



Public Input No. 107-NFPA 70-2025 [Global Input]

Type your content here Replace "plaque" with "placard" throughout the code.

Statement of Problem and Substantiation for Public Input

A plaque is "an ornamental tablet, typically of metal, porcelain, or wood, that is fixed to a wall or other surface in commemoration of a person or event." A placard is "a poster or sign for public display, either fixed to a wall or carried during a demonstration."

In all cases where the code uses the term "plaque" it is really intending that a sign be placed on the equipment to convey information, so the term placard is the correct term.

Submitter Information Verification

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Submittal Date: Tue Oct 14 12:45:54 EDT 2025

Committee: NEC-P10

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Public Input No. 640-NFPA 70-2026 [Global Input]

Type your content here ...

Industrial facilities

Industrial buildings

Industrial establishments

Industrial premises

Industrial Occupancies

For consistency and clarity, consolidate all the terms above into Industrial Occupancy

Statement of Problem and Substantiation for Public Input

Installation standards generally refer to and align with the performance-based requirements provided in consensus-based building and life safety codes. Industrial occupancy is a term use to classify the use of the building, establishment, premises, or facility. Consolidating to one terminology would solidify the use of the terms meaning, and aligns with outer codes and standards, Industrial Occupancy.

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Submittal Date: Mon Jan 19 11:36:19 EST 2026

Committee: NEC-P01

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Public Input No. 1005-NFPA 70-2026 [Global Input]

Delete the words, "to be installed" everywhere they appear in the First Draft.

Additional Proposed Changes

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
PC_649_CMP_1.pdf	70_PC649	✓

Statement of Problem and Substantiation for Public Input

NOTE: This Public Input appeared as "Reject but Hold" in Public Comment No. 649 of the (A2025) Second Draft Report for NFPA 70 and per the Regs. at 4.4.8.3.1 and needs to be reconsidered by the Code-Making Panel for the next edition of the document.

The term "to be installed" is always redundant. 90.2(C) says, "This code covers the installation and removal of electrical conductors, equipment, and raceways...". Every requirement of the NEC is about installation or removal (and requirements about removal are a very small minority). "Shall be permitted" and "shall not be permitted," as applied to equipment, mean that the subject equipment either is or is not allowed to be installed.

The new First Draft restrictions on reconditioned equipment seem to have overlooked the scope and purpose of the NEC. Adding the superfluous term "to be installed" also does not conform to 3.1.1, 3.1.2, and 3.5.1.1 of the NEC Style Manual.

Submitter Information Verification

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Submission Date: Wed Feb 11 12:23:38 EST 2026

Committee: NEC-P01

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Delete the words, "to be installed" everywhere they appear in the First Draft.

Statement of Problem and Substantiation for Public Comment

The term "to be installed" is always redundant. 90.2(C) says, "This code covers the installation and removal of electrical conductors, equipment, and raceways...". Every requirement of the NEC is about installation or removal (and requirements about removal are a very small minority). "Shall be permitted" and "shall not be permitted," as applied to equipment, mean that the subject equipment either is or is not allowed to be installed.

The new First Draft restrictions on reconditioned equipment seem to have overlooked the scope and purpose of the NEC. Adding the superfluous term "to be installed" also does not conform to 3.1.1, 3.1.2, and 3.5.1.1 of the NEC Style Manual.

Related
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Submittal Date: Fri Aug 02 09:19:44 EDT 2024

Committee: NEC-P01

Committee Statement

Committee Action: Rejected but held

Resolution: This recommendation introduces new information. Accordingly, this comment is held per 4.4.8.3.2, Basis for Reject But Hold, in the Regulations Governing the Development of NFPA Standards.

**Public Input No. 1777 Assigned to CMP 1
Referred to CMP 12**



Public Input No. 1777-NFPA 70-2026 [Section No. A.1]

A.1 Referenced Publications.

Table A.1(1), Table A.1(2), and Table A.1(3) provide a list of publications that are referenced in this code. These references are current at the time of publication. New publications or modifications to existing publications can occur at any time while this edition of the code is in effect.

Table A.1(1) provides a list of NFPA publications referenced in this code. Table A.1(2) provides a list of product safety standards used for product listing where that listing is required by this code. Table A.1(3) provides a list of other publications referenced in this code.

Table A.1(1) NFPA Standards Referenced in NEC

<u>Standard Number</u>	<u>Standard Title</u>	<u>Current Edition</u>	<u>Extract Edition</u>
1	Fire Code	2024	-
2	Hydrogen Technologies Code	2023	-
13	Standard for the Installation of Sprinkler Systems	2025	-
13D	Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes	2025	-
20	Standard for the Installation of Stationary Pumps for Fire Protection	2025	2025
30	Flammable and Combustible Liquids Code	2024	-
30A	Code for Motor Fuel Dispensing Facilities and Repair Garages	2024	2024
32	Standard for Drycleaning Facilities	2021	-
33	Standard for Spray Application Using Flammable or Combustible Materials	2024	2024
34	Standard for Dipping, Coating, and Printing Processes Using Flammable or Combustible Liquids	2024	2024
35	Standard for the Manufacture of Organic Coatings	2021	-
36	Standard for Solvent Extract Plants	2025	-
37	Standard for the Installation and Use of Stationary Combustion Engines and Gas Turbines	2024	-
40	Standard for the Storage and Handling of Cellulose Nitrate Film	2025	-
45	Standard on Protection for Laboratories Using Chemicals	2024	-
52	Vehicular Natural Gas Fuel Systems Code	2026	-
54	National Fuel Gas Code	2024	-
55	Compressed Gases and Cryogenic Fluids Code	2026	-
58	Liquefied Petroleum Gas Code	2024	-
59	Utility LP-Gas Plant Code	2024	-
70	National Electrical Code®	2026	-
70B	Standard for Electrical Equipment Maintenance	2023	-
70E®	Standard for Electrical Safety in the Workplace®	2024	-
72	National Fire Alarm and Signaling Code®	2025	-
75	Standard for the Fire Protection of Information Technology Equipment	2024	2024
77	Recommended Practice on Static Electricity	2024	-
79	Electrical Standard for Industrial Machinery	2024	2024
80	Standard for Fire Doors and Other Opening Protectives	2025	-
88A	Standard for Parking Structures	2023	-
90A	Standard for the Installation of Air-Conditioning and Ventilating Systems	2024	-

<u>Standard Number</u>	<u>Standard Title</u>	<u>Current Edition</u>	<u>Extract Edition</u>
90B	Standard for the Installation of Warm Air Heating and Air-Conditioning Systems	2024	-
91	Standard for Exhaust Systems for Air Conveying of Vapors, Gases, Mists, and Particulate Solids	2026	-
99	Health Care Facilities Code	2024	2024
101 [®]	Life Safety Code [®]	2024	2024
110	Standard for Emergency and Standby Power Systems	2025	2025
111	Standard for Stored Electrical Energy Emergency and Standby Power Systems	2025	-
220	Standard on Types of Building Construction	2024	-
262	Standard Method of Test for Flame Travel and Smoke of Wires and Cables for Use in Air-Handling Spaces	2023	-
303	Fire Protection Standard for Marinas and Boatyards	2026	2021
307	Standard for the Construction and Fire Protection of Marine Terminals, Piers, and Wharves	2021	2021
409	Standard on Aircraft Hangers	2022	-
496	Standard for Purged and Pressurized Enclosures for Electrical Equipment	2024	-
497	Recommended Practice for the Classification of Flammable Liquids, Gases, or Vapors and of Hazardous (Classified) Locations for Electrical Installations in Chemical Process Areas	2024	-
499	Recommended Practice for the Classification of Combustible Dusts and of Hazardous (Classified) Locations for Electrical Installations in Chemical Process Areas	2024	2024
505	Fire Safety Standard for Powered Industrial Trucks Including Type Designations, Areas of Use, Conversions, Maintenance, and Operations	2024	-
701	Standard Methods of Fire Tests for Flame Propagation of Textiles and Films	2023	-
730	Guide for Premises Security	2023	-
780	Standard for the Installation of Lightning Protection Systems	2026	-
790	Standard for the Competency of Third-Party Field Evaluation Bodies	2024	2024
820	Standard for Fire Protection in Wastewater Treatment and Collection Facilities	2024	-
853	Standard for the Installation of Stationary Fuel Cell Power Systems	2025	-
855	Standard for the Installation of Stationary Energy Storage Systems	2026	-
1192	Standard on Recreational Vehicles	2026	2021
1660	Standard for Emergency, Continuity, and Crisis Management: Preparedness, Response, and Recovery	2024	-
5000	Building Construction and Safety Code [®]	2024	-

Table A.1(2) Product Safety Standards for Conductors and Equipment That Have an Associated Listing Requirement

Article	Standard Number	Standard Title
110	UL 10C, third edition	Positive Pressure Fire Tests of Door Assemblies
	-	UL 305, sixth edition Panic Hardware
	-	UL 486D, seventh edition Sealed Wire Connector Systems
	-	UL 2043, fifth edition Fire Test for Heat and Visible Smoke Release for Discrete Products and Their Accessories Installed in Air-Handling Spaces
	-	UL 62275, third edition Cable Management Systems — Cable Ties for Electrical Installations
130	UL 916, fifth edition	Energy Management Equipment
	-	UL 3141, first edition Power Control Systems
210	UL 498, sixteenth edition	Attachment Plugs and Receptacles
	-	UL 935, tenth edition Fluorescent-Lamp Ballasts
	-	UL 943, fifth edition Ground Fault Circuit Interrupters
	-	UL 1029, fifth edition High-Intensity-Discharge Lamp Ballasts
	-	UL 1699, third edition Arc-Fault Circuit-Interrupters
	-	UL 1699A, second edition Outlet Branch Circuit Arc-Fault Circuit-Interrupters
225	UL 6, fifteenth edition	Electrical Rigid Metal Conduit — Steel
	-	UL 6A, second edition Electrical Rigid Metal Conduit — Aluminum, Red Brass and Stainless Steel
	-	UL 360, seventh edition Liquid-Tight Flexible Metal Conduit
	-	UL 651, eighth edition Schedule 40, 80, Type EB and A Rigid PVC Conduit and Fittings
	-	UL 1242, fourth edition Electrical Intermediate Metal Conduit — Steel
	-	UL 1660, sixth edition Liquid-Tight Flexible Nonmetallic Conduit
	-	UL 2515, second edition Aboveground Reinforced Thermosetting Resin Conduit (RTRC) and Fittings
230	UL 6, fifteenth edition	Electrical Rigid Metal Conduit — Steel
	-	UL 6A, second edition Electrical Rigid Metal Conduit — Aluminum, Red Brass and Stainless Steel
	-	UL 67, thirteenth edition Panelboards

<u>Article</u>	<u>Standard Number</u>	<u>Standard Title</u>
-	UL 98, fourteenth edition	Enclosed and Dead-Front Switches
-	UL 218, third edition	Fire Pump Controllers
-	UL 231, tenth edition	Power Outlets
-	UL 360, seventh edition	Liquid-Tight Flexible Metal Conduit
-	UL 414, ninth edition	Meter Sockets
-	UL 486A-486B, third edition	Wire Connectors
-	UL 486C, eighth edition	Splicing Wire Connectors
-	UL 489, thirteenth edition	Molded-Case Circuit Breakers, Molded-Case Switches and Circuit-Breaker Enclosures
-	UL 508, eighteenth edition	Industrial Control Equipment
-	UL 508A, third edition	Industrial Control Panels
-	UL 514B, sixth edition	Conduit, Tubing, and Cable Fittings
-	UL 651, eighth edition	Schedule 40, 80, Type EB and A Rigid PVC Conduit and Fittings
-	UL 845, sixth edition	Motor Control Centers
-	UL 857, thirteenth edition	Busways
-	UL 869A, fourth edition	Reference Standard for Service Equipment
-	UL 891, twelfth edition	Switchboards
-	UL 977, fifth edition	Fused Power-Circuit Devices
-	UL 1008, ninth edition	Transfer Switch Equipment
-	UL 1008M, first edition	Transfer Switch Equipment, Meter-Mounted
-	UL 1008S, first edition	Solid-State Transfer Switches
-	UL 1053, seventh edition	Ground-Fault Sensing and Relaying Equipment
-	UL 1062, third edition	Unit Substations
-	UL 1066, fifth edition	Power Circuit Breakers up to 1000 V AC and 1500 V DC Used in Enclosures
-	UL 1242, fourth edition	Electrical Intermediate Metal Conduit — Steel
-	UL 1429, fourth edition	Pullout Switches

Article	Standard Number	Standard Title
	-	UL 1449, fifth edition Surge Protective Devices
	-	UL 1558, fifth edition Metal-Enclosed Low-Voltage Power Circuit Breaker Switchgear
	-	UL 1660, sixth edition Liquid-Tight Flexible Nonmetallic Conduit
	-	UL 1740, fourth edition Robots and Robotic Equipment
	-	UL 1953, seventh edition Power Distribution Blocks
	-	UL 2011, seventh edition Machinery
	-	UL 2200, third edition Stationary Engine Generator Assemblies
	-	UL 2416, first edition Audio/Video, Information and Communication Technology Equipment Cabinet, Enclosure and Rack Systems
	-	UL 2446, first edition Unitary Boiler Room Systems
	-	UL 2565, first edition Industrial Metalworking and Woodworking Machine Tools
	-	UL 2735, first edition Electric Utility Meters
	-	UL 2745, first edition Meter Socket Adapters for Communications Equipment
	-	UL 2876, first edition Remote Racking Devices for Switchgear and Controlgear
	-	UL 4248-1, third edition Fuseholders — Part 1: General Requirements
	-	UL 60947-1, sixth edition Low-Voltage Switchgear and Controlgear — Part 1: General Rules
	-	UL 61800-5-1, second edition Adjustable Speed Electrical Power Drive Systems — Part 5-1: Safety Requirements — Electrical, Thermal and Energy
240	UL 248-1, fourth edition	Low-Voltage Fuses — Part 1: General Requirements
	-	UL 248-2, second edition Low-Voltage Fuses — Part 2: Class C Fuses
	-	UL 248-3, second edition Low-Voltage Fuses — Part 2: Class CA and CB Fuses
	-	UL 248-4, second edition Low-Voltage Fuses — Part 4: Class CC Fuses
	-	UL 248-5, second edition Low-Voltage Fuses — Part 5: Class G Fuses
	-	UL 248-6, second edition Low-Voltage Fuses — Part 6: Class H Non-Renewable Fuses
	-	UL 248-8, third edition Low-Voltage Fuses — Part 8: Class J Fuses
	-	UL 248-9, second edition Low-Voltage Fuses — Part 9: Class K Fuses

Article	Standard Number	Standard Title
	-	UL 248-10, third edition Low-Voltage Fuses — Part 10: Class L Fuses
	-	UL 248-11, third edition Low-Voltage Fuses — Part 11: Plug Fuses
	-	UL 248-12, third edition Low-Voltage Fuses — Part 12: Class R Fuses
	-	UL 248-15, third edition Low-Voltage Fuses — Part 15: Class T Fuses
	-	UL 248-17, fifth edition Low-Voltage Fuses — Part 17: Class CF Fuses
	-	UL 248-18, first edition Low-Voltage Fuses — Part 18: Class CD Fuses
	-	UL 489, thirteenth edition Molded-Case Circuit Breakers, Molded-Case Switches, and Circuit-Breaker Enclosures
	-	UL 489I, second edition Solid State Molded-Case Circuit Breakers
	-	UL 943, fifth edition Ground-Fault Circuit-Interrupters
	-	UL 1053, seventh edition Ground-Fault Sensing and Relaying Equipment
	-	UL 1066, fifth edition Power Circuit Breakers up to 1000 V AC and 1500 V DC Used in Enclosures
	-	UL 4248-1, third edition Fuseholders — Part 1: General Requirements
242	UL 1449, fifth edition	Surge Protective Devices
250	UL 1, eleventh edition	Flexible Metal Conduit
	-	UL 4, fifteenth edition Armored Cable
	-	UL 5, fifteenth edition Surface Metal Raceways and Fittings
	-	UL 6, fifteenth edition Electrical Rigid Metal Conduit — Steel
	-	UL 6A, second edition Electrical Rigid Metal Conduit — Aluminum, Red Brass and Stainless Steel
	-	UL 153, thirteenth edition Portable Electric Luminaires
	-	UL 360, seventh edition Liquid-Tight Flexible Metal Conduit
	-	UL 467, eleventh edition Grounding and Bonding Equipment
	-	UL 486A-486B, third edition Wire Connectors
	-	UL 486C, eighth edition Splicing Wire Connectors
	-	UL 486D, seventh edition Sealed Wire Connector Systems
	-	UL 498, sixteenth edition Attachment Plugs and Receptacles

Article	Standard Number	Standard Title	
	-	UL 504, third edition	Mineral-Insulated, Metal-Sheathed Cable
	-	UL 514A, eleventh edition	Metallic Outlet Boxes
	-	UL 514B, sixth edition	Conduit, Tubing, and Cable Fittings
	-	UL 797, ninth edition	Electrical Metallic Tubing — Steel
	-	UL 797A, third edition	Electrical Metallic Tubing — Aluminum and Stainless Steel
	-	UL 1242, fourth edition	Electrical Intermediate Metal Conduit — Steel
	-	UL 1569, fifth edition	Metal-Clad Cables
	-	UL 1652, third edition	Flexible Metallic Tubing
270	UL 1, eleventh edition	Flexible Metal Conduit	
	-	UL 6, fifteenth edition	Electrical Rigid Metal Conduit — Steel
	-	UL 6A, second edition	Electrical Rigid Metal Conduit — Aluminum, Red Brass and Stainless Steel
	-	UL 360, seventh edition	Liquid-Tight Flexible Metal Conduit
	-	UL 467, eleventh edition	Grounding and Bonding Equipment
	-	UL 486A-486B, third edition	Wire Connectors
	-	UL 486C, eighth edition	Splicing Wire Connectors
	-	UL 486D, seventh edition	Sealed Wire Connector Systems
	-	UL 514A, eleventh edition	Metallic Outlet Boxes
	-	UL 514B, sixth edition	Conduit, Tubing, and Cable Fittings
	-	UL 797, ninth edition	Electrical Metallic Tubing — Steel
	-	UL 797A, third edition	Electrical Metallic Tubing — Aluminum and Stainless Steel
	-	UL 1242, fourth edition	Electrical Intermediate Metal Conduit — Steel
	-	UL 1569, fifth edition	Metal-Clad Cables
300	UL 4, fifteenth edition	Armored Cable	
	-	UL 44, nineteenth edition	Thermoset-Insulated Wires and Cables
	-	UL 83, sixteenth edition	Thermoplastic-Insulated Wires and Cables

Article	Standard Number	Standard Title
	-	UL 83A, first edition Fluoropolymer Insulated Wire
	-	UL 263, fourteenth edition Fire Tests of Building Construction and Materials
	-	UL 504, third edition Mineral-Insulated, Metal-Sheathed Cable
	-	UL 746C, seventh edition Polymeric Materials — Use in Electrical Equipment Evaluations
	-	UL 1569, fifth edition Metal-Clad Cables
	-	UL 1581, fourth edition Reference Standard for Electrical Wires, Cables, and Flexible Cords
	-	UL 2239, second edition Hardware for the Support of Conduit, Tubing and Cable
	-	UL 2556, fifth edition Wire and Cable Test Methods
	-	UL 62275, third edition Cable Management Systems — Cable Ties for Electrical Installations
310	UL 44, nineteenth edition	Thermoset-Insulated Wires and Cables
	-	UL 83, sixteenth edition Thermoplastic-Insulated Wires and Cables
	-	UL 83A, first edition Fluoropolymer Insulated Wire
	-	UL 83B, first edition Switchboard and Switchgear Wires and Cables
	-	UL 224, seventh edition Extruded Insulating Tubing
	-	UL 493, tenth edition Thermoplastic-Insulated Underground Feeder and Branch-Circuit Cables
	-	UL 504, third edition Mineral-Insulated, Metal-Sheathed Cable
	-	UL 854, twelfth edition Service-Entrance Cables
	-	UL 1063, ninth edition Machine-Tool Wires and Cables
	-	UL 1441, fifth edition Coated Electrical Sleeving
	-	UL 1581, fourth edition Reference Standard for Electrical Wires, Cables, and Flexible Cords
312	UL 50, fourteenth edition	Enclosures for Electrical Equipment, Non-Environmental Considerations
	-	UL 50E, third edition Enclosures for Electrical Equipment, Environmental Considerations
	-	UL 514C, fourth edition Nonmetallic Outlet Boxes, Flush-Device Boxes, and Covers
	-	UL 2808, first edition Energy Monitoring Equipment

Article	Standard Number	Standard Title
	-	UL 61010-1, third edition Electrical Equipment for Measurement, Control, and Laboratory Use — Part 1: General Requirements
	-	UL 61010-2-030, second edition Electrical Equipment for Measurement, Control, and Laboratory Use — Part 2-030: Particular Requirements for Testing and Measuring Circuits
314	UL 50, fourteenth edition	Enclosures for Electrical Equipment, Non-Environmental Considerations
	-	UL 50E, third edition Enclosures for Electrical Equipment, Environmental Considerations
	-	UL 486D, seventh edition Sealed Wire Connector Systems
	-	UL 498, sixteenth edition Attachment Plugs and Receptacles
	-	UL 498B, first edition Receptacles with Integral Switching Means
	-	UL 498D, first edition Attachment Plugs, Cord Connectors and Receptacles with Arcuate (Locking Type) Contacts
	-	UL 498E, first edition Attachment Plugs, Cord Connectors and Receptacles — Enclosure Types for Environmental Protection
	-	UL 514A, eleventh edition Metallic Outlet Boxes
	-	UL 514B, sixth edition Conduit, Tubing, and Cable Fittings
	-	UL 514C, fourth edition Nonmetallic Outlet Boxes, Flush-Device Boxes, and Covers
	-	UL 514D, second edition Cover Plates for Flush-Mounted Wiring Devices
	-	UL 1953, seventh edition Power Distribution Blocks
315	ANSI C119.4	Electric Connectors — Connectors for Use between Aluminum-to-Aluminum and Aluminum-to-Copper Conductors Designed for Normal Operation at or Below 93°C and Copper-to-Copper Conductors Designed for Normal Operation at or Below 100°C
	-	IEEE 48 IEEE Standard for Test Procedures and Requirements for Alternating-Current Cable Terminations Used on Shielded

<u>Article</u>	<u>Standard Number</u>	<u>Standard Title</u>
	-	IEEE 386 Cables Having Laminated Insulation Rated 2.5 kV through 765 kV or Extruded Insulation Rated 2.5 kV through 500 kV
	-	IEEE 404 IEEE Standard for Separable Insulated Connector Systems for Power Distribution Systems Rated 2.5 kV through 35 kV
	-	UL 4, fifteenth edition Armored Cable
	-	UL 504, third edition Mineral-Insulated, Metal-Sheathed Cable
	-	UL 1072, fourth edition Medium Voltage Power Cables
	-	UL 1569, fifth edition Metal-Clad Cables
320	UL 4, fifteenth edition	Armored Cable
	-	UL 44, nineteenth edition Thermoset-Insulated Wires and Cables
	-	UL 514B, sixth edition Conduit, Tubing, and Cable Fittings
	-	UL 514C, fourth edition Nonmetallic Outlet Boxes, Flush-Device Boxes, and Covers
	-	UL 1565, sixth edition Positioning Devices
	-	UL 2239, second edition Hardware for the Support of Conduit, Tubing, and Cable
322	UL 486A-486B, third edition	Wire Connectors
	-	UL 498, sixteenth edition Attachment Plugs and Receptacles
	-	UL 514A, eleventh edition Metallic Outlet Boxes
324	UL 486A-486B, third edition	Wire Connectors
	-	UL 498, sixteenth edition Attachment Plugs and Receptacles
330	UL 514B, sixth edition	Conduit, Tubing, and Cable Fittings
	-	UL 1565, sixth edition Positioning Devices
	-	UL 1569, fifth edition Metal-Clad Cables
	-	UL 2225, fifth edition Cables and Cable-Fittings For Use In Hazardous (Classified) Locations
	-	UL 2239, second edition Hardware for the Support of Conduit, Tubing, and Cable
332	UL 504, third edition	Mineral-Insulated, Metal-Sheathed

Article	Standard Number	Standard Title	
		Cable	
	-	UL 514B, sixth edition	Conduit, Tubing and Cable Fittings
334	UL 719, thirteenth edition	Nonmetallic-Sheathed Cables	
	-	UL 2256, first edition	Nonmetallic Sheathed Cable Interconnects
	-	UL 62275, third edition	Cable Management Systems — Cable Ties for Electrical Installations
335	UL 2250, third edition	Instrumentation Tray Cable	
336	UL 514B, sixth edition	Conduit, Tubing, and Cable Fittings	
	-	UL 1277, sixth edition	Electrical Power and Control Tray Cables with Optional Optical-Fiber Members
	-	UL 2225, fifth edition	Cables and Cable-Fittings For Use In Hazardous (Classified) Locations
337	UL 1309A, first edition	Cable for Use in Mobile Installations	
338	UL 514B, sixth edition	Conduit, Tubing, and Cable Fittings	
	-	UL 854, twelfth edition	Service-Entrance Cables
340	UL 514B, sixth edition	Conduit, Tubing, and Cable Fittings	
	-	UL 493, tenth edition	Thermoplastic-Insulated Underground Feeder and Branch-Circuit Cables
342	UL 514B, sixth edition	Conduit, Tubing, and Cable Fittings	
	-	UL 1242, fourth edition	Electrical Intermediate Metal Conduit — Steel
344	UL 6, fifteenth edition	Electrical Rigid Metal Conduit — Steel	
	-	UL 6A, second edition	Electrical Rigid Metal Conduit — Aluminum, Red Brass and Stainless Steel
	-	UL 514B, sixth edition	Conduit, Tubing, and Cable Fittings
348	UL 1, eleventh edition	Flexible Metal Conduit	
	-	UL 62275, third edition	Cable Management Systems — Cable Ties for Electrical Installations
350	UL 360, seventh edition	Liquid-Tight Flexible Steel Conduit	
	-	UL 514B, sixth edition	Conduit, Tubing, and Cable Fittings
	-	UL 62275, third edition	Cable Management Systems — Cable Ties for Electrical Installations

Article	Standard Number	Standard Title	
352	UL 651, eighth edition	Schedule 40, 80, Type EB and A Rigid PVC Conduit and Fittings	
353	UL 651A, sixth edition	High Density Polyethylene (HDPE) Conduit	
354	UL 1990, fourth edition	Nonmetallic Underground HDPE Conduit with Conductors	
355	UL 2420, first edition	Belowground Reinforced Thermosetting Resin Conduit (RTRC) and Fittings	
	-	UL 2515, second edition	Aboveground Reinforced Thermosetting Resin Conduit (RTRC) and Fittings
	-	UL 2515A, first edition	Supplemental Requirements for Extra-Heavy Wall Reinforced Thermosetting Resin Conduit (RTRC) and Fittings
356	UL 1660, sixth edition	Liquid-Tight Flexible Nonmetallic Conduit	
	-	UL 62275, third edition	Cable Management Systems — Cable Ties for Electrical Installations
358	UL 514B, sixth edition	Conduit, Tubing, and Cable Fittings	
	-	UL 797, ninth edition	Electrical Metallic Tubing — Steel
	-	UL 797A, third edition	Electrical Metallic Tubing — Aluminum and Stainless Steel
360	UL 514B, sixth edition	Conduit, Tubing, and Cable Fittings	
	-	UL 1652, third edition	Flexible Metallic Tubing
362	UL 1653, third edition	Electrical Nonmetallic Tubing	
	-	UL 62275, third edition	Cable Management Systems — Cable Ties for Electrical Installations
366	UL 870, ninth edition	Wireways, Auxiliary Gutters, and Associated Fittings	
368	UL 509, second edition	Bus Drop Cable	
370	ANSI/CSA C22.2 No. 273	Cablebus	
371	UL 1386, first edition	Flexible Bus Systems	

Article	Standard Number	Standard Title	
	-	UL 1387, first edition	Flexible Insulated Bus
374	UL 209, tenth edition	Cellular Metal Floor Raceways and Fittings	
	-	UL 360, seventh edition	Liquid-Tight Flexible Metal Conduit
	-	UL 1660, sixth edition	Liquid-Tight Flexible Nonmetallic Conduit
376	UL 870, ninth edition	Wireways, Auxiliary Gutters, and Associated Fittings	
	-	UL 1953, seventh edition	Power Distribution Blocks
378	UL 870, ninth edition	Wireways, Auxiliary Gutters, and Associated Fittings	
382	UL 5A, fourth edition	Nonmetallic Surface Raceways and Fittings	
	-	UL183, fourth edition	Manufactured Wiring Systems
	-	UL 467, eleventh edition	Grounding and Bonding Equipment
	-	UL 498, sixteenth edition	Attachment Plugs and Receptacles
	-	UL 498D, first edition	Attachment Plugs, Cord Connectors and Receptacles with Arcuate (Locking Type) Contacts
	-	UL 498E, first edition	Attachment Plugs, Cord Connectors and Receptacles — Enclosure Types for Environmental Protection
	-	UL 498F, first edition	Plugs, Socket-Outlets and Couplers with Arcuate (Locking Type) Contacts
	-	UL 498M, first edition	Marine Shore Power Inlets
	-	UL 514D, second edition	Cover Plates for Flush-Mounted Wiring Devices
	-	UL 746C, seventh edition	Polymeric Materials — Use in Electrical Equipment Evaluations
	-	UL 943, fifth edition	Ground-Fault Circuit-Interruptioners
	-	UL 991, third edition	Tests for Safety-Related Controls Employing Solid-State Devices
	-	UL 1077, seventh edition	Supplementary Protectors for Use in Electrical Equipment
	-	UL 1699, third edition	Arc-Fault Circuit-Interruptioners
	-	UL 1998, third edition	Software in Programmable Components
384	UL 5B, second edition	Strut-Type Channel Raceways and	

Article	Standard Number	Standard Title
		Fittings
386	UL 5, fifteenth edition	Surface Metal Raceways and Fittings
388	UL 5A, fourth edition	Nonmetallic Surface Raceways and Fittings
392	UL 62275, third edition	Cable Management Systems — Cable Ties for Electrical Installations
393	UL 13, fourth edition	Power-Limited Circuit Cables
	-	UL 50, fourteenth edition Enclosures for Electrical Equipment, Non-Environmental Considerations
	-	UL 50E, third edition Enclosures for Electrical Equipment, Environmental Considerations
	-	UL 514C, fourth edition Nonmetallic Outlet Boxes, Flush-Device Boxes, and Covers
	-	UL 1310, seventh edition Class 2 Power Units
	-	UL 2043, fifth edition Fire Test for Heat and Visible Smoke Release for Discrete Products and Their Accessories Installed in Air-Handling Spaces
	-	UL 2577, first edition Suspended Ceiling Power Grid Systems and Equipment
	-	UL 62368-1, third edition Audio/Video, Information and Communication Technology Equipment — Part 1: Safety Requirements
396	UL 1072, fourth edition	Medium-Voltage Power Cables
404	ANSI/NEMA WD 6–2016	Wiring Devices — Dimensional Specifications
	-	UL 20, fourteenth edition General-Use Snap Switches
	-	UL 98, fourteenth edition Enclosed and Dead-Front Switches
	-	UL 98A, second edition Open-Type Switches
	-	UL 363, eleventh edition Knife Switches
	-	UL 489, thirteenth edition Molded-Case Circuit Breakers, Molded-Case Switches and Circuit-Breaker Enclosures
	-	UL 773, fifth edition Plug-In Locking Type Photocontrols for Use with Area Lighting
	-	UL 773A, sixth edition Nonindustrial Photoelectric Switches for Lighting Control
	-	UL 917, fifth edition Clock-Operated Switches

Article	Standard Number	Standard Title
	-	UL 977, fifth edition Fused Power-Circuit Devices
	-	UL 1066, fifth edition Power Circuit Breakers up to 1000 V AC and 1500 V DC Used in Enclosures
	-	UL 1472, second edition Solid-State Dimming Controls
	-	UL 1429, fourth edition Pullout Switches
	-	UL 60730-1, fifth edition Automatic Electrical Controls — Part 1: General Requirements
	-	UL 60730-2-7, third edition Automatic Electrical Controls — Part 2-7: Particular Requirements for Timers and Time Switches
406	UL 498, sixteenth edition	Attachment Plugs and Receptacles
	-	UL 498B, first edition Receptacles with Integral Switching Means
	-	UL 498D, first edition Attachment Plugs, Cord Connectors and Receptacles with Arcuate (Locking Type) Contacts
	-	UL 498E, first edition Attachment Plugs, Cord Connectors and Receptacles — Enclosure Types for Environmental Protection
	-	UL 498F, first edition Plugs, Socket-Outlets and Couplers with Arcuate (Locking Type) Contacts
	-	UL 498M, first edition Marine Shore Power Inlets
	-	UL 514A, eleventh edition Metallic Outlet Boxes
	-	UL 514C, fourth edition Nonmetallic Outlet Boxes, Flush-Device Boxes, and Covers
	-	UL 514D, second edition Cover Plates for Flush-Mounted Wiring Devices
	-	UL 943, fifth edition Ground-Fault Circuit-Interrupters
	-	UL 943B, third edition Appliance Leakage-Current Interrupters
	-	UL 943C, second edition Special Purpose Ground-Fault Circuit-Interrupters
	-	UL 970, first edition Retail Fixtures and Merchandise Displays
	-	UL 1053, seventh edition Ground-Fault Sensing and Relaying Equipment
	-	UL 1286, sixth edition Office Furnishings Systems
	-	UL 1310, seventh edition Class 2 Power Units
	-	UL 1682, fifth edition Plugs, Receptacles, and Cable Connectors, of the Pin and Sleeve Type
	-	UL 1691, second edition Single Pole Locking-Type Separable Connectors
	-	UL 1699, third edition Arc-Fault Circuit-Interrupters

Article	Standard Number	Standard Title	
	-	UL 1699A, second edition	Outlet Branch Circuit Arc-Fault Circuit-Interruption
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	-	UL 2999, first edition	Individual Commercial Office Furnishings
408	UL 44, nineteenth edition	Thermoset-Insulated Wires and Cables	
	-	UL 67, thirteenth edition	Panelboards
	-	UL 891, twelfth edition	Switchboards
	-	UL 1558, fifth edition	Metal-Enclosed Low-Voltage Power Circuit Breaker Switchgear
409	UL 508, eighteenth edition	Industrial Control Equipment	
	-	UL 508A, third edition	Industrial Control Panels
410	ANSI/CSA-C22.2 No. 184.2	Solid-State Controls for Lighting Systems (SSCLS)	
	-	UL 153, thirteenth edition	Portable Electric Luminaires
	-	UL 496, fourteenth edition	Lampholders
	-	UL 498, sixteenth edition	Attachment Plugs and Receptacles
	-	UL 498B, first edition	Receptacles with Integral Switching Means
	-	UL 498D, first edition	Attachment Plugs, Cord Connectors and Receptacles with Arcuate (Locking Type) Contacts
	-	UL 498E, first edition	Attachment Plugs, Cord Connectors and Receptacles — Enclosure Types for Environmental Protection
	-	UL 498F, first edition	Plugs, Socket-Outlets and Couplers with Arcuate (Locking Type) Contacts
	-	UL 542, ninth edition	Fluorescent Lamp Starters
	-	UL 588, nineteenth edition	Seasonal and Holiday Decorative Products
	-	UL 935, tenth edition	Fluorescent-Lamp Ballasts
	-	UL 943, fifth edition	Ground-Fault Circuit-Interruption
	-	UL 970, first edition	Retail Fixtures and Merchandising Displays
	-	UL 1029, fifth edition	High-Intensity-Discharge Lamp Ballasts

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Article	Standard Number	Standard Title
	-	UL 1029A, first edition Ignitors and Related Auxiliaries for HID Lamp Ballasts
	-	UL 1574, third edition Track Lighting Systems
	-	UL 1598, fifth edition Luminaires
	-	UL 1598B, first edition Luminaire Reflector Kits for Installation on Previously Installed Fluorescent Luminaires, Supplemental Requirements
	-	UL 1598C, second edition Light-Emitting Diode (LED) Retrofit Luminaire Conversion Kits
	-	UL 1993, sixth edition Self-Ballasted Lamps and Lamp Adapters
	-	UL 2388, second edition Flexible Lighting Products
	-	UL 8750, second edition Light Emitting Diode (LED) Equipment for Use in Lighting Products
	-	UL 8752, second edition Organic Light Emitting Diode (OLED) Panels
	-	UL 8753, second edition Field-Replaceable Light Emitting Diode (LED) Light Engines
	-	UL 8754, second edition Holders, Bases and Connectors for Solid-State (LED) Light Engines and Arrays
	-	UL 8800, first edition Horticultural Lighting Equipment and Systems
	-	UL 8802, first edition Ultraviolet (UV) Germicidal Equipment and Systems
	-	UL 8803, first edition Portable UV Germicidal Equipment With Uncontained UV Sources
411	UL 1310, seventh edition	Class 2 Power Units
	-	UL 1838, third edition Low-Voltage Landscape Lighting Systems
	-	UL 2108, second edition Low-Voltage Lighting Systems
	-	UL 5085-3, first edition Low Voltage Transformers — Part 3: Class 2 and Class 3 Transformers
422	ANSI/CSA-C22.2 No. 339	Hand-held motor-operated electric tools — Safety — Particular requirements for chain beam saws
	-	UL 22, sixth edition Amusement and Gaming Machines
	-	UL 73, tenth edition Motor-Operated Appliances
	-	UL 82, ninth edition Electric Gardening Appliances
	-	UL 122, fifth edition Photographic Equipment
	-	UL 141, ninth edition Garment Finishing Appliances

<u>Article</u>	<u>Standard Number</u>	<u>Standard Title</u>
-	UL 174, eleventh edition	Household Electric Storage Tank Water Heaters
-	UL 197, tenth edition	Commercial Electric Cooking Appliances
-	UL 283, third edition	Air Fresheners and Deodorizers
-	UL 325, seventh edition	Door, Drapery, Gate, Louver, and Window Operators and Systems
-	UL 399, eighth edition	Drinking Water Coolers
-	UL 430, eighth edition	Waste Disposers
-	UL 498, sixteenth edition	Attachment Plugs and Receptacles
-	UL 498D, first edition	Attachment Plugs, Cord Connectors and Receptacles with Arcuate (Locking Type) Contacts
-	UL 498E, first edition	Attachment Plugs, Cord Connectors and Receptacles — Enclosure Types for Environmental Protection
-	UL 498F, first edition	Plugs, Socket-Outlets and Couplers with Arcuate (Locking Type) Contacts
-	UL 499, fourteenth edition	Electric Heating Appliances
-	UL 507, tenth edition	Electric Fans
-	UL 514A, eleventh edition	Metallic Outlet Boxes
-	UL 515, second edition	Electrical Resistance Trace Heating for Commercial Applications
-	UL 561, seventh edition	Floor Finishing Machines
-	UL 574, eighth edition	Electric Oil Heaters
-	UL 621, seventh edition	Ice Cream Makers
-	UL 705, seventh edition	Power Ventilators
-	UL 710B, second edition	Recirculating Systems
-	UL 749, twelfth edition	Household Dishwashers
-	UL 751, ninth edition	Vending Machines
-	UL 763, fifth edition	Motor-Operated Commercial Food Preparing Machines
-	UL 778, sixth edition	Motor-Operated Water Pumps
-	UL 834, fifth edition	Heating, Water Supply, and Power Boilers — Electric

<u>Article</u>	<u>Standard Number</u>	<u>Standard Title</u>
-	UL 858, sixteenth edition	Household Electric Ranges
-	UL 859, eleventh edition	Household Electric Personal Grooming Appliances
-	UL 875, tenth edition	Electric Dry-Bath Heaters
-	UL 921, eighth edition	Commercial Dishwashers
-	UL 923, seventh edition	Microwave Cooking Appliances
-	UL 943, fifth edition	Ground-Fault Circuit-Interrupters
-	UL 962, fifth edition	Household and Commercial Furnishings
-	UL 962A, sixth edition	Furniture Power Distribution Units
-	UL 979, second edition	Water Treatment Appliances
-	UL 982, eighth edition	Motor-Operated Household Food Preparing Machines
-	UL 987, eighth edition	Stationary and Fixed Electric Tools
-	UL 1017, tenth edition	Vacuum Cleaners, Blower Cleaners, and Household Floor Finishing Machines
-	UL 1026, sixth edition	Household Electric Cooking and Food Serving Appliances
-	UL 1086, sixth edition	Household Trash Compactors
-	UL 1090, seventh edition	Electric Snow Movers
-	UL 1206, fourth edition	Electric Commercial Clothes-Washing Equipment
-	UL 1240, fourth edition	Electric Commercial Clothes-Drying Equipment
-	UL 1278, fourth edition	Movable and Wall- or Ceiling-Hung Electric Room Heaters
-	UL 1447, sixth edition	Electric Lawn Mowers
-	UL 1450, fourth edition	Motor-Operated Air Compressors, Vacuum Pumps, and Painting Equipment
-	UL 1453, sixth edition	Electric Booster and Commercial Storage Tank Water Heaters
-	UL 1576, second edition	Flashlights and Lanterns
-	UL 1594, fourth edition	Sewing and Cutting Machines
-	UL 1647, sixth edition	Motor-Operated Massage and Exercise Machines
-	UL 1727, fifth edition	Commercial Electric Personal Grooming Appliances
-	UL 1776, third edition	High-Pressure Cleaning Machines

<u>Article</u>	<u>Standard Number</u>	<u>Standard Title</u>
-	UL 2157, fourth edition	Electric Clothes Washing Machines and Extractors
-	UL 2158, sixth edition	Electric Clothes Dryers
-	UL 2565, first edition	Industrial Metalworking and Woodworking Machine Tools
-	UL 60335-2-3, sixth edition	Household and Similar Electrical Appliances — Safety — Part 2-3: Particular Requirements for Electric Irons
-	UL 60335-2-8, sixth edition	Household and Similar Electrical Appliances — Safety — Part 2-8: Particular Requirements for Shavers, Hair Clippers, and Similar Appliances
-	UL 60335-2-24, third edition	Household and Similar Electrical Appliances — Safety — Part 2-24: Particular Requirements for Refrigerating Appliances, Ice-Cream Appliances, and Ice-Makers
-	UL 60335-2-40, fourth edition	Household and Similar Electrical Appliances — Safety — Part 2-40: Particular Requirements for Electrical Heat Pumps, Air-Conditioners and Dehumidifiers
-	UL 60335-2-67, second edition	Household and Similar Electrical Appliances — Safety — Part 2-67: Particular Requirements for Floor Treatment Machines, For Commercial Use
-	UL 60335-2-68, first edition	Household and Similar Electrical Appliances — Safety — Part 2-68: Particular Requirements for Spray Extraction Machines, for Commercial Use
-	UL 60335-2-79, first edition	Household and Similar Electrical Appliances — Safety — Part 2-79: Particular Requirements for High Pressure Cleaners and Steam Cleaners
-	UL 60730-2-9, fourth edition	Automatic Electrical Controls; Part 2-9: Particular Requirements for Temperature Sensing Controls
-	UL 60745-1, fourth edition	Hand-Held Motor-Operated Electric Tools — Safety — Part 1: General Requirements
-	UL 60745-2-1, second edition	Hand-Held Motor-Operated Electric Tools — Safety — Part 2-1: Particular Requirements for Drills and Impact Drills
-	UL 60745-2-2, second edition	Hand-Held Motor-Operated Electric Tools — Safety — Part 2-2: Particular Requirements for Screwdrivers and Impact Wrenches
-	UL 60745-2-3, second edition	Hand-Held Motor-Operated Electric Tools — Safety — Part 2-3: Particular Requirements for Grinders, Polishers, and Disk-Type Sanders
-	UL 60745-2-4, second edition	Hand-Held Motor-Operated Electric Tools — Safety — Part 2-4: Particular

<u>Article</u>	<u>Standard Number</u>	<u>Standard Title</u>
		Requirements for Sanders and Polishers Other Than Disk Type
-	UL 60745-2-5, fifth edition	Hand-Held Motor-Operated Electric Tools — Safety — Part 2-5: Particular Requirements for Circular Saws
-	UL 60745-2-6, second edition	Hand-Held Motor-Operated Electric Tools — Safety — Part 2-6: Particular Requirements for Hammers
-	UL 60745-2-8, second edition	Hand-Held Motor-Operated Electric Tools — Safety — Part 2-8: Particular Requirements for Shears and Nibblers
-	UL 60745-2-9, second edition	Hand-Held Motor-Operated Electric Tools — Safety — Part 2-9: Particular Requirements for Tappers
-	UL 60745-2-11, second edition	Hand-Held Motor-Operated Electric Tools — Safety — Part 2-11: Particular Requirements for Reciprocating Saws
-	UL 60745-2-12, second edition	Hand-Held Motor-Operated Electric Tools — Safety — Part 2-12: Particular Requirements For Concrete Vibrators
-	UL 60745-2-13, first edition	Hand-Held Motor-Operated Electric Tools — Safety — Part 2-13: Particular Requirements For Chain Saws
-	UL 60745-2-14, second edition	Hand-Held Motor-Operated Electric Tools — Safety — Part 2-14: Particular Requirements for Planers
-	UL 60745-2-15, first edition	Hand-Held Motor-Operated Electric Tools — Safety — Part 2-15: Particular Requirements for Hedge Trimmers
-	UL 60745-2-16, first edition	Hand-Held Motor-Operated Electric Tools — Safety — Part 2-16: Particular Requirements for Tackers
-	UL 60745-2-17, third edition	Hand-Held Motor-Operated Electric Tools — Safety — Part 2-17: Particular Requirements for Routers and Trimmers
-	UL 60745-2-18, first edition	Hand-Held Motor-Operated Electric Tools — Safety — Part 2-18: Particular Requirements For Strapping Tools
-	UL 60745-2-19, first edition	Hand-Held Motor-Operated Electric Tools — Safety — Part 2-19: Particular Requirements for Jointers
-	UL 60745-2-20, first edition	Hand-Held Motor-Operated Electric Tools — Safety — Part 2-20: Particular Requirements for Band Saws
-	UL 60745-2-21, first edition	Hand-Held Motor-Operated Electric Tools — Safety — Part 2-21: Particular Requirements For Drain Cleaners
-	UL 60745-2-22, first edition	Hand-Held Motor-Operated electric Tools — Safety — Part 2-22: Particular Requirements for Cut-Off Machines
-	UL 60745-2-23, first edition	Hand-Held Motor-Operated electric Tools — Safety — Part 2-23: Particular

<u>Article</u>	<u>Standard Number</u>	<u>Standard Title</u>
		Requirements for Die Grinders and Small Rotary Tools
-	UL 62841-1, first edition	Electric Motor-Operated Hand-Held Tools — Safety — Part 1: General Requirements
-	UL 62841-2-1, first edition	Electric Motor-Operated Hand-Held Tools, Transportable Tools And Lawn And Garden Machinery — Safety — Part 2-1: Particular Requirements For Hand-Held Drills and Impact Drills
-	UL 62841-2-2, first edition	Electric Motor-Operated Hand-Held Tools, Transportable Tools And Lawn And Garden Machinery — Safety — Part 2-2: Particular Requirements For Hand-Held Screwdrivers And Impact Wrenches
-	UL 62841-2-3, first edition	Electric Motor-Operated Hand-Held Tools, Transportable Tools And Lawn And Garden Machinery — Safety — Part 2-3: Particular Requirements For Hand-Held Grinders, Disk-Type Polishers, and Disk-Type Sanders
-	UL 62841-2-4, first edition	Electric Motor-Operated Hand-Held Tools, Transportable Tools And Lawn And Garden Machinery — Safety — Part 2-4: Particular Requirements For Hand-Held Sanders And Polishers Other Than Disc Type
-	UL 62841-2-5, first edition	Electric Motor-Operated Hand-Held Tools, Transportable Tools And Lawn And Garden Machinery — Safety — Part 2-5: Particular Requirements For Hand-Held Circular Saws
-	UL 62841-2-8, first edition	Electric Motor-Operated Hand-Held Tools, Transportable Tools And Lawn And Garden Machinery — Safety — Part 2-8: Particular Requirements For Hand-Held Shears and Nibblers
-	UL 62841-2-9, first edition	Electric Motor-Operated Hand-Held Tools, Transportable Tools And Lawn And Garden Machinery — Safety — Part 2-9: Particular Requirements For Hand-Held Tappers And Threaders
-	UL 62841-2-10, first edition	Electric Motor-Operated Hand-Held Tools, Transportable Tools And Lawn And Garden Machinery — Safety — Part 2-10: Particular Requirements For Hand-Held Mixers
-	UL 62841-2-11, first edition	Electric Motor-Operated Hand-Held Tools, Transportable Tools And Lawn And Garden Machinery — Safety — Part 2-11: Particular Requirements for Hand-Held Reciprocating Saws
-	UL 62841-2-14, first edition	Electric Motor-Operated Hand-Held Tools, Transportable Tools And Lawn And Garden Machinery — Safety — Part 2-14: Particular Requirements For Hand-Held Planers

<u>Article</u>	<u>Standard Number</u>	<u>Standard Title</u>
-	UL 62841-2-17, first edition	Electric Motor-Operated Hand-Held Tools, Transportable Tools And Lawn And Garden Machinery — Safety — Part 2-17: Particular Requirements For Hand-Held Routers
-	UL 62841-2-21, first edition	Electric Motor-Operated Hand-Held Tools, Transportable Tools And Lawn And Garden Machinery — Safety — Part 2-21: Particular Requirements For Hand-Held Drain Cleaners
-	UL 62841-3-1, first edition	Electric Motor-Operated Hand-Held Tools, Transportable Tools And Lawn And Garden Machinery — Safety — Part 3-1: Particular Requirements For Transportable Table Saws
-	UL 62841-3-4, first edition	Electric Motor-Operated Hand-Held Tools, Transportable Tools And Lawn And Garden Machinery — Safety — Part 3-4: Particular Requirements for Transportable Bench Grinders
-	UL 62841-3-6, first edition	Electric Motor-Operated Hand-Held Tools, Transportable Tools And Lawn And Garden Machinery — Safety — Part 3-6: Particular Requirements For Transportable Diamond Drills with Liquid System
-	UL 62841-3-9, second edition	Electric Motor-Operated Hand-Held Tools, Transportable Tools And Lawn And Garden Machinery — Safety — Part 3-9: Particular Requirements For Transportable Mitre Saws
-	UL 62841-3-10, first edition	Electric Motor-Operated Hand-Held Tools, Transportable Tools And Lawn And Garden Machinery — Safety — Part 3-10: Particular Requirements for Transportable Cut-Off Machines
-	UL 62841-3-12, first edition	Electric Motor-Operated Hand-Held Tools, Transportable Tools And Lawn And Garden Machinery — Safety — Part 3-12: Particular Requirements for Transportable Threading Machines
-	UL 62841-3-13, first edition	Electric Motor-Operated Hand-Held Tools, Transportable Tools And Lawn And Garden Machinery — Safety — Part 3-13: Particular Requirements For Transportable Drills
-	UL 62841-3-14, first edition	Electric Motor-Operated Hand-Held Tools, Transportable Tools And Lawn And Garden Machinery — Safety — Part 3-14: Particular Requirements for Transportable Drain Cleaners
-	UL 62841-3-1000, first edition	Electric Motor-Operated Hand-Held Tools, Transportable Tools And Lawn And Garden Machinery — Safety — Part 3-1000: Particular Requirements for Transportable Laser Engravers

Article	Standard Number	Standard Title
	-	UL 62841-4-1, first edition Electric Motor-Operated Hand-Held Tools, Transportable Tools And Lawn And Garden Machinery — Safety — Part 4-1: Particular Requirements for Chain Saws
	-	UL 62841-4-2, first edition Electric Motor-Operated Hand-Held Tools, Transportable Tools And Lawn And Garden Machinery — Safety — Part 4-2: Particular Requirements for Hedge Trimmers
	-	UL 62841-4-1000, first edition Electric Motor-Operated Hand-Held Tools, Transportable Tools And Lawn And Garden Machinery — Safety — Part 4-1000: Particular Requirements For Utility Machines
424	UL 499, fourteenth edition	Electric Heating Appliances
	-	UL 1042, fifth edition Electric Baseboard Heating Equipment
	-	UL 1673, third edition Electric Space Heating Cables
	-	UL 1693, third edition Electric Radiant Heating Panels and Heating Panel Sets
	-	UL 1995, fifth edition Heating and Cooling Equipment
	-	UL 1996, fourth edition Electric Duct Heaters
	-	UL 2021, fourth edition Fixed and Location-Dedicated Electric Room Heaters
	-	UL 2683, first edition Electric Heating Products for Floor and Ceiling Installation
425	UL 508, eighteenth edition	Industrial Control Equipment
	-	UL 2021, fourth edition Fixed and Location-Dedicated Electric Room Heaters
426	IEEE 515	Testing, Design, Installation and Maintenance of Electrical Resistance Trace Heating for Industrial Applications
	-	UL 1588, fourth edition Roof and Gutter De-Icing Cable Units
	-	UL 2049, fourth edition Residential Pipe Heating Cable
427	IEEE 515-2017	Testing, Design, Installation and Maintenance of Electrical Resistance Trace Heating for Industrial Applications

<u>Article</u>	<u>Standard Number</u>	<u>Standard Title</u>	
	-	UL 515, second edition	Electrical Resistance Trace Heat for Commercial Applications
	-	UL 2049, fourth edition	Residential Pipe Heating Cable
430	UL 4, fifteenth edition	Armored Cable	
	-	UL 98, fourteenth edition	Enclosed and Dead-Front Switches
	-	UL 489, thirteenth edition	Molded-Case Circuit Breakers, Molded-Case Switches and Circuit-Breaker Enclosures
	-	UL 508, eighteenth edition	Industrial Control Equipment
	-	UL 705, seventh edition	Power Ventilators
	-	UL 745-1, second edition	Portable Electric Tools
	-	UL 845, sixth edition	Motor Control Centers
	-	UL 987, eighth edition	Stationary and Fixed Electric Tools
	-	UL 1004-1, second edition	Rotating Electrical Machines — General Requirements
	-	UL 1004-2, second edition	Impedance Protected Motors
	-	UL 1004-3, second edition	Thermally Protected Motors
	-	UL 1004-6, second edition	Servo and Stepper Motors
	-	UL 1004-7, third edition	Electronically Protected Motors
	-	UL 1004-8, second edition	Inverter Duty Motors
	-	UL 1004-9, first edition	Form Wound and Medium Voltage Rotating Electrical Machines
	-	UL 1066, fifth edition	Power Circuit Breakers up to 1000 V AC and 1500 V DC Used in Enclosures
	-	UL 1569, fifth edition	Metal Clad Cables
	-	UL 1812, fourth edition	Ducted Heat Recovery Ventilators
	-	UL 1815, fifth edition	Nonducted Heat Recovery Ventilators
	-	UL 2565, first edition	Industrial Metalworking and Woodworking Machine Tools
	-	UL 60034-1, third edition	Rotating Electrical Machines — Part 1: Rating and Performance
	-	UL 60335-2-40, fourth edition	Household and Similar Electrical Appliances — Safety — Part 2-40: Particular Requirements for Electrical Heat

<u>Article</u>	<u>Standard Number</u>	<u>Standard Title</u>
		Pumps, Air-Conditioners and Dehumidifiers
-	UL 60730-2-22, first edition	Automatic Electrical Controls — Part 2-22: Particular Requirements for Thermal Motor Protectors
-	UL 60745-1, fourth edition	Hand-Held Motor-Operated Hand-Held Tools — Safety — Part 1: General Requirements
-	UL 60745-2-1, second edition	Hand-Held Motor-Operated Hand-Held Tools — Safety — Part 2-1: Particular Requirements For Hand-Held Drills and Impact Drills
-	UL 60745-2-2, second edition	Hand-Held Motor-Operated Hand-Held Tools — Safety — Part 2-2: Particular Requirements For Screwdrivers And Impact Wrenches
-	UL 60745-2-3, second edition	Hand-Held Motor-Operated Tools — Safety — Part 2-3: Particular Requirements For Hand-Held Grinders, Polishers, and Disk-Type Sanders
-	UL 60745-2-4, second edition	Hand-Held Motor-Operated Tools — Safety — Part 2-4: Particular Requirements For Hand-Held Sanders And Polishers Other Than Disc Type
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-	UL 60947-5-2, fourth edition	Low-Voltage Switchgear and Controlgear — Part 5-2: Control Circuit Devices and Switching Elements — Proximity Switches
-	UL 61800-5-1, second edition	Adjustable Speed Electrical Power Drive Systems — Part 5-1: Safety Requirements — Electrical, Thermal and Energy

Article	Standard Number	Standard Title
-	UL 62841-2-9, first edition	Electric Motor-Operated Hand-Held Tools, Transportable Tools And Lawn And Garden Machinery — Safety — Part 2-9: Particular Requirements For Hand-Held Tappers And Threaders
-	UL 62841-2-10, first edition	Electric Motor-Operated Hand-Held Tools, Transportable Tools And Lawn And Garden Machinery — Safety — Part 2-10: Particular Requirements For Hand-Held Mixers
-	UL 62841-2-11, first edition	Electric Motor-Operated Hand-Held Tools, Transportable Tools And Lawn And Garden Machinery — Safety — Part 2-11: Particular Requirements for Hand-Held Reciprocating Saws
-	UL 62841-2-14, first edition	Electric Motor-Operated Hand-Held Tools, Transportable Tools And Lawn And Garden Machinery — Safety — Part 2-14: Particular Requirements For Hand-Held Planers
-	UL 62841-2-17, first edition	Electric Motor-Operated Hand-Held Tools, Transportable Tools And Lawn And Garden Machinery — Safety — Part 2-17: Particular Requirements For Hand-Held Routers
-	UL 62841-2-21, first edition	Electric Motor-Operated Hand-Held Tools, Transportable Tools And Lawn And Garden Machinery — Safety — Part 2-21: Particular Requirements For Hand-Held Drain Cleaners
-	UL 62841-3-1, first edition	Electric Motor-Operated Hand-Held Tools, Transportable Tools And Lawn And Garden Machinery — Safety — Part 3-1: Particular Requirements For Transportable Table Saws
-	UL 62841-3-4, first edition	Electric Motor-Operated Hand-Held Tools, Transportable Tools And Lawn And Garden Machinery — Safety — Part 3-4: Particular Requirements for Transportable Bench Grinders
-	UL 62841-3-6, first edition	Electric Motor-Operated Hand-Held Tools, Transportable Tools And Lawn And Garden Machinery — Safety — Part 3-6: Particular Requirements For Transportable Diamond Drills with Liquid System
-	UL 62841-3-9, second edition	Electric Motor-Operated Hand-Held Tools, Transportable Tools And Lawn And Garden Machinery — Safety — Part 3-9: Particular Requirements For Transportable Mitre Saws
-	UL 62841-3-10, first edition	Electric Motor-Operated Hand-Held Tools, Transportable Tools And Lawn And Garden Machinery — Safety — Part 3-10: Particular requirements for Transportable Cut-Off Machines

Article	Standard Number	Standard Title
	-	UL 62841-3-12, first edition Electric Motor-Operated Hand-Held Tools, Transportable Tools And Lawn And Garden Machinery — Safety — Part 3-12: Particular requirements for Transportable Threading Machines
	-	UL 62841-3-13, first edition Electric Motor-Operated Hand-Held Tools, Transportable Tools And Lawn And Garden Machinery — Safety — Part 3-13: Particular Requirements For Transportable Drills
	-	UL 62841-3-14, first edition Electric Motor-Operated Hand-Held Tools, Transportable Tools And Lawn And Garden Machinery — Safety — Part 3-14: Particular requirements for Transportable Drain Cleaners
	-	UL 62841-3-1000, first edition Electric Motor-Operated Hand-Held Tools, Transportable Tools And Lawn And Garden Machinery — Safety — Part 3-1000: Particular Requirements for Transportable Laser Engravers
	-	UL 62841-4-1, first edition Electric Motor-Operated Hand-Held Tools, Transportable Tools And Lawn And Garden Machinery — Safety — Part 4-1: Particular Requirements for Chain Saws
	-	UL 62841-4-2, first edition Electric Motor-Operated Hand-Held Tools, Transportable Tools And Lawn And Garden Machinery — Safety — Part 4-2: Particular Requirements for Hedge Trimmers
	-	UL 62841-4-1000, first edition Electric Motor-Operated Hand-Held Tools, Transportable Tools And Lawn And Garden Machinery — Safety — Part 4-1000: Particular Requirements For Utility Machines
440	UL 98, fourteenth edition	Enclosed and Dead-Front Switches
	-	UL 416, fourth edition Refrigerated Medical Equipment
	-	UL 484, ninth edition Room Air Conditioners
	-	UL 489, thirteenth edition Molded-Case Circuit Breakers, Molded-Case Switches and Circuit-Breaker Enclosures
	-	UL 508, eighteenth edition Industrial Control Equipment
	-	UL 541, ninth edition Refrigerated Vending Machines
	-	UL 563, eighth edition Ice Makers
	-	UL 1429, fourth edition Pullout Switches
	-	UL 1995, fifth edition Heating and Cooling Equipment

Article	Standard Number	Standard Title
	-	UL 60335-2-24, third edition Household and Similar Electrical Appliances — Safety — Part 2-24: Particular Requirements for Refrigerating Appliances, Ice-Cream Appliances and Ice-Makers
	-	UL 60335-2-40, fourth edition Household and Similar Electrical Appliances — Safety — Part 2-40: Particular Requirements for Electrical Heat Pumps, Air-Conditioners and Dehumidifiers
	-	UL 60335-2-89, second edition Household and Similar Electrical Appliances — Safety — Part 2-89: Particular Requirements for Commercial Refrigerating Appliances and Ice Makers with an Incorporated or Remote Refrigerant Unit or Compressor
	-	UL 60947-4-1, fourth edition Low-Voltage Switchgear and Controlgear — Part 4-1: Contactors and Motor-Starters — Electromechanical Contactors and Motor-Starters
	-	UL 60947-4-2, second edition Low-Voltage Switchgear and Controlgear — Part 4-2: Contactors and Motor-Starters — AC Semiconductor Motor Controllers and Starters
	-	UL 61800-5-2, second edition Adjustable Speed Electrical Power Drive Systems — Part 5-2: Safety Requirements — Functional
445	UL 508, eighteenth edition	Industrial Control Equipment
	-	UL 943, fifth edition Ground-Fault Circuit-Interruptions
	-	UL 943C, second edition Special Purpose Ground-Fault Circuit-Interruptions
	-	UL 1004-4, third edition Electric Generators
	-	UL 1741, third edition Inverters, Converters, Controllers and Interconnection System Equipment for Use With Distributed Energy Resources
	-	UL 2200, third edition Stationary Engine Generator Assemblies
450	UL 10C, third edition	Positive Pressure Fire Tests of Door Assemblies
	-	UL 305, sixth edition Panic Hardware
	-	UL 340, sixth edition Tests for Comparative Flammability of Liquids
	-	UL 60730-2-14, third edition Automatic Electrical Controls; Part 2-14: Particular Requirements for Electric Actuators
480	UL 10C, third edition	Positive Pressure Fire Tests of Door Assemblies

Article	Standard Number	Standard Title	
	-	UL 305, sixth edition	Panic Hardware
	-	UL 1642, sixth edition	Lithium Batteries
	-	UL 1973, third edition	Batteries for Use in Stationary and Motive Auxiliary Power Applications
	-	UL 1989, sixth edition	Valve Regulated or Vented Batteries with Aqueous Electrolytes
	-	UL 2054, third edition	Household and Commercial Batteries
	-	UL 4127, second edition	Low Voltage Battery Cable
	-	UL 4128, fifth edition	Intercell and Intertier Connectors for use in Electrochemical Battery System Applications
495	UL 347, seventh edition	Medium-Voltage AC Contactors, Controllers, and Control Centers	
	-	UL 347A, second edition	Medium Voltage Power Conversion Equipment
	-	UL 347C, first edition	Medium Voltage Solid State Resistive Load Controllers, Up to 15kV
	-	UL 1008A, second edition	Transfer Switch Equipment, Over 1000 Volts
500	FM 121303	Guide for Use of Detectors for Flammable Gases	
	-	IEEE 844.1	Skin Effect Trace Heating of Pipelines, Vessels, Equipment, and Structures — General, Testing, Marking, and Documentation Requirements
	-	IEEE 1349	Guide for the Application of Electric Machines in Zone 2 and Class I, Division 2 Hazardous (Classified) Locations
	-	NFPA 33-2024	Standard for Spray Application Using Flammable or Combustible Materials
	-	NFPA 34-2024	Standard for Dipping, Coating, and Printing Processes Using Flammable or Combustible Liquids
	-	NFPA 496-2024	Standard for Purged and Pressurized Enclosures for Electrical Equipment
	-	UL 674, sixth edition	Electric Motors and Generators for Use in Hazardous (Classified) Locations
	-	UL 698A, fourth edition	Industrial Control Panels Relating to Hazardous (Classified) Locations
	-	UL 783, sixth edition	Electric Flashlights and Lanterns for Use in Hazardous (Classified) Locations
	-	UL 823, ninth edition	Electric Heaters For Use in Hazardous (Classified) Locations

Article	Standard Number	Standard Title
-	UL 844, thirteenth edition	Luminaires for Use in Hazardous (Classified)
-	UL 913, eighth edition	Intrinsically Safe Apparatus and Associated Apparatus for Use in Class I, II, and III, Division 1, Hazardous (Classified) Locations
-	UL 1203, sixth edition	Explosionproof and Dust-Ignition-Proof Electrical Equipment for Use in Hazardous (Classified) Locations
-	UL 1389, first edition	Plant Oil Extraction Equipment for Installation and Use in Ordinary (Unclassified) Locations and Hazardous (Classified) Locations
-	UL 1836, sixth edition	Electric Motors and Generators for Use in Class I, Division 2, Class I, Zone 2, Class II, Division 2 and Zone 22 Hazardous (Classified) Locations
-	UL 2225, fifth edition	Cable and Cable Fittings for Use in Hazardous (Classified) Locations
-	UL 60079-28, second edition	Explosive Atmospheres — Part 28: Protection of Equipment and Transmission Systems Using Optical Radiation.
-	UL 60079-29-1, second edition	Explosive Atmospheres — Part 29-1: Gas Detectors — Performance Requirements of Detectors for Flammable Gases
-	UL 60079-29-4, first edition	Explosive Atmospheres — Part 29-4: Gas Detectors — Performance Requirements of Open Path Detectors for Flammable Gases
-	UL 60079-30-1, first edition	Explosive Atmospheres — Part 30-1: Electrical Resistance Trace Heating — General and Testing Requirements
-	UL 60079-33, first edition	Explosive Atmospheres — Part 33: Equipment Protection by Special Protection “s”
-	UL 121201, ninth edition	Nonincendive Electrical Equipment for Use in Class I and II, Division 2 and Class III, Divisions 1 and 2 Hazardous (Classified) Locations
-	UL 121303, first edition	Guide for Use of Detectors for Flammable Gases
-	UL 122001, first edition	General Requirements for Electrical Ignition Systems for Internal Combustion Engines in Class I, Division 2 or Zone 2, Hazardous (Classified) Locations
-	UL 122701, fourth edition	Requirements for Process Sealing Between Electrical Systems and Flammable or Combustible Process Fluids
501	IEEE 844.1	Skin Effect Trace Heating of Pipelines, Vessels, Equipment, and Structures — General, Testing,

Article	Standard Number	Standard Title
		Marking, and Documentation Requirements
-	IEEE 1349	Guide for the Application of Electric Machines in Zone 2 and Class I, Division 2 Hazardous (Classified) Locations
-	NFPA 496-2024	Standard for Purged and Pressurized Enclosures for Electrical Equipment
-	UL 674, sixth edition	Electric Motors and Generators for Use in Hazardous (Classified) Locations
-	UL 783, sixth edition	Electric Flashlights and Lanterns for Use in Hazardous (Classified) Locations
-	UL 823, ninth edition	Electric Heaters For Use in Hazardous (Classified) Locations
-	UL 844, thirteenth edition	Luminaires for Use in Hazardous (Classified) Locations
-	UL 1072, fourth edition	Medium-Voltage Power Cables
-	UL 1203, sixth edition	Explosionproof and Dust-Ignition-Proof Electrical Equipment for Use in Hazardous (Classified) Locations
-	UL 1277, sixth edition	Electrical Power and Control Tray Cables with Optional Optical-Fiber Members
-	UL 1309A, first edition	Cable for Use in Mobile Installations
-	UL 1836, sixth edition	Electric Motors and Generators for Use in Class I, Division 2, Class I, Zone 2, Class II, Division 2 and Zone 22 Hazardous (Classified) Locations
-	UL 2225, fifth edition	Cable and Cable-Fittings for Use in Hazardous (Classified) Locations
-	UL 60079-28, second edition	Explosive Atmospheres — Part 28: Protection of Equipment and Transmission Systems Using Optical Radiation
-	UL 60079-29-1, second edition	Explosive Atmospheres — Part 29-1: Gas Detectors — Performance Requirements of Detectors for Flammable Gases
-	UL 60079-29-4, first edition	Explosive Atmospheres — Part 29-4: Gas Detectors — Performance Requirements of Open Path Detectors for Flammable Gases
-	UL 60079-30-1, first edition	Explosive Atmospheres — Part 30-1: Electrical Resistance Trace Heating — General and Testing Requirements
-	UL 60079-33, first edition	Explosive Atmospheres — Part 33: Equipment Protection by Special Protection “s”
-	UL 121201, ninth edition	Nonincendive Electrical Equipment for Use in Class I and II, Division 2 and Class III, Divisions 1 and 2 Hazardous (Classified) Locations

Article	Standard Number	Standard Title
	-	UL 122001, first edition General Requirements for Electrical Ignition Systems for Internal Combustion Engines in Class I, Division 2 or Zone 2, Hazardous (Classified) Locations
	-	UL 122701, fourth edition Requirements for Process Sealing Between Electrical Systems and Flammable or Combustible Process Fluids
502	IEEE 844.1	Skin Effect Trace Heating of Pipelines, Vessels, Equipment, and Structures — General, Testing, Marking, and Documentation Requirements
	-	NFPA 496-2024 Standard for Purged and Pressurized Enclosures for Electrical Equipment
	-	UL 674, sixth edition Electric Motors and Generators for Use in Hazardous (Classified) Locations
	-	UL 783, sixth edition Electric Flashlights and Lanterns for Use in Hazardous (Classified) Locations
	-	UL 823, ninth edition Electric Heaters For Use in Hazardous (Classified) Locations
	-	UL 844, thirteenth edition Luminaires for Use in Hazardous (Classified) Locations
	-	UL 1203, sixth edition Explosionproof and Dust-Ignition-Proof Electrical Equipment for Use in Hazardous (Classified) Locations
	-	UL 1309A, first edition Cable for Use in Mobile Installations
	-	UL 1836, sixth edition Electric Motors and Generators for Use in Class I, Division 2, Class I, Zone 2, Class II, Division 2 and Zone 22 Hazardous (Classified) Locations
	-	UL 2225, fifth edition Cable and Cable-Fittings for Use in Hazardous (Classified) Locations
	-	UL 60079-28, second edition Explosive Atmospheres — Part 28: Protection of Equipment and Transmission Systems Using Optical Radiation
	-	UL 60079-30-1, first edition Explosive Atmospheres — Part 30-1: Electrical Resistance Trace Heating — General and Testing Requirements
	-	UL 60079-33, first edition Explosive Atmospheres — Part 33: Equipment Protection by Special Protection “s”
	-	UL 121201, ninth edition Nonincendive Electrical Equipment for Use in Class I and II, Division 2 and Class III, Divisions 1 and 2 Hazardous (Classified) Locations
503	IEEE 844.1	Skin Effect Trace Heating of Pipelines, Vessels,

Article	Standard Number	Standard Title
		Equipment, and Structures — General, Testing, Marking, and Documentation Requirements
	-	UL 823, ninth edition
	-	UL 844, thirteenth edition
	-	UL 1836, sixth edition
	-	UL 60079-30-1, first edition
	-	UL 121201, ninth edition
504	UL 698A, fourth edition	Industrial Control Panels Relating to Hazardous (Classified) Locations
	-	UL 913, eighth edition
	-	UL 120202, first edition
505	FM 121303	Guide for Use of Detectors for Flammable Gases
	-	IEEE 844.1
	-	IEEE 1349
	-	UL 1309A, first edition
	-	UL 2225, fifth edition
	-	UL 60079-0, seventh edition
	-	UL 60079-1, seventh edition
		Electric Heaters For Use in Hazardous (Classified) Locations
		Luminaires for Use in Hazardous (Classified) Locations
		Electric Motors and Generators for Use in Class I, Division 2, Class I, Zone 2, Class II, Division 2 and Zone 22 Hazardous (Classified) Locations
		Explosive Atmospheres — Part 30-1: Electrical Resistance Trace Heating — General and Testing Requirements
		Nonincendive Electrical Equipment for Use in Class I and II, Division 2 and Class III, Divisions 1 and 2 Hazardous (Classified) Locations
		Intrinsically Safe Apparatus and Associated Apparatus for Use in Class I, II, and III, Division 1, Hazardous (Classified) Locations
		Recommendations for the Preparation, Content, and Organization of Intrinsic Safety Control Drawings
		Skin Effect Trace Heating of Pipelines, Vessels, Equipment, and Structures — General, Testing, Marking, and Documentation Requirements
		Guide for the Application of Electric Machines in Zone 2 and Class I, Division 2 Hazardous (Classified) Locations
		Cable for Use in Mobile Installations
		Cable and Cable-Fittings for Use in Hazardous (Classified) Locations
		Explosive Atmospheres — Part 0: Equipment — General Requirements
		Explosive Atmospheres — Part 1: Equipment Protection by Flameproof Enclosures “d”

Article	Standard Number	Standard Title
-	UL 60079-2, sixth edition	Explosive Atmospheres — Part 2: Equipment protection by pressurized enclosure “p”
-	UL 60079-5, fourth edition	Explosive Atmospheres — Part 5: Type of Equipment Protection by Powder Filling
-	UL 60079-6, fourth edition	Explosive Atmospheres — Part 6: Equipment Protection by Liquid Immersion “o”
-	UL 60079-7, fifth edition	Explosive Atmospheres — Part 7: Equipment Protection by Increased Safety “e”
-	UL 60079-10-1, first edition	Explosive Atmospheres — Part 10-1: Classification of Areas — Explosive Gas Atmospheres
-	UL 60079-11, sixth edition	Explosive Atmospheres — Part 11: Equipment Protection by Intrinsic Safety “i”
-	UL 60079-13, second edition	Explosive Atmospheres — Part 13: Equipment Protection by Pressurized Room “p” and Artificially Ventilated Room “v”
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-	UL 60079-18, fourth edition	Explosive Atmospheres — Part 18: Equipment Protection by Encapsulation “m”
-	UL 60079-25, second edition	Explosive Atmospheres — Part 25: Intrinsically Safe Electrical Systems
-	UL 60079-26, third edition	Explosive Atmospheres — Part 26: Equipment with Equipment Protection Level (EPL) Ga
-	UL 60079-28, second edition	Explosive Atmospheres — Part 28: Protection of Equipment and Transmission Systems Using Optical Radiation
-	UL 60079-29-1, second edition	Explosive Atmospheres — Part 29-1: Gas Detectors — Performance Requirements of Detectors for Flammable Gases
-	UL 60079-29-4, first edition	Explosive Atmospheres — Part 29-4: Gas Detectors — Performance Requirements of Open Path Detectors for Flammable Gases
-	UL 60079-30-1, first edition	Explosive Atmospheres — Part 30-1: Electrical Resistance Trace Heating — General and Testing Requirements
-	UL 60079-33, first edition	Explosive Atmospheres — Part 33: Equipment Protection by Special Protection “s”
-	UL 60079-46, first edition	Recommended Practice for Explosive Atmospheres — Part 46: Equipment Assemblies
-	UL 80079-36, first edition	Explosive Atmospheres — Part 36: Non-Electrical Equipment for Explosive

Article	Standard Number	Standard Title
		Atmospheres — Basic Method and Requirements
	- UL 80079-37, first edition	Explosive Atmospheres — Part 37: Non-Electrical Equipment for Explosive Atmospheres — Non Electrical Type of Protection Constructional Safety “c”, Control of Ignition Source “b”, Liquid Immersion “k”
	- UL 121303, first edition	Guide for Use of Detectors for Flammable Gases
	- UL 122701, fourth edition	Requirements for Process Sealing Between Electrical Systems and Flammable or Combustible Process Fluids
506	IEEE 844.1	Skin Effect Trace Heating of Pipelines, Vessels, Equipment, and Structures — General, Testing, Marking, and Documentation Requirements
	- UL 698A, fourth edition	Industrial Control Panels Relating to Hazardous (Classified) Locations
	- UL 2225, fifth edition	Cable and Cable-Fittings for Use in Hazardous (Classified) Locations
	- UL 60079-0, seventh edition	Explosive Atmospheres — Part 0: Equipment — General Requirements
	- UL 60079-2, sixth edition	Explosive atmospheres — Part 2: Equipment protection by pressurized enclosure “p”
	- UL 60079-11, sixth edition	Explosive Atmospheres — Part 11: Equipment Protection by Intrinsic Safety “i”
	- UL 60079-18, fourth edition	Explosive Atmospheres — Part 18: Equipment Protection by Encapsulation “m”
	- UL 60079-25, second edition	Explosive Atmospheres — Part 25: Intrinsically Safe Electrical Systems
	- UL 60079-28, second edition	Explosive Atmospheres — Part 28: Protection of Equipment and Transmission Systems Using Optical Radiation
	- UL 60079-30-1, first edition	Explosive Atmospheres — Part 30-1: Electrical Resistance Trace Heating — General and Testing Requirements
	- UL 60079-31, second edition	Explosive Atmospheres — Part 31: Equipment Dust Ignition Protection by Enclosure “t”
	- UL 60079-33, first edition	Explosive Atmospheres — Part 33: Equipment Protection by Special Protection “s”
	- UL 60079-46, first edition	Recommended Practice for Explosive Atmospheres — Part 46: Equipment Assemblies

Article	Standard Number	Standard Title	
	-	UL 62784, first edition	Vacuum Cleaners and Dust Extractors Providing Equipment Protection Level Dc for the Collection of Combustible Dusts — Particular Requirements
	-	UL 80079-36, first edition	Explosive Atmospheres — Part 36: Non-Electrical Equipment for Explosive Atmospheres — Basic Method and Requirements
	-	UL 80079-37, first edition	Explosive Atmospheres — Part 37: Non-Electrical Equipment for Explosive Atmospheres — Non Electrical Type of Protection Constructional Safety “c”, Control of Ignition Source “b”, Liquid Immersion “k”
512	UL 1389, first edition	Plant Oil Extraction Equipment for Installation and Use in Ordinary (Unclassified) Locations and Hazardous (Classified) Locations	
516	NFPA 33-2024	Standard for Spray Application Using Flammable or Combustible Materials	
	-	NFPA 34-2024	Standard for Dipping, Coating, and Printing Processes Using Flammable or Combustible Liquids
	-	UL 844, thirteenth edition	Luminaires for Use in Hazardous (Classified) Locations
517	AAMI ES 60601-1	Medical electrical equipment — Part 1: General requirements for basic safety and essential performance	
	-	UL 5, fifteenth edition	Surface Metal Raceways and Fittings
	-	UL 5A, fourth edition	Nonmetallic Surface Raceways and Fittings
	-	UL 467, eleventh edition	Grounding and Bonding Equipment
	-	UL 498, sixteenth edition	Attachment Plugs and Receptacles
	-	UL 498D, first edition	Attachment Plugs, Cord Connectors and Receptacles with Arcuate (Locking Type) Contacts
	-	UL 498E, first edition	Attachment Plugs, Cord Connectors and Receptacles — Enclosure Types for Environmental Protection

Article	Standard Number	Standard Title
	-	UL 498F, first edition Plugs, Socket-Outlets and Couplers with Arcuate (Locking Type) Contacts
	-	UL 651, eighth edition Schedule 40, 80, Type EB and A Rigid PVC Conduit and Fittings
	-	UL 1022, fifth edition Line Isolation Monitors
	-	UL 1047, sixth edition Isolated Power Systems Equipment
	-	UL 1286, sixth edition Office Furnishing Systems
	-	UL 2930, first edition Cord-and-Plug-connected Health Care Facility Outlet Assemblies
	-	UL 60601-1, first edition Medical Electrical Equipment — Part 1: General Requirements for Safety
	-	UL 122701, fourth edition Requirements for Process Sealing Between Electrical Systems and Flammable or Combustible Process Fluids
518	UL 498, sixteenth edition	Attachment Plugs and Receptacles
	-	UL 498D, first edition Attachment Plugs, Cord Connectors and Receptacles with Arcuate (Locking Type) Contacts
	-	UL 498E, first edition Attachment Plugs, Cord Connectors and Receptacles — Enclosure Types for Environmental Protection
	-	UL 498F, first edition Plugs, Socket-Outlets and Couplers with Arcuate (Locking Type) Contacts
	-	UL 943, fifth edition Ground-Fault Circuit-Interrupters
	-	UL 943C, second edition Special Purpose Ground-Fault Circuit-Interrupters
	-	UL 2305, first edition Exhibition Display Units, Fabrication and Installation
520	UL 62, twentieth edition	Flexible Cords and Cables
	-	UL 334, second edition Theater Lighting Distribution and Control Equipment
	-	UL 498, sixteenth edition Attachment Plugs and Receptacles
	-	UL 817, twelfth edition Cord Sets and Power-Supply Cords
	-	UL 891, twelfth edition Switchboards
	-	UL 1573, fourth edition Stage and Studio Luminaires and Connector Strips
	-	UL 1640, fourth edition Portable Power-Distribution Equipment
	-	UL 1691, second edition Single Pole Locking-Type Separable Connectors
522	UL 13, fourth edition	Power-Limited Circuit Cables

Article	Standard Number	Standard Title	
	-	UL 1063, ninth edition	Machine-Tool Wires and Cables
	-	UL 2250, third edition	Instrumentation Tray Cable
525	UL 62, twentieth edition	Flexible Cords and Cables	
	-	UL 817, twelfth edition	Cord Sets and Power-Supply Cords
	-	UL 943, fifth edition	Ground-Fault Circuit-Interrupters
	-	UL 943C, second edition	Special Purpose Ground-Fault Circuit-Interrupters
	-	UL 1691, second edition	Single Pole Locking-Type Separable Connectors
530	UL 62, twentieth edition	Flexible Cords and Cables	
	-	UL 1479-2-15, fourth edition	Fire Tests of Penetration Firestops
	-	UL 1573, fourth edition	Stage and Studio Luminaires and Connector Strips
	-	UL 1680, second edition	Stage and Lighting Cables
	-	UL 1691, second edition	Single Pole Locking-Type Separable Connectors
	-	UL 1836, sixth edition	Electric Motors and Generators for Use in Class I, Division 2, Class I, Zone 2, Class II, Division 2 and Zone 22 Hazardous (Classified) Locations
	-	UL 62368-1, third edition	Audio/Video, Information and Communication Technology Equipment — Part 1: Safety Requirements
540	UL 67, thirteenth edition	Panelboards	
	-	UL 943, fifth edition	Ground-Fault Circuit Interrupters
	-	UL 1640, fourth edition	Portable Power-Distribution Equipment
	-	UL 62368-1, third edition	Audio/Video, Information and Communication Technology Equipment — Part 1: Safety Requirements
545	UL 5, fifteenth edition	Surface Metal Raceways and Fittings	
	-	UL 5A, fourth edition	Nonmetallic Surface Raceways and Fittings
	-	UL 5B, second edition	Strut-Type Channel Raceways and Fittings
	-	UL 5C, third edition	Surface Raceways and Fittings for Use with Data, Signal, and Control Circuits
	-	UL 20, fourteenth edition	General Use Snap Switches
	-	UL 209, tenth edition	Cellular Metal Floor Raceways and Fittings

Article	Standard Number	Standard Title
	-	UL 498, sixteenth edition Attachment Plugs and Receptacles
	-	UL 498D, first edition Attachment Plugs, Cord Connectors and Receptacles with Arcuate (Locking Type) Contacts
	-	UL 498E, first edition Attachment Plugs, Cord Connectors and Receptacles — Enclosure Types for Environmental Protection
	-	UL 498F, first edition Plugs, Socket-Outlets and Couplers with Arcuate (Locking Type) Contacts
	-	UL 514A, eleventh edition Metallic Outlet Boxes
	-	UL 514C, fourth edition Nonmetallic Outlet Boxes, Flush-Device Boxes, and Covers
	-	UL 2024, fifth edition Cable Routing Assemblies and Communications Raceways
547	UL 50, fourteenth edition	Enclosures for Electrical Equipment, Non-Environmental Considerations
	-	UL 50E, third edition Enclosures for Electrical Equipment, Environmental Considerations
	-	UL 62, twentieth edition Flexible Cords and Cables
	-	UL 514A, eleventh edition Metallic Outlet Boxes
	-	UL 514B, sixth edition Conduit, Tubing, and Cable Fittings
	-	UL 514C, fourth edition Nonmetallic Outlet Boxes, Flush-Device Boxes, and Covers
	-	UL 1598, fifth edition Luminaires
	-	UL 2225, fifth edition Cable and Cable-Fittings for Use in Hazardous (Classified) Locations
550	UL 6, fifteenth edition	Electrical Rigid Metal Conduit — Steel
	-	UL 6A, second edition Electrical Rigid Metal Conduit — Aluminum, Red Brass and Stainless Steel
	-	UL 83, sixteenth edition Thermoplastic-Insulated Wires and Cables
	-	UL 307A, ninth edition Liquid Fuel-Burning Heating Appliances for Manufactured Homes and Recreational Vehicles
	-	UL 307B, fifth edition Gas-Burning Heating Appliances for Manufactured Homes and Recreational Vehicles
	-	UL 360, seventh edition Liquid-Tight Flexible Metal Conduit

Article	Standard Number	Standard Title
	-	UL 467, eleventh edition
	-	UL 498, sixteenth edition
	-	UL 498D, first edition
	-	UL 498E, first edition
	-	UL 498F, first edition
	-	UL 651, eighth edition
	-	UL 817, twelfth edition
	-	UL 1242, fourth edition
	-	UL 1462, fourth edition
	-	UL 1598, fifth edition
	-	UL 1660, sixth edition
	-	UL 2108, second edition
	-	UL 2515, second edition
551	UL 6, fifteenth edition	Electrical Rigid Metal Conduit — Steel
	-	UL 6A, second edition
	-	UL 62, twentieth edition
	-	UL 231, tenth edition
	-	UL 234, fifth edition
	-	UL 360, seventh edition
	-	UL 467, eleventh edition
	-	UL 486C, eighth edition
	-	UL 498, sixteenth edition
	-	UL 498D, first edition

Grounding and Bonding Equipment

Attachment Plugs and Receptacles

Attachment Plugs, Cord Connectors and Receptacles with Arcuate (Locking Type) Contacts

Attachment Plugs, Cord Connectors and Receptacles — Enclosure Types for Environmental Protection

Plugs, Socket-Outlets and Couplers with Arcuate (Locking Type) Contacts

Schedule 40, 80, Type EB and A Rigid PVC Conduit and Fittings

Cord Sets and Power-Supply Cords

Electrical Intermediate Metal Conduit — Steel

Mobile Home Pipe Heating Cable

Luminaires

Liquid-Tight Flexible Nonmetallic Conduit

Low-Voltage Lighting Systems

Aboveground Reinforced Thermosetting Resin Conduit (RTRC) and Fittings

Electrical Rigid Metal Conduit — Steel

Electrical Rigid Metal Conduit — Aluminum, Red Brass and Stainless Steel

Flexible Cords and Cables

Power Outlets

Low Voltage Lighting Fixtures for use in Recreational Vehicles

Liquid-Tight Flexible Metal Conduit

Grounding and Bonding Equipment

Splicing Wire Connectors

Attachment Plugs and Receptacles

Attachment Plugs, Cord Connectors and Receptacles with Arcuate (Locking Type) Contacts

Article	Standard Number	Standard Title
	-	UL 498E, first edition Attachment Plugs, Cord Connectors and Receptacles — Enclosure Types for Environmental Protection
	-	UL 498F, first edition Plugs, Socket-Outlets and Couplers with Arcuate (Locking Type) Contacts
	-	UL 514A, eleventh edition Metallic Outlet Boxes
	-	UL 514C, fourth edition Nonmetallic Outlet Boxes, Flush-Device Boxes, and Covers
	-	UL 514D, second edition Cover Plates for Flush-Mounted Wiring Devices
	-	UL 651, eighth edition Schedule 40, 80, Type EB and A Rigid PVC Conduit and Fittings
	-	UL 817, twelfth edition Cord Sets and Power-Supply Cords
-	UL 943, fifth edition	Ground-Fault Circuit-Interruptions
	-	UL 1004-4, third edition Electric Generators
	-	UL 1008, ninth edition Transfer Switch Equipment
	-	UL 1008M, first edition Transfer Switch Equipment, Meter Mounted
	-	UL 1008S, first edition Solid-State Transfer Switches
	-	UL 1242, fourth edition Electrical Intermediate Metal Conduit — Steel
	-	UL 1449, fifth edition Surge Protective Devices
	-	UL 1598, fifth edition Luminaires
	-	UL 1660, sixth edition Liquid-Tight Flexible Nonmetallic Conduit
	-	UL 2200, third edition Stationary Engine Generator Assemblies
	-	UL 2299, first edition Ground Monitor Interrupters
	-	UL 2515, second edition Aboveground Reinforced Thermosetting Resin Conduit (RTRC) and Fittings
	-	UL 60730-1, fifth edition Automatic Electrical Controls — Part 1: General Requirements
	-	UL 60730-2-9, fourth edition Automatic Electrical Controls; Part 2-9: Particular Requirements for Temperature Sensing Controls
552	SAE J1128-2015	Low Voltage Primary Cable, for Types GXL, HDT, and SXL
	-	SAE J1127-2015 Low Voltage Battery Cable, for Types SGT and SGR
	-	UL 6, fifteenth edition Electrical Rigid Metal Conduit — Steel

Article	Standard Number	Standard Title
	-	UL 6A, second edition Electrical Rigid Metal Conduit — Aluminum, Red Brass and Stainless Steel
	-	UL 50, fourteenth edition Enclosures for Electrical Equipment, Non-Environmental Considerations
	-	UL 50E, third edition Enclosures for Electrical Equipment, Environmental Considerations
	-	UL 62, twentieth edition Flexible Cords and Cables
	-	UL 67, thirteenth edition Panelboards
	-	UL 231, tenth edition Power Outlets
	-	UL 234, fifth edition Low Voltage Lighting Fixtures for Use in Recreational Vehicles
	-	UL 360, seventh edition Liquid-Tight Flexible Metal Conduit
	-	UL 430, eighth edition Waste Disposers
	-	UL 467, eleventh edition Grounding and Bonding Equipment
	-	UL 514A, eleventh edition Metallic Outlet Boxes
	-	UL 514B, sixth edition Conduit, Tubing, and Cable Fittings
	-	UL 514C, fourth edition Nonmetallic Outlet Boxes, Flush-Device Boxes, and Covers
	-	UL 651, eighth edition Schedule 40, 80, Type EB and A Rigid PVC Conduit and Fittings
	-	UL 817, twelfth edition Cord Sets and Power-Supply Cords
	-	UL 916, fifth edition Energy Management Equipment
	-	UL 943, fifth edition Ground-Fault Circuit-Interrupters
	-	UL 1004-4, third edition Electric Generators
	-	UL 1242, fourth edition Electrical Intermediate Metal Conduit — Steel
	-	UL 1563, sixth edition Electric Spas, Equipment Assemblies, and Associated Equipment
	-	UL 1598, fifth edition Luminaires
	-	UL 1660, sixth edition Liquid-Tight Flexible Nonmetallic Conduit
	-	UL 2108, second edition Low Voltage Lighting Systems
	-	UL 2200, third edition Stationary Engine Generator Assemblies
	-	UL 2515, second edition Aboveground Reinforced Thermosetting Resin Conduit (RTRC) and Fittings
555	UL 6, fifteenth edition	Electrical Rigid Metal Conduit —

Article	Standard Number	Standard Title
		Steel
	-	UL 6A, second edition Electrical Rigid Metal Conduit — Aluminum, Red Brass and Stainless Steel
	-	UL 231, tenth edition Power Outlets
	-	UL 486D, seventh edition Sealed Wire Connector Systems
	-	UL 651, eighth edition Schedule 40, 80, Type EB and A Rigid PVC Conduit and Fittings
	-	UL 676, ninth edition Underwater Luminaires and Submersible Junction Boxes
	-	UL 943, fifth edition Ground-Fault Circuit-Interrupters
	-	UL 1053, seventh edition Ground-Fault Sensing and Relaying Equipment
	-	UL 1399, first edition Leakage Current Measurement Devices for Use in Marina Applications
	-	UL 1650, first edition Portable Power Cable
	-	UL 2515, second edition Aboveground Reinforced Thermosetting Resin Conduit (RTRC) and Fittings
590	UL 496, fourteenth edition	Lampholders
	-	UL 514B, sixth edition Conduit, Tubing, and Cable Fittings
	-	UL 588, nineteenth edition Seasonal and Holiday Decorative Products
	-	UL 817, twelfth edition Cord Sets and Power-Supply Cords
	-	UL 943, fifth edition Ground-Fault Circuit-Interrupters
	-	UL 1088, seventh edition Temporary Lighting Strings
	-	UL 1377, first edition Wire used in Low Voltage Seasonal Lighting Products In Circuits With a Maximum Available Power of 15W
	-	UL 1640, fourth edition Portable Power-Distribution Equipment
600	UL 1, eleventh edition	Flexible Metal Conduit
	-	UL 5, fifteenth edition Surface Metal Raceways and Fittings
	-	UL 5A, fourth edition Nonmetallic Surface Raceways and Fittings
	-	UL 13, fourth edition Power-Limited Circuit Cables
	-	UL 48, fifteenth edition Electric Signs
	-	UL 50, fourteenth edition Enclosures for Electrical Equipment, Non-Environmental Considerations
	-	UL 50E, third edition Enclosures for Electrical Equipment, Environmental Considerations

<u>Article</u>	<u>Standard Number</u>	<u>Standard Title</u>
-	UL 98B, third edition	Enclosed and Dead-Front Switches for Use in Photovoltaic Systems
-	UL 248-19, first edition	Low-Voltage Fuses — Part 19: Photovoltaic Fuses
-	UL 360, seventh edition	Liquid-Tight Flexible Metal Conduit
-	UL 489B, first edition	Molded-Case Circuit Breakers, Molded-Case Switches, and Circuit-Breaker Enclosures For Use With Photovoltaic (PV) Systems
-	UL 508I, second edition	Disconnect Switches Intended for Use in Photovoltaic Systems
-	UL 814, twelfth edition	Gas-Tube-Sign Cable
-	UL 879, ninth edition	Electric Sign Components
-	UL 879A, first edition	LED Sign and Sign Retrofit Kits
-	UL 879B, first edition	Polymeric Enclosure Systems for the Splice Between Neon Tubing Electrode Leads and GTO Cable, and the GTO Cable Leading to the Splice
-	UL 943, fifth edition	Ground-Fault Circuit-Interrupters
-	UL 1310, seventh edition	Class 2 Power Units
-	UL 1660, sixth edition	Liquid-Tight Flexible Nonmetallic Conduit
-	UL 1699B, first edition	Photovoltaic (PV) DC Arc-Fault Circuit Protection
-	UL 1741, third edition	Inverters, Converters, Controllers and Interconnection System Equipment for Use With Distributed Energy Resources
-	UL 2161, second edition	Neon Transformers and Power Supplies
-	UL 2703, first edition	Mounting Systems, Mounting Devices, Clamping/Retention Devices, and Ground Lugs for Use with Flat-Plate Photovoltaic Modules and Panels
-	UL 3001, first edition	Distributed Energy Generation and Storage Systems
-	UL 3003, first edition	Distributed Generation Cables
-	UL 3703, first edition	Solar Trackers
-	UL 4703, first edition	Photovoltaic Wire
-	UL 6703, first edition	Connectors for Use in Photovoltaic Systems
-	UL 7103, first edition	Investigation for Building-Integrated Photovoltaic Roof Coverings

Article	Standard Number	Standard Title
	-	UL 8703, third edition Concentrator Photovoltaic Modules and Assemblies
	-	UL 9703, third edition Distributed Generation Wiring Harnesses
	-	UL 61730-1, second edition Photovoltaic (PV) Module Safety Qualification — Part 1: Requirements For Construction
	-	UL 61730-2, second edition Photovoltaic (PV) Module Safety Qualification — Part 2: Requirements For Testing
	-	UL 62109-1, first edition Power Converters for Use in Photovoltaic Power Systems — Part 1: General Requirements
	-	UL 62109-2, first edition Power Converters for Use in Photovoltaic Power Systems — Part 1: Particular Requirements for Inverters
	-	UL 62368-1, third edition Audio/Video, Information and Communication Technology Equipment — Part 1: Safety Requirements
604	UL 1, eleventh edition	Flexible Metal Conduit
	-	UL 4, fifteenth edition Armored Cable
	-	UL 5, fifteenth edition Surface Metal Raceways and Fittings
	-	UL 5A, fourth edition Nonmetallic Surface Raceways and Fittings
	-	UL 5B, second edition Strut-Type Channel Raceways and Fittings
	-	UL 5C, third edition Surface Raceways and Fittings for Use with Data, Signal, and Control Circuits
	-	UL 62, twentieth edition Flexible Cords and Cables
	-	UL 183, fourth edition Manufactured Wiring Systems
	-	UL 209, tenth edition Cellular Metal Floor Raceways and Fittings
	-	UL 360, seventh edition Liquid-Tight Flexible Metal Conduit
	-	UL 797, ninth edition Electrical Metallic Tubing — Steel
	-	UL 797A, third edition Electrical Metallic Tubing — Aluminum and Stainless Steel
	-	UL 857, thirteenth edition Busways
	-	UL 1569, fifth edition Metal-Clad Cables
	-	UL 2024, fifth edition Cable Routing Assemblies and Communications Raceways
605	UL 962, fifth edition	Household and Commercial

<u>Article</u>	<u>Standard Number</u>	<u>Standard Title</u>	
		Furnishings	
	-	UL 962A, sixth edition	Furniture Power Distribution Units
	-	UL 1286, sixth edition	Office Furnishings Systems
	-	UL 1310, seventh edition	Class 2 Power Units
	-	UL 2999, first edition	Individual Commercial Office Furnishings
	-	UL 5085-3, first edition	Low Voltage Transformers — Part 3: Class 2 and Class 3 Transformers
	-	UL 62368-1, third edition	Audio/Video, Information and Communication Technology Equipment — Part 1: Safety Requirements
610	UL 62, twentieth edition	Flexible Cords and Cables	
	-	UL 2273, second edition	Festoon Cable
620	UL 62, twentieth edition	Flexible Cords and Cables	
	-	UL 83, sixteenth edition	Thermoplastic-Insulated Wires and Cables
	-	UL 98, fourteenth edition	Enclosed and Dead-Front Switches
	-	UL 104, twelfth edition	Elevator Door Locking Devices and Contacts
	-	UL 489, thirteenth edition	Molded-Case Circuit Breakers, Molded-Case Switches and Circuit-Breaker Enclosures
	-	UL 508, eighteenth edition	Industrial Control Equipment
	-	UL 508A, third edition	Industrial Control Panels
	-	UL 1066, fifth edition	Power Circuit Breakers up to 1000 V AC and 1500 V DC Used in Enclosures
	-	UL 1310, seventh edition	Class 2 Power Units
	-	UL 1449, fifth edition	Surge Protective Devices
	-	UL 1685, fourth edition	Vertical-Tray Fire-Propagation and Smoke-Release Test for Electrical and Optical-Fiber Cables
	-	UL 2556, fifth edition	Wire and Cable Test Methods
	-	UL 62368-1, third edition	Audio/Video, Information and Communication Technology Equipment — Part 1: Safety Requirements
624	UL 9741A	Onboard Electric Vehicle Power	<u>Electrical Vehicle Supply Equipment</u>
		Export and Import Equipment	<u>Electric Vehicle Charging System Equipment</u>

Article	Standard Number	Standard Title
		<u>UL 2594, third edition</u> <u><i>Outline of Investigation for Wireless Power Transfer Equipment for Electric Vehicles</i></u>
		<u>UL 2202, third edition</u>
		<u>UL 2750, first edition</u>
625	UL 62, twentieth edition	Flexible Cords and Cables
	-	UL 1650, first edition Portable Power Cable
	-	UL 1741, third edition Inverters, Converters, Controllers and Interconnection System Equipment for Use With Distributed Energy Resources
	-	UL 2202, third edition DC Charging Equipment for Electric Vehicles
	-	UL 2231-1, second edition Personnel Protection Systems for Electric Vehicle (EV) Supply Circuits — Part 1: General Requirements
	-	UL 2231-2, second edition Personnel Protection Systems for Electric Vehicle (EV) Supply Circuits — Part 2: Particular Requirements for Protection Devices for Use in Charging Systems
	-	UL 2251-, fourth edition Plugs, Receptacles and Couplers for Electrical Vehicles
	-	UL 2580, third edition Batteries for Use in Electric Vehicles
	-	UL 2594, third edition Electric Vehicle Supply Equipment
	-	UL 9741, first edition Electric Vehicle Power Export Equipment (EVPE)
	-	UL 60730-1, fifth edition Automatic Electrical Controls — Part 1: General Requirements
626	UL 62, twentieth edition	Flexible Cords and Cables
	-	UL 231, tenth edition Power Outlets
	-	UL 498, sixteenth edition Attachment Plugs and Receptacles
	-	UL 498D, first edition Attachment Plugs, Cord Connectors and Receptacles with Arcuate (Locking Type) Contacts
	-	UL 498E, first edition Attachment Plugs, Cord Connectors and Receptacles — Enclosure Types for Environmental Protection
	-	UL 498F, first edition Plugs, Socket-Outlets and Couplers with Arcuate (Locking Type) Contacts
	-	UL 817, twelfth edition Cord Sets and Power-Supply Cords
	-	UL 1651, fourth edition Optical Fiber Cable

Article	Standard Number	Standard Title	
	-	UL 1686, fifth edition	Pin and Sleeve Configurations
630	UL 551, eighth edition	Transformer-Type Arc-Welding Machines	
640	UL 13, fourth edition	Power-Limited Circuit Cables	
	-	UL 62, twentieth edition	Flexible Cords and Cables
	-	UL 813, seventh edition	Commercial Audio Equipment
	-	UL 1310, seventh edition	Class 2 Power Units
	-	UL 1419, fourth edition	Professional Video and Audio Equipment
	-	UL 1492, second edition	Audio-Video Products and Accessories
	-	UL 1711, fourth edition	Amplifiers for Fire Protective Signaling Systems
	-	UL 2269, fourth edition	Optical Fiber/Communications/Signaling/Coaxial Cable Outlet Boxes
	-	UL 6500, second edition	Audio/Video and Musical Instrument Apparatus for Household, Commercial, and Similar General Use
	-	UL 60065, eighth edition	Audio, Video and Similar Electronic Apparatus — Safety Requirements
	-	UL 62368-1, third edition	Audio/Video, Information and Communication Technology Equipment — Part 1: Safety Requirements
645	UL 38, eighth edition	Manual Signaling Boxes for Fire Alarm Systems	
	-	UL 268, eighth edition	Smoke Detectors for Fire Alarm Systems
	-	UL 444, fifth edition	Communications Cables
	-	UL 464, eleventh edition	Audible Signaling Devices for Fire Alarm and Signaling Systems, Including Accessories
	-	UL 497B, fourth edition	Protectors for Data Communications and Fire Alarm Circuits
	-	UL 833, first edition	Control Units and Accessories for Fire Alarm Systems
	-	UL 864, eleventh edition	Control Units and Accessories for Fire Alarm Systems
	-	UL 1424, fourth edition	Cables for Power-Limited Fire-Alarm Circuits
	-	UL 1425, third edition	Cables for Non-Power-Limited Fire-Alarm Circuits
	-	UL 1449, fifth edition	Surge Protective Devices

Article	Standard Number	Standard Title
	-	UL 1480, seventh edition Speakers for Fire Alarm and Signaling Systems, Including Accessories
	-	UL 1638, sixth edition Visible Signaling Devices for Fire Alarm and Signaling Systems, Including Accessories
	-	UL 1651, fourth edition Optical Fiber Cable
	-	UL 1685, fourth edition Vertical-Tray Fire-Propagation and Smoke-Release Test for Electrical and Optical-Fiber Cables
	-	UL 1690, fourth edition Data-Processing Cable
-	UL 1778, fifth edition Uninterruptible Power Systems	
	-	UL 2024, fifth edition Cable Routing Assemblies and Communications Raceways
	-	UL 60950-1, second edition Information Technology Equipment — Safety — Part 1: General Requirements
	-	UL 60950-21, first edition Information Technology Equipment — Safety — Part 21: Remote Power Feeding
	-	UL 60950-22, second edition Information Technology Equipment — Safety — Part 22: Equipment to be Installed Outdoors
	-	UL 60950-23, first edition Information Technology Equipment — Safety — Part 23: Large Data Storage Equipment
	-	UL 62368-1, third edition Audio/Video, Information and Communication Technology Equipment — Part 1: Safety Requirements
646	UL 10C, third edition Positive Pressure Fire Tests of Door Assemblies	
	-	UL 62, twentieth edition Flexible Cords and Cables
	-	UL 67, thirteenth edition Panelboards
	-	UL 98, fourteenth edition Enclosed and Dead-Front Switches
	-	UL 305, sixth edition Panic Hardware
	-	UL 347, seventh edition Medium-Voltage AC Contactors, Controllers, and Control Centers
	-	UL 489, thirteenth edition Molded-Case Circuit Breakers, Molded-Case Switches and Circuit-Breaker Enclosures
	-	UL 508, eighteenth edition Industrial Control Equipment
	-	UL 508A, third edition Industrial Control Panels
	-	UL 845, sixth edition Motor Control Centers

Article	Standard Number	Standard Title
	-	UL 869A, fourth edition
	-	UL 891, twelfth edition
	-	UL 924, tenth edition
-	-	UL 977, fifth edition
	-	UL 1008, ninth edition
	-	UL 1008A, second edition
	-	UL 1008M, first edition
	-	UL 1008S, first edition
	-	UL 1062, third edition
	-	UL 1066, fifth edition
	-	UL 1429, fourth edition
	-	UL 1449, fifth edition
	-	UL 1655, second edition
	-	UL 1989, sixth edition
	-	UL 2755, second edition
	-	UL 62368-1, third edition
		Reference Standard for Service Equipment
		Switchboards
		Emergency Lighting and Power Equipment
		Fused Power-Circuit Devices
		Transfer Switch Equipment
		Transfer Switch Equipment, Over 1000 Volts
		Transfer Switch Equipment, Meter-Mounted
		Solid-State Transfer Switches
		Unit Substations
		Power Circuit Breakers up to 1000 V AC and 1500 V DC Used in Enclosures
		Pullout Switches
		Surge Protective Devices
		Community-Antenna Television Cables
		Valve Regulated or Vented Batteries with Aqueous Electrolytes
		Modular Data Centers
		Audio/Video, Information and Communication Technology Equipment — Part 1: Safety Requirements
647	UL 1598, fifth edition	Luminaires
650	UL 1310, seventh edition	Class 2 Power Units
	-	UL 1581, fourth edition
	-	UL 62368-1, third edition
		Reference Standard for Electrical Wires, Cables, and Flexible Cords
		Audio/Video, Information and Communication Technology Equipment — Part 1: Safety Requirements
670	ANSI/CSA-C22.2 No. 19085-1	Woodworking machines — Safety — Part 1: Common requirements
	-	UL 508, eighteenth edition
	-	UL 61800-5-1, second edition
		Industrial Control Equipment
		Adjustable Speed Electrical Power Drive Systems — Part 5-1: Safety Requirements — Electrical, Thermal and Energy

<u>Article</u>	<u>Standard Number</u>	<u>Standard Title</u>	
675	UL 493, tenth edition	Thermoplastic-Insulated Underground Feeder and Branch-Circuit Cables	
	-	UL 1581, fourth edition	Reference Standard for Electrical Wires, Cables, and Flexible Cords
680	UL 6, fifteenth edition	Electrical Rigid Metal Conduit — Steel	
	-	UL 6A, second edition	Electrical Rigid Metal Conduit — Aluminum, Red Brass and Stainless Steel
	-	UL 20, fourteenth edition	General Use Snap-Switches
	-	UL 62, twentieth edition	Flexible Cords and Cables
	-	UL 360, seventh edition	Liquid-Tight Flexible Metal Conduit
	-	UL 379, first edition	Power Units for Fountain, Swimming Pool, and Spa Luminaires
	-	UL 467, eleventh edition	Grounding and Bonding Equipment
	-	UL 486D, seventh edition	Sealed Wire Connector Systems
	-	UL 489, thirteenth edition	Molded-Case Circuit Breakers, Molded-Case Switches and Circuit-Breaker Enclosures
	-	UL 651, eighth edition	Schedule 40, 80, Type EB and A Rigid PVC Conduit and Fittings
	-	UL 676, ninth edition	Underwater Luminaires and Submersible Junction Boxes
	-	UL 676A, third edition	Potting Compounds for Swimming Pool, Fountain, and Spa Equipment
	-	UL 943, fifth edition	Ground-Fault Circuit-Interrupters
	-	UL 943C, second edition	Special Purpose Ground-Fault Circuit-Interrupters
	-	UL 1004-10, first edition	Pool Pump Motors
	-	UL 1081, seventh edition	Swimming Pool Pumps, Filters, and Chlorinators
	-	UL 1241, seventh edition	Junction Boxes for Swimming Pool Luminaires
	-	UL 1242, fourth edition	Electrical Intermediate Metal Conduit — Steel
	-	UL 1261, sixth edition	Electric Water Heaters for Pools and Tubs
	-	UL 1563, sixth edition	Electric Spas, Equipment Assemblies, and Associated Equipment
	-	UL 1569, fifth edition	Metal-Clad Cables

Article	Standard Number	Standard Title
	-	UL 1660, sixth edition Liquid-Tight Flexible Nonmetallic Conduit
	-	UL 1795, fifth edition Hydromassage Bathtubs
	-	UL 2420, first edition Belowground Reinforced Thermosetting Resin Conduit (RTRC) and Fittings
	-	UL 2452, first edition Electric Swimming Pool and Spa Cover Operators
	-	UL 2515, second edition Aboveground Reinforced Thermosetting Resin Conduit (RTRC) and Fittings
	-	UL 2515A, first edition Supplemental Requirements for Extra Heavy Wall Reinforced Thermosetting Resin Conduit (RTRC) and Fittings
	-	UL 2995, first edition Lifts for Swimming Pools and Spas
	-	UL 60335-2-1000, first edition Household and Similar Electrical Appliances: Particular Requirements for Electrically Powered Pool Lifts
682	UL 486D, seventh edition	Sealed Wire Connector Systems
	-	UL 943, fifth edition Ground-Fault Circuit-Interrupters
	-	UL 1053, seventh edition Ground-Fault Sensing and Relaying Equipment
	-	UL 1650, first edition Portable Power Cable
	-	UL 1838, third edition Low Voltage Landscape Lighting Systems
690	UL 98B, third edition	Enclosed and Dead-Front Switches for Use in Photovoltaic Systems
	-	UL 248-19, first edition Low-Voltage Fuses — Part 19: Photovoltaic Fuses
	-	UL 467, eleventh edition Grounding and Bonding Equipment
	-	UL 489B, first edition Molded-Case Circuit Breakers, Molded-Case Switches, and Circuit-Breaker Enclosures For Use With Photovoltaic (PV) Systems
	-	UL 508I, second edition Disconnect Switches Intended for Use in Photovoltaic Systems
	-	UL 1569, fifth edition Metal-Clad Cables
	-	UL 1699B, first edition Photovoltaic (PV) DC Arc-Fault Circuit Protection
	-	UL 1703, third edition Flat-Plate Photovoltaic Modules and Panels

Article	Standard Number	Standard Title
	-	UL 1741, third edition Inverters, Converters, Controllers and Interconnection System Equipment for Use with Distributed Energy Resources
	-	UL 2703, first edition Mounting Systems, Mounting Devices, Clamping/Retention Devices, and Ground Lugs for Use with Flat-Plate Photovoltaic Modules and Panels
	-	UL 3001, first edition Distributed Energy Generation and Storage Systems
	-	UL 3003, first edition Distributed Generation Cables
	-	UL 3703, first edition Solar Trackers
	-	UL 3730, first edition Photovoltaic Junction Boxes
	-	UL 3741, first edition Photovoltaic Hazard Control
	-	UL 4703, first edition Photovoltaic Wire
	-	UL 6703, first edition Connectors for Use in Photovoltaic Systems
	-	UL 7103, first edition Investigation for Building-Integrated Photovoltaic Roof Coverings
	-	UL 8703, third edition Concentrator Photovoltaic Modules and Assemblies
	-	UL 8801, first edition Photovoltaic (PV) Luminaire Systems
	-	UL 9703, third edition Distributed Generation Wiring Harnesses
	-	UL 9741, first edition Electric Vehicle Power Export Equipment (EVPE)
	-	UL 61730-1, second edition Photovoltaic (PV) Module Safety Qualification — Part 1: Requirements for Construction
	-	UL 61730-2, second edition Photovoltaic (PV) Module Safety Qualification — Part 2: Requirements for Testing
	-	UL 62109-1, first edition Power Converters for Use in Photovoltaic Power Systems — Part 1: General Requirements
	-	UL 62109-2, first edition Power Converters for Use in Photovoltaic Power Systems — Part 2: Particular Requirements for Inverters
	-	UL 62275, third edition Cable Management Systems — Cable Ties for Electrical Installations
692	UL 2262, second edition	Fuel Cell Modules for Use in Portable and Stationary Equipment
	-	UL 2262A, second edition Borohydride Fuel Cartridges with Integral Fuel Processing for Use with Portable Fuel Cell Power Systems or Similar Equipment

Article	Standard Number	Standard Title
694	-	UL 2265, first edition Fuel Cell Power Units and Fuel Storage Containers for Portable Devices
	-	UL 2265C, first edition Hand-Held or Hand-Transportable Alkaline (Direct Borohydride) Fuel Cell Power Units and Borohydride Fuel Cartridges For Use With Consumer Electronics or Information Technology Equipment
	-	UL 2266, first edition Electromagnetic Compatibility, Electrical Safety, and Physical Protection of Stationary and Portable Fuel Cell Power Systems for Use with Commercial Network Telecommunications Equipment
	-	UL 2267, third edition Fuel Cell Power Systems for Installation in Industrial Electric Trucks
	UL 467, eleventh edition	Grounding and Bonding Equipment
	-	UL 489C, first edition Molded-Case Circuit Breakers and Molded-Case Switches for Use with Wind Turbines
	-	UL 1741, third edition Inverters, Converters, Controllers and Interconnection System Equipment for Use With Distributed Energy Resources
	-	UL 2277, fifth edition Flexible Motor Supply Cable and Wind Turbine Tray Cable
	-	UL 2736, first edition Single Pole Separable Interconnecting Cable Connectors for Use with Wind Turbine Generating Systems
	-	UL 4143, first edition Wind Turbine Generator — Life Time Extension (LTE)
695	-	UL 6141, first edition Wind Turbines Permitting Entry of Personnel
	-	UL 6142, first edition Small Wind Turbine Systems
	UL 6, fifteenth edition	Electrical Rigid Metal Conduit — Steel
	-	UL 6A, second edition Electrical Rigid Metal Conduit — Aluminum, Red Brass and Stainless Steel
	-	UL 218, third edition Fire Pump Controllers
	-	UL 448, twelfth edition Centrifugal Stationary Pumps for Fire-Protection Service
	-	UL 448B, second edition Residential Fire Pumps Intended for One- and Two-Family Dwellings and Manufactured Homes
	-	UL 448C, second edition Stationary, Rotary-Type, Positive-Displacement Pumps for Fire Protection Service
	-	UL 651, eighth edition Schedule 40, 80, Type EB and A Rigid PVC Conduit and Fittings

Article	Standard Number	Standard Title
	-	UL 1004-5, second edition Fire Pump Motors
	-	UL 1242, fourth edition Electrical Intermediate Metal Conduit — Steel
	-	UL 1569, fifth edition Metal-Clad Cables
	-	UL 1724, third edition Fire Tests for Electrical Circuit Protective Systems
	-	UL 2196, second edition Fire Test for Circuit Integrity of Fire-Resistive Power, Instrumentation, Control and Data Cables
	-	UL 2515, second edition Aboveground Reinforced Thermosetting Resin Conduit (RTRC) and Fittings
700	UL 924, tenth edition	Emergency Lighting and Power Equipment
	-	UL 1008, ninth edition Transfer Switch Equipment
	-	UL 1008A, second edition Transfer Switch Equipment, Over 1000 Volts
	-	UL 1449, fifth edition Surge Protective Devices
	-	UL 1724, third edition Fire Tests for Electrical Circuit Protective Systems
	-	UL 2196, second edition Fire Test for Circuit Integrity of Fire-Resistive Power, Instrumentation, Control and Data Cables
	-	UL 2200, third edition Stationary Engine Generator Assemblies
701	UL 924, tenth edition	Emergency Lighting and Power Equipment
	-	UL 1008, ninth edition Transfer Switch Equipment
	-	UL 1008A, second edition Transfer Switch Equipment, Over 1000 Volts
702	UL 98, fourteenth edition	Enclosed and Dead-Front Switches
	-	UL 1008, ninth edition Transfer Switch Equipment
	-	UL 1008A, second edition Transfer Switch Equipment, Over 1000 Volts
	-	UL 1008M, first edition Transfer Switch Equipment, Meter-Mounted
	-	UL 1008S, first edition Solid-State Transfer Switches
705	UL 62, twentieth edition	Flexible Cords and Cables
	-	UL 98, fourteenth edition Enclosed and Dead-Front Switches

Article	Standard Number	Standard Title
	-	UL 486D, seventh edition Sealed Wire Connector Systems
	-	UL 489, thirteenth edition Molded-Case Circuit Breakers, Molded-Case Switches and Circuit-Breaker Enclosures
	-	UL 1066, fifth edition Power Circuit Breakers up to 1000 V AC and 1500 V DC Used in Enclosures
	-	UL 1429, fourth edition Pullout Switches
	-	UL 1741, third edition Inverters, Converters, Controllers and Interconnection System Equipment for Use With Distributed Energy Resources
	-	UL 2200, third edition Stationary Engine Generator Assemblies
	-	UL 3001, first edition Distributed Energy Generation and Storage Systems
	-	UL 3003, first edition Distributed Generation Cables
	-	UL 6141, first edition Wind Turbines Permitting Entry of Personnel
	-	UL 6142, first edition Small Wind Turbine Systems
	-	UL 9540, third edition Energy Storage Systems and Equipment
	-	UL 9741, first edition Electric Vehicle Power Export Equipment (EVPE)
	-	UL 62109-1, first edition Power Converters for Use in Photovoltaic Power Systems — Part 1: General Requirements
	-	UL 62109-2, first edition Power Converters for Use in Photovoltaic Power Systems — Part 2: Particular Requirements for Inverters
706	UL 248-2, second edition	Low-Voltage Fuses — Part 2: Class C Fuses
	-	UL 248-3, second edition Low-Voltage Fuses — Part 3: Class CA and CB Fuses
	-	UL 248-4, second edition Low-Voltage Fuses — Part 4: Class CC Fuses
	-	UL 248-5, second edition Low-Voltage Fuses — Part 5: Class G Fuses
	-	UL 248-6, second edition Low-Voltage Fuses — Part 6: Class H Non-Renewable Fuses
	-	UL 248-8, third edition Low-Voltage Fuses — Part 8: Class J Fuses
	-	UL 248-9, second edition Low-Voltage Fuses — Part 9: Class K Fuses
	-	UL 248-10, third edition Low-Voltage Fuses — Part 10: Class L Fuses
	-	UL 248-12, third edition Low-Voltage Fuses — Part 12: Class R Fuses

Article	Standard Number	Standard Title
	-	UL 248-15, third edition Low-Voltage Fuses — Part 15: Class T Fuses
	-	UL 248-17, fifth edition Low-Voltage Fuses — Part 17: Class CF Fuses
	-	UL 248-18, first edition Low-Voltage Fuses — Part 18: Class CD Fuses
	-	UL 489, thirteenth edition Molded-Case Circuit Breakers, Molded-Case Switches and Circuit-Breaker Enclosures
	-	UL 489H, first edition Molded-Case Circuit Breakers, Molded-Case Switches, and Circuit-Breaker Enclosures, for Use with Direct Current (DC) Microgrids
	-	UL 1066, fifth edition Power Circuit Breakers up to 1000 V AC and 1500 V DC Used in Enclosures
	-	UL 1741, third edition Inverters, Converters, Controllers and Interconnection System Equipment for Use With Distributed Energy Resources
	-	UL 9540, third edition Energy Storage Systems and Equipment
708	UL 1, eleventh edition	Flexible Metal Conduit
	-	UL 4, fifteenth edition Armored Cable
	-	UL 83, sixteenth edition Thermoplastic-Insulated Wires and Cables
	-	UL 360, seventh edition Liquid-Tight Flexible Metal Conduit
	-	UL 493, tenth edition Thermoplastic-Insulated Underground Feeder and Branch-Circuit Cables
	-	UL 497A, third edition Secondary Protectors for Communications Circuits
	-	UL 1008, ninth edition Transfer Switch Equipment
	-	UL 1008A, second edition Transfer Switch Equipment, Over 1000 Volts
	-	UL 1008M, first edition Transfer Switch Equipment, Meter-Mounted
	-	UL 1008S, first edition Solid-State Transfer Switches
	-	UL 1569, fifth edition Metal-Clad Cables
	-	UL 2196, second edition Fire Test for Circuit Integrity of Fire-Resistive Power, Instrumentation, Control and Data Cables
710	UL 1741, third edition	Inverters, Converters, Controllers and Interconnection System Equipment for Use With

Article	Standard Number	Standard Title
		Distributed Energy Resources
	-	UL 2200, third edition Stationary Engine Generator Assemblies
	-	UL 8801, first edition Photovoltaic (PV) Luminaire Systems
	-	UL 9540, third edition Energy Storage Systems and Equipment
	-	UL 9741, first edition Electric Vehicle Power Export Equipment (EVPE)
	-	UL 62109-1, first edition Power Converters for use in Photovoltaic Power Systems — Part 1: General Requirements
	-	UL 62109-2, first edition Power Converters for Use in Photovoltaic Power Systems — Part 2: Particular Requirements for Inverters
722	UL 13, fourth edition	Power-Limited Circuit Cables
	-	UL 444, fifth edition Communications Cables
	-	UL 1424, fourth edition Cables for Power-Limited Fire-Alarm Circuits
	-	UL 1651, fourth edition Optical Fiber Cable
	-	UL 1666, fifth edition Test for Flame Propagation Height of Electrical and Optical-Fiber Cables Installed Vertically in Shafts
	-	UL 1685, fourth edition Vertical-Tray Fire-Propagation and Smoke-Release Test for Electrical and Optical-Fiber Cables
	-	UL 1724, third edition Fire Tests for Electrical Circuit Protective Systems
	-	UL 2044, fourth edition Commercial Closed-Circuit Television Equipment
	-	UL 2196, second edition Fire Test for Circuit Integrity of Fire-Resistive Power, Instrumentation, Control and Data Cables
	-	UL 2556, fifth edition Wire and Cable Test Methods
725	UL 1310, seventh edition	Class 2 Power Units
	-	UL 5085-3, first edition Low Voltage Transformers — Part 3: Class 2 and Class 3 Transformers
	-	UL 9990, first edition Information and Communication Technology (ICT) Power Cables
	-	UL 60730-1, fifth edition Automatic Electrical Controls — Part 1: General Requirements
	-	UL 61010-2-201, second edition Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use — Part 2-201: Particular Requirements for Control Equipment

Article	Standard Number	Standard Title	
	-	UL 61800-5-1, second edition	Adjustable Speed Electrical Power Drive Systems — Part 5-1: Safety Requirements — Electrical, Thermal and Energy
	-	UL 62368-1, third edition	Audio/Video, Information and Communication Technology Equipment — Part 1: Safety Requirements
726	UL 1400-1, first edition	Fault-Managed Power Systems — 1 General Requirements	
	-	UL 1400-2, first edition	Fault-Managed Power Systems — 2 Requirements for Cables
	-	UL 1666, fifth edition	Test for Flame Propagation Height of Electrical and Optical-Fiber Cables Installed Vertically in Shafts
	-	UL 1685, fourth edition	Vertical-Tray Fire-Propagation and Smoke-Release Test for Electrical and Optical-Fiber Cables
	-	UL 2556, fifth edition	Wire and Cable Test Methods
728	UL 5, fifteenth edition	Surface Metal Raceways and Fittings	
	-	UL 5A, fourth edition	Nonmetallic Surface Raceways and Fittings
	-	UL 5B, second edition	Strut-Type Channel Raceways and Fittings
	-	UL 5C, third edition	Surface Raceways and Fittings for Use with Data, Signal, and Control Circuits
	-	UL 209, tenth edition	Cellular Metal Floor Raceways and Fittings
	-	UL 467, eleventh edition	Grounding and Bonding Equipment
	-	UL 514A, eleventh edition	Metallic Outlet Boxes
	-	UL 514C, fourth edition	Nonmetallic Outlet Boxes, Flush-Device Boxes, and Covers
	-	UL 568, first edition	Nonmetallic Cable Tray Systems
	-	UL 884, thirteenth edition	Underfloor Raceways and Fittings
	-	UL 1724, third edition	Fire Tests for Electrical Circuit Protective Systems
	-	UL 2024, fifth edition	Cable Routing Assemblies and Communications Raceways
	-	UL 2196, second edition	Fire Test for Circuit Integrity of Fire-Resistive Power, Instrumentation, Control and Data Cables
750	UL 467, eleventh edition	Grounding and Bonding Equipment	

<u>Article</u>	<u>Standard Number</u>	<u>Standard Title</u>
	-	UL 497, seventh edition Protectors for Paired-Conductor Communications Circuits
	-	UL 497A, third edition Secondary Protectors for Communication Circuits
	-	UL 497B, fourth edition Protectors for Data Communications and Fire-Alarm Circuits
	-	UL 497C, second edition Protectors for Coaxial Communications Circuits
	-	UL 497E, fourth edition Protectors for Antenna Lead-In Conductors
760	UL 268, eighth edition	Smoke Detectors for Fire Alarm Systems
	-	UL 268A, fourth edition Smoke Detectors for Duct Application
	-	UL 486C, eighth edition Splicing Wire Connectors
	-	UL 497B, fourth edition Protectors for Data Communication and Fire Alarm Circuits
	-	UL 1424, fourth edition Cables for Power-Limited Fire-Alarm Circuits
	-	UL 1425, third edition Cables for Non-Power-Limited Fire-Alarm Circuits
	-	UL 1480, seventh edition Speakers for Fire Alarm and Signaling Systems, Including Accessories
	-	UL 1666, fifth edition Test for Flame Propagation Height of Electrical and Optical-Fiber Cables Installed Vertically in Shafts
	-	UL 1685, fourth edition Vertical-Tray Fire-Propagation and Smoke-Release Test for Electrical and Optical-Fiber Cables
	-	UL 2196, second edition Fire Test for Circuit Integrity of Fire-Resistive Power, Instrumentation, Control and Data Cables
	-	UL 60730-2-14, third edition Automatic Electrical Controls; Part 2-14: Particular Requirements for Electric Actuators
800	UL 444, fifth edition	Communications Cables
	-	UL 467, eleventh edition Grounding and Bonding Equipment
	-	UL 489A, first edition Circuit Breakers for Use in Communication Equipment
	-	UL 497, seventh edition Protectors for Paired-Conductor Communications Circuits
	-	UL 497A, third edition Secondary Protectors for Communications Circuits
	-	UL 497C, second edition Protectors for Coaxial Communications Circuits
	-	UL 497E, fourth edition Protectors for Antenna Lead-In Conductors

Article	Standard Number	Standard Title
	-	UL 498A, second edition Current Taps and Adapters
	-	UL 523, second edition Telephone Service Drop Wire
	-	UL 568, first edition Nonmetallic Cable Tray Systems
	-	UL 723, eleventh edition Test for Surface Burning Characteristics of Building Materials
	-	UL 1581, fourth edition Reference Standard for Electrical Wires, Cables, and Flexible Cords
	-	UL 1666, fifth edition Test for Flame Propagation Height of Electrical and Optical-Fiber Cables Installed Vertically in Shafts
	-	UL 1685, fourth edition Vertical-Tray Fire-Propagation and Smoke-Release Test for Electrical and Optical-Fiber Cables
	-	UL 1724, third edition Fire Tests for Electrical Circuit Protective Systems
	-	UL 1863, fourth edition Communication-Circuit Accessories
	-	UL 2024, fifth edition Cable Routing Assemblies and Communications Raceways
	-	UL 2043, fifth edition Fire Test for Heat and Visible Smoke Release for Discrete Products and Their Accessories Installed in Air-Handling Spaces
	-	UL 2196, second edition Fire Test for Circuit Integrity of Fire-Resistive Power, Instrumentation, Control and Data Cables
	-	UL 2556, fifth edition Wire and Cable Test Methods
	-	UL 60950-1, second edition Information Technology Equipment
	-	UL 62275, third edition Cable Management Systems — Cable Ties for Electrical Installations
	-	UL 62368-1, third edition Audio/Video, Information and Communication Technology Equipment — Part 1: Safety Requirements
810	UL 150, fourth edition	Antenna Rotators
	-	UL 452, seventh edition Antenna-Discharge Units
	-	UL 467, eleventh edition Grounding and Bonding Equipment
	-	UL 497E, fourth edition Protectors for Antenna Lead-In Conductors
820	UL 444, fifth edition	Communications Cables
	-	UL 497E, fourth edition Protectors for Antenna Lead-In Conductors
	-	UL 1655, second edition Community-Antenna Television Cables

Article	Standard Number	Standard Title
830	UL 444, fifth edition	Communications Cables
	-	UL 497A, third edition
	-	UL 497C, second edition
	-	UL 497E, fourth edition
	-	UL 62368-1, third edition
		Secondary Protectors for Communications Circuits
		Protectors for Coaxial Communications Circuits
		Protectors for Antenna Lead-In Conductors
		Audio/Video, Information and Communication Technology Equipment — Part 1: Safety Requirements
Tables 11(A) and 11(B)	UL 1310, seventh edition	Class 2 Power Units
	UL 1434, first edition	Thermistor-Type Devices
	UL 5085-3, first edition	Low Voltage Transformers — Part 3: Class 2 and Class 3 Transformers
	UL 62368-1, third edition	Audio/Video, Information and Communication Technology Equipment — Part 1: Safety Requirements
Tables 12(A) and 12(B)	UL 1310, seventh edition	Class 2 Power Units
	UL 1434, first edition	Thermistor-Type Devices
	UL 5085-3, first edition	Low Voltage Transformers — Part 3: Class 2 and Class 3 Transformers
	UL 62368-1, third edition	Audio/Video, Information and Communication Technology Equipment — Part 1: Safety Requirements

Table A.1(3) Product Safety Standards for Conductors and Equipment That Do Not Have an Associated Listing Requirement and Other Referenced Publications

Article	Standard Number	Standard Title
110	NEMA CY 70001-2023	Cybersecurity Implementation Guidance for Connected Electrical Infrastructure
	-	UL 969, fifth edition
		Marking and Labeling Systems

<u>Article</u>	<u>Standard Number</u>	<u>Standard Title</u>	
	-	UL 9691, first edition	Recommended Practice for Nameplates for Use in Electrical Installations
210	UL 1053, seventh edition	Ground-Fault Sensing and Relaying Equipment	
215	UL 1053, seventh edition	Ground-Fault Sensing and Relaying Equipment	
240	NEMA CY 70001-2023	Cybersecurity Implementation Guidance for Connected Electrical Infrastructure	
245	IEEE C37.09	IEEE Standard Test Procedures for AC High-Voltage Circuit Breakers with Rated Maximum Voltage Above 1000 V	
	-	IEEE C37.41	IEEE Standard Design Tests for High-Voltage (>1000 V) Fuses and Accessories
	-	IEEE C37.42	IEEE Standard Specifications for High-Voltage (>1000 V) Fuses and Accessories
	-	NEMA C37.54	NEMA Standard Indoor AC High Voltage Circuit Breakers Applied as Removable Elements in Metal-Enclosed Switchgear — Conformance Test Procedures
265	UL 6, fifteenth edition	Electrical Rigid Metal Conduit — Steel	
	-	UL 6A, second edition	Electrical Rigid Metal Conduit — Aluminum, Red Brass and Stainless Steel
	-	UL 347, seventh edition	Medium-Voltage AC Contactors, Controllers, and Control Centers
	-	UL 360, seventh edition	Liquid-Tight Flexible Metal Conduit
	-	UL 486C, eighth edition	Splicing Wire Connectors
	-	UL 514B, sixth edition	Conduit, Tubing and Cable Fittings
	-	UL 651, eighth edition	Schedule 40, 80, Type EB and A Rigid PVC Conduit and Fittings
	-	UL 1008A, second edition	Transfer Switch Equipment, Over 1000 Volts
	-	UL 1242, fourth edition	Electrical Intermediate Metal Conduit — Steel
	-	UL 1660, sixth edition	Liquid-Tight Flexible Nonmetallic Conduit
	-	UL 2200, third edition	Stationary Engine Generator Assemblies
	-	UL 2515, second edition	Aboveground Reinforced Thermosetting Resin Conduit (RTRC) and Fittings
	-	UL 2876, first edition	Remote Racking Devices for Switchgear and Controlgear
300	UL 635, third edition	Insulating Bushings	

<u>Article</u>	<u>Standard Number</u>	<u>Standard Title</u>	
314	UL 514B, sixth edition	Conduit, Tubing, and Cable Fittings	
	-	UL 2239, second edition	Hardware for the Support of Conduit, Tubing and Cable
	-	UL 3004, second edition	Outline of Investigation for Medium Voltage Junction Boxes
320	UL 514A, eleventh edition	Metallic Outlet Boxes	
	-	UL 2239, second edition	Hardware for the Support of Conduit, Tubing and Cable
322	UL 5, fifteenth edition	Surface Metal Raceways and Fittings	
	-	UL 2239, second edition	Hardware for the Support of Conduit, Tubing and Cable
324	UL 5, fifteenth edition	Surface Metal Raceways and Fittings	
	-	UL 2239, second edition	Hardware for the Support of Conduit, Tubing and Cable
330	UL 2239, second edition	Hardware for the Support of Conduit, Tubing and Cable	
332	UL 1565, sixth edition	Positioning Devices	
	-	UL 2239, second edition	Hardware for the Support of Conduit, Tubing and Cable
334	UL 6, fifteenth edition	Electrical Rigid Metal Conduit — Steel	
	-	UL 6A, second edition	Electrical Rigid Metal Conduit — Aluminum, Red Brass and Stainless Steel
	-	UL 514B, sixth edition	Conduit, Tubing, and Cable Fittings
	-	UL 651, eighth edition	Schedule 40, 80, Type EB and A Rigid PVC Conduit and Fittings
	-	UL 797, ninth edition	Electrical Metallic Tubing — Steel
	-	UL 797A, third edition	Electrical Metallic Tubing — Aluminum and Stainless Steel
	-	UL 1242, fourth edition	Electrical Intermediate Metal Conduit — Steel
	-	UL 1565, sixth edition	Positioning Devices
	-	UL 2239, second edition	Hardware for the Support of Conduit, Tubing and Cable
	-	UL 2420, first edition	Belowground Reinforced Thermosetting Resin Conduit (RTRC) and Fittings
	-	UL 2515, second edition	Aboveground Reinforced Thermosetting Resin Conduit (RTRC) and Fittings
	-	UL 2515A, first edition	Supplemental Requirements for Extra Heavy Wall Reinforced Thermosetting

<u>Article</u>	<u>Standard Number</u>	<u>Standard Title</u>	
			Resin Conduit (RTRC) and Fittings
335	UL 2250, third edition	Instrumentation Tray Cable	
337	UL 1565, sixth edition	Positioning Devices	
	-	UL 2239, second edition	Hardware for the Support of Conduit, Tubing and Cable
340	UL 493, tenth edition	Thermoplastic-Insulated Underground Feeder and Branch- Circuit Cables	
342	UL 635, third edition	Insulating Bushings	
	-	UL 2239, second edition	Hardware for the Support of Conduit, Tubing and Cable
344	UL 635, third edition	Insulating Bushings	
	-	UL 2239, second edition	Hardware for the Support of Conduit, Tubing and Cable
348	UL 2239, second edition	Hardware for the Support of Conduit, Tubing and Cable	
350	UL 2239, second edition	Hardware for the Support of Conduit, Tubing and Cable	
352	UL 635, third edition	Insulating Bushings	
	-	UL 2239, second edition	Hardware for the Support of Conduit, Tubing and Cable
353	UL 635, third edition	Insulating Bushings	
355	UL 635, third edition	Insulating Bushings	
	-	UL 2239, second edition	Hardware for the Support of Conduit, Tubing and Cable
356	UL 2239, second edition	Hardware for the Support of Conduit, Tubing and Cable	
358	UL 2239, second edition	Hardware for the Support of Conduit, Tubing and Cable	
362	UL 2239, second edition	Hardware for the Support of Conduit, Tubing and Cable	
368	UL 857, thirteenth edition	Busways	
392	UL 568, first edition	Nonmetallic Cable Tray Systems	
400	NEMA WC 58-2017	Portable and Power Feeder Cables for Use in Mines and Similar Applications	

<u>Article</u>	<u>Standard Number</u>	<u>Standard Title</u>	
	-	UL 62, twentieth edition	Flexible Cords and Cables
	-	UL 498, sixteenth edition	Attachment Plugs and Receptacles
	-	UL 498B, first edition	Receptacles with Integral Switching Means
	-	UL 498D, first edition	Attachment Plugs, Cord Connectors and Receptacles with Arcuate (Locking Type) Contacts
	-	UL 498, first edition	Attachment Plugs, Cord Connectors and Receptacles — Enclosure Types for Environmental Protection
	-	UL 514B, sixth edition	Conduit, Tubing, and Cable Fittings
	-	UL 817, twelfth edition	Cord Sets and Power-Supply Cords
	-	UL 1650, first edition	Portable Power Cable
	-	UL 1680, second edition	Stage and Lighting Cables
	-	UL 2263, first edition	Electric Vehicle Cable
402	UL 66, third edition	Fixture Wire	
408	UL 50, fourteenth edition	Enclosures for Electrical Equipment, Non-Environmental Considerations	
	-	UL 50E, third edition	Enclosures for Electrical Equipment, Environmental Considerations
409	UL 1436, sixth edition	Outlet Circuit Testers and Other Similar Indicating Devices	
	-	UL 61010-1, third edition	Electrical Equipment for Measurement, Control, and Laboratory Use — Part 1: General Requirements
	-	UL 61010-2-030, second edition	Electrical Equipment for Measurement, Control, and Laboratory Use — Part 2-30: Particular Requirements for Testing and Measuring Circuits
424	UL 834, fifth edition	Heating, Water Supply, and Power Boilers — Electric	
	-	UL 1693, third edition	Electric Radiant Heating Panels and Heating Panel Sets
	-	UL 1995, fifth edition	Heating and Cooling Equipment
	-	UL 1996, fourth edition	Electric Duct Heaters
	-	UL 60335-1, sixth edition	Safety of Household and Similar Electrical Appliances, Part 1: General Requirements
	-	UL 60335-2-40, fourth edition	Household and Similar Electrical Appliances — Safety — Part 2-40: Particular Requirements for Electrical Heat Pumps, Air-Conditioners and Dehumidifiers
425	UL 834, fifth edition	Heating, Water Supply, and Power Boilers — Electric	
426	UL 1588, fourth edition	Roof and Gutter De-Icing Cable Units	

<u>Article</u>	<u>Standard Number</u>	<u>Standard Title</u>	
427	UL 515, second edition	Electrical Resistance Trace Heating for Commercial Applications	
	-	UL 1462, fourth edition	Mobile Home Pipe Heating Cable
	-	UL 2049, fourth edition	Residential Pipe Heating Cable
430	UL 248-13, third edition	Low Voltage Fuses — Part 13: Semiconductor Fuses	
	-	UL 347, seventh edition	Medium-Voltage AC Contactors, Controllers, and Control Centers
	-	UL 347A, second edition	Medium Voltage Power Conversion Equipment
445	UL 3001, first edition	Distributed Energy Generation and Storage Systems	
-	-	-	
450	IEEE C57.12.00	IEEE Standard for General Requirements for Liquid-Immersed Distribution, Power, and Regulating Transformers	
	-	IEEE C57.12.28	IEEE Standard for Pad-Mounted Equipment — Enclosure Integrity
	-	IEEE C57.12.29	IEEE C57.12.29 IEEE Standard for Pad-Mounted Equipment — Enclosure Integrity for Coastal Environments
	-	IEEE C57.16	IEEE Standard for Requirements, Terminology, and Test Code for Dry-Type Air-Core Series-Connected Reactors
	-	UL 50, fourteenth edition	Enclosures for Electrical Equipment, Non-Environmental Considerations
	-	UL 50E, third edition	Enclosures for Electrical Equipment, Environmental Considerations
	-	UL 248-1, fourth edition	Low-Voltage Fuses — Part 1: General Requirements
	-	UL 248-2, second edition	Low-Voltage Fuses — Part 2: Class C Fuses
	-	UL 248-3, second edition	Low-Voltage Fuses — Part 3: Class CA and CB Fuses
	-	UL 248-4, second edition	Low-Voltage Fuses — Part 4: Class CC Fuses
	-	UL 248-5, second edition	Low-Voltage Fuses — Part 5: Class G Fuses
	-	UL 248-8, third edition	Low-Voltage Fuses — Part 8: Class J Fuses
	-	UL 248-9, second edition	Low-Voltage Fuses — Part 9: Class K Fuses
	-	UL 489, thirteenth edition	Molded-Case Circuit Breakers, Molded-Case Switches and Circuit-Breaker Enclosures
	-	UL 1561, fourth edition	Dry-Type General Purpose and Power Transformers

<u>Article</u>	<u>Standard Number</u>	<u>Standard Title</u>	
	-	UL 1562, fourth edition	Transformers, Distribution, Dry-Type Over 600 Volts
	-	UL 5085, second edition	Low Voltage Transformers — Part 2: General Purpose Transformers
460	UL 810, sixth edition	Capacitors	
	-	UL 1283, seventh edition	Electromagnetic Interference Filters
	-	UL 60384-14, second edition	Fixed Capacitors for Use in Electronic Equipment — Part 14: Sectional Specification: Fixed Capacitors for Electromagnetic Interference Suppression and Connection to the Supply Mains
470	UL 508, eighteenth edition	Industrial Control Equipment	
	-	UL 1283, seventh edition	Electromagnetic Interference Filters
495	IEEE C37.09	IEEE Standard Test Procedures for AC High-Voltage Circuit Breakers with Rated Maximum Voltage Above 1000 V	
	-	IEEE C37.20.2	IEEE Standard for Metal-Clad Switchgear
	-	IEEE C37.20.3	IEEE Standard for Metal-Enclosed Interrupter Switchgear (1 kV–38 kV)
	-	IEEE C37.20.4	IEEE Standard for Indoor AC Switches (1 kV to 38 kV) for Use in Metal-Enclosed Switchgear
	-	IEEE C37.20.6	IEEE Standard for 4.76 kV to 38 kV Rated Ground and Test Devices Used in Enclosures
	-	IEEE C37.20.9	IEEE Standard for Metal-Enclosed Switchgear Rated 1 kV to 52 kV Incorporating Gas Insulating Systems
	-	IEEE C37.23	IEEE Standard for Metal-Enclosed Bus
	-	IEEE C37.41	IEEE Standard Design Tests for High-Voltage (>1000 V) Fuses and Accessories
	-	IEEE C37.42	IEEE Standard Specifications for High-Voltage (>1000 V) Fuses and Accessories
	-	IEEE C37.59	IEEE Standard for Requirements for Conversion of Power Switchgear Equipment
	-	IEEE C37.60	IEEE International Standard — High-voltage switchgear and controlgear — Part 111: Automatic circuit reclosers for alternating current systems up to and including 38 kV

<u>Article</u>	<u>Standard Number</u>	<u>Standard Title</u>
	- IEEE C37.74	IEEE Standard Requirements for Subsurface, Vault, and Padmounted Load-Interrupter Switchgear and Fused Load-Interrupter Switchgear for Alternating Current Systems up to 38 kV
	- NEMA C37.54	American National Standard for Indoor AC High Voltage Circuit Breakers Applied as Removable Elements in Metal-Enclosed Switchgear — Conformance Test Procedures
	- NEMA C37.55	American National Standard for Switchgear — Medium Voltage Metal-Clad Assemblies — Conformance Test Procedures
	- NEMA C37.57	American National Standard for Switchgear — Metal-Enclosed Interrupter Switchgear Assemblies — Conformance Testing
	- NEMA C37.58	American National Standard for Switchgear — Indoor AC Medium Voltage Switches for Use in Metal-Enclosed Switchgear — Conformance Test Procedures
	- UL 347, seventh edition	Medium-Voltage AC Contactors, Controllers, and Control Centers
	- UL 347A, second edition	Medium Voltage Power Conversion Equipment
	- UL 347C, first edition	Medium Voltage Solid State Resistive Load Controllers, Up to 15KV
	- UL 1008A, second edition	Transfer Switch Equipment, Over 1000 Volts
	- UL 2748, first edition	Arcing Fault Quenching Equipment
	- UL 2877, fourth edition	Power Supplies, Medium Voltage
	- UL 3004, second edition	Outline of Investigation for Medium Voltage Junction Boxes
500	ANSI/IEEE C2	National Electrical Safety Code, Section 127A, Coal Handling Areas
	- ANSI/UL 121203	Recommended Practice for Portable/Personal Electronic Products Suitable for Use in Class I, Division 2, Class I, Zone 2, Class II, Division 2, Class III, Division 1, Class III, Division 2, Zone 21 and Zone 22 Hazardous (Classified) Locations
	- API RP 14F	Recommended Practice for Design and Installation of Electrical Systems for Fixed and Floating Offshore Petroleum Facilities for Unclassified and Class I, Division 1 and Division 2 Locations
	- API RP 500	Recommended Practice for Classification of Locations of Electrical Installations at Petroleum Facilities Classified as Class I, Division 1 and Division 2

<u>Article</u>	<u>Standard Number</u>	<u>Standard Title</u>
-	API RP 2003	Protection Against Ignitions Arising Out of Static Lightning and Stray Currents.
-	ASHRAE 15	Safety Standard for Refrigeration Systems.
-	ASME B1.20.1	Pipe Threads, General Purpose (Inch)
-	IEEE 844.2	Standard for Skin Effect Trace Heating of Pipelines, Vessels, Equipment, and Structures — Application Guide for Design, Installation, Testing, Commissioning, and Maintenance
-	IEEE 60079-30-2	IEEE/IEC International Standard for Explosive atmospheres — Part 30-2: Electrical resistance trace heating — Application guide for design, installation, and maintenance
-	IIAR 2	Standard for Safe Design of Closed-Circuit Ammonia Refrigeration Systems
-	ISA-12.10	Area Classification in Hazardous (Classified) Dust Locations
-	ISO 965-1	ISO general purpose metric screw threads — Tolerances — Part 1: Principles and basic data
-	ISO 965-3	ISO general purpose metric screw threads — Tolerances — Part 3: Deviations for constructional screw threads
-	NFPA 30-2024	Flammable and Combustible Liquids Code
-	NFPA 32-2021	Standard for Drycleaning Facilities
-	NFPA 33-2024	Standard for Spray Application Using Flammable or Combustible Materials
-	NFPA 34-2024	Standard for Dipping, Coating, and Printing Processes Using Flammable or Combustible Liquids
-	NFPA 35-2021	Standard for the Manufacture of Organic Coatings
-	NFPA 36-2025	Standard for Solvent Extraction Plants
-	NFPA 45-2024	Standard on Fire Protection for Laboratories Using Chemicals
-	NFPA 55-2026	Compressed Gases and Cryogenic Fluids Code
-	NFPA 58-2024	Liquefied Petroleum Gas Code
-	NFPA 59-2024	Utility LP-Gas Plant Code
-	NFPA 77-2024	Recommended Practice on Static Electricity
-	NFPA 497	Recommended Practice for the Classification of Flammable Liquids, Gases, or Vapors and of Hazardous (Classified) Locations for Electrical Installations in Chemical Process Areas
-	NFPA 499	Recommended Practice for the Classification of Combustible Dusts and

<u>Article</u>	<u>Standard Number</u>	<u>Standard Title</u>
		of Hazardous (Classified) Locations for Electrical Installation in Chemical Process Areas
	- NFPA 780-2026	Standard for the Installation of Lightning Protection Systems
	- NFPA 820-2024	Standard for Fire Protection in Wastewater Treatment and Collection Facilities
	- UL 60079-29-2, second edition	Explosive Atmospheres — Part 29-2: Gas detectors — Selection, installation, use and maintenance of detectors for flammable gases and oxygen
	- UL 120002, second edition	Recommended Practice for Certificates for Equipment for Hazardous (Classified) Locations
	- UL 120101, first edition	Definitions and Information Pertaining to Electrical Equipment in Hazardous Locations
	- UL 121303, first edition	Guide for Use of Detectors for Flammable Gases
-	-	-
501	UL 62, twentieth edition	Flexible Cords and Cables
	-	UL 504, third edition
-	-	-
503	NFPA 505-2024	Fire Safety Standard for Powered Industrial Trucks Including Type Designations, Areas of Use, Conversions, Maintenance, and Operations
504	ISA-RP 12.06.01	Recommended Practice for Wiring Methods for Hazardous (Classified) Locations Instrumentation — Part 1: Intrinsic Safety
505	ANSI/API RP 14FZ	Recommended Practice for Design and Installation of Electrical Systems for Fixed and Floating Offshore Petroleum Facilities for Unclassified and Class I, Zone 0, Zone 1, and Zone 2 Locations
	-	API RP 505
	-	API RP 2003
	-	ASME B1.20.1
	-	EI 15
		Recommended Practice for Classification of Locations for Electrical Installations at Petroleum Facilities Classified as Class I, Zone 0, Zone 1, and Zone 2
		Protection Against Ignitions Arising Out of Static Lightning and Stray Currents.
		Pipe Threads, General Purpose (Inch)
		Model Code of Safe Practice, Part 15: Area Classification Code for Installations Handling Flammable Fluids

<u>Article</u>	<u>Standard Number</u>	<u>Standard Title</u>
	- IEEE 844.2	Skin Effect Trace Heating of Pipelines, Vessels, Equipment, and Structures — Application Guide for Design, Installation, Testing, Commissioning, and Maintenance
	- IEEE 60079-30-2	Explosive Atmospheres — Part 30-2: Electrical resistance trace heating — Application guide for design, installation and maintenance
	- IIAR 2	Standard for Safe Design of Closed-Circuit Ammonia Refrigeration Systems
	- ISA-60079-10-1 (12.24.01)	Explosive Atmospheres — Part 10-1: Classification of Areas — Explosive gas atmospheres
	- ISA-60079-29-2	Explosive Atmospheres — Part 29-2: Gas detectors — Selection, installation, use and maintenance of detectors for flammable gases and oxygen
	- ISO 965-1	ISO general purpose metric screw threads — Tolerances — Part 1: Principles and basic data
	- ISO 965-3	ISO general purpose metric screw threads — Tolerances — Part 3: Deviations for constructional screw threads
	- NFPA 30-2024	Flammable and Combustible Liquids Code
	- NFPA 77-2024	Recommended Practice on Static Electricity
	- NFPA 497-2024	Recommended Practice for the Classification of Flammable Liquids, Gases, or Vapors and of Hazardous (Classified) Locations for Electrical Installations in Chemical Process Areas
	- NFPA 780-2026	Standard for the Installation of Lightning Protection Systems
	- UL 80079-20-1, first edition	Explosive Atmospheres — Part 20-1: Material Characteristics for Gas and Vapour Classification — Test Methods and Data
	- UL 120101, first edition	Definitions and Information Pertaining to Electrical Equipment in Hazardous Locations
	- UL 121303, first edition	Guide for Use of Detectors for Flammable Gases
506	ASME B1.20.1	Pipe Threads, General Purpose (Inch)
	- IEEE 844.2	Skin Effect Trace Heating of Pipelines, Vessels, Equipment, and Structures — Application Guide for Design, Installation, Testing, Commissioning, and Maintenance

<u>Article</u>	<u>Standard Number</u>	<u>Standard Title</u>	
	-	IEEE 60079-30-2	Explosive Atmospheres — Part 30-2: Electrical resistance trace heating — Application guide for design, installation and maintenance
	-	ISA-60079-10-2 (12.10.05)	Explosive Atmospheres — Part 10-2: Classification of Areas — Combustible Dust Atmospheres
	-	NFPA 499	Recommended Practice for the Classification of Combustible Dusts and of Hazardous (Classified) Locations for Electrical Installations in Chemical Process Areas
511	NFPA 30A-2024	Code for Motor Fuel Dispensing Facilities and Repair Garages	
	-	NFPA 88A-2023	Standard for Parking Structures
512	ICC IFC	International Fire Code	
	-	NFPA 1-2023	Fire Code
	-	NFPA 30-2024	Flammable and Combustible Liquids Code
	-	NFPA 33-2024	Standard for Spray Application Using Flammable or Combustible Materials
	-	NFPA 36-2025	Standard for Solvent Extraction Plants
	-	NFPA 58-2024	Liquefied Petroleum Gas Code
	-	NFPA 70B-2023	Standard for Electrical Equipment Maintenance
	-	NFPA 497-2024	Recommended Practice for the Classification of Flammable Liquids, Gases, or Vapors and of Hazardous (Classified) Locations for Electrical Installations in Chemical Process Areas
513	NFPA 30-2024	Flammable and Combustible Liquids Code	
	-	NFPA 33-2024	Standard for Spray Application Using Flammable or Combustible Materials
	-	NFPA 409-2022	Standard on Aircraft Hangars
514	NFPA 2-2023	Hydrogen Technologies Code	
	-	NFPA 30A-2024	Code for Motor Fuel Dispensing Facilities and Repair Garages
	-	NFPA 52-2023	Vehicular Natural Gas Fuel Systems Code
	-	NFPA 58-2024	Liquefied Petroleum Gas Code
	-	NFPA 59-2024	Utility LP-Gas Plant Code
	-	NFPA 303-2026	Fire Protection Standard for Marinas and Boatyards
515	NFPA 30-2024	Flammable and Combustible Liquids Code	
516	NFPA 13-2025	Standard for the Installation of Sprinkler Systems	

<u>Article</u>	<u>Standard Number</u>	<u>Standard Title</u>	
	-	NFPA 33-2024	Standard for Spray Application Using Flammable or Combustible Materials
	-	NFPA 34-2024	Standard for Dipping, Coating, and Printing Processes Using Flammable or Combustible Liquids
	-	NFPA 77-2024	Recommended Practice on Static Electricity
	-	NFPA 91-2026	Standard for Exhaust Systems for Air Conveying of Vapors, Gases, Mists, and Particulate Solids
	-	NFPA 701-2023	Standard Methods of Fire Tests for Flame Propagation of Textiles and Films
620	UL 4, fifteenth edition	Armored Cable	
	-	UL 44, nineteenth edition	Thermoset-Insulated Wires and Cables
	-	UL 66, third edition	Fixture Wire
	-	UL 504, third edition	Mineral-Insulated, Metal Sheathed Cable
	-	UL 1063, ninth edition	Machine-Tool Wires and Cables
	-	UL 1569, fifth edition	Metal-Clad Cables
625	UL 3001, first edition	Distributed Energy Generation and Storage Systems	
630	UL 1276, third edition	Welding Cable	
650	UL 1651, fourth edition	Optical Fiber Cable	
660	UL 62, twentieth edition	Flexible Cords and Cables	
	-	UL 817, twelfth edition	Cord Sets and Power-Supply Cords
668	UL 4, fifteenth edition	Armored Cable	
	-	UL 62, twentieth edition	Flexible Cords and Cables
670	UL 1740, fourth edition	Standard for Robots and Robotic Equipment	
	-	UL 2011, seventh edition	Machinery
	-	UL 3100, first edition	Automated Mobile Platforms (AMPs)
675	UL 44, nineteenth edition	Thermoset-Insulated Wires and Cables	
	-	UL 83, sixteenth edition	Thermoplastic-Insulated Wires and Cables
	-	UL 83A, first edition	Fluoropolymer Insulated Wire
	-	UL 1063, ninth edition	Machine-Tool Wires and Cables
	-	UL 1263, sixth edition	Irrigation Cable
690	UL 3001, first edition	Distributed Energy Generation and Storage Systems	

<u>Article</u>	<u>Standard Number</u>	<u>Standard Title</u>	
691	UL 3001, first edition	Distributed Energy Generation and Storage Systems	
692	UL 44, nineteenth edition	Thermoset-Insulated Wires and Cables	
	-	UL 83, sixteenth edition	Thermoplastic-Insulated Wires and Cables
	-	UL 83A, first edition	Fluoropolymer Insulated Wire
	-	UL 1063, ninth edition	Machine-Tool Wires and Cables
	-	UL 3001, first edition	Distributed Energy Generation and Storage Systems
694	UL 44, nineteenth edition	Thermoset-Insulated Wires and Cables	
	-	UL 62, twentieth edition	Flexible Cords and Cables
	-	UL 83, sixteenth edition	Thermoplastic-Insulated Wires and Cables
	-	UL 83A, first edition	Fluoropolymer Insulated Wire
	-	UL 1063, ninth edition	Machine-Tool Wires and Cables
	-	UL 3001, first edition	Distributed Energy Generation and Storage Systems
700	UL 1598C, second edition	Light-Emitting Diode (LED) Retrofit Luminaire Conversion Kits	
	-	UL 3001, first edition	Distributed Energy Generation and Storage Systems
	-	UL 3008, third edition	Automatic Interconnection Switches for Emergency Systems
701	UL 3001, first edition	Distributed Energy Generation and Storage Systems	
	-	UL 3008, third edition	Automatic Interconnection Switches for Emergency Systems
702	UL 3001, first edition	Distributed Energy Generation and Storage Systems	
705	UL 3001, first edition	Distributed Energy Generation and Storage Systems	
708	NEMA CY 70001-2023	Cybersecurity Implementation Guidance for Connected Electrical Infrastructure	
710	UL 3001, first edition	Distributed Energy Generation and Storage Systems	

Statement of Problem and Substantiation for Public Input

There is no product safety standard known as "UL 9741A - Onboard Electric Vehicle Power Export and Import Equipment". Product safety standards and outlines of investigation from 624.1 included.

Submitter Information Verification

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Committee: NEC-P01

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Public Input No. 2633-NFPA 70-2026 [Global Input]

As the NEC has taken major steps in evolving relative to a completely new structure and organization, It has become more complex and repetitive, violating the NEC Style Manual and introducing confusion in many respects. The concepts in 90.3 that assist users in understanding the NEC and applying it, are being dismantled. Significant changes in the development and long-term evolution of the NEC are necessary for the industry, NFPA, and the future users of the document.

This global Public Input suggests that The NEC be divided into two Codes, NFPA 70-National Electrical Code Part 1 (for everything 1000 volts and less and 1500 volts dc), and NFPA 70-National Electrical Code Part 2 (everything over 1000 volts, 1500 volts dc).

This suggested change actually will expand the NEC and allow for the anticipated growth of both parts in the future. It also establishes a new Code into the NFPA library of Codes and Standards. The suggested Global Input and associated development work could be a planned migration over a cycle or two if needed.

Much of this work has already been started with the separation of the low voltage (1000 volts and less) from the medium and high voltage (over 1000 volts) requirements. So separating those requirements and definition and so forth into two documents makes sense long term.

This would also allow the original 90.3 to maintain its validity and use as it has enjoyed since the 1937 edition. This change would also allow for the integration of and correlation with the voltage classifications into the NEC to be consistent with the existing voltage classification structure in ANSI C 84.

This revision would also be less burdensome for many organizations that use the current NEC structure for licensing and certification exams, NEC-based training, contractor project management and estimation software, apprenticeship training programs and so forth. It could also ease and streamline the adoption processes across North American states that adopt the NEC legally for use by enforcing jurisdictions.

Statement of Problem and Substantiation for Public Input

The NEC is expanding and being reorganized into a large and much more complex document that is getting harder for users. Separating the 1000 volt rules from the over 1000 volt rules makes sense and seems to be a logical solution for those involved in its evolution, especially the NFPA.

Much of this work has already been started with the separation of the low voltage (1000 volts and less) from the medium and high voltage (over 1000 volts) requirements. So separating those requirements and definition and so forth into two documents makes sense long term.

This would also allow the original 90.3 to maintain its validity and use as it has enjoyed since the 1937 edition. This change would also allow for the integration of and correlation with the voltage classifications into the NEC to be consistent with the existing voltage classification structure in ANSI C 84.

This revision would also be less burdensome for many organizations that use the current NEC structure for licensing and certification exams, NEC-based training, contractor project management and estimation software, apprenticeship training programs and so forth. It could also ease and streamline the adoption processes across North American states that adopt the NEC legally for use by enforcing jurisdictions.

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Public Input No. 2796-NFPA 70-2026 [Global Input]

Interconnected power production sources

Statement of Problem and Substantiation for Public Input

See Public Input No. 2758 which seeks to strike "electric" from the phrase Interconnected Electric Power Production Sources.

Occurrences based on NFPALink search:

230.4(A)(5)

230.82

692.1

705.1

710.1

100 Electric Vehicle (EV)

705.11

705.40

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
<u>Public Input No. 2758-NFPA 70-2026 [Article 705]</u>	Editorial cleanup

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Submittal Date: Mon Apr 06 11:23:42 EDT 2026

Committee: NEC-P04

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Public Input No. 2867-NFPA 70-2026 [Global Input]

This is a companion of PI 2860, which seeks to add Class 5 to article 726

Add "and Class 5" or similar to all instances of the phrase "Class 4" in the code that occur in Chapters 1-6.

Statement of Problem and Substantiation for Public Input

PI 2860 creates a Class 5, substantially similar to Class 4 circuits, with identical safety performance criteria. The new Class 5 designation is required to address applications of Fault Managed Power where the working voltage exceeds that allowed by Class 4 and requires cabling with a higher voltage rating.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
<u>Public Input No. 2860-NFPA 70-2026 [Article 726]</u>	companion

Submitter Information Verification

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Committee: NEC-P16

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Public Input No. 3276-NFPA 70-2026 [Global Input]

Type your content here ...

- Change the term "normal" to "typical" or "intended" throughout this Standard.
- Change the term "normally" to "typically" throughout this Standard.
- Change the term "abnormal" to "atypical" or "unintended" throughout this Standard.

Statement of Problem and Substantiation for Public Input

The terms "normal", "normally", and "abnormal" can be seen as non-inclusive and less suitable for international use and translation.

1. In common industry usage, function-based terms are widely understood and are more technically descriptive, such as intended and typical.
2. Using the proposed term(s) improves clarity for a broader range of users, including non-specialists, because the term(s) describe the intended function rather than a metaphor.
3. The proposed term(s) align with plain-language writing practices and improve translatability for international audiences.
4. The change supports ULSE's inclusive language goals by replacing terms with neutral, technically descriptive alternatives without changing any technical requirement. Proposals are being made across ULSE's portfolio supporting inclusive language.

Submitter Information Verification

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Committee: NEC-P01

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Public Input No. 3684-NFPA 70-2026 [Global Input]

Change the term "within sight from", within sight of", within sight" globally to "within sight from" throughout the NEC.

Type your content here ...

Statement of Problem and Substantiation for Public Input

Simplify the wording and make it consistent.

Submitter Information Verification

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Submittal Date: Thu Apr 09 16:49:05 EDT 2026

Committee: NEC-P01

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Public Input No. 1719-NFPA 70-2026 [Global Input]

Type your content here ...

Additional Proposed Changes

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
Global_Public_Input_Portable-Mobile-Transportable.docx	Global Public Input regarding the definitions Portable, Mobile and Transportable	

Statement of Problem and Substantiation for Public Input

Substantiation: This Public Input is being submitted on behalf of the NEC Correlating Committee Portable Definitions Task Group which includes David Williams, Dan Neeser, Seth Carlton, Rich Holub, David Kendall and Matt Hittinger.

The task group was assigned to review the definitions of Equipment, Mobile; Equipment, Portable; Portable and Portable (as applied to equipment), Platform, Portable and create one general definition for the term "Portable", "Mobile" and "Transportable". The Task Group has proposed Public Inputs for the defined terms as shown and for deleting the other thirteen terms. This Global Public Input is required to ensure consistent use of the terms throughout the Code.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
Public Input No. 1701-NFPA 70-2026 [Definition: Portable.]	
Public Input No. 1702-NFPA 70-2026 [Definition: Mobile.]	
Public Input No. 1703-NFPA 70-2026 [Definition: Transportable.]	

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Submission Date: Thu Mar 19 15:08:25 EDT 2026

Committee: NEC-P12

Global Public Input

Three public inputs are proposed to provide global definitions of the adjectives "Portable", "Mobile", and "Transportable".

PI1701 **Portable.** Able to be carried or moved by a single person without mechanical aids.

PI1702 **Mobile.** Able to be moved only by two or more persons or with mechanical aids.

PI1703 **Transportable.** Intended to be moved by a vehicle.

All Code Making Panels are requested to create first revisions, where appropriate, pertaining to the use of terms including the words "portable", "mobile", or "transportable" and ensure the appropriate defined adjective is used.

Substantiation: This Public Input is being submitted on behalf of the NEC Correlating Committee Portable Definitions Task Group which includes David Williams, Dan Neeser, Seth Carlton, Rich Holub, David Kendall and Matt Hittinger.

The task group was assigned to review the definitions of Equipment, Mobile; Equipment, Portable; Portable and Portable (as applied to equipment), Platform, Portable and create one general definition for the term "Portable", "Mobile" and "Transportable". The Task Group has proposed Public Inputs for the defined terms as shown and for deleting the other thirteen terms. This Global Public Input is required to ensure consistent use of the terms throughout the Code.



Public Input No. 2890-NFPA 70-2026 [Global Input]

Revisions to current article 646, new article 1608 are provided in the attached file.

Additional Proposed Changes

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
1608_P1.docx	Suggested language and substantiation from CC Datacenter TG for article 1608	

Statement of Problem and Substantiation for Public Input

See the attached file for the substantiation for this Global Input.

The recommendations contained in this global public input are the result of the work conducted by the Correlating Committee Datacenter Task Group chaired by Todd Lottmann (Eaton) with additional Task Group members including Jack Lyons (NEMA), Ernie Gallo (ATIS), Keith Waters (Schnider Electric), David Kendall (ABB), Christine Porter (Intertek) David Humphrey (IAEI), Robert Osborne (UL), Joel Goergen (Cisco), Brian Deckard (Siemens), Joseph Borowski (Google), Darryl Hill (IBEW), Eddie Rodriguez (IEC), Joe Prisco (IBM), James Walters (Meta), and Brandon DeVaul (Microsoft). In addition to these task group members, over 30 guests participated in the development of this global input, showing the wide range of input received while processing this recommendation. This is a consensus recommendation from the Task Group members that meets the direction given to them which is "Data Centers, and the infrastructure that supports them, are evolving quickly. Articles 645 and 646 have been used in the past for IT applications and data centers, but the rapid pace of development of "AI data centers", where modular systems operate at DC voltages, utilize wiring methods that are not recognized in Chapter 3, and may have other challenges with existing rules. A Task Group should identify gaps and make public Inputs to address any gaps."

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
<u>Public Input No. 2889-NFPA 70-2026</u> <u>[Definition: Data Center, Modular (MDC).</u> <u>(Modular Data Cente...]</u>	Definition tied to the recommendation from the CC Datacenter Task Group for article 1608
<u>Public Input No. 2889-NFPA 70-2026</u> <u>[Definition: Data Center, Modular (MDC).</u> <u>(Modular Data Cente...]</u>	

Submitter Information Verification

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Submittal Date: Mon Apr 06 18:32:58 EDT 2026

Clean Text Version

Article 1608 Modular Assemblies

1608.1 Scope.

This article covers modular assemblies.

1608.2 Listing and Field Labeling Requirements.

All modular assemblies shall be listed or field labeled.

1608.4 Other Requirements

Modular assemblies shall additionally comply with other requirements applicable to the equipment, application, and occupancy unless amended by this article. Refer to Table 1608.4 for requirements that apply to modular assemblies intended for specific applications.

Table 1608.4 Other Requirements

Application	Requirements
Energy Storage	Article 706
Data Centers	Chapter 23
HVAC	Article 440

1608.5 Nameplate Data.

A permanent nameplate shall be attached to each modular assembly and shall be plainly visible after installation. The nameplate shall include the following information, as applicable:

1. Manufacturer's name or trademark.
2. Supply voltage
3. Current
4. Number of phases
5. Frequency (if ac)
6. Separately derived system grounding configuration, if applicable.
7. For modular equipment that is not powered by a separate service, feeder, or branch circuit, a reference to the powering equipment.
8. Electrical diagram number(s) or the number of the index to the electrical drawings.
9. Short-circuit current rating of the modular assembly based on one of the following:
 - a. Short-circuit current rating of a listed modular assembly
 - b. For field labeled equipment, short-circuit current rating established using an approved method

1608.6 Multiple Assemblies.

When listed as multiple assemblies intended for group installation, each assembly shall be identified as part of the group assembly and provided with information regarding interconnections.

1608.7 Additional Documentation.

Additional documentation shall be provided to indicate all factory installed equipment and complete schematic diagrams showing electrical circuits within the assembly. Documentation shall be permitted to be provided electronically.

1608.8 Supply Conductors – Size.

Modular assemblies shall be considered a continuous load based on its current rating when sizing the supply conductors.

Informational Note No. 1: See the 0-2000-volt ampacity tables of Article 310 for ampacity of conductors rated 1000 Vac, 1500 Vdc, nominal and below.

Informational Note No. 2: See 430.22(E) and 430.26 for duty cycle requirements.

1608.9 Overcurrent Protection.

Where overcurrent protection is provided as part of the modular assembly, overcurrent protection for each supply circuit shall comply with 1608.8(A) through 1608.8(B).

(A) Service Equipment – Overcurrent Protection. Service conductors shall be provided with overcurrent protection in accordance with Article 230 Part VII or Article 268, Part VII.

(B) Taps and Feeders. Taps and feeders as permitted by 240.21 shall comply with the following:

- (1) The overcurrent protection shall consist of a single circuit breaker or set of fuses.
- (2) The modular assembly shall be marked "OVERCURRENT PROTECTION PROVIDED AT MODULAR ASSEMBLY SUPPLY TERMINALS."
- (3) The supply conductors shall be considered either as feeders or as taps and be provided with overcurrent protection complying with 240.21.

1608.10 Short-Circuit Current Rating.

(A) Service Equipment.

The service equipment that connects directly to a service shall have a short-circuit current rating not less than the available fault current of the service.

(B) Modular Assemblies Connected to Branch Circuits and Feeders.

Modular assemblies that connect to a branch circuit or a feeder circuit shall have a short-circuit current rating not less than the available fault current of the branch circuit or feeder.

Exception: This requirement shall not apply to listed equipment connected to branch circuits located inside of the modular assembly.

Informational Note: See UL 508A, *Standard for Industrial Control Panels, Supplement SB*, for an example of an approved method.

(C) Modular Assemblies Powered from Separate Modular Assemblies.

Modular assemblies powered from a separate modular assembly (powering module) that is not part of the specific modular assembly that is listed as a system shall have a short-circuit current rating coordinated with the powering module in accordance with 110.10.

Informational Note: See UL 508A, *Standard for Industrial Control Panels, Supplement SB*, for an example of an approved method for determining short-circuit current ratings.

1608.11 Field Connections.

Connections that are required to be terminated in the field shall be in a readily accessible location after the assembly is installed.

1608.12 Distribution Transformers.

(A) Utility-Owned Transformers.

Utility-owned distribution transformers shall not be permitted in a modular assembly.

(B) Non-Utility-Owned Transformers.

Non-utility-owned premises distribution transformers of a modular assembly shall be of the dry type or the type filled with a noncombustible dielectric medium.

1608.13 Equipment Requiring Servicing.

At least one 125-volt ac, 15- or 20-ampere-rated receptacle shall be installed at an accessible location within each work area of the modular assembly to facilitate the powering of test and measurement equipment during routine maintenance and servicing, without having to route flexible power cords through or across doorways or around line-ups of equipment, or the like. The receptacle outlet shall not be connected to the load side of the equipment's branch-circuit disconnecting means.

Informational Note: Listed equipment often includes a service receptacle outlet as part of the modular assembly.

1608.14 Other Electrical Equipment.

Electrical equipment that is an integral part of the modular assembly, including lighting, control, power, HVAC (heating, ventilation, and air conditioning), emergency lighting, alarm circuits, information technology equipment, and so forth, shall comply with the requirements for its use and installation and shall be listed.

1608.15 General Illumination for Enclosed Modular Assemblies.

Illumination shall be provided for all workspaces and areas that are used for exit access and exit discharge of an enclosed modular assembly. The illumination shall be arranged so that the failure of any single lighting unit does not result in a complete loss of illumination.

Informational Note: See NFPA 101, *Life Safety Code*, Section 7.8 for information on illumination of means of egress.

1608.16 Emergency Lighting for Enclosed Modular Assemblies.

Areas that are used for exit access and exit discharge of an enclosed modular assembly shall be provided with emergency lighting. Emergency lighting systems shall be listed equipment installed in accordance with the manufacturer's instructions.

Informational Note: See NFPA 101, *Life Safety Code*, Section 7.9 for information on emergency lighting.

1608.17 Emergency Lighting Circuits for Enclosed Modular Assemblies.

No appliances or lamps, other than those specified as required for emergency use, shall be supplied by emergency lighting circuits for enclosed modular assemblies. Branch circuits supplying emergency lighting shall be installed to provide service from storage batteries,

generator sets, UPS, separate service, fuel cells, or unit equipment. No other equipment shall be connected to these circuits unless the emergency lighting system includes a backup system where only the lighting is supplied by battery circuits under power failure conditions. All boxes and enclosures (including transfer switches, generators, and power panels) for emergency circuits shall be marked to identify them as components of an emergency circuit or system.

1608.18 Entrance to and Egress from Working Space.

For equipment over 1.8 m (6 ft) wide or deep, there shall be one entrance to and egress from the required working space not less than 610 mm (24 in.) wide and 2.0 m (6 1/2 ft) high at each end of the working space. Doors shall open to the full extent of their designed egress opening and be equipped with listed panic hardware or listed fire exit hardware. A single entrance to and egress from the required working space shall be permitted where either of the conditions in 1608.18(A) or 1608.18(B) is met.

(A) Unobstructed Egress.

Where the location permits a continuous and unobstructed way of egress travel, a single entrance to the working space shall be permitted.

(B) Extra Working Space.

Where the depth of the working space is twice that required by 110.26(A)(1), a single entrance shall be permitted. It shall be located such that the distance from the equipment to the nearest edge of the entrance is not less than the minimum clear distance specified in Table 110.26(A)(1) for equipment operating at that voltage and in that condition.

1608.19 Spaces About Electrical Equipment

In Modular Assemblies where electrical equipment is being installed, working clearances from Table 110.26(A)(1), Condition 2, shall be permitted between electrical equipment located across the aisle from each other where installed in industrial establishments where the conditions of maintenance and supervision ensure that written procedures have been adopted to prohibit equipment on both sides of the aisle from being open at the same time and qualified persons who are authorized will service the installation.

1608.20. Flexible Power Cords and Cables for Connecting Equipment Enclosures of a Modular Assembly.

(A) Uses Permitted.

Flexible power cords and cables shall be permitted to be used for connections between equipment within enclosed modular assembly where not subject to physical damage. Where flexible power cords or cables are used, they shall be listed as suitable for extra-hard usage.

(B) Uses Not Permitted.

Flexible power cords and cables shall not be used for connection to sources of power external to the enclosed modular assembly.

Informational Note: Examples of external sources of power are electrical services, feeders, and premises branch circuits.

(C) Single-Conductor Cable.

Single-conductor power cable shall be permitted to be used only in sizes 2 AWG or larger.

Legislative Version

Article 6461608 Modular AssembliesData-Centers

Part I. General

1608646.1 Scope.

This article covers modular data-centersassemblies.

Informational Note No. 1: Modular data-centers include the installed information technology equipment (ITE) and support equipment, electrical supply and distribution, wiring and protection, working space, grounding, HVAC, and the like, that are located in an equipment enclosure.

Informational Note No. 2: See NFPA 75, *Standard for the Fire Protection of Information Technology Equipment*, which covers the requirements for the protection of information technology equipment and systems in an information technology equipment room.

Informational Note No. 3: See UL 60950-1, *Information Technology Equipment — Safety — Part 1: General Requirements*, and UL 62368-1, *Audio/Video, Information and Communication Technology Equipment — Part 1: Safety Requirements*, for information on listing requirements for both information technology equipment and communications equipment contained within a modular data-center.

Informational Note No. 4: *Modular data-centers* are sometimes referred to as containerized data-centers.

Informational Note No. 5: Equipment enclosures housing only support equipment (e.g., HVAC or power distribution equipment) that are not part of a specific modular data-center are not considered a modular data-center.

1608646.25 Applicable RequirementsListing Requirements.

All MDCs-modular assemblies shall be listed or field labeled and labeled and comply with 646.24(B) and 646.6 through 646.10 or comply with this article.

Informational Note: See UL Subject 2755, *Outline of Investiga*

1608.4 Other Requirements

Modular assemblies shall additionally comply with other requirements applicable to the equipment, application, and occupancy unless amended by this article. Refer to Table 1608.4 for requirements that apply to modular assemblies intended for specific applications.

Table 1608.4 Other Requirements

<u>Application</u>	<u>Requirements</u>
<u>Energy Storage</u>	<u>Article 706</u>
<u>Data Centers</u>	<u>Chapter 23</u>
<u>HVAC</u>	<u>Article 440</u>

1608.5 646.6 Nameplate Data.

A permanent nameplate shall be attached to each equipment enclosure of an MDCmodular assembly and shall be plainly visible after installation. The nameplate shall include the following information, as applicable:

1. Manufacturer's name or trademark. (1)–
2. Supply voltage

3. Current,~~n~~
4. Number of phases,~~n~~
5. Frequency (if ac)~~n~~
6. Separately derived system gGrounding cConfiguration, if applicable.-
7. For modular equipment that is not powered by a separate service, feeder, or branch circuit, a reference to the powering equipment.
8. Electrical diagram number(s) or the number of the index to the electrical drawings.

1. ~~and full-load current. The full-load current shown on the nameplate shall not be less than the sum of the full-load currents required for all motors and other equipment that may be in operation at the same time under normal conditions of use. Where unusual type loads, duty cycles, and so forth, require oversized conductors or permit reduced-size conductors, the required capacity shall be included in the marked full-load current. Where more than one incoming supply circuit is to be provided, the nameplate shall state the preceding information for each circuit. For listed equipment, the full-load current shown on the nameplate shall be permitted to be the maximum, measured, 15-minute, average full-load current.-~~

Informational Note No. 1: See 430.22(E) and 430.26 for duty cycle requirements.

1. (2) ~~For MDCs powered by a separate service, the short-circuit current rating of the service equipment provided as part of the MDC.-~~
9. Short-circuit current rating of the modular assembly based on one of the following:

- a. Short-circuit current rating of a listed modular assembly
- b. For field labeled equipment, short-circuit current rating established using an approved method

Informational Note No. 2: This rating may be part of the service equipment marking.

- (3) ~~For MDCs powered by a separate service, if the required service as determined by Article 120 Parts I, III, and IV is less than the rating of the service panel used, the required service shall be included on the nameplate. As an alternative to the feeder and service load calculations required by Article 120 Parts III and IV, feeder and service load calculations for new, future, or existing loads shall be permitted to be used if performed by qualified persons under engineering supervision.-~~

Informational Note No. 3: Branch circuits supplying ITE loads are assumed to be loaded not less than 80 percent of the branch-circuit rating with a 100-percent duty cycle.

- (4) Electrical diagram number(s) or the number of the index to the electrical drawings.
- (5) ~~For MDC equipment enclosures that are not powered by a separate service, feeder, or branch circuit, a reference to the powering equipment.~~
- (6) ~~Manufacturer's name or trademark.-~~

1608.6 Multiple Assemblies.

When listed as multiple assemblies intended for group installation, each assembly shall be identified as part of the group assembly and provided with information regarding interconnections.

1608.7 Additional Documentation

Additional documentation shall be provided to indicate all factory installed equipment and complete schematic diagrams showing electrical circuits within the assembly. Documentation shall be permitted to be provided electronically.

~~646.7 Supply Conductors and Overcurrent Protection.-~~

1608.8 ~~646.7(A)~~ Supply Conductors – Size.

(A) Size.

~~The size of the supply conductor shall be such as to have an ampacity not less than 125 percent of the full load current rating. Modular assemblies shall be considered a continuous load based on its current rating when sizing the supply conductors.~~

Informational Note No. 1: See the 0-2000-volt ampacity tables of Article 310 for ampacity of conductors rated 10600 Vac, 1500 Vdc, nominal and below.

Informational Note No. 2: See 430.22(E) and 430.26 for duty cycle requirements.

1608.9-646.7(B) Overcurrent Protection.

Where overcurrent protection for supply conductors is furnished provided as part of the modular assembly, overcurrent protection for each supply circuit shall comply with 1608.86(A) through 1608.86(B).

(A) (1) Service Equipment — Overcurrent Protection. Service conductors shall be provided with overcurrent protection in accordance with ~~230.90 through 230.95~~ Article 230 Part VII or Article 268, Part VII.

(B) Taps and Feeders. Taps and feeders as permitted by 240.21 shall comply with the following:

- (1) The overcurrent protection shall consist of a single circuit breaker or set of fuses.
- (2) The modular assembly shall be marked "OVERCURRENT PROTECTION PROVIDED AT MODULAR ASSEMBLY SUPPLY TERMINALS."
- (3) The supply conductors shall be considered either as feeders or as taps and be provided with overcurrent protection complying with 240.21.

1608.106646.8 Short-Circuit Current Rating.

(A) Service Equipment.

The service equipment of ~~an MDC~~ that connects directly to a service shall have a short-circuit current rating not less than the available fault current of the service.

(B) Modular AssembliesMDCs Connected to Branch Circuits and Feeders.

Modular ~~assemblies~~~~data centers~~ that connect to a branch circuit or a feeder circuit shall have a short-circuit current rating not less than the available fault current of the branch circuit or feeder. ~~The short-circuit current rating of the modular assemblyMDC shall be based on the short-circuit current rating of a listed or field and labeled modular assembly,MDC or the short-circuit current rating established using an approved method.~~

Exception: This requirement shall not apply to listed ~~and labeled~~ equipment connected to branch circuits located inside of the modular assembly-MDC equipment enclosure.

Informational Note: See UL 508A, *Standard for Industrial Control Panels, Supplement SB*, for an example of an approved method.

(C) MDCs-Modular Assemblies Powered from Separate Modular AssembliesMDC System Enclosures.

Modular ~~assemblies~~~~data center equipment enclosures~~, powered from a separate modular assembly (powering module)MDC system enclosure that is not part of the specific modular assembly that is listed as a MDC-system, shall have a short-circuit current rating coordinated with the powering module in accordance with 110.10-.

Informational Note: See UL 508A, *Standard for Industrial Control Panels, Supplement SB*, for an example of an approved method for determining short-circuit current ratings.

1608.646.119 ~~Field Connections-Wiring Compartments.~~

~~Connections that are required to be terminated in the field. A field wiring compartment in which service or feeder connections are to be made shall be in a readily accessible location after the assembly is installed. and comply with the following:-~~

- ~~(1) Permit the connection of the supply wires after the modular assemblyMDC is installed~~
- ~~(2) Permit the connection to be introduced and readily connected~~
- ~~(3) Be located so that the connections may be readily inspected after the modular assemblyMDC is installed~~

646.10 ~~Flexible Power Cords and Cables for Connecting Equipment Enclosures of an MDC System.~~

(A) Uses Permitted.

~~Flexible power cords and cables shall be permitted to be used for connections between equipment enclosures of an MDC system where not subject to physical damage. Where flexible power cords or cables are used, they shall be listed as suitable for extra hard usage. Where used outdoors, flexible power cords and cables shall also be listed as suitable for wet locations and shall be sunlight resistant.~~

~~Informational Note: One example of flexible power cord usage for connections between equipment enclosures of an MDC system is between an MDC enclosure containing only servers and one containing power distribution equipment.~~

(B) Uses Not Permitted.

~~Flexible power cords and cables shall not be used for connection to external sources of power.~~

~~Informational Note: Examples of external sources of power are electrical services, feeders, and premises branch circuits.~~

(C) Single Conductor Cable.

~~Single conductor power cable shall be permitted to be used only in sizes 2 AWG or larger.~~

Part II. Equipment

646.20 ~~Electrical Supply and Distribution.~~

~~Equipment used for electrical supply and distribution in an MDC, including fittings, devices, luminaires, apparatus, machinery, and the like, shall comply with Article 110 Parts I and II.~~

1608.127646.21 ~~Distribution Transformers.~~

(A) Utility-Owned Transformers.

~~Utility-owned distribution transformers shall not be permitted in a modular assemblyMDC.~~

(B) Non-Utility-Owned Premises Transformers.

~~Non-utility-owned premises distribution transformers installed in the vicinity of a modular assemblyMDC shall be of the dry type or the type filled with a noncombustible dielectric medium. Such transformers shall be installed in accordance with Article 450 Parts I and II. Non-utility-owned premises distribution transformers shall not be permitted in an MDC.~~

(C) Power Transformers.

~~Power transformers that supply power only to the modular assemblyMDC shall be permitted as part of the modular assemblyin the MDC equipment enclosure. Only dry-type transformers shall be permitted in the modular assemblyMDC equipment enclosure.~~

1608.138646.22 ~~Equipment Requiring Servicing. Receptacles.~~

At least one 125-volt ac, 15- or 20-ampere-rated ~~receptacle duplex convenience outlet~~ shall be installed at an accessible location within provided in each work area of the modular assemblyMDC to facilitate the powering of test and measurement equipment ~~that may be required during routine maintenance and servicing, without having to route flexible power cords through or across doorways or around line-ups of equipment, or the like. The receptacle outlet shall not be connected to the load side of the equipment's branch-circuit disconnecting means.~~

1608.149646-23 Other Electrical Equipment.

Electrical equipment that is an integral part of the modular assemblyMDC, including ~~information technology equipment~~, lighting, control, power, HVAC (heating, ventilation, and air conditioning), emergency lighting, alarm circuits, information technology equipment, and so forth, shall comply with the requirements for its use and installation and shall be listed and labeled.

646.24 Installation and Use.

Listed and labeled equipment shall be installed and used in accordance with any instructions or limitations included in the listing.

(A) Wiring Methods and Materials.

(1) Under Raised Floors.

Wiring in areas under a raised floor that are constructed and used for ventilation as described in 645.6(E) shall be permitted to use the wiring methods described in 645.6(E) if the conditions of 645.5 are met.

(2) Alternative Wiring Methods.

Alternate wiring methods as permitted by Article 645 shall be permitted for MDCs, provided that all of the conditions of 645.5 are met.

(B) Disconnecting Means.

An approved means shall be provided to disconnect power to all electronic equipment in the MDC in accordance with 645.10. There shall also be a similar approved means to disconnect the power to all dedicated HVAC systems serving the MDC that shall cause all required fire/smoke dampers to close.

Part III. Lighting

1608.150646-30 General Illumination for Enclosed Modular Assemblies.

Illumination shall be provided for all workspaces and areas that are used for exit access and exit discharge of an enclosed modular assembly. The illumination shall be arranged so that the failure of any single lighting unit does not result in a complete loss of illumination.

Informational Note: See NFPA 101, *Life Safety Code*, Section 7.8 for information on illumination of means of egress.

1608.161646-31 Emergency Lighting for Enclosed Modular Assemblies.

Areas that are used for exit access and exit discharge of an enclosed modular assembly shall be provided with emergency lighting. Emergency lighting systems shall be listed and labeled equipment installed in accordance with the manufacturer's instructions.

Informational Note: See NFPA 101, *Life Safety Code*, Section 7.9 for information on emergency lighting.

1608.172646-32 Emergency Lighting Circuits for Enclosed Modular Assemblies.

No appliances or lamps, other than those specified as required for emergency use, shall be supplied by emergency lighting circuits for enclosed modular assemblies. Branch circuits supplying emergency lighting shall be installed to provide service from storage batteries, generator sets, UPS, separate service, fuel cells, or unit equipment. No other equipment

shall be connected to these circuits unless the emergency lighting system includes a backup system where only the lighting is supplied by battery circuits under power failure conditions. All boxes and enclosures (including transfer switches, generators, and power panels) for emergency circuits shall be marked to identify them as components of an emergency circuit or system.

Part IV. Workspace

~~646.40 General.~~

~~Space about electrical equipment shall comply with 110.26.~~

1608.183646.41 Entrance to and Egress from Working Space.

For equipment over 1.8 m (6 ft) wide or deep, there shall be one entrance to and egress from the required working space not less than 610 mm (24 in.) wide and 2.0 m (6 1/2 ft) high at each end of the working space. Doors shall open to the full extent of their designed egress opening and be equipped with listed panic hardware or listed fire exit hardware. A single entrance to and egress from the required working space shall be permitted where either of the conditions in 1608.183646.41(A) or 1608.183646.41(B) is met.

(A) Unobstructed Egress.

Where the location permits a continuous and unobstructed way of egress travel, a single entrance to the working space shall be permitted.

(B) Extra Working Space.

Where the depth of the working space is twice that required by 110.26(A)(1), a single entrance shall be permitted. It shall be located such that the distance from the equipment to the nearest edge of the entrance is not less than the minimum clear distance specified in Table 110.26(A)(1) for equipment operating at that voltage and in that condition.

1608.19 Spaces About Electrical Equipment

In Modular Assemblies where electrical equipment is being installed, Condition 2 working clearances from Table 110.26(A)(1) for Condition 2 shall be permitted between electrical equipment located across the aisle from each other where installed in industrial establishments where the conditions of maintenance and supervision ensure that written procedures have been adopted to prohibit equipment on both sides of the aisle from being open at the same time and qualified persons who are authorized will service the installation.

~~646.42 Working Space for ITE.~~

~~(A) Low Voltage Circuits.~~

~~The working space about ITE where any live parts that may be exposed during routine servicing operate at not greater than 30 volts rms, 42 volts peak, or 60 volts dc shall not be required to comply with the workspace requirements of 646.41.~~

~~(B) Other Circuits.~~

~~Any areas of ITE that require servicing of parts that are greater than 30 volts rms, 42 volts peak, or 60 volts dc shall comply with the workspace requirements of 646.41.~~

~~Informational Note: Examples of such areas include field wiring compartments for ac mains connections, power distribution units, and so forth.~~

~~646.43 Work Areas and Working Space About Batteries.~~

~~Working space about a battery system shall comply with 110.26. Working space shall be measured from the edges of the battery racks, cabinets, or trays.~~

~~646.44 Workspace for Routine Service and Maintenance.~~

~~Workspace shall be provided to facilitate routine servicing and maintenance (those tasks involving operations that can be accomplished by employees and where extensive~~

~~disassembly of equipment is not required). Routine servicing and maintenance shall be able to be performed without exposing the worker to a risk of electric shock or personal injury.~~

1608.20 646.10 Flexible Power Cords and Cables for Connecting Equipment Enclosures of an MDC System a Modular Assembly.

(A) Uses Permitted.

~~Flexible power cords and cables shall be permitted to be used for connections between equipment within enclosed modular assembly enclosures of an MDC system where not subject to physical damage. Where flexible power cords or cables are used, they shall be listed as suitable for extra-hard usage. Where used outdoors, flexible power cords and cables shall also be listed as suitable for wet locations and shall be sunlight resistant.~~

~~Informational Note: One example of flexible power cord usage for connections between equipment enclosures of an MDC system is between an MDC enclosure containing only servers and one containing power distribution equipment.~~

(B) Uses Not Permitted.

~~Flexible power cords and cables shall not be used for connection to external sources of power external to the enclosed modular assembly.~~

~~Informational Note: Examples of external sources of power are electrical services, feeders, and premises branch circuits.~~

(C) Single-Conductor Cable.

~~Single-conductor power cable shall be permitted to be used only in sizes 2 AWG or larger.~~

Substantiation:

The recommendations contained in this global public input are the result of the work conducted by the Correlating Committee Datacenter Task Group chaired by Todd Lottmann (Eaton) with additional Task Group members including Jack Lyons (NEMA), Ernie Gallo (ATIS), Keith Waters (Schnider Electric), David Kendall (ABB), Christine Porter (Intertek), David Humphrey (IAEI), Robert Osborne (UL), Joel Goergen (Cisco), Brian Deckard (Siemens), Joseph Borowski (Google), Darryl Hill (IBEW), Eddie Rodriguez (IEC), Joe Prisco (IBM), James Walters (Meta), and Brandon DeVaul (Microsoft). In addition to these task group members, over 30 guests participated in the development of this global input, showing the wide range of input received while processing this recommendation. This is a consensus recommendation from the Task Group members that meets the direction given to them which is “Data Centers, and the infrastructure that supports them, are evolving quickly. Articles 645 and 646 have been used in the past for IT applications and data centers, but the rapid pace of development of “AI data centers”, where modular systems operate at DC voltages, utilize wiring methods that are not recognized in Chapter 3, and may have other challenges with existing rules. A Task Group should identify gaps and make public Inputs to address any gaps.”

This Public Input creates a new Article for “Modular Assemblies”, placing it in the new structure in Chapter 16 for “Other Equipment” (refer to Annex L of the 2026 NEC). With the creation of this Article, Related PI’s are submitted to create a definition for “Modular Assemblies” and to expand Article 646 to apply to broader applications.

This new Article is based on the existing Article for Modular Data Centers (MDCs), Article 646, with the TG reviewing each Section of 646 to determine applicability for all types of Modular Assemblies. The proposed text is based on the following substantiation:

- The scope is expanded to cover all modular assemblies, not just once dedicated to data centers, and modular assemblies are used in more applications than just data centers.
- Existing 646.5 required MDCs to be listed, the new Section is properly numbered 1608.2 to comply with 2.2.1 of the NEC Style Manual, and also includes the option for field labeling (field evaluation) as it may be practical to also field evaluate a modular assembly if all equipment is listed and no additional testing is required for evaluation of the equipment or wiring.
- Rather than identify unique requirements for modular assemblies intended for use in specific applications, occupancies, or inclusion of specific equipment, a table is included in Section 1608.4 to indicate that the modular assembly shall comply

with other applicable requirements in the NEC. This is in accordance with 4.1.5 of the NEC Style Manual.

- 646.6 identified all information that shall be required on the Nameplate for a MDC. Nameplate requirements were reviewed, revised and restructured into new Section 1608.5 to address information that is germane to all modular assemblies. Information included on the nameplate is specific to the type of information necessary for an installer and AHJ to install and approve a modular assembly. Key changes include the removal of details related to load calculations, as this is a site specific determination that is better addressed at the time of installation, and the inclusion of short circuit current ratings which are necessary to ensure compliance with requirements in 1608.10 (which are based on requirements in 646.8).
- Section 1608.6 is added to address scenarios where a manufacturer may design and list assemblies for group installation.
- Section 1608.7 is necessary to ensure the AHJ has the information necessary to validate what equipment was factory installed as part of the listed assembly vs. what may be alterations made at the installation site. This requirement allows this documentation to be provided electronically (i.e., a “QR Code”) as this means of accessing information has become more commonplace.
- Sections 1608.8 and 1608.9 are reformatted and modified requirements from 646.7, with rewording of the “125 percent rule” to align with the CC TG working on wording for applications related to “Continuous Loads”.
- Section 1608.10 is based on 646.8.
- Section 1608.11 is based on 646.9 but is simplified while maintaining the original intent that field connection be readily accessible after the assembly is installed.
- 1608.12 is based on 646.21 but is improved by removing vague and unenforceable language of “installed in the vicinity” (646.21(B)). Considering the requirements in 646.21(B) and (C), it is understood that transformers should be dry-type or filled with noncombustible dielectric medium. References to Article 450 are not necessary as those are ‘general requirements’ for all transformers.
- 1608.13 is based on 646.22 but is reformatted and titled to more closely align with 210.63, which is the reason the receptacle is required. An informational note is also included to note that these receptacles are often part of the listing of the assembly.

- 1608.14 is based on 646.23.
- 1608.15 is based on 646.30, with the title changed to make clear that this requirement only applies to enclosed modular assemblies (as not all modular assemblies are enclosed).
- 1608.16 is based on 646.31 with a title change to make this specific to enclosed modular assemblies.
- 1608.17 is based on 646.32 with a title change to make this specific to enclosed modular assemblies.
- 1608.18 is based on 646.41
- 1608.19 is added to address working clearance challenges for modular assemblies. Specifically, modular assemblies have width limitations due to DOT restrictions, and are impacted by building requirements such as fire ratings, seismic designs, etc. To safely accommodate these modified working clearances, additional requirements to limit application to industrial establishments where written procedures prohibit equipment on both sides of the aisle from being opened at the same time.
- 1608.20 is based on 646.10; however, the requirement is modified to limit the use of flexible cords such that they cannot be used to ‘daisy chain’ between enclosed modular assemblies.
- Requirements in 646.20 are not included as these requirements are repetitive of general requirements
- Requirements in 646.24 are not included in Article 1608 as some of these requirements are repetitive of general requirements (“Installation and Use” is required by 110.3), and other requirements are specific to data centers and would be applicable as noted in 1608.4.
- Requirements in 646.40 are not included in Article 1608 as these requirements are repetitive of general requirements in 110.26.
- Requirements in 646.42 are not included as these are specific to data centers and would be applicable as noted in 1608.4.
- Requirements in 646.43 and 646.44 are not included as these requirements are repetitive of general requirements in 110.26.

The following table is provided to cross reference the changes to the requirements in Article 646:

Existing Article/ Section	Section Title	New Article/ Section
Title	Modular Assemblies	1608
646.1	Scope	1608.1
646.5	Applicable Requirements.	1608.2
646.6	Nameplate Data	1608.4
646.7	Supply Conductors and Overcurrent Protection.	1608.7 1608.8
646.8	Short Circuit Current Rating	1608.10
646.9	Field-Wiring Compartments	1608.11
646.10	Flexible Power Cords and Cables for Connecting Equipment Enclosures of an MDC System.	1608.20
Part II	Equipment	Title Removed
646.20	Electrical Supply and Distribution	Removed
646.21	Distribution Transformers	1608.12
646.22	Receptacles.	1608.13
646.23	Other Electrical Equipment	1608.14
646.24	Installation and Use	Removed
Part III	Lighting	Title Removed
646.30	General Illumination	1608.15
646.31	Emergency Lighting	1608.16
646.32	Emergency Lighting Circuits	1608.17
Part IV	Workspace	Title Removed
646.40	General	Removed
646.41	Entrance and Egress from Working Space	1608.18
646.42	Working Space for ITE	Removed
646.43	Work Areas and Working Space About Batteries.	Removed
646.44	Workspace for Routine Service and Maintenance	Removed

The task group recommends the following for code making panel responsibility for the articles proposed:

Article	Proposed CMP
Article 1608 - Modular Assemblies	CMP-10
Article 2300 – General Requirements	CMP-12
Article 2302 – Information Technology Equipment Rooms	CMP-12
Article 2304 – Data Center Facility	CMP-12
Article 2306 – IT Specific Equipment	CMP-12
Article 2308 – Liquid Cooled Systems	CMP-6
Article 2310 – Superconductors	CMP-6
Article 2314 – Cybersecurity	CMP-12



Public Input No. 2891-NFPA 70-2026 [Global Input]

This Global PI is a result of the CC Datacenter task group. Suggested wording is in attached file.

Additional Proposed Changes

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
CC_Datacenter_TG_Chapter_23_Global_PI.docx	Content and Substantiation for new Chapter 23 resulting from a CC Datacenter Task Group	

Statement of Problem and Substantiation for Public Input

The detailed substantiation is contained in the attached file.

The recommendations contained in this global public input are the result of the work conducted by the Correlating Committee Datacenter Task Group chaired by Todd Lottmann (Eaton) with additional Task Group members including Jack Lyons (NEMA), Ernie Gallo (ATIS), Keith Waters (Schnider Electric), David Kendall (ABB), Christine Porter (Intertek), David Humphrey (IAEI), Robert Osborne (UL), Joel Goergen (Cisco), Brian Deckard (Siemens), Joseph Borowski (Google), Darryl Hill (IBEW), Eddie Rodriguez (IEC), Joe Prisco (IBM), James Walters (Meta), and Brandon DeVaul (Microsoft). In addition to these task group members, over 30 guests participated in the development of this global input, showing the wide range of input received while processing this recommendation. This is a consensus recommendation from the Task Group members that meets the direction given to them which is “Data Centers, and the infrastructure that supports them, are evolving quickly. Articles 645 and 646 have been used in the past for IT applications and data centers, but the rapid pace of development of “AI data centers”, where modular systems operate at DC voltages, utilize wiring methods that are not recognized in Chapter 3, and may have other challenges with existing rules. A Task Group should identify gaps and make public Inputs to address any gaps.”

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
Public Input No. 2874-NFPA 70-2026 [New Definition after Definition: Scope.]	Definition tied to the recommendation from the CC Datacenter Task Group for proposed Chapter 23 for Data centers and Information Technology Equipment.
Public Input No. 2875-NFPA 70-2026 [Definition: Information Technology Equipment (ITE).]	Definition tied to the recommendation from the CC Datacenter Task Group for proposed Chapter 23 for Data centers and Information Technology Equipment.
Public Input No. 2876-NFPA 70-2026 [New Definition after Definition: Scope.]	Definition tied to the recommendation from the CC Datacenter Task Group for proposed Chapter 23 for Data centers and Information Technology Equipment.
Public Input No. 2879-NFPA 70-2026 [New Definition after Definition: Scope.]	Definition tied to the recommendation from the CC Datacenter Task Group for proposed Chapter 23 for Data centers and Information Technology Equipment.
Public Input No. 2880-NFPA 70-2026 [New Definition after Definition: Scope.]	Definition tied to the recommendation from the CC Datacenter Task Group for proposed Chapter 23 for Data centers and Information Technology Equipment.

Public Input No. 2881-NFPA 70-2026 [New Definition after Definition: Scope.]

Public Input No. 2882-NFPA 70-2026 [New Definition after Definition: Scope.]

Public Input No. 2883-NFPA 70-2026 [New Definition after Definition: Scope.]

Public Input No. 2884-NFPA 70-2026 [New Definition after Definition: Scope.]

Public Input No. 2885-NFPA 70-2026 [New Definition after Definition: Scope.]

Public Input No. 2886-NFPA 70-2026 [New Definition after Definition: Scope.]

Public Input No. 2887-NFPA 70-2026 [New Definition after Definition: Scope.]

Public Input No. 2888-NFPA 70-2026 [New Definition after Definition: Scope.]

Public Input No. 2877-NFPA 70-2026 [New Definition after Definition: Scope.]

Public Input No. 2874-NFPA 70-2026 [New Definition after Definition: Scope.]

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Public Input No. 2888-NFPA 70-2026 [New Definition after Definition: Scope.]

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Chapter 23 – Data Centers and Information Technology Equipment

Article 2300 - General Requirements for Data Center Facilities, and Information Technology Equipment (ITE) Rooms

2300.1 Scope.

This article covers the general requirements for installing information technology equipment, power-supply wiring, equipment interconnecting wiring, and grounding of ITE, and systems within data center facilities and ITE rooms.

Informational Note No. 1: See NFPA 75, *Standard for the Fire Protection of Information Technology Equipment*, which covers the requirements for the protection of information technology equipment and information technology equipment areas.

Informational Note No. 2: See Article 100, Definitions, for definitions of Data Center Facility, and ITE Rooms.

2300.2 Listing.

Conductors, equipment and raceways that are not part of the IT equipment shall be listed.

Informational Note: See Article 100, Definitions for the definition of Equipment

2300.3 Reconditioning.

Reconditioned IT equipment and cable systems shall not be installed.

2300.15 Equipment Grounding and Bonding.

Where signal reference structures are installed, they shall be bonded to the equipment grounding conductor provided for the ITE.

2300.17 Supply Circuits and Interconnecting Cables

(A) Supply Conductors

Supply conductors for IT equipment shall be considered as a continuous load.

Informational Note: See 2306.42 for overcurrent protection requirements for IT equipment provided with overcurrent protection.

(B) Power-Supply Cords. Information technology equipment U shall be permitted to be connected to branch circuits by power-supply cords that comply with the following:

- (1) Power-supply cords shall not exceed 4.5 m (15 ft).
- (2) Power-supply cords shall be listed and a type permitted for use on listed information technology equipment or shall be constructed of listed flexible cord and listed attachment plugs and cord connectors of a type permitted for information technology equipment.
- (3) Plugs and receptacles used to connect the power-supply cords shall be listed and identified for the system voltage and current applied.

Exception No.1 to 2300.17(B): For power supply cords that supply or utilize currents that differ from a pure direct-current (dc) waveform or a 60-hertz sinusoidal alternating-current (ac) waveform , 2300.20 shall be required.

Exception No.2 to 2300.17(B): Information Technology equipment rated over 100 A shall be permitted to be connected to branch circuits by power supply cords of cable Types DCPC, PPE, G, and W. Ampacities shall be as indicated in Table 400.5(A)(2)

Informational Note No. 1: See UL 60950-1, Safety of Information Technology Equipment — Safety — Part 1: General Requirements; or UL 62368-1, Audio/Video, Information and Communication Technology Equipment — Part 1: Safety Requirements, for one method of determining if cords are of a permitted type.

Informational Note No. 2: See ANSI/NEMA WD-6, Wiring Devices — Dimensional Specifications, which identifies plug and receptacle configurations L25-30P and L25-30R for 240 Vac and L26-30P and L26-30R for 240/415 Vac.

(C) Interconnecting Cables.

Separate information technology equipment units rated 100A or less shall be permitted to be interconnected by means of listed cables and cable assemblies. The 4.5 m (15 ft) limitation in 645.6(B)(1) shall not apply to interconnecting cables.

Exception No. 1 to 2300.17(C): For interconnecting cables that supply or utilize currents that differ from a pure direct-current (dc) waveform or a 60-hertz sinusoidal alternating-current (ac) waveform , 2300.20 shall be required.

Exception No.2 to 2300.17(C): Information Technology equipment rated over 100 A shall be permitted to use interconnecting cables that use Types DCPC, PPE, G, and W. Ampacities shall be as indicated in Table 400.5(A)(2)

2300.18 EV Connectors and Cable Assemblies

EV connectors and cable assemblies shall not be used in datacenters unless identified for that purpose

2300.20 Frequency and Waveform Effects on Conductor Ampacity (See A2300.20)

(A) Scope.

This section covers requirements for determining conductor ampacity where electrical installations supply or utilize currents that differ from a pure direct-current (dc) waveform or a 60-hertz sinusoidal alternating-current (ac) waveform.

Informational Note: See A2300.20 for information on frequency and waveform effects on conductor ampacity.

(B) Conditions of Use.

The ampacity values referenced elsewhere in this Code are based on 60-hertz sinusoidal ac or steady-state continuous-load dc conditions. Where the connected load or source produces current having harmonic, supra harmonic, high-frequency, pulsed, or variable-frequency content, additional heating effects shall be considered.

(C) Engineering Determination Required.

Where the frequency content or waveform shape increases conductor losses due to skin effect, proximity effect, or other frequency-dependent mechanisms, the allowable ampacity of conductors shall be determined under engineering supervision using one or more of the following:

- (1) Recognized calculation methods addressing frequency-dependent conductor resistance,
- (2) Validated test data, or
- (3) Manufacturer specified conductor sizing, instructions or published ratings.

(D) Documentation.

The engineering determination required in 2300.26 (C) shall be documented and made available to the authority having jurisdiction. Documentation shall identify the following:

- (1) The waveform, frequency content, and/or load profile evaluated,
- (2) The calculation, model, or test data used,
- (3) The conductor construction and installation arrangement considered, and
- (4) The resulting allowable ampacity.

Informational Note No. 1:

Skin effect and proximity effect increase effective conductor resistance as frequency increases or as conductors are installed in close proximity. These effects can lead to higher I^2R losses than those inherent in 60-hertz ampacity tables.

Informational Note No. 2:

Power-electronic equipment such as variable-frequency drives and pulsed-DC devices may introduce switching components in the kilohertz range that can significantly increase conductor heating.

A2300.20 Frequency and Waveform Effects on Conductor Ampacity

(A) Equation Application Information.

This informative annex provides application information for ampacities calculated under engineering supervision.

(B) Frequency and Waveform Effects on Conductor AC Resistance and Ampacity

The ampacity values in Tables throughout the code are based on conductor losses evaluated under 60hertz sinusoidal alternating current conditions and are generally applicable to steady state direct current systems where skin effect is negligible. These table values assume the frequency dependent component of conductor resistance is small relative to direct current (dc) resistance for most commonly used conductor sizes.

When the operating current departs from a pure 60hertz sinusoid, such as in systems with significant harmonic content, supra harmonics, variable frequency operation, or pulsed dc switching, the effective AC resistance of conductors may increase due to skin effect and proximity effect. These mechanisms increase I^2R heating relative to the assumptions inherent in the ampacity tables.

Examples of installations where increased frequency dependent losses may occur include:

- Pulse width modulated (PWM) outputs of variable frequency drives, which may contain switching components from several hundred hertz to tens of kilohertz.
- Nonlinear loads such as rectifiers, inverters, UPS systems, and power electronics that generate harmonic or supra harmonic currents.
- Closely grouped multiphase conductor arrangements, where proximity effect raises conductor loss at elevated frequencies.

Where such conditions are present, conductor heating may exceed the values associated with table ampacities even when RMS current remains within tabulated limits. Industry recognized engineering methods such as those in IEC 60287, manufacturer provided frequency dependent resistance data, or validated test results can be used to evaluate conductor temperature rise.

Informational Note:

At 60 hertz, the skin depth in copper is approximately 8.5 mm (0.33 in.), resulting in only minor differences between dc and 60hertz AC resistance for typical conductor sizes. The effect becomes more pronounced as conductor size increases or when frequency components enter the kilohertz range.

2300.22 Load Calculations.

(A) Branch Circuits. Information Technology Equipment shall be considered a continuous load for sizing branch circuit wiring.

(B) Feeder and Services. As an alternative to the feeder and service load calculations required by Article 120 Parts I, III, and IV, feeder and service load calculations for new or

existing loads shall be permitted to be used if provided by qualified persons under engineering supervision.

2300.24 Surge Protection.

A listed surge-protective device (SPD) shall be installed for IT systems in accordance with Article 242 Part II.

2300.27 Selective Coordination of Critical Operation Data Systems.

(A) General.

Critical operations data system(s) OCPDs shall be selectively coordinated with all supply-side OCPDs.

Selective coordination shall be selected by a professional engineer or other qualified persons engaged primarily in the design, installation, or maintenance of electrical systems. The selection shall be documented and made available to those authorized to design, install, inspect, maintain, and operate the system.

(B) Replacements.

Where critical operations data system(s) OCPDs are replaced, they shall be re-evaluated to ensure selective coordination of the critical operations data system(s) is maintained with all supply-side and load-side OCPDs.

(C) Modifications.

If modifications, additions, or deletions to the critical operations data system(s) or the normal system supplying the load(s) occur, selective coordination of the critical operations data system(s) OCPDs with all supply-side and load-side OCPDs shall be re-evaluated.

Article 2302 - Information Technology Equipment (ITE) Room(s)

2302.1 Scope.

This article covers the equipment, power-supply wiring, equipment interconnecting wiring, and grounding of ITE and systems in an ITE room. ITE rooms are ancillary to the main occupancy of the building.

Informational Note: See NFPA 75, *Standard for the Fire Protection of Information Technology Equipment*, which covers the requirements for the protection of information technology equipment and information technology equipment areas.

2302.5 Special Requirements for ITE Room.

The wiring methods in 722.120 for signaling wiring, and 722.160 for optical fiber cabling shall be permitted if all of the following conditions are met:

- (1) Disconnecting means complying with 2302.10 are provided.
- (2) A heating/ventilating/air-conditioning (HVAC) system is provided in one of the methods identified in the following:
 - a. A separate HVAC system that is dedicated for ITE use and is separated from other areas of occupancy
 - b. An HVAC system that serves other occupancies and meets all of the following:
 - (i) Also serves the information technology equipment room
 - (ii) Provides fire/smoke dampers at the point of penetration of the room boundary
 - (iii) Activates the damper operation upon initiation by smoke detector alarms, by operation of the disconnecting means required by 645.10, or by both

Informational Note No. 1: See NFPA 75, *Standard for the Fire Protection of Information Technology Equipment*, Section 11.1, 11.1.1, 11.1.2, and 11.1.3, for further information.

- (3) The room is occupied by, and accessible to, only those personnel needed for the servicing and functional operation of the equipment installed within the ITE Room.
- (4) The room is separated from other occupancies by fire-resistant-rated walls, floors, and ceilings with protected openings.

Informational Note No. 2: See NFPA 75, *Standard for the Fire Protection of Information Technology Equipment*, Chapter 6, for further information on room construction requirements.

- (5) Only electrical equipment and wiring associated with the operation of the ITE shall be installed in the ITE room.

Informational Note No. 3: HVAC systems, communications systems, and monitoring systems such as telephone, fire alarm systems, security systems, water detection systems, power distribution equipment, lighting, and other related protective equipment are examples of equipment associated with the operation of the ITE room.

2302.6 Supply Circuits and Interconnecting Cables.

(A) Physical Protection.

Where exposed to physical damage, power-supply cords, branch-circuit supply conductors, and interconnecting cables shall be protected.

(B) Under Raised Floors.

Where the area under the floor is accessible and openings minimize the entrance of debris beneath the floor, power-supply cords, communications cables, connecting cables, interconnecting cables, cord and plug connections, and receptacles associated with the ITE shall be permitted under a raised floor of approved construction. The installation requirement shall comply with 2302.6(E)(1) through 2302.6(E)(3).

(1) Installation Requirements for Branch-Circuit Supply Conductors Under a Raised Floor.

- (a) The supply conductors shall be installed in accordance with 300.13.
- (b) In addition to the wiring methods of 300.25(C), the following wiring methods shall also be permitted:
 - (1) Rigid metal conduit
 - (2) Rigid nonmetallic conduit
 - (3) Intermediate metal conduit
 - (4) Electrical metallic tubing
 - (5) Electrical nonmetallic tubing
 - (6) Metal wireway
 - (7) Nonmetallic wireway
 - (8) Surface metal raceway with metal cover
 - (9) Surface nonmetallic raceway

- (10) Flexible metal conduit
- (11) Liquidtight flexible metal conduit
- (12) Liquidtight flexible nonmetallic conduit
- (13) Type MI cable
- (14) Type MC cable
- (15) Type AC cable
- (16) Associated metallic and nonmetallic boxes or enclosures
- (17) Type TC power and control tray cable

(2) Installation Requirements for Power-Supply Cords, Data Cables, Interconnecting Cables, and Grounding Conductors Under a Raised Floor.

The following cords, cables, and conductors shall be permitted to be installed under a raised floor:

- (1) Power-supply cords of listed ITE in accordance with 2302.6(B).
- (2) Interconnecting cables enclosed in a raceway.
- (3) Equipment grounding conductors.
- (4) Where the air space under a raised floor is protected by an automatic fire suppression system, the following cables shall be permitted under raised floors:
 - a. Types CL2P, CL3P, CL4P, CMP plenum cables
 - b. Types CL2R, CL3R, CL4R, CMR riser cables
 - c. Types CL2, CL3, CL4, CM, CMG general-purpose cables
- (5) Where the air space under a raised floor is not protected by an automatic fire suppression system, only Types CL2P, CL3P, CL4P, and CMP plenum cables shall be permitted.
- (6) Listed Type DP cable having fire-resistant characteristics suitable for use under raised floors of an information technology equipment room.

Informational Note: See CSA C22.2 No. 0.3, *Test Methods for Electrical Wires and Cables*, CSA Vertical Flame Test-Cables in Cable Trays for one method of defining resistance to the spread of fire where the damage (char length) of the cable does not exceed 1.5 m (4 ft 11 in.) or UL 1685, *Vertical-Tray Fire-Propagation and Smoke-Release Test for Electrical and Optical-Fiber Cables*, UL Flame Exposure, Vertical Flame Tray Test. The smoke measurements in the test method are not applicable.

(3) Installation Requirements for Optical Fiber Cables Under a Raised Floor.

The installation of optical fiber cables shall comply with either of the following:

- (1) Where the air space under a raised floor is protected by an automatic fire suppression system, Types OFNP, OFCP, OFNR, OFCR, OFNG, OFCG, OFN, and OFC shall be permitted under raised floors.
- (2) Where the air space under a raised floor is not protected by an automatic fire suppression system, only Types OFNP and OFCP cables shall be permitted under raised floors.

(C) Securing in Place.

Power-supply cords; communications cables, connecting cables, interconnecting cables, and associated boxes, connectors, plugs, and receptacles that are listed as part of, or for, ITE shall not be required to be secured in place if installed under raised floors.

Informational Note: See 300.13 for securement requirements for raceways and cables not listed as part of, or for, ITE.

(D) Abandoned Supply Circuits and Interconnecting Cables.

The accessible portion of abandoned supply circuits and interconnecting cables shall be removed unless contained in a raceway.

(E) Installed Supply Circuits and Interconnecting Cables Identified for Future Use.

(1) Cable Identification Means.

Supply circuits and interconnecting cables identified for future use shall be marked with a tag of sufficient durability to withstand the environment involved.

(2) Cable Tag Criteria.

Supply circuit tags and interconnecting cable tags shall have the following information:

- (1) Date identified for future use
- (2) Date of intended use
- (3) Information relating to the intended future use

2302.10 Disconnecting Means.

An approved means shall be provided to disconnect power to all electronic equipment in the ITE room or in designated zones within the room. There shall also be a similar approved means to disconnect the power to all dedicated HVAC systems serving the room or designated zones and to cause all required fire/smoke dampers to close. The disconnecting means shall comply with either 2302.10(A) or 2302.10(B).

Exception: These requirements shall not apply to installations complying with Article 685.

(A) Remote Disconnect Controls.

(1) Emergency Access.

Remote disconnect controls shall be located at approved locations readily accessible in case of fire to authorized personnel and emergency responders.

(2) Disconnect Identification.

The remote disconnect means for the control of electronic equipment power and HVAC systems shall be grouped and marked. A single means to control both systems shall be permitted.

(3) Fire/Smoke Zone Isolation.

Where multiple zones are created, each zone shall have an approved means to confine fire or products of combustion to within the zone.

(4) System Operation Continuity.

Additional means to prevent unintentional operation of remote disconnect controls shall be permitted.

Informational Note: See NFPA 75, *Standard for the Fire Protection of Information Technology Equipment*, for further information.

(B) Critical Operations Data Systems.

Remote disconnecting controls shall not be required for critical operations data systems if all of the following conditions are met:

- (1) An approved procedure has been established and maintained for removing power and air movement within the room or zone.
- (2) Qualified personnel are continuously available to advise emergency responders and to instruct them of disconnecting methods.
- (3) A smoke-sensing fire detection system is in place.

Informational Note: See NFPA 72, *National Fire Alarm and Signaling Code*, for further information.

- (4) An approved fire suppression system suitable for the application is in place.
- (5) Cables installed under a raised floor, other than branch-circuit wiring, and power cords are installed in compliance with 2302.6(E)(2) or 2302.6(E)(3), or in compliance with Table 2302.10(B).

Table 2302.10(B) Cables Installed Under Raised Floors

Cable Type	Applicable Sections
Branch circuits under raised floors	2302.6(E)(1)
Supply cords of listed ITE	2302.6(E)(2)(1), 300.25(C)
Class 2 and Class 3 remote control and Class 4 cables in other spaces used for environmental air (plenums)	Table 722.120
Optical fiber cable in other spaces used for environmental air (plenums)	Table 722.120 and 722.160(A)(1)

Cable Type	Applicable Sections
Communications wires and cables, cable routing assemblies, and communications raceways in other spaces used for environmental air (plenums)	Table 722.120, Table 722.130, 723.20, 723.22, 723.30, and 723.32
Coaxial CATV and radio distribution cables in other spaces used for environmental air (plenums)	Table 722.120 and 722.133

Article 2304 - Data Center Facility

Part I. General

2304.1 Scope. This article covers electrical requirements unique to data center facilities, including electrical distribution architectures, grounding and bonding methods that differ from standard practice, and interfaces with information technology equipment (ITE).

Informational Note: ITE used in data center facilities may have unique electrical characteristics that differ from those of typical building loads. These characteristics may affect the selection and application of overcurrent protection, grounding methods, and distribution of equipment, requiring engineering evaluation.

2304.5 General.

(A) Critical Operations Considerations. Where continuous computing operation is a design objective, the electrical distribution system, grounding methods, and protection strategies shall be documented as part of the facility's engineering design.

(B) Coordination With Cooling Infrastructure. Where electrical systems integrate with liquid cooling systems for ITE, requirements in 2308.10 shall apply.

Part II. Installation

2304.10 Wiring Methods – Busway. Where overhead or underfloor busway systems are used as the primary distribution method to ITE racks, the following shall apply:

(A) Reconfiguration. Busway systems intended to allow the addition or removal of tap box units shall include mechanical and electrical features preventing energization before full engagement.

(B) Physical Arrangement. Busways shall be arranged to maintain working clearance for ITE equipment and rack power distribution assemblies without creating access restrictions

Part III. Grounding and Bonding

2304.20 Supplemental Bonding-

(A) Supplemental Bonding of metallic racks, cabinets, busways, cable management systems, raceways, structural steel and equipment likely to be energized shall be permitted to provide equipotential bonding for high frequency currents.

(B) Supplemental bonding jumpers shall be permitted between adjacent racks or structures to control impedance where required by the equipment listing or engineering evaluation.

2304.22 DC Distribution Grounding. For supervised installations, grounding methods shall be permitted to be determined by qualified persons under engineering supervision. Supervised installations shall be considered to be those portions of a facility where all of the following are met:

- (1) The installation shall be designed under engineering supervision.
- (2) Installation, maintenance, monitoring, and servicing of the system shall be performed by qualified persons with documented training and experience in grounding methods not commonly employed.

Part IV. Overcurrent and Ground-Fault Protection

2304.30 Overcurrent Protection. Where the electrical characteristics of ITE, as identified in the equipment listing or engineering documentation, affect the performance of overcurrent protective devices, the OCPDs supplying the ITE shall be coordinated to the extent practicable so that a fault on the load side does not unnecessarily deenergize upstream equipment.

Selective coordination shall be selected by a qualified professional engineer or other qualified person engaged primarily in the design, installation, or maintenance of electrical systems. The selection and device settings shall be documented and made available to those authorized to design, install, inspect, maintain, and operate the system.

2304.32 DC Protection and Coordination.

Where DC distribution is used to serve ITE, the protection and coordination of overcurrent protective devices shall comply with the equipment listing and the applicable requirements of 240.4 for conductor protection and 250.4 effective ground-fault current paths.

Article 2306 – Equipment Specific for IT Installations

2306.1 Scope. This article covers equipment intended for use in data centers and IT specific installations.

2306.2 Listing Requirements. All equipment used in data centers and IT installations covered by Chapter 23 shall be listed.

2306.3 Reconditioned Equipment. Reconditioned equipment used in data centers and IT installations covered by Chapter 23 shall not be permitted to be installed, unless specifically permitted in the requirements applicable to the specific equipment.

2306.4 Nameplate Data. Equipment used in data centers and IT installations shall have permanent markings that are visible after installation. The following markings shall be included as applicable:

- (1) Manufacturer's name, trademark, or other descriptive marking by which the organization responsible for the product can be identified
- (2) Supply voltage,
- (3) Number of phases,
- (4) Frequency (if ac),
- (5) Full-load current for each incoming supply circuit,
- (6) Short-circuit current rating,
- (7) Electrical wiring diagram, the identification number of a separate electrical wiring diagram, or a designation referenced in a separate wiring diagram, and
- (8) Where equipment has more than one power source, a reference to all sources of supply.

2306.5 Overcurrent Protection. Equipment provided with overcurrent protection shall comply with the following:

- (1) The equipment shall be marked "overcurrent protection provided at equipment supply terminals."
- (2) Overcurrent protection for each supply circuit shall consist of a single circuit breaker or set of fuses
- (3) The supply conductors shall be considered either as feeders or as taps as covered by 240.21

2306.6 Short-Circuit Current Rating.

(A) Installation. Equipment shall not be installed where the available fault current exceeds its short-circuit current rating, as marked in accordance with 2306.4

(B) Available Fault Current Field Marking.

Equipment shall be legibly marked in the field with the available fault current at its line terminals. The field marking(s) shall include the date the available fault current calculation

was performed and shall meet the requirements of 110.21(B). The calculation shall be documented and made available to those authorized to design, install, inspect, maintain, or operate the system.

When modifications to the electrical system occur that affect the available fault current at the equipment, the available fault current shall be verified or recalculated as necessary to ensure the equipment's short-circuit current rating is sufficient for the available fault current at the line terminals of the equipment. The required field markings shall be adjusted to reflect the new level of available fault current.

2306.6 Power Distribution Units in IT Rack.

Power distribution units, which include multiple OCPDs, located in IT racks shall be listed according to the following:

1. Equipment rated 100A or less total input shall be listed as either information technology equipment or power distribution equipment.
2. Equipment rated greater than 100A total input shall be listed as power distribution equipment.

Informational Note No. 1 – Identify IT Standard

Informational Note No. 2 – Identify Power Distribution Standards

Informational Note No. 3 – Identify Article 408 for power distribution units that are not in an IT rack.

2306.7 Power Distribution Units External to the IT Rack

Distribution units mounted external to the IT rack, which include multiple OCPDs, shall be listed power distribution equipment.

Informational Note: Examples of power distribution equipment includes panelboards, switchboards, and switchgear.

2306.8 Solid State Power Supplies.

(A) Overcurrent Protection: Where solid state power supply equipment is listed and marked as "Suitable for Output Conductor Protection," additional overcurrent protection shall not be required for the output conductors. This protection covers only the conductors from the power supply equipment to the next required OCPD.

(B) Disconnecting Means: The output circuit of any solid state power supply shall be provided with a disconnecting means. This disconnecting means, if identified as a "Disconnect", shall be permitted to be integral to the solid state power supply. When the solid state power supply is not marked "Disconnect", a separate disconnecting means shall be provided.

Informational note No. 1: See UL 2877 - *Outline for Investigation for Power Supplies, Medium Voltage* for information on medium voltage power supply equipment.

Informational note No.2: Medium voltage powers supplies are often referred to as Medium Voltage Solid State Transformers.

2306.9 Uninterruptible Power Supplies. UPS systems installed within the information technology equipment room and their supply and output circuits shall comply with 2302.10, except for the following installations and constructions:

- (1) Installations complying with Article 685 Parts I and II
- (2) Power sources limited to 750 volt-amperes or less derived either from UPS equipment or from battery circuits integral to electronic equipment

The disconnecting means shall also disconnect the battery from its load.

Informational Note: See UL 1778, Uninterruptible Power Systems, and UL 62368-1, Audio/Video, Information and Communication Technology Equipment — Part 1: Safety Requirements, for information on product listings for electronic equipment disconnecting means and backup battery power sources.

Article 2308 - Liquid Cooled Systems

Part I. General

2304.1 Scope. This article covers the liquid-cooled systems associated with information technology equipment, including associated components such as cables, hoses, pumps, control panels, sensors, actuators, and interlocks.

2308.2 Listing Requirements.

The following equipment and associated components shall be listed:

- (1) Liquid-cooled system equipment and assemblies
- (2) Immersion-cooled system equipment and assemblies
- (3) Immersion Cooling Fluids for use with Information and Communication Technology Equipment.

Part II. Installation

2308.10 Wiring Methods.

(A) Raceways and Seals. Terminations shall be arranged to prevent liquid migration into raceways. Where sealing fittings are used, they shall be installed in accordance with the product listing and the applicable wiring method.

(B) Drip Paths and Routing. Conductors and cables shall be routed to avoid liquid drip paths onto terminations and live parts, or shall be provided with barriers or shields integral to the listed assembly to prevent dripping onto terminations or live parts.

(C) Separation from Non-Dielectric Liquid Piping. Electrical conductors and equipment shall be installed with separation from non-dielectric liquid piping sufficient to prevent damage to wiring and prevent exposure of live parts in the event of leakage.

2308.12 Equipment Enclosures. Enclosures that contain live parts that may be exposed to liquid leakage or spray shall be identified for use in wet locations or provided with guards or shields integral to the listed assembly to prevent liquid contact with live parts.

2308.14 Controls and Instrumentation

(A) Control Circuits. Remote-control and signaling circuit wiring shall be selected for the environment of use and installed to avoid contact with liquids or be protected as part of a listed assembly.

(B) Safety Interlocks. Interlocks affecting de-energization or protective functions shall be:

- (1) supervised by qualified personnel or by an automatic monitoring system integral to the listed equipment, or
- (2) fail-safe such that a loss of the interlock function does not defeat required protective action.

(C) Sensors. Sensors that are part of a protective scheme shall be installed per manufacturer's instructions as part of a listed system.

Part III. Overcurrent and Ground-Fault Protection

2308.30 Continuous Load. Liquid-cooling system equipment shall be considered continuous load for branch circuits.

2308.32 Ground-Fault Protection of Equipment (GFPE).

For systems with conductive liquids or where conductive paths can be created by leakage, ground-fault protection shall be provided for feeders and branch circuits supplying liquid-cooled system equipment:

Part IV. Disconnecting Means

2308.40 Means of Disconnect.

(A) Readily Accessible. A disconnecting means shall be provided for each liquid-cooled system equipment assembly and shall be readily accessible.

(B) Unit and Subassembly Disconnects. Where pumps, control panels, or power distribution units are remote from the main assembly, a disconnecting means shall be provided for each.

(C) Emergency Shutdown Interface. If a leak occurs, liquid-cooled system equipment shall be deenergized without relying on liquid containment or flow to achieve an electrically safe condition. Notification of the leak shall annunciate locally.

Part V. Ampacity Determination for Liquid-Cooled Systems

2308.104 Ampacity Determination for Liquid-Cooled Cable Systems.

The ampacity of conductors that are part of a liquid-cooled cable system shall be determined under engineering supervision and shall be based on the specific operating conditions of the system.

(A) Inapplicability of Standard Ampacity Tables. Ampacity values in the ampacity tables of Chapter 3 shall not apply to conductors installed as part of a liquid-cooled cable system.

Informational Note: Ampacity for liquid-cooled cable systems depends on system specific thermal conditions rather than the installation conditions assumed in the ampacity tables of Chapter 3. Engineering analysis may include evaluation of coolant properties, flow characteristics, thermal interfaces, and equipment operating conditions.

(B) Engineering Parameters. Engineering supervision shall account for system variables that affect conductor operating temperature, including the following:

- (1) Coolant type
- (2) Coolant temperature
- (3) Coolant flow rate
- (4) Total Length of cable and associated coolant path
- (5) Heat transfer characteristics of the cable construction
- (6) Loss of coolant
- (7) Any other operating conditions that affect the removal of heat from the conductors

Article 2310 - Superconducting Cable Systems (SCS)

Part I — General

2310.1 Scope.

This article covers the use, construction, and installation requirements for Superconducting Cable Systems (SCS). (See A2310.1)

A2310.1 — Informational References for Cryogenic Coolant, Venting, and Oxygen Deficiency Hazard (ODH) Mitigation for Superconducting Cable Systems (SCS)

Informative Annex A2310.1 is not a part of the requirements of this NFPA document but is included for informational purposes only.

A2310.1.1 General

This annex provides informational guidance and identifies other codes, standards, and industry practices that may apply to cryogenic fluid coolant systems associated with Superconducting Cable Systems (SCS). While cryogenic coolant systems are essential to the operation of SCS, they are not, in themselves, electrical systems regulated by this Code except at the supply and return points where they interface with the electrical portions of the SCS as described in 2310.249.

The information in this annex is intended to assist designers, installers, inspectors, and authorities having jurisdiction (AHJs) in recognizing related safety considerations and coordinating requirements among electrical, fire, mechanical, and building codes.

A2310.1.2 Cryogenic Coolants and Associated Hazards

Cryogenic coolants commonly used with SCS installations include inert gases such as liquid or gaseous nitrogen and helium. The release of these gases can displace oxygen in enclosed or poorly ventilated spaces, creating an oxygen deficiency hazard (ODH).

Codes and standards outside the NEC address the storage, handling, transfer, and use of cryogenic fluids, including requirements intended to mitigate ODH and other nonelectrical hazards.

A2310.1.3 Cryogenic Fluid Storage, Distribution, and Handling

NFPA 55, Compressed Gases and Cryogenic Fluids Code, and NFPA 1, Fire Code, provide requirements related to cryogenic fluid storage, distribution, and handling, including maximum allowable quantities, separation distances, ventilation, emergency controls, and signage.

The International Fire Code (IFC), where adopted, contains parallel provisions addressing cryogenic fluid installations and may apply depending on the locally adopted code path.

A2310.1.4 Pressure Relief Devices and Vent Routing

Cryogenic systems typically incorporate pressure relief devices to protect vessels, piping, and cryostats from overpressure conditions.

NFPA 55 establishes requirements for pressure relief devices used on cryogenic systems, including provisions for device sizing, materials, installation orientation, and routing of discharge to safe outdoor locations. The IFC Chapter 55 contains similar requirements.

A2310.1.5 Leak Detection and Oxygen Deficiency Hazard (ODH) Monitoring

NFPA 55 and the IFC address requirements for gas detection systems where inert cryogenic fluids are used indoors or in enclosed spaces. These provisions typically include detector placement, alarm setpoints, annunciation, and system performance criteria.

CGA P76, Oxygen Deficiency Hazard Analysis — Guideline for Safety in Cryogenic Environments, provides guidance on evaluating ODH risks, detector placement, alarm levels, and mitigation strategies for cryogenic installations.

A2310.1.6 Ventilation and ODH Mitigation

Ventilation is a primary mitigation measure for ODH conditions associated with cryogenic fluid releases.

NFPA 55 establishes ventilation requirements for indoor cryogenic fluid installations, including minimum exhaust ventilation rates and provisions for emergency exhaust ventilation. The International Mechanical Code (IMC) governs the mechanical design of ventilation systems for commercial and industrial occupancies.

CGA P18, Standard for Bulk Inert Gas Systems at Consumer Sites, and CGA P76 provide additional guidance related to ventilation design, airflow patterns, and ODH mitigation strategies.

Cold nitrogen and helium vapor can be denser than ambient air at the same pressure and may accumulate near floor level, in trenches, below grade vaults, or other low points before warming and dispersing. Ventilation system design and exhaust point placement should account for this behavior.

Outdoor locations are generally considered ventilated for ODH classification where dispersion to free air is unobstructed; however, localized accumulation may occur due to recirculation zones created by structures or wind conditions. CGA P76 provides dispersion assessment methodologies applicable to outdoor cryogenic release scenarios.

A2310.1.7 Signage, Hazard Communication, and Emergency Planning

Signage for areas where cryogenic fluids are stored or used may be governed by NFPA 55, IFC Chapter 55, NFPA 704, Standard System for the Identification of the Hazards of Materials for Emergency Response, and ANSI Z535, Safety Signs and Colors.

OSHA regulations, including 29 CFR 1910.1200 (Hazard Communication) and 29 CFR 1910.134 (Respiratory Protection), may apply to workplaces where oxygen deficiency hazards exist.

Emergency planning, ventilation controls, and ODH mitigation measures are typically within the jurisdiction of the fire official or mechanical inspector. Early coordination with the AHJ responsible for fire, mechanical, and building codes is recommended.

A2310.1.8 Structural, Seismic, and Building Code Considerations

Structural support, anchorage, and seismic design requirements for cryogenic vessels, piping, and associated equipment are typically governed by the International Building Code (IBC) and ASCE 7, Minimum Design Loads and Associated Criteria for Buildings and Other Structures.

ASME B31.3 includes seismic design provisions applicable to process piping.

Occupancy classification, fire resistance ratings, and means of egress for rooms or spaces housing SCS cryogenic equipment are generally addressed by the IBC and locally adopted building codes.

2310.2 Listing Requirements.

Superconducting Cable Systems, including cryostats, SCS terminations, SCS joints, fittings, accessories, and monitoring/control equipment, shall be listed.

2310.10 Uses Permitted.

- (1) Services, feeders, and branch circuits
- (2) Indoors
- (3) Outdoors, where listed for use in outdoor locations
- (4) Wet locations, where listed for wet locations
- (5) In cable trays, including those with mechanically discontinuous segments up to 300 mm (1 ft).
- (6) For direct burial or in ducts where identified for such use.

2310.11 Uses Not Permitted.

- (1) Where subject to physical damage.
- (2) In hoistways, unless specifically listed for use in hoistways.
- (3) In ducts or plenums used for environmental air, unless listed for use in ducts or plenums used for environmental air.
- (4) In hazardous (classified) locations unless listed for the specific hazardous (classified) location.

(5) Where installed in locations subject to flooding, unless SCS components are listed for submersion, and control/monitoring equipment shall be located above the design flood elevation unless otherwise permitted by the listing.

2310.12 Qualified Persons.

Installation, shall be performed only by qualified persons trained in superconducting systems.

Informational Note: See NFPA 55, Compressed Gases and Cryogenic Fluids Code, for personnel training provisions related to the handling and use of cryogenic fluids.

Part II — Installation

2310.20 Bending Radius.

The installed bending radius shall not be less than that marked on the assembly or specified by the manufacturer.

2310.21 Support and Expansion.

(A) Support.

SCS shall be secured and supported at intervals specified by the manufacturer.

(B) Expansion/Contraction.

Where temperature changes produce differential movement, listed expansion devices shall be provided.

(C) Seismic.

In seismic regions, supports and restraints shall be listed as suitable for the designated seismic design category.

2310.22 SCS Joints.

SCS Joints shall be accessible unless listed for concealment and specifically permitted by the manufacturer. Where SCS joints are concealed, provisions shall be made for inspection and monitoring connections as required by the listing.

2310.23 Access.

(A) Supervisory Monitoring and Controls, and emergency shutoff devices shall be Readily Accessible.

(B) Valves and pressure relief devices shall be Accessible.

2310.24 Outdoors

Components installed outdoors shall be UV resistant or protected.

2310.25 Enclosures Outdoors or in Damp or Wet Locations.

Enclosures installed outdoors or in damp or wet locations shall be in accordance with 110.28. For enclosures in wet locations, raceways or cables entering above the level of uninsulated live parts shall use fittings listed for wet locations.

2310.26 Direct Burial and Below Grade.

Below-grade installations shall provide drainage, ventilation as needed for ODH mitigation, and protection against corrosion and water ingress in accordance with its listing.

2310.27 Proximity to Other Systems.

SCS shall be permitted to be installed near heat sources, steam lines, and other systems in accordance with the manufacturer's instructions.

2310.28 Source of Supply Signage.

All SCS termination points shall be permanently marked with signage in accordance with the following:

- (1) With the identification and physical location of where the power originates.
- (2) With a label that is permanently affixed and of sufficient durability to withstand the environment involved.
- (3) Using a method that is not handwritten.

2310.29 Accessibility of Energized Parts.

(A) Energized Equipment.

Doors that would provide unqualified persons access to energized parts shall be locked. Permanent signs in accordance with 110.21(B) shall be installed on panels or doors that provide access to live parts and shall state the following: DANGER — KEEP OUT.

(B) Control Equipment.

Where operating at not over 1000 volts ac, 1500 volts dc, nominal, control equipment, relays, monitoring equipment, and the like shall not be installed in compartments with high-voltage parts or high-voltage wiring, unless both of the following apply:

- (1) The access means is interlocked with the high-voltage switch or disconnecting means to prevent the access means from being opened or removed when the high-voltage switch is in the closed position.
- (2) All high-voltage parts or high-voltage wiring in the enclosure that remains energized when connected to the termination are protected by insulating or grounded metal barriers to prevent accidental contact with energized high-voltage parts or wiring.

(C) High-Voltage Instruments or Control Transformers and Space Heaters.

High-voltage instrument or control transformers and space heaters shall be permitted to be installed in the high-voltage compartment without access restrictions beyond those that apply to the high-voltage compartment generally.

2310.30 SCS Design, Documentation, and Required Diagram.

(A) Design and Documentation.

SCS systems shall be designed by the manufacturer. Where components of the SCS system and assemblies are listed, documentation of internal design features subject to the listing investigation shall not be required. The system design shall address but not be limited to the following topics, and the documentation of this design shall be made available to the authority having jurisdiction:

- (1) Clearances and exits
- (2) Electrical enclosures
- (3) Securing and support
- (4) Fire protection
- (5) Safety ground connection provisions
- (6) Guarding of live parts
- (7) Application, arrangement, and disconnection of circuit breakers, switches, and fuses
- (8) Overvoltage (surge) protection equipment
- (9) Safety Critical Monitoring and control systems
- (10) ODH hazards, alarms and mitigation methods

Informational Note: An SCS system includes the termination points, the interconnecting cable and joint areas, and the SCS supply and return connections that conveys cryogenic fluid to the system. The cryogenic fluid supply and associated piping, storage vessels, fittings, valves and other components are considered a separate system.

(B) Diagram.

A permanent, single-line diagram of the SCS system shall be provided in a readily visible location within the same rooms or enclosed areas in each location where the SCS system terminates and shall clearly identify the following:

1. OCPD's
2. Isolation means
3. Safety critical alarms, control and monitoring equipment
4. All possible sources of voltage to the installation under normal or emergency conditions

Informational Note: The permanent, single-line diagram required by this section may be prepared by the installer, designer, or building owner and may not be supplied by the SCS manufacturer.

The marking on the SCS System shall cross-reference the diagram.

Part III — Construction**2310.50 General.**

SCS shall be factory assembled to the extent practicable and shall use listed components.

2310.51

Cryostat. The cryostat shall provide a thermal insulation barrier to the SCS System suitable for the environment.

2310.52 Fittings, SCS Joints, and SCS Terminations.

(1) SCS Joints and Transitions.

Only listed, fittings shall be used.

(2) SCS Terminations.

Current lead assemblies shall provide heat interception, electrical insulation, and creepage/clearance distances for the voltage rating.

(3) Pressure Relief.

Where pressure relief is integral, venting shall be routed in accordance with section 2310.251.

(4) Electrical Connections.

Where practicable, dissimilar metals in contact anywhere in the system shall be avoided to eliminate the possibility of galvanic action.

2310.53 Monitoring and Controls.

Where provided as part of the listed system, temperature, pressure, vacuum, flow, quench detection, and leak detection components shall be integral and arranged for supervisory monitoring where required listing or manufacturer's instructions.

Informational Note: Control and monitoring is integral to maintaining superconductivity, coordinating protective devices, and mitigating ODH.

2310.54 Door Stops and Cover Plates.

External hinged doors or covers to protected parts such as SCS joints or SCS terminations shall be provided with stops to hold them in the open position. Cover plates intended to be removed for inspection of energized parts or wiring shall be equipped with lifting handles and shall not exceed 1.1 m² (12 ft²) in area or 27 kg (60 lb) in weight, unless they are hinged and bolted or locked.

2310.55 Ampacity and Voltage Rating.

Ampacity and voltage rating shall be as indicated in the SCS listing and marking.

Informational Note 1: SCS ampacity may differ substantially from conventional conductors and is sensitive to cooling capacity and installation geometry.

Informational Note 2: Ampacity is determined with consideration for coolant temperature, coolant flow rate, installed configuration, and any additional correction or adjustment factors as specified by the equipment manufacturer.

2310.56 Short-Circuit Rating.

The energized components, including SCS conductors, SCS terminations, and SCS joints,

shall have a short-circuit rating coordinated with the protective device clearing times and manufacturer's specified limits.

2310.57 Marking.

(A) System Nameplate.

A nameplate shall be installed at each termination point and joint portion of the SCS system. The nameplate shall be visible after installation. The system nameplate along with the outermost covering along length of the system shall contain the following Information:

(1) The maximum rated voltage AC phase-to-phase, phase-to-ground or both or DC pole-to-pole or pole-to-ground.

(2) The maximum rated Ampacity

(3) The manufacturer's name, trademark, or other distinctive marking by which the organization responsible for the product can be readily identified

(4) The rated peak withstand current rating in rms symmetrical amperes or kA

(5) Rated short-time withstand current and duration if greater than 2 seconds

(6) Maximum Allowable Working Pressure (MAWP). The maximum allowable working pressure (MAWP), expressed in bar or psi, for the SCS system.

Informational Note: The maximum allowable working pressure can vary based on the operating temperature.

(7) Type of cryogenic fluid used in the SCS system.

(8) System Volume. The total volume of cryogenic fluid contained in the SCS system at normal operating temperature, expressed in liters or gallons.

Informational Note: The total system volume is based on the quantity of cryogenic fluid at normal operating temperature.

(9) Basic Impulse Level (BIL). The basic impulse level (BIL) of the SCS system, expressed in kilovolts (kV).

Informational Note: The basic impulse level identifies the system's ability to withstand transient overvoltage conditions.

(B) Environmental Marks.

Where listed for use in specific environments, the applicable environmental marking shall be applied to the nameplate, cryostat or outermost covering of the system.

Informational Note: Environmental markings can indicate the suitability of the SCS system and components for specific environmental conditions. Such markings can include characteristics such as sunlight resistance, oil resistance, moisture resistance, corrosion resistance, or other environmental performance designations

Part IV — Grounding and Bonding

2310.150 Equipment Grounding and Bonding.

(A) Equipment Grounding Conductor (EGC).

An EGC shall be provided with the circuits supplied by the SCS. The cable cryostat shall not be used as the sole EGC unless specifically listed for such use.

(B) Shielding and Screens.

Where shielding is provided, bonding and terminations shall comply with the listing.

2310.151 Ground-Fault Protection of Equipment.

Where ground-fault protection of equipment is required elsewhere in this Code, protective devices shall be coordinated with SCS manufacturer's specified limits.

Part V — Overcurrent Protection, Coordination, and Quench

2310.200 Overcurrent Protection.

A. General.

Overcurrent protective devices (OCPDs) supplying superconducting cable systems (SCS) shall be selected, set, and installed so that their interrupting settings do not exceed the short-circuit, thermal, and quench related withstand ratings of any SCS system, including conductors, joints, and terminations, as specified by the SCS manufacturer.

B. Coordination With SCS Protection.

OCPDs shall be coordinated with SCS protection schemes so that protective operation limits-of the SCS to values not exceeding the manufacturer's specified limits. Where the listed SCS includes protective interlocks or trip signals, the OCPDs shall be compatible with and responsive to such functions as specified in the listing and manufacturer's instructions.

C. Settings and Characteristics.

Time-current characteristics, instantaneous (or short time) pickup, and zone selective or differential functions, where provided, shall be selected to achieve clearing times within the SCS manufacturer's specified limits for both fault conditions and quench induced overcurrent conditions.

D. Interrupting and Withstand Ratings.

The available fault current at the line terminals of equipment supplied by the SCS shall not exceed the interrupting rating of the OCPDs or the short-circuit withstand ratings of the SCS and connected equipment. Where necessary, current limiting devices shall be provided to comply with this requirement.

E. Documentation.

Protective device ratings, settings, and coordination studies used to demonstrate compliance with this section shall be documented and made available to the authority having jurisdiction.

Part VI — Cryogenic Coolant, Venting, and ODH Mitigation

2310.249 General

SCS Systems require connection to a cryogenic coolant supply, these supplies while integral to the operation of the system, do not serve an inherent electrical function covered by this code. The requirements of 2310.250 through 2310.254 shall apply only to those portions of the cryogenic coolant system at or within the supply and the return connections, and within the Superconducting System, where such portions interface with or affect the electrical function or safety of the system. Cryogenic coolant system components beyond the supply and return connection points provided by the SCS manufacturer shall not be considered part of the electrical installation for the purposes of this Code.

Informational Note: Annex A2310.1 provides informational guidance and references to other applicable codes and standards addressing cryogenic fluid systems associated with Superconducting Systems (SCS), including cryogenic fluid storage and handling, pressure relief and venting, oxygen deficiency hazard (ODH) monitoring, ventilation, signage, and coordination with fire, mechanical, and building codes.

2310.250 Cryogenic Coolant Media.

Only cryogenic coolants specified in the SCS listing shall be used. Cryogenic Coolant storage, distribution, and handling associated with the SCS shall comply with the manufacturer's instructions.

2310.251 Pressure Relief and Vent Routing.

Where pressure relief is integral to the SCS system, relief devices and vent piping shall discharge to approved locations that do not create a hazard to persons or damage to equipment. Discharge points shall not be directed into working space required by 110.26.

2310.252 Cryogenic Fluid Leak Detection.

Where provided as part of the listed SCS, cryogenic fluid leak detection shall annunciate locally and comply with all applicable codes, standards, and the manufacturer's listing and installation requirements.

2310.253 Ventilation and Signage.

Indoor installations shall provide means to mitigate ODH where required by the manufacturer's instructions or listing. Areas with potential ODH shall be posted with permanent signage indicating the hazard and emergency procedures.

Informational Note: Ventilation and ODH mitigation measures are typically addressed by mechanical or fire codes; coordination with the AHJ is recommended.

2310.254 Cryogenic Fluid Systems Associated With SCS.

Cryogenic fluid systems associated with the SCS — including coolant storage vessels, supply manifolds, transfer lines, refrigeration and circulation equipment, pressure relief devices, and venting systems — shall comply with all applicable codes, standards, and the manufacturer's installation requirements.

Part VII — Connections to Equipment

2310.300 Transition to Conventional Conductors.

The connection of a SCS system to the distribution equipment shall comply with one of the following:

1. Be listed and marked by the specific distribution equipment as an acceptable means of termination.
2. Be listed and identified for the specific distribution equipment as an acceptable means of termination.
3. Incorporate, as part of the listed SCS system, a transition box to interface between the SCS system and the distribution equipment.

2310.301 Equipment Spaces.

Enclosures housing SCS terminations, joints, or control components shall be of adequate size to maintain required bending radius, clearances, and access.

Part VIII — Testing, Documentation, and Service

2310.350 Field Testing.

Prior to energization, SCS systems shall be tested in accordance with the listing and manufacturer's instructions.

Informational Note: Testing may include dielectric tests, vacuum integrity, pressure/leak checks, temperature stabilization, monitoring interlock verification, and protective device functional checks.

2310.351 Documentation.

Documentation shall be provided to the owner and made available to the AHJ, including system ratings, as-built routing, physical support details, vent discharge locations, protective device settings, and monitoring/alarm points.

2310.352 Access for Servicing.

Access shall be provided for periodic inspection of SC terminations, joints, supports, and monitoring devices. Where software or firmware is integral to protection or monitoring, configuration control procedures shall be provided.

Informational Note: Maintenance practices are critical to sustaining SCS system performance. See NFPA 70B for recommended electrical equipment maintenance.

Article 2314 - Cybersecurity for Data Centers

2314.1 Scope. This article applies to the general requirements for developing a cybersecurity posture and the installation of cybersecurity operations for data centers, including information technology centers.

Part II. Special Cybersecurity Requirements for

2314.10 Cybersecurity Risk Posture

(A) Cybersecurity Risk Assessment. (See A2314.10)

A cybersecurity risk assessment shall comply with the following:

1. A cybersecurity risk assessment shall be conducted by a licensed professional engineer or cybersecurity qualified persons acceptable to the AHJ.
2. Documentation attesting the risk assessment was completed shall be provided to the AHJ.

A2314.10 The entity conducting the cybersecurity risk assessment should be able to provide references demonstrating their experience in designing, installing, or maintaining electrical systems that support the development of the Cybersecurity/Information Security Risk Management Strategy for facilities of similar complexity.

The cybersecurity risk assessment should be developed using an approved, recognized framework, such as NIST SP 800-30r1 Guide for Conducting Risk Assessments or ANSI/ISA/IEC 62443-3-2 Security risk assessment for system design like the following:

1. The assessment activity should include at least the following risk categories:
 - a. Threat-related risks,
 - b. Vulnerability-related risks,
 - c. Asset-related risks,
 - d. Third-party supply chain-related risks,
 - e. Human factor related risks,
 - f. Compliance and regulatory risks, and
 - g. Operational-related risks, including system compromise, downtime, isolation, and restoration.
2. The assessment should, at a minimum, document the:
 - a. the risk tolerance for all identified risks and the risk tolerance criteria used,
 - b. risk acceptance, conditional risk acceptance, and risk treatments required to achieve risk acceptance, and
 - c. residual risk that remains after applying risk treatment measures.
3. The summary of the cybersecurity risk assessment for AHJ review should provide insight into how it was completed and scope. The summary should indicate a holistic approach to the assessment and not focus on one aspect, such as operational technology and/or information technology. Additional factors such as physical security (access control) features and organizational risk appetite should be mentioned. Specific vulnerabilities and control methods should be avoided because they increase the likelihood of attack from a

threat actor. Color coded (green, yellow, red) risk for associated subsystems should suffice reflecting a high, medium, or low level of concern.

(B) Cybersecurity/Information Security Risk Management Strategy (See A2314.10(B))

A risk management strategy shall comply with the following:

1. A Cybersecurity/Information Security Risk Management Strategy shall be developed and implemented in accordance with the findings of the cybersecurity risk assessment.
2. Documentation attesting that the Cybersecurity/Information Security Risk Management Strategy was created shall be provided to the AHJ,

A2314.10 (B)

The Cybersecurity/Information Security Risk Management Strategy should align with established frameworks such as NIST CSF or ISO 27001. Its complexity should be commensurate with the overall risk level, indicative of the type of facility, and established in the cybersecurity risk assessment. The strategy should consider one, more, or all of the following:

1. Equipment inventory, categorization, and assessments,
2. Remediation plans and compensating controls,
3. Identification and categorization of all security controls. Controls should be:
 - a. Aligned with prioritized aspects of the Confidentiality, Integrity, and Availability (CIA) triad,
 - b. flexible to encourage refinement to match emerging threats and routine reviews through the change management process,
 - c. categorized based on the nature of the connections (i.e., human-to-human, human-to-machine, and/or machine-to-machine),
 - d. targeted for protections that ensure connectivity is aligned with security requirements,
 - e. standardized to the most current version of secured protocols, to the greatest extent practical,
 - f. where possible configured to require a token-based authentication, certificate-based authentication, passkey, or other method consistent with the security requirements of the system,
 - g. validated to ensure its data traffic is expected,
 - h. simplified where it is possible to reduce the attack surface vectors and malicious activities,
 - i. designed to limit lateral movement and avoid compromise of additional hosts or escalating privileges,
 - j. utilizing least privilege access principles,
 - k. subjected to a change management program for complex passwords on systems where applicable,
 - l. utilizing a development and testing environment where virtual instances of controls can be tested and refined prior to introduction in the production environment,

- m. supplemented where mandatory controls are impractical to implement. Compensatory controls should be permitted, subject to appropriate review and approvals, and
 - n. tested, validated, and commissioned on equipment installations to verify measures are properly implemented.
- 2. monitoring plans, including methods of securing monitoring records,
- 3. inventory of all related documentation, version control methods, and documentation review and update schedules,
- 4. requirements for connectivity outside the facility, connectivity within the facility, and remote management capabilities,
- 5. change, patch, and upgrade management processes, and the ownership of the process,
- 6. change management approval authority,
- 7. external attack surface management processes, including:
 - a. asset discovery and management,
 - b. vulnerability identification and management,
 - c. configuration management, and
 - d. continuous monitoring programs and activities.
- 8. isolation and recovery plans, including:
 - a. data repository classifications of criticality and confidentiality, and
 - b. data back-up and recovery requirements for each class.
- 9. identification of critical systems (such as life safety) that need to remain operational in the event of a cybersecurity incident,
- 10. identification of specific application or service isolation requirements to limit the impacts of compromised equipment and systems,
- 11. enhanced assurance devices utilizing hardware-enforced trusted communications for critical operations and personnel,
- 12. demilitarized zone(s) (DMZ) that document boundary zone(s) identifying demarcation between external networks and those within the datacenter. Within the DMZ, establish:
 - a. threat detection and response to identify and address threats bypassing or exploiting controls such as intrusion detection and/or prevention systems,
 - b. means to log and monitor connectivity,
 - c. Anomaly detection to identify patterns or activities deviating from normal or expected behavior,
 - d. data flow monitoring within and between network segments, validating policies and early signs of compromise or misconfiguration of controls, and
 - e. security operations center KPIs and KPIs that prompt change and develop plans to be executed during maintenance operations to limit disruptions from false positives,
- 13. minimization of unnecessary traffic flow to the greatest extent practical. Where possible:
 - a. Implement unidirectional traffic flows with data diodes,
 - b. utilize cross-domain methodology/architecture enabling specific data flow between specific devices within the DMZ,

14. network segmentation to minimize the threat surface, isolating Operational Technology (OT) systems, including but not limited to power systems, HVAC, and life safety equipment, from the business network and information technology (IT) services,
15. micro-segmentation for smaller units based on device function to limit duties where system, role, or individual has complete control of critical functions,
16. reduced connectivity time for control systems. Operational technology systems may only need connectivity to broader network connectivity during maintenance operations, such as patching and updates. Consider the following:
 - a. Disable unneeded ports and protocols that may provide a threat vector,
 - b. Utilize Industrial protocols using the latest secure version with cryptographic protection for authentication and integrity, and
 - c. Manage risks where obsolete devices no longer receive patches or updates, to limit migration of threats across the networks, by reducing interconnectivity to the lowest practical level,
17. Establish host-based boundary controls, including access control lists, allowed source and destination addresses, ports and protocols, directionality, and connection flags,
18. Utilize dynamic tools in areas of greater concern, providing stateful filtering and/or deep packet inspection,
19. Centralize and standardize network connections to provide repeatable solutions that avoid duplicating existing routes, such as centralized remote access via secure virtual private networks (VPN),
20. Multifactor authentication (MFA), including physical tokens, should be utilized to the greatest extent practical,
21. security requirements, certifications, and accreditations for third parties bringing equipment or services into datacenters,
22. review of security practices for the design, development, production, and service of network connectable equipment, including the overall cybersecurity posture of the manufacturing company itself. Note that it does not matter how well a system is designed or deployed from a cybersecurity perspective if the manufacturer does not adequately secure its own development, manufacturing, and patch/update distribution systems. Threat actors can compromise products by installing covert back doors during initial development or during the development and distribution of software updates.
23. physical access controls to the datacenter and critical assets within the datacenter, based on the recommendations of a physical security assessment.
24. continuous improvement mandates including a methodology for addressing strategy element non-compliance.

(C) Cybersecurity/Information Security Audit

A cybersecurity audit shall comply with the following:

1. A Cybersecurity/Information Security audit shall be conducted by a licensed professional engineer or cybersecurity qualified persons acceptable to the AHJ to verify the acceptable implementation and compliance with the Cybersecurity/Information Security Risk Management Strategy.

2. Documentation attesting that the Cybersecurity/Information audit was completed shall be provided to the AHJ.

3. Cybersecurity/Information Security Strategy elements found not in compliance shall be documented within the strategy as inputs to a continuous improvement mandate.

Substantiation:

The recommendations contained in this global public input are the result of the work conducted by the Correlating Committee Datacenter Task Group chaired by Todd Lottmann (Eaton) with additional Task Group members including Jack Lyons (NEMA), Ernie Gallo (ATIS), Keith Waters (Schnider Electric), David Kendall (ABB), Christine Porter (Intertek) David Humphrey (IAEI), Robert Osborne (UL), Joel Goergen (Cisco), Brian Deckard (Siemens), Joseph Borowski (Google), Darryl Hill (IBEW), Eddie Rodriguez (IEC), Joe Prisco (IBM), James Walters (Meta), and Brandon DeVaul (Microsoft). In addition to these task group members, over 30 guests participated in the development of this global input, showing the wide range of input received while processing this recommendation. This is a consensus recommendation from the Task Group members that meets the direction given to them which is “Data Centers, and the infrastructure that supports them, are evolving quickly. Articles 645 and 646 have been used in the past for IT applications and data centers, but the rapid pace of development of “AI data centers”, where modular systems operate at DC voltages, utilize wiring methods that are not recognized in Chapter 3, and may have other challenges with existing rules. A Task Group should identify gaps and make public Inputs to address any gaps.”

The task group recommends the creation of a new Chapter 23 Data Centers and Information Technology Equipment containing 7 new articles. This new chapter is based on requirements in article 645 and additional requirements deemed necessary for the safe installation of Datacenters and IT applications. The new requirements and substantiation below detail the recommendation.

The following table is provided to cross reference the changes to the requirements in Article 645 that were distributed to various new sections in proposed Chapter 23:

Existing Article/ Section	Section Title	New Article/ Section
Title	Information Technology Equipment	
645.1	Scope	2302.1
645.5	Special Requirements for Information Technology Equipment Room.	2302.5
645.6 (A) – (C)	Supply Circuits and Interconnecting Cables.	2300.17
645.6 (D) – (H)	Supply Circuits and Interconnecting Cables.	2302.6
645.10	645.10 Disconnecting Means.	2302.10
645.11	Uninterruptible Power Supply (UPS).	2306.9
645.14	System Grounding.	Deleted
645.15	Equipment Grounding and Bonding.	Deleted
645.16	Marking	2306.4
645.17	Power Distribution Units.	2306.6
645.18	Surge Protection for Critical Operations Data Systems.	2300.24
645.25	Engineering Supervision.	2300.22
645.27	Selective Coordination.	2300.27

Chapter 23 – Data Centers and Information Technology Equipment

Article 2300 - General Requirements for Data Center Facilities, Modular Data Centers (MDCs), and Information Technology Equipment (ITE) Rooms

Existing Article/ Section	New Article/ Section	Section Title	Panel Statement
Title	2300	General Requirements for Data Center Facilities, Modular Data Centers (MDCs), and Information Technology Equipment (ITE) Rooms	A new article 2300 for the “General Requirements for Data Center Facilities, Modular Data Centers (MDCs), and Information Technology Equipment (ITE) Rooms” was created to provide the general requirements for the Data Centers, MDCs and ITE rooms category This is part of an effort to reorganize the NEC to make more user friendly, and group together like in kind articles.
(none)	2300.1	Scope	A new scope was created to define the general requirements for Data Center Facilities, Modular Data Centers (MDCs), and Information Technology Equipment (ITE) Rooms
(none)	2300.2	Listing	Panel Statement A new listing requirement applies to all equipment used in an IT or Datacenter application. Power levels are increasing rapidly in IT and Datacenter applications and extra scrutiny is necessary to ensure proper application and use of conductors, equipment, and raceways.
	2300.3	Reconditioned	Determined that the items listed in the 2300.3 section cannot be reconditioned. Panel Statement Added a prohibition

			of installing reconditioned equipment at section 2300.3 per NEC Style Manual section 2.2.1 Parallel Numbering Required.
645.15	2300.15	Equipment Grounding and Bonding	Deleted the redundant grounding requirements contained within Article 250 and retained the requirement to bond signal reference structures.
645.6 (B) and (C)	2300.17	(Supply Circuits and Interconnecting Cables)	645.6 (B) and (C) is maintained in Article 2300 as a general wiring requirement for IT applications. It is modified to include an ampacity limitation. The use of flexible cords in article 645 IT rooms has long been established for equipment rated 100A or less. An increase above this level would require technical study and justification therefore the limit of 100A was added. The types and ampacities called out in table 400.5(A)(1) is aligned to this limitation. New exceptions were added to allow for engineering determination for ampacity for non-typical loads as encountered in new datacenter applications and to allow certain types to be used for applications above 100A. New 2300.17(A) was included to clarify sizing rules for supply conductors while aligning with the continuous load CC task group recommendations.
	2300.18	EV Connectors and Cable Assemblies	EV connectors and cable assemblies are used under a specific use case that is not correlated with how these connectors and cable assemblies would be used in a datacenter. There are gaps that exist in the certification requirements for EV

			connectors and cable assemblies when they are used in datacenters, and as such only an EV connector and cable assemblies that has been evaluated to close those gaps would be suitable for use in a datacenter. Once the gaps are closed, the EV connector and cable assemblies can be identified as suitable for that use.
	2300.20	Frequency and Waveform Effects on Conductor Ampacity	Modern datacenter electrical installations increasingly use power electronic converters, pulsed and harmonic rich loads, and other nonlinear equipment that produce currents differing substantially from the 60hertz sinusoidal ac and steady state dc assumptions embedded in NEC ampacity tables. These waveform conditions introduce frequency dependent mechanisms—such as skin effect and proximity effect—that increase effective conductor resistance and heating, potentially reducing allowable ampacity well below Code table values. Because the NEC provides no explicit direction for these scenarios, field practices can be inconsistent and conductor temperature rise may be underestimated. The existing NEC ampacity tables were historically developed for 60hertz sinusoidal systems, dating back more than a century to early conductor ampacity research and including major refinements in the 1930s and 1940s. Their underlying assumptions remain appropriate for the vast majority of conventional installations but do not describe the

			behavior of conductors subjected to high frequency or no sinusoidal currents. The proposed Section 2300.26 remedies this gap by clarifying the foundational assumptions behind table based ampacities and requiring a documented engineering determination when waveform or frequency content departs from them. This flexible approach permits validated calculations, test data, or manufacturer ratings while preserving existing ampacity values for conventional 60Hz and steady state dc systems. It aligns with recent NEC actions (e.g., TIAs addressing PWM environments) that require engineering evaluation where equipment or conductors are exposed to waveforms beyond original Code assumptions, thereby improving safety and ensuring consistent, reviewable compliance.
645.25	2300.22	(Engineering Supervision) Load Calculations	The title was changed from Engineering Supervision to Load Calculations to reflect the application of this section. The section was divided into (A) and (B) and the requirement to consider IT loads to be continuous was relocated to (A). The alternative method of calculations was relocated to (B) and limited to Feeder and Services.
645.18	2300.24	Surge Protective Devices (SPDs)	The Article number was changed to reflect the new location in Chapter 23. The requirement was broadened to include all installations, not

			just critical operation data systems as there are critical components providing protection in IT and datacenter applications that are susceptible to surges.
645.27	2300.27	Selective Coordination of Critical Operation Data Systems	The tile was changed to limit this to Critical Operation Systems within a Data Center. The term “license” was removed from professional engineer as that is a state or local requirement
645.14		(System Grounding)	This section was deleted as it did not modify the requirements within Article 250.

Article 2302 - Information Technology Equipment (ITE) Room(s)

Existing Article Section	New Article/ Section	Section Title	Panel Statement
Title	2302	Information Technology Equipment (ITE) Room(s)	The existing Article 645 was revised, renumbered, and relocated to the new Chapter 23 for Data Center related Articles. Article 2302 is the new Article for ITE rooms requirements. The basic requirements that apply to Data Center Facilities were relocated from the existing Article 645 to a new General Requirements in Article 2300. This is part of an effort to reorganize the NEC to make more user friendly, and to group together like in kind articles.
645.1	2302.1	Scope	The Scope of 2302 was created at 2302.1 to clarify that ITE rooms are not the main purpose of a building or structure. The term ancillary was used because that term in the building codes does not have a minimum or maximum square foot percentage of use within a facility. The term accessory is a specific use term that could pull in other building code requirements such as a maximum 10% area. This change is part of a task group that was charged with creating a new Chapter for Data Center Facilities, Modular Data Centers, and Information Technology Equipment Rooms.
645.5	2302.5	Special Requirements for ITE rooms.	Removed the awkward phrasing to state merely that these specific wiring methods are permitted if all the conditions stated are met. Revised references to the new article numbering. Used the accepted acronym for ITE. The word where was changed to if, as these are

			conditions not location specific. List item 3 was removed as the listing requirements are being stated elsewhere. Renumbered the ensuing sections. Removed the word maintenance and replaced with servicing as maintenance is under the purview of NFPA 70B. Revised the previous list item six now list item 5 and the informational note for clarity.
645.6	2302.6	Supply Circuits and Interconnecting Cables.	The requirements originate in 645.6, only 645.6 (D) - (H) remain in 2303.6 and renumbered. The requirements in existing 645.6(A) - (C) were moved and modified in 2300.17. The proposed requirements keep the original 645.6 language with minor editorial changes.
645.10	2302.10	Disconnecting Means	This remains the same requirement as the current 645.10 for ITE rooms. Moving the location to this section aligns with the reorganization of ITE rooms in the new Chapter 23 “Data Centers”
Table 645.10(B)	Table 2302.10(B)	Cables installed Under Raised Floors	The cables under raised floors will have the same requirements in ITE as stated in the current section 645.10(B). The relocation aligns with the development of a new Chapter 23 “Data Centers”

Article 2304 — Data Center Facility

General

Modern data center facilities have electrical characteristics not fully addressed by existing general NEC requirements. The proposed new Article 2304 provides minimum requirements for installation, grounding and bonding, and overcurrent protection unique to these facilities, improving consistency in design, installation, inspection, operation, and maintenance.

2304.1 Scope

This section defines the article's application to electrical requirements unique to data center facilities. Scope language is needed because these facilities commonly use specialized distribution, grounding, and bonding methods not typical of ordinary premises wiring.

2304.5 General

2304.5(A) Critical Operations Considerations

Many data center facilities are designed for continuous computing operation and use engineered electrical architectures and protection strategies to minimize interruptions. Documentation of these features supports safe installation, inspection, operation, and maintenance.

2304.5(B) Coordination with Cooling Infrastructure

Data center electrical systems increasingly interface with liquid cooling systems serving ITE. A cross reference is needed to direct users to the applicable requirements for these integrated systems.

2304.10 Wiring Methods — Busway

2304.10(A) Reconfiguration

Busway systems are commonly used in data centers to support flexible power distribution to rack-mounted equipment. Where tap units are intended to be added or removed, features preventing energization prior to full engagement are necessary to reduce the risk of arcing and exposure to energized parts.

2304.10(B) Physical Arrangement

Busway installations must not compromise working clearance or restrict access to ITE equipment and rack power distribution assemblies. Specific language is needed because of the density of equipment and infrastructure in these facilities.

2304.20 Supplemental Bonding.

2304.20(A)

Data center facilities commonly contain extensive metallic racks, cabinets, busways, cable management systems, raceways, and structural steel. Supplemental bonding may be used to promote equipotential conditions and reduce impedance to high-frequency current.

2304.20(B)

Supplemental bonding jumpers between adjacent racks or structures are commonly used where necessary to equalize potential and control impedance. This provision recognizes an established practice without reducing the requirements of Article 250.

2304.22 DC Distribution Grounding

DC distribution systems in data center facilities may use grounding methods that differ from conventional premises wiring systems. Limiting these methods to supervised installations under engineering supervision ensures appropriate technical oversight.

2304.30 Overcurrent Protection

The electrical characteristics of information technology equipment can affect overcurrent protective device performance, making coordination and documentation necessary to minimize unnecessary de-energization of upstream equipment.

2304.32 DC Protection and Coordination.

DC systems serving information technology equipment have protection and coordination characteristics that must comply with equipment listings and applicable NEC requirements for conductor protection and effective ground-fault current paths.

Closing

The proposed new Article 2304 addresses electrical requirements unique to data center facilities that are not comprehensively covered elsewhere in the NEC. The proposal improves clarity, consistency, and safety for these installations.

Article 2306 – Equipment Specific for IT Installations

Substantiation: A new Article is needed to address equipment specific for IT installations. This is in support of a new Chapter where requirements unique to IT Equipment and Data Centers will be co-located. This PI addresses the following needs:

- Listing Requirements – With the increasing power densities and emergency of newer technologies to support those power densities, having equipment evaluated to appropriate safety standards by a qualified electrical testing laboratory is important for safety.
- Reconditioned Equipment – Not all equipment can be re-evaluated to validate continued compliance with important safety requirements. The reconditioning section of this new Article prohibits reconditioning of equipment in the data center and IT installations unless specifically permitted.
- Nameplate Data – Information about the equipment, in the form of a nameplate, is important to ensure proper application of equipment. Requirements for Industrial Control Panels (Section 409.110) are the basis for a section for “Nameplate Data”. The parent language does indicate the requirements apply “as applicable”, since not all equipment have all ratings in the list.
- Overcurrent Protection – Requirements for overcurrent protection are based on 670.4(B) and 670.5(A), as these are existing requirements where overcurrent protection may be part of the equipment.
- Short-Circuit Current Rating – Requirements for short-circuit are based on 620.16, and are necessary to ensure proper coordination of equipment ratings with available fault currents
- Power Distribution Units in IT Racks - Requirements from 645.17, which were originally added in 2005 to address use of panelboards with more than 42 circuits within an enclosure, are no longer necessary as the ‘42-circuit rule’ was removed from the Code in 2008. This requirement has resulted in “IT-PDUs” that are evaluated to standards that differ from traditional power distribution standards (such as UL 60950 and UL 62368). Establishing a 100 A demarcation allows the continued use of some of the more common “rack mounted IT-PDUs” while providing a threshold for when product standards traditionally used for power distribution are required.
- Power Distribution Units External to the IT Rack – Similar to the requirement for in-rack PDU’s, a requirement is added to also apply to PDU’s that are not mounted in the IT rack. As this equipment is not part of an IT configuration, there is no amperage demarcation as the equipment should be evaluated as power distribution equipment to the power distribution product standards.
- Solid State Power Supplies - New requirements added to address the use of power supplies where the product certification evaluates the suitability of internal overcurrent protection to provide downstream overcurrent protection. These requirements also address the need for a disconnection means (which may be integral to the power supply) for servicing. Lastly, Informational Notes address the introduction of a new set of requirements for “Medium Voltage Power Supplies”, which routinely get referred to as “Solid State Transformers”.

- Uninterruptible Power Supplies - Requirements relocated from 645.11.

It is recommended that this new Article be assigned to CMP 12.

Article 2308 — Liquid Cooled Systems

General

New Article 2308 is necessary because liquid-cooled systems associated with information technology equipment introduce electrical installation, protection, and operating conditions not fully addressed by existing Code rules for conventional equipment. These systems involve liquids in proximity to energized parts, specialized controls and interlocks, and, in some applications, conductor ampacity dependent on active thermal management. The proposed article provides minimum requirements for listing, installation, protection, disconnecting means, and engineered ampacity determination to support safe and enforceable applications of these emerging systems.

2308.1 Scope

New text is necessary to establish a dedicated article addressing electrical requirements unique to liquid-cooled systems associated with information technology equipment. These systems include not only the cooling interface itself, but also associated pumps, control panels, sensors, actuators, and interlocks that introduce installation, protection, and reliability considerations not fully addressed by existing general provisions.

2308.2 Listing Requirements

Listing requirements are necessary to ensure that liquid-cooled and immersion-cooled equipment, assemblies, and associated fluids are evaluated for electrical safety, suitability of use, and compatibility with the intended application. Because these systems combine electrical equipment with liquids or specialized cooling media, product evaluation is necessary to address hazards that are not present in conventional equipment installations.

2308.2(1) Liquid-cooled system equipment and assemblies

Listing of liquid-cooled system equipment and assemblies is necessary to ensure that components intended to operate in proximity to coolant piping, fittings, and heat exchange equipment are evaluated as complete systems for electrical safety and proper integration.

2308.2(2) Immersion-cooled system equipment and assemblies

Listing of immersion-cooled system equipment and assemblies is necessary because these systems involve energized equipment operating within or adjacent to specialized cooling

fluids and enclosure systems that require evaluation beyond conventional equipment standards.

2308.2(3) Immersion Cooling Fluids for use with Information and Communication Technology Equipment

Listing of immersion cooling fluids is necessary to verify that the fluid is suitable for its intended use with information and communication technology equipment and does not introduce unacceptable electrical, fire, material compatibility, or performance hazards.

2308.10 Wiring Methods

Requirements for wiring methods are necessary because liquid-cooled systems present conditions such as leakage, condensation, spray, and fluid migration that are not typically encountered in conventional dry electrical installations. Specific wiring method provisions help ensure that conductors, cables, fittings, and terminations remain protected where liquids may be present.

2308.10(A) Raceways and Seals

This requirement is necessary to prevent liquid migration through raceways and wiring system openings into enclosures or equipment where contact with live parts could result in equipment damage, fault conditions, or shock hazards.

2308.10(B) Drip Paths and Routing

This requirement is necessary to reduce the likelihood that leaked or condensed liquids will follow gravity paths onto terminations, splices, or energized parts and create electrical tracking, arcing, or insulation failure.

2308.10(C) Separation from Piping

This requirement is necessary to minimize the risk of damage to wiring systems or exposure of live parts caused by leakage, rupture, service operations, or mechanical interaction with liquid piping systems. Where such separation cannot be achieved within listed assemblies, equivalent protection should be part of the evaluated assembly.

2308.12 Equipment Enclosures

This requirement is necessary to ensure that enclosures containing energized parts are protected where liquid leakage or spray may occur. Identification for wet locations, or equivalent integral guards or shields within a listed assembly, helps prevent liquid contact with live parts and reduces shock and fire hazards.

2308.14 Controls and Instrumentation

Requirements for controls and instrumentation are necessary because liquid-cooled systems commonly rely on sensing, monitoring, signaling, and automatic protective actions to maintain safe operation. These functions are integral to both the cooling process and the electrical safety of the equipment served.

2308.14(A) Control Circuits

This requirement is necessary to ensure that remote-control and signaling circuit wiring is suitable for the environmental conditions associated with liquid-cooled systems and is installed in a manner that reduces the risk of liquid contact with electrical conductors and terminations.

2308.14(B) Safety Interlocks

This requirement is necessary to ensure that interlocks relied upon for de-energization or protective action remain effective through supervision by qualified personnel, automatic monitoring integral to listed equipment, or fail-safe design so that loss of the interlock function does not defeat required protection.

2308.14(C) Sensors

This requirement is necessary to ensure that sensors forming part of a protective scheme are installed in accordance with manufacturer's instructions as part of the listed system so that their protective function is reliable and consistent with the equipment evaluation.

2308.30 Continuous Load

This requirement is necessary because liquid-cooling system equipment is commonly intended to operate for long durations in support of continuously operating information technology equipment loads. Treating this equipment as a continuous load aligns branch-circuit design with the actual operating profile of the system.

2308.32 Ground-Fault Protection

Ground-fault protection requirements are necessary because conductive liquids, conductive contamination, or conductive leakage paths may create fault conditions not normally present in conventional equipment environments. Additional protection helps reduce the risk of equipment damage, fire, and unintended energized conditions.

2308.40 Means of Disconnect

Disconnecting means requirements are necessary to provide a safe and practical means to isolate liquid-cooled system equipment for servicing, maintenance, emergency response,

and equipment protection. Because these systems may include multiple remotely located components, clear disconnecting provisions are needed.

2308.40(A) Readily Accessible

This requirement is necessary so personnel can quickly disconnect power to each liquid-cooled system equipment assembly during maintenance or in response to abnormal operating conditions, leakage, or equipment malfunction.

2308.40(B) Unit and Subassembly Disconnects

This requirement is necessary because pumps, control panels, power distribution units, and similar remote subassemblies may require independent isolation for maintenance, replacement, or emergency shutdown without affecting unrelated equipment.

2308.40(C) Emergency Shutdown Interface

This requirement is necessary to ensure that where remote shutdown is provided, the equipment de-energizes in a manner consistent with applicable life-safety requirements and does not depend on liquid containment or coolant flow to achieve an electrically safe condition.

2308.104 Ampacity for Liquid-Cooled Cable Systems

New text is necessary because the ampacity of conductors that are part of a liquid-cooled cable system is dependent on system-specific thermal conditions and cannot be accurately determined using the generalized assumptions that form the basis of the Chapter 3 ampacity tables. Engineering supervision is therefore necessary to establish safe conductor ampacity under actual operating conditions.

2308.104(A) Inapplicability of Standard Ampacity Tables

This requirement is necessary to clarify that the standard ampacity tables in Chapter 3 do not apply to conductors installed as part of a liquid-cooled cable system because those tables assume passive heat dissipation under conventional installation conditions rather than active liquid-assisted cooling.

Informational Note

The informational note is helpful because it explains that ampacity for liquid-cooled cable systems is based on system-specific thermal conditions and engineering analysis rather than the generalized installation assumptions used in Chapter 3.

2308.104(B) Engineering Parameters

This requirement is necessary to identify the minimum factors that must be considered under engineering supervision when establishing conductor ampacity for liquid-cooled cable systems. Since conductor temperature is directly influenced by coolant behavior and system design, these parameters are essential to technically sound ampacity determination.

2308.104(B)(1) Coolant type

Coolant type must be considered because its thermal, dielectric, and material compatibility properties directly influence system heat removal and safe performance.

2308.104(B)(2) Coolant temperature

Coolant temperature must be considered because it affects the temperature gradient available for heat transfer and therefore directly influences conductor operating temperature.

2308.104(B)(3) Coolant flow rate

Coolant flow rate must be considered because inadequate or degraded flow can materially reduce heat removal and cause conductor temperatures to exceed safe limits.

2308.104(B)(4) Total length of cable and associated coolant path

Total cable length and coolant path length must be considered because they affect thermal performance, pressure drop, and the overall effectiveness of the cooling system.

2308.104(B)(5) Heat transfer characteristics of the cable construction

Cable construction must be considered because the thermal interface between the conductor, insulation system, sheath, and coolant directly affects the rate at which heat can be removed.

2308.104(B)(6) Loss of coolant

Loss of coolant must be considered because the elimination or degradation of the cooling medium can rapidly invalidate the assumed operating ampacity and result in conductor overheating.

2308.104(B)(7) Any other operating conditions that affect the removal of heat from the conductors

This provision is necessary to recognize that additional installation-specific or operating-specific conditions may materially affect conductor temperature and must therefore be included in the engineering analysis.

Closing

Overall, the proposed new Article 2308 improves Code usability by consolidating requirements applicable to liquid-cooled systems associated with information technology equipment into a single article and by establishing minimum safety provisions for listing, installation, protection, disconnecting means, and ampacity determination. The proposal supports uniform design, installation, and enforcement while accommodating evolving technologies through the use of listed systems and engineering supervision where appropriate.

Article 2310 — Superconducting Cable Systems (SCS)

Article 2310 is proposed to recognize Superconducting Cable Systems (SCS) as a wiring method and to establish installation and application requirements necessary to ensure safe, consistent, and enforceable use of this emerging technology.

Superconducting Cable Systems transmit electrical power using superconducting conductors contained within a cryostat and operated at cryogenic temperatures. These systems differ fundamentally from conventional conductors, cables, busways, and cable bus systems currently addressed in the NEC. Existing Articles do not adequately address the electrical, mechanical, thermal, and cryogenic characteristics of SCS installations.

Without a dedicated NEC article, Authorities Having Jurisdiction (AHJs), designers, installers, and inspectors will lack clear requirements to evaluate compliance, resulting in inconsistent interpretations and potential safety concerns. Article 2310 is needed to establish clear installation criteria, consistent terminology, and enforceable safety provisions for this wiring method.

Nature of the Product and Technology

Superconducting Cable Systems are factory-engineered wiring systems that include:

- Superconducting conductors
- Cryostats providing thermal insulation
- Current lead assemblies and terminations
- Joints and transition fittings
- Monitoring and control systems
- Integrated cryogenic interfaces

Unlike traditional wiring methods, SCS installations involve cryogenic coolant systems, quench behavior, pressure relief, oxygen-deficiency hazards (ODH), and specialized protection and monitoring. These characteristics are unique and are not addressed by existing NEC wiring method articles.

Although early adoption of SCS is occurring in data centers, the technology is not occupancy-specific. SCS performs the same fundamental function as other NEC wiring methods—transmitting electrical power—and its installation considerations are driven by the characteristics of the equipment rather than the type of facility. Potential applications

include industrial facilities, campuses, medical and research environments, semiconductor manufacturing, and other high-capacity electrical distribution systems.

Consistent with the NEC's historical approach, Article 2310 treats SCS as a general wiring method, rather than limiting it to a specific occupancy.

Product Standards and Listing

Superconducting Cable Systems represent a new product category within the NEC. Industry stakeholders, including manufacturers, end users, and nationally recognized testing laboratories, are actively developing product standards and certification requirements for these systems, with UL Solutions leading an industry consortium.

An Outline of Investigation is currently underway to establish listing requirements for SCS assemblies and associated components. This development is proceeding in parallel with the creation of NEC installation requirements, consistent with past NEC practice for emerging technologies.

Listing of SCS will be essential to ensure:

- Verified electrical ratings (voltage, current, short-circuit withstand)
- Cryogenic system integrity
- Mechanical support and environmental limitations
- Coordination between electrical protection and superconducting system limits

Article 2310 requires SCS systems and associated components to be listed, providing a consistent basis for installation, inspection, and enforcement.

Scope and Structure of Article 2310

Article 2310 establishes requirements addressing the unique characteristics of Superconducting Cable Systems, including:

- **Scope and Definitions**
Establishes SCS as a recognized wiring method and defines system components such as cryostats, joints, terminations, quench, and oxygen-deficiency hazards.

- **Uses Permitted and Uses Not Permitted**

Identifies appropriate applications and locations for SCS installations, and locations where additional listing or safeguards are required.

- **Installation Requirements**

Provides requirements for bending radius, securing and supporting, expansion and contraction, accessibility, protection from physical damage, outdoor and below-grade installations, and proximity to other systems.

- **Engineering Design and Documentation**

Recognizes SCS as an engineered system and requires system documentation, coordination studies, and diagrams to be made available to the AHJ.

- **Overcurrent Protection and Coordination**

Establishes coordination requirements between overcurrent protective devices and the thermal, short-circuit, and quench limits of the SCS, which differ significantly from conventional conductors.

- **Grounding and Bonding**

Addresses equipment grounding and bonding for systems where the cryostat is not inherently suitable as an equipment grounding conductor.

- **Cryogenic Coolant Interfaces and ODH Considerations**

Establishes NEC requirements only at the electrical interface points, while referencing other applicable codes for cryogenic fluid systems, pressure relief, venting, ventilation, and oxygen-deficiency hazard mitigation.

- **Marking, Testing, and Maintenance Access**

Requires system markings, field testing prior to energization, and access for inspection and servicing.

- **Annex A**

Helps bridge gap between electrical functioning of the SCS system and the Informational References for Cryogenic Coolant, Venting, and Oxygen Deficiency Hazard (ODH) Mitigation for Superconducting Cable Systems (SCS), which is crucial for AHJ coordination.

Need for NEC Recognition

Superconducting Cable Systems are transitioning from pilot installations to early commercial deployment. Without NEC requirements:

- AHJs will lack enforceable criteria for approval
- Designers will lack a normative reference for safe integration
- Installers will lack consistent installation rules
- Safety issues unique to superconducting technology may not be adequately addressed

Article 2310 provides a structured framework to ensure SCS installations are safe, inspectable, and consistent nationwide, while allowing innovation to proceed responsibly.

Article 2314 - Cybersecurity for Data Centers

This public input is submitted on behalf of the NEC Datacenter task group charged by the NFPA 70 correlating committee and the NFPA Cybersecurity Advisory Committee (CAC) (www.nfpa.org/cac). The CAC notes that there has been consideration of the significance of cybersecurity protections as it relates to the scope of NFPA 70's new datacenter article and the scope of the technical committee. NFPA 70 2029 Edition has taken a proactive approach to providing cybersecurity requirements for equipment within its scope.

This proposal requires data center owners to establish a cybersecurity posture appropriate to their facility's nature. It contains a requirement for an overall cybersecurity risk assessment that serves as the foundation for developing a cybersecurity strategy. After implementing the strategy, a cybersecurity audit is necessary to verify that the strategy has been effectively implemented and to identify any non-compliant components, which should then be addressed through a continuous improvement process.

Recognizing the significant security and confidentiality concerns involved in building and operating a data center, third-party participation in the risk assessment, strategy development, and audit is not required. What is required is the AHJ's approval for who conducts the risk assessment and audit, and documentation attesting that the assessment, strategy development, and audit was completed.

The intention was not to require AHJs to be cybersecurity experts. Much of the detail about what should be included in a cybersecurity risk assessment and strategy is provided as an informational note or annex material. This is meant to give context to building owners responsible for conducting the assessment and developing an appropriate strategy based on it. There is no expectation that these details need AHJ approval (although the required steps do). For AHJs with more experience in cybersecurity practices, this additional context can help evaluate the summaries.

Part of the reason for this proposal is to establish the discussion within the relevant technical committees of what cybersecurity requirements are suitable for data centers, and provide a vetted example of the cybersecurity requirements and best practices applied to the overall level of cybersecurity preparedness undertaken by facility owners, and provide the committee(s) a broad enough proposal that a task group(s) working between the first and second draft can provide alternate proposals that may be considered without the concern of it being new material.

The task group recommends the following for code making panel responsibility for the articles proposed:

Article	Proposed CMP
Article 1608 - Modular Assemblies	CMP-10
Article 2300 – General Requirements	CMP-12
Article 2302 – Information Technology Equipment Rooms	CMP-12
Article 2304 – Data Center Facility	CMP-12
Article 2306 – IT Specific Equipment	CMP-12
Article 2308 – Liquid Cooled Systems	CMP-6
Article 2310 – Superconductors	CMP-6
Article 2314 – Cybersecurity	CMP-12



Public Input No. 2889-NFPA 70-2026 [Definition: Data Center, Modular (MDC).

(Modular Data Cente...]

Data Center, Modular (MDC). (Modular Data Center)

Prefabricated units, rated 1000 volts or less, consisting of an outer enclosure housing multiple racks or cabinets of information technology equipment (ITE) (e.g., servers) and various support equipment, such as electrical service and distribution equipment, HVAC systems, and the like. (646) (CMP-12)

Informational Note: A typical construction may use a standard ISO shipping container or other structure as the outer enclosure, racks or cabinets of ITE, service-entrance equipment and power distribution components, power storage such as a UPS, and an air or liquid cooling system. Modular data centers are intended for fixed installation, either indoors or outdoors, based on their construction and resistance to environmental conditions. MDCs can be configured as an all-in-one system housed in a single equipment enclosure or as a system with the support equipment housed in separate equipment enclosures.

Modular Assemblies.

Assemblies incorporating factory installed equipment, interconnecting raceways, conductors, and cables. (1608) (CMP-10).

Informational Note: Includes assemblies that are not provided with an overall enclosure as well as assemblies with overall enclosures, such as a container. A Modular Data Center is an example of a modular assembly with an overall enclosure.

Statement of Problem and Substantiation for Public Input

The recommendations contained in public input are the result of the work conducted by the Correlating Committee Datacenter Task Group chaired by Todd Lottmann (Eaton) with additional Task Group members including Jack Lyons (NEMA), Ernie Gallo (ATIS), Keith Waters (Schnider Electric), David Kendall (ABB), Christine Porter (Intertek) David Humphrey (IAEI), Robert Osborne (UL), Joel Goergen (Cisco), Brian Deckard (Siemens), Joseph Borowski (Google), Darryl Hill (IBEW), Eddie Rodriguez (IEC), Joe Prisco (IBM), James Walters (Meta), and Brandon DeVaul (Microsoft). In addition to these task group members, over 30 guests participated in the development of this public input, showing the wide range of input received while processing this recommendation. This is a consensus recommendation from the Task Group members that meets the direction given to them which is “Data Centers, and the infrastructure that supports them, are evolving quickly. Articles 645 and 646 have been used in the past for IT applications and data centers, but the rapid pace of development of “AI data centers”, where modular systems operate at DC voltages, utilize wiring methods that are not recognized in Chapter 3, and may have other challenges with existing rules. A Task Group should identify gaps and make public Inputs to address any gaps.”

Related PIs are submitted to create a definition for “Modular Assemblies” and to expand Article 646 to apply to broader applications. With this change, there is no longer a need for the definition “Data Center, Modular”, so this PI deletes the definition and adds a new definition for “Modular Assembly” that is more generic. As a more generic term, it may apply to ‘open type’ of assemblies (such as assemblies mounted on a skid) as well as enclosed types of assemblies (such as those mounted in a container).

Related Public Inputs for This Document

Related Input

Public Input No. 2890-NFPA 70-2026 [Global Input]

Relationship

Proposed Article 1608 tied to this definition and recommended by the CC Datacenter Task Group

Public Input No. 2890-NFPA 70-
2026 [Global Input]

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Submittal Date: Mon Apr 06 18:12:29 EDT 2026

Committee: NEC-P12



Public Input No. 2233-NFPA 70-2026 [Definition: Electric Self-Propelled Vehicle (ESV).]

Electric Self-Propelled Vehicle (ESV).

A vehicle or marine vessel, other than an electric vehicle (EV) , such as farm equipment, boats, aircraft, and golf carts, primarily powered by an electric motor that draws current from a rechargeable storage battery, fuel cell, photovoltaic array, or other source of electric current. (624) (CMP-12)

Statement of Problem and Substantiation for Public Input

The acronym EV is replaced with the full defined term and the acronym "electric vehicle (EV)" to comply with the NEC Style Manual.

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Committee: NEC-P12



Public Input No. 2808-NFPA 70-2026 [Definition: Electric Self-Propelled Vehicle (ESV).]

Electric Self-Propelled Vehicle (ESV) Mobility Equipment (EME).

A vehicle or marine vessel, other than an EV, Equipment or machinery intended for the transport of persons and materials off roads such as farm equipment, boats, aircraft, and golf carts, primarily powered by an electric motor that draws current from a rechargeable storage battery, fuel cell, photovoltaic array, or other source of electric current. (624) (CMP-12)

Informational note: This equipment is distinct from an electric vehicle (EV) as they are not automotive-type vehicles intended for on-road use.

Statement of Problem and Substantiation for Public Input

The name “electric self-propelled vehicle (ESV) includes the term “electric vehicle” yet the definition states that they must be “other than an EV”. The inclusion of “self-propelled” does not resolve this contradiction or serve to create a meaningful distinction between the two as they are both self-propelled.

Adopting the term “electric mobility” is frequently applied to this category of equipment and would serve to create a clearer distinction between these definitions and articles.

This would also assist with making the definitions that use the term “electric vehicle” clearer such as “electric vehicle connector”, “electric vehicle power export equipment”, “electric self-propelled vehicle power export equipment”.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
Public Input No. 2819-NFPA 70-2026 [Article 624]	

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Submittal Date: Mon Apr 06 12:53:05 EDT 2026

Committee: NEC-P12



Public Input No. 1813-NFPA 70-2026 [Definition: Electric Vehicle (EV).]

Electric Vehicle (EV).

An automotive-type vehicle for on-road use, such as passenger automobiles, buses, trucks, vans, neighborhood electric vehicles, and electric motorcycles, primarily powered by an electric motor that draws current from a rechargeable storage battery, fuel cell, photovoltaic array, or other source of electric current. - ~~Plug-in hybrid electric vehicles (PHEV) are electric vehicles having a second source of motive power. (CMP-12)~~

Informational Note: Off-road, self-propelled electric mobile machines, such as industrial trucks, hoists, lifts, transports, golf carts, airline ground support equipment, tractors, and boats are not considered electric vehicles.

Statement of Problem and Substantiation for Public Input

There are two different concepts in this definition. The sentence about plug-in hybrids is not quite correct. I suggest moving Plug-in Hybrid to its own definition. Many hybrids are not actually electric vehicles. The petroleum engine does, in fact, power the wheels and there is an electrical motor to assist. These are called parallel hybrids, where the vehicle can be powered by either the electric motor or the petroleum motor. There are also series hybrids where the automobile is only powered by electric motors. The petroleum engine is only used for recharging the battery. There are very few of these. Karma Fisker was one. BMW makes one. The Chevy Volt was advertised as an electric vehicle with the engine only supplying electricity. This, however, is not the case. If a car has a transmission or a clutch, it is not a series hybrid and thus not an electric vehicle.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
Public Input No. 1814-NFPA 70-2026 [New Definition after Definition: Electric Vehicle (EV).]	

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Submittal Date: Sat Mar 21 21:06:47 EDT 2026

Committee: NEC-P12



Public Input No. 3237-NFPA 70-2026 [Definition: Electric Vehicle (EV).]

Electric Vehicle (EV).

~~An automotive-type vehicle for on-road use, such as~~

Electric Vehicle (EV). A motor vehicle manufactured primarily for use on public streets, roads, and highways, driven or drawn by mechanical power, and equipped with a rechargeable storage battery, fuel cell, photovoltaic array, or other source of electric current. Electric vehicles include passenger automobiles, buses, trucks, vans, neighborhood electric vehicles,

and

electric motorcycles,

~~primarily powered by an electric motor that draws current from a rechargeable storage battery, fuel cell,~~

and unpropelled vehicles including trailers equipped with a photovoltaic array, energy storage system, or other source of electric current.

Plug

A plug-in hybrid electric

~~vehicles (PHEV) are electric vehicles~~

vehicle is an electric vehicle having a

second

secondary source of motive power.

(CMP-12)

~~Informational Note: Off-road, self-propelled electric mobile machines, such as industrial trucks, hoists, lifts, transports, golf carts, airline ground support equipment, tractors, and boats are not considered electric vehicles.~~

An electric vehicle shall be permitted to supply electric power to the premises wiring system or to the electric utility system by means of listed electric vehicle power export equipment or a listed plug-in photovoltaic electric vehicle power exchange system.

Informational Note No. 1: Federal law defines motor vehicles at 49 U.S.C. § 30102(a)(8) as vehicles driven or drawn by mechanical power primarily to be used on public streets, roads, and highways, excluding vehicles operated solely on rail. Unpropelled vehicles, including trailers equipped with photovoltaic modules or energy storage systems and certified in accordance with applicable federal motor vehicle safety standards, satisfy this statutory definition and are subject to federal vehicle safety requirements.

Informational Note No. 2: A plug-in photovoltaic system, as defined in Article 100, connects to the premises wiring system by means of a cord-and-plug connection and is not classified as an electric vehicle for purposes of this Code. Requirements for cord-and-plug-connected electric power production sources are addressed in Article 705, Part IV.

Informational Note No. 3: Requirements for equipment that transfers electric power from an electric vehicle to a premises wiring system or to the electric utility system are addressed in Article 625, Part VII. Where such transfer is accomplished by means of a plug-in photovoltaic electric vehicle power exchange system, see also Article 705, Part IV.

Additional Proposed Changes

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
US_12_570_173_B2-VehicularElectricityGeneratingCanopyAppliance.pdf	US-Patent: Vehicular Electricity Generating Canopy Appliance	
US_2026-00228848-A1-TrailerableElectricityGeneratingCanopyAppliance.pdf	US 2026-00228848-A1-Trailerable Electricity Generating Canopy Appliance	
USCODE-2023-title49-subtitleVI-partA-chap301-subchapl-sec30102.pdf	USCODE Title49 SubtitleVI PartA Chapter 301 SubchapterI Section 301002	

Statement of Problem and Substantiation for Public Input

Statement of Problem and Substantiation

Federal law defines motor vehicle at 49 U.S.C. § 30102(a)(8) as a vehicle driven or drawn by mechanical power manufactured primarily for use on public streets, roads, and highways, excluding vehicles operated solely on a rail line. This statutory definition includes unpropelled vehicles, including trailers, as well as self-propelled vehicles. FMVSS and DOT-compliant trailers equipped with photovoltaic modules or energy storage systems satisfy this statutory definition and are subject to federal vehicle safety standards applicable to motor vehicles.

The current Article 100 definition of Electric Vehicle (EV) solely covers automotive-type vehicles with electric propulsion systems and does not address unpropelled vehicles equipped with photovoltaic modules or energy storage systems, nor does it address cord-and-plug-connected electric power production sources that connect to the premises wiring system by means of receptacle outlets instead of using a hardwired interconnection. These categories of equipment exist in the current market, satisfy applicable federal safety and road-worthiness standards where those standards apply, and are capable of supplying electric power to the premises wiring system or to the electric utility system. Neither category is addressable under any current NEC provision.

The absence of a NEC-recognized path for these product categories does not prevent their installation; it prevents their installation through certified, inspectable, code-compliant means. Products that satisfy rigorous federal safety standards remain without a compliant NEC installation pathway through no deficiency in their design or certification. Meanwhile, installations of uncertified plug-in solar and battery equipment operating outside any established safety framework continue to proliferate precisely because no compliant pathway exists.

Affirmative NEC provisions addressing both FMVSS/DOT-compliant trailerable PIPV systems and cord-and-plug-connected electric power production sources would establish an unambiguous safety framework applicable to an existing and growing product class and would create enforceable installation standards where none currently exist.

The Existing Informational Note Restricts the Application of the EV Definition

NEC STYLE MANUAL — MANDATORY GROUND FOR DELETION

NEC Style Manual, Section 2.2.2 (or equivalent current provision): “Informational Notes shall not be used to restrict or expand the application of Code requirements.”

The existing Informational Note violates this directive on its face and must be struck on Style Manual grounds alone, regardless of the Technical Committee’s disposition on the revised definition text. By declaring that specific categories of equipment are “not considered electric vehicles,” the Note directly restricts the application of the EV definition to exclude those categories. This is precisely the function the NEC Style Manual prohibits for Informational Notes. The operative scope of a Code definition, what falls within it and what does not, can only be established through properly adopted Code text subject to

the full public input, public comment, and Technical Committee review process. It cannot be established through an Informational Note.

The distinction is not merely procedural. The Style Manual’s prohibition on scope-restricting Informational Notes exists because such notes alter legal obligations without the deliberative safeguards of the Code-making process. An AHJ, installer, or property owner reading a scope-restricting Informational Note may act in reliance on it as if it were Code text, because it appears in the Code and no contrary signal is provided. When that reliance is based on language that was never subjected to proper Technical Committee adoption, the result is an effective restriction on Code coverage achieved through an impermissible mechanism.

The Style Manual Violation Is Independent of the Revised Definition Text and exists independently of whether the Technical Committee adopts the revised definition text proposed in this Public Input. Even if the Technical Committee declines to adopt the revised main definition and retains the existing “automotive-type vehicle” language, the existing Informational Note must still be struck:

- If the Technical Committee retains the existing definition text, the Informational Note’s off-road exclusion list restricts that definition’s application by negative enumeration. That restriction belongs in the definition text itself if it reflects a genuine scope determination not in an Informational Note.
- If the Technical Committee adopts the revised definition text, the Informational Note is additionally superseded: the revised definition’s affirmative statutory scope alignment (vehicles manufactured primarily for use on public streets, roads, and highways) already implicitly excludes off-road equipment without requiring a negative list.
- In either case, the Informational Note must be struck. The Technical Committee should therefore treat deletion of the Informational Note as a threshold action required at this cycle on Style Manual grounds, independent of its disposition on the main definition text.

The Existing Informational Note Also Fails as an Informational Note. A compliant Informational Note provides explanatory context, cross-references, or supplementary technical information without altering the operative scope of a provision. The three new Informational Notes proposed in this Public Input are examples of compliant usage: they cite the federal statutory basis for the definition (IN No. 1), clarify the classification boundary between PIPV systems and EVs without altering either definition (IN No. 2), and cross-reference the applicable Article 625 and Article 705 provisions (IN No. 3). None of those Notes restricts or expands what falls within the EV definition or any other Code requirement.

The existing Note does the opposite. Its statement that specified equipment categories “are not considered electric vehicles” is a scope determination. It tells code users what the EV definition covers and does not cover. That function belongs in the definition’s operative text. The fact that this scope determination was placed in an Informational Note rather than in the definition text does not make it a proper Informational Note; it makes it an improperly placed restriction that must be corrected.

There is no loss of substantive coverage resulting from the deletion. The Informational Note does not remove off-road equipment from the EV definition’s scope in a way that creates new compliance obligations. Off-road self-propelled electric vehicles like industrial trucks, hoists, golf carts, agricultural tractors, and marine vessels are governed by other applicable NEC provisions and product standards and are not brought within Article 625 requirements by the deletion of a restrictive Informational Note. Their exclusion from the EV definition is properly established by the revised definition’s affirmative statutory scope language, which limits coverage to vehicles manufactured primarily for use on public streets, roads, and highways. That is the correct mechanism for a scope limitation: operative definition text adopted through the proper Code-making process, not a restrictive Informational Note.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
<u>Public Input No. 2574-NFPA 70-2026 [New Definition after Definition: Scope.]</u>	
<u>Public Input No. 3251-NFPA 70-2026 [New Definition after Definition: Scope.]</u>	

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Submittal Date: Wed Apr 08 15:18:07 EDT 2026

Committee: NEC-P12

mines such amendment or repeal will not diminish the level of motor vehicle safety.”

Executive Documents

EX. ORD. NO. 11357. ADMINISTRATION OF TRAFFIC AND MOTOR VEHICLE SAFETY THROUGH NATIONAL HIGHWAY SAFETY BUREAU AND ITS DIRECTOR

Ex. Ord. No. 11357, June 6, 1967, 32 F.R. 8225, provided: By virtue of the authority vested in me as President of the United States by Section 201 of the Highway Safety Act of 1966, as amended (80 Stat. 735, 943) [set out as a note under section 401 of Title 23, Highways], and by Section 3(f)(3) of the Department of Transportation Act (80 Stat. 932) [former 49 U.S.C. 1652(f)(3)], it is hereby ordered that the provisions of the National Traffic and Motor Vehicle Safety Act of 1966, as amended (80 Stat. 718, 943) [formerly 15 U.S.C. 1381 et seq.], shall be carried out through the National Highway Safety Bureau and the Director thereof.

LYNDON B. JOHNSON.

§ 30102. Definitions

(a) GENERAL DEFINITIONS.—In this chapter—

(1) “covered rental vehicle” means a motor vehicle that—

(A) has a gross vehicle weight rating of 10,000 pounds or less;

(B) is rented without a driver for an initial term of less than 4 months; and

(C) is part of a motor vehicle fleet of 35 or more motor vehicles that are used for rental purposes by a rental company.

(2) “dealer” means a person selling and distributing new motor vehicles or motor vehicle equipment primarily to purchasers that in good faith purchase the vehicles or equipment other than for resale.

(3) “defect” includes any defect in performance, construction, a component, or material of a motor vehicle or motor vehicle equipment.

(4) “distributor” means a person primarily selling and distributing motor vehicles or motor vehicle equipment for resale.

(5) “interstate commerce” means commerce between a place in a State and a place in another State or between places in the same State through another State.

(6) “manufacturer” means a person—

(A) manufacturing or assembling motor vehicles or motor vehicle equipment; or

(B) importing motor vehicles or motor vehicle equipment for resale.

(7) “motor vehicle” means a vehicle driven or drawn by mechanical power and manufactured primarily for use on public streets, roads, and highways, but does not include a vehicle operated only on a rail line.

(8) “motor vehicle equipment” means—

(A) any system, part, or component of a motor vehicle as originally manufactured;

(B) any similar part or component manufactured or sold for replacement or improvement of a system, part, or component, or as an accessory or addition to a motor vehicle; or

(C) any device or an article or apparel, including a motorcycle helmet and excluding medicine or eyeglasses prescribed by a licensed practitioner, that—

(i) is not a system, part, or component of a motor vehicle; and

(ii) is manufactured, sold, delivered, or offered to be sold for use on public streets, roads, and highways with the apparent purpose of safeguarding users of motor vehicles against risk of accident, injury, or death.

(9) “motor vehicle safety” means the performance of a motor vehicle or motor vehicle equipment in a way that protects the public against unreasonable risk of accidents occurring because of the design, construction, or performance of a motor vehicle, and against unreasonable risk of death or injury in an accident, and includes nonoperational safety of a motor vehicle.

(10) “motor vehicle safety standard” means a minimum standard for motor vehicle or motor vehicle equipment performance.

(11) “rental company” means a person who—

(A) is engaged in the business of renting covered rental vehicles; and

(B) uses for rental purposes a motor vehicle fleet of 35 or more covered rental vehicles, on average, during the calendar year.

(12) “State” means a State of the United States, the District of Columbia, Puerto Rico, the Northern Mariana Islands, Guam, American Samoa, and the Virgin Islands.

(13) “United States district court” means a district court of the United States, a United States court for Guam, the Virgin Islands, and American Samoa, and the district court for the Northern Mariana Islands.

(b) LIMITED DEFINITIONS.—(1) In sections 30117(b), 30118–30121, and 30166(f) of this title—

(A) “adequate repair” does not include repair resulting in substantially impaired operation of a motor vehicle or motor vehicle equipment;

(B) “first purchaser” means the first purchaser of a motor vehicle or motor vehicle equipment other than for resale;

(C) “original equipment” means motor vehicle equipment (including a tire) installed in or on a motor vehicle at the time of delivery to the first purchaser;

(D) “replacement equipment” means motor vehicle equipment (including a tire) that is not original equipment;

(E) a brand name owner of a tire marketed under a brand name not owned by the manufacturer of the tire is deemed to be the manufacturer of the tire;

(F) a defect in original equipment, or noncompliance of original equipment with a motor vehicle safety standard prescribed under this chapter, is deemed to be a defect or noncompliance of the motor vehicle in or on which the equipment was installed at the time of delivery to the first purchaser;

(G) a manufacturer of a motor vehicle in or on which original equipment was installed when delivered to the first purchaser is deemed to be the manufacturer of the equipment; and

(H) a retreader of a tire is deemed to be the manufacturer of the tire.

(2) The Secretary of Transportation may prescribe regulations changing paragraph (1)(C), (D), (F), or (G) of this subsection.

(Pub. L. 103-272, §1(e), July 5, 1994, 108 Stat. 941; Pub. L. 112-141, div. C, title I, § 31201, July 6, 2012, 126 Stat. 757; Pub. L. 114-94, div. B, title XXIV, § 24109(b), Dec. 4, 2015, 129 Stat. 1706.)

HISTORICAL AND REVISION NOTES

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
30102(a)(1) ..	15:1391(7).	Sept. 9, 1966, Pub. L. 89-563, §102(1)-(3), (5)-(9), (11), (12), 80 Stat. 718, 719.
	15:1391(10).	Sept. 9, 1966, Pub. L. 89-563, §102(10), 80 Stat. 718; restated Oct. 27, 1974, Pub. L. 93-492, §110(a), 88 Stat. 1484.
	49 App.:1655(a)(6)(A).	Oct. 15, 1966, Pub. L. 89-670, §6(a)(6)(A), 80 Stat. 938.
30102(a)(2) ..	15:1391(11).	
30102(a)(3) ..	15:1391(6).	
30102(a)(4) ..	15:1391(9).	
30102(a)(5) ..	15:1391(5).	
30102(a)(6) ..	15:1391(3).	
30102(a)(7) ..	15:1391(4).	Sept. 9, 1966, Pub. L. 89-563, §102(4), 80 Stat. 718; restated May 22, 1970, Pub. L. 91-265, §2, 84 Stat. 262.
30102(a)(8) ..	15:1391(1).	
30102(a)(9) ..	15:1391(2).	
30102(a)(10)	15:1391(8).	
30102(a)(11)	15:1391(12).	
30102(b)	15:1419.	Sept. 9, 1966, Pub. L. 89-563, 80 Stat. 718, §159; added Oct. 27, 1974, Pub. L. 93-492, §102(a), 88 Stat. 1476.

In subsection (a), the definitions apply to the entire chapter because of references in 15:1421-1431 applying 15:1391-1420 to 15:1421-1431. Before clause (1), the words “As used” are omitted as surplus. In clause (1), the text of 15:1391(10) and 49 App.:1655(a)(6)(A) is omitted as surplus because the complete name of the Secretary of Transportation is used the first time the term appears in a section. The words “selling and distributing” are substituted for “who is engaged in the sale and distribution of” to eliminate unnecessary words. The word “purposes” is omitted as surplus. In clause (3), the words “selling and distributing” are substituted for “engaged in the sale and distribution of” to eliminate unnecessary words. In clause (5)(A), the words “manufacturing or assembling” are substituted for “engaged in the manufacturing or assembling of” to eliminate unnecessary words. In clause (7), the words “physician or other duly” and “drivers, passengers, and other” are omitted as surplus. In clause (8), the words “is also protected” and “to persons” are omitted as unnecessary. In clause (9), the words “which is practicable, which meets the need for motor vehicle safety and which provides objective criteria” are omitted as unnecessary because of 15:1392(a) which is restated in section 30111 of the revised title. In clauses (10) and (11), the words “the Northern Mariana Islands” are added because of section 502(a)(2) of the Covenant to Establish a Commonwealth of the Northern Mariana Islands in Political Union with the United States of America, as enacted by the Act of March 24, 1976 (Public Law 94-241, 90 Stat. 268), and as proclaimed to be in effect by the President on January 9, 1978 (Proc. No. 4534, Oct. 24, 1977, 42 F.R. 56593). The words “the Canal Zone” are omitted because of the Panama Canal Treaty of 1977. In clause (10), the word “means” is substituted for “includes” as being more appropriate. The words “a State of the United States” are substituted for “each of the several States” for consistency. The words “the Commonwealth of” are omitted as surplus. In clause (11), the word “Federal” is omitted as surplus. The words “of the Commonwealth of Puerto Rico” are omitted as unnecessary because the district court of Puerto Rico is a district court of the United States under 28:119.

In subsection (b)(1), before clause (A), the words “The term” and “the term” are omitted as surplus. In clause

(B), the words “of a motor vehicle or motor vehicle equipment” are added for clarity. In clause (E), the words “to be” are added for consistency. The words “marketed under such brand name” are omitted as surplus. In clause (F), the words “a motor vehicle safety standard prescribed under this chapter” are added for clarity and consistency. The word “noncompliance” is substituted for “failure to comply” for consistency in the chapter. In clause (G), the words “(rather than the manufacturer of such equipment)” are omitted as surplus. The words “deemed to be” are substituted for “considered” for consistency. In clause (H), the words “which have been” are omitted as surplus.

Subsection (b)(2) is substituted for “Except as otherwise provided in regulations of the Secretary” for clarity and because of the restatement.

Editorial Notes

AMENDMENTS

2015—Subsec. (a)(1). Pub. L. 114-94, § 24109(b)(3), added par. (1). Former par. (1) redesignated (2).

Subsec. (a)(2) to (10). Pub. L. 114-94, § 24109(b)(2), redesignated pars. (1) to (9) as (2) to (10), respectively. Former par. (10) redesignated (12).

Subsec. (a)(11). Pub. L. 114-94, § 24109(b)(4), added par. (11). Former par. (11) redesignated (13).

Subsec. (a)(12), (13). Pub. L. 114-94, § 24109(b)(1), redesignated pars. (10) and (11) as (12) and (13), respectively.

2012—Subsec. (a)(7)(C). Pub. L. 112-141 amended subpar. (C) generally. Prior to amendment, subpar. (C) read as follows: “any device or an article or apparel (except medicine or eyeglasses prescribed by a licensed practitioner) that is not a system, part, or component of a motor vehicle and is manufactured, sold, delivered, offered, or intended to be used only to safeguard motor vehicles and highway users against risk of accident, injury, or death.”

Statutory Notes and Related Subsidiaries

EFFECTIVE DATE OF 2015 AMENDMENT

Pub. L. 114-94, div. B, title XXIV, § 24109(k), Dec. 4, 2015, 129 Stat. 1709, provided that: “The amendments made by this section [amending this section and sections 30120, 30122, and 30166 of this title] shall take effect on the date that is 180 days after the date of enactment of this Act [Dec. 4, 2015].”

EFFECTIVE DATE OF 2012 AMENDMENT

Amendment by Pub. L. 112-141 effective Oct. 1, 2012, see section 3(a) of Pub. L. 112-141, set out as an Effective and Termination Dates of 2012 Amendment note under section 101 of Title 23, Highways.

RULE OF CONSTRUCTION

Pub. L. 114-94, div. B, title XXIV, § 24109(i), Dec. 4, 2015, 129 Stat. 1708, provided that: “Nothing in this section [amending this section and sections 30120, 30122, and 30166 of this title and enacting provisions set out as notes under this section and section 30101 of this title] or the amendments made by this section—

“(1) may be construed to create or increase any liability, including for loss of use, for a manufacturer as a result of having manufactured or imported a motor vehicle subject to a notification of defect or noncompliance under subsection (b) or (c) of section 30118 of title 49, United States Code; or

“(2) shall supersede or otherwise affect the contractual obligations, if any, between such a manufacturer and a rental company (as defined in section 30102(a) of title 49, United States Code).”

RULEMAKING

Pub. L. 114-94, div. B, title XXIV, § 24109(j), Dec. 4, 2015, 129 Stat. 1708, provided that: “The Secretary [probably means Secretary of Transportation] may promulgate rules, as appropriate, to implement this sec-

tion [amending this section and sections 30120, 30122, and 30166 of this title and enacting provisions set out as notes under this section and section 30101 of this title] and the amendments made by this section.”

LOW-SPEED ELECTRIC BICYCLES

Pub. L. 107-319, § 2, Dec. 4, 2002, 116 Stat. 2776, provided that: “For purposes of motor vehicle safety standards issued and enforced pursuant to chapter 301 of title 49, United States Code, a low-speed electric bicycle (as defined in section 38(b) of the Consumer Product Safety Act [15 U.S.C. 2085(b)]) shall not be considered a motor vehicle as defined by section 30102[(a)](6) [now 30102(a)(7)] of title 49, United States Code.”

§ 30103. Relationship to other laws

(a) **UNIFORMITY OF REGULATIONS.**—The Secretary of Transportation may not prescribe a safety regulation related to a motor vehicle subject to subchapter I of chapter 135 of this title that differs from a motor vehicle safety standard prescribed under this chapter. However, the Secretary may prescribe, for a motor vehicle operated by a carrier subject to subchapter I of chapter 135, a safety regulation that imposes a higher standard of performance after manufacture than that required by an applicable standard in effect at the time of manufacture.

(b) **PREEMPTION.**—(1) When a motor vehicle safety standard is in effect under this chapter, a State or a political subdivision of a State may prescribe or continue in effect a standard applicable to the same aspect of performance of a motor vehicle or motor vehicle equipment only if the standard is identical to the standard prescribed under this chapter. However, the United States Government, a State, or a political subdivision of a State may prescribe a standard for a motor vehicle or motor vehicle equipment obtained for its own use that imposes a higher performance requirement than that required by the otherwise applicable standard under this chapter.

(2) A State may enforce a standard that is identical to a standard prescribed under this chapter.

(c) **ANTITRUST LAWS.**—This chapter does not—

(1) exempt from the antitrust laws conduct that is unlawful under those laws; or

(2) prohibit under the antitrust laws conduct that is lawful under those laws.

(d) **WARRANTY OBLIGATIONS AND ADDITIONAL LEGAL RIGHTS AND REMEDIES.**—Sections 30117(b), 30118-30121, 30166(f), and 30167(a) and (b) of this title do not establish or affect a warranty obligation under a law of the United States or a State. A remedy under those sections and sections 30161 and 30162 of this title is in addition to other rights and remedies under other laws of the United States or a State.

(e) **COMMON LAW LIABILITY.**—Compliance with a motor vehicle safety standard prescribed under this chapter does not exempt a person from liability at common law.

(Pub. L. 103-272, § 1(e), July 5, 1994, 108 Stat. 943; Pub. L. 104-88, title III, § 308(j), Dec. 29, 1995, 109 Stat. 947.)

HISTORICAL AND REVISION NOTES

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
30103(a)	15:1392(g).	Sept. 9, 1966, Pub. L. 89-563, §§ 103(g), 105(a)(6), 116, 80 Stat. 720, 721, 727.
30103(b)	15:1392(d).	Sept. 9, 1966, Pub. L. 89-563, § 103(d), 80 Stat. 719; Oct. 15, 1982, Pub. L. 97-331, § 3, 96 Stat. 1619.
30103(c)	15:1405.	Sept. 9, 1966, Pub. L. 89-563, 80 Stat. 718, §§ 124(e), 160; added Oct. 27, 1974, Pub. L. 93-492, §§ 102(a), 106, 88 Stat. 1477, 1481.
30103(d)	15:1394(a)(6). 15:1410a(e).	
30103(e)	15:1420. 15:1397(k).	Sept. 9, 1966, Pub. L. 89-563, § 108(k), 80 Stat. 723; Oct. 31, 1988, Pub. L. 100-562, § 2(b), 102 Stat. 2818.

In subsection (a), the words “or the Transportation of Explosives Act, as amended (18 U.S.C. 831-835)” are omitted as obsolete because 18:831-835 have been repealed. The word “prescribe” is substituted for “adopt” for consistency. The words “or continue in effect” and “In prescribing safety regulations” are omitted as surplus. The word “prescribed” is substituted for “issued” for consistency. The words “to comply” and “Federal” are omitted as surplus. The words “in effect” are added for clarity.

In subsection (b)(1), the word “Federal” is omitted as surplus. The word “prescribe” is substituted for “either to establish, or to continue in effect” for consistency and to eliminate unnecessary words. The words “standard prescribed under this chapter” are substituted for “Federal standard” for clarity. The words “However, the United States . . . may prescribe” are substituted for “Nothing in this section shall be construed to prevent the Federal . . . from establishing” for consistency. The words “of a State” are substituted for “thereof” for clarity. The word “standard” is substituted for “safety requirement” for consistency. The words “performance requirement” are substituted for “standard of performance” to avoid using “standard” in 2 different ways.

Subsection (b)(2) is substituted for 15:1392(d) (2d sentence) for consistency and to eliminate unnecessary words.

In subsection (c), the words “be deemed to” and “of the United States” are omitted as surplus.

In subsection (d), the words “United States” are substituted for “Federal” in 15:1420 for consistency. The words “Consumer” in 15:1420, “not in lieu of” in 15:1410a(e) and 1420, and “not in substitution for” in 15:1394(a)(6) are omitted as surplus. The word “other” is added for clarity.

Editorial Notes

AMENDMENTS

1995—Subsec. (a). Pub. L. 104-88 substituted “subchapter I of chapter 135” for “subchapter II of chapter 105” in two places.

Statutory Notes and Related Subsidiaries

EFFECTIVE DATE OF 1995 AMENDMENT

Amendment by Pub. L. 104-88 effective Jan. 1, 1996, see section 2 of Pub. L. 104-88, set out as an Effective Date note under section 1301 of this title.

§ 30104. Authorization of appropriations

There is authorized to be appropriated to the Secretary \$98,313,500 for the National Highway Traffic Safety Administration to carry out this part in each fiscal year beginning in fiscal year 1999 and ending in fiscal year 2001.

(Pub. L. 103-272, § 1(e), July 5, 1994, 108 Stat. 944; Pub. L. 105-178, title VII, § 7102(a), June 9, 1998,



Public Input No. 2396-NFPA 70-2026 [Definition: Electric Vehicle Power

Export Equipment (EVPE).]

Electric Vehicle Power Export Equipment (EVPE).

The equipment, including the ~~outlet on the electric vehicle,~~ output cable to EV (EV cable) or EV receptacle, and all other fittings, devices or apparatus such as cord connector, that is used to provide electrical power at voltages greater than or equal to 30 Vac or 60 Vdc to loads- ~~external~~ , microgrids, or premise wiring systems, external to the electric vehicle, using the electric vehicle as the source of supply. (625) (CMP-12)

Informational Note: Electric vehicle power export equipment and electric vehicle supply equipment or wireless power transfer equipment are sometimes contained in one piece of equipment, sometimes referred to as a bidirectional electric vehicle supply equipment (EVSE) or bidirectional wireless power transfer equipment (WPTE).

Statement of Problem and Substantiation for Public Input

An outlet on an EV (the point where you connect utilization equipment) would be a receptacle (V2L), not the vehicle inlet (J-1772, NACS, CCS1, J-3068, etc.) which is where EVPE (per UL 9741) is defined to occur (a V2L device is one type of EVPE, but it starts at an EV connector not receptacle). EVPE equipment is therefore the assembly from the EV connector (may be part of output cable to EV aka EV cable) to: receptacles for V2L devices; hardwired connections to premise wiring systems (V2H, V2B, etc.); or other connectors (V2V); for temporary use (such as the Tesla mobile connector that permits replacement of the power supply cord with a cord and cord connector for V2L use, but could also have a second EV cable for V2V).

Note that section 90.7 indicates that the NEC should only involve itself with approved equipment if it might be altered or damaged. That said where EVPE equipment is permanently installed to interface to a premise wiring system the connection to the premise wiring system is within scope for the NEC. So, it's okay to define it, but it should be correct.

See definitions of EV Connector, Interactive Mode, Inverter Output, Inverter Utilization Output Circuit, Microgrid, Outlet, Stand-alone, etc.

Submitter Information Verification

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Submittal Date: Thu Apr 02 16:20:50 EDT 2026

Committee: NEC-P12



Public Input No. 2429-NFPA 70-2026 [Definition: Electric Vehicle Supply Equipment (EVSE).]

Electric Vehicle Supply Equipment (EVSE).

Equipment for plug-in charging, including the signaling, ungrounded, grounded, and equipment grounding conductors, and the ~~electric vehicle connectors, attachment plugs~~ EV connectors, output cable to EV (EV cable) or EV receptacle, personnel protection system, and all ~~other fittings~~ other fittings, devices, ~~power outlets, or apparatus~~ or apparatus such as power-supply cord installed specifically for the purpose of transferring energy between the premises wiring and the electric vehicle. (625) (CMP-12)

Informational Note: Electric vehicle power export equipment and electric vehicle supply equipment or wireless power transfer equipment (WPTE) are sometimes contained in one piece of equipment, sometimes referred to as a bidirectional EVSE or bidirectional WPTE.

Statement of Problem and Substantiation for Public Input

The current definition does not align with the referenced standard for EVSE UL 2594, which go from the attachment plug and flexible cord (power-supply cord) if provided, to output cable to and EV connector (if permanently attached to EV charging station) or EV receptacle (if detachable from EV charging station as with SAE J3068), so it doesn't always include an attachment plug and doesn't always include the EV cable and EV connector.

Submitter Information Verification

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Submittal Date: Thu Apr 02 22:28:16 EDT 2026

Committee: NEC-P12



Public Input No. 528-NFPA 70-2025 [Definition: Electric Vehicle Supply Equipment (EVSE).]

Electric Vehicle Supply Equipment (EVSE).

Equipment for plug-in charging, including the ungrounded, grounded, and equipment grounding conductors, and the electric vehicle connectors, attachment plugs, personnel protection system, and all other fittings, devices, power outlets, or apparatus installed specifically for the purpose of transferring energy between the premises wiring and the electric vehicle. ~~(625)~~ (CMP-12)

Informational Note: Electric vehicle power export equipment and electric vehicle supply equipment or wireless power transfer equipment (WPTE) are sometimes contained in one piece of equipment, sometimes referred to as a bidirectional EVSE or bidirectional WPTE.

Statement of Problem and Substantiation for Public Input

There is no reason for this definition to apply only to Article 625. The term is used in multiple articles, and Article 625 does not use the term in any unique manner.

Submitter Information Verification

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Submittal Date: Wed Dec 31 21:33:57 EST 2025

Committee: NEC-P12



Public Input No. 2875-NFPA 70-2026 [Definition: Information Technology Equipment (ITE).]

Information Technology Equipment (ITE).

Equipment and systems ~~rated 1000 volts or less, normally~~ found in offices or other business establishments, data centers, and similar environments classified as ordinary locations, that are used for creation and manipulation of data, voice, video, and similar signals. (CMP-12)

Informational Note: See UL 60950-1, *Information Technology Equipment — Safety — Part 1: General Requirements*, or UL 62368-1, *Audio/Video Information and Communication Technology Equipment Part 1: Safety Requirements*, for information on listing requirements for both information technology equipment and communications equipment.

Statement of Problem and Substantiation for Public Input

The recommendations contained in public input are the result of the work conducted by the Correlating Committee Datacenter Task Group chaired by Todd Lottmann (Eaton) with additional Task Group members including Jack Lyons (NEMA), Ernie Gallo (ATIS), Keith Waters (Schnider Electric), David Kendall (ABB), Christine Porter (Intertek) David Humphrey (IAEI), Robert Osborne (UL), Joel Goergen (Cisco), Brian Deckard (Siemens), Joseph Borowski (Google), Darryl Hill (IBEW), Eddie Rodriguez (IEC), Joe Prisco (IBM), James Walters (Meta), and Brandon DeVaul (Microsoft). In addition to these task group members, over 30 guests participated in the development of this public input, showing the wide range of input received while processing this recommendation. This is a consensus recommendation from the Task Group members that meets the direction given to them which is “Data Centers, and the infrastructure that supports them, are evolving quickly. Articles 645 and 646 have been used in the past for IT applications and data centers, but the rapid pace of development of “AI data centers”, where modular systems operate at DC voltages, utilize wiring methods that are not recognized in Chapter 3, and may have other challenges with existing rules. A Task Group should identify gaps and make public Inputs to address any gaps.”

This Public Input was submitted by the NEC Correlating Committee Task Group for Data Centers. The definition for “Information Technology Equipment” is revised to remove the voltage rating, as newer systems may exceed the 1000 volt limit, and the inclusion of the limit in the definition is a violation of 2.1.2.4 of the NEC Style Manual as it is a requirement. Additionally, data centers are a location where IT equipment is commonly located.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
<u>Public Input No. 2891-NFPA 70-2026 [Global Input]</u>	Proposed Chapter 23 tied to this definition and recommended by the CC Datacenter Task Group
<u>Public Input No. 2891-NFPA 70-2026 [Global Input]</u>	

Submitter Information Verification

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Submittal Date: Mon Apr 06 17:53:58 EDT 2026

Committee: NEC-P12



Public Input No. 3338-NFPA 70-2026 [Definition: Information Technology Equipment (ITE).]

Information Technology Equipment (ITE).

Equipment and systems ~~rated 1000 volts or less, normally found in offices or other business establishments and similar environments classified as ordinary locations,~~ that are used for creation and manipulation of data, voice, video, and similar signals. (CMP-12)

Informational Note: See UL 60950-1, *Information Technology Equipment — Safety — Part 1: General Requirements*, or UL 62368-1, *Audio/Video Information and Communication Technology Equipment Part 1: Safety Requirements*, for information on listing requirements for both information technology equipment and communications equipment.

Statement of Problem and Substantiation for Public Input

The NEC definition of Information Technology Equipment (ITE) is used in the 2024 edition of NFPA 75, Standard for the Fire Protection of Information Technology Equipment. Section 3.3.13 extracts the definition of ITE from the 2023 NEC.

The NFPA 75 Technical Committee, at its First Draft meeting on April 8, 2026, decided to stop using the definition extracted from the NEC and instead adopt its own definition because the NEC definition did not reflect current information technology practice.

The definition developed by the NFPA 75 TC is the basis of the recommended text in this PI.

Submitter Information Verification

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Submittal Date: Wed Apr 08 19:02:41 EDT 2026

Committee: NEC-P12



Public Input No. 1702-NFPA 70-2026 [Definition: Mobile.]

Mobile.

~~X-ray equipment mounted on a permanent base with wheels and/or casters for moving while completely assembled. (660) (CMP-12)~~ Able to be moved only by two more persons or with mechanical aids.

Additional Proposed Changes

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
2-Mobile_660_.docx	Mobile Definition	

Statement of Problem and Substantiation for Public Input

Substantiation: This Public Input is being submitted on behalf of the NEC Correlating Committee Portable Definitions Task Group which includes David Williams, Dan Neeser, Seth Carlton, Rich Holub, David Kendall and Matt Hittinger.

The task group was assigned to review the definitions of Equipment, Mobile; Equipment, Portable; Portable and Portable (as applied to equipment), Platform, Portable. Create one general definition for the term "Portable". Provide Public Inputs for the new definition and for deleting the other related terms. A single general definition for the term "Portable" is necessary.

The definition for "Mobile" (as an adjective) is created to be used consistently throughout the code for various types of equipment. Additional definitions are being proposed for the terms "portable" and "transportable". A global Public Input is being submitted to request the panels to review usage and change to the correct modifier for the application.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
Public Input No. 1705-NFPA 70-2026 [Definition: Portable.]	
Public Input No. 1706-NFPA 70-2026 [Definition: Portable (as applied to equipment).]	
Public Input No. 1707-NFPA 70-2026 [Definition: Equipment, Portable (as applied to equipment ov...]	
Public Input No. 1708-NFPA 70-2026 [Definition: Equipment, Portable [as applied to hazardous (c...]	
Public Input No. 1709-NFPA 70-2026 [Definition: Equipment, Portable. (Portable Equipment)]	
Public Input No. 1710-NFPA 70-2026 [Definition: Equipment, Portable. (Portable Equipment)]	
Public Input No. 1711-NFPA 70-2026 [Definition: Platform, Portable (as applied to equipment ove...]	
Public Input No. 1712-NFPA 70-2026 [Definition: Portable Handlamp.]	
Public Input No. 1713-NFPA 70-2026 [Definition: Portable Power Distribution Unit.]	
Public Input No. 1714-NFPA 70-2026 [Definition: Portable Structures.]	
Public Input No. 1715-NFPA 70-2026 [Definition: Portable Substation.]	

[Public Input No. 1716-NFPA 70-2026 \[Definition: Equipment, Mobile. \(Mobile Equipment\)\]](#)

[Public Input No. 1717-NFPA 70-2026 \[Definition: Equipment, Mobile \(as applied to equipment over...\)\]](#)

[Public Input No. 1719-NFPA 70-2026 \[Global Input\]](#)

Submitter Information Verification

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Submittal Date: Thu Mar 19 13:07:15 EDT 2026

Committee: NEC-P12

Article 100 Definitions

Mobile.

Able to be moved only by two more persons or with mechanical aids.

~~X-ray equipment mounted on a permanent base with wheels and/or casters for moving while completely assembled. (660) (CMP-12)~~

Substantiation: This Public Input is being submitted on behalf of the NEC Correlating Committee Portable Definitions Task Group which includes David Williams, Dan Neeser, Seth Carlton, Rich Holub, David Kendall and Matt Hittinger.

The task group was assigned to review the definitions of Equipment, Mobile; Equipment, Portable; Portable and Portable (as applied to equipment), Platform, Portable. Create one general definition for the term "Portable". Provide Public Inputs for the new definition and for deleting the other related terms. A single general definition for the term "Portable" is necessary.

The definition for "Mobile" (as an adjective) is created to be used consistently throughout the code for various types of equipment. Additional definitions are being proposed for the terms "portable" and "transportable". A global Public Input is being submitted to request the panels to review usage and change to the correct modifier for the application.

Proposed revised definitions:

Portable. Able to be carried or moved by a single person without mechanical aids.

Mobile. Able to be moved only by two more persons or with mechanical aids.

Transportable. Intended to be moved by a vehicle.



Public Input No. 2533-NFPA 70-2026 [Definition: Output Cable to the Electric Vehicle.]

Output Cable to the Electric Vehicle.

An assembly consisting of a length of flexible EV cable and an electric vehicle connector (supplying power to, or receiving power from, and carrying any status signals of the electric vehicle). (625) (CMP-12)

Statement of Problem and Substantiation for Public Input

In the case of EVPE or bidirectional EVSE/EVPE, the power is coming from the EV. It also has signaling / control conductors unlike typical power supply cords. Note that it may even have an EV Breakaway Coupling somewhere along its length.

Submitter Information Verification

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Submittal Date: Fri Apr 03 14:24:35 EDT 2026

Committee: NEC-P12



Public Input No. 2288-NFPA 70-2026 [Definition: Personnel Protection System (as applied to EVSE...)

Personnel Protection System { [as applied to Electric Vehicle Supply Equipment (EVSE)] .

A system of personnel protection devices and constructional features that when used together provide protection against electric shock of personnel. (625) (CMP-12)

Statement of Problem and Substantiation for Public Input

The full defined term followed by the acronym needs to be used in the title. [as applied to Electric Vehicle Supply Equipment (EVSE)].

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Submittal Date: Wed Apr 01 05:27:02 EDT 2026

Committee: NEC-P12



Public Input No. 2640-NFPA 70-2026 [Definition: Personnel Protection System

(as applied to EVSE...]

Personnel Protection System (as applied to EVSE).

A system of personnel protection devices and constructional features that when used together provide protection against electric shock of personnel. (625) (CMP-12)

Informational Note: See UL 2231-1 and -2 for Personnel Protection Systems for Electric Vehicle (EV) Supply Circuits.

Statement of Problem and Substantiation for Public Input

UL 2231-1 and -2 are the appropriate product standards for EVSE personnel protection systems. I recommend adding this reference to help inform users of the code that there are personnel protection system requirements integrated into the listed EVSE.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
<u>Public Input No. 2641-NFPA 70-2026 [Section No. 625.2]</u>	
<u>Public Input No. 2641-NFPA 70-2026 [Section No. 625.2]</u>	

Submitter Information Verification

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Submittal Date: Sat Apr 04 13:38:58 EDT 2026

Committee: NEC-P12



Public Input No. 1701-NFPA 70-2026 [Definition: Portable.]

Portable.

~~A device intended for indoor or outdoor use that is designed~~ Able to be hand- carried from location to location or easily transported without the use of other devices or equipment. (625) (CMP-12) or moved by a single person without mechanical aids.

Additional Proposed Changes

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
1-Portable-1_625_.docx	Portable Definition	

Statement of Problem and Substantiation for Public Input

Substantiation: This Public Input is being submitted on behalf of the NEC Correlating Committee Portable Definitions Task Group which includes David Williams, Dan Neeser, Seth Carlton, Rich Holub, David Kendall and Matt Hittinger.

The task group was assigned to review the definitions of Equipment, Mobile; Equipment, Portable; Portable and Portable (as applied to equipment), Platform, Portable. Create one general definition for the term "Portable". Provide Public Inputs for the new definition and for deleting the other related terms. A single general definition for the term "Portable" is necessary.

The definition for "Portable" (as an adjective) is created to be used consistently throughout the code for various types of equipment. Additional definitions are being proposed for the terms "mobile" and "transportable". A global Public Input is being submitted to request the panels to review usage and change to the correct modifier for the application.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
Public Input No. 1705-NFPA 70-2026 [Definition: Portable.]	
Public Input No. 1706-NFPA 70-2026 [Definition: Portable (as applied to equipment).]	
Public Input No. 1707-NFPA 70-2026 [Definition: Equipment, Portable (as applied to equipment ov...]	
Public Input No. 1708-NFPA 70-2026 [Definition: Equipment, Portable [as applied to hazardous (c...]	
Public Input No. 1709-NFPA 70-2026 [Definition: Equipment, Portable. (Portable Equipment)]	
Public Input No. 1710-NFPA 70-2026 [Definition: Equipment, Portable. (Portable Equipment)]	
Public Input No. 1711-NFPA 70-2026 [Definition: Platform, Portable (as applied to equipment ove...]	
Public Input No. 1712-NFPA 70-2026 [Definition: Portable Handlamp.]	
Public Input No. 1713-NFPA 70-2026 [Definition: Portable Power Distribution Unit.]	
Public Input No. 1714-NFPA 70-2026 [Definition: Portable Structures.]	
Public Input No. 1715-NFPA 70-2026 [Definition: Portable Substation.]	
Public Input No. 1716-NFPA 70-2026 [Definition: Equipment, Mobile. (Mobile Equipment)]	

[Public Input No. 1717-NFPA 70-2026 \[Definition: Equipment, Mobile \(as applied to equipment over...\)\]](#)

[Public Input No. 1719-NFPA 70-2026 \[Global Input\]](#)

Submitter Information Verification

Submitter Full Name: David Williams

Organization: Delta Charter Township

Street Address:

City:

State:

Zip:

Submittal Date: Thu Mar 19 12:58:31 EDT 2026

Committee: NEC-P12

Article 100 Definitions

Portable.

Able to be carried or moved by a single person without mechanical aids.

~~A device intended for indoor or outdoor use that is designed to be hand-carried from location to location or easily transported without the use of other devices or equipment. (625) (CMP 12)~~

Substantiation: This Public Input is being submitted on behalf of the NEC Correlating Committee Portable Definitions Task Group which includes David Williams, Dan Neeser, Seth Carlton, Rich Holub, David Kendall and Matt Hittinger.

The task group was assigned to review the definitions of Equipment, Mobile; Equipment, Portable; Portable and Portable (as applied to equipment), Platform, Portable. Create one general definition for the term "Portable". Provide Public Inputs for the new definition and for deleting the other related terms. A single general definition for the term "Portable" is necessary.

The definition for "Portable" (as an adjective) is created to be used consistently throughout the code for various types of equipment. Additional definitions are being proposed for the terms "mobile" and "transportable". A global Public Input is being submitted to request the panels to review usage and change to the correct modifier for the application.

Proposed revised definitions:

Portable. Able to be carried or moved by a single person without mechanical aids.

Mobile. Able to be moved only by two more persons or with mechanical aids.

Transportable. Intended to be moved by a vehicle.



Public Input No. 1705-NFPA 70-2026 [Definition: Portable.]

Portable:

~~X-ray equipment designed to be hand-carried. (660) (CMP-12)~~

Statement of Problem and Substantiation for Public Input

Substantiation: This Public Input is being submitted on behalf of the NEC Correlating Committee Portable Definitions Task Group which includes David Williams, Dan Neeser, Seth Carlton, Rich Holub, David Kendall and Matt Hittinger.

The task group was assigned to review the definitions of Equipment, Mobile; Equipment, Portable; Portable and Portable (as applied to equipment), Platform, Portable. Create one general definition for the term "Portable". Provide Public Inputs for the new definition and for deleting the other related terms. A single general definition for the term "Portable" is necessary.

This definition of Portable as applied to x-ray equipment is being deleted.

A new definition for "Portable" (as an adjective) is created to be used consistently throughout the code for various types of equipment. Additional definitions are being proposed for the terms "mobile" and "transportable". A global Public Input is being submitted to request the panels to review usage and change to the correct modifier for the application.

Proposed revised definitions:

Portable. Able to be carried or moved by a single person without mechanical aids.

Mobile. Able to be moved only by two more persons or with mechanical aids.

Transportable. Intended to be moved by a vehicle.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
Public Input No. 1701-NFPA 70-2026 [Definition: Portable.]	
Public Input No. 1702-NFPA 70-2026 [Definition: Mobile.]	
Public Input No. 1703-NFPA 70-2026 [Definition: Transportable.]	

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Submittal Date: Thu Mar 19 13:20:52 EDT 2026

Committee: NEC-P12



Public Input No. 1703-NFPA 70-2026 [Definition: Transportable.]

Transportable.

~~X-ray equipment that is~~ Intended to be installed in ~~a vehicle or that may be readily disassembled for transport in~~ or moved by a vehicle. - (660) (CMP-12)

Additional Proposed Changes

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
3-Transportable_660_.docx	Transportable Definition	

Statement of Problem and Substantiation for Public Input

Substantiation: This Public Input is being submitted on behalf of the NEC Correlating Committee Portable Definitions Task Group which includes David Williams, Dan Neeser, Seth Carlton, Rich Holub, David Kendall and Matt Hittinger.

The task group was assigned to review the definitions of Equipment, Mobile; Equipment, Portable; Portable and Portable (as applied to equipment), Platform, Portable. Create one general definition for the term "Portable". Provide Public Inputs for the new definition and for deleting the other related terms. A single general definition for the term "Portable" is necessary.

The definition for "Transportable" (as an adjective) is created to be used consistently throughout the code for various types of equipment. Additional definitions are being proposed for the terms "mobile" and "portable". A global Public Input is being submitted to request the panels to review usage and change to the correct modifier for the application.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
Public Input No. 1705-NFPA 70-2026 [Definition: Portable.]	
Public Input No. 1706-NFPA 70-2026 [Definition: Portable (as applied to equipment).]	
Public Input No. 1707-NFPA 70-2026 [Definition: Equipment, Portable (as applied to equipment ov...]	
Public Input No. 1708-NFPA 70-2026 [Definition: Equipment, Portable [as applied to hazardous (c...]	
Public Input No. 1709-NFPA 70-2026 [Definition: Equipment, Portable. (Portable Equipment)]	
Public Input No. 1710-NFPA 70-2026 [Definition: Equipment, Portable. (Portable Equipment)]	
Public Input No. 1711-NFPA 70-2026 [Definition: Platform, Portable (as applied to equipment ove...]	
Public Input No. 1712-NFPA 70-2026 [Definition: Portable Handlamp.]	
Public Input No. 1713-NFPA 70-2026 [Definition: Portable Power Distribution Unit.]	
Public Input No. 1714-NFPA 70-2026 [Definition: Portable Structures.]	
Public Input No. 1715-NFPA 70-2026 [Definition: Portable Substation.]	

[Public Input No. 1716-NFPA 70-2026 \[Definition: Equipment, Mobile. \(Mobile Equipment\)\]](#)

[Public Input No. 1717-NFPA 70-2026 \[Definition: Equipment, Mobile \(as applied to equipment over...\)\]](#)

[Public Input No. 1719-NFPA 70-2026 \[Global Input\]](#)

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Submittal Date: Thu Mar 19 13:10:10 EDT 2026

Committee: NEC-P12

Article 100 Definitions

Transportable.

Intended to be installed in or moved by a vehicle.

~~X-ray equipment that is to be installed in a vehicle or that may be readily disassembled for transport in a vehicle. (660) (CMP-12)~~

Substantiation: This Public Input is being submitted on behalf of the NEC Correlating Committee Portable Definitions Task Group which includes David Williams, Dan Neeser, Seth Carlton, Rich Holub, David Kendall and Matt Hittinger.

The task group was assigned to review the definitions of Equipment, Mobile; Equipment, Portable; Portable and Portable (as applied to equipment), Platform, Portable. Create one general definition for the term "Portable". Provide Public Inputs for the new definition and for deleting the other related terms. A single general definition for the term "Portable" is necessary.

The definition for "Transportable" (as an adjective) is created to be used consistently throughout the code for various types of equipment. Additional definitions are being proposed for the terms "mobile" and "portable". A global Public Input is being submitted to request the panels to review usage and change to the correct modifier for the application.

Proposed revised definitions:

Portable. Able to be carried or moved by a single person without mechanical aids.

Mobile. Able to be moved only by two more persons or with mechanical aids.

Transportable. Intended to be moved by a vehicle.



Public Input No. 3223-NFPA 70-2026 [Definition: Truck Coupler.]

Truck Coupler.

A truck flanged surface inlet and ~~mating~~ matching_cord connector. (626) (CMP-12)

Statement of Problem and Substantiation for Public Input

The term mating can be seen as non-inclusive and less suitable for international use and translation.

1. In common industry usage, function-based terms are widely understood and are more technically descriptive, such as interconnecting, matching, and connecting.
2. Using the proposed term(s) improves clarity for a broader range of users, including non-specialists, because the term(s) describe the intended function rather than a metaphor.
3. The proposed term(s) align with plain-language writing practices and improve translatability for international audiences.
4. The change supports ULSE's inclusive language goals by replacing gendered terms with neutral, technically descriptive alternatives without changing any technical requirement. Proposals are being made across ULSE's portfolio supporting inclusive language.

Submitter Information Verification

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Submittal Date: Wed Apr 08 14:55:02 EDT 2026

Committee: NEC-P12



Public Input No. 1814-NFPA 70-2026 [New Definition after Definition: Electric Vehicle (EV).]

Electric Vehicle, Plug-in Hybrid (PHEV)

A vehicle that has both a petroleum engine and electric motor(s). In a parallel hybrid, both the petroleum motor and the electric motor(s) can give motive force to the vehicle. In a series hybrid, the vehicle is an electric vehicle and the petroleum engine only generates electrical power to charge the batteries. A plug-in hybrid can be either of these, but is also able to be connected to Electric Vehicle Supply Equipment (EVSE) in order to charge the batteries.

Statement of Problem and Substantiation for Public Input

Currently, Plug-in Hybrids are conflated with the definition of an electric vehicle. But plug-in vehicles might not actually be electric vehicles. I have added this definition as "electric vehicle, plug-in hybrid" in order to keep the definitions together. CMP-12, however, may choose to simply make the definition title "Plug-in Hybrid Vehicle." This would separate it's position in Article 100, but would be more accurate.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
<u>Public Input No. 1813-NFPA 70-2026 [Definition: Electric Vehicle (EV).]</u>	separate the definitions for EV and PHEV

Submitter Information Verification

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Submission Date: Sat Mar 21 21:16:28 EDT 2026

Committee: NEC-P12



Public Input No. 2411-NFPA 70-2026 [New Definition after Definition: Electric Vehicle Supply Eq...]

Electric Vehicle Power Transfer System Equipment (EVPTSE)

The equipment that is used to transfer electric power at voltages greater than or equal to 30 Vac or 60 Vdc to or from the electric vehicle to loads, premise wiring systems, power production and distribution systems, or similar, including EVSE, WPTSE, EVPE, DCFC, or similar, other than the vehicle inlet, receptacles, or other vehicle equipment.

Statement of Problem and Substantiation for Public Input

Since Article 625 is entitled EV Power Transfer System, without an abbreviation like Article 624 has (that doesn't match its title?), to simplify reference to the equipment it covers, rather than listing EVSE, WPTSE, EVPE, DCFC, pantographs, etc. individually where requirements apply to all of them, it would be convenient to abbreviate, as has been done for ESVSE for Article 624. An abbreviation (EVPTSE) would help to avoid having to write it out every time.

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Submittal Date: Thu Apr 02 17:31:18 EDT 2026

Committee: NEC-P12



Plug-In Photovoltaic Electric Vehicle Power Exchange System

A system that integrates a photovoltaic system and electric vehicle power export equipment in a single unit, connected to the premises wiring system by means of a cord-and-plug connection to a receptacle outlet and interfacing with an electric vehicle by means of electric vehicle power export equipment. A plug-in photovoltaic electric vehicle power exchange system is capable of supplying premises loads, transferring electric power in both directions between the electric vehicle and the premises wiring system, exporting electric power to the electric utility system, or any combination thereof.

Informational Note No. 1: A plug-in photovoltaic electric vehicle power exchange system is a cord-and-plug-connected electric power production source in accordance with Article 705, Part III.

Informational Note No. 2: The electric vehicle power export equipment integrated in a plug-in photovoltaic electric vehicle power exchange system is subject to the requirements of Article 625, Part VII. The photovoltaic system is subject to the requirements of Article 690 and Article 705, Part III.

Additional Proposed Changes

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
US_12_570_173_B2-VehicularElectricityGeneratingCanopyAppliance.pdf	US 12,570,173_B2 Vehicular Electricity Generating Canopy Appliance	
US_2026-00228848-A1-TrailerableElectricityGeneratingCanopyAppliance.pdf	US 2026-00228848-A1 Trailerable Electricity Generating Canopy Appliance	

Statement of Problem and Substantiation for Public Input

There is currently no definition of a Plug-In Photovoltaic Electric Vehicle Power Exchange System in Article 100 or anywhere else in the 2026 NEC. Absent a defined term, authorities having jurisdiction (AHJs) lack a codified classification to reference on permit documentation. An implicit inclusion that cannot be formally cited is, in practice, no inclusion at all.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
Public Input No. 2538-NFPA 70-2026 [New Part after III.]	
Public Input No. 3251-NFPA 70-2026 [New Definition after Definition: Scope.]	
Public Input No. 2551-NFPA 70-2026 [New Section after 625.102]	
Public Input No. 3237-NFPA 70-2026 [Definition: Electric Vehicle (EV).]	
Public Input No. 3251-NFPA 70-2026 [New Definition after Definition: Scope.]	

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Submittal Date: Fri Apr 03 19:04:18 EDT 2026

Committee: NEC-P12



Public Input No. 2874-NFPA 70-2026 [New Definition after Definition: Scope.]

Data Center Facility.

A facility where the primary purpose of the building(s) is to support large scale computing operations that house computing, digital processing, data storage, communications, or control equipment and associated infrastructure. These facilities contain dedicated infrastructure to support the operation of such equipment through electrical power distribution, cooling, environmental control, grounding and bonding, physical security, and connectivity sized and designed for that purpose. (2304)(CMP-12).

Informational Note No.1: A commonly used definition for a data center is provided in ASHRAE Standard 90.4, which defines a data center as “a room or building, or portions thereof, including computer rooms being served by the data center systems, serving a total ITE load greater than 10 kW and 20 W/ft² (215 W/m²) of conditioned floor area.”

Informational Note No.2: Data center facilities include, but are not limited to, enterprise data centers, colocation facilities, hyperscale facilities, edge or modular data centers, high performance computing facilities, artificial intelligence computing facilities, and digital asset or blockchain computing facilities.

Statement of Problem and Substantiation for Public Input

The recommendations contained in public input are the result of the work conducted by the Correlating Committee Datacenter Task Group chaired by Todd Lottmann (Eaton) with additional Task Group members including Jack Lyons (NEMA), Ernie Gallo (ATIS), Keith Waters (Schnider Electric), David Kendall (ABB), Christine Porter (Intertek) David Humphrey (IAEI), Robert Osborne (UL), Joel Goergen (Cisco), Brian Deckard (Siemens), Joseph Borowski (Google), Darryl Hill (IBEW), Eddie Rodriguez (IEC), Joe Prisco (IBM), James Walters (Meta), and Brandon DeVaul (Microsoft). In addition to these task group members, over 30 guests participated in the development of this public input, showing the wide range of input received while processing this recommendation. This is a consensus recommendation from the Task Group members that meets the direction given to them which is “Data Centers, and the infrastructure that supports them, are evolving quickly. Articles 645 and 646 have been used in the past for IT applications and data centers, but the rapid pace of development of “AI data centers”, where modular systems operate at DC voltages, utilize wiring methods that are not recognized in Chapter 3, and may have other challenges with existing rules. A Task Group should identify gaps and make public Inputs to address any gaps.”

This Public Input was submitted by the NEC Correlating Committee Task Group for Data Centers. This Public Input proposes a new definition for Data Center Facility. This definition supports the recommendation for a new article 2304 covering Datacenter Facilities. Modern data center facilities have electrical characteristics not fully addressed by existing general NEC requirements. The proposed new Article 2304 provides minimum requirements for installation, grounding and bonding, overcurrent protection, and fault management unique to these facilities, improving consistency in design, installation, inspection, operation, and maintenance.

Related Public Inputs for This Document

Related Input

Public Input No. 2891-NFPA 70-2026 [Global Input]

Public Input No. 2891-NFPA 70-2026 [Global Input]

Relationship

Proposed Chapter 23 tied to this definition and recommended by the CC Datacenter Task Group

Submitter Information Verification

Submitter Full Name: Todd Lottmann

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Submittal Date: Mon Apr 06 17:49:55 EDT 2026

Committee: NEC-P12



Public Input No. 2887-NFPA 70-2026 [New Definition after Definition: Scope.]

Cybersecurity.

The protection of systems, facilities, equipment, and personnel from the disruption or compromise of confidentiality, integrity, and availability of electronically controllable equipment by malicious actors, malfunction, or neglect. (2314) (CMP-12)

Statement of Problem and Substantiation for Public Input

The recommendations contained in public input are the result of the work conducted by the Correlating Committee Datacenter Task Group chaired by Todd Lottmann (Eaton) with additional Task Group members including Jack Lyons (NEMA), Ernie Gallo (ATIS), Keith Waters (Schnider Electric), David Kendall (ABB), Christine Porter (Intertek) David Humphrey (IAEI), Robert Osborne (UL), Joel Goergen (Cisco), Brian Deckard (Siemens), Joseph Borowski (Google), Darryl Hill (IBEW), Eddie Rodriguez (IEC), Joe Prisco (IBM), James Walters (Meta), and Brandon DeVaul (Microsoft). In addition to these task group members, over 30 guests participated in the development of this public input, showing the wide range of input received while processing this recommendation. This is a consensus recommendation from the Task Group members that meets the direction given to them which is “Data Centers, and the infrastructure that supports them, are evolving quickly. Articles 645 and 646 have been used in the past for IT applications and data centers, but the rapid pace of development of “AI data centers”, where modular systems operate at DC voltages, utilize wiring methods that are not recognized in Chapter 3, and may have other challenges with existing rules. A Task Group should identify gaps and make public Inputs to address any gaps.”

This Public Input was submitted by the NEC Correlating Committee Task Group for Data Centers. This Public Input proposes a new definition for Cybersecurity. The requirement for cybersecurity continues to increase within the NEC and needs to be defined for usability and clarification.

Related Public Inputs for This Document

Related Input

Public Input No. 2891-NFPA 70-2026 [Global Input]

Public Input No. 2891-NFPA 70-2026 [Global Input]

Relationship

Proposed Chapter 23 tied to this definition and recommended by the CC Datacenter Task Group

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Committee: NEC-P12



Public Input No. 2888-NFPA 70-2026 [New Definition after Definition: Scope.]

Cybersecurity Risk Assessment.

A process for systematically evaluating risk that considers the severity of consequences and the likelihood that the adverse event will occur. (2314).(CMP-12).

Statement of Problem and Substantiation for Public Input

The recommendations contained in public input are the result of the work conducted by the Correlating Committee Datacenter Task Group chaired by Todd Lottmann (Eaton) with additional Task Group members including Jack Lyons (NEMA), Ernie Gallo (ATIS), Keith Waters (Schnider Electric), David Kendall (ABB), Christine Porter (Intertek) David Humphrey (IAEI), Robert Osborne (UL), Joel Goergen (Cisco), Brian Deckard (Siemens), Joseph Borowski (Google), Darryl Hill (IBEW), Eddie Rodriguez (IEC), Joe Prisco (IBM), James Walters (Meta), and Brandon DeVaul (Microsoft). In addition to these task group members, over 30 guests participated in the development of this public input, showing the wide range of input received while processing this recommendation. This is a consensus recommendation from the Task Group members that meets the direction given to them which is "Data Centers, and the infrastructure that supports them, are evolving quickly. Articles 645 and 646 have been used in the past for IT applications and data centers, but the rapid pace of development of "AI data centers", where modular systems operate at DC voltages, utilize wiring methods that are not recognized in Chapter 3, and may have other challenges with existing rules. A Task Group should identify gaps and make public Inputs to address any gaps."

This Public Input was submitted by the NEC Correlating Committee Task Group for Data Centers. This Public Input proposes a new definition for Risk Assessment as required in a companion Public Input for a new Article pertaining to Cybersecurity for Data Centers. The definition separates a risk assessment that might be performed on electrical equipment. This definition for Risk Assessment would only apply to cybersecurity for data centers.

Related Public Inputs for This Document

Related Input

Public Input No. 2891-NFPA 70-2026 [Global Input]

Public Input No. 2891-NFPA 70-2026 [Global Input]

Relationship

Proposed Chapter 23 tied to this definition and recommended by the CC Datacenter Task Group

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Committee: NEC-P12



Public Input No. 2517-NFPA 70-2026 [Section No. 610.14(D)]

(D) Contact Conductors.

Contact wires shall have an ampacity not less than that required by Table 610.14(A) for 75°C (167°F) wire, ~~and in no case shall they~~ and shall not be smaller than as shown in Table 610.14(D).

Table 610.14(D) Minimum Contact Conductor Size Based on Distance Between Supports

<u>Minimum Size of Wire (AWG)</u>	<u>Maximum Distance Between End Strain Insulators or Clamp- Type Intermediate Supports</u>
6	9.0 m (30 ft) or less
4	18 m (60 ft) or less
2	Over 18 m (60 ft)

Statement of Problem and Substantiation for Public Input

The use of the phrase "in no case shall" is revised to comply with the NEC Style Manual for mandatory language as specified in 3.1.1.

Submitter Information Verification

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Submittal Date: Fri Apr 03 13:47:43 EDT 2026

Committee: NEC-P12



Public Input No. 2519-NFPA 70-2026 [Section No. 610.21(E)]

(E) Supports for Rigid Conductors.

Conductors along runways and crane bridges, that are of the rigid type specified in 610.13(B) and not contained within an approved enclosed assembly, shall be carried on insulating supports spaced at intervals of not more than 80 times the vertical dimension of the conductor, ~~but in no case greater~~ and shall not be greater than 4.5 m (15 ft), and spaced apart sufficiently to give a clear electrical separation of conductors or adjacent collectors of not less than 25 mm (1 in.).

Statement of Problem and Substantiation for Public Input

The use of the phrase "in no case shall" is revised to comply with the NEC Style Manual for mandatory language as specified in 3.1.1.

Submitter Information Verification

Submitter Full Name: David Williams

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Submittal Date: Fri Apr 03 13:49:26 EDT 2026

Committee: NEC-P12



Public Input No. 2477-NFPA 70-2026 [Section No. 610.42]

610.42 Branch-Circuit Short-Circuit and Ground-Fault Protection.

Branch circuits shall be protected in accordance with 610.42(A). Branch-circuit taps, where made, shall comply with 610.42(B).

(A) Fuse or Circuit Breaker Rating.

Crane, hoist, and monorail hoist motor branch circuits shall be protected by fuses or inverse-time circuit breakers that have a rating in accordance with 430.52. Where two or more motors operate a single motion, the sum of their nameplate current ratings shall be considered as that of a single motor.

(B) Taps.

(1) Multiple Motors.

Where two or more motors are connected to the same branch circuit, each tap conductor to an individual motor shall have an ampacity not less than one-third that of the branch circuit. Each motor shall be protected from overload according to 610.43.

(2) Control Circuits.

Where taps to control circuits originate on the load side of a branch-circuit OCPD, each tap and piece of equipment shall be protected in accordance with 430.72.

(C) Maintenance Receptacles.

Maintenance receptacles associated with cranes, monorail hoists, runways, bridges, or machinery spaces shall have GFCI protection in accordance with 210.8(B) when located outdoors, on rooftops, or in damp or wet locations.

Statement of Problem and Substantiation for Public Input

Section 610.42 addresses branch circuit protection requirements for cranes, hoists, and monorail hoists but does not explicitly address maintenance receptacles that are commonly installed as part of these systems. These receptacles are frequently located on crane bridges, runways, or associated machinery spaces and are often installed outdoors or in damp or wet locations.

While 210.8(B) already requires GFCI protection for receptacles in these environments, users designing and installing crane systems often rely primarily on Chapter 6 for applicable requirements governing special equipment. The absence of a specific reference within Article 610 creates the potential for these receptacles to be overlooked or inconsistently protected.

The proposed new subsection 610.42(C) does not introduce new technical requirements, but instead clearly references existing GFCI provisions in the context where they are most likely to be applied. This improves code usability, consistency, and enforcement, while enhancing personnel safety during maintenance activities involving crane and hoist equipment.

Submitter Information Verification

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Submittal Date: Fri Apr 03 11:14:58 EDT 2026

Committee: NEC-P12



Public Input No. 790-NFPA 70-2026 [Section No. 620.7]

620.7 Ground-Fault Circuit-Interrupter Protection for Personnel.

(A) Pits, Hoistways, and on Cars.

Each 125-volt, single-phase, 15- and 20-ampere receptacle installed in pits, in hoistways, on the cars of elevators and dumbwaiters associated with wind turbine tower elevators, on the platforms or in the runways and machinery spaces of platform lifts and stairway chairlifts, and in escalator and moving walk wellways shall be a listed ~~Class A~~ ground-fault circuit-interrupter type.

(B) Machine Rooms, Control Spaces, Machinery Spaces, Control Rooms, and Truss Interiors.

All 125-volt, single-phase, 15- and 20-ampere receptacles installed in machine rooms, control spaces, machinery spaces, control rooms, and truss interiors shall have listed ~~Class A~~ ground-fault circuit-interrupter protection for personnel.

Statement of Problem and Substantiation for Public Input

Delete 'Class A' since the standard method for identifying GFCI is simply 'GFCI'. The article 100 definition already makes it a Class A device, so no need to add it.

Submitter Information Verification

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Submission Date: Tue Jan 27 08:29:38 EST 2026

Committee: NEC-P12



TITLE OF NEW CONTENT

620.8 Cybersecurity

Elevators, dumbwaiters, escalators, moving walks and lifts, located in vital infrastructure facilities, having communication capability or that can be connected to a network, shall be identified as being evaluated for cybersecurity, and be included in a cybersecurity assessment.

Informational Note No. 1: Examples of assessment requirements include, but are not limited to, ANSI/ISA 62443, *Cybersecurity Standards series*, UL 2900 *Cybersecurity Standard series*, and NIST *Framework for Improving Critical Infrastructure Cybersecurity*, Version 1.1.

Informational Note No. 2: Examples used to demonstrate the system has been investigated for cybersecurity vulnerabilities include, but are not limited to

- (1) The ISA Security Compliance Institute (ISCI) conformity assessment program**
- (2) Certification of compliance by a nationally recognized test laboratory**
- (3) Manufacturer certification for the specific type and brand of system provided**

Informational Note No. 3: Cybersecurity is a specialized field requiring constant, vigilant attention to security vulnerabilities that could arise due to software defects, system configuration changes, or user interactions. Installation of devices that can be secured is an important first step but not sufficient to guarantee a secure system.

Informational Note No. 4: See NEMA CY70001-2023, *Cybersecurity Implementation Guidance for Connected Electrical Infrastructure*, for recommendations on how to meet this requirement.

Informational Note No. 5: Examples of vital infrastructure facilities include, but are not limited to, waste water treatment facilities, water supply facilities, police stations, call centers, financial centers, data centers, and military bases.

Statement of Problem and Substantiation for Public Input

Our “vital infrastructure facilities” are under constant cyber attack. For example, the Director of National Intelligence, through the Cyber Threat Intelligence Integration Center, released a report of 12 cyber attacks on water utilities, water systems, and waste water treatment systems, for the six-month period from November 2023 through April 2024.

This Public Input creates minimal cybersecurity requirements, but limits those cybersecurity requirements to “vital infrastructure facilities”. (Informational Note No. 5 provides examples of “vital infrastructure facilities”.) There is no conflict with Article 708. While a very small percentage of “vital infrastructure facilities” have been designated by authorities as Article 708 Critical Operations Power Systems, the vast majority of “vital infrastructure facilities” have not been so designated.

Let's look at an example of a high rise financial center. 110.3(A)(8) requires that a fire alarm system in the financial center, because it is normally considered life safety equipment, be evaluated in light of cybersecurity. However, there is no cybersecurity requirement for non-life safety equipment, such as an elevator, within the financial center. If elevators are installed with inadequate cyber protection, it can be extremely expensive or impossible to rectify the problem, short of replacing the equipment.

"Identified" as applied to equipment, is defined in Article 100 as "Recognizable as suitable for the specific purpose, function, use, environment, application, and so forth, where described in a particular Code requirement. Informational Note: Some examples of ways to determine suitability of equipment for a specific purpose, environment, or application include investigations by a qualified testing laboratory (listing and labeling), an inspection agency, or other organization concerned with product evaluation."

Hackers can easily manipulate unprotected elevators, disrupting entry and exit. Our adversaries are continuously mounting cyber attacks. We have the obligation to prevent damage to our "vital infrastructure facilities" from these malicious cyber attacks.

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Submittal Date: Tue Mar 31 10:36:08 EDT 2026

Committee: NEC-P12



Public Input No. 2591-NFPA 70-2026 [Section No. 620.16(C)]

(C) Available Fault Current Field Marking.

The elevator control panel shall be legibly marked in the field with the available fault current at its line terminals. The field marking(s) shall include the date the available fault current calculation was performed and shall ~~meet the requirements of~~ comply with 110.21(B). The calculation shall be documented and made available to those authorized to design, install, inspect, maintain, or operate the system.

When modifications to the electrical system occur that affect the available fault current at the elevator control panel, the available fault current shall be verified or recalculated as necessary to ensure the elevator control panel's short-circuit current rating is sufficient for the available fault current at the line terminals of the equipment. The required field marking(s) shall be adjusted to reflect the new level of available fault current.

Statement of Problem and Substantiation for Public Input

The phrase "Meeting the requirements" has been revised to comply with the NEC Style Manual 4.1.3 for Reference Structure.

Submitter Information Verification

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Submittal Date: Fri Apr 03 19:37:29 EDT 2026

Committee: NEC-P12



Public Input No. 2965-NFPA 70-2026 [Section No. 620.16(C)]

~~(C) Available Fault Current Field Marking:~~

~~The elevator control panel shall be legibly marked in the field with the available fault current at its line terminals. The field marking(s) shall include the date the available fault current calculation was performed and shall meet the requirements of 110.21(B). The calculation shall be documented and made available to those authorized to design, install, inspect, maintain, or operate the system.~~

~~When modifications to the electrical system occur that affect the available fault current at the elevator control panel, the available fault current shall be verified or recalculated as necessary to ensure the elevator control panel's short-circuit current rating is sufficient for the available fault current at the line terminals of the equipment. The required field marking(s) shall be adjusted to reflect the new level of available fault current.~~

-

Statement of Problem and Substantiation for Public Input

Rationale for proposal: A field marking requirement for the controller will create a conflict related to work responsibility between electrical and elevator personnel. This is an invitation for confusion and will likely create a safety risk, particularly concerning the second paragraph of the proposed language in 620.16(C) regarding modifications to the electrical system. The ownership of this marking will have a safety impact when the electrical system is modified in the building and the marking on the elevator control panel is not updated. The documentation to support this calculated available fault current may end up in various place not consistent which will then lead to the coordination of this calculated value at the controller input terminals. This marking should be part of the field marking already provided at the disconnecting means required in 620.51.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
Public Input No. 2971-NFPA 70-2026 [Section No. 620.51(D)]	

Submitter Information Verification

Submitter Full Name: John Kleine

Organization: Otis

Affiliation: NEII

Street Address:

City:

State:

Zip:

Submittal Date: Tue Apr 07 13:34:59 EDT 2026

Committee: NEC-P12



Public Input No. 1515-NFPA 70-2026 [Section No. 620.23(A)]

(A) Separate Branch Circuits.

The branch circuits supplying the lighting for machine rooms, control rooms, machinery spaces, control spaces, or truss interiors, where required, shall be separate from the branch circuits supplying the receptacles in those places. These circuits shall supply no other loads.

~~Required lighting shall not be connected to the load side of a ground-fault circuit interrupter.~~

Statement of Problem and Substantiation for Public Input

The sentence "Required lighting shall not be connected to the load side of a ground-fault circuit interrupter" is a carryover from prior editions of the NEC when the separate branch circuit for the machine room was permitted to supply both the machine room lighting and the machine room receptacles.

Since machine room receptacles are required to be provided with GFCI protection, when the lighting and receptacle circuits were permitted to be shared, care was needed to ensure that the machine room lighting was not connected to the load side of ground fault circuit interrupter receptacles.

In 2017, NEC Section 620.23 was revised to require the branch circuit(s) supplying machine room lighting to be separate from the branch circuit(s) supplying machine room receptacles. As such, there is no longer the possibility that machine room lighting will be connected to the load side of a ground fault circuit interrupter (receptacle).

Submitter Information Verification

Submitter Full Name: Jeanne Tebera

Organization: Henry Adams, LLC

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City:

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Submission Date: Fri Mar 13 18:21:20 EDT 2026

Committee: NEC-P12



Public Input No. 388-NFPA 70-2025 [Section No. 620.23(A)]

(A) Separate Branch Circuits.

The branch circuits supplying the lighting for machine rooms, control rooms, machinery spaces, control spaces, or truss interiors, where required, shall be separate from the branch circuits supplying the receptacles in those places. These circuits shall supply no other loads.

~~Required lighting shall not be connected to the load side of a ground-fault circuit interrupter.~~

Statement of Problem and Substantiation for Public Input

This statement is unnecessary as the first statement requires the lights and the receptacles in the elevator machine room to be on a separate circuit. In the 2014 edition of the NEC the wording of 620.23 was exactly the same as 620.24 which states that "Separate branch circuits shall supply the hoistway pit lighting and receptacles." This was then followed by the statement about not connecting the lighting on the load side of the ground-fault circuit interrupter.

When 620.23 was changed in the 2017 edition of the NEC to explicitly state that the lighting branch circuit and the receptacle branch circuit shall be on separate circuits, the next statement was never removed.

Submitter Information Verification

Submitter Full Name: Neeraj Sarnaik

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Submittal Date: Sun Dec 14 18:54:17 EST 2025

Committee: NEC-P12



Public Input No. 1517-NFPA 70-2026 [Section No. 620.24]

620.24 Branch Circuit Circuits for Hoistway Pit Lighting and Pit Receptacles.

(A) Separate Branch Circuits.

~~Separate branch circuits shall supply the hoistway pit lighting and receptacles.~~

~~Required lighting shall not be connected to the load side of a ground-fault circuit interrupter.~~

The branch circuit(s) supplying the lighting in the hoistways shall be separate from the branch circuit(s) supplying the receptacle(s) in the pit. These circuits shall supply no other loads.

(B)

~~Lighting Switch~~

Light Switches .

~~The lighting switch~~

Light switches (manual control) for the hoistway lighting, shall be

~~so located as to be readily~~

located within the hoistway enclosure and shall be accessible from the following locations:

(1) The pit access door.

(2) The top landing.

(C) Duplex Receptacle.

At least one 125-volt, single-phase, 15- or 20-ampere duplex receptacle shall be provided in the hoistway pit.

Informational Note No. 1: See ASME A17.1-

2022

2025 /CSA B44-

2022

2025 , Safety Code for Elevators and Escalators , for pit and hoistway illumination levels.

Informational Note No. 2: See 620.7 for ground-fault circuit-interrupter requirements.

Informational Note No. 3: See ASME A17.1-2025/CSA B44-2025, Safety Code for Elevators and Escalators, for automatic lighting control requirements for hoistway lighting.

Statement of Problem and Substantiation for Public Input

Suggested revisions will correlate NEC branch circuit requirements and light switch requirements with hoistway lighting required by ASME A17.1-2025 (and 2022) Section 2.1.7, Illumination of Hoistways.

NEC Section 620.24 currently permits hoistway pit lighting and pit receptacles to be fed from a shared circuit. Since ASME A17.1, 2.1.7 requires lighting throughout the hoistway, the pit receptacle should be provided with a separate circuit.

ASME A17.1, 2.1.7.1.1 also requires manual controls for (light switches) at both the pit access door and at the top landing.

Submitter Information Verification

Submitter Full Name: Jeanne Tebera

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Submittal Date: Fri Mar 13 20:59:59 EDT 2026

Committee: NEC-P12



Public Input No. 789-NFPA 70-2026 [Section No. 620.24]

620.24 Branch Circuit for Hoistway Pit Lighting and Receptacles.

(A) Separate Branch Circuits.

~~Separate branch circuits shall supply the~~ The hoistway pit lighting and receptacles shall each be supplied by a separate branch circuit.

Required lighting shall not be connected to the load side of a ground-fault circuit interrupter.

(B) Lighting Switch.

The lighting switch shall be so located as to be readily accessible from the pit access door.

(C) Duplex Receptacle.

At least one 125-volt, single-phase, 15- or 20-ampere duplex receptacle shall be provided in the hoistway pit.

Informational Note No. 1: See ASME A17.1-2022/CSA B44-2022, *Safety Code for Elevators and Escalators*, for illumination levels.

Informational Note No. 2: See 620.7 for ground-fault circuit-interrupter requirements.

Statement of Problem and Substantiation for Public Input

This proposal revises the language in Section 620.24 to clearly state that lighting and receptacles shall each be supplied by a separate branch circuit. The current wording in Section 620.24 is vague and may be interpreted in multiple ways, which can lead to inconsistent application in the field. It is not sufficiently clear that separate branch circuits are required for lighting and receptacles.

By explicitly stating this requirement, the revised text removes ambiguity and ensures that installers and inspectors clearly understand that lighting loads and receptacle loads must be supplied by separate branch circuits. This revision is consistent with the NEC Style Manual, Section 3.5.4, which requires that words and terms be specific and clear in meaning and avoid language that could be difficult to interpret.

Submitter Information Verification

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Submission Date: Tue Jan 27 08:27:21 EST 2026

Committee: NEC-P12



Public Input No. 2971-NFPA 70-2026 [Section No. 620.51(D)]

(D) Identification and Signs.

(1) Available Fault Current Field Marking.

The disconnecting means shall be legibly marked in the field with the available fault current at its line terminals. The field marking(s) shall include the date the available fault current calculation was performed and be of sufficient durability to withstand the environment involved. This field marking shall include an additional value that indicates the calculated available fault current at the elevator control panel input line terminals.

When modifications to the electrical installation occur that affect the available fault current at the disconnecting means, the available fault current shall be verified or recalculated as necessary to ensure the elevator equipment's short-circuit current rating is sufficient for the available fault current at the line terminals of the equipment. The required field marking(s) shall be adjusted to reflect the new level of available fault current.

Statement of Problem and Substantiation for Public Input

Rationale for proposal: A field marking requirement for the controller will create a conflict related to work responsibility between electrical and elevator personnel. This is an invitation for confusion and will likely create a safety risk, particularly concerning the second paragraph of the proposed language in 620.16(C) regarding modifications to the electrical system. The ownership of this marking will have a safety impact when the electrical system is modified in the building and the marking on the elevator control panel is not updated. The documentation to support this calculated available fault current may end up in various place not consistent which will then lead to the coordination of this calculated value at the controller input terminals. This marking should be part of the field marking already provided at the disconnecting means required in 620.51.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
<u>Public Input No. 2965-NFPA 70-2026 [Section No. 620.16(C)]</u>	must go together

Submitter Information Verification

Submitter Full Name: John Kleine

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Affiliation: NEII

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Submittal Date: Tue Apr 07 13:48:28 EDT 2026

Committee: NEC-P12



Public Input No. 58-NFPA 70-2025 [Section No. 620.62(A)]

(A) General.

Where more than one driving machine is supplied by the same source, the OCPDs supplying the driving machines shall be selectively coordinated with any other supply-side and load-side OCPDs, up to the first upstream supply-side OCPD shared by all driving machines.

Selective coordination shall be selected by a licensed professional engineer or other qualified person engaged primarily in the design, installation, or maintenance of electrical systems. The selection and device settings shall be documented and made available to those authorized to design, install, inspect, maintain, and operate the system.

Statement of Problem and Substantiation for Public Input

As per the figure in 620.62 (C), the selectivity requirements only extend up to the first OCPD shared by all of the driving machines, which is an important distinction when compared to the other forms of selective coordination required in 700.32, 701.32, and 708.54, all of which are coordinated up to the source level. This proposed change makes this distinction explicit rather than implied.

If this is not the intent of the figure, please revise the figure to be drawn up to the shared source (utility transformer, genset, etc) as per the figures shown in article 700.

Submitter Information Verification

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Submission Date: Fri Oct 10 14:04:59 EDT 2025

Committee: NEC-P12



Public Input No. 1962-NFPA 70-2026 [Section No. 620.62(B)]

(B) Replacements.

~~Where elevator system(s) OCPDs are replaced, they~~ Selective coordination shall be re-evaluated ~~to ensure selective coordination is maintained with all supply-side and load-side OCPDs.~~ if replacement OCPDs that supply elevator system loads are not replaced with the same manufacturer and type of OCPDs and with the same ratings or settings.

Statement of Problem and Substantiation for Public Input

If an OCPD is replaced with the same manufacturer, type, ratings and settings, then a reevaluation for selective coordination shouldn't be required for the system. Similar requirements are found in emergency systems and legally required standby systems and would help to coordinate the same rules throughout the code when selective coordination is required when replacing an OCPD.

Submitter Information Verification

Submitter Full Name: Darryl Hill

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Submittal Date: Fri Mar 27 11:32:41 EDT 2026

Committee: NEC-P12



Public Input No. 2592-NFPA 70-2026 [Section No. 620.65]

620.65 Signage.

Equipment enclosures containing selectively coordinated OCPDs shall be legibly marked in the field to indicate that the OCPDs are selectively coordinated. The marking shall ~~meet the requirements of~~ comply with 110.21(B), ~~shall~~ be readily visible, ~~and shall~~ and state the following:

CAUTION: OVERCURRENT DEVICES IN THIS ENCLOSURE ARE SELECTIVELY COORDINATED. EQUIVALENT REPLACEMENTS AND TRIP SETTINGS ARE REQUIRED.

Statement of Problem and Substantiation for Public Input

Multiple shall statements should be avoided.

The phrase "Meeting the requirements" has been revised to comply with the NEC Style Manual 4.1.3 for Reference Structure.

Submitter Information Verification

Submitter Full Name: David Williams

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Submittal Date: Fri Apr 03 19:38:45 EDT 2026

Committee: NEC-P12



Article 624 ~~Electric Self-Propelled Vehicle~~ Mobility Equipment Power Transfer Systems (ESVSEs EMEPTES)

Part I. General

624.1 Scope.

This article covers the electrical conductors and equipment connecting an electric self-propelled vehicle (ESV) to premises wiring for the purposes of charging, power export, or bidirectional current flow.

Informational Note No. 1: See NFPA 505, *Fire Safety Standard for Powered Industrial Trucks Including Type Designations, Areas of Use, Conversions, Maintenance, and Operations*, for information on fire protection of industrial trucks.

Informational Note No. 2: See UL 2594, *Electrical Vehicle Supply Equipment*, for information on conductive electric vehicle supply equipment.

Informational Note No. 3: See UL 2202, *Electric Vehicle Charging System Equipment*, for information on conductive electric vehicle charging equipment.

Informational Note No. 4: See UL 2750-2020, *Outline of Investigation for Wireless Power Transfer Equipment for Electric Vehicles*, for information on wireless power transfer equipment for transferring power to an electric vehicle.

Informational Note No. 5: See NECA 413-2019, *Installing and Maintaining Electric Vehicle Supply Equipment (EVSE)*, for information on the procedures for installing and maintaining AC Level 1, AC Level 2, and fast-charging dc electric vehicle supply equipment (EVSE).

624.2 Listing Requirements.

Electric self-propelled vehicle supply equipment (ESVSE), including power supply cords for the purposes of charging, power export, or bidirectional current flow, shall be listed.

Part II. Equipment Construction

624.17 Cords and Cables.

(A) Power-Supply Cords.

Cables for cord-connected ESVSE shall comply with all of the following:

- (1) Be any of the types specified in 624.17(B)(1)(1) or hard service cord, junior hard service cord, or portable power cable types in accordance with Table 400.4. Hard service cord, junior hard service cord, or portable power cable types shall be listed, as applicable, for exposure to oil and damp and wet locations.
- (2) Have an ampacity as specified in Table 400.5(A)(1) or, for 8 AWG and larger, in the 60°C (140°F) columns of Table 400.5(A)(2)
- (3) Have a personnel protection system located within the ESVSE, at the attachment plug, or within the first 300 mm (12 in.) of the power-supply cord and have an overall length not exceeding 15.25 m (50 ft)

(B) Output Cables to ESV.

(1) Output Cable Type.

Output cables to ESVs shall be one of the following

- (1) Listed Types EV, EVJ, EVE, EVJE, EVT, or EVJT flexible cables as specified in Table 400.4
- (2) Integral parts of listed ESVSE

(2) Overall Output Cable Length.

The overall usable length of output cable to the ESV shall not exceed 15 m (50 ft) unless equipped with a cable management system that is part of the listed ESVSE.

(a) The usable length of output cables to ESVs shall be measured from the cable exits of the ESVSE to the face of ESV connectors.

(b) Where wireless power transfer equipment (WPTE) is hand fastened, the output cables to the primary pads shall be measured from the cable exits of the control boxes to the cable inlets at the primary pads.

(C) Interconnecting Cabling Systems.

Other cabling systems that are integral parts of listed supply equipment and are intended to interconnect pieces of equipment within ESVSE systems using approved installation methods shall be permitted.

624.22 Personnel Protection Systems.

ESVSE shall have a listed system of protection against electric shock of personnel and comply with the following:

- (1) Where cord- and plug-connected equipment is used, the interrupting device of a listed personnel protection system shall be provided according to 624.17(A).
- (2) A personnel protection system shall not be required for power transfer equipment that supplies less than 60 volts dc.

Part III. Installation

624.40 ESVSE Branch Circuits.

Each outlet installed for the purpose of supplying ESVSE greater than 16 amperes, or 120 volts, shall be supplied by an individual branch circuit.

Exception: Branch circuits shall be permitted to feed multiple ESVSE as permitted by 624.42(A) or 624.42(B).

624.41 Overcurrent Protection.

(A) General.

Overcurrent protection for feeders and branch circuits supplying ESVSE and WPTE, including bidirectional equipment, shall be sized for continuous duty and have a current rating of not less than 125 percent of the maximum load of the equipment.

(B) Noncontinuous Loads.

Where noncontinuous loads are supplied from the same feeder, OCPDs shall have current ratings of not less than the sum of the noncontinuous loads plus 125 percent of the continuous loads.

624.42 Rating.

ESVSE shall have sufficient rating to supply the load served. Charging loads shall be considered continuous loads for the purposes of this article. Service and feeders shall be sized in accordance with the product ratings, unless the overall rating of the installation can be limited through controls as permitted by 624.42(A) or 624.42(B).

(A) Power Control System (PCS).

Where PCSs in accordance with Article 130 Part II provide load management of ESVSE, the maximum equipment load on service and feeders shall be the maximum load permitted by the PCSs. PCSs shall be permitted to be integral to one piece of equipment or integral to listed systems consisting of more than one piece of equipment. When one or more pieces of equipment are provided with integral load management control, systems shall be marked to indicate such control is provided.

(B) Supply Equipment with Adjustable Settings.

Supply equipment with restricted access to an ampere adjusting means complying with 130.70(B) shall be permitted. If adjustments have an impact on the rating label, such changes shall comply with manufacturer's instructions, with the adjusted rating appearing on the rating label with sufficient durability to withstand the environment involved. Such supply equipment shall be permitted to have ampere ratings that are equal to the adjusted current setting.

624.43 Disconnecting Means.

Supply equipment rated more than 60 amperes or more than 150 volts to ground shall be provided with a disconnecting means installed in a readily accessible location. If the disconnecting means is installed remote from the equipment, a plaque shall be installed on the equipment denoting the location of the disconnecting means. The disconnecting means shall be lockable open in accordance with 110.25.

624.44 Equipment Connection.

ESVSE and WPTE shall be connected to the premises wiring system in accordance with one of the methods in 624.44(A) through 624.44(C).

(A) Portable Equipment.

Portable equipment shall be connected to the premises wiring system by one or more of the following methods:

- (1) A nonlocking, 2-pole, 3-wire grounding-type receptacle outlet rated at 125 volts, single phase, 15 or 20 amperes
- (2) A nonlocking, 2-pole, 3-wire grounding-type receptacle outlet rated at 250 volts, single phase, 15 or 20 amperes
- (3) A nonlocking, 2-pole, 3-wire or 3-pole, 4-wire grounding-type receptacle outlet rated at 250 volts, single phase, 30 or 50 amperes, or at 125/250 volts, single-phase, 30, 50, or 60 amperes
- (4) A nonlocking, 2-pole, 3-wire grounding-type receptacle outlet rated at 60 volts dc maximum, 15 or 20 amperes

(B) Fastened-in-Place Equipment.

Equipment that is fastened-in-place shall be connected to the premises wiring system by one of the following methods:

- (1) A nonlocking, 2-pole, 3-wire grounding-type receptacle outlet rated 125 volts or 250 volts, single phase, up to 50 amperes
- (2) A nonlocking, 3-pole, 4-wire grounding-type receptacle outlet rated 250 volts, three phase, up to 50 amperes
- (3) A nonlocking, 3-pole, 4-wire grounding-type receptacle outlet rated 125/250 volts, single phase, 30, 50, or 60 amperes
- (4) A nonlocking, 2-pole, 3-wire grounding-type receptacle outlet rated 60 volts dc maximum, 15 or 20 amperes

(C) Securely Fastened in Place Equipment.

All other ESVSE and WPTE shall be permanently wired and securely fastened in place to supporting surfaces.

624.46 Loss of Primary Source.

Means shall be provided such that energy cannot be backfed through the ESV and supply equipment to the premises wiring system upon loss of voltage from the utility or other electrical systems unless permitted by 624.48.

624.47 Multiple Feeder or Branch Circuits.

Where equipment is identified for the application, more than one feeder or branch circuit shall be permitted to supply equipment.

624.48 Interactive Equipment.

ESVSE or WPTE that incorporates power export functions and are part of interactive systems that serve as optional standby systems, electric power production sources, or bidirectional power feeds shall be listed and marked as suitable for that purpose. When ESVSE or WPTE are used as optional standby systems, the requirements of Article 702 shall apply; when ESVSE or WPTE are used as electric power production sources, the requirements of Article 705 shall apply.

624.49 Island Mode.

Electric self-propelled vehicle power export equipment (ESVPE) and bidirectional ESVSE that incorporate power export functions shall be permitted to be part of interconnected power systems operating in island mode.

624.50 Location.

ESVSE shall be located for direct electrical coupling of ESV connectors (conductive or inductive) to ESVs. Unless specifically listed and marked for the location, the coupling means of ESVs shall be stored or located at a height of not less than 450 mm (18 in.) above the floor level for indoor locations or 600 mm (24 in.) above the grade level for outdoor locations.

This requirement shall not apply to portable ESVSE constructed in accordance with 624.44(A).

624.52 Ventilation.

Ventilation for charging ESVs in indoor enclosed spaces shall be determined by 624.52(A) or 624.52(B).

(A) Ventilation Not Required.

Where ESV storage batteries are used or where equipment is listed for charging ESVs indoors without ventilation, mechanical ventilation shall not be required.

(B) Ventilation Required.

Where equipment is listed for charging ESVs that require ventilation for indoor charging, mechanical ventilation shall be provided. The ventilation shall include both supply and exhaust equipment and shall be permanently installed and located to intake from, and vent directly to, the outdoors. Positive-pressure ventilation systems shall be permitted only in vehicle charging buildings or areas that have been specifically designed and approved for that application. Mechanical ventilation requirements shall be determined by one of the methods specified in 624.52(B)(1) through 624.52(B)(4).

Informational Note: An example of mechanical ventilation would be a fan.

(1) Table Values.

For supply voltages and currents specified in Table 624.52(B)(1)(1) or Table 624.52(B)(1)(2), the minimum ventilation requirements shall be as specified in Table 624.52(B)(1)(1) or Table 624.52(B)(1)(2) for each of the total number of electric vehicles that can be charged at one time.

Table 624.52(B)(1)(1) Minimum Ventilation Required in Cubic Meters per Minute (m³/min) for Each of the Total Number of ESVs That Can Be Charged at One Time

Branch-Circuit Ampere Rating	Branch-Circuit Voltage								
	Single-Phase				-	3-Phase			
	dc ≥ 50 V	120 V	208 V	240 V or 120/240 V		208 V or 208Y/120 V	240 V	480 V or 480Y/277 V	600 V or 600Y/347 V
15	0.5	1.1	1.8	2.1	-	—	—	—	—
20	0.6	1.4	2.4	2.8	-	4.2	4.8	9.7	12
30	0.9	2.1	3.6	4.2	-	6.3	7.2	15	18
40	1.2	2.8	4.8	5.6	-	8.4	9.7	19	24
50	1.5	3.5	6.1	7	-	10	12	24	30
60	1.8	4.2	7.3	8.4	-	13	15	29	36
100	2.9	7	12	14	-	21	24	48	60
150	—	—	—	—	-	31	36	73	91
200	—	—	—	—	-	42	48	97	120
250	—	—	—	—	-	52	60	120	150
300	—	—	—	—	-	63	73	145	180
350	—	—	—	—	-	73	85	170	210
400	—	—	—	—	-	84	97	195	240

Table 624.52(B)(1)(2) Minimum Ventilation Required in Cubic Feet per Minute (cfm) for Each of the Total Number of Electric Vehicles That Can Be Charged at One Time

Branch-Circuit Ampere Rating	Branch-Circuit Voltage								
	Single-Phase				-	3-Phase			
	dc ≥ 50 V	120 V	208 V	240 V or 120/240 V		208 V or 208Y/120 V	240 V	480 V or 480Y/277 V	600 V or 600Y/347 V
15	15.4	37	64	74	-	—	—	—	—
20	20.4	49	85	99	-	148	171	342	427
30	30.8	74	128	148	-	222	256	512	641
40	41.3	99	171	197	-	296	342	683	854
50	51.3	123	214	246	-	370	427	854	1066
60	61.7	148	256	296	-	444	512	1025	1281
100	102.5	246	427	493	-	740	854	1708	2135
150	—	—	—	—	-	1110	1281	2562	3203
200	—	—	—	—	-	1480	1708	3416	4270
250	—	—	—	—	-	1850	2135	4270	5338
300	—	—	—	—	-	2221	2562	5125	6406
350	—	—	—	—	-	2591	2989	5979	7473
400	—	—	—	—	-	2961	3416	6832	8541

(2) Other Values.

For supply voltages and currents other than specified in Table 624.52(B)(1)(1) or Table 624.52(B)(1)(2), the minimum ventilation requirements shall be calculated by means of Equation 624.52(B)(2)a or Equation 624.52(B)(2)b for single-phase ac or dc or Equation 624.52(B)(2)c or Equation 624.52(B)(2)d for 3-phase ac.

$$\text{ventilation single-phase ac or dc in cubic meters per minute } \left(\frac{\text{m}^3}{\text{min}} \right) = \frac{(\text{volts})(\text{amperes})}{1718} \quad [624.52(\text{B})(2)\text{a}]$$

$$\text{ventilation single-phase ac or dc in cubic feet per minute (cfm)} = \frac{(\text{volts})(\text{amperes})}{48.7} \quad [624.52(\text{B})(2)\text{b}]$$

$$\text{ventilation 3-phase ac or dc in cubic meters per minute } \left(\frac{\text{m}^3}{\text{min}} \right) = \frac{(1.732)(\text{volts})(\text{amperes})}{1718} \quad [624.52(\text{B})(2)\text{c}]$$

$$\text{ventilation 3-phase ac or dc in cubic feet per minute (cfm)} = \frac{(1.732)(\text{volts})(\text{amperes})}{48.7} \quad [624.52(\text{B})(2)\text{d}]$$

(3) Engineered Systems.

For equipment ventilation systems designed by persons qualified to perform such calculations as integral parts of total ventilation systems for buildings, minimum ventilation requirements shall be permitted to be determined in accordance with calculations specified in engineering studies.

(4) Supply Circuits.

Supply circuits to mechanical ventilation equipment shall be electrically interlocked with the equipment and remain energized during the entire electric vehicle charging cycle. Equipment receptacles rated at 125 volts, single phase, 15 and 20 amperes shall be switched, with mechanical ventilation systems electrically interlocked through the switch supply power to the receptacles. Equipment supplied from less than 50 volts dc shall be switched with mechanical ventilation systems electrically interlocked through the switch supply power to the equipment.

624.54 Ground-Fault Circuit-Interrupter Protection for Personnel.

All receptacles installed for the connection of ESVSE shall have GFCI protection for personnel.

624.56 Receptacle Enclosures.

All receptacles installed in wet locations for electric vehicle charging shall have enclosures that are weatherproof with attachment plug caps inserted or removed. Outlet box hoods installed for this purpose shall be listed and be identified as extra duty. Other listed products, enclosures, or assemblies providing weatherproof protection that do not use outlet box hoods shall not be required to be marked extra duty.

Part IV. Wireless Power Transfer Equipment

624.101 Grounding.

Primary pad base plates shall be constructed of nonferrous metal and be connected to circuit equipment grounding conductors unless the listed WPTE employs double-insulation systems. Base plates shall be sized to match the size of the primary pad enclosures.

624.102 Installation.

(A) General.

Control pads, if included in WPTE configuration, shall comply with 624.102(B). The primary pad shall comply with 624.102(C).

(B) Control Box.

Control box enclosures shall be suitable for the environment and be mounted at a height not less than 450 mm (18 in.) above the floor level for indoor locations or 600 mm (24 in.) above grade level for outdoor locations in one of the following forms:

- (1) Pedestals
- (2) Walls or poles
- (3) Buildings or structures
- (4) Raised concrete pads

(C) Primary Pads.

Primary pads shall be installed secured to the surface or embedded in the surface of the floor with their tops flush with or below the surface in accordance with the manufacturer's instructions and the following:

- (1) If located in an area requiring snow removal, primary pads shall not be located on or above the surface.

Exception: Where installed on private property where snow removal is done manually, primary pads shall be permitted to be on or above the surface.

- (2) Primary pad enclosures shall be suitable for the environment and, if located in an area subject to severe climatic conditions (e.g., flooding), suitably rated for those conditions.

(D) Protection of Cords and Cables to Primary Pads.

Output cables to primary pads shall be secured in place over its entire length to restrict movement and to prevent strain at the connection points. If installed in conditions where drive-over could occur, cables shall be provided with supplemental protection.

Where control boxes are not provided, cords or cables supplying power to primary pads shall be secured in place to restrict movement and to prevent strain at the connection points. Where subject to vehicular traffic, supplemental protection shall be provided.

(E) Other Wiring Systems.

Other wiring systems and fittings specifically listed for use on WPTE shall be permitted.

Statement of Problem and Substantiation for Public Input

The name "electric self-propelled vehicle (ESV)" includes the term "electric vehicle" yet the definition states that they must be "other than an EV". The inclusion of "self-propelled" does not resolve this contradiction or serve to create a meaningful distinction between the two as they are both self-propelled.

Adopting the term "electric mobility" is frequently applied to this category of equipment and would serve to create a clearer distinction between these definitions and articles.

This would also assist with making the definitions that use the term "electric vehicle" clearer such as "electric vehicle connector", "electric vehicle power export equipment", "electric self-propelled vehicle power export equipment".

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
Public Input No. 2808-NFPA 70-2026 [Definition: Electric Self-Propelled Vehicle (ESV).]	

Submitter Information Verification

Submitter Full Name: Alexander Jahp

Organization:

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Submittal Date: Mon Apr 06 13:13:19 EDT 2026

Committee: NEC-P12



Public Input No. 1582-NFPA 70-2026 [Section No. 624.2]

624.2 Listing Requirements.

Electric self-propelled vehicle supply equipment (ESVSE) ~~including power supply cords for~~ shall be listed for the purposes of charging, power export, or bidirectional current flow, ~~shall be listed~~.

Additional Proposed Changes

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
624_2_Draft_V1.docx		

Statement of Problem and Substantiation for Public Input

This revision aligns with a similar section in 625.2 and provides for parallel construction of the requirement. The revision additionally clarifies that the equipment is what is to be listed and that listing shall be for the purposes outlined.

Submitter Information Verification

Submitter Full Name: Scott Picco

Organization: UL Solutions

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Submittal Date: Mon Mar 16 19:24:27 EDT 2026

Committee: NEC-P12

624.2 Listing Requirements.

Electric self-propelled vehicle supply equipment (ESVSE); shall be listed ~~including power supply cords~~ for the purposes of charging, power export, or bidirectional current flow, ~~shall be listed~~.

Rationale: This revision aligns with a similar section in 625.2 and provides for parallel construction of the requirement. The revision additionally clarifies that the equipment is what is to be listed and that listing shall be for the purposes outlined.



Public Input No. 1787-NFPA 70-2026 [Section No. 624.17(A)]

(A) Power-Supply Cords.

Cables for cord-connected ESVSE shall comply with all of the following:

- (1) Be any of the types specified in 624.17(B)(1)(1) or hard service cord, junior hard service cord, or portable power cable types in accordance with Table 400.4. Hard service cord, junior hard service cord, or portable power cable types shall be listed, as applicable, for exposure to oil and damp and wet locations.
- (2) ~~- Have an ampacity~~ Be of a type and ampacity as specified in Table 400.5(A)(1) or ~~for of~~ a type specified in 624.17(B)(1) and considered to have the same ampacity rating as equivalent gauge hard service cord in Table 400.5(A)(1). For 8 AWG and larger, in the cable shall be permitted to be of a type as specified in Table 400.5(A)(2) with an ampacity as specified in the 60°C (140°F) columns of Table 400.5(A)(2)
- (3) Have a personnel protection system located within the ESVSE, at the attachment plug, or within the first 300 mm (12 in.) of the power-supply cord and have an overall length not exceeding 15.25 m (50 ft)

Additional Proposed Changes

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
624_17_A_Draft_V1.docx		

Statement of Problem and Substantiation for Public Input

This change provides for parallel construction where applicable between 625.17 and 624.17 in accordance with 3.5.5. of the NEC Style Manual. The change also specifies that the use of Table 400.5(A)(2) requires the use of a type of cord that is referenced in that table. This revision clarifies that the use of a type of cord only included in Table 400.5(A)(1) used with an ampacity specified from Table 400.5(A)(2) is not permitted. Lastly, the section is expanded to include the use of EV cords as power supply cords, but points to Table 400.5(A)(1) to establish an ampacity rating for the cable types when used as power supply cords, as referenced in 625.17.

Submitter Information Verification

Submitter Full Name: Scott Picco

Organization: UL Solutions

Street Address:

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Zip:

Submission Date: Fri Mar 20 15:54:50 EDT 2026

Committee: NEC-P12

624.17 Cords and Cables.

(A) Power-Supply Cords.

Cables for cord-connected ESVSE shall comply with all of the following:

(1) Be any of the types specified in [624.17\(B\)\(1\)\(1\)](#) or hard service cord, junior hard service cord, or portable power cable types in accordance with [Table 400.4](#). Hard service cord, junior hard service cord, or portable power cable types shall be listed, as applicable, for exposure to oil and damp and wet locations.

(2) ~~Be of a type and Have an~~ ampacity as specified in [Table 400.5\(A\)\(1\)](#) or ~~of a type specified in 624.17(B)(1) and considered to have the same ampacity rating as equivalent gauge hard service cord in Table 400.5(A)(1).~~ For 8 AWG and larger, ~~the cable shall be permitted to be of a type as specified in Table 400.5(A)(2) with an ampacity as specified~~ in the 60°C (140°F) columns of [Table 400.5\(A\)\(2\)](#).

(3) Have a personnel protection system located within the ESVSE, at the attachment plug, or within the first 300 mm (12 in.) of the power-supply cord and have an overall length not exceeding 15.25 m (50 ft).

Rationale: This change provides for parallel construction where applicable between 625.17 and 624.17 in accordance with 3.5.5. of the NEC Style Manual. The change also specifies that the use of Table 400.5(A)(2) requires the use of a type of cord that is referenced in that table. This revision clarifies that the use of a type of cord only included in Table 400.5(A)(1) used with an ampacity specified from Table 400.5(A)(2) is not permitted. Lastly, the section is expanded to include the use of EV cords as power supply cords, but points to Table 400.5(A)(1) to establish an ampacity rating for the cable types when used as power supply cords, as referenced in 625.17.



Public Input No. 3345-NFPA 70-2026 [Section No. 624.17(B)(2)]

(2) Overall Output Cable Length.

The overall usable length of output cable to the ESV shall not exceed 15 m (50 ft) unless equipped with a cable management system ~~that is part of the listed~~ listed for use with ESVSE.

(a) The usable length of output cables to ESVs shall be measured from the cable exits of the ESVSE to the face of ESV connectors.

(b) Where wireless power transfer equipment (WPTE) is hand fastened, the output cables to the primary pads shall be measured from the cable exits of the control boxes to the cable inlets at the primary pads.

Statement of Problem and Substantiation for Public Input

Our firm designs, specifies, contracts for or installs both public and multifamily EV charging systems.

EVSE and support pedestals have become sufficiently standardized such that pedestals are interchangeable between brands, and we'll often use mixed brands to get the best of breed for each component.

When using a retractor, extra cord length is often needed. We may be required, or prefer, to use a brand of EVSE that does not have a listed cable management system from the vendor. We see no modern day justification for requiring the cable management and EVSE to be from the same vendor or part of the same listing. They're two different things.

Beyond that: the 7.5m limit has had unintended consequences all but begging purchasing manager to get shady Amazon or Temu extension cords. The net result is demonstrably less safe than if the EVSE had the proper cord length in the first place. In an industrial environment like most 624 installs, extra connectors, cables connections are undesirable and less safe than a honking long cord.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
<u>Public Input No. 3344-NFPA 70-2026 [Section No. 625.17(C) [Excluding any Sub-Sections]]</u>	Same input, different box.
<u>Public Input No. 3346-NFPA 70-2026 [Section No. 624.17(B)(2)]</u>	

Submitter Information Verification

Submitter Full Name: Bryce Nesbitt

Organization: Obviously Inspects & EV Plugbox LLC

Street Address:

City:

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Submittal Date: Wed Apr 08 19:24:17 EDT 2026

Committee: NEC-P12



Public Input No. 3346-NFPA 70-2026 [Section No. 624.17(B)(2)]

(2) Overall Output Cable Length.

The overall usable length of output cable to the ESV shall not exceed 15 m (50 ft) unless equipped with a cable management system ~~that is part of the listed~~ vendor identified as suitable for ESVSE.

(a) The usable length of output cables to ESVs shall be measured from the cable exits of the ESVSE to the face of ESV connectors.

(b) Where wireless power transfer equipment (WPTE) is hand fastened, the output cables to the primary pads shall be measured from the cable exits of the control boxes to the cable inlets at the primary pads.

Statement of Problem and Substantiation for Public Input

This is alternative language for the linked PI.

There's no product standard for the wide variety of cable retractor systems. They are not electrical devices, just mechanical. It's not clear that listing is needed. The longer cord would come from the EVSE vendor, and therefore be part of their listed offering.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
<u>Public Input No. 3344-NFPA 70-2026 [Section No. 625.17(C). [Excluding any Sub-Sections]]</u>	
<u>Public Input No. 3345-NFPA 70-2026 [Section No. 624.17(B)(2)]</u>	

Submitter Information Verification

Submitter Full Name: Bryce Nesbitt

Organization: Obviously Inspects & EV Plugbox LLC

Affiliation: No conflict or affiliation with any cord management system vendor.

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City:

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Submittal Date: Wed Apr 08 19:28:02 EDT 2026

Committee: NEC-P12



Public Input No. 1446-NFPA 70-2026 [Section No. 624.40]

624.40 ESVSE Branch Circuits.

Each outlet installed for the purpose of supplying ESVSE greater than 16 amperes, or 120 volts, shall be supplied by an individual branch circuit.

Exception: Branch circuits shall be permitted to feed multiple ESVSE as permitted by 624.42(A) or 624.42(B). See 310.15 and associated tables for sizing of conductors.

Statement of Problem and Substantiation for Public Input

Adds clarity to the sizing of conductors required for Equipment.

Submitter Information Verification

Submitter Full Name: Michael Gray

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Submittal Date: Tue Mar 10 18:02:47 EDT 2026

Committee: NEC-P12



Public Input No. 1902-NFPA 70-2026 [Section No. 624.41]

624.41 Overcurrent Protection.

(A) General.

Overcurrent protection for feeders and branch circuits supplying ESVSE and WPTE, including bidirectional equipment, shall ~~be sized for continuous duty and have a current rating of not less than 125 percent of the maximum load of the equipment.~~

~~(B) Noncontinuous Loads.~~

~~Where noncontinuous loads are supplied from the same feeder, OCPDs shall have current ratings of not less than the sum of the noncontinuous loads plus 125 percent of the continuous loads be considered continuous loads .~~

Statement of Problem and Substantiation for Public Input

This public input is being submitted on behalf of the NEC Correlating Committee Continuous Load Task Group in order to provide consistency throughout the National Electrical Code. The task group members are John McCamish, Donny Cook, Brett Larson, Bryan Tatum, David Kendall, Christel Hunter, Larry Wildermuth Jr., Rob Zachariason, Todd Crisman, and Greg Woyczynski.

In many cases sizing of conductors the use of the terms "Continuous Load" and "125% of the load" have been used interchangeably. When adjustment and correction factors are involved for branch, feeder or service conductors, the calculation results for a continuous load and 125% of the load result in different values. Below is an example which illustrates this difference:

Calculation of Ampacity for Continuous Loads Versus Loads requiring 125% Ampacity.

The 125 percent multiplier used for ampacity calculations can be required for reasons other than continuous loads and require different methods to calculate the ampacity of a conductor [see 120.6, Informational Note].

1. Calculate Ampacity of the Branch Circuit Conductors for 47 Ampere Continuous Load, 75 degree C conductors and terminations, Ambient Temperature 102 degree F, two current carrying conductors in a raceway.

[see 210.19]

Compare the following two totals:

$47 \text{ A} \times 125\% = 58.75 \text{ A}$ [see 210.19 (A)(1)]

$47 \text{ A} / 0.88 = 53.4 \text{ A}$ [see 210.19(A)(2), 310.15(B), Table 310.15(B)(1)(1)]

$58.75 \text{ A} > 53.4 \text{ A}$, therefore the required ampacity of the conductor is 58.75A.

2. Calculate Ampacity of the Branch Circuit Conductors for 47 Ampere Load, 75 degree C conductors and terminations, Ambient Temperature 102 degree F, two current carrying conductors in a raceway. The load requires an ampacity of 125%.

Since the load is not specified as a continuous load, no comparison is permitted. The ampacity of the conductor under the conditions of use must have an ampacity of 125% of the 47 A load.

$47 \text{ A} \times 125\% = 58.75 \text{ A}$

$58.75 \text{ A} / 0.88 = 66.76 \text{ A}$, therefore the required ampacity of the conductor is 66.76 A.

624.41 (A) and (B) are combined and rewritten to eliminate the term continuous duty and create an alignment with the language found in 625.41. The term continuous duty is typically used where motors (Article 430) or AC compressor loads (Article 440) are expected to run for an indefinitely long time. Since there is not a reference to continuous duty in Articles 210 and 215 when sizing the OCPD, or branch circuit and feeder conductors, "continuous load" is the more appropriate term.

Changing the term to “continuous load” and removing the term “branch circuit”, eliminates confusion and sends the code user to the appropriate supply conductor sizing requirements found in 210.19, 215.4, and 230.42. This will also ensure that the correction and adjustment factors are properly applied.

The term charging load is redundant language that is encompassed by ESVSE and WPTE equipment. It was removed as it is not a defined term and adds confusion.

TerraView did not allow "Considered continuous loads" to be at the end of 624.41(A) which is the intent such that it should read " 624.41 Continuous Loads ESVSE and WPTE, including bidirectional equipment, shall be considered continuous loads."

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
Public Input No. 1903-NFPA 70-2026 [Section No. 624.42 [Excluding any Sub-Sections]]	

Submitter Information Verification

Submitter Full Name: John McCamish
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Submittal Date: Wed Mar 25 13:06:26 EDT 2026
Committee: NEC-P12



Public Input No. 216-NFPA 70-2025 [Section No. 624.41]

624.41 Overcurrent Protection.

~~(B)~~

(A) General:

~~Overcurrent protection for feeders and branch circuits supplying ESVSE and WPTE, including bidirectional equipment, shall be sized for continuous duty and have a current rating of not less than 125 percent of the maximum load of the equipment.~~

Noncontinuous Loads.

Where noncontinuous loads are supplied from the same feeder, OCPDs shall have current ratings of not less than the sum of the noncontinuous loads plus 125 percent of the continuous loads.

Statement of Problem and Substantiation for Public Input

Placing continuous load calculation requirements in a new section in Article 120 (section 120.2), rather than peppering the continuous load requirements in other Articles, increases usability and clarity and closes the opportunity for discrepancies.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
<u>Public Input No. 206-NFPA 70-2025 [New Article after 120]</u>	
<u>Public Input No. 206-NFPA 70-2025 [New Article after 120]</u>	
<u>Public Input No. 207-NFPA 70-2025 [Section No. 120.4]</u>	

Submitter Information Verification

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Submittal Date: Mon Nov 17 12:45:38 EST 2025

Committee: NEC-P12



Public Input No. 1583-NFPA 70-2026 [Section No. 624.42(A)]

(A) Power Control System (PCS).

~~Where PCSs in accordance with Article 130 Part II~~ All PCSs used to provide load management of ESVSE , ~~shall comply with Article 130 Part II and~~ the maximum equipment load on service, ~~feeders, and feeders~~ branch circuits shall be the maximum load permitted by the PCSs ~~PCS~~ . ~~PCSs shall~~ The PCS shall be permitted to be integral to one piece of equipment or integral to listed systems consisting of more than one piece of equipment. When one or more pieces of equipment are provided with integral load management control, ~~systems shall the~~ system shall be marked to indicate such control is provided.

Additional Proposed Changes

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
624_42_A_Draft_V1.docx		

Statement of Problem and Substantiation for Public Input

The change is intended to clarify the requirement and indicate that branch circuits are included. This also provides for parallel construction with 625.42.

Submitter Information Verification

Submitter Full Name: Scott Picco

Organization: UL Solutions

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Submittal Date: Mon Mar 16 19:28:42 EDT 2026

Committee: NEC-P12

624.42 Rating.

(A) Power Control System (PCS).

~~All~~Where PCSs ~~used to provide load management of ESVSE in accordance shall comply~~ with Article [130](#) Part II ~~provide load management of ESVSE, and~~ the maximum equipment load on service ~~and~~, feeders, ~~and branch circuit~~ shall be the maximum load permitted by the PCSs. ~~The~~ PCSs shall be permitted to be integral to one piece of equipment or integral to listed systems consisting of more than one piece of equipment. When one or more pieces of equipment are provided with integral load management control, ~~the~~ systems shall be marked to indicate such control is provided.

Rationale: The change is intended to clarify the requirement and indicate that branch circuits are included. This also provides for parallel construction with 625.42.



Public Input No. 1789-NFPA 70-2026 [Section No. 624.42(B)]

(B) Supply Equipment with Adjustable Settings.

~~Supply equipment with restricted access to an ampere adjusting means complying with~~ ESVSE with a current adjustment setting shall be permitted if restricted access to the adjusting setting is accomplished by at least one of the methods permitted in 130.70(B)- shall be permitted . If adjustments have the adjusted current setting has an impact on the rating label, such changes shall comply with those changes shall be in accordance with manufacturer's instructions, ~~with the adjusted rating appearing on the rating label with sufficient durability to withstand the environment involved. Such supply equipment shall be permitted to have ampere ratings that are equal and the adjusted current setting shall appear on the field installed rating label in accordance with 110.21. ESVSE shall be permitted to have a current rating that is equal to the adjusted current setting. For equipment other than self-adjusting, the current adjustment setting shall be set at the time of installation and shall only be re-adjusted by a qualified person.~~

Additional Proposed Changes

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
624_42_B_Draft_V1.docx		

Statement of Problem and Substantiation for Public Input

This paragraph was rewritten to clarify language regarding current adjustment and provide for parallel construction with 625 in accordance with 3.5.5. of the NEC Style Manual. Additional terms were added to require that the field-installed adjusted current rating label be field installed in accordance with 110.21. Lastly, the requirement was revised to explicitly state that qualified persons should be providing any readjustment to the current setting after first installation.

Submitter Information Verification

Submitter Full Name: Scott Picco

Organization: UL Solutions

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Submittal Date: Fri Mar 20 16:02:12 EDT 2026

Committee: NEC-P12

624.42 Rating.

(B) ~~Supply Equipment~~ ESVSE with Adjustable Settings.

~~Supply equipment~~ ESVSE with a current adjustment setting shall be permitted if restricted access to ~~an~~ ampere-the adjusting ~~means-setting is accomplished by at least one of the methods permitted~~ in complying with 130.70(B). ~~shall be permitted.~~ If the adjusted current setting ~~adjustments have~~ has an impact on the rating label, ~~such those~~ changes shall be in accordance ~~comply~~ with manufacturer's instructions, ~~with and~~ the adjusted ~~rating current setting appearing shall appear~~ on the field installed rating label in accordance with 110.21. ~~ESVSE as referenced with sufficient durability to withstand the environment involved. Such supply equipment~~ shall be permitted to have ampere-a current ratings that ~~are-is~~ equal to the adjusted current setting. For equipment other than self-adjusting, the current adjustment setting shall be set at the time of installation and shall only be readjusted by a qualified person.

Rationale: This paragraph was rewritten to clarify language regarding current adjustment and provide for parallel construction with 625 in accordance with 3.5.5. of the NEC Style Manual. Additional terms were added to require that the field-installed adjusted current rating label be field installed in accordance with 110.21. Lastly, the requirement was revised to explicitly state that qualified persons should be providing any readjustment to the current setting after first installation.



Public Input No. 1903-NFPA 70-2026 [Section No. 624.42 [Excluding any Sub-Sections]]

~~ESVSE~~ The service, feeder and branch circuit supplying ESVSE and WPTE, including bidirectional equipment, shall have sufficient rating to supply the load served ~~. Charging loads shall be considered continuous loads for the purposes of this article. Service and feeders shall be sized in accordance with the product ratings~~ , unless the overall rating of the installation can be limited through controls as permitted by 624.42(A) or 624.42(B).

Statement of Problem and Substantiation for Public Input

This public input is being submitted on behalf of the NEC Correlating Committee Continuous Load Task Group in order to provide consistency throughout the National Electrical Code. The task group members are John McCamish, Donny Cook, Brett Larson, Bryan Tatum, David Kendall, Christel Hunter, Larry Wildermuth Jr., Rob Zachariason, Todd Crisman, and Greg Woyczynski.

If the PI 1902 to reword 624.41 (Continuous Load) is approved, 642.42 will have redundant language and will need to be updated as the PI to revise 624.41 identifies ESVSE and WPTE as a continuous loads.

The new language of "Section 624.42 Rating" will now match the existing language in 625.42. The new language makes it clear that the service and feeder must have a sufficient rating unless it can be limited by power control systems or supply equipment with adjustable settings.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
Public Input No. 1902-NFPA 70-2026 [Section No. 624.41]	

Submitter Information Verification

Submitter Full Name: John McCamish

Organization: Eaton

Affiliation: Continuous Load Task Group

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Submittal Date: Wed Mar 25 13:32:33 EDT 2026

Committee: NEC-P12



624.43 Disconnecting Means.

~~Supply equipment rated more than 60 amperes or more than 150 volts to ground shall be provided with a disconnecting means.~~ (A) **General** . Supply equipment shall be provided with one or more disconnecting means in accordance with 624.43(B) through 624.43(D) as applicable.

(B) **Multifamily Dwellings.** For multifamily dwellings where multiple ESVSE are each served through individual disconnecting means, a plaque or directory shall be attached to each ESVSE, and its corresponding disconnect clearly identifying which disconnect serves which ESVSE.

(C) **Equipment disconnects.** For permanently connected ESVSE, a disconnecting means shall be provided and installed in a readily accessible location. If the disconnecting means is installed remote from the equipment, a plaque or directory shall be installed on the equipment denoting the location of the disconnecting means. For cord and plug connected ESVSE, with a rating not exceeding 60 amperes or not exceeding 150 volts to ground, the cord and plug shall be permitted to serve as the disconnecting means. The disconnecting means shall be lockable open in accordance with 110.25 .

(D) Emergency Shutoff.

(1) **Emergency Disconnect Device.** For other than one- and two-family dwellings, all permanently connected ESVSE shall be provided with one or more clearly identified emergency disconnect devices or electrical disconnects that meet all of the following:

- (1) Be installed in a readily accessible location not less than 6.0 m (20 ft) nor more than 30.0 m (100 ft) from the equipment and in sight from the equipment.
- (2) Disconnect power to all ESVSE within sight of the emergency shutoff.
- (3) Be marked “ESVSE EMERGENCY DISCONNECT” and “WARNING: ELECTRIC VEHICLE(S) WILL REMAIN ENERGIZED” in accordance with 110.22(A).
- (4) Be a manual reset type.
- (5) Disconnect all ungrounded conductors of the circuits simultaneously from the source of supply.

(2) **Disconnecting Means Serving as Emergency Shutoff.** The disconnecting means required in accordance with 624.43(C) shall be permitted to serve as the emergency disconnect if it complies with all the requirements of 625.43.

Additional Proposed Changes

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
624_43_Draft_V1.docx		

Statement of Problem and Substantiation for Public Input

The revision clarifies that permanently installed ESVSE are required to have a disconnecting means and provides a limitation on cord-and-plug connected ESVSE. Charging stations supplying power to electric vehicles (EVs) are primarily available along major highways and are also becoming more available in public parking garages and workplace parking lots. When an emergency occurs at one of these EV charging stations, responders need a quick means to disconnect power in order to respond to the emergency safely. Premises was replaced with “within sight” as it a defined term and provides a

proximity for the equipment controlled by the emergency shutoff. The revision also provides for parallel construction with a similar requirement in 625.43.

Submitter Information Verification

Submitter Full Name: Scott Picco

Organization: UL Solutions

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City:

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Submittal Date: Fri Mar 20 16:21:10 EDT 2026

Committee: NEC-P12

624.43 Disconnecting Means.

(A) General. Supply equipment ~~rated more than 60 amperes or more than 150 volts to ground shall be provided with a one or more disconnecting means in accordance with 624.43(B) through 624.43(D) as applicable installed in a readily accessible location. If the disconnecting means is installed remote from the equipment, a plaque shall be installed on the equipment denoting the location of the disconnecting means. The disconnecting means shall be lockable open in accordance with 110.25.~~

(B) Multifamily Dwellings. For multifamily dwellings where multiple ESVSE are each served through individual disconnecting means, a plaque or directory shall be attached to each ESVSE, and its corresponding disconnect clearly identifying which disconnect serves which ESVSE.

(C) Equipment disconnects. For permanently connected ESVSE, a disconnecting means shall be provided and installed in a readily accessible location. If the disconnecting means is installed remote from the equipment, a plaque or directory shall be installed on the equipment denoting the location of the disconnecting means. For cord and plug connected ESVSE, with a rating not exceeding 60 amperes or not exceeding 150 volts to ground, the cord and plug shall be permitted to serve as the disconnecting means. The disconnecting means shall be lockable open in accordance with 110.25.

(D) Emergency Shutoff.

(1) Emergency Disconnect Device. For other than one- and two-family dwellings, all permanently connected ESVSE shall be provided with one or more clearly identified emergency disconnect devices or electrical disconnects that meet all of the following:

(1) Be installed in a readily accessible location not less than 6.0 m (20 ft) nor more than 30.0 m (100 ft) from the equipment and in sight from the equipment.

(2) Disconnect power to all ESVSE within sight of the emergency shutoff.

(3) Be marked "ESVSE EMERGENCY DISCONNECT" and "WARNING: ELECTRIC VEHICLE(S) WILL REMAIN ENERGIZED" in accordance with 110.22(A).

(4) Be a manual reset type.

(5) Disconnect all ungrounded conductors of the circuits simultaneously from the source of supply.

(2) Disconnecting Means Serving as Emergency Shutoff. The disconnecting means required in accordance with 624.43(C) shall be permitted to serve as the emergency disconnect if it complies with all the requirements of 625.43.

Rationale:

The revision clarifies that permanently installed ESVSE are required to have a disconnecting means and provides a limitation on cord-and-plug connected ESVSE. Charging stations supplying power to electric

vehicles (EVs) are primarily available along major highways and are also becoming more available in public parking garages and workplace parking lots. When an emergency occurs at one of these EV charging stations, responders need a quick means to disconnect power in order to respond to the emergency safely. Premises was replaced with “within sight” as it a defined term and provides a proximity for the equipment controlled by the emergency shutoff. The revision also provides for parallel construction with a similar requirement in 625.43.



Public Input No. 2068-NFPA 70-2026 [Section No. 624.43]

624.43 Disconnecting Means.

Supply equipment rated more than 60 amperes or more than 150 volts to ground shall be provided with a disconnecting means installed in a readily accessible location. If the disconnecting means is installed remote from the equipment, a ~~plaque~~ placard shall be installed on the equipment denoting the location of the disconnecting means. The disconnecting means shall be lockable open in accordance with 110.25.

Statement of Problem and Substantiation for Public Input

The word “plaque” is not the correct word in this context. It should be changed to “placard.” Plaque is either an accommodation that one hangs on their wall, the green stuff on one’s teeth, or something in a petri dish. A placard is a notice, such as a notice that a building is supplied by multiple sources of electricity.

Plaque

1

a: an ornamental brooch especially : the badge of an honorary order

b: a flat thin piece (as of metal) used for decoration

c: a commemorative or identifying inscribed tablet

2

a: a localized abnormal patch on a body part or surface

b: a sticky usually colorless film on teeth that is formed by and harbors bacteria

c: an atherosclerotic lesion

d: a histopathologic lesion of brain tissue that is characteristic of Alzheimer's disease and consists of a dense proteinaceous core composed primarily of beta-amyloid that is often surrounded and infiltrated by a cluster of degenerating axons and dendrites

3: a clear area in a bacterial culture produced by viral destruction of cells

Placard

1: a notice posted in a public place : poster

2: a small card or metal plaque

Submitter Information Verification

Submitter Full Name: Ryan Jackson

Organization: Ryan Jackson Electrical Training

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City:

State:

Zip:

Submittal Date: Sun Mar 29 13:22:53 EDT 2026

Committee: NEC-P12



Public Input No. 514-NFPA 70-2025 [Section No. 624.43]

624.43 Disconnecting Means.

Supply equipment rated more than 60 amperes or more than 150 volts to ground shall be provided with a readily accessible disconnecting means ~~installed in a readily accessible location. If the disconnecting means is installed remote from the equipment, a plaque shall be installed on the equipment denoting the location of the disconnecting means. The disconnecting means~~ located either within sight of the equipment in accordance with 110.29 or in a remote location. Where located in a remote location, the disconnecting means shall be lockable open in accordance with 110.25 , and its location shall be field marked on the equipment .

Statement of Problem and Substantiation for Public Input

The text was not complete, so I updated it to reflect the text for transformers 450.16.

Submitter Information Verification

Submitter Full Name: Mike Holt

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Submittal Date: Wed Dec 31 17:51:35 EST 2025

Committee: NEC-P12



Public Input No. 2111-NFPA 70-2026 [New Section after 624.44]

624.45 Accessibility for People with Disabilities.

Where required to provide accessibility for people with disabilities, wiring devices shall be installed in accordance with the applicable accessibility codes or standards. (See Annex A 624.40).

Additional Proposed Changes

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
PI_2111_-_Annex_Content_for_Section_624.45.docx	Annex content for Section 624.45	
PI_2111_Attachment_-_Disability_Access_Review_Task_Group.docx	Attachment	

Statement of Problem and Substantiation for Public Input

The ICC A117.1 accessibility standard and federal accessibility regulations require a level of usability for people with disabilities for certain public and private spaces. It is important for designers and installers to recognize when these requirements may apply so that 1) they meet the intended usability goals in the accessibility standards and 2) they avoid unnecessary enforcement action.

Accessibility regulations are comprised of both scoping and technical details. Therefore, the proposed language provides general guidance which should prompt the code user to consult the person with oversight of the project and find out whether accessibility for people with disabilities applies to their scope of work. The table in the annex text provides a list of components where accessibility considerations which may apply and their accompanying NEC code sections. Annex text was submitted with specific considerations applicable to each of the components listed.

The entire series of PIs submitted by the Task Group is attached.

The Disability Access Review Task Group consists of members from CMP-2, CMP-10, CMP-18 and the NFPA Disability Access Review and Advisory Committee (DARAC). It was directed by the Correlating Committee to review specific articles concerning components such as receptacles, switches and circuit breakers and their usability for the disabled. The task group shall develop Public Inputs for the 2029 code as necessary. The NFPA Disability Access Review Advisory Committee (DARAC: www.nfpa.org/darac) has reviewed this Public Input, and by letter ballot, concurs with the proposed language and the substantiation provided.

Submitter Information Verification

Submitter Full Name: Daniel Buuck

Organization: National Association of Home Builders

Street Address:

City:

State:

Zip:

Submittal Date: Mon Mar 30 10:18:57 EDT 2026

Committee: NEC-P12

PI 2111 – CMP-12

[NEW] 624.45 Accessibility for People with Disabilities.

Where required to provide accessibility for people with disabilities, wiring devices shall be installed in accordance with the applicable accessibility codes or standards. (See Annex A 624.40)

[NEW] Annex A 624.40 Accessibility for People with Disabilities.

The following list is intended as guidance, and no claim to completeness is made. Where required to provide accessibility for people with disabilities, the devices and equipment in the listed sections should be installed in accordance with the applicable accessibility codes or standards. Accessibility requirements are typically more stringent than those of the NEC. However, it should be possible to meet accessibility requirements and remain in compliance with this code.

Generally, where equipment is installed in areas used only by employees to perform their work, such areas are not required to be accessible. However, in other areas available to occupants without disabilities, some, if not all, of the equipment in such areas is required to be accessible for people with disabilities.

[Include the following table in annex note.]

NEC Sections	Topic
110.26	Spaces About Electrical Equipment
210.52(A)(3)	Floor receptacles
210.52(A)(5)	Prohibited receptacle outlet locations
210.52(C)(3)	Receptacle outlet location
210.52(C)(4)	Prohibited receptacle outlet locations
240.24(A)	Circuit breaker location and operation
406.9(C)(1)	Bathroom receptacle location
406.12(D)	Replacement of receptacles
406.38(A)	Switch location
624.50	Electric self-propelled vehicle power transfer system location
625.50	Electric vehicle power transfer system location

PI 2118 – CMP-1

110.26 Spaces About Electrical Equipment.

Working space, and access to and egress from working space, shall be provided and maintained about all electrical equipment to permit ready and safe operation and maintenance of such equipment. Open equipment doors shall not impede access to and egress from the working space. Access or egress is impeded if one or more simultaneously opened equipment doors restrict working space access to be less than 610 mm (24 in.) wide and 2.0 m (6¹/₂ ft) high when such doors are or can be opened 90 degrees. [\(See Annex A 110.26\)](#)

[\[NEW\] Annex A 110.26 Spaces About Electrical Equipment.](#)

[A clear floor space sized for a wheelchair plus an accessible route to that location may be required. Where installed to meet accessibility requirements prescribed by other codes or standards, consult ICC A117.1 for the applicable accessible route, clear floor space, and reach range requirements.](#)

Reason statement:

Service panels are required to be accessible to people with disabilities in essentially all apartments as well as some other types of dwellings. The new annex text provides guidance for designers and installers so they recognize when these requirements may apply so that 1) they meet the intended usability goals in the accessibility standards and 2) they avoid unnecessary enforcement action.

The entire series of PIs submitted by the Task Group is attached.

The Disability Access Review Task Group consists of members from CMP-2, CMP-10, CMP-18 and the NFPA Disability Access Review and Advisory Committee (DARAC). It was directed by the Correlating Committee to review specific articles concerning components such as receptacles, switches and circuit breakers and their usability for the disabled. The task group shall develop Public Inputs for the 2029 code as necessary. The NFPA Disability Access Review Advisory Committee (DARAC: www.nfpa.org/darac) has reviewed this Public Input, and by letter ballot, concurs with the proposed language and the substantiation provided.

[NEW] 110.26(A)(7) Accessibility for People with Disabilities.

Where required to provide accessibility for people with disabilities, electrical equipment shall be installed in accordance with the applicable accessibility codes or standards. (See Annex A 110.26(A)(7))

[NEW] Annex A 110.26(A)(7) Accessibility for People with Disabilities.

The following list is intended as guidance, and no claim to completeness is made. Where required to provide accessibility for people with disabilities, the devices and equipment in the listed sections should be installed in accordance with the applicable accessibility codes or standards. Accessibility requirements are typically more stringent those of the NEC. However, it should be possible to meet accessibility requirements and remain in compliance with this code.

Generally, where equipment is installed in areas used only by employees to perform their work, such areas are not required to be accessible. However, in other areas available to occupants without disabilities, some, if not all, of the equipment in such areas is required to be accessible for people with disabilities.

[Include the following table in annex note.]

NEC Sections	Topic
110.26	Spaces About Electrical Equipment
210.52(A)(3)	Floor receptacles
210.52(A)(5)	Prohibited receptacle outlet locations
210.52(C)(3)	Receptacle outlet location
210.52(C)(4)	Prohibited receptacle outlet locations
240.24(A)	Circuit breaker location and operation
406.9(C)(1)	Bathroom receptacle location
406.38(A)	Switch location
624.50	Electric self-propelled vehicle power transfer system location
625.50	Electric vehicle power transfer system location

Reason statement:

The ICC A117.1 accessibility standard and federal accessibility regulations require a level of usability for people with disabilities for certain public and private spaces. It is important for designers and installers to recognize when these requirements may apply so that 1) they meet the intended usability goals in the accessibility standards and 2) they avoid unnecessary enforcement action.

Accessibility regulations are comprised of both scoping and technical details. Therefore, the proposed language provides general guidance which should prompt the code user to

consult the person with oversight of the project and find out whether accessibility for people with disabilities applies to their scope of work. The table in the annex text provides a list of components where accessibility considerations which may apply and their accompanying NEC code sections. Annex text was submitted with specific considerations applicable to each of the components listed.

The entire series of PIs submitted by the Task Group is attached to a PI for each Code-Making Panel.

The Disability Access Review Task Group consists of members from CMP-2, CMP-10, CMP-18 and the NFPA Disability Access Review and Advisory Committee (DARAC). It was directed by the Correlating Committee to review specific articles concerning components such as receptacles, switches and circuit breakers and their usability for the disabled. The task group shall develop Public Inputs for the 2029 code as necessary. The NFPA Disability Access Review Advisory Committee (DARAC: www.nfpa.org/darac) has reviewed this Public Input, and by letter ballot, concurs with the proposed language and the substantiation provided.

PI 2094 – CMP-2

Part III. Required Outlets

210.50 Receptacle Outlets.

Receptacle outlets shall be installed as specified in 210.5251 through 210.65.

Informational Note: See ICC A117.1-20172026, *Accessible and Usable Buildings and Facilities*, for information regarding accessibility for people with disabilities.

210.50(A) Cord Pendants.

A cord connector that is supplied by a permanently connected cord pendant shall be considered a receptacle outlet.

210.50(B) Cord Connections.

A receptacle outlet shall be installed wherever flexible cords with attachment plugs are used. Where flexible cords are permitted to be permanently connected, receptacles shall be permitted to be omitted for such cords.

210.50(C) Appliance Receptacle Outlets.

Appliance receptacle outlets installed in a dwelling unit for specific appliances, such as laundry equipment, shall be installed within 1.8 m (6 ft) of the intended location of the appliance.

[NEW] 210.51 Accessibility for People with Disabilities.

Where required to provide accessibility for people with disabilities, wiring devices shall be installed in accordance with the applicable accessibility codes or standards. (See Annex A 210.51)

[NEW] Annex A 210.51 Accessibility for People with Disabilities.

The following list is intended as guidance, and no claim to completeness is made. Where required to provide accessibility for people with disabilities, the devices and equipment in the listed sections should be installed in accordance with the applicable accessibility codes or standards. Accessibility requirements are typically more stringent those of the NEC. However, it should be possible to meet accessibility requirements and remain in compliance with this code.

Generally, where equipment is installed in areas used only by employees to perform their work, such areas are not required to be accessible. However, in other areas available to occupants without disabilities, some, if not all, of the equipment in such areas is required to be accessible for people with disabilities.

[Include the following table in annex note.]

NEC Sections	Topic
110.26	Spaces About Electrical Equipment
210.52(A)(3)	Floor receptacles
210.52(C)(3)	Receptacle outlet location
210.52(C)(4)	Prohibited receptacle outlet locations
240.24(A)	Circuit breaker location and operation
406.9(C)(1)	Bathroom receptacle location
406.38(A)	Switch location
624.50	Electric self-propelled vehicle power transfer system location
625.50	Electric vehicle power transfer system location

Reason statement:

The ICC A117.1 accessibility standard and federal accessibility regulations require a level of usability for people with disabilities for certain public and private spaces. It is important for designers and installers to recognize when these requirements may apply so that 1) they meet the intended usability goals in the accessibility standards and 2) they avoid unnecessary enforcement action.

Accessibility regulations are comprised of both scoping and technical details. Therefore, the proposed language provides general guidance which should prompt the code user to consult the person with oversight of the project and find out whether accessibility for people with disabilities applies to their scope of work. The table in the annex text provides a list of components where accessibility considerations which may apply and their accompanying NEC code sections. Annex text was submitted with specific considerations applicable to each of the components listed.

The entire series of PIs submitted by the Task Group is attached to a PI for each Code-Making Panel.

The Disability Access Review Task Group consists of members from CMP-2, CMP-10, CMP-18 and the NFPA Disability Access Review and Advisory Committee (DARAC). It was directed by the Correlating Committee to review specific articles concerning components such as receptacles, switches and circuit breakers and their usability for the disabled. The task group shall develop Public Inputs for the 2029 code as necessary. The NFPA Disability Access Review Advisory Committee (DARAC: www.nfpa.org/darac) has reviewed this Public Input, and by letter ballot, concurs with the proposed language and the substantiation provided.

PI 2095 – CMP-2

210.52(A)(3) Floor Receptacles.

Receptacle outlets in or on floors shall not be counted as part of the required number of receptacle outlets unless located within 450 mm (18 in.) of the wall. [\(See Annex A 210.52\(A\)\(3\)\)](#)

[\[NEW\] Annex A 210.52\(A\)\(3\) Floor Receptacles.](#)

[Floor receptacles are not accessible for people using a wheelchair, so they should be installed sparingly even though they are exempted from complying with clear floor space and height requirements in ICC A117.1. Federal regulation requires equal use and enjoyment of residential facilities for individuals requiring accessibility. Therefore, use of the ICC A117.1 exception should be avoided where possible.](#)

Reason statement:

Receptacles are required to be accessible to people with disabilities in essentially all apartments as well as some other types of dwellings. The new annex text provides guidance for designers and installers so they recognize when these requirements may apply so that 1) they meet the intended usability goals in the accessibility standards and 2) they avoid unnecessary enforcement action.

The entire series of PIs submitted by the Task Group is attached to a PI for each Code-Making Panel.

The Disability Access Review Task Group consists of members from CMP-2, CMP-10, CMP-18 and the NFPA Disability Access Review and Advisory Committee (DARAC). It was directed by the Correlating Committee to review specific articles concerning components such as receptacles, switches and circuit breakers and their usability for the disabled. The task group shall develop Public Inputs for the 2029 code as necessary. The NFPA Disability Access Review Advisory Committee (DARAC: www.nfpa.org/darac) has reviewed this Public Input, and by letter ballot, concurs with the proposed language and the substantiation provided.

PI 2096 – CMP-2

210.52(A)(5) Receptacle Outlet Locations Prohibited.

Where receptacle outlets are installed in spaces covered in 210.52(A)(2)(3) and the outlets are below countertops or work surfaces, they shall not be installed within 610 mm (24 in.) of the countertop or work surface. [\(See Annex A 210.52\(A\)\(5\)\).](#)

[\[NEW\] Annex A 210.52\(A\)\(5\) Receptacle Outlet Locations Prohibited.](#)

[The location specified in this section may be lower than can be reached by someone using a wheelchair. Where installed to meet accessibility requirements prescribed by other codes or standards, consult ICC A117.1 for the applicable reach range requirements.](#)

Reason statement:

Receptacles are required to be accessible to people with disabilities in essentially all apartments as well as some other types of dwellings. The new annex text provides guidance for designers and installers so they recognize when these requirements may apply so that 1) they meet the intended usability goals in the accessibility standards and 2) they avoid unnecessary enforcement action.

The entire series of PIs submitted by the Task Group is attached to a PI for each Code-Making Panel.

The Disability Access Review Task Group consists of members from CMP-2, CMP-10, CMP-18 and the NFPA Disability Access Review and Advisory Committee (DARAC). It was directed by the Correlating Committee to review specific articles concerning components such as receptacles, switches and circuit breakers and their usability for the disabled. The task group shall develop Public Inputs for the 2029 code as necessary. The NFPA Disability Access Review Advisory Committee (DARAC: www.nfpa.org/darac) has reviewed this Public Input, and by letter ballot, concurs with the proposed language and the substantiation provided.

PI 2103 – CMP-2

210.52(C)(2) Island and Peninsular Countertops and Work Surfaces.

If provided to serve an island or peninsular countertop or work surface, receptacle outlets shall be installed in accordance with 210.52(C)(3) and 210.52(C)(4). If a receptacle outlet is not provided to serve an island or peninsular countertop or work surface, electrical provisions shall be provided at the island or peninsula for future addition of a receptacle outlet to serve the island or peninsular countertop or work surface.

210.52(C)(3) Receptacle Outlet Location.

Receptacle outlets shall be located in one or more of the following:

- (1) On or above, but not more than 500 mm (20 in.) above, a countertop or work surface
- (2) In a countertop using receptacle outlet assemblies listed for use in countertops
- (3) In a work surface using receptacle outlet assemblies listed for use in work surfaces or listed for use in countertops

Receptacle outlets rendered not readily accessible by appliances fastened in place, appliance garages, sinks, or rangetops as covered in 210.52(C)(1) Exception No. 1 or appliances occupying assigned spaces shall not be considered as the outlets required by 210.52(C)(3)(1) through 210.52(C)(3)(3). [\(See Annex A 210.52\(C\)\(3\)\)](#)

[\[NEW\] Annex A 210.52\(C\)\(3\) Receptacle Outlet Location.](#)

[If a receptacle outlet is installed in or on a countertop or work surface, note that a person using a wheelchair cannot reach more than 24 inches horizontally. Where installed to meet accessibility requirements prescribed by other codes, receptacles installed in the locations specified in 210.52\(C\)\(3\)\(2\) or 210.52\(C\)\(3\)\(3\) should be located not more than 24 inches horizontally from at least one edge of the countertop surface or work surface.](#)

Informational Note No. 1: See 406.14(E) for installation of receptacles in countertops and 406.14(F) for installation of receptacles in work surfaces. See 380.10 for installation of multioutlet assemblies.

Informational Note No. 2: See ANSI/ICC A117.1-~~2017~~2026, *Accessible and Usable Buildings and Facilities*, for information regarding accessibility for people with disabilities.

Reason statement:

Receptacles are required to be accessible to people with disabilities in essentially all apartments as well as some other types of dwellings. The new annex text provides guidance for designers and installers so they recognize when these requirements may apply so that 1) they meet the intended usability goals in the accessibility standards and 2) they avoid unnecessary enforcement action.

The entire series of PIs submitted by the Task Group is attached to a PI for each Code-Making Panel.

The Disability Access Review Task Group consists of members from CMP-2, CMP-10, CMP-18 and the NFPA Disability Access Review and Advisory Committee (DARAC). It was directed by the Correlating Committee to review specific articles concerning components such as receptacles, switches and circuit breakers and their usability for the disabled. The task group shall develop Public Inputs for the 2029 code as necessary. The NFPA Disability Access Review Advisory Committee (DARAC: www.nfpa.org/darac) has reviewed this Public Input, and by letter ballot, concurs with the proposed language and the substantiation provided.

210.52(C)(4) Receptacle Outlet Locations Prohibited.

Required and permitted receptacle outlets installed in a location that is accessible outside cabinet or wall surfaces that are below countertops and work surfaces shall comply with the following:

- (1) Receptacle outlets shall not be installed on adjacent walls extending from the base cabinets within 610 mm (24 in.).
- (2) Receptacle outlets beneath countertops shall not be located within 610 mm (24 in.) of the countertop or work surface.

(See Annex A 210.52(C)(4))

Exception: Receptacle outlets installed in a drawer shall be permitted to be installed below countertops and work surfaces.

[NEW] Annex A 210.52(C)(4) Receptacle Outlet Locations Prohibited.

The locations specified in 210.52(C)(4)(1) and 210.52(C)(4)(2) may be lower than can be reached by someone using a wheelchair. Where installed to meet accessibility requirements prescribed by other codes or standards, consult ICC A117.1 for the applicable reach range requirements.

Reason statement:

Receptacles are required to be accessible to people with disabilities in essentially all apartments as well as some other types of dwellings. The new annex text provides guidance for designers and installers so they recognize when these requirements may apply so that 1) they meet the intended usability goals in the accessibility standards and 2) they avoid unnecessary enforcement action.

The entire series of PIs submitted by the Task Group is attached to a PI for each Code-Making Panel.

The Disability Access Review Task Group consists of members from CMP-2, CMP-10, CMP-18 and the NFPA Disability Access Review and Advisory Committee (DARAC). It was directed by the Correlating Committee to review specific articles concerning components such as receptacles, switches and circuit breakers and their usability for the disabled. The task group shall develop Public Inputs for the 2029 code as necessary. The NFPA Disability Access Review Advisory Committee (DARAC: www.nfpa.org/darac) has reviewed this Public Input, and by letter ballot, concurs with the proposed language and the substantiation provided.

240.24 Location in or on Premises.

240.24(A) Accessibility.

Circuit breakers and switches containing fuses shall be readily accessible and installed so that the center of the grip of the operating handle of the switch or circuit breaker, when in its highest position, is not more than 2.0 m (6 ft 7 in.) above the grade, floor, or working platform, unless one of the following applies:

- (1) For busways, as provided in 368.17(C).
- (2) For supplementary overcurrent protection, as described in 240.10.
- (3) For OCPDs, as described in 225.40 and 230.92.
- (4) For OCPDs adjacent to utilization equipment that they supply, access by portable means shall be permitted.

(See Annex A 240.24(A))

[NEW] Annex A 240.24(A) Accessibility.

The location specified in this section may be higher than can be reached by someone using a wheelchair. Where installed to meet accessibility requirements prescribed by other codes or standards, consult ICC A117.1 for the applicable reach range requirements.

Exception: The use of a tool shall be permitted to access OCPDs located within listed industrial control panels, within enclosures designed for hazardous (classified) locations or enclosures to protect against environmental conditions. An enclosure within the scope of this exception, and all OCPDs within such enclosures as judged with the enclosure open, shall comply with the accessibility requirements of 240.24(A).

Reason statement:

Circuit breakers are required to be accessible to people with disabilities in essentially all apartments as well as some other types of dwellings. The new annex text provides guidance for designers and installers so they recognize when these requirements may apply so that 1) they meet the intended usability goals in the accessibility standards and 2) they avoid unnecessary enforcement action.

The entire series of PIs submitted by the Task Group is attached to a PI for each Code-Making Panel.

The Disability Access Review Task Group consists of members from CMP-2, CMP-10, CMP-18 and the NFPA Disability Access Review and Advisory Committee (DARAC). It was directed by the Correlating Committee to review specific articles concerning components such as receptacles, switches and circuit breakers and their usability for the disabled. The

task group shall develop Public Inputs for the 2029 code as necessary. The NFPA Disability Access Review Advisory Committee (DARAC: www.nfpa.org/darac) has reviewed this Public Input, and by letter ballot, concurs with the proposed language and the substantiation provided.

[NEW] 240.24(G) Accessibility for People with Disabilities.

Where required to provide accessibility for people with disabilities, circuit breakers shall be installed in accordance with the applicable accessibility codes or standards. (See Annex A 240.24(G))

[NEW] Annex A 240.24(G) Accessibility for People with Disabilities.

The following list is intended as guidance, and no claim to completeness is made. Where required to provide accessibility for people with disabilities, the devices and equipment in the listed sections should be installed in accordance with the applicable accessibility codes or standards. Accessibility requirements are typically more stringent those of the NEC. However, it should be possible to meet accessibility requirements and remain in compliance with this code.

Generally, where equipment is installed in areas used only by employees to perform their work, such areas are not required to be accessible. However, in other areas available to occupants without disabilities, some, if not all, of the equipment in such areas is required to be accessible for people with disabilities.

[Include the following table in annex note.]

NEC Sections	Topic
110.26	Spaces About Electrical Equipment
210.52(A)(3)	Floor receptacles
210.52(A)(5)	Prohibited receptacle outlet locations
210.52(C)(3)	Receptacle outlet location
210.52(C)(4)	Prohibited receptacle outlet locations
240.24(A)	Circuit breaker location and operation
406.9(C)(1)	Bathroom receptacle location
406.38(A)	Switch location
624.50	Electric self-propelled vehicle power transfer system location
625.50	Electric vehicle power transfer system location

Reason statement:

The ICC A117.1 accessibility standard and federal accessibility regulations require a level of usability for people with disabilities for certain public and private spaces. It is important for designers and installers to recognize when these requirements may apply so that 1) they meet the intended usability goals in the accessibility standards and 2) they avoid unnecessary enforcement action.

Accessibility regulations are comprised of both scoping and technical details. Therefore, the proposed language provides general guidance which should prompt the code user to

consult the person with oversight of the project and find out whether accessibility for people with disabilities applies to their scope of work. The table in the annex text provides a list of components where accessibility considerations which may apply and their accompanying NEC code sections. Annex text was submitted with specific considerations applicable to each of the components listed.

The entire series of PIs submitted by the Task Group is attached to a PI for each Code-Making Panel.

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[NEW] 406.4 Accessibility for People with Disabilities.

Where required to provide accessibility for people with disabilities, wiring devices shall be installed in accordance with the applicable accessibility codes or standards. (See Annex A 406.4)

[NEW] Annex A 406.4 Accessibility for People with Disabilities.

The following list is intended as guidance, and no claim to completeness is made. Where required to provide accessibility for people with disabilities, the devices and equipment in the listed sections should be installed in accordance with the applicable accessibility codes or standards. Accessibility requirements are typically more stringent those of the NEC. However, it should be possible to meet accessibility requirements and remain in compliance with this code.

Generally, where equipment is installed in areas used only by employees to perform their work, such areas are not required to be accessible. However, in other areas available to occupants without disabilities, some, if not all, of the equipment in such areas is required to be accessible for people with disabilities.

[Include the following table in annex note.]

NEC Sections	Topic
110.26	Spaces About Electrical Equipment
210.52(A)(3)	Floor receptacles
210.52(A)(5)	Prohibited receptacle outlet locations
210.52(C)(3)	Receptacle outlet location
210.52(C)(4)	Prohibited receptacle outlet locations
240.24(A)	Circuit breaker location and operation
406.9(C)(1)	Bathroom receptacle location
406.12(D)	Replacement of receptacles
406.38(A)	Switch location
624.50	Electric self-propelled vehicle power transfer system location
625.50	Electric vehicle power transfer system location

Reason statement:

The ICC A117.1 accessibility standard and federal accessibility regulations require a level of usability for people with disabilities for certain public and private spaces. It is important for designers and installers to recognize when these requirements may apply so that 1) they meet the intended usability goals in the accessibility standards and 2) they avoid unnecessary enforcement action.

Accessibility regulations are comprised of both scoping and technical details. Therefore, the proposed language provides general guidance which should prompt the code user to consult the person with oversight of the project and find out whether accessibility for people with disabilities applies to their scope of work. The table in the annex text provides a list of components where accessibility considerations which may apply and their accompanying NEC code sections. Annex text was submitted with specific considerations applicable to each of the components listed.

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PI 2108 – CMP-18

406.38 Accessibility and Grouping.

406.38(A) Location.

All switches shall comply with both of the following:

- (1) They shall be located so that they can be operated from readily accessible places.
- (2) They shall be installed such that the actuating means of the switch's operating handle, when in its highest position, is not more than 2.0 m (6 ft 7 in.) above the floor, working platform, or finished grade.

(See Annex 406.38(A))

[NEW] Annex A 406.38(A) Location.

The location specified in this section may be higher than can be reached by someone using a wheelchair. A clear floor space sized for a wheelchair plus an accessible route to that location may also be required. Where installed to meet accessibility requirements prescribed by other codes or standards, consult ICC A117.1 for the applicable accessible route, clear floor space, and reach range requirements.

Exception to (2): Switches installed adjacent to motors, appliances, or other equipment that they supply shall be permitted to be located higher than 2.0 m (6 ft 7 in.).

Reason statement:

Switches are required to be accessible to people with disabilities in essentially all apartments as well as some other types of dwellings. The new annex text provides guidance for designers and installers so they recognize when these requirements may apply so that 1) they meet the intended usability goals in the accessibility standards and 2) they avoid unnecessary enforcement action.

The entire series of PIs submitted by the Task Group is attached to a PI for each Code-Making Panel.

The Disability Access Review Task Group consists of members from CMP-2, CMP-10, CMP-18 and the NFPA Disability Access Review and Advisory Committee (DARAC). It was directed by the Correlating Committee to review specific articles concerning components such as receptacles, switches and circuit breakers and their usability for the disabled. The task group shall develop Public Inputs for the 2029 code as necessary. The NFPA Disability Access Review Advisory Committee (DARAC: www.nfpa.org/darac) has reviewed this Public Input, and by letter ballot, concurs with the proposed language and the substantiation provided.

[NEW] 624.45 Accessibility for People with Disabilities.

Where required to provide accessibility for people with disabilities, wiring devices shall be installed in accordance with the applicable accessibility codes or standards. (See Annex A 624.40)

[NEW] Annex A 624.40 Accessibility for People with Disabilities.

The following list is intended as guidance, and no claim to completeness is made. Where required to provide accessibility for people with disabilities, the devices and equipment in the listed sections should be installed in accordance with the applicable accessibility codes or standards. Accessibility requirements are typically more stringent those of the NEC. However, it should be possible to meet accessibility requirements and remain in compliance with this code.

Generally, where equipment is installed in areas used only by employees to perform their work, such areas are not required to be accessible. However, in other areas available to occupants without disabilities, some, if not all, of the equipment in such areas is required to be accessible for people with disabilities.

[Include the following table in annex note.]

NEC Sections	Topic
110.26	Spaces About Electrical Equipment
210.52(A)(3)	Floor receptacles
210.52(A)(5)	Prohibited receptacle outlet locations
210.52(C)(3)	Receptacle outlet location
210.52(C)(4)	Prohibited receptacle outlet locations
240.24(A)	Circuit breaker location and operation
406.9(C)(1)	Bathroom receptacle location
406.12(D)	Replacement of receptacles
406.38(A)	Switch location
624.50	Electric self-propelled vehicle power transfer system location
625.50	Electric vehicle power transfer system location

Reason statement:

The ICC A117.1 accessibility standard and federal accessibility regulations require a level of usability for people with disabilities for certain public and private spaces. It is important for designers and installers to recognize when these requirements may apply so that 1) they meet the intended usability goals in the accessibility standards and 2) they avoid unnecessary enforcement action.

Accessibility regulations are comprised of both scoping and technical details. Therefore, the proposed language provides general guidance which should prompt the code user to

consult the person with oversight of the project and find out whether accessibility for people with disabilities applies to their scope of work. The table in the annex text provides a list of components where accessibility considerations which may apply and their accompanying NEC code sections. Annex text was submitted with specific considerations applicable to each of the components listed.

The entire series of PIs submitted by the Task Group is attached to a PI for each Code-Making Panel.

The Disability Access Review Task Group consists of members from CMP-2, CMP-10, CMP-18 and the NFPA Disability Access Review and Advisory Committee (DARAC). It was directed by the Correlating Committee to review specific articles concerning components such as receptacles, switches and circuit breakers and their usability for the disabled. The task group shall develop Public Inputs for the 2029 code as necessary. The NFPA Disability Access Review Advisory Committee (DARAC: www.nfpa.org/darac) has reviewed this Public Input, and by letter ballot, concurs with the proposed language and the substantiation provided.

PI 2113 – CMP-12

624.50 Location.

ESVSE shall be located for direct electrical coupling of ESV connectors (conductive or inductive) to ESVs. Unless specifically listed and marked for the location, the coupling means of ESVs shall be stored or located at a height of not less than 450 mm (18 in.) above the floor level for indoor locations or 600 mm (24 in.) above the grade level for outdoor locations. [\(See Annex 624.50\)](#)

This requirement shall not apply to portable ESVSE constructed in accordance with 624.44(A).

[\[NEW\] Annex 624.50 Location.](#)

[The location allowed in this section may be higher than can be reached by someone using a wheelchair. A clear floor space sized for a wheelchair plus an accessible route to that location may also be required. Where installed to meet accessibility requirements prescribed by other codes or standards, consult ICC A117.1 for the applicable accessible route, clear floor space, and reach range requirements.](#)

Reason statement:

ESVSEs are required to be accessible to people with disabilities in certain situations. The new annex text provides guidance for designers and installers so they recognize when these requirements may apply so that 1) they meet the intended usability goals in the accessibility standards and 2) they avoid unnecessary enforcement action.

The entire series of PIs submitted by the Task Group is attached to a PI for each Code-Making Panel.

The Disability Access Review Task Group consists of members from CMP-2, CMP-10, CMP-18 and the NFPA Disability Access Review and Advisory Committee (DARAC). It was directed by the Correlating Committee to review specific articles concerning components such as receptacles, switches and circuit breakers and their usability for the disabled. The task group shall develop Public Inputs for the 2029 code as necessary. The NFPA Disability Access Review Advisory Committee (DARAC: www.nfpa.org/darac) has reviewed this Public Input, and by letter ballot, concurs with the proposed language and the substantiation provided.

[NEW] 625.45 Accessibility for People with Disabilities.

Where required to provide accessibility for people with disabilities, wiring devices shall be installed in accordance with the applicable accessibility codes or standards. (See Annex A 625.45)

[NEW] Annex A 625.45 Accessibility for People with Disabilities.

The following list is intended as guidance, and no claim to completeness is made. Where required to provide accessibility for people with disabilities, the devices and equipment in the listed sections should be installed in accordance with the applicable accessibility codes or standards. Accessibility requirements are typically more stringent than those of the NEC. However, it should be possible to meet accessibility requirements and remain in compliance with this code.

Generally, where equipment is installed in areas used only by employees to perform their work, such areas are not required to be accessible. However, in other areas available to occupants without disabilities, some, if not all, of the equipment in such areas is required to be accessible for people with disabilities.

[Include the following table in annex note.]

NEC Sections	Topic
110.26	Spaces About Electrical Equipment
210.52(A)(3)	Floor receptacles
210.52(A)(5)	Prohibited receptacle outlet locations
210.52(C)(3)	Receptacle outlet location
210.52(C)(4)	Prohibited receptacle outlet locations
240.24(A)	Circuit breaker location and operation
406.9(C)(1)	Bathroom receptacle location
406.12(D)	Replacement of receptacles
406.38(A)	Switch location
624.50	Electric self-propelled vehicle power transfer system location
625.50	Electric vehicle power transfer system location

Reason statement:

The ICC A117.1 accessibility standard and federal accessibility regulations require a level of usability for people with disabilities for certain public and private spaces. It is important for designers and installers to recognize when these requirements may apply so that 1) they meet the intended usability goals in the accessibility standards and 2) they avoid unnecessary enforcement action.

Accessibility regulations are comprised of both scoping and technical details. Therefore, the proposed language provides general guidance which should prompt the code user to consult the person with oversight of the project and find out whether accessibility for people with disabilities applies to their scope of work. The table in the annex text provides a list of components where accessibility considerations which may apply and their accompanying NEC code sections. Annex text was submitted with specific considerations applicable to each of the components listed.

The entire series of PIs submitted by the Task Group is attached to a PI for each Code-Making Panel.

The Disability Access Review Task Group consists of members from CMP-2, CMP-10, CMP-18 and the NFPA Disability Access Review and Advisory Committee (DARAC). It was directed by the Correlating Committee to review specific articles concerning components such as receptacles, switches and circuit breakers and their usability for the disabled. The task group shall develop Public Inputs for the 2029 code as necessary. The NFPA Disability Access Review Advisory Committee (DARAC: www.nfpa.org/darac) has reviewed this Public Input, and by letter ballot, concurs with the proposed language and the substantiation provided.

PI 2116 – CMP-12

625.50 Location.

The EVSE shall be located for direct electrical coupling of the EV connector (conductive or inductive) to the electric vehicle. Unless specifically listed and marked for the location, the coupling means of the EVSE shall be stored or located at a height of not less than 450 mm (18 in.) above the floor level for indoor locations or 600 mm (24 in.) above the grade level for outdoor locations. This requirement does not apply to portable EVSE constructed in accordance with 625.44(A). [\(See Annex 625.50\)](#)

[NEW] Annex 625.50 Location.

[The location allowed in this section may be higher than can be reached by someone using a wheelchair. A clear floor space sized for a wheelchair plus an accessible route to that location may also be required. Where installed to meet accessibility requirements prescribed by other codes or standards, consult ICC A117.1 for the applicable accessible route, clear floor space, and reach range requirements.](#)

Reason statement:

EVSEs are required to be accessible to people with disabilities in certain situations. The new annex text provides guidance for designers and installers so they recognize when these requirements may apply so that 1) they meet the intended usability goals in the accessibility standards and 2) they avoid unnecessary enforcement action.

The entire series of PIs submitted by the Task Group is attached to a PI for each Code-Making Panel.

The Disability Access Review Task Group consists of members from CMP-2, CMP-10, CMP-18 and the NFPA Disability Access Review and Advisory Committee (DARAC). It was directed by the Correlating Committee to review specific articles concerning components such as receptacles, switches and circuit breakers and their usability for the disabled. The task group shall develop Public Inputs for the 2029 code as necessary. The NFPA Disability Access Review Advisory Committee (DARAC: www.nfpa.org/darac) has reviewed this Public Input, and by letter ballot, concurs with the proposed language and the substantiation provided.



Public Input No. 3411-NFPA 70-2026 [Section No. 624.44]

624.44 Equipment Connection.

~~ESVSE and WPTE shall be connected to the premises wiring system in accordance with one of the methods in 624.44(A) through 624.44(C) .~~

~~(A) Portable Equipment.~~

~~Portable equipment shall be connected to the premises wiring system by one or more of the following methods:~~

- ~~(1) A nonlocking, 2-pole, 3-wire grounding-type receptacle outlet rated at 125 volts, single phase, 15 or 20 amperes~~
- ~~(2) A nonlocking, 2-pole, 3-wire grounding-type receptacle outlet rated at 250 volts, single phase, 15 or 20 amperes~~
- ~~(3) A nonlocking, 2-pole, 3-wire or 3-pole, 4-wire grounding-type receptacle outlet rated at 250 volts, single phase, 30 or 50 amperes, or at 125/250 volts, single-phase, 30, 50, or 60 amperes~~
- ~~(4) A nonlocking, 2-pole, 3-wire grounding-type receptacle outlet rated at 60 volts dc maximum, 15 or 20 amperes~~

~~(B) Fastened-in-Place Equipment.~~

~~Equipment that is fastened in place shall be connected to the premises wiring system by one of the following methods:~~

- ~~(1) A nonlocking, 2-pole, 3-wire grounding-type receptacle outlet rated 125 volts or 250 volts, single phase, up to 50 amperes~~
- ~~(2) A nonlocking, 3-pole, 4-wire grounding-type receptacle outlet rated 250 volts, three phase, up to 50 amperes~~
- ~~(3) A nonlocking, 3-pole, 4-wire grounding-type receptacle outlet rated 125/250 volts, single phase, 30, 50, or 60 amperes~~
- ~~(4) A nonlocking, 2-pole, 3-wire grounding-type receptacle outlet rated 60 volts dc maximum, 15 or 20 amperes~~

~~(C) Securely Fastened in Place Equipment.~~

~~All other ESVSE and WPTE shall be permanently wired and securely fastened in place to supporting surfaces~~

~~A 50-ampere rated receptacle shall not be installed on a 40-ampere branch circuit as permitted in 210.24.~~

~~The NEMA "L" series receptacles shall not be used for charging circuits nor on charging equipment .~~

Statement of Problem and Substantiation for Public Input

This section may have made sense when EV charging was new. This section is obsolete now and hinders special purpose and industrial choice. The "L" series connector locking design makes them unsuitable for this use.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
<u>Public Input No. 3410-NFPA 70-2026 [Section No. 625.44]</u>	Mirror 624 and 625 to avoid correlation issue.

Submitter Information Verification

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Submittal Date: Thu Apr 09 03:05:14 EDT 2026

Committee: NEC-P12



Public Input No. 1793-NFPA 70-2026 [Section No. 624.44(A)]

(A) Portable Equipment.

Portable equipment shall be connected to the premises wiring system by one or more of the following methods:

- (1) A nonlocking, 2-pole, 3-wire grounding-type receptacle outlet rated at 125 volts or 250 volts , single phase, in accordance with one of the following:
 - a. 15 or 20 amperes
 - b. 30 or 50 amperes listed for EVSE or WPTE use
- (2) A nonlocking, ~~2~~ 3 -pole, ~~3~~ 4 -wire grounding-type receptacle outlet rated at 125/ 250 volts, single phase, in accordance with one of the following:
 - a. 15 or 20 amperes
 - b. 30, 50, or 60 amperes listed for EVSE or WPTE use
- (3) A nonlocking, 2-pole, ~~3-wire or 3-pole, 4-wire grounding-~~ wire grounding- type receptacle outlet rated at ~~250 volts~~ 277 volts , single phase, ~~30 or 50 amperes, or at 125/250 volts, single phase, 30, 50, or 60 amperes~~ in accordance with one of the following:
 - a. 15 or 20 amperes
 - b. 30 or 50 amperes listed for EVSE or WPTE use
- (4) A nonlocking, 2-pole, 3-wire grounding-type receptacle outlet rated at 60 volts dc maximum, ~~15 or 20 amperes in accordance with one of the following~~:
 - a. ~~15 amperes~~
 - b. ~~20 amperes~~
- (5) A locking, pin-and-sleeve, 3-pole, 4-wire grounding type receptacle outlet rated 277/480 volts, three-phase, in accordance with one of the following:
 - a. 60 amperes
 - b. 100 amperes

Additional Proposed Changes

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
624_44_A_Draft_V1.docx		

Statement of Problem and Substantiation for Public Input

This text is revised in order to provide for parallel construction, in accordance with 3.5.5 of the NEC Style Manual, with 625.44 which contains similar requirements. Additionally, the subdivisions are added to each list item to cover the new EVSE or WPTE rated receptacles that were added to Article 625 in the last cycle. As the equipment in Article 624 is used in the same overall manner as equipment is Article 625, it is logical to require the same robust ratings and risk mitigation strategies in this Article as are included in Article 625. Lastly, the addition of the 277 volt rated receptacles which addresses the use of the North American Charging Standard (NACS) and the addition of the locking pin-and-sleeve connector are included as they were added to Article 625 in the last cycle.

Submitter Information Verification

Submitter Full Name: Scott Picco

Organization: UL Solutions

Street Address:

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Zip:

Submittal Date: Fri Mar 20 16:36:54 EDT 2026

Committee: NEC-P12

(A) Portable Equipment.

Portable equipment shall be connected to the premises wiring system by one or more of the following methods:

- (1) A nonlocking, 2-pole, 3-wire grounding-type receptacle outlet rated at 125 volts or 250 volts, single phase, 15 or 20 amperes in accordance with one of the following:
 - a. 15 or 20 amperes
 - a.b. 30 or 50 amperes listed for EVSE or WPTE use
- (2) ~~(2)~~ A nonlocking, ~~23~~-pole, ~~34~~-wire grounding-type receptacle outlet rated at 125/250 volts, single phase, 15 or 20 amperes in accordance with one of the following:
 - a. 15 or 20 amperes
 - b. 30, 50 , or 60 amperes listed for EVSE or WPTE use
- (3) ~~(3)~~ A nonlocking, 2-pole, 3-wire ~~or 3-pole, 4-wire~~ grounding-type receptacle outlet rated at 250-277 volts, single phase, 30 or 50 amperes, or at 125/250 volts, single phase, 30, 50, or 60 amperes in accordance with one of the following:
 - a. 15 or 2 amperes
 - a.b. 30 or 50 amperes listed for EVSE or WPTE use
- (4) ~~(4)~~ A nonlocking, 2-pole, 3-wire grounding-type receptacle outlet rated at 60 volts dc maximum, 15 or 20 amperes in accordance with one of the following:
 - a. 15 amperes
 - b. 20 amperes
- (5) A locking, pin-and-sleeve, 3-pole, 4-wire grounding type receptacle outlet rated 277/480 volts, three-phase, in accordance with one of the following:
 - a. 60 amperes
 - a.b. 100 amperes

Rationale: This text is revised in order to provide for parallel construction, in accordance with 3.5.5 of the NEC Style Manual, with 625.44 which contains similar requirements. Additionally, the subdivisions are added to each list item to cover the new EVSE or WPTE rated receptacles that were added to Article 625 in the last cycle. As the equipment in Article 624 is used in the same overall manner as equipment is Article 625, it is logical to require the same robust ratings and risk mitigation strategies in this Article as are included in Article 625. Lastly, the addition of the 277 volt rated receptacles which addresses the use of the North American Charging Standard (NACS) and the addition of the locking pin-and-sleeve connector are included as they were added to Article 625 in the last cycle.



Public Input No. 2939-NFPA 70-2026 [Section No. 624.44(A)]

(A).

—

Portable Equipment.

Portable equipment shall be connected to the premises wiring system by one or more of the following methods

÷

:

(1) ~~A nonlocking, 2-pole, 3-wire grounding-type receptacle outlet rated at 125 volts~~

~~125 volts or 250 volts, single phase~~

,

in accordance with one of the following:

— a. — 15 or 20 amperes

A

— b. — 30 or 50 amperes listed for EVSE and WPTE use

(2) ~~A nonlocking,~~

2

~~3 -pole,~~

3

~~4 -wire grounding-type receptacle outlet rated at~~

~~250 volts~~

~~125/250 volts, single phase~~

, 15

in accordance with one of the following:

— a. — 15 or 20 amperes

A

— b. — 30, 50, or 60 amperes listed for EVSE and WPTE use

(3) ~~A nonlocking, 2-pole, 3-wire~~

~~or 3-pole, 4-wire~~

~~grounding-type receptacle outlet rated at~~

~~250 volts~~

~~277 volts, single phase~~

~~, 30 or 50 amperes, or at 125/250 volts, single phase, 30, 50, or 60 amperes~~A

in accordance with one of the following:

— a. — 15 or 20 amperes

- ~~— b. — 30 or 50 amperes listed for EVSE and WPTE use~~
- ~~(4) — A nonlocking, 2-pole, 3-wire grounding~~
- ~~—~~
- ~~type receptacle outlet rated at~~
- ~~60 volts~~
- ~~60 volts dc maximum, 15 or 20 amperes~~
- ~~(5) — A locking, pin-and-sleeve, 3-pole, 4-wire grounding type receptacle outlet rated 277/480 volts, three-phase in accordance with one of the following:~~
 - ~~— a. — 60 or 100 amperes~~
 - ~~— b. — 200 or 400 amperes listed for harsh environments or heavy duty applications~~
- ~~(6) — A locking, pin-and-sleeve, 4-pole, 5-wire grounding type receptacle outlet rated 277/480 volts, three-phase in accordance with one of the following:~~
 - ~~— a. — 60 or 100 amperes~~
 - ~~— b. — 200 or 400 amperes listed for harsh environments or heavy duty applications~~

Statement of Problem and Substantiation for Public Input

This change brings Article 624.44(A) into alignment with Article 625.44(A). Article 624 was created on the basis of article 625 before accepted changes were integrated into the new code. At minimum, article 624.44(A) should be brought along to match article 625.44(A).

This also adds some flexibility for the higher current market for future additions of larger portable DC fast charging systems as well as prospective portable MCS charging systems. As article 624 covers "off-road" EVSE, higher power requirements could be driven by electric aircraft, electric ferries, etc. Readily available, listed receptacles are common in other high current cord-and-plug appliance applications, specifically for commercial and industrial markets.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
Public Input No. 3590-NFPA 70-2026 [Section No. 624.54]	

Submitter Information Verification

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Submittal Date: Tue Apr 07 11:37:56 EDT 2026

Committee: NEC-P12



Public Input No. 1833-NFPA 70-2026 [Section No. 624.44(B)]

(B) Hand Fastened ~~in-Place~~ Equipment.

Equipment that is hand fastened ~~in-place~~ shall be connected to the premises wiring system by one of the following methods:

- (1) A nonlocking, 2-pole, 3-wire grounding-type receptacle outlet rated 125 volts or 250 volts, single phase, ~~up to 50 amperes~~ in accordance with the following:

- a. 15 or 20 amperes

- b. 30 or 50 amperes listed for EVSE or WPTE use

- (2) A nonlocking, 3-pole, 4-wire grounding-type receptacle outlet rated 250 volts, three phase, ~~up to 50 amperes~~ in accordance with one of the following:

- a. 15 or 20 amperes

- b. 30, 50, or 60 amperes listed for EVSE or WPTE use

- (3) A nonlocking, 3-pole, 4-wire grounding-type receptacle outlet rated 125/250 volts, single phase, in accordance with one of the following:

- a. 15 or 20 amperes

- b. 30, 50, or 60 amperes listed for EVSE or WPTE use

- (4) A nonlocking, 2-pole, 3-wire, ., grounding-type receptacle outlet rated 60 volts dc maximum,

- (5) 277 volts, single phase, in accordance with one of the following:

- a. 15 or 20 amperes

- b. 30, 50, or 60 amperes listed for EVSE or WPTE use

- (6) A nonlocking, 2-pole, 3-wire grounding-type receptacle outlet rated 60 volts dc maximum, in accordance with one of the following:

- a. 15 amperes

- b. 20 amperes

- (7) A locking, pin-and-sleeve, 3-pole, 4-wire, grounding type receptacle outlet, rated 277/480 volts, three-phase, in accordance with one of the following:

- a. 60 amperes

- b. 100 amperes

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
624_44_B_Draft_V1.docx		

Statement of Problem and Substantiation for Public Input

This text is revised in order to provide for parallel construction, in accordance with 3.5.5 of the NEC Style Manual, with 625.44(B) which contains similar requirements. Additionally, the subdivisions are added to each list item to cover the new EVSE or WPTE rated receptacles that were added to Article 625 in the last cycle. Although this equipment is designated as ESVSE, the same EVSE rated receptacles would be applicable. As the equipment in Article 624 is used in the same overall manner as equipment in Article 625, it is logical to require the same robust ratings and risk mitigation strategies in this Article as are included in Article 625. Lastly, the addition of the 277 volt rated receptacles which addresses the use of the North American Charging Standard (NACS), the addition of the 120/208, three-phase receptacle, and the addition of the locking pin-and-sleeve connector are included as they were added to Article 625 in the last cycle.

Submitter Information Verification

Submitter Full Name: Scott Picco

Organization: UL Solutions

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Submittal Date: Mon Mar 23 11:47:41 EDT 2026

Committee: NEC-P12

(B) ~~Fastened-in-Place~~Hand Fastened Equipment.

Equipment that is ~~fastened-in-place~~hand fastened shall be connected to the premises wiring system by one of the following methods:

- (1) ~~(1)~~ A nonlocking, 2-pole, 3-wire grounding-type receptacle outlet rated 125 volts or 250 volts, single phase, ~~up to 50 amperes~~in accordance with the following:

 - a. 15 or 20 amperes
 - b. 30 or 50 amperes listed for EVSE or WPTE use
- (2) ~~(2)~~ A nonlocking, 3-pole, 4-wire grounding-type receptacle outlet rated 250 volts, three phase, ~~up to 50 amperes~~in accordance with one of the following:

 - a. 15 or 20 amperes
 - b. 30, 50, or 60 amperes listed for EVSE or WPTE use
- (3) ~~(3)~~ A nonlocking, 3-pole, 4-wire grounding-type receptacle outlet rated 125/250 volts, single phase, ~~30, 50, or 60 amperes~~in accordance with one of the following:

 - a. 15 or 20 amperes
 - b. 30, 50, or 60 amperes listed for EVSE or WPTE use
- (4) A nonlocking, 2-pole, 3-wire, grounding-type receptacle outlet rated 277 volts, single phase, in accordance with one of the following:

 - a. 15 or 20 amperes
 - b. 30, 50, or 60 amperes listed for EVSE or WPTE use
- (45) A nonlocking, 2-pole, 3-wire grounding-type receptacle outlet rated 60 volts dc maximum, ~~15 or 20 amperes~~in accordance with one of the following:

 - a. 15 amperes
 - b. 20 amperes
- (6) A locking, pin-and-sleeve, 3-pole, 4-wire, grounding type receptacle outlet, rated 277/480 volts, three-phase, in accordance with one of the following:

 - a. 60 amperes
 - b. 100 amperes

Rationale: This text is revised in order to provide for parallel construction, in accordance with 3.5.5 of the NEC Style Manual, with 625.44(B) which contains similar requirements. Additionally, the subdivisions are added to each list item to cover the new EVSE or WPTE rated receptacles that were added to Article 625 in the last cycle. Although this equipment is designated as EVSE, the same EVSE rated receptacles would be applicable. As the equipment in Article 624 is used in the same overall manner as equipment in Article 625, it is logical to require the same robust ratings and risk mitigation strategies in this Article as are included in Article 625. Lastly, the addition of the 277 volt rated receptacles which addresses the use of

the North American Charging Standard (NACS), the addition of the 120/208, three-phase receptacle, and the addition of the locking pin-and-sleeve connector are included as they were added to Article 625 in the last cycle.



Public Input No. 1792-NFPA 70-2026 [Section No. 624.44 [Excluding any Sub-Sections]]

ESVSE and WPTE shall be connected to the premises wiring system in accordance with one of the methods in 624.44(A) through 624.44(C).

Cord-and-plug connected equipment shall be provided with an attachment plug rated not less than 125 percent of the maximum rating of the equipment.

A 50-ampere rated receptacle shall not be _ installed on a 40-ampere branch circuit as permitted in 210.24.

Additional Proposed Changes

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
624_44_Draft_V1.docx		

Statement of Problem and Substantiation for Public Input

The revision explicitly states that the attachment plug on a power supply cord should match the same sizing requirement as the branch circuit protection in the case of ESVSE. This is to ensure that the attachment plug and equipment current rating are correlated and no undersizing will occur. Additionally, requirements are added to prevent the installation of a 50-ampere rated receptacle being installed with a 40-ampere overcurrent protection. The installation allowance in 210.24 would allow a 40 A product to be installed on a 40 A overcurrent protection, which is not considered to be acceptable for ESVSE. Lastly, this will provide for parallel construction, in accordance with 3.5.5 of the NEC Style Manual, with 625.44 which contains similar requirements.

Submitter Information Verification

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Submittal Date: Fri Mar 20 16:33:21 EDT 2026

Committee: NEC-P12

624.44 Equipment Connection.

ESVSE and WPTE shall be connected to the premises wiring system in accordance with one of the methods in [624.44\(A\)](#) through [624.44\(C\)](#).

Cord-and-plug connected equipment shall be provided with an attachment plug rated not less than 125 percent of the maximum rating of the equipment.

A 50-ampere rated receptacle shall not be installed on a 40-ampere branch circuit as permitted in 210.24.

Rationale: The revision explicitly states that the attachment plug on a power supply cord should match the same sizing requirement as the branch circuit protection in the case of ESVSE. This is to ensure that the attachment plug and equipment current rating are correlated and no undersizing will occur. Additionally, requirements are added to prevent the installation of a 50-ampere rated receptacle being installed with a 40-ampere overcurrent protection. The installation allowance in 210.24 would allow a 40 A product to be installed on a 40 A overcurrent protection, which is not considered to be acceptable for ESVSE. Lastly, this will provide for parallel construction, in accordance with 3.5.5 of the NEC Style Manual, with 625.44 which contains similar requirements.



Public Input No. 2113-NFPA 70-2026 [Section No. 624.50]

624.50 Location.

ESVSE shall be located for direct electrical coupling of ESV connectors (conductive or inductive) to ESVs. Unless specifically listed and marked for the location, the coupling means of ESVs shall be stored or located at a height of not less than 450 mm (18 in.) above the floor level for indoor locations or 600 mm (24 in.) above the grade level for outdoor locations. (See Annex 624.50).

This requirement shall not apply to portable ESVSE constructed in accordance with 624.44(A).

Additional Proposed Changes

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
PI_2113_-_Annex_Content_for_Section_624.50.docx	Annex content for Section 624.50	

Statement of Problem and Substantiation for Public Input

ESVSEs are required to be accessible to people with disabilities in certain situations. The new annex text provides guidance for designers and installers so they recognize when these requirements may apply so that 1) they meet the intended usability goals in the accessibility standards and 2) they avoid unnecessary enforcement action.

The entire series of PIs submitted by the Task Group is attached to PI 2111.

The Disability Access Review Task Group consists of members from CMP-2, CMP-10, CMP-18 and the NFPA Disability Access Review and Advisory Committee (DARAC). It was directed by the Correlating Committee to review specific articles concerning components such as receptacles, switches and circuit breakers and their usability for the disabled. The task group shall develop Public Inputs for the 2029 code as necessary. The NFPA Disability Access Review Advisory Committee (DARAC: www.nfpa.org/darac) has reviewed this Public Input, and by letter ballot, concurs with the proposed language and the substantiation provided.

Submitter Information Verification

Submitter Full Name: Daniel Buuck

Organization: National Association of Home Builders

Street Address:

City:

State:

Zip:

Submission Date: Mon Mar 30 10:23:18 EDT 2026

Committee: NEC-P12

PI 2113 – CMP-12

624.50 Location.

ESVSE shall be located for direct electrical coupling of ESV connectors (conductive or inductive) to ESVs. Unless specifically listed and marked for the location, the coupling means of ESVs shall be stored or located at a height of not less than 450 mm (18 in.) above the floor level for indoor locations or 600 mm (24 in.) above the grade level for outdoor locations. [\(See Annex 624.50\)](#)

This requirement shall not apply to portable ESVSE constructed in accordance with 624.44(A).

[\[NEW\] Annex 624.50 Location.](#)

[The location allowed in this section may be higher than can be reached by someone using a wheelchair. A clear floor space sized for a wheelchair plus an accessible route to that location may also be required. Where installed to meet accessibility requirements prescribed by other codes or standards, consult ICC A117.1 for the applicable accessible route, clear floor space, and reach range requirements.](#)



Public Input No. 1780-NFPA 70-2026 [Section No. 624.52(B)(1)]

(1) Table Values.

For supply voltages and currents specified in Table 624.52(B)(1)(1) or Table 624.52(B)(1)(2), the minimum ventilation requirements shall be as specified in Table 624.52(B)(1)(1) or Table 624.52(B)(1)(2) for each of the total number of ~~electric vehicles that~~ ESVs that can be charged at one time.

Table 624.52(B)(1)(1) Minimum Ventilation Required in Cubic Meters per Minute (m³/min) for Each of the Total Number of ESVs That Can Be Charged at One Time

<u>Branch-Circuit Ampere Rating</u>	<u>Branch-Circuit Voltage</u>								
	<u>Single-Phase</u>				-	<u>3-Phase</u>			
	<u>dc ≥ 50 V</u>	<u>120 V</u>	<u>208 V</u>	<u>240 V or 120/240 V</u>		<u>208 V or 208Y/120 V</u>	<u>240 V</u>	<u>480 V or 480Y/277 V</u>	<u>600 V or 600Y/347 V</u>
15	0.5	1.1	1.8	2.1	-	—	—	—	—
20	0.6	1.4	2.4	2.8	-	4.2	4.8	9.7	12
30	0.9	2.1	3.6	4.2	-	6.3	7.2	15	18
40	1.2	2.8	4.8	5.6	-	8.4	9.7	19	24
50	1.5	3.5	6.1	7	-	10	12	24	30
60	1.8	4.2	7.3	8.4	-	13	15	29	36
100	2.9	7	12	14	-	21	24	48	60
150	—	—	—	—	-	31	36	73	91
200	—	—	—	—	-	42	48	97	120
250	—	—	—	—	-	52	60	120	150
300	—	—	—	—	-	63	73	145	180
350	—	—	—	—	-	73	85	170	210
400	—	—	—	—	-	84	97	195	240

Table 624.52(B)(1)(2) Minimum Ventilation Required in Cubic Feet per Minute (cfm) for Each of the Total Number of ~~Electric Vehicles~~ ESVs That Can Be Charged at One Time

<u>Branch-Circuit Ampere Rating</u>	<u>Branch-Circuit Voltage</u>								
	<u>Single-Phase</u>				-	<u>3-Phase</u>			
	<u>dc ≥ 50 V</u>	<u>120 V</u>	<u>208 V</u>	<u>240 V or 120/240 V</u>		<u>208 V or 208Y/120 V</u>	<u>240 V</u>	<u>480 V or 480Y/277 V</u>	<u>600 V or 600Y/347 V</u>
15	15.4	37	64	74	-	—	—	—	—
20	20.4	49	85	99	-	148	171	342	427
30	30.8	74	128	148	-	222	256	512	641
40	41.3	99	171	197	-	296	342	683	854
50	51.3	123	214	246	-	370	427	854	1066
60	61.7	148	256	296	-	444	512	1025	1281
100	102.5	246	427	493	-	740	854	1708	2135
150	—	—	—	—	-	1110	1281	2562	3203
200	—	—	—	—	-	1480	1708	3416	4270
250	—	—	—	—	-	1850	2135	4270	5338
300	—	—	—	—	-	2221	2562	5125	6406
350	—	—	—	—	-	2591	2989	5979	7473
400	—	—	—	—	-	2961	3416	6832	8541

Statement of Problem and Substantiation for Public Input

The term electric vehicle should not be used within Article 624 as these vehicles are, per Article 100 definitions, not electric vehicles.

Submitter Information Verification

Submitter Full Name: Alexander Jahp

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Submittal Date: Fri Mar 20 15:17:24 EDT 2026

Committee: NEC-P12



Public Input No. 1781-NFPA 70-2026 [Section No. 624.52(B)(4)]

(4) Supply Circuits.

Supply circuits to mechanical ventilation equipment shall be electrically interlocked with the equipment and remain energized during the entire ~~electric vehicle~~ ESV charging cycle. Equipment receptacles rated at 125 volts, single phase, 15 and 20 amperes shall be switched, with mechanical ventilation systems electrically interlocked through the switch supply power to the receptacles. Equipment supplied from less than 50 volts dc shall be switched with mechanical ventilation systems electrically interlocked through the switch supply power to the equipment.

Statement of Problem and Substantiation for Public Input

The term electric vehicle should not be used within Article 624 as these vehicles are, per Article 100 definitions, not electric vehicles.

Submitter Information Verification

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Submittal Date: Fri Mar 20 15:20:25 EDT 2026

Committee: NEC-P12



Public Input No. 3590-NFPA 70-2026 [Section No. 624.54]

624.54 Ground-Fault Circuit-Interrupter Protection for Personnel.

All receptacles installed for the connection of ESVSE shall have GFCI protection for personnel.

Exception No.1: This requirement shall not apply to receptacles intended to serve DCFC equipment where ground-fault protection is provided as an integral part of listed equipment or where such protection is not required by the applicable product standard.

Exception No. 2: GFCI protection shall not be required where its application would introduce a greater hazard due to incompatibility with the EVSE or the characteristics of the supply system.

Statement of Problem and Substantiation for Public Input

Substantiation for Exception No. 1:

Direct current fast charging equipment differs significantly from cord-and-plug connected Level 1 and Level 2 ESVSE. These systems commonly incorporate internal ground-fault detection and protection as part of their listed design and may exhibit inherent leakage characteristics associated with power conversion equipment. Requiring upstream GFCI or SPGFCI protection can result in nuisance tripping and interfere with proper operation. This exception recognizes the design and evaluation of such equipment and avoids conflicts with applicable product standards while maintaining the intent of personnel protection.

Substantiation for Exception No. 2:

In certain installations, the application of GFCI or SPGFCI protection may introduce a greater hazard than its omission due to incompatibility with the ESVSE design or the characteristics of the supply system. Examples include systems with inherent leakage currents, non-neutral configurations, or other conditions where GFCI or SPGFCI operation may result in unintended loss of power or improper coordination with equipment protection. This exception provides necessary flexibility to address such conditions without compromising overall safety.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
<u>Public Input No. 2939-NFPA 70-2026 [Section No. 624.44(A)]</u>	Power levels and receptacle classification correlates to level 1, level 2, and DCFC ESVSE inherently by design of such systems.

Submitter Information Verification

Submitter Full Name: Bryan Seymour

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Submittal Date: Thu Apr 09 13:29:09 EDT 2026

Committee: NEC-P12



Public Input No. 3601-NFPA 70-2026 [Section No. 624.54]

624.54 Ground-Fault Circuit-Interrupter Protection for Personnel.

All receptacles installed for the connection of ESVSE shall have GFCI protection for personnel. Exception: A listed locking finger-safe receptacle marked for use with EVSE, WPTE or ESVSE shall not require GFCI protection. Suitable connectors must prevent contact with live conductors during all phases of insertion and operation. Associated systems must use means to shut down power unless the connector is fully engaged. The branch circuit must be physically protected as specified in PI-1917 625.54 (B)(1).

Statement of Problem and Substantiation for Public Input

Substantiation:

In a variety of use cases, protection against shock hazard can be completed with mechanical means.

Among use cases are wheeled DC fast charging EVSE serving truck, boat, train or airport docking bays. No suitable GFCI is available at these power levels. The cost of supplying all bays with DCFC is prohibitive.

The finger safe receptacles are paired with systems featuring a release button or a shorter control pin that breaks before the power conductors, ensuring that power is well and truly off unless a connector is properly engaged. At idle power is off.

Protection from the OCPD to the receptacle is the topic of a separate PI created by the Standards Council D25-2 task group. This proposed PI is designed to be completely compatible with that PI (like peanut butter and chocolate :-).

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
Public Input No. 3602-NFPA 70-2026 [Section No. 625.54]	
Public Input No. 3634-NFPA 70-2026 [Section No. 210.8]	
Public Input No. 3689-NFPA 70-2026 [Section No. 624.54]	

Submitter Information Verification

Submitter Full Name: Bryce Nesbitt

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Affiliation: EV-Seg (Public fast charging)

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Submittal Date: Thu Apr 09 14:16:00 EDT 2026

Committee: NEC-P12



Public Input No. 3689-NFPA 70-2026 [Section No. 624.54]

624.54 Ground-Fault Circuit-Interrupter Protection for Personnel.

All receptacles installed for the connection of ESVSE shall have GFCI protection for personnel. As of January 1st 2031, newly installed GFCI receptacles intended, marketed, or positioned for ESVSE equipment shall be of the type that includes a thermal sensor able to shut power in the case of overheating prongs. The temperature threshold shall be identified on the face of the device.

Statement of Problem and Substantiation for Public Input

Adding a thermal sensor to an existing GFCI design is a low cost safety improvement that could protect against very common EVSE misuse, including the use of extension cords for charging. This abuse is most common with NEMA 5-15 and 5-20 receptacles.

During the recent Standards Council Decision 25-2 Task Group investigations into EVSE safety: review of social media and CSPC databases showed many instances of melted receptacles.

Doing this in the receptacle is the only seemingly practical way to protect users with extension cords, that frustrate the ability to sense temperature events with a plug mounted thermal sensor.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
<u>Public Input No. 3601-NFPA 70-2026 [Section No. 624.54]</u>	
<u>Public Input No. 3602-NFPA 70-2026 [Section No. 625.54]</u>	
<u>Public Input No. 3342-NFPA 70-2026 [Section No. 625.17(A)]</u>	
<u>Public Input No. 3344-NFPA 70-2026 [Section No. 625.17(C)]</u>	<u>[Excluding any Sub-Sections]</u>

Submitter Information Verification

Submitter Full Name: Bryce Nesbitt

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Affiliation: Member NCAC, charging access for all.

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Submittal Date: Thu Apr 09 16:54:49 EDT 2026

Committee: NEC-P12



Public Input No. 1782-NFPA 70-2026 [Section No. 624.56]

624.56 Receptacle Enclosures.

All receptacles installed in wet locations for ~~electric vehicle~~ ESV charging shall have enclosures that are weatherproof with attachment plug caps inserted or removed. Outlet box hoods installed for this purpose shall be listed and be identified as extra duty. Other listed products, enclosures, or assemblies providing weatherproof protection that do not use outlet box hoods shall not be required to be marked extra duty.

Statement of Problem and Substantiation for Public Input

The term electric vehicle should not be used within Article 624 as these vehicles are, per Article 100 definitions, not electric vehicles.

Submitter Information Verification

Submitter Full Name: Alexander Jahp

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Submittal Date: Fri Mar 20 15:21:10 EDT 2026

Committee: NEC-P12



Public Input No. 1761-NFPA 70-2026 [Section No. 625.1]

625.1 Scope.

This article covers the electrical conductors and equipment connecting an electric vehicle to premises wiring for the purposes of charging, power export, or bidirectional current flow.

Informational Note No. 1: See NFPA 505, *Fire Safety Standard for Powered Industrial Trucks Including Type Designations, Areas of Use, Conversions, Maintenance, and Operations*, for information on fire protection of industrial trucks.

Informational Note No. 2: See UL 2594, *Electric Vehicle Supply Equipment*, for information on conductive electric vehicle supply equipment.

Informational Note No. 3: See UL 2202, *Electric Vehicle Charging System Equipment*, for information on conductive electric vehicle charging equipment.

Informational Note No. 4: See UL 2750-2020, *Outline of Investigation for Wireless Power Transfer Equipment for Electric Vehicles*, for information on wireless power transfer equipment for transferring power to an electric vehicle.

Informational Note No. 5: See NECA 413-2019, *Installing and Maintaining Electric Vehicle Supply Equipment (EVSE)*, for information on the procedures for installing and maintaining AC Level 1, AC Level 2, and fast-charging dc electric vehicle supply equipment (EVSE).

Informational Note No. 6: See UL 9741, *Electric Vehicle Power Export Equipment (EVPE)*, for more information on power export equipment.

Statement of Problem and Substantiation for Public Input

The informational notes contain standards relevant to the equipment covered by this article. UL 9741 should be included.

Submitter Information Verification

Submitter Full Name: Alexander Jahp

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Submittal Date: Fri Mar 20 11:16:47 EDT 2026

Committee: NEC-P12



Public Input No. 2704-NFPA 70-2026 [Section No. 625.1]

625.1 Scope.

This article covers the electrical conductors and equipment connecting an electric vehicle to premises wiring for the purposes of charging, power export, or bidirectional current flow.

Informational Note No. 1: See NFPA 505, *Fire Safety Standard for Powered Industrial Trucks Including Type Designations, Areas of Use, Conversions, Maintenance, and Operations*, for information on fire protection of industrial trucks.

Informational Note No. 2: See UL 2594, *Electric Vehicle Supply Equipment*, for information on conductive electric vehicle supply equipment.

Informational Note No. 3: See UL 2202, *Electric Vehicle Charging System Equipment*, for information on conductive electric vehicle charging equipment.

Informational Note No. 4: See UL 2750-2020, *Outline of Investigation for Wireless Power Transfer Equipment for Electric Vehicles*, for information on wireless power transfer equipment for transferring power to an electric vehicle.

Informational Note No. 5: See NECA 413-2019, *Installing and Maintaining Electric Vehicle Supply Equipment (EVSE)*, for information on the procedures for installing and maintaining AC Level 1, AC Level 2, and fast-charging dc electric vehicle supply equipment (EVSE).

Statement of Problem and Substantiation for Public Input

Since section 625.2 requires EVPTSE to be listed, and Annex A.1(2), where product standards that have an associated listing requirement are required to be listed per the NEC Style Manual sentence 2.1.10.5, and since that sentence states "General standard references for listing or certification shall only be included in Annex A", it is not permissible to list UL 2202, 2594, and 2750 here. UL 2750 should be moved to the Annex, and referred to by edition not year, and 2594 and 2202 which are already there should be deleted as an informative note. Users of the code should know where such references are located. Since these standards are mandatory, not informational, they are not explanatory, nor are they comprehensive since Annex A.1(2) lists eleven standards (missing 2750, those for pantographs, etc.).

Submitter Information Verification

Submitter Full Name: Kevin Cheong

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Affiliation: Chargepoint Inc.

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Submittal Date: Sun Apr 05 15:12:29 EDT 2026

Committee: NEC-P12



Public Input No. 2641-NFPA 70-2026 [Section No. 625.2]

625.2 Listing Requirements.

Electric vehicle power transfer system equipment shall be listed for the purposes of charging, power export, or bidirectional current flow. The equipment shall include a listed personnel protection system.

Note: See UL 2231-1 and UL 2231-2 for Personnel Protection Systems for Electric Vehicle (EV) Supply Circuits.

Statement of Problem and Substantiation for Public Input

As part of the product safety listing this equipment should have the means to prevent a shock hazard to the end user. UL 2231 is the appropriate standard to reference for this purpose. The inclusion of this language and the info note will inform users on the appropriate standards required for EVSE personnel protection systems.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
<u>Public Input No. 2640-NFPA 70-2026 [Definition: Personnel Protection System (as applied to EVSE...)]</u>	
<u>Public Input No. 2640-NFPA 70-2026 [Definition: Personnel Protection System (as applied to EVSE...)]</u>	

Submitter Information Verification

Submitter Full Name: Michael Hart

Organization: Tesla

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City:

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Submittal Date: Sat Apr 04 13:43:00 EDT 2026

Committee: NEC-P12



Public Input No. 979-NFPA 70-2026 [Section No. 625.2]

625.2 Listing Requirements.

Electric vehicle power transfer system equipment shall be listed for the purposes of charging, power export, or bidirectional current flow. The equipment shall also have a listed internal personnel protection system built in to prevent shock hazards.

Statement of Problem and Substantiation for Public Input

This equipment shall come with a means to protect the end user from a shock hazard as part of its design.

Submitter Information Verification

Submitter Full Name: Raymond Horner

Organization: Base Power Company

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Submittal Date: Mon Feb 09 11:44:05 EST 2026

Committee: NEC-P12



Public Input No. 2705-NFPA 70-2026 [Section No. 625.4]

625.4 Qualified Persons.

Permanently installed electric vehicle power transfer system equipment rated above 150 volts to ground, or more than 60 amperes, or EVPE, or bi-directional equipment configured to permit EVPE, shall be installed by qualified persons.

~~Informational Note: See NECA 413-2024, *Standard for Installing and Maintaining Electric Vehicle Supply Equipment (EVSE)*, or other ANSI approved installation standards.~~

Statement of Problem and Substantiation for Public Input

Appliances such as wall-mounted ovens or counter-mounted cooking units do not require qualified persons to install them but are similar in voltage and current to typical EVSE, and WPTE.

While higher voltage (NACS permits 277 V) or higher current (J1772 can be 80 A output, DCFC far higher) may justify qualified persons, it should not be necessary for dwelling unit garage EVSE at less than 150 V to ground, and as little as 15A circuits, to be installed by a qualified person any more than the garage receptacle for the garage door opener or garage receptacle for a portable EVSE / EV Cordset.

Since the informational note only covers EVSE, missing many of the equipment noted, and differs from the edition referenced in section 625.1, we deleted it as it does not support or improve usability, per NEC Style Manual 2.1.10.1.

Submitter Information Verification

Submitter Full Name: Kevin Cheong

Organization: Chargepoint Canada Inc.

Affiliation: Chargepoint Inc.

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Submission Date: Sun Apr 05 15:52:36 EDT 2026

Committee: NEC-P12



Public Input No. 3119-NFPA 70-2026 [Section No. 625.4]

625.4- Qualified Persons:

~~Permanently installed electric vehicle power transfer system equipment shall be installed by qualified persons.~~

~~Informational Note: See NECA 413-2024, *Standard for Installing and Maintaining Electric Vehicle Supply Equipment (EVSE)*, or other ANSI approved installation standards.~~

Statement of Problem and Substantiation for Public Input

This PI proposes to strike 625.4 on the grounds that it is unnecessary, lightly substantiated, ambiguous for enforcement, and may encourage unsafe behavior.

True, there are strong reasons for special qualifications for high power electrical work, including public DC fast charging. The EVITP certification is an example certification addressing the need for special training, and it's appropriate for funders or AHJ's to require such training for specific situations.

—
However, there has been insufficient substantiation that EVSE in general are harder than other electrical install types, justifying this blanket requirement.

It's difficult for an AHJ to determine what qualifications are sufficient, as there is no defined rule. Thus the rules will vary by location, perhaps drastically.

EVSE are one of the most common DIY home projects, and are well within reach of many owner builders. In the interest of fire prevention either DIY installs should be banned totally, or go the opposite way and promote permits and professional inspection of the work.

Article 625.4 pushes DIY'ers out of the system: to either install a receptacle outlet to avoid the rule, or skip even trying to get a permit to avoid the hurdle of demonstrating ambiguous qualifications.

This affects millions of DIY installs expected over the code cycle.

I would support an alternative that DIY owner-builders must take an online training: perhaps EVITP-Lite, specific to L2 hardwired and receptacle installs.

Submitter Information Verification

Submitter Full Name: Bryce Nesbitt

Organization: EV Plugbox LLC

Affiliation: Member of National Charging Access Coalition & EV Charging for All Coalition, removing barriers to wider home apartment and HOA charging access.

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City:

State:

Zip:

Submittal Date: Wed Apr 08 03:09:25 EDT 2026



Public Input No. 656-NFPA 70-2026 [Section No. 625.4]

625.4 ~~Qualified Persons:~~

~~Permanently installed electric vehicle power transfer system equipment shall be installed by qualified persons.~~

~~Informational Note: See NECA 413-2024, *Standard for Installing and Maintaining Electric Vehicle Supply Equipment (EVSE)*, or other ANSI approved installation standards.~~

Statement of Problem and Substantiation for Public Input

There is to date no such thing as a qualified person for EVSE. Individuals who are qualified by the NEC would also be qualified to service EVSE. There is no reason for this reference to exist and removing it will have zero impact on 625 compliance.

Submitter Information Verification

Submitter Full Name: William Snyder

Organization: RCC Solutions

Affiliation: High Voltage Live Podcast

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Submittal Date: Tue Jan 20 18:43:31 EST 2026

Committee: NEC-P12



625.5 Field Markings.

Electric

(A) Nameplate

All electric vehicle supply equipment shall have the following a permanent markings nameplate marking on the outside of the equipment enclosure that ~~are~~ is visible after installation and contains the following information for each incoming supply circuit :

- (1) Supply voltage, ~~number~~
- (2) Number of phases, frequency, and full-
- (3) Frequency
- (4) Full load current- ~~for each incoming supply circuit~~
- ~~Short~~
- (5)

(B) Short Circuit Current Rating

All permanently wired electric vehicle supply equipment shall have a permanent marking indicating the short -circuit current rating of the

~~electric vehicle supply~~
equipment based on

~~one~~
of the following

:

- (1) Short-circuit current rating of a listed
~~and labeled~~
- (2) assembly
- (3) Short-circuit current rating established utilizing an approved method

Informational Note: See UL 2594, *Standard Electric Vehicle Supply Equipment*, for an example of an approved method.

Additional Proposed Changes

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
625_5_Draft_V1.docx		

Statement of Problem and Substantiation for Public Input

All EVSEs are intended to be provided with a nameplate with the information that is included in the requirement. This is mandatory and in line with the product standards for EVSEs. The short circuit rating does not seem to be applicable for a cord-and-plug connected products as the receptacle does not have a short circuit rating. Due to this, the list is revised to distinguish between cord-and-plug

connected products and permanently connected products. As this revision generates two separate requirements, those two requirements are not to be under the same subheading in accordance with 3.5.1.2 of the style manual. Therefore, an (A) and (B) were added with titles. Lastly, the informational note is deleted since currently the requirements in the product standards do not require a short circuit current rating.

Submitter Information Verification

Submitter Full Name: Scott Picco

Organization: UL Solutions

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City:

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Zip:

Submittal Date: Mon Mar 16 19:06:52 EDT 2026

Committee: NEC-P12

625.5 Field Markings.

(A) Nameplate

All Electric vehicle supply equipment shall have ~~the following a~~ permanent nameplate markings on the outside of the equipment enclosure that ~~are is~~ visible after installation and contains the following information for each incoming supply circuit:

- (1) ~~(1)~~ Supply voltage, ~~e, number of phases, frequency, and full load current for each incoming supply circuit~~
- (2) ~~Number of phases~~
- (3) ~~Frequency~~
- ~~(4)~~(4) Full load Current.

(B) Short Circuit Current Rating

All permanently wired electric vehicle supply equipment shall have a permanent marking indicating the short-circuit current rating of the equipment based on of the following:

- (2) ~~Short-circuit current rating of the electric vehicle supply equipment based on one of the following:~~
 - (1) ~~a-~~ Short-circuit current rating of a listed ~~and labeled~~ assembly
 - (2) ~~b-~~ Short-circuit current rating established utilizing an approved method

Informational Note: See UL 2594, *Standard Electric Vehicle Supply Equipment*, for an example of an approved method.

Rationale: All EVSEs are intended to be provided with a nameplate with the information that is included in the requirement. This is mandatory and in line with the product standards for EVSEs. The short circuit rating does not seem to be applicable for a cord-and-plug connected products as the receptacle does not have a short circuit rating. Due to this, the list is revised to distinguish between cord-and-plug connected products and permanently connected products. As this revision generates two separate requirements, those two requirements are not to be under the same subheading in accordance with 3.5.1.2 of the style manual. Therefore, an (A) and (B) were added with titles. Lastly, the informational note is deleted since currently the requirements in the product standards do not require a short circuit current rating.



Public Input No. 2706-NFPA 70-2026 [Section No. 625.5]

625.5 Field Markings.

Electric vehicle supply equipment shall have the following permanent markings on the outside of the equipment enclosure that are visible after installation:

- (1) Supply voltage, number of phases, frequency, and full-load current for each incoming supply circuit
- (2) ~~Short~~ For equipment rated greater than 60 A or 150 volts to ground, short-circuit current rating of the electric vehicle ~~supply~~ power transfer system equipment based on one of the following:

(3) Short-circuit current rating of

~~a listed and labeled assembly~~

a. the equipment

b. Short-circuit current rating established utilizing an approved method

~~Informational Note: See UL 2594, Standard Electric Vehicle Supply Equipment, for an example of an approved method.~~

Statement of Problem and Substantiation for Public Input

The listed and labeled requirement does not apply since 625.2 only notes listed for the purposes. It's section 130.2 that uses the listed and labeled terminology (along with article 600 and 691).

UL 2594 Table 62.2 only lists "Circuit Capacity for Short Circuit Test" values up to 5000A (for up to 600 V, although the standard goes to 1000 V now I understand). SCCR is not listed in the Markings section 72.

Therefore, UL 2594, which only covers AC conductively connected equipment, is probably not an appropriate informational note reference since it provides no information regarding an approved method of establishing SCCR.

Submitter Information Verification

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Submittal Date: Sun Apr 05 16:14:35 EDT 2026

Committee: NEC-P12



625.22 Personnel Protection System.

The electric vehicle supply equipment shall have a listed system of protection against electric shock of personnel. Where cord-and plug-connected electric vehicle supply equipment is used, the interrupting device of a listed personnel protection system shall be provided and shall be an integral part of the attachment plug or shall be located in the power-supply cord not more than 300 mm (12 in.) from the attachment plug.

Exception: Where a permanently wired EVSE is listed to require Class F GFCI protection for the circuit supplying the EVSE by the product standard marking, the personnel protection system in 625.22 shall not be required

Additional Proposed Changes

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
625.22_Substantiation.pdf	Substantiation file with figures included	

Statement of Problem and Substantiation for Public Input

See attached substantiation file for the figures called out in this substantiation.

This new exception will allow for the use of this technology and remove a now redundant equipment requirement as the same level of protection is provided. This exception actually increases the protection for personnel as it covers the entire circuit from the branch overcurrent protective device down to the load or vehicle. The proposed language allows this as an option and will require the product standard to be updated with the equipment mark for installation with Class F.

New Class F GFCI technology

A new type of GFCI technology was created to address the perceived interoperability concerns. New Class F GFCI requirements in UL943C allow up to 20 ma to flow on the equipment grounding conductor while providing Class A protection where current flows through a path other than the equipment grounding conductor – see figures 1 and 2.

Figure 1 - Up to 20mA of current allowed to flow on the equipment grounding conductor

Figure 2 - If a ground fault occurs, Class A 4-6mA protection is provided

The equipment grounding conductor GFCI level is same as CCID levels in UL2231. This is hybrid solution is intended to be tuned to applications such as this – see figure 3

Figure 3 - GFCI protection level on the EGC is the same as the protection provided by EVSE

In addition, it protects the circuit all the way down to the vehicle – a major advantage over the current CCID protection in UL2231 which only protects downstream from the charger – see figure 4

Figure 4 - Class F will provide protection all the way down to the vehicle

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Submittal Date: Mon Apr 06 21:04:57 EDT 2026

Committee: NEC-P12

Substantiation

This public input would revise the GFCI requirements in 555.35(C) to the new class F GFCI in UL943(C). This new type of GFCI is a hybrid of Class C and Class A GFCI protection and increases the level of GFCI protection while allowing a higher current level to flow on the equipment grounding conductor.

New Class F GFCI technology

A new Class F GFCI requirements in UL943C allow up to 20 mA to flow on the equipment grounding conductor while providing Class A protection where current flows through a path other than the equipment grounding conductor – see figures 1 and 2.

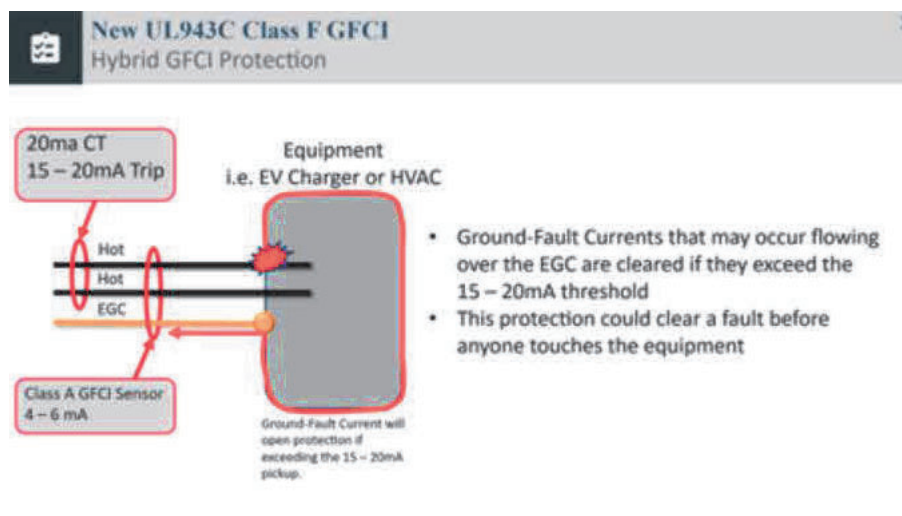


Figure 1 - Up to 20mA of current allowed to flow on the equipment grounding conductor

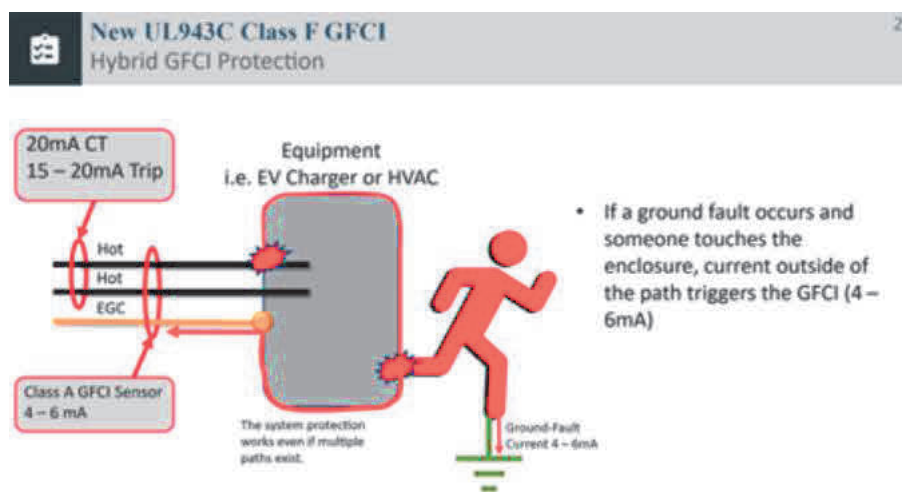


Figure 2 - If a ground fault occurs, Class A 4-6mA protection is provided

The equipment grounding conductor GFCI level is set at 20mA max and is a hybrid solution intended to be tuned to applications where leakage current on the EGC is necessary for operation – see figure 3

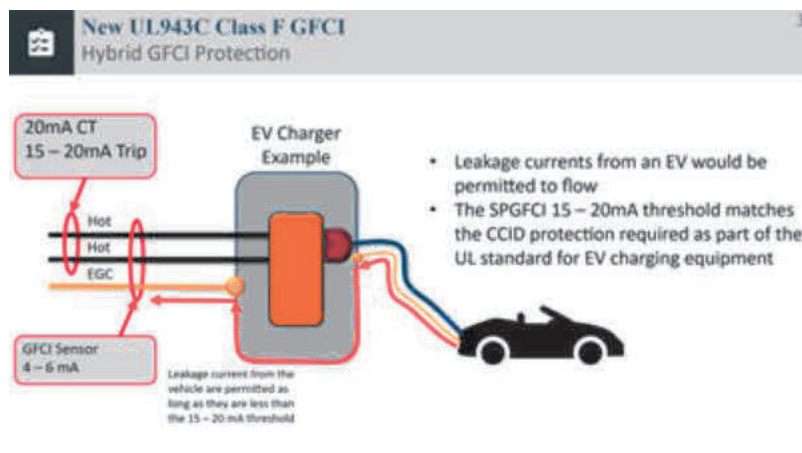


Figure 3 - GFCI protection level on the EGC is the same as the protection provided by EVSE

In addition, it protects the entire circuit all the way down to the connected load – a major advantage over the current equipment protection (I.e EV Charging in UL2231) which only protects downstream from the equipment – see figure 4

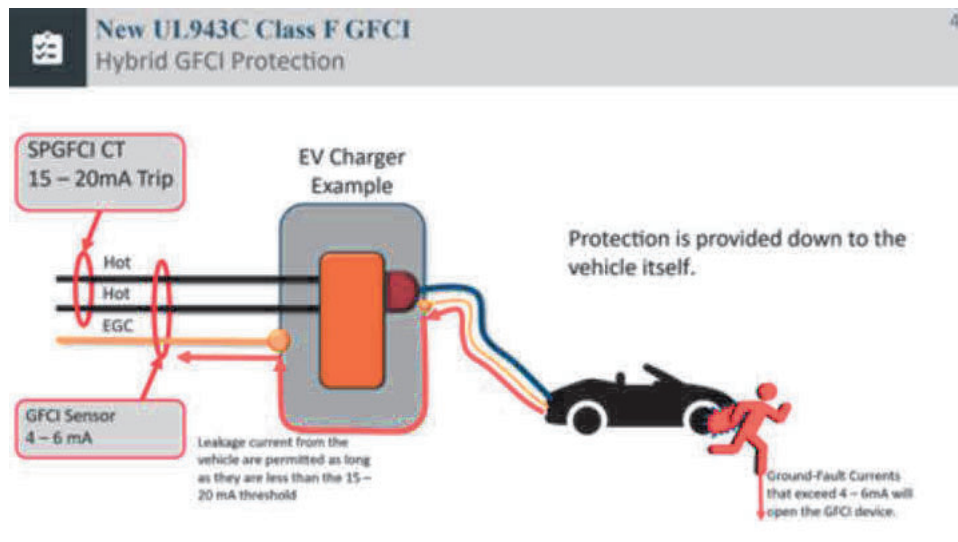


Figure 4 - Class F will provide protection all the way down to the vehicle

This proposal represents a significant step forward in personnel safety and aligns with NEC 90.2(B)—the practical safeguarding of persons and property from hazards arising from the use of electricity.



Public Input No. 2707-NFPA 70-2026 [Section No. 625.17(A)]

(A) Power-Supply Cord.

~~The~~ Where the cable for cord-connected electric vehicle ~~supply equipment (EVSE)~~ power transfer system equipment is not an integral part of the listed equipment, it shall comply with all of the following:

- (1) Be any of the types specified in 625.17(B)(1) or hard service cord, junior hard service cord, or portable power cable types in accordance with Table 400.4. Hard service cord, junior hard service cord, or portable power cable types shall be listed, as applicable, for exposure to oil and damp and wet locations.
- (2) Be of a type and ampacity as specified in Table 400.5(A)(1) or of a type specified in 625.17(B)(1) and considered to have the same ampacity rating as equivalent gauge hard service cord in Table 400.5(A)(1). For 8 AWG and larger, the cable shall be permitted to be of a type as specified in Table 400.5(A)(2) with an ampacity as specified in the 60°C (140°F) column of Table 400.5(A)(2).
- (3) Have an overall length as specified in either of the following:
 - (4) When the interrupting device of the personnel protection system is located within the enclosure of the supply equipment or charging system, the power-supply cord shall be not more than the length indicated in either of the following:
 - (5) For portable equipment in accordance with 625.44(A), the power-supply cord shall be not more than 300 mm (12 in.) long.
 - (6) For hand fastened equipment in accordance with 625.44(B), the power-supply cord shall be not more than 1.8 m (6 ft) long and the equipment shall be installed at a height that prevents the power-supply cord from contacting the floor when it is connected to the proper receptacle.
 - (7) When the interrupting device of the personnel protection system is located at the attachment plug, or within the first 300 mm (12 in.) of the power-supply cord, the overall cord length shall be not greater than 4.6 m (15 ft).

Statement of Problem and Substantiation for Public Input

Per Section 90.7 "It is the intent of this code that factory-installed internal wiring or the connection of equipment need not be inspected at the time of installation of the equipment, except to detect alterations or damage, if the equipment has been listed by a qualified electrical testing laboratory in accordance with 110.3(C)". So, the only reason you should be attempting to regulate the power-supply cord, is when it is altered, damaged, or not of the type provided with the equipment listed per 625.2.

Submitter Information Verification

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Submittal Date: Sun Apr 05 16:50:52 EDT 2026

Committee: NEC-P12



Public Input No. 3342-NFPA 70-2026 [Section No. 625.17(A)]

(A) Power-Supply Cord.

The cable for cord-connected electric vehicle supply equipment (EVSE) shall comply with all of the following:

- (1) Be any of the types specified in 625.17(B)(1) or hard service cord, junior hard service cord, or portable power cable types in accordance with Table 400.4. Hard service cord, junior hard service cord, or portable power cable types shall be listed, as applicable, for exposure to oil and damp and wet locations.
- (2) Be of a type and ampacity as specified in Table 400.5(A)(1) or of a type specified in 625.17(B)(1) and considered to have the same ampacity rating as equivalent gauge hard service cord in Table 400.5(A)(1). For 8 AWG and larger, the cable shall be permitted to be of a type as specified in Table 400.5(A)(2) with an ampacity as specified in the 60°C (140°F) column of Table 400.5(A)(2).
- (3) Have an overall length as specified in either of the following:
 - (4) When the interrupting device of the personnel protection system is located within the enclosure of the supply equipment or charging system, the power-supply cord shall be not more than the length indicated in either of the following:
 - (5) For portable equipment in accordance with 625.44(A), the power-supply cord shall be not more than 300 mm (12 in.) long.
 - (6) For hand fastened equipment in accordance with 625.44(B), the power-supply cord shall be not more than 1.8 m (6 ft) long and the equipment shall be installed at a height that prevents the power-supply cord from contacting the floor when it is connected to the proper receptacle.
 - (7) When the interrupting device of the personnel protection system is located at the attachment plug, or within the first 300 mm (12 in.) of the power-supply cord, the overall cord length shall be not greater than 4.6 m (15 ft).
- (8) Contain a thermal sensor in the plug end able to modulate or disable charging on an overtemperature event. The temperature cutoff points must be documented on the rating label and on the plug end.

Statement of Problem and Substantiation for Public Input

First, this is already common among higher end cord sets, such as those from Tesla. The goal of this PI is to lead the product standards to incorporate thermal sensors even for the low end units sold by retailers such as Amazon or Temu.

Second, the most brief investigation into EVSE safety shows a multitude of melted receptacle reports, including those that led to serious damage. During the recent Standards Council Decision 25-2 Task Group investigations into EVSE safety: this issue rose right to the top in terms of observable impact.

The technology is widely available and affordable, requiring two extra wires in the cord and a low cost NTC type thermal sensor.

I propose that the details of the cutoff points are best left to the product standards.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
Public Input No. 3689-NFPA 70-2026 [Section No. 624.54]	

Submitter Information Verification

Submitter Full Name: Bryce Nesbitt

Organization: Obviously Technical Inspections & EV Plugbox LLC
Member of National Charging Access Coalition & EV Charging

Affiliation: for All Coalition, removing barriers to wider home apartment and HOA charging access.

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Submittal Date: Wed Apr 08 19:07:04 EDT 2026

Committee: NEC-P12



Public Input No. 2708-NFPA 70-2026 [Section No. 625.17(B)]

(B) Output Cable to Electric Vehicles.

The output cable to electric vehicles shall be ~~one of the following~~ :

- (1) ~~Listed Type EV, EVJ, EVE, EVJE, EVT, or EVJT flexible cable as specified in Table 400.4~~
- (2) An integral part of listed electric vehicle supply equipment

~~Informational Note No. 1: See UL 2594, *Standard for Electric Vehicle Supply Equipment*, for information on conductive electric vehicle supply equipment.~~

~~Informational Note No. 2: See UL 2202, *Standard for Electric Vehicle (EV) Charging System Equipment*, for information on conductive electric vehicle charging equipment.~~

Statement of Problem and Substantiation for Public Input

Per our comments on 625.1, 625.5, per NEC Style Manual 2.1.10.5, and per section 90.7 Informational Note 2, the appropriate location for reference to listing standards is Annex A.1(2), UL 2594 is already listed there, and UL 2594 already lists EV, EVJ, EVE, EVJE, EVT or EVJT in clause 13.1.8, so neither subdivision 1 nor the informational note are appropriate.

If the concern is alteration or damage to the output cable to the EV, then qualify sentence (1) accordingly to avoid conflict with 90.7.

Submitter Information Verification

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Submittal Date: Sun Apr 05 17:14:22 EDT 2026

Committee: NEC-P12



Public Input No. 3347-NFPA 70-2026 [Section No. 625.17(B)]

~~(B) Output Cable to Electric Vehicles:~~

~~The output cable to electric vehicles shall be one of the following:~~

- ~~(1) Listed Type EV, EVJ, EVE, EVJE, EVT, or EVJT flexible cable as specified in Table 400.4~~
- ~~(2) An integral part of listed electric vehicle supply equipment~~

~~Informational Note No. 1: See UL 2594, *Standard for Electric Vehicle Supply Equipment*, for information on conductive electric vehicle supply equipment.~~

~~Informational Note No. 2: See UL 2202, *Standard for Electric Vehicle (EV) Charging System Equipment*, for information on conductive electric vehicle charging equipment.~~

Statement of Problem and Substantiation for Public Input

Strike this section as it adds words but unclear actionable value to the NEC code, and for readers and users of the code. This topic is covered by the product standards and the product standards are more tightly tied to EVSE design and evolution of EVSE design.

There are new options that are not necessarily “integral” to the EVSE.

Submitter Information Verification

Submitter Full Name: Bryce Nesbitt

Organization: EV Plugbox LLC

Affiliation: No conflict of interest with any particular EVSE vendor.

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Submittal Date: Wed Apr 08 19:32:33 EDT 2026

Committee: NEC-P12



Public Input No. 2710-NFPA 70-2026 [Section No. 625.17(C)(1)]

~~(1)– Portable Equipment:~~

~~For portable EVSE, the cord-exposed usable length shall be measured from the face of the attachment plug to the face of the electric vehicle connector.~~

Statement of Problem and Substantiation for Public Input

Per our comments on 90.2, 625.1, 625.60, referencing 90.4, 90.7, etc., the NEC does not regulate approved equipment unless there is evidence of alteration or damage. Therefore this subdivision should either be restricted to situations of alteration within the scope of the NEC (we don't see how that would apply for portable equipment) or be deleted.

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Submittal Date: Sun Apr 05 17:38:15 EDT 2026

Committee: NEC-P12



Public Input No. 2709-NFPA 70-2026 [Section No. 625.17(C) [Excluding any Sub-Sections]]

~~The~~ Where power-supply cords or output cables to the EV are altered or replaced, the overall usable length shall not exceed 7.5 m (25 ft) unless equipped with a cable management system that is part of the listed electric vehicle supply equipment.

Statement of Problem and Substantiation for Public Input

Per our input on prior subdivisions and sections, the only situation that does not conflict with section 90.7 is where the cord or cable is altered.

Submitter Information Verification

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Submittal Date: Sun Apr 05 17:34:58 EDT 2026

Committee: NEC-P12



Public Input No. 3344-NFPA 70-2026 [Section No. 625.17(C) [Excluding any Sub-Sections]]

The overall usable length shall not exceed 7.5 m (25 ft) unless equipped with a cable management system that is part of the listed listed for use with electric vehicle supply equipment.

Statement of Problem and Substantiation for Public Input

Our firm designs, specifies, contracts for or installs both public and multifamily EV charging systems.

EVSE and support pedestals have become sufficiently standardized such that pedestals are interchangeable between brands, and we'll often use mixed brands to get the best of breed for each component.

When using a retractor, extra cord length is often needed. We may be required, or prefer, to use a brand of EVSE that does not have a listed cable management system from the vendor. We see no modern day justification for requiring the cable management and EVSE to be from the same vendor or part of the same listing. They're two different things.

Beyond that: the 7.5m limit has had unintended consequences all but begging users to purchase shady Amazon or Temu extension cords. The net result is demonstrably less safe than if the EVSE had the proper cord length in the first place.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
Public Input No. 3345-NFPA 70-2026 [Section No. 624.17(B)(2)]	
Public Input No. 3346-NFPA 70-2026 [Section No. 624.17(B)(2)]	
Public Input No. 3689-NFPA 70-2026 [Section No. 624.54]	

Submitter Information Verification

Submitter Full Name: Bryce Nesbitt

Organization: Obviously Technical Inspections & EV Plugbox LLC

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Submittal Date: Wed Apr 08 19:20:11 EDT 2026

Committee: NEC-P12



Public Input No. 1953-NFPA 70-2026 [Section No. 625.40]

625.40 Electric Vehicle Branch Circuit.

Each outlet installed for the purpose of supplying EVSE greater than 16 amperes ~~or 120 volts~~ shall be supplied by an individual branch circuit.

Exception: Branch circuits shall be permitted to feed multiple EVSEs as permitted by 625.42(A) or 625.42(B).

Statement of Problem and Substantiation for Public Input

Because Article 625 also recognizes equipment connected by receptacle outlets rated 60 volts dc maximum, 15 or 20 amperes, the phrase "or 120 volts" or any voltage for that matter is not a logical threshold. The requirement is current based and should apply to branch circuits of any voltage.

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Submittal Date: Thu Mar 26 21:45:36 EDT 2026

Committee: NEC-P12



Public Input No. 2712-NFPA 70-2026 [Section No. 625.40]

625.40 Electric Vehicle Branch Circuit.

Each outlet installed for the purpose of supplying ~~EVSE-greater~~ electric vehicle power transfer system equipment greater than 16 amperes or 120 volts shall be supplied by an individual branch circuit.

Exception: Branch circuits shall be permitted to feed multiple EVSEs as permitted by 625.42(A) or 625.42(B).

Statement of Problem and Substantiation for Public Input

EVSE only cover conductive AC charging, so presumably you wish to expand this requirement to WPTE, EVPE, DCFC, pantographs, etc.

Submitter Information Verification

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Submittal Date: Sun Apr 05 18:20:26 EDT 2026

Committee: NEC-P12



Public Input No. 217-NFPA 70-2025 [Section No. 625.41]

~~625.41~~ Continuous Loads:

~~EVSE and WPTE, including bidirectional EVSE and WPTE, shall be considered continuous loads.~~

Statement of Problem and Substantiation for Public Input

Placing continuous load calculation requirements in a new section in Article 120 (section 120.2), rather than peppering the continuous load requirements in other Articles, increases usability and clarity and closes the opportunity for discrepancies.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
Public Input No. 206-NFPA 70-2025 [New Article after 120]	
Public Input No. 206-NFPA 70-2025 [New Article after 120]	
Public Input No. 207-NFPA 70-2025 [Section No. 120.4]	

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Submission Date: Mon Nov 17 12:46:59 EST 2025

Committee: NEC-P12



Public Input No. 2713-NFPA 70-2026 [Section No. 625.41]

625.41 Continuous Loads.

EVSE and WPTE, including bidirectional EVSE and WPTE when charging , shall be considered continuous loads.

Exception: when controlled by a PCS with load management, only the load permitted to be continuous need be considered continuous.

Statement of Problem and Substantiation for Public Input

Especially for DCFC, pantographs, in-motion wireless, and other heavy-duty vehicle, or enroute charging applications, it is common to use PCS with load management to permit the fastest charging possible.

Only if very large, or multiple vehicles, are charging is sustained load possible, but the PCS/LM control can reduce the load if it is sustained such that it is not necessary to consider the load continuous.

Many passenger EVs are capable of refilling to a point well past peak load (charging rate) in ten minutes or so, such that the peak load is not sustained and need not be considered when a PCS/LM ensures that such load cannot persist.

In general even large HD fleet vehicles will not sustain, nor need to sustain, fast charging (high load) for long enough to be worried about continuous load, and again such installations will usually incorporate PCS/LM for other reasons (demand charge management, BESS usage, etc.).

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Submittal Date: Sun Apr 05 18:23:52 EDT 2026

Committee: NEC-P12



Public Input No. 677-NFPA 70-2026 [Sections 625.41, 625.42]

Sections 625.41, 625.42

625.41 Continuous Loads.

EVSE and WPTE, including bidirectional EVSE and WPTE, shall be considered continuous loads for branch circuit sizing.

625.42 Rating.

The service, feeder, and branch circuit supplying EVSE shall have sufficient rating to supply the load served at 100 percent of the entire load served, unless the overall rating of the installation can be limited through controls as permitted by 625.42(A) or 625.42(B).

(A) Power Control Systems (PCS).

All PCS used to provide load management of EVSE shall comply with Article 130 Part II and the maximum equipment load on a service, feeder, and branch circuit shall be the maximum load permitted by the PCS. The PCS shall be permitted to be integral to one piece of equipment or integral to a listed system consisting of more than one piece of equipment. When one or more pieces of equipment are provided with an integral load management control, the system shall be marked to indicate this control is provided.

Exception: Network residing software that directs and limits EVSE output shall be permitted to be used as a PCS for fleets of three or more vehicles.

(B) EVSE with Adjustable Settings.

EVSE with a current adjustment setting shall be permitted if restricted access to the adjustment setting is accomplished by at least one of the methods permitted in 130.70(B). If the adjusted current setting has an impact on the rating label, those changes shall be in accordance with manufacturer's instructions, and the adjusted current setting shall appear on the field-installed rating label in accordance with 110.21. EVSE as referenced shall be permitted to have a current rating that is equal to the adjusted current setting. For equipment other than self-adjusting, the current adjustment setting shall be set at the time of installation and shall only be readjusted by a qualified person.

Informational Note: An example of a current adjustment setting is an EVSE that has the capability of being set to a maximum of 80A but is adjusted to a 40A maximum output to match the 50A branch circuit supplying the EVSE.

Statement of Problem and Substantiation for Public Input

The 2 sections appear to create confusion as section 625.41 states the load to be considered continuous but section 625.42 include feeders but only states "the load served". many people are taking it to mean that the entire load is to be considered continuous and apply 125% to the entire load. The suggested edit would help to clarify the rating for a feeder.

Submitter Information Verification

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Submittal Date: Thu Jan 22 09:45:02 EST 2026

Committee: NEC-P12



Public Input No. 2647-NFPA 70-2026 [Section No. 625.42]

625.42 Rating.

The service, feeder, and branch circuit supplying EVSE shall have sufficient rating to supply the load served, unless the overall rating of the installation can be limited through controls as permitted by ~~625.42(A) or 625.42(B)~~.

~~(A) Power Control Systems (PCS):~~

~~All PCS used to provide load management of EVSE shall comply with Article 130 Part II and the maximum equipment load on a service, feeder, and branch circuit shall be the maximum load permitted by the PCS. The PCS shall be permitted to be integral to one piece of equipment or integral to a listed system consisting of more than one piece of equipment. When one or more pieces of equipment are provided with an integral load management control, the system shall be marked to indicate this control is provided.~~

~~Exception: Network residing software that directs and limits EVSE output shall be permitted to be used as a PCS for fleets of three or more vehicles.~~

~~(B) EVSE with Adjustable Settings:~~

~~EVSE with a current adjustment setting shall be permitted if restricted access to the adjustment setting is accomplished by at least one of the methods permitted in 130.70(B). If the adjusted current setting has an impact on the rating label, those changes shall be in accordance with manufacturer's instructions, and the adjusted current setting shall appear on the field-installed rating label in accordance with 110.21. EVSE as referenced shall be permitted to have a current rating that is equal to the adjusted current setting. For equipment other than self-adjusting, the current adjustment setting shall be set at the time of installation and shall only be readjusted by a qualified person.~~

~~Informational Note: An example of a current adjustment setting is an EVSE that has the capability of being set to a maximum of 80A but is adjusted to a 40A maximum output to match the 50A branch circuit supplying the EVSE.~~

~~served in accordance with Article 120 Parts I through IV.~~

Statement of Problem and Substantiation for Public Input

Both 625.42(A) and 625.42(B) refer to power control system functionality and restrictions already covered by section 120.7, Article 130 Part II, and UL 3141. This includes system configuration requirements, marking requirements, and access to adjustable control settings. These requirements should be maintained in the governing Article and system safety standard.

Submitter Information Verification

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Submission Date: Sat Apr 04 14:40:57 EDT 2026

Committee: NEC-P12



Public Input No. 3015-NFPA 70-2026 [Section No. 625.42]

625.42 Rating.

The service, feeder, and branch circuit supplying EVSE shall have sufficient rating to supply the load served, unless the overall rating of the installation can be limited through controls as permitted by 625.42(A) or 625.42(B).

(A) Power Control Systems (PCS).

All PCS used to provide load management of EVSE shall comply with Article 130 Part II- ~~and the~~ . The maximum equipment load on a service, feeder, and branch circuit shall be the maximum load permitted by the PCS in accordance with 120.7. The PCS shall be permitted to be integral to one piece of equipment or integral to a listed system consisting of more than one piece of equipment. When one or more pieces of equipment are provided with an integral load management control, the system shall be marked to indicate this control is provided.

~~Exception: Network residing software that directs and limits EVSE output shall be permitted to be used as a PCS for fleets of three or more vehicles.~~

(B) EVSE with Adjustable Settings.

An EVSE with a current adjustment setting shall be permitted

~~if restricted access to the adjustment setting is accomplished by at least one of the methods permitted in 130.70(B). If~~

to be accessed only by qualified persons through methods specified in accordance with its listing. If the adjusted current setting has an impact on the rating label, those changes shall be in accordance with manufacturer's instructions, and the adjusted current setting shall appear on the field-installed rating label in accordance with 110.21 . EVSE as referenced shall be permitted to have a current rating that is equal to the adjusted current setting. For equipment other than self-adjusting, the current adjustment setting shall be set at the time of installation and shall only be readjusted by a qualified person. Systems where current adjustment settings control more than one EVSE shall comply with 625.42(A).

Informational Note: An example of a current adjustment setting is an EVSE that has the capability of being set to a maximum of 80A but is adjusted to a 40A maximum output to match the 50A branch circuit supplying the EVSE.

Additional Proposed Changes

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
625.42_PI_Final.docx	original edits in word format	

Statement of Problem and Substantiation for Public Input

625.42(A) has been modified to split the 1st sentence into two separate sentences for clarity. The 2nd sentence regarding the maximum load permitted by the PCS has been revised to reference 120.7 since this is the requirement for PCS overload control setting for load calculations utilizing a PCS. The exception has been deleted as there should not be a duplicate requirement for the use of PCS within Article 625. The references in 625.42(A) already correctly reference Article 130, Part II for PCS requirements. The listing of a PCS will evaluate critical software and communications of the PCS.

130.70(B) (2026 Edition) was based on requirements from 750.30(C)(3) in the 2023 edition of the NEC for adjustable settings. In this PI, the reference to 130.70(B) is deleted, as the use of a PCS for EVSE adjustable settings is no longer addressed by PCS requirements. A new sentence was added to refer to the EVSE listing as the means to set a requirement for qualified persons making the adjustment to

the EVSE's current setting. This wording is based on 130.70(B) in the 2026 NEC.

Lastly, a 2nd new sentence was added to the end of 625.42(B) to make it clear that if more than one EVSE is controlled by an adjustable control setting, that the system shall comply with 625.42(B) where PCS requirements would be applicable at the system level. Note the word "An" was also added to the first sentence of 625.42(A) to make it clear that EVSE adjustable current settings pertain to a single EVSE, and not to system level control where a PCS is required.

Submitter Information Verification

Submitter Full Name: Scott Picco

Organization: UL Solutions

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City:

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Submittal Date: Tue Apr 07 15:19:53 EDT 2026

Committee: NEC-P12

625.42 Rating.

The service, feeder, and branch circuit supplying EVSE shall have sufficient rating to supply the load served, unless the overall rating of the installation can be limited through controls as permitted by [625.42\(A\)](#) or [625.42\(B\)](#).

(A) Power Control Systems (PCS).

All PCS used to provide load management of EVSE shall comply with Article [130](#) Part II. ~~and~~ ~~The~~ the maximum equipment load on a service, feeder, and branch circuit shall be the maximum load permitted by the PCS ~~in accordance with 120.7~~. The PCS shall be permitted to be integral to one piece of equipment or integral to a listed system consisting of more than one piece of equipment. When one or more pieces of equipment are provided with an integral load management control, the system shall be marked to indicate this control is provided.

Exception:-

~~Network residing software that directs and limits EVSE output shall be permitted to be used as a PCS for fleets of three or more vehicles.~~

(B) EVSE with Adjustable Settings.

~~An~~ EVSE with a current adjustment setting shall be permitted ~~to be accessed only if restricted access to the adjustment setting is accomplished by qualified persons~~ ~~through methods specified in accordance with its listing. at least one of the methods permitted in 130.70(B)~~. If the adjusted current setting has an impact on the rating label, those changes shall be in accordance with manufacturer's instructions, and the adjusted current setting shall appear on the field-installed rating label in accordance with [110.21](#). EVSE as referenced shall be permitted to have a current rating that is equal to the adjusted current setting. For equipment other than self-adjusting, the current adjustment setting shall be set at the time of installation and shall only be readjusted by a qualified person. ~~Systems where current adjustment settings control more than one EVSE shall comply with 625.42(A).~~

Informational Note: An example of a current adjustment setting is an EVSE that has the capability of being set to a maximum of 80A but is adjusted to a 40A maximum output to match the 50A branch circuit supplying the EVSE.

Statement of Problem and Substantiation for Public Comment

625.42(A) has been modified to split the 1st sentence into two separate sentences for clarity. The 2nd sentence regarding the maximum load permitted by the PCS has been

revised to reference 120.7 since this is the requirement for PCS overload control setting for load calculations utilizing a PCS.

The exception has been deleted as there should not be a duplicate requirement for the use of PCS within Article 625. The references in 625.42(A) already correctly reference Article 130, Part II for PCS requirements. The listing of a PCS will evaluate critical software and communications of the PCS.

130.70(B) (2026 Edition) was based on requirements from 750.30(C)(3) in the 2023 edition of the NEC for adjustable settings. In this PI, the reference to 130.70(B) is deleted, as the use of a PCS for EVSE adjustable settings is no longer addressed by PCS requirements. A new sentence was added to refer to the EVSE listing as the means to set a requirement for qualified persons making the adjustment to the EVSE's current setting. This wording is based on 130.70(B) in the 2026 NEC.

Lastly, a 2nd new sentence was added to the end of 625.42(B) to make it clear that if more than one EVSE is controlled by an adjustable control setting, that the system shall comply with 625.42(B) where PCS requirements would be applicable at the system level. Note the word "An" was also added to the first sentence of 625.42(A) to make it clear that EVSE adjustable current settings pertain to a single EVSE, and not to system level control where a PCS is required.



Public Input No. 3650-NFPA 70-2026 [Section No. 625.42]

625.42 Rating.

The service, feeder, and branch circuit supplying EVSE shall have sufficient rating to supply the load served, unless the overall rating of the installation can be limited through controls as permitted by 625.42(A) or 625.42(B) as modified by 625.42(C).

(A) Power Control Systems (PCS).

All PCS used to provide load management of EVSE shall comply with Article 130 Part II and the maximum equipment load on a service, feeder, and branch circuit shall be the maximum load permitted by the PCS. The PCS shall be permitted to be integral to one piece of equipment or integral to a listed system consisting of more than one piece of equipment. When one or more pieces of equipment are provided with an integral load management control, the system shall be marked to indicate this control is provided.

Exception: Network residing software that directs and limits EVSE output shall be permitted to be used as a PCS for fleets of three or more vehicles.

(B) EVSE with Adjustable Settings.

EVSE with a current adjustment setting shall be permitted if restricted access to the adjustment setting is accomplished by at least one of the methods permitted in 130.70(B). If the adjusted current setting has an impact on the rating label, those changes shall be in accordance with manufacturer's instructions, and the adjusted current setting shall appear on the field-installed rating label in accordance with 110.21. EVSE as referenced shall be permitted to have a current rating that is equal to the adjusted current setting. For equipment other than self-adjusting, the current adjustment setting shall be set at the time of installation and shall only be readjusted by a qualified person.

(C). All power limitation settings must be field verifiable by qualified persons using only information left on site, tools to access any covers and a common smartphone. Settings must comply with 625.42(A)(1)-(4) as applicable.

- (1) A smartphone connection to equipment is permissible, provided all information required to access view-only settings is durably attached to the equipment.
- (2) Technical documentation on settings must be durably affixed to the equipment.
- (3) If a form of authentication is required to adjust settings, a label must be attached to the equipment with contact information for the responsible parties.
- (4) Cloud based systems must be field configured to report power control setting changes to the cloud based host.

Informational Note: An example of a current adjustment setting is an EVSE that has the capability of being set to a maximum of 80A but is adjusted to a 40A maximum output to match the 50A branch circuit supplying the EVSE.

Statement of Problem and Substantiation for Public Input

Substantiation

Recently in the field I googled for the meaning of rotary limiting switch position 2 on a Cyberswitching EVSE. Turns out different production years of the same EVSE model had different meanings of rotary switch position 2. I almost set the EVSE for the incorrect ampacity. There was no local label on the rotary switch.

What if it has been years later? It is hard enough figuring out old electrical systems where every wire, breaker and panel have well understood printed rating labels and colors.

Power control systems and adjustable devices are black boxes. Years or decades later we may be called to diagnose, extend or repair such equipment. Without visibility into the internal settings, and with equipment from a company that may be long out of business, we will be unable to do our jobs. These settings matter a lot. Field validation is important.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
<u>Public Input No. 3666-NFPA 70-2026 [Section No. 120.7]</u>	

Submitter Information Verification

Submitter Full Name: Bryce Nesbitt
Organization: Obviously Technical Inspections / EV Plugbox LLC
Affiliation: Member InterNACHI, home inspector organization, but writing as an individual.
Street Address:
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Submittal Date: Thu Apr 09 15:59:53 EDT 2026
Committee: NEC-P12



Public Input No. 1772-NFPA 70-2026 [Section No. 625.42(A)]

(A) Power Control Systems (PCS).

All PCS used to provide load management of EVSE shall comply with Article 130 Part II and the maximum equipment load on a service, feeder, and branch circuit shall be the maximum load permitted by the PCS. The PCS shall be permitted to be integral to one piece of equipment or integral to a listed system consisting of more than one piece of equipment. When one or more pieces of equipment are provided with an integral load management control, the system shall be marked to indicate this control is provided.

~~Exception: Network residing software that directs and limits EVSE output shall be permitted to be used as a PCS for fleets of three or more vehicles.~~

Statement of Problem and Substantiation for Public Input

This exemption may be interpreted as allowing equipment that meets these requirements from having to comply with the requirements of this section, which could be used to avoid PCS listing requirements despite this equipment/software performing the same active safety functions including controls to prevent overload as a PCS. This exemption should be removed to clearly require any equipment or systems that are performing these active safety functions to be evaluated and listed to do so.

Submitter Information Verification

Submitter Full Name: Alexander Jahp

Organization:

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Submittal Date: Fri Mar 20 14:28:06 EDT 2026

Committee: NEC-P12



Public Input No. 2717-NFPA 70-2026 [Section No. 625.42(A)]

(A) Power Control Systems (PCS).

All PCS used to provide load management of ~~EVSE- EV power transfer system equipment~~ shall comply with Article 130 Part II and the ~~maximum equipment load- calculated load~~ on a service, feeder, and branch circuit shall be ~~permitted to be~~ the maximum load permitted by the PCS. The PCS shall be permitted to be integral to one piece of equipment or integral to a listed system consisting of more than one piece of equipment. When one or more pieces of equipment are provided with an integral load management control, the system shall be marked to indicate this control is provided.

Exception: Network residing software that directs and limits EVSE output shall be permitted to be used as a PCS for fleets of three or more vehicles.

Statement of Problem and Substantiation for Public Input

EVSE only covers conductive AC charging, but PCS/LM is applicable to EVPE, bidirectional, WPTE, DCFC, pantographs, etc. so it's best to use the generic EV power transfer system equipment term. Note that you think (along with section 120.7, and others) that Article 130 Part II covers Load Management, but Section 705.13 thinks it covers paralleling of multiple sources (the original scope of UL 3141 as approved by ANSI), so the Correlating Committee needs to address the inconsistency across multiple CMPs.

Note that multisource PCS may not have Load Management, and for the charging mode which this subdivision attempts to regulate is based on load management.

Submitter Information Verification

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Affiliation: Chargepoint Inc.

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Submittal Date: Sun Apr 05 19:29:47 EDT 2026

Committee: NEC-P12



Public Input No. 2841-NFPA 70-2026 [Section No. 625.42(A)]

(A) Power Control Systems (PCS).

All PCS used to provide load management of EVSE shall comply with Article 130 Part II and the maximum equipment load on a service, feeder, and branch circuit shall be the maximum load permitted by the PCS. ~~The PCS shall be permitted to be integral to one piece of equipment or integral to a listed system consisting of more than one piece of equipment.~~ When one or more pieces of equipment are provided with an integral load management control, the system shall be marked to indicate this control is provided.

Exception: Network residing software that directs and limits EVSE output shall be permitted to be used as a PCS for fleets of three or more vehicles.

Statement of Problem and Substantiation for Public Input

This language is confusing as written, will be addressed during the certification process, and should be removed from Article 625. If necessary, this language should be moved to Article 130.

Submitter Information Verification

Submitter Full Name: Alexander Jahp

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Submittal Date: Mon Apr 06 14:14:22 EDT 2026

Committee: NEC-P12



Public Input No. 2718-NFPA 70-2026 [Section No. 625.42(B)]

(B) ~~EVSE with~~ EV Power Transfer System Equipment with Adjustable Settings.

~~EVSE~~ EV power transfer system equipment with a current adjustment setting shall be permitted if restricted access to the adjustment setting is accomplished ~~by at least one of the methods as~~ permitted in 130.70(B). If the adjusted current setting has an impact on the rating label, those changes shall be in accordance with manufacturer's instructions, and the adjusted current setting shall appear on ~~the~~ a field-installed rating label as durable and permanently affixed as in accordance with 110.21. EVSE as referenced shall be permitted to have a current rating that is equal to the adjusted current setting. For equipment other than self-adjusting, the current adjustment setting shall be set at the time of installation and shall only be readjusted by a qualified person.

Informational Note: An example of a current adjustment setting is an EVSE that has the capability of being set to a maximum of 80A but is adjusted to a 40A maximum output to match the 50A branch circuit supplying the EVSE.

Statement of Problem and Substantiation for Public Input

EVSE only cover conductively connected AC equipment, but we suspect you wish to consider WPTE, DCFC, bidirectional (not currently part of UL 2594), etc., so it's best to use the generic EVPTSE terminology.

Section 110.21 wrt Field-Applied Markings only covers hazard warnings, not ratings, so the portions we suspect you intend are the durability and permanently affixed attributes.

You may also mean to permit the setting to be handwritten, but we're not sure.

Where the adjustable setting is combined with PCS/LM you may wish to clarify that the indicated setting is a maximum current since it may often be reduced due to PCS/LM control.

Submitter Information Verification

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Submittal Date: Sun Apr 05 19:39:09 EDT 2026

Committee: NEC-P12



Public Input No. 757-NFPA 70-2026 [Section No. 625.42(B)]

(B) EVSE with Adjustable Settings.

EVSE with a current adjustment setting shall be permitted if restricted access to the adjustment setting is accomplished by at least one of the methods permitted in 130.70(B). If the adjusted current setting has an impact on the rating label, those changes shall be in accordance with manufacturer's instructions, and the adjusted current setting shall appear on the field-installed rating label required by 625.5 in accordance with 110.21. EVSE as referenced shall be permitted to have a current rating that is equal to the adjusted current setting. For equipment other than self-adjusting, the current adjustment setting shall be set at the time of installation and shall only be readjusted by a qualified person.

Informational Note: An example of a current adjustment setting is an EVSE that has the capability of being set to a maximum of 80A but is adjusted to a 40A maximum output to match the 50A branch circuit supplying the EVSE.

Statement of Problem and Substantiation for Public Input

This proposal adds a reference to 625.5 in Section 625.42(B) to clarify where the adjusted current setting is required to be marked. Section 625.42(B) addresses the adjustment of current settings; however, it does not currently direct the installer to the applicable marking requirements.

Including a reference to Section 625.5 ensures that installers are aware of the requirement to properly mark the adjusted current setting and understand where and how this marking is to be applied. This improves usability and reduces the likelihood of incomplete installations. This revision enhances clarity, promotes compliance with existing marking requirements, and ensures consistent application without introducing a new technical requirement.

Submitter Information Verification

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Submission Date: Sun Jan 25 11:41:53 EST 2026

Committee: NEC-P12



Public Input No. 2714-NFPA 70-2026 [Section No. 625.42 [Excluding any Sub-Sections]]

The service, feeder, and branch circuit supplying ~~EVSE shall~~ electric vehicle power transfer system equipment shall have sufficient rating to supply the load served, or source served, unless the overall rating of the installation can be limited through controls as permitted by 625.42(A) or 625.42(B).

Statement of Problem and Substantiation for Public Input

In order to include WPTE, DCFC, etc., and EVPE / bi-directionality, it'd be preferred to use the generic EV power transfer system equipment terminology as EVSE only covers conductive AC charging, and EVPE only covers supply sourcing, but EVPTSE can be either or both.

Submitter Information Verification

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Affiliation: Chargepoint Inc.

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Submittal Date: Sun Apr 05 18:38:52 EDT 2026

Committee: NEC-P12



Public Input No. 2920-NFPA 70-2026 [Section No. 625.43(A)]

(A) General.

EVSE and WPTE shall be provided with one or more disconnecting means in accordance with 625.43(B) through 625.43(D), as applicable and shall be listed as Continuous Duty.

Statement of Problem and Substantiation for Public Input

Continuous loads have long been established as running 3 hours or more at maximum current. However here has been growth in heavier continuous duty loads that run much longer and are over-stressing listed equipment. Solar, EV Charging, and heat pumps with electric auxiliary heat have shown to be the main examples of this new type of load.

This equipment is often installed where proper application of conductors and breakers in elevated ambient requires derating factors that are missed adding to the stress put on the electrical equipment tied to the circuits feeding the loads.

In addition, these types of loads are growing in use at a fast pace only to make this more of an issue as time passes.

A preliminary search of the internet for product reviews, forums, and government injury data produced several instances of this issue. This approach was taken since most of the fires associated with these failures are not reported to most reporting organizations, rather included in fire and insurance reports. The links to these examples are included below.

Certain information referenced herein is derived from publicly available sources. Such information was not created by Eaton and has not been independently verified for accuracy or completeness. References are provided for illustrative purposes only. Eaton does not adopt or endorse any third party statements or conclusions.

https://www.reddit.com/r/AskElectricians/comments/15yhtz8/breaker_for_ev_charger_melted/
https://www.reddit.com/r/electrical/comments/1ov9v4w/tesla_charger_breaker_help/
https://www.reddit.com/r/AskElectricians/comments/17glci8/tesla_wall_connector_60_amp_breaker_melt_down/
https://www.reddit.com/r/evcharging/comments/1exbs42/my_electrical_panel_and_breaker_burned_not_sure/
<https://teslamotorsclub.com/tmc/threads/tesla-wall-charger-breaker-caught-fire.271291/page-2>
https://www.amazon.ca/THQL2160-Electric-Standard-Magnetic-Protection/dp/B0DR7V5Q3N/ref=pd_lpo_d_scc_1/138-6029230-0292466?pd_rd_w=nBFRy&content-id=amzn1.sym.d3f44101-6e04-446e-916c-a6ec5616982b&pf_rd_p=d3f44101-6e04-446e-916c-a6ec5616982b&pf_rd_r=92ZRH4EFEB6HV4EHVJ6&pd_rd_wg=qXKqR&pd_rd_r=99f8813f-e0c6-4349-a2a0-65c99f510559&pd_rd_i=B0DR7V5Q3N&psc=1
<https://www.facebook.com/electricaltechnology.info/posts/ch-or-br-which-one-do-you-prefer-and-whykey-difference-%EF%B8%8F%EF%B8%8F%EF%B8%8Fpanel-loadcenter-panel/1206559321649216/>
<https://www.applianceproblem.com/siemens/circuit-breakers-fuses/>
<https://www.electricaltalk.com/threads/melting-busbar.59260/>
<https://teslamotorsclub.com/tmc/threads/psa-non-fused-ac-disconnects.256630/>
https://www.reddit.com/r/AskElectricians/comments/1lz6ism/what_happened_at_this_fused_disconnect_for_ev/
https://www.reddit.com/r/HVAC/comments/sckoxf/super_melted_disconnect_found/
<https://www.inspectorsjournal.com/topic/16464-melted-disconnect-cause/>
https://www.reddit.com/r/AskElectricians/comments/1lkqcdz/outside_solar_disconnect_meltdown/
https://www.reddit.com/r/solar/comments/1fjhkv7/solaredge_system_issues/
https://www.reddit.com/r/electrical/comments/1hqu4f0/hey_guys_was_just_wondering_what_it_is_that_im/
https://www.amazon.com/product-reviews/B000LF42NK/ref=acr_dp_hist_1?ie=UTF8&filterByStar=one_star&reviewerType=all_reviews
<https://www.solarpaneltalk.com/forum/solar-panels-for-home/solar-panel-system-equipment/442693->

ac-disconnect-wire-burned-out
https://www.reddit.com/r/HVAC/comments/hwg8eo/blown_fuse_and_melted_ac_disconnect_any_guesses/
<https://www.facebook.com/groups/237138492156724/posts/466534772550427/>

The following video link provides even further proof of issues happening on these applications across the entire circuit and multiple pieces of equipment involved. At 16:29 in this video you can hear a conclusion that some existing equipment is not suitable for the long running load profile associated with this application. This shows even further that these loads are straining equipment due to their long run times and it is already starting to become industry knowledge.

<https://youtu.be/zsbSj0a-BfE?si=QJVdkm6le9VtVA0x>

A similar issue was identified last cycle for receptacles used in EV charging applications. A new marking requirement, triggering new product standard requirements, was added to 625.44 to address this issue. Examples of these new product standard requirements include:

- Heat Stress where the samples are conditioned to high temperatures and must pass dielectric testing following
- Under Torque – a test at 80% of the device torque rating is performed and has to pass acceptable temperature rise
- Over Torque test – device is installed at 110% torque and shall pass insertion/extraction and dielectric breakdown.
- Termination construction – Phillips and slotted screw heads are prohibited

This will greatly advance the safety of the receptacles used in these applications; however, it did not address or harden the remaining equipment in the circuit including those upstream that will also be affected by this issue. This public input will continue the journey to update the NEC to the demands associated with these long running loads.

This is one of several proposals Eaton is submitting for the 2029 NEC to increase the safe installation of equipment with long run times. In addition to this public input Eaton is submitting proposals to 110.14, 240.4, 215.4, 215.5, 210.19, 210.20, and 230.42 to address further installation issues.

This proposal creates a new listing category for equipment that will be evaluated to heavier continuous duty testing. With this proposal the NEC will contain the marking requirement, and the product standards will be updated to require heavier testing and a marking for these applications. Proposals to the product standards will be submitted in parallel with this public input.

This public input is tied to other PIs in 240.83 (PI2917) and 404.20 (PI2918) for the equipment and 440.11(PI2919) and 690.13 (PI2921) for the end application. All these public inputs tied together will require this new product type and drive proper equipment evaluation along with installation requirements to require this type of equipment to be used.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 2917-NFPA 70-2026 [New Section after 240.83(E)]	PI on similar issue containing requirements in 240 for circuit breakers
Public Input No. 2918-NFPA 70-2026 [New Section after 404.20]	PI on similar issue containing requirements in 404 for switches
Public Input No. 2919-NFPA 70-2026 [Section No. 440.11]	PI on similar issue containing requirements in 440 heat pump with electric auxiliary heat
Public Input No. 2921-NFPA 70-2026 [Section No. 690.13(A)]	PI on similar issue containing requirements in 690 for PV
Public Input No. 2917-NFPA 70-2026 [New Section after 240.83(E)]	
Public Input No. 2918-NFPA 70-2026 [New Section after 404.20]	
Public Input No. 2919-NFPA 70-2026 [Section No. 440.11]	

Public Input No. 2921-NFPA 70-2026
[Section No. 690.13(A)]

Submitter Information Verification

Submitter Full Name: Todd Lottmann

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Submittal Date: Mon Apr 06 21:44:14 EDT 2026

Committee: NEC-P12



Public Input No. 2069-NFPA 70-2026 [Sections 625.43(B), 625.43(C)]

Sections 625.43(B), 625.43(C)

(B) Multifamily Dwellings.

For multifamily dwellings where multiple EVSE or WPTE are each served through individual disconnecting means, a ~~plaque~~ placard or directory shall be attached to each EVSE or WPTE and its corresponding disconnect clearly identifying which disconnect serves which EVSE or WPTE.

(C) Equipment Disconnects.

For permanently connected EVSE and WPTE, a disconnecting means shall be provided and installed in a readily accessible location. If the disconnecting means is installed remote from the equipment, a ~~plaque~~ placard or directory shall be installed on the equipment denoting the location of the disconnecting means. For cord- and plug-connected EVSE and WPTE, with a rating not exceeding 60 amperes or not exceeding 150 volts to ground, the cord and plug shall be permitted to serve as the disconnecting means. The disconnecting means shall be lockable open in accordance with 110.25.

Statement of Problem and Substantiation for Public Input

The word “plaque” is not the correct word in this context. It should be changed to “placard.” Plaque is either an accommodation that one hangs on their wall, the green stuff on one’s teeth, or something in a petri dish. A placard is a notice, such as a notice that a building is supplied by multiple sources of electricity.

Plaque

1

a: an ornamental brooch especially : the badge of an honorary order

b: a flat thin piece (as of metal) used for decoration

c: a commemorative or identifying inscribed tablet

2

a: a localized abnormal patch on a body part or surface

b: a sticky usually colorless film on teeth that is formed by and harbors bacteria

c: an atherosclerotic lesion

d: a histopathologic lesion of brain tissue that is characteristic of Alzheimer's disease and consists of a dense proteinaceous core composed primarily of beta-amyloid that is often surrounded and infiltrated by a cluster of degenerating axons and dendrites

3: a clear area in a bacterial culture produced by viral destruction of cells

Placard

1: a notice posted in a public place : poster

2: a small card or metal plaque

Submitter Information Verification

Submitter Full Name: Ryan Jackson

Organization: Ryan Jackson Electrical Training

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Submittal Date: Sun Mar 29 13:23:53 EDT 2026

Committee: NEC-P12



Public Input No. 676-NFPA 70-2026 [Section No. 625.43(C)]

(C) Equipment Disconnects.

For A permanently connected EVSE and WPTE, ~~a disconnecting~~ shall meet the following requirements:

- (1) A disconnecting means shall be provided and installed in a readily accessible location.
- (2) If the disconnecting means is installed remote from the equipment, a plaque or directory shall be installed on the equipment denoting the location of the disconnecting means.
- (3) For cord- and plug-connected EVSE and WPTE, with a rating not exceeding 60 amperes or not exceeding 150 volts to ground, the cord and plug shall be permitted to serve as the disconnecting means.
- (4) The disconnecting means shall be lockable open in accordance with 110.25.

Statement of Problem and Substantiation for Public Input

The current text has multiple requirements in one paragraph. Suggest putting items into a list for usability.

Submitter Information Verification

Submitter Full Name: Dennis Querry

Organization: Trinity River Authority of Tex

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City:

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Submittal Date: Thu Jan 22 09:28:28 EST 2026

Committee: NEC-P12



Public Input No. 1450-NFPA 70-2026 [Section No. 625.43(D)]

(D) Emergency Shutoff.

~~(1) Emergency Disconnect Devices.~~

For other than one- and two-family dwellings, all permanently connected EVSE and WPTE shall be provided with one or more

clearly identified

emergency

disconnect

shutoff devices or electrical disconnects

that meet

in accordance with (D)(1) or (D)(2):

(1) **Emergency Shutoff Devices.** Emergency shutoff devices shall comply with all of the following:

(1) **Be**

installed in a

(1) **readily accessible**

location

(1)

(2) **Be visible from the EVSE and WPTE equipment**

(3) **Located not less than 6.0 m (20 ft) nor more than 30.0 m (100 ft) from the EVSE and WPTE equipment**

and in sight from the equipment

- **Disconnect power to all EVSE and WPTE within sight of emergency shutoff**

(1)

Exception for 2 and 3: Alternative locations for the emergency shutoff devices shall be permitted based on specific site restrictions documented by a qualified person and approved by the authority having jurisdiction (AHJ).

(1) (4) **Be installed to shutoff power to all EVSE and WPTE and marked as follows:**

(2) (a.) **Be marked "EVSE EMERGENCY**

DISCONNECT"

(1)

(1) **SHUTOFF" and "WARNING: ELECTRIC VEHICLE(S) WILL REMAIN ENERGIZED"** in accordance with 110.22(A)

(2) (b.) **If the emergency shutoff device does not perform the emergency shutoff function to all EVSE and WPTE it shall indicate which EVSE and WPTE they provide the emergency shutoff function for.**

(2) (5) **Be a manual reset type**

Disconnect

Exception: An alternative reset type shutoff shall be permitted if approved by the authority having jurisdiction (AHJ).

- (1) (6) Be installed to disconnect all ungrounded conductors of the circuits simultaneously from the source of supply.

Informational Note: Emergency shutoffs are typically used to initiate opening of a disconnecting means resulting in interruption of power to the EVSE or WPTE rather than being the device that directly interrupts the power.

(2) Disconnecting Means Serving as Emergency Shutoff.

The disconnecting means required in accordance with 625.43(C) shall be permitted to serve as the emergency

disconnect

shutoff if it complies with all the requirements of 625.43(D)(1).

Additional Proposed Changes

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
Clean_625.43_D_Public_Input_Kendall_03112026.docx	625.43(D) Emergency Shutoffs - Cleaner Public Input than Terra	

Statement of Problem and Substantiation for Public Input

Word document was uploaded to overcome Terra and it's formatting issues.

This Public Input was created by a working group made of NEMA members and members of the Department of Homeland Security's Big City Fire Working Group to address first responders safety concerns and installation issues.

625.43(D) was rewritten for clarity and usability to comply with the NEC Style Manual where applicable.

A list format was used to comply with the NEC Style Manual Section 2.1.8. "Emergency Disconnect Devices" and "disconnect" was removed to avoid confusion with the equipment disconnect.

The distance requirements were clarified to be are from the EVSE and WPTE as opposed to general "equipment".

"In sight" and "within sight" were replaced by "visible" to avoid a correlation issue with Section 110.29 and 110.39 and the distance location specified in 625.43(D) of a minimum 20 feet to a maximum 100 feet. Visibility is defined in the Merriam-Webster Dictionary and includes the capability of being readily noticed and capability of affording an unobstructed view. Per 90.4 permits Article 625 to modified the requirements found in Article 110.

Two Exceptions were added to address the unforeseen applications such as existing structures that may cause difficulty complying with the requirements. For the Exceptions to be applicable, the local electrical officials along with the fire officials will be required to approve the installations. See the definition of an Authority Having Jurisdiction including the Informational Note in Article 100.

Labeling requirements were added that include identification of which EVSE and WPTE are shutoff as a result of the emergency shutoff function when multiple EVSE and WPTE are on site.

An Informational Note was added to clarify the difference between the disconnect and the emergency shutoff.

The proposed language intends to offer to the public a benefit that would lessen a recognized (known)

hazard or ameliorate a continuing dangerous condition or situation.

There are concerns that local officials will amend their local code requirements and remove 625.43(D) for Emergency Shutoffs because of its currently overly restrictive requirements around the locations of the Emergency Shutoff. An amendment could remove the Emergency Shutoff putting First Responders are at a higher risk of injury or death.

Submitter Information Verification

Submitter Full Name: David Kendall

Organization: ABB Inc.

Street Address:

City:

State:

Zip:

Submittal Date: Wed Mar 11 09:31:04 EDT 2026

Committee: NEC-P12

(D) Emergency Shutoff.

~~(1) Emergency Disconnect Devices.~~

For other than one- and two-family dwellings, all permanently connected EVSE and WPTE shall be provided with one or more ~~clearly identified emergency disconnect shutoff devices or electrical disconnects in accordance with (D)(1) or (D)(2).~~ that meet all of the following:

(1) Emergency Shutoff Devices. Emergency shutoff devices shall comply with all of the following:

- (1) Be readily accessible
- (2) Be visible from the EVSE and WPTE equipment
- (3) ~~(1) Be installed in a readily accessible location~~ located not less than 6.0 m (20 ft) nor more than 30.0 m (100 ft) from the EVSE and WPTE equipment and in sight from the equipment

Exception for 2 and 3 Alternative locations for the emergency shutoff devices shall be permitted based on specific site restrictions documented by a qualified person and approved by the authority having jurisdiction (AHJ).

(2) ~~(4) Disconnect~~ Be installed to shutoff power to all EVSE and WPTE within sight of emergency shutoff and marked as follows:

(3) a. Be marked "EVSE EMERGENCY SHUTOFF DISCONNECT" and "WARNING: ELECTRIC VEHICLE(S) WILL REMAIN ENERGIZED" in accordance with **110.22(A)**

b. If the emergency shutoff device does not perform the emergency shutoff function to all EVSE and WPTE it shall indicate which EVSE and WPTE they provide the emergency shutoff function for.

(4) ~~(5)~~ Be a manual reset type

Exception: An alternative reset type shutoff shall be permitted if approved by the authority having jurisdiction (AHJ).

(5) (6) Be installed to dDisconnect all ungrounded conductors of the circuits simultaneously from the source of supply

Informational Note: Emergency shutoffs are typically used to initiate opening of a disconnecting means resulting in interruption of power to the EVSE or WPTE rather than being the device that directly interrupts the power.

(2) Disconnecting Means Serving as Emergency Shutoff.

The disconnecting means required in accordance with **625.43(C)** shall be permitted to serve as the emergency disconnect shutoff if it complies with all the requirements of **625.43(D)(1)**.

Substantiation:

This Public Input was created by a working group made of NEMA members and members of the Department of Homeland Security's Big City Fire Working Group to address first responders safety concerns and installation issues.

625.43(D) was rewritten for clarity and usability to comply with the NEC Style Manual where applicable.

A list format was used to comply with the NEC Style Manual Section 2.1.8. "Emergency Disconnect Devices" and "disconnect" was removed to avoid confusion with the equipment disconnect.

The distance requirements were clarified to be ~~are~~ from the EVSE and WPTE as opposed to general "equipment".

"In sight" and "within sight" were replaced by "visible" to avoid a correlation issue with Section 110.29 and 110.39 and the distance location specified in 625.43(D) of a minimum 20 feet to a maximum 100 feet. Visibility is defined in the Merriam-Webster Dictionary and includes the capability of being readily noticed and capability of affording an unobstructed view. Per 90.4 permits Article 625 to modified the requirements found in Article 110.

Two Exceptions were added to address the unforeseen applications such as existing structures that may cause difficulty complying with the requirements. For the Exceptions to be applicable, the local electrical officials along with the fire officials will be required to approve the installations. See the definition of an Authority Having Jurisdiction including the Informational Note in Article 100.

Labeling requirements were added that include identification of which EVSE and WPTE are shutoff as a result of the emergency shutoff function when multiple EVSE and WPTE are on site.

An Informational Note was added to clarify the difference between the disconnect and the emergency shutoff.

The proposed language intends to offer to the public a benefit that would lessen a recognized (known) hazard or ameliorate a continuing dangerous condition or situation.

There are concerns that local officials will amend their local code requirements and remove 625.43(D) for Emergency Shutoffs because of its currently overly restrictive requirements around the locations of the Emergency Shutoff. An amendment could remove the Emergency Shutoff putting First Responders at a higher risk of injury or death.



Public Input No. 1827-NFPA 70-2026 [Section No. 625.43(D)]

(D) Emergency Shutoff.

(1) Emergency Disconnect Devices.

For other than one- and two-family dwellings, all permanently connected EVSE and WPTE shall be provided with one or more clearly identified emergency disconnect devices or electrical disconnects that meet all of the following:

- (1) Be installed in a ~~readily accessible location not less than 6.0 m (20 ft) nor more than 30.0 m (100 ft) from the equipment and in sight from the equipment location approved by the AHJ~~
- (2) Disconnect power to all EVSE and WPTE within sight of emergency shutoff
- (3) Be marked "EVSE EMERGENCY DISCONNECT" and "WARNING: ELECTRIC VEHICLE(S) WILL REMAIN ENERGIZED" in accordance with 110.22(A)
- (4) Be a manual reset type
- (5) Disconnect all ungrounded conductors of the circuits simultaneously from the source of supply

(2) Disconnecting Means Serving as Emergency Shutoff.

The disconnecting means required in accordance with 625.43(C) shall be permitted to serve as the emergency disconnect if it complies with all the requirements of 625.43(D).

Additional Proposed Changes

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
Charger_Disconnect_issue.pdf	Layout of commercial EVSE installation	

Statement of Problem and Substantiation for Public Input

The requirements for emergency disconnect location added in 2026 was borrowed from Article 514. That requirement has served well enough for fueling facilities but cannot be easily adapted to large EVSE installations. The attached drawing shows part of an installation which includes 292 EVSE in an existing parking lot. The electrical panels and breakers serving the equipment are within 20 feet of at least some of the EVSE precluding their use as an emergency disconnect, and are also located behind locked doors. To meet the 2026 requirements multiple emergency disconnects would need to be installed. Much of the available space to do so is within 20 feet of other EVSE or located in drive lanes, making installation impractical. The installation of potentially dozens of emergency disconnects spaced across the 1/4 mile this installation covers may cause confusion in an emergency when time is of the essence. A single emergency disconnect could be installed to shut down all EVSE in the installation (this installation was under the 2023 NEC, and did include a single emergency disconnect), which would reduce confusion for first responders. In any case the local inspector and/or fire marshal are best suited to determine what location provides the highest degree of safety and least confusion. Eliminating the distance requirements will allow that determination to be made by those parties instead of causing a conflict with their decision, while still ensuring that an emergency disconnect will always be installed.

Submitter Information Verification

Submitter Full Name: Matthew Grover

Organization: Ace Electric, Inc.

Affiliation: IEC

Street Address:

City:

State:

Zip:

Submittal Date: Sun Mar 22 16:39:11 EDT 2026

Committee: NEC-P12



Public Input No. 2648-NFPA 70-2026 [Section No. 625.43(D)]

(D) Emergency ~~Shutoff~~ Shutdown of EVSE and WPTE .

~~(1) Emergency Disconnect~~

(1) Emergency Shutdown Devices.

For other than one- and two-family dwellings, all permanently connected EVSE and WPTE shall be provided with one or more clearly identified emergency

disconnect

shutdown devices

~~or electrical disconnects~~

that meet all of the following:

(1) Be installed in a readily accessible

~~location not less than 6.0 m (20 ft) nor more than 30.0 m (100 ft) from the equipment and in sight from the equipment~~

- ~~• Disconnect power to all EVSE and WPTE within sight of emergency shutoff~~

~~Be~~

(1) outdoor location and in sight of the service equipment location to which the EVSE and WPTE are connected to.

Exception: Alternative locations shall be permitted where approved by the authority having jurisdiction (AHJ).

(1) The “off” position of the device(s) shall perform the emergency shutdown function for all EVSE and WPTE connected to such devices.

(2) The emergency shutdown device shall be marked “EVSE EMERGENCY DISCONNECT” and “WARNING: ELECTRIC VEHICLE(S) WILL REMAIN ENERGIZED” in accordance with 110.22(A).

- ~~• Be a manual reset type~~

~~Disconnect all ungrounded conductors of the circuits simultaneously from the source of supply~~

(1) ~~=~~

(2) ~~Permanent placards, labels, or directories shall be installed at each service equipment location to which the EVSE and WPTE are connected to or at an approved readily visible location that denote the location of the emergency shutdown devices on site.~~

(3) ~~Emergency shutdown devices shall consist of one or more of the following:~~

(4) ~~Service disconnecting means~~

(5) ~~EVSE or WPTE equipment disconnecting means~~

(6) ~~Listed switches~~

(7) ~~Shall be lockable open in the “off” position in accordance with 110.25.~~

~~(2) Disconnecting Means Serving as Emergency Shutoff.~~

The disconnecting means required in accordance with 625.43(C) shall be permitted to serve as the emergency disconnect if it complies with all the requirements of 625.43(D).

Additional Proposed Changes

File Name

Description

Approved

Statement of Problem and Substantiation for Public Input

Please see attached file for actual proposal. Terraview did not work for this public input. The file will have the proposed changes, the clean text if accepted, and the substantiation with visual examples.

The current language lacks clarity and has conflicting information when considering Article 100 definitions and the International Fire Code in the following ways.

- “Clearly identified” is undefined and will lead to various interpretations across AHJs
- Conflates emergency shutdown devices and disconnecting means
- Uses incorrect terms for disconnecting means (i.e., emergency disconnect devices, electrical disconnects)
- The terms “within sight of” and “in sight from” within Article 100 definitions are directly correlated to 50’ which contradict, and further restricts, the 100’ maximum.
- The phrase “from the equipment” lacks clarity about which equipment is being referred to regarding the location restrictions (e.g., electrical service equipment or EVSE/WPTE)
- 2027 IFC section 611.1 has language regarding emergency shutdown device location for EVSE that states that it must be in a location approved by the fire official. This contradicts the prescriptive requirements set in this section. Correlating intentions set in the IFC for first responder regulation considerations is important as most states adopt the IFC in conjunction with NFPA 70.

Additionally, the language introduced for EVSE emergency shutoff in section 625.43(D) of the 2026 NFPA 70 standard has inadvertently created compatibility issues with the application of EVSE emergency shutdown and the most typical EVSE installations when applying real-world site considerations. These compatibility issues stem from the prescriptive distance requirements of 20’ minimum and 100’ maximum from “equipment”. The limiting factors include the following.

- Utility infrastructure and space requirements for all equipment associated with EV charging (charge posts, electrical cabinets, switching equipment). Significant electrical equipment each has its own working space and operating clear space requirements.
- Tight property lines, setback requirements, host restrictions, underground obstructions and/or lack of available green/non-parking space. (Example 1)
- Zoning regulations (such as parking ratios) and inability to reduce parking counts to place equipment infield, closer to posts. (Example 2)
- Standard parking dimensions (9ft wide stalls and 24ft wide drive aisles). Larger sites will inevitably require posts placed more than 100ft from an available emergency shutdown device. (Example 3)

These same distance requirements did not have adequate technical (safety) justification. This is evident when considering that the distance requirements were copied from existing fuel dispensing station requirements in section 514.11 of NFPA 70. Motor fuel considerations are not representative to the safety concerns or site application constraints of EV charging.

To meet these distance limitations for typical EV charging sites, there will have to be multiple shutdown devices scattered throughout the site. This will complicate emergency first response and pose unintended safety risks to first responders because they won’t be able to confidently differentiate which EV charging posts the emergency shutdown device disables. The inability to confidently identify the de-energization boundaries of each individual emergency shutdown device results in a false perception of safety for responding fire fighters.

Additionally, the distance requirements lack consideration for atypical sites for EVSE such as parking garages where first responders would typically want to shutdown the system from the outside where the EVSE may not be visible; in such a scenario, the code must provide flexibility to allow for co-locating of disconnecting means alongside existing service disconnects for the premises. First responder preference and safety are a critical reason to have flexibility within the code to account for hard to define site constraints.

The current language also has adverse impacts to EVSE and WPTE products based on the requirement that the emergency shutoff device must be a disconnecting means that disconnects all ungrounded conductors simultaneously. While a disconnecting means can adequately provide

emergency shutdown, it has practical limitations when considering the distance requirements, atypical sites such as parking garages, and the preferred locations of the fire official. DC fast charging EVSE sites can operate up to 1000V. Sites that require multiple emergency shutdown devices may require multiple 1000V rated electrical cabinets and the associated conductors, conduit, and overcurrent protection devices which would greatly increase the cost and viability of EVSE stations. This would also contribute to the complexity of system shutdown due to the ratings and size of this equipment. Allowing other listed devices such as emergency shutdown devices (e.g., e-stop) will help safely accommodate practical, application to meet the intent of the code.

The overall impact of the current language, if left unchanged, would result in the following

- Non-uniform AHJ application of the code due to its lack of clarity and inconsistent terminology
- Result in location limitations of a maximum 50' from "equipment" when the intent was 100'
- Misaligned location requirements between the 2027 IFC and the NFPA 70 when this device is intended for first responder use.
- Incompatibility issues with sites due to utility infrastructure and spacing requirements, regulatory site restrictions, zoning regulations, underground obstructions, and standard parking dimensions.
- Include distance requirements based on motor fuel requirements that lack technical justification for EVSE.
- Increase complexity of emergency shutdown due the proliferation of emergency disconnects that will be needed on typical installations sites.
- Lack of specific labeling of the devices will cause issues with understanding which shutdown devices goes to which charging posts.
- Undefined working solutions for safe shutdown for atypical sites such as EVSE installations within parking garages.
- Prohibit common listed emergency shutdown devices such as e-stop due to the device being required to be a disconnecting means.
- Unreasonable costs associated with duplicative electrical switch gear, conduit, and conductor runs for systems utilizing 1000V ratings.

The intent of this section is to provide an easily identifiable shutdown device for first responders when onsite at an EV charging site. The core needs to meet this intent of first responders include

- Location identification of the emergency shutdown devices at a common point across sites
- Devices must be readily accessible and outdoors (ideally at a standardized point across sites)
- Location flexibility based on AHJ official preference and atypical site considerations
- Safe, reliable, and familiar devices to initiate the emergency shutdown function
- Standardized and secure (lockable) operation of the device
- Labeling of the device and other appropriate warnings

This public input provides language that would eliminate the problems the current language creates and ensures EV charging sites will meet the needs of first responder emergency shutdown.

This proposal was based off the rooftop photovoltaic rapid shutdown (RSD) initiation requirements in section 690.12 of NFPA 70. The RSD requirements were put in place for first responders to quickly reduce any shock hazard of rooftop operations during emergency events. Those requirements have been tested and refined over multiple cycles and first responders have become accustomed to the expectations set by the RSD requirements in 690.12 for emergency response. Having similar requirements for EV charging equipment allows first responders to instinctively and confidently go through the same motions for site assessment and emergency shutdown as they would any other electrical equipment device.

In addition to the comprehensive requirements provided, this language provides flexibility for the location of the shutdown devices need for site considerations. Either the location will be by the electrical equipment at which the EVSE is connected to (predictable), or it will be in a location approved by the AHJ official. These options will resolve compatibility issues the prescriptive distance requirements currently in section 625.43(D).

See visuals for the examples below in the attached PDF with the proposed language and substantiation.

Example 1

- Farthest EV charger is 225' from the electrical equipment
- All other space is constrained by property lines, setback requirements, green space, and underground obstructions.

Example 2

- Farthest EV charger more than 230' from the electrical equipment
- Zoning regulations (such as parking ratios) limits the ability to reduce parking counts to place equipment infield, i.e. closer to post.

Example 3

- Standard parking dimensions: 9ft wide stalls and 24ft wide drive aisles.
- Farthest charging stall is 142' from the electrical equipment
- Larger sites will require posts placed in excess of 100ft from an available disconnect

Submitter Information Verification

Submitter Full Name: Michael Hart

Organization: Tesla

Street Address:

City:

State:

Zip:

Submittal Date: Sat Apr 04 15:03:13 EDT 2026

Committee: NEC-P12

625.43(D)

Proposed Changes

(D) Emergency ~~Shutoff~~Shutdown of EVSE and WPTE.

(1) Emergency ~~Disconnect~~Shutdown Devices.

For other than one- and two-family dwellings, all permanently connected EVSE and WPTE shall be provided with one or more clearly identified emergency ~~disconnect~~shutdown devices ~~or electrical disconnects~~ that meet all of the following:

- a. Be installed in a readily accessible outdoor location ~~not less than 6.0 m (20 ft) nor more than 30.0 m (100 ft) from the equipment and in sight from the equipment and be within sight of the service equipment location to which the EVSE and WPTE are connected to.~~

Exception: Alternative locations shall be permitted where approved by the authority having jurisdiction (AHJ).

- b. ~~Disconnect power to all EVSE and WPTE within sight that are visible of emergency shutoff~~ The “off” position of the device(s) shall perform the emergency shutdown function for all EVSE and WPTE connected to such devices.
- c. The emergency shutdown device shall Bbe marked “EVSE EMERGENCY DISCONNECT” and “WARNING: ELECTRIC VEHICLE(S) WILL REMAIN ENERGIZED” in accordance with 110.22(A).
- d. Permanent placards, labels, or directories shall be installed at each service equipment location to which the EVSE and WPTE are connected to or at an approved readily visible location that denote the location of the emergency shutdown devices on site.
- e. Emergency shutdown devices shall consist of one or more of the following: Be a manual reset type
 - 1. Service disconnecting means
 - 2. EVSE or WPTE equipment disconnecting means
 - 3. Listed switches
- f. Shall be lockable open in the “off” position in accordance with 110.25.

~~d. Disconnect all ungrounded conductors of the circuits simultaneously from the source of supply~~

(2) Disconnecting Means Serving as Emergency Shutdown~~off~~.

The disconnecting means required in accordance with 625.43(C) shall be permitted to serve as the emergency disconnect if it complies with all the requirements of 625.43(D).

Clean Text of Proposal

(D) Emergency Shutdown of EVSE and WPTE.

(1) Emergency Shutdown Devices.

For other than one- and two-family dwellings, all permanently connected EVSE and WPTE shall be provided with one or more clearly identified emergency shutdown devices that meet all of the following:

- a. Be installed in a readily accessible outdoor location and in sight of the service equipment location to which the EVSE and WPTE are connected to.

Exception: Alternative locations shall be permitted where approved by the authority having jurisdiction (AHJ).

- b. The “off” position of the device(s) shall perform the emergency shutdown function for all EVSE and WPTE connected to such devices.
- c. The emergency shutdown device shall be marked “EVSE EMERGENCY DISCONNECT” and “WARNING: ELECTRIC VEHICLE(S) WILL REMAIN ENERGIZED” in accordance with 110.22(A).
- d. Permanent placards, labels, or directories shall be installed at each service equipment location to which the EVSE and WPTE are connected to or at an approved readily visible location that denote the location of the emergency shutdown devices on site.
- e. Emergency shutdown devices shall consist of one or more of the following:
 1. Service disconnecting means
 2. EVSE or WPTE equipment disconnecting means
 3. Listed switches
- f. Shall be lockable open in the “off” position in accordance with 110.25.

(2) Disconnecting Means Serving as Emergency Shutdown~~off~~.

The disconnecting means required in accordance with 625.43(C) shall be permitted to serve as the emergency disconnect if it complies with all the requirements of 625.43(D).

Substantiation

The current language lacks clarity and has conflicting information when considering Article 100 definitions and the International Fire Code in the following ways.

- “Clearly identified” is undefined and will lead to various interpretations across AHJs
- Conflates emergency shutdown devices and disconnecting means
- Uses incorrect terms for disconnecting means (i.e., emergency disconnect devices, electrical disconnects)
- The terms “within sight of” and “in sight from” within Article 100 definitions are directly correlated to 50’ which contradict, and further restricts, the 100’ maximum.
- The phrase “from the equipment” lacks clarity about which equipment is being referred to regarding the location restrictions (e.g., electrical service equipment or EVSE/WPTE)
- 2027 IFC section 611.1 has language regarding emergency shutdown device location for EVSE that states that it must be in a location approved by the fire official. This contradicts the prescriptive requirements set in this section. Correlating intentions set in the IFC for first responder regulation considerations is important as most states adopt the IFC in conjunction with NFPA 70.

Additionally, the language introduced for EVSE emergency shutoff in section 625.43(D) of the 2026 NFPA 70 standard has inadvertently created compatibility issues with the application of EVSE emergency shutdown and the most typical EVSE installations when applying real-world site considerations. These compatibility issues stem from the prescriptive distance requirements of 20’ minimum and 100’ maximum from “equipment”. The limiting factors include the following.

- Utility infrastructure and space requirements for all equipment associated with EV charging (charge posts, electrical cabinets, switching equipment). Significant electrical equipment each has its own working space and operating clear space requirements.
- Tight property lines, setback requirements, host restrictions, underground obstructions and/or lack of available green/non-parking space. (Example 1)
- Zoning regulations (such as parking ratios) and inability to reduce parking counts to place equipment infield, closer to posts. (Example 2)
- Standard parking dimensions (9ft wide stalls and 24ft wide drive aisles). Larger sites will inevitably require posts placed more than 100ft from an available emergency shutdown device. (Example 3)

These same distance requirements did not have adequate technical (safety) justification. This is evident when considering that the distance requirements were copied from existing fuel

dispensing station requirements in section 514.11 of NFPA 70. Motor fuel considerations are not representative to the safety concerns or site application constraints of EV charging.

To meet these distance limitations for typical EV charging sites, there will have to be multiple shutdown devices scattered throughout the site. This will complicate emergency first response and pose unintended safety risks to first responders because they won't be able to confidently differentiate which EV charging posts the emergency shutdown device disables. The inability to confidently identify the de-energization boundaries of each individual emergency shutdown device results in a false perception of safety for responding fire fighters.

Additionally, the distance requirements lack consideration for atypical sites for EVSE such as parking garages where first responders would typically want to shutdown the system from the outside where the EVSE may not be visible; in such a scenario, the code must provide flexibility to allow for co-locating of disconnecting means alongside existing service disconnects for the premises. First responder preference and safety are a critical reason to have flexibility within the code to account for hard to define site constraints.

The current language also has adverse impacts to EVSE and WPTE products based on the requirement that the emergency shutoff device must be a disconnecting means that disconnects all ungrounded conductors simultaneously. While a disconnecting means can adequately provide emergency shutdown, it has practical limitations when considering the distance requirements, atypical sites such as parking garages, and the preferred locations of the fire official. DC fast charging EVSE sites can operate up to 1000V. Sites that require multiple emergency shutdown devices may require multiple 1000V rated electrical cabinets and the associated conductors, conduit, and overcurrent protection devices which would greatly increase the cost and viability of EVSE stations. This would also contribute to the complexity of system shutdown due to the ratings and size of this equipment. Allowing other listed devices such as emergency shutdown devices (e.g., e-stop) will help safely accommodate practical, application to meet the intent of the code.

The overall impact of the current language, if left unchanged, would result in the following

- Non-uniform AHJ application of the code due to its lack of clarity and inconsistent terminology
- Result in location limitations of a maximum 50' from "equipment" when the intent was 100'
- Misaligned location requirements between the 2027 IFC and the NFPA 70 when this device is intended for first responder use.
- Incompatibility issues with sites due to utility infrastructure and spacing requirements, regulatory site restrictions, zoning regulations, underground obstructions, and standard parking dimensions.

- Include distance requirements based on motor fuel requirements that lack technical justification for EVSE.
- Increase complexity of emergency shutdown due the proliferation of emergency disconnects that will be needed on typical installations sites.
- Lack of specific labeling of the devices will cause issues with understanding which shutdown devices goes to which charging posts.
- Undefined working solutions for safe shutdown for atypical sites such as EVSE installations within parking garages.
- Prohibit common listed emergency shutdown devices such as e-stop due to the device being required to be a disconnecting means.
- Unreasonable costs associated with duplicative electrical switch gear, conduit, and conductor runs for systems utilizing 1000V ratings.

The intent of this section is to provide an easily identifiable shutdown device for first responders when onsite at an EV charging site. The core needs to meet this intent of first responders include

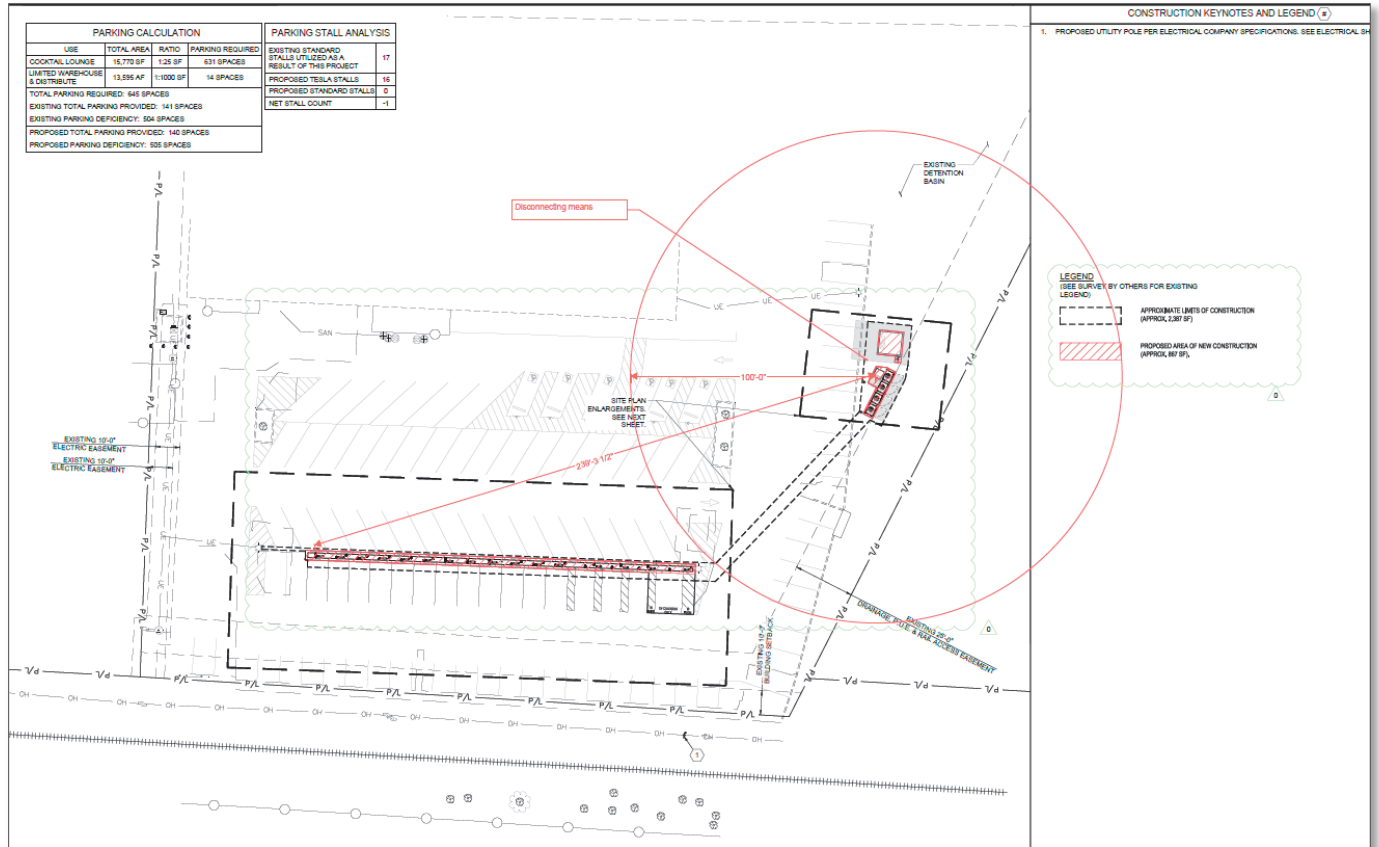
- Location identification of the emergency shutdown devices at a common point across sites
- Devices must be readily accessible and outdoors (ideally at a standardized point across sites)
- Location flexibility based on AHJ official preference and atypical site considerations
- Safe, reliable, and familiar devices to initiate the emergency shutdown function
- Standardized and secure (lockable) operation of the device
- Labeling of the device and other appropriate warnings

This public input provides language that would eliminate the problems the current language creates and ensures EV charging sites will meet the needs of first responder emergency shutdown.

This proposal was based off the rooftop photovoltaic rapid shutdown (RSD) initiation requirements in section 690.12 of NFPA 70. The RSD requirements were put in place for first responders to quickly reduce any shock hazard of rooftop operations during emergency events. Those requirements have been tested and refined over multiple cycles and first responders have become accustomed to the expectations set by the RSD requirements in 690.12 for emergency response. Having similar requirements for EV charging equipment allows first responders to instinctively and confidently go through the same motions for site assessment and emergency shutdown as they would any other electrical equipment device.

In addition to the comprehensive requirements provided, this language provides flexibility for the location of the shutdown devices need for site considerations. Either the location will be by

- Farthest EV charger more than 230' from the electrical equipment
- Zoning regulations (such as parking ratios) limits the ability to reduce parking counts to place equipment infield, i.e. closer to post.



Example 3

- Standard parking dimensions: 9ft wide stalls and 24ft wide drive aisles.
- Farthest charging stall is 142' from the electrical equipment
- Larger sites will require posts placed in excess of 100ft from an available disconnect



Public Input No. 3412-NFPA 70-2026 [Section No. 625.43(D)]

(D)– Public Facing Emergency Shutoff.

~~(1)– Emergency Disconnect Devices:~~

~~For other than one- and two-family dwellings, all permanently connected EVSE and WPTE shall be provided with one or more clearly identified emergency disconnect devices or~~

~~(1) For public charging stations of four or more EVSE provide electrical disconnects that meet all of~~

~~(1) the following:~~

~~(2) Be~~

~~installed in a readily accessible location not less than 6.0 m (20 ft) nor more than 30.0 m (100 ft) from the equipment and in sight from the equipment~~

- ~~• Disconnect power to all EVSE and WPTE within sight of emergency shutoff~~
- ~~• Be marked “EVSE EMERGENCY DISCONNECT” and “WARNING: ELECTRIC VEHICLE(S) WILL REMAIN ENERGIZED” in accordance with 110.22(A)~~
- ~~• Be a manual reset type~~
- ~~• Disconnect all ungrounded conductors of the circuits simultaneously from the source of supply~~

~~(2)– Disconnecting Means Serving as Emergency Shutoff.~~

~~The disconnecting means required in accordance with 625.43(C) shall be permitted to serve as the emergency disconnect if it complies with all the requirements of 625.43(D)~~

~~(1)~~

- ~~(a) marked “EMERGENCY SHUTOFF VEHICLE CHARGING” with a red background or red text. If there is more than one shutoff, it must indicate which chargers are covered.~~
- ~~(b) Be located in a readily accessible and visible location separate from any individual charging location.~~
- ~~(c) Have anti tamper features such as a “break glass” cover or a latch.~~
- ~~(d) Operate within 15 seconds to cleanly shut down and de-energize all charging activity.~~
- ~~(e) Be of any otherwise allowable type, including push button with capability for remote reset via network command.~~
- ~~(f) Be optionally equipped with a 1 hour automatic reset, provided that all normal electrical safety and equipment ground checks are run again by the equipment prior to delivering power.~~

~~(2) For non-public charging stations commercial dwellings, or residential dwellings of five or more units:~~

- ~~(3) Each charging location must comply with 625.43(B).~~
- ~~(4) Each door to rooms containing shutoffs must be clearly labeled.~~
- ~~(5) Each shutoff or breaker shall be clearly and durably labeled with a printed (non-handwritten) label .~~

Statement of Problem and Substantiation for Public Input

Substantiation:

625.43(B) has been a mess and a pain.

It's not well crafted for real world situations, and frankly needs more work. It solves a largely non-existent problem with solutions more appropriate to liquid fuel.

EVSE are cold stone off when the vehicle is in trouble, or any of a variety of cable or site issues occur.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
Public Input No. 3541-NFPA 70-2026 [Section No. 625.43(D)(1)]	

Submitter Information Verification

Submitter Full Name: Bryce Nesbitt

Organization: Obviously Inspects

Affiliation: Member of National Charging Access Coalition & EV Charging for All Coalition, removing barriers to wider home apartment and HOA charging access.

Street Address:

City:

State:

Zip:

Submittal Date: Thu Apr 09 03:45:50 EDT 2026

Committee: NEC-P12



Public Input No. 643-NFPA 70-2026 [Section No. 625.43(D)]

(D) Emergency Shutoff.

(1) ~~Emergency~~ Disconnect Devices.

For other than one- and two-family dwellings, all permanently connected EVSE and WPTE shall be provided with one or more clearly identified emergency ~~disconnect devices~~ shutoff device(s) or electrical ~~disconnects~~ disconnect(s) that meet all of the following:

- (1) Be installed in a readily accessible location not less than 6.0 m (20 ft) nor more than 30.0 m (100 ft) from the equipment and in sight from the equipment
- (2) Disconnect power to all EVSE and WPTE within sight of emergency shutoff
- (3) Be marked “EVSE EMERGENCY DISCONNECT” and “WARNING: ELECTRIC VEHICLE(S) WILL REMAIN ENERGIZED” in accordance with 110.22(A)
- (4) Be a manual reset type
- (5) Disconnect all ungrounded conductors of the circuits simultaneously from the source of supply

(2) – Equipment Disconnecting Means Serving as Emergency Shutoff.

The disconnecting means for EVSE equipment required in accordance with 625.43(C) shall be permitted to serve as the emergency ~~disconnect~~ shutoff if it complies with all the requirements of 625.43(D).

Statement of Problem and Substantiation for Public Input

My edits are not technical in nature and are offered to make the rule clear that a shunt-trip breaker with a pushbutton would meet this requirement, just like the text in 514.11 for Fuel Dispensers.

Submitter Information Verification

Submitter Full Name: Mike Holt

Organization: Mike Holt Enterprises Inc

Street Address:

City:

State:

Zip:

Submittal Date: Mon Jan 19 16:56:20 EST 2026

Committee: NEC-P12



Public Input No. 1194-NFPA 70-2026 [Section No. 625.43(D)(1)]

(1) Emergency Disconnect Devices.

For other than one- and two-family dwellings, all permanently connected EVSE and WPTE shall be provided with one or more clearly identified emergency disconnect ~~devices~~ control device or electrical disconnects that meet all of the following:

- (1) Be installed in a readily accessible location not less than 6.0 m (20 ft) nor more than 30.0 m (100 ft) from the equipment and in sight from the equipment
- (2) Disconnect power to all EVSE and WPTE within sight of emergency shutoff or cause the operation of a remote device that disconnects all power to all EVSE and WPTE within sight of the emergency disconnect control device.
- (3) Be marked “EVSE EMERGENCY DISCONNECT” and “WARNING: ELECTRIC VEHICLE(S) WILL REMAIN ENERGIZED” in accordance with 110.22(A)
- (4) Be a manual reset type
- (5) Disconnect all ungrounded conductors of the circuits simultaneously from the source of supply
- (6) Access to the emergency disconnect control device shall be permitted to be limited to first responders.

Statement of Problem and Substantiation for Public Input

It is not practical to locate the actual power disconnect 20 to 100' from the EVSE and WPTE equipment. The physical power disconnect is often located adjacent to the EVSE and WPTE equipment. This change makes it clear that a remote device can be used to open the disconnect and remove all power. An example of such a device would be a remotely operated shunt trip breaker. Since a push button or other control device is easy to operate, there will likely be mischievous activation of such a device. Unlike the emergency button at a gas station that could be used to cut off the flow of gas, there is no improvement in the safety of the general public when the emergency disconnect control device is activated, there is no reason not to limit access to that device. The emergency shutdown is only intended to improve safety of the first responders by removing the power supply to the charging equipment. The access could be limited to first responders by the use of a key operated control device. Many fire departments use Knox™ Boxes for access to keys for building in the event of an off hour emergency. When the fire department has such an access system, the key to open the Knox Box is unique to that fire department.

Submitter Information Verification

Submitter Full Name: Don Ganiere

Organization: none

Street Address:

City:

State:

Zip:

Submission Date: Wed Feb 25 13:17:14 EST 2026

Committee: NEC-P12



Public Input No. 12-NFPA 70-2025 [Section No. 625.43(D)(1)]

(1) Emergency Disconnect Devices.

For other than one- and two-family dwellings, all permanently connected EVSE and WPTE shall be provided with one or more clearly identified emergency disconnect devices or electrical disconnects that meet all of the following:

- (1) Be installed in a readily accessible location not less than 6.0 m (20 ft) nor more than 30.0 m (100 ft) from the equipment and in ~~sight from~~ visible from the equipment
- (2) Disconnect power to all EVSE and WPTE within sight of any of the emergency ~~shutoff~~ shutoffs
- (3) Be marked "EVSE EMERGENCY DISCONNECT" and "WARNING: ELECTRIC VEHICLE(S) WILL REMAIN ENERGIZED" in accordance with 110.22(A)
- (4) Be a manual reset type
- (5) Disconnect all ungrounded conductors of the circuits simultaneously from the source of supply

Statement of Problem and Substantiation for Public Input

The addition of 100 ft in 625.43 D 1(1) contradicts 110.29 which limits "In sight from" to 50 ft. Chapter 5 can modify the requirements in 1-8 but if that modification was intended changing terminology would be clearer.

This language in 625.43 D 1 (2) is confusing, I believe the intent was to require that IF a shutoff is within 50 ft of any EVSE and WPTE then that shutoff would control power to the EVSE and WPTE. In no case should an emergency shutoff be within sight and not control the EVSE and WPTE. The language clarifies that the EVSE or WPTE might need to be disconnected by any one of multiple emergency shutoffs.

I visualize a 100 ft row of charging stations. I could install one disconnect that is in the middle of them all or three emergency shutoffs, The northern most disconnect would turn off the first 50ft and the southern most the last 50ft while the middle one would turn off all of them.

Submitter Information Verification

Submitter Full Name: Tim Oberg

Organization: InPwr

Street Address:

City:

State:

Zip:

Submittal Date: Wed Oct 01 14:21:15 EDT 2025

Committee: NEC-P12



Public Input No. 1636-NFPA 70-2026 [Section No. 625.43(D)(1)]

(1) Emergency Disconnect Devices.

For other than one- and two-family dwellings, all permanently connected EVSE and WPTE shall be provided with one or more clearly identified emergency disconnect devices or electrical disconnects that meet all of the following:

- (1) Be installed in a readily accessible location not less than 6.0 m (20 ft) nor more than 30.0 m (100 ft) from the equipment and ~~in-sight~~ visible from the equipment
- (2) Disconnect power to all EVSE and WPTE within sight of emergency shutoff
- (3) Be marked "EVSE EMERGENCY DISCONNECT" and "WARNING: ELECTRIC VEHICLE(S) WILL REMAIN ENERGIZED" in accordance with 110.22(A)
- (4) Be a manual reset type
- (5) Disconnect all ungrounded conductors of the circuits simultaneously from the source of supply

Statement of Problem and Substantiation for Public Input

The phrase "in sight from" refers to a distance of no greater than 50-feet (See NEC 110.29) which is contradictory to the 100 foot requirement in this same section. This proposed change would change the wording "in sight from" to "visible" removing the restriction of 50 feet, allowing the emergency disconnect to be installed within 100 feet of the equipment and maintain its visibility from the equipment.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
<u>Public Input No. 1641-NFPA 70-2026 [New Definition after Definition: Vessel.]</u>	Visible (as applied to equipment)
<u>Public Input No. 1641-NFPA 70-2026 [New Definition after Definition: Vessel.]</u>	

Submitter Information Verification

Submitter Full Name: Edward Brown

Organization: Independent Electrical Contractors

Affiliation: IEC Codes & Standards

Street Address:

City:

State:

Zip:

Submittal Date: Tue Mar 17 17:19:06 EDT 2026

Committee: NEC-P12



Public Input No. 2070-NFPA 70-2026 [Section No. 625.43(D)(1)]

(1) Emergency Disconnect Devices.

For other than one- and two-family dwellings, all permanently connected EVSE and WPTE shall be provided with one or more clearly identified emergency disconnect devices or electrical disconnects that meet all of the following:

- (1) Be installed in a readily accessible location not less than 6.0 m (20 ft) nor more than 30.0 m (100 ft) from the equipment and ~~in-sight~~ visible from the equipment
- (2) Disconnect power to all EVSE and WPTE within sight of emergency shutoff
- (3) Be marked “EVSE EMERGENCY DISCONNECT” and “WARNING: ELECTRIC VEHICLE(S) WILL REMAIN ENERGIZED” in accordance with 110.22(A)
- (4) Be a manual reset type
- (5) Disconnect all ungrounded conductors of the circuits simultaneously from the source of supply

Statement of Problem and Substantiation for Public Input

An object cannot be in sight from another if they are 100' apart, as permitted in this section. See 110.29. It appears that the intent is to allow the disconnect to be up to 100' away if it is also visible.

Submitter Information Verification

Submitter Full Name: Ryan Jackson

Organization: Ryan Jackson Electrical Training

Street Address:

City:

State:

Zip:

Submittal Date: Sun Mar 29 13:24:58 EDT 2026

Committee: NEC-P12



Public Input No. 2720-NFPA 70-2026 [Section No. 625.43(D)(1)]

(1) ~~Emergency Remote Disconnect Devices Controls~~ .

For other than one- and two-family dwellings, all permanently connected EVSE and WPTE shall be provided with one or more clearly identified ~~emergency remote disconnect devices controls~~ or electrical disconnects that meet all of the following:

- (1) ~~Be installed in a readily accessible location not less than 6.0 m (20 ft) nor more than 30.0 m (100 ft) from the equipment and in sight from the equipment~~
- (2) ~~Disconnect power to all EVSE and WPTE within sight of emergency shutoff~~
~~Be marked "EVSE EMERGENCY DISCONNECT"~~
- (3) located at approved locations readily accessible in case of fire to authorized personnel and emergency responders.
- (4) The remote disconnect control for EV power transfer equipment may be grouped, may be guarded to prevent unintended operation, and shall simultaneously disconnect all ungrounded conductors of the circuits from the source of supply to all EV charging equipment associated with a particular remote disconnect control.
- (5) Be marked indicating the group controlled, "EV CHARGING DISCONNECT CONTROL" and "WARNING: ELECTRIC VEHICLE(S) WILL REMAIN ENERGIZED" in accordance with 110.22(A)
- (6) Be a manual reset type
- (7) ~~Disconnect all ungrounded conductors of the circuits simultaneously from the source of supply~~
- (8) .

Statement of Problem and Substantiation for Public Input

We understand the intent of the remote disconnect control requirements, and this same CMP has an equivalent situation with IT equipment rooms that also often have e-stops, under section 645.10. Rather than expose firefighters to arc flash hazards constituting electrical work that their gear and training do not cover, we believe that what they want is the equivalent to an e-stop in a data center, since operation of a remote disconnect control is not electrical work, does not expose them to arc-flash, and achieves what we believe they want since it operates a remote disconnect. This could be for all EV charging in an area, and they can determine how many they want and preferred locations based on their anticipated approach.

Please note that section 110.39 clarifies that "in sight from", "within sight of", etc. is not more than 15 m (50 ft) and that may be unnecessary where the firefighters wish to disable all EV charging from the entrance of the parkade, or other response point.

Additional remote disconnect controls may be replicated at additional locations as dictated by the emergency personnel.

While consistent requirements would be preferred, the various applications and configurations (indoor/outdoor, public fast charging, fleet charging, etc.) make that very difficult, and the first thing will be to get the concept of remote disconnect control established, making it suitable for emergency personnel, without risking nuisance activation.

Simpler installations can employ local disconnects (lower current ratings and voltages) but installations over 150 V to ground and a few hundred amps should utilize remote disconnect control instead of direct operation of a local disconnect.

Submitter Information Verification

Submitter Full Name: Kevin Cheong

Organization: Chargepoint Canada Inc.

Affiliation: Chargepoint Inc.

Street Address:

City:

State:

Zip:

Submittal Date: Sun Apr 05 19:55:08 EDT 2026

Committee: NEC-P12



Public Input No. 274-NFPA 70-2025 [Section No. 625.43(D)(1)]

(1) Emergency Disconnect Devices.

For other than one- and two-family dwellings, all permanently connected EVSE and WPTE shall be provided with one or more clearly identified emergency disconnect devices or electrical disconnects that meet all of the following:

- (1) Be installed in a readily accessible location not less than 6.0 m (20 ft) nor more than 30.0 m (100 ft) from the equipment and ~~in-sight~~ visible from the equipment
- (2) Disconnect power to all EVSE and WPTE within sight of emergency shutoff
- (3) Be marked "EVSE EMERGENCY DISCONNECT" and "WARNING: ELECTRIC VEHICLE(S) WILL REMAIN ENERGIZED" in accordance with 110.22(A)
- (4) Be a manual reset type
- (5) Disconnect all ungrounded conductors of the circuits simultaneously from the source of supply

Statement of Problem and Substantiation for Public Input

Using the words "in sight from" and specifying a maximum distance of 100' creates a conflict with 110.29. The language in 110.29 tells us that the words "in sight from" means not more than 50' from the equipment. Replacing the words "in sight from" with the word "visible" preserves the intent and removes the conflict with 110.29.

Submitter Information Verification

Submitter Full Name: Don Ganiere

Organization: none

Street Address:

City:

State:

Zip:

Submission Date: Tue Nov 25 16:46:19 EST 2025

Committee: NEC-P12



Public Input No. 3358-NFPA 70-2026 [Section No. 625.43(D)(1)]

(1) Emergency Disconnect Devices.

For other than one- and two-family dwellings, all permanently connected EVSE and WPTE shall be provided with one or more clearly identified emergency disconnect devices or electrical disconnects that meet all of the following:

- (1) Be installed in a readily accessible location not less than 6.0 m (20 ft) nor more than 30.0 m (100 ft) from the equipment and ~~in sight from~~ be located within visual sight from the equipment
- (2) Disconnect power to all EVSE and WPTE within visual sight of emergency shutoff
- (3) Be marked “EVSE EMERGENCY DISCONNECT” and “WARNING: ELECTRIC VEHICLE(S) WILL REMAIN ENERGIZED” in accordance with 110.22(A)
- (4) Be a manual reset type
- (5) Disconnect all ungrounded conductors of the circuits simultaneously from the source of supply

Statement of Problem and Substantiation for Public Input

This public input is being submitted on behalf of the Minnesota Department of Labor and Industry. Currently, the Department’s electrical inspection staff includes 15 office/field staff, 77 state field electrical inspectors and 11 virtual inspectors that completed over 190,000 electrical inspections in 2025.

Removing “in sight” and “within sight” language removes the confusion of the 50’ requirement per 110.29 when the emergency disconnect is allowed to be up to 100’ away per this section.

Submitter Information Verification

Submitter Full Name: Luke Nemeth

Organization: Minnesota Department of Labor

Street Address:

City:

State:

Zip:

Submission Date: Wed Apr 08 20:48:56 EDT 2026

Committee: NEC-P12



Public Input No. 3541-NFPA 70-2026 [Section No. 625.43(D)(1)]

(1) Emergency Disconnect Devices.

For other than one- and two-family dwellings, all permanently connected EVSE and WPTE shall be provided with one or more clearly identified emergency disconnect devices or electrical disconnects that meet all of the following:

- (1) Be installed in a readily accessible location not less than 6.0 m (20 ft) nor more than 30.0 m (100 ft) from the equipment and in sight from the equipment
- (2) Disconnect power to all EVSE and WPTE within sight of emergency shutoff
- (3) Be marked “EVSE EMERGENCY DISCONNECT” and “WARNING: ELECTRIC VEHICLE(S) WILL REMAIN ENERGIZED” in accordance with 110.22(A)
- (4) ~~Be a manual reset type~~
- (5)
- (6) Disconnect all ungrounded conductors of the circuits simultaneously from the source of supply

Statement of Problem and Substantiation for Public Input

Charger availability is a huge issue, for remote sites.

We should be careful balancing a new hazard (stranding) with an old hazard (EMS response and EMS training).

We have so much remote video and telemetry capability that remote reset should be a possibility. It's not inherently safer for a charging service operator to send a guy in a truck out to reset a button, compared to having it done at the operations center. The staff in the operations center frankly likely know more about the incident history and what's needed.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
Public Input No. 3412-NFPA 70-2026 [Section No. 625.43(D)]	Heavier alternative / Lighter alternative.

Submitter Information Verification

Submitter Full Name: Bryce Nesbitt

Organization: Obviously Technical Inspections and EV-Seg (public fast charging)

Affiliation: Regularly in touch with operations issues for several public charging groups, and very in touch with what it takes to make them reliable.

Street Address:

City:

State:

Zip:

Submittal Date: Thu Apr 09 12:10:46 EDT 2026

Committee: NEC-P12



Public Input No. 2721-NFPA 70-2026 [Section No. 625.43(D)(2)]

(2) Disconnecting Means Serving as Emergency Shutoff.

The disconnecting means required in accordance with 625.43(C) shall be permitted to serve as the emergency disconnect if it complies with all the requirements of 625.43(D), does not exceed 1000 V AC, or 1500 V DC, or 600 A.

Statement of Problem and Substantiation for Public Input

Per our input on 625.43D we believe the preferred approach is the 645.10 solution of remote disconnect control for higher power level charging installations. The current value suggested is rather arbitrary, and the actual incident energy will vary with voltage, OCPD, etc. but we believe this gets the idea across.

Submitter Information Verification

Submitter Full Name: Kevin Cheong

Organization: Chargepoint Canada Inc.

Affiliation: Chargepoint Inc.

Street Address:

City:

State:

Zip:

Submittal Date: Sun Apr 05 20:24:40 EDT 2026

Committee: NEC-P12



Public Input No. 2115-NFPA 70-2026 [New Section after 625.44]

625.45 Accessibility for People with Disabilities.

Where required to provide accessibility for people with disabilities, wiring devices shall be installed in accordance with the applicable accessibility codes or standards. (See Annex A 625.45).

Additional Proposed Changes

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
PI_2115 - _Annex_Content_for_Section_625.45.docx	Annex content for Section 625.45	

Statement of Problem and Substantiation for Public Input

The ICC A117.1 accessibility standard and federal accessibility regulations require a level of usability for people with disabilities for certain public and private spaces. It is important for designers and installers to recognize when these requirements may apply so that 1) they meet the intended usability goals in the accessibility standards and 2) they avoid unnecessary enforcement action.

Accessibility regulations are comprised of both scoping and technical details. Therefore, the proposed language provides general guidance which should prompt the code user to consult the person with oversight of the project and find out whether accessibility for people with disabilities applies to their scope of work. The table in the annex text provides a list of components where accessibility considerations which may apply and their accompanying NEC code sections. Annex text was submitted with specific considerations applicable to each of the components listed.

The entire series of PIs submitted by the Task Group is attached to PI 2111.

The Disability Access Review Task Group consists of members from CMP-2, CMP-10, CMP-18 and the NFPA Disability Access Review and Advisory Committee (DARAC). It was directed by the Correlating Committee to review specific articles concerning components such as receptacles, switches and circuit breakers and their usability for the disabled. The task group shall develop Public Inputs for the 2029 code as necessary. The NFPA Disability Access Review Advisory Committee (DARAC: www.nfpa.org/darac) has reviewed this Public Input, and by letter ballot, concurs with the proposed language and the substantiation provided.

Submitter Information Verification

Submitter Full Name: Daniel Buuck

Organization: National Association of Home Builders

Street Address:

City:

State:

Zip:

Submittal Date: Mon Mar 30 10:26:44 EDT 2026

Committee: NEC-P12

[NEW] 625.45 Accessibility for People with Disabilities.

Where required to provide accessibility for people with disabilities, wiring devices shall be installed in accordance with the applicable accessibility codes or standards. (See Annex A 625.45)

[NEW] Annex A 625.45 Accessibility for People with Disabilities.

The following list is intended as guidance, and no claim to completeness is made. Where required to provide accessibility for people with disabilities, the devices and equipment in the listed sections should be installed in accordance with the applicable accessibility codes or standards. Accessibility requirements are typically more stringent than those of the NEC. However, it should be possible to meet accessibility requirements and remain in compliance with this code.

Generally, where equipment is installed in areas used only by employees to perform their work, such areas are not required to be accessible. However, in other areas available to occupants without disabilities, some, if not all, of the equipment in such areas is required to be accessible for people with disabilities.

[Include the following table in annex note.]

NEC Sections	Topic
110.26	Spaces About Electrical Equipment
210.52(A)(3)	Floor receptacles
210.52(A)(5)	Prohibited receptacle outlet locations
210.52(C)(3)	Receptacle outlet location
210.52(C)(4)	Prohibited receptacle outlet locations
240.24(A)	Circuit breaker location and operation
406.9(C)(1)	Bathroom receptacle location
406.12(D)	Replacement of receptacles
406.38(A)	Switch location
624.50	Electric self-propelled vehicle power transfer system location
625.50	Electric vehicle power transfer system location



Public Input No. 1681-NFPA 70-2026 [Section No. 625.44]

625.44 Equipment Connection.

EVSE and WPTE that is connected to the premises wiring shall be connected in accordance with one of the methods in 625.44(A) through 625.44(C).

Cord- and plug-connected equipment shall be provided with an attachment plug rated not less than 125 percent of the maximum rating of the equipment.

A 50-ampere rated receptacle shall not be installed on a 40-ampere branch circuit as permitted in 210.24.

(A) Portable Equipment.

Portable equipment shall be connected to the premises wiring system by one or more of the following methods:

- (1) A nonlocking, 2-pole, 3-wire grounding-type receptacle ~~outlet~~ rated at 125 volts or 250 volts, single phase in accordance with one of the following:
 - (2) 15 or 20 amperes
 - (3) 30 or 50 amperes listed for EVSE and WPTE use
- (4) A nonlocking, 3-pole, 4-wire grounding-type receptacle ~~outlet~~ rated at 125/250 volts, single phase in accordance with one of the following:
 - (5) 15 or 20 amperes
 - (6) 30, 50, or 60 amperes listed for EVSE and WPTE use
- (7) A nonlocking, 2-pole, 3-wire grounding-type receptacle ~~outlet~~ rated at 277 volts, single phase in accordance with one of the following:
 - (8) 15 or 20 amperes
 - (9) 30 or 50 amperes listed for EVSE and WPTE use
- (10) A nonlocking, 2-pole, 3-wire grounding-type receptacle ~~outlet~~ rated at 60 volts dc maximum, 15 or 20 amperes
- (11) A locking, pin-and-sleeve, 3-pole, 4-wire grounding-type receptacle ~~outlet~~ rated 277/480 volts, three-phase 60 amperes or 100 amperes

(B) Hand Fastened Equipment.

Equipment that is hand fastened shall be connected to the premises wiring system by one of the following methods:

- (1) A nonlocking, 2-pole, 3-wire grounding-type receptacle ~~outlet~~-rated 125 volts or 250 volts, single phase in accordance with one of the following:
 - (2) _ 15 or 20 amperes
 - (3) _ 30 or 50 amperes listed for EVSE and WPTE use
- (4) A nonlocking, 3-pole, 4-wire grounding-type ~~receptacle-outlet-rated~~ receptacle rated 250 volts, three phase in accordance with one of the following:
 - (5) _ 15 or 20 amperes
 - (6) _ 30, 50, or 60 amperes listed for EVSE and WPTE use
- (7) A nonlocking, 3-pole, 4-wire grounding-type ~~receptacle-outlet-rated~~ receptacle rated 125/250 volts, single phase in accordance with one of the following:
 - (8) _ 15 or 20 amperes
 - (9) _ 30, 50, or 60 amperes listed for EVSE and WPTE use
- (10) A nonlocking, 2-pole, 3-wire grounding-type ~~receptacle-outlet-rated~~ receptacle rated 277 volts, single phase in accordance with one of the following:
 - (11) _ 15 or 20 amperes
 - (12) _ 30, 50, or 60 amperes listed for EVSE and WPTE use
- (13) A nonlocking, 3-pole, 4-wire grounding-type ~~receptacle-outlet-rated~~ receptacle rated at 120/208 volts, three phase in accordance with one of the following:
 - (14) _ 15 or 20 amperes
 - (15) _ 30, 50, or 60 amperes listed for EVSE and WPTE use
- (16) A nonlocking, 2-pole, 3-wire grounding-type receptacle ~~outlet~~-rated 60 volts dc maximum, 15 or 20 amperes
- (17) A locking, pin-and-sleeve, 3-pole, 4-wire grounding type receptacle ~~outlet~~-rated 277/480 volts, three phase 60 amperes or 100 amperes

(C) Securely Fastened in Place Equipment.

All other EVSE and WPTE shall be permanently wired and securely fastened in place to the supporting surface.

Statement of Problem and Substantiation for Public Input

The only change this public input is proposing is to remove the word "outlet" in strategic locations as the requirement applies to the receptacle and not the outlet. this change adds clarity and accuracy for the requirement.

Submitter Information Verification

Submitter Full Name: Thomas Domitrovich

Organization: Eaton Corporation

Street Address:

City:

State:

Zip:

Submittal Date: Wed Mar 18 14:31:28 EDT 2026

Committee: NEC-P12



625.44 Equipment Connection.

~~(C)~~

~~EVSE and WPTE that is connected to the premises wiring shall be connected in accordance with one of the methods in 625.44 (A) - through 625.44(C) :~~

~~Cord- and plug-connected equipment shall be provided with an attachment plug rated not less than 125 percent of the maximum rating of the equipment.~~

~~A 50-ampere rated receptacle shall not be installed on a 40-ampere branch circuit as permitted in 210.24 :~~

~~(A) Portable Equipment:~~

~~Portable equipment shall be connected to the premises wiring system by one or more of the following methods:~~

- ~~(1) A nonlocking, 2-pole, 3-wire grounding-type receptacle outlet rated at 125 volts or 250 volts, single phase in accordance with one of the following:~~
 - ~~(2) 15 or 20 amperes~~
 - ~~(3) 30 or 50 amperes listed for EVSE and WPTE use~~
- ~~(4) A nonlocking, 3-pole, 4-wire grounding-type receptacle outlet rated at 125/250 volts, single phase in accordance with one of the following:~~
 - ~~(5) 15 or 20 amperes~~
 - ~~(6) 30, 50, or 60 amperes listed for EVSE and WPTE use~~
- ~~(7) A nonlocking, 2-pole, 3-wire grounding-type receptacle outlet rated at 277 volts, single phase in accordance with one of the following:~~
 - ~~(8) 15 or 20 amperes~~
 - ~~(9) 30 or 50 amperes listed for EVSE and WPTE use~~
- ~~(10) A nonlocking, 2-pole, 3-wire grounding-type receptacle outlet rated at 60 volts de maximum, 15 or 20 amperes~~
- ~~(11) A locking, pin-and-sleeve, 3-pole, 4-wire grounding-type receptacle outlet rated 277/480 volts, three-phase 60 amperes or 100 amperes~~

(B)– Hand-Fastened Equipment:

Equipment that is hand fastened shall be connected to the premises wiring system by one of the following methods:

- (1) ~~A nonlocking, 2-pole, 3-wire grounding-type receptacle outlet rated 125 volts or 250 volts, single phase in accordance with one of the following:~~
 - (2) ~~15 or 20 amperes~~
 - (3) ~~30 or 50 amperes listed for EVSE and WPTE use~~
- (4) ~~A nonlocking, 3-pole, 4-wire grounding-type receptacle outlet rated 250 volts, three phase in accordance with one of the following:~~
 - (5) ~~15 or 20 amperes~~
 - (6) ~~30, 50, or 60 amperes listed for EVSE and WPTE use~~
- (7) ~~A nonlocking, 3-pole, 4-wire grounding-type receptacle outlet rated 125/250 volts, single phase in accordance with one of the following:~~
 - (8) ~~15 or 20 amperes~~
 - (9) ~~30, 50, or 60 amperes listed for EVSE and WPTE use~~
- (10) ~~A nonlocking, 2-pole, 3-wire grounding-type receptacle outlet rated 277 volts, single phase in accordance with one of the following:~~
 - (11) ~~15 or 20 amperes~~
 - (12) ~~30, 50, or 60 amperes listed for EVSE and WPTE use~~
- (13) ~~A nonlocking, 3-pole, 4-wire grounding-type receptacle outlet rated at 120/208 volts, three phase in accordance with one of the following:~~
 - (14) ~~15 or 20 amperes~~
 - (15) ~~30, 50, or 60 amperes listed for EVSE and WPTE use~~
- (16) ~~A nonlocking, 2-pole, 3-wire grounding-type receptacle outlet rated 60 volts dc maximum, 15 or 20 amperes~~
- (17) ~~A locking, pin-and-sleeve, 3-pole, 4-wire grounding-type receptacle outlet rated 277/480 volts, three phase 60 amperes or 100 amperes~~

Portable and hand-fastened equipment.

Power-supply Cords and receptacles for portable and hand-fastened equipment shall be in accordance with those types and configurations listed for use with the equipment. Where equipment has adjustable current settings, the setting shall not exceed the rating of the power-supply cord, based on the load being continuous.

(B) Securely Fastened in Place Equipment.

All other ~~EVSE and WPTE~~ EV power transfer system equipment shall be permanently wired in accordance with this code and securely fastened in place to the supporting surface.

Statement of Problem and Substantiation for Public Input

There is no justification for this CMP to restrict the use of listed equipment and installation methods of the balance of the code.

Per our other input, we understand that if a non-OEM power supply cord is affixed to EV power transfer system equipment, then it is governed by this code and the cord should be compatible with the intended use, equipment listing, and equipment rating, but generally most EVPTSE are otherwise very similar to cooktops and built-in ovens in terms of complexity.

Higher power charging utilize installation methods similar to other outdoor industrial equipment and similarly requires no special treatment than other electrical equipment installers are accustomed to.

Submitter Information Verification

Submitter Full Name: Kevin Cheong

Organization: Chargepoint Canada Inc.

Affiliation: Chargepoint Inc.

Street Address:

City:

State:

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Submittal Date: Sun Apr 05 20:30:08 EDT 2026

Committee: NEC-P12



Public Input No. 3410-NFPA 70-2026 [Section No. 625.44]

625.44 Equipment Connection.

~~EVSE and WPTE that is connected to the premises wiring shall be connected in accordance with one of the methods in 625.44(A) through 625.44(C) :~~

~~Cord- and plug-connected equipment shall be provided with an attachment plug rated not less than 125 percent of the maximum rating of the equipment.~~

~~A 50-ampere rated receptacle shall not be installed on a 40-ampere branch circuit as permitted in 210.24.~~

~~(A) Portable Equipment:~~

~~Portable equipment shall be connected to the premises wiring system by one or more of the following methods:~~

- ~~(1) A nonlocking, 2-pole, 3-wire grounding-type receptacle outlet rated at 125 volts or 250 volts, single phase in accordance with one of the following:~~
 - ~~(2) 15 or 20 amperes~~
 - ~~(3) 30 or 50 amperes listed for EVSE and WPTE use~~
- ~~(4) A nonlocking, 3-pole, 4-wire grounding-type receptacle outlet rated at 125/250 volts, single phase in accordance with one of the following:~~
 - ~~(5) 15 or 20 amperes~~
 - ~~(6) 30, 50, or 60 amperes listed for EVSE and WPTE use~~
- ~~(7) A nonlocking, 2-pole, 3-wire grounding-type receptacle outlet rated at 277 volts, single phase in accordance with one of the following:~~
 - ~~(8) 15 or 20 amperes~~
 - ~~(9) 30 or 50 amperes listed for EVSE and WPTE use~~
- ~~(10) A nonlocking, 2-pole, 3-wire grounding-type receptacle outlet rated at 60 volts de maximum, 15 or 20 amperes~~
- ~~(11) A locking, pin-and-sleeve, 3-pole, 4-wire grounding-type receptacle outlet rated 277/480 volts, three-phase 60 amperes or 100 amperes~~

~~(B)~~ Hand-Fastened Equipment:

~~Equipment that is hand fastened shall be connected to the premises wiring system by one of the following methods:~~

- ~~(1) A nonlocking, 2-pole, 3-wire grounding-type receptacle outlet rated 125 volts or 250 volts, single phase in accordance with one of the following:~~
 - ~~(2) 15 or 20 amperes~~
 - ~~(3) 30 or 50 amperes listed for EVSE and WPTE use~~
- ~~(4) A nonlocking, 3-pole, 4-wire grounding-type receptacle outlet rated 250 volts, three phase in accordance with one of the following:~~
 - ~~(5) 15 or 20 amperes~~
 - ~~(6) 30, 50, or 60 amperes listed for EVSE and WPTE use~~
- ~~(7) A nonlocking, 3-pole, 4-wire grounding-type receptacle outlet rated 125/250 volts, single phase in accordance with one of the following:~~
 - ~~(8) 15 or 20 amperes~~
 - ~~(9) 30, 50, or 60 amperes listed for EVSE and WPTE use~~
- ~~(10) A nonlocking, 2-pole, 3-wire grounding-type receptacle outlet rated 277 volts, single phase in accordance with one of the following:~~
 - ~~(11) 15 or 20 amperes~~
 - ~~(12) 30, 50, or 60 amperes listed for EVSE and WPTE use~~
- ~~(13) A nonlocking, 3-pole, 4-wire grounding-type receptacle outlet rated at 120/208 volts, three phase in accordance with one of the following:~~
 - ~~(14) 15 or 20 amperes~~
 - ~~(15) 30, 50, or 60 amperes listed for EVSE and WPTE use~~
- ~~(16) A nonlocking, 2-pole, 3-wire grounding-type receptacle outlet rated 60 volts dc maximum, 15 or 20 amperes~~
- ~~(17) A locking, pin-and-sleeve, 3-pole, 4-wire grounding-type receptacle outlet rated 277/480 volts, three phase 60 amperes or 100 amperes~~

~~(C)~~ Securely Fastened in-Place Equipment:

~~All other EVSE and WPTE shall be permanently wired and securely fastened in place to the supporting surface:~~

NEMA "L" series receptacles shall not be used for EV charging circuits nor on EV charging equipment.

Statement of Problem and Substantiation for Public Input

This section may have made sense when EV charging was new. This section is obsolete now and hinders special purpose and industrial choice.

The “L” series connector locking design makes them unsuitable for this use -- so focusing on safety and not on control of installers and designers -- it makes sense to prohibit their use.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
Public Input No. 3411-NFPA 70-2026 [Section No. 624.44]	

Submitter Information Verification

Submitter Full Name: Bryce Nesbitt

Organization: EV Plugbox LLC

Affiliation: Member of POWER

Street Address:

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State:

Zip:

Submittal Date: Thu Apr 09 03:02:24 EDT 2026

Committee: NEC-P12



Public Input No. 1950-NFPA 70-2026 [Section No. 625.44(A)]

(A) Portable Equipment.

Portable equipment shall be connected to the premises wiring system by one or more of the following methods:

- (1) A nonlocking, 2-pole, 3-wire grounding-type receptacle outlet rated at 125 volts or 250 volts, single phase in accordance with one of the following:
 - (2) ~~15 or 20 amperes~~
 - (3) ~~30 or 50 amperes listed for EVSE and WPTE use~~
- (4) ~~A nonlocking, 3-pole, 4-wire grounding-type receptacle outlet rated at 125/250 volts, single phase in accordance with one of the following:~~
 - (5) ~~15 or 20 amperes~~
 - (6) ~~30, 50, or 60 amperes listed for EVSE and WPTE use~~
- (7) ~~A nonlocking, 2-pole, 3-wire grounding-type receptacle outlet rated at 125 through 277 volts, single phase in accordance with one of the following:~~
 - (8) 15 or 20 amperes
 - (9) 30 or 50 amperes listed for EVSE and WPTE use
- (10) A nonlocking, 2-pole, 3-wire grounding-type receptacle outlet rated at 60 volts dc maximum, 15 or 20 amperes
- (11) A locking, pin-and-sleeve, 3-pole, 4-wire grounding-type receptacle outlet rated ~~277/480 volts~~ 416/240 through 480/277 volts, three-phase 60 amperes or 100 amperes

Statement of Problem and Substantiation for Public Input

There are no light-duty EV charging standards that require an EVSE to use a 120/240 V split-phase load with both line-to-line and line-to-neutral power. Under SAE J1772, AC charging for light-duty vehicles is based on 120 V Level 1 charging and 208/240 V single-phase Level 2 charging. NACS, now covered by SAE J3400, follows the same general approach for AC charging. Three-phase AC charging is addressed separately under SAE J3068. In other words, the mainstream EV charging standards are built around a single utilization voltage, not a 120/240 V split-phase (or 120/208) load that needs a neutral.

In the field, however, there have been many reports of installers using NEMA 14-50 receptacles for 240 V EVSE while supplying them with 3-wire SE cable, with no insulated neutral conductor installed and the bare conductor terminated as the equipment grounding conductor. A close reading of NEC 406, including 406.12(C) and (F), appear not to require that the neutral contact of a NEMA 14-50 be connected to any neutral conductor when the load does not use a neutral and there are no other 14-50 receptacles installed on the premises (e.g. for a range or RV) such as any residence with gas cooking. Since Level 2 EVSE is widely understood to operate at 208/240 V AC and generally does not require a neutral for charging, some installers have saved on cost by omitting the insulated neutral conductor, and since the NEC does not require it an AHJ is forced to approve the installation. This clear safety issue has been discussed repeatedly on Mike Holt and other electrical forums.

Correctly wired 14-50's also have a material cost and are a waste of resources. Using annual U.S. EV sales as a rough stand-in for annual EVSE installations, Cox Automotive reported about 1.3 million EVs sold in the United States in 2024. Using #6 copper at about 79.5 pounds per 1,000 feet, an unused 20-foot neutral conductor adds about 1.59 pounds of copper per installation. Across 1.3 million installations, that comes to about 2.06 million pounds, or roughly 1,032 short tons of copper in a single year that may be installed with no useful charging function.

Removing the reference to 4-wire 120/240 V receptacles would better align the NEC with current EV charging practice and with the SAE standards. It would also help guide manufacturers and installers toward the correct receptacle configuration for a 240 V branch circuit, typically a NEMA 6-50 where permitted by the equipment listing and manufacturer's instructions.

Some may argue that RV and EVSE receptacles should be interchangeable, but a 120/240 V, 50 A RV receptacle is installed for a different purpose and under different rules. EV charging equipment should be matched to the electrical characteristics it actually uses, rather than to a receptacle configuration borrowed from an unrelated application.

I further propose to merge the 125 -250 and 277 requirements as they are the same, making the section simpler to read.

In addition per article 120.5(A) 416/240 is a new standard voltage that may be present at say a datacenter when 480/277 is not, there is no need to exclude this voltage so I propose adding it with the same requirements as 480/277.

I also corrected the voltage notation to match ANSI C84.1 and NEC usage, with the line-to-line voltage shown first and the line-to-ground or line-to-neutral voltage shown after the slash.

Link to a electrician discussion of NEMA 14-50's being installed on Mike Holts site:
<https://forums.mikeholt.com/threads/can-i-install-a-14-50-with-no-neutral.2590027/>

Submitter Information Verification

Submitter Full Name: Stephen Schmiechen

Organization: Schmiechen

Street Address:

City:

State:

Zip:

Submittal Date: Thu Mar 26 20:22:04 EDT 2026

Committee: NEC-P12



Public Input No. 1167-NFPA 70-2026 [Sections 625.44(A), 625.44(B)]

Sections 625.44(A), 625.44(B)

(A) Portable Equipment.

Portable equipment shall be connected to the premises wiring system by one or more of the following methods:

- (1) ~~A nonlocking,~~ 2-pole, 3-wire grounding-type receptacle outlet rated at 125 volts or 250 volts, single phase in accordance with one of the following:
 - (2) 15 or 20 amperes
 - (3) 30 or 50 amperes listed for EVSE and WPTE use
- (4) ~~A nonlocking,~~ 3-pole, 4-wire grounding-type receptacle outlet rated at 125/250 volts, single phase in accordance with one of the following:
 - (5) 15 or 20 amperes
 - (6) 30, 50, or 60 amperes listed for EVSE and WPTE use
- (7) ~~- A nonlocking, 2 A~~ 2 -pole, 3-wire grounding-type receptacle outlet rated at 277 volts, single phase in accordance with one of the following:
 - (8) 15 or 20 amperes
 - (9) 30 or 50 amperes listed for EVSE and WPTE use
- (10) ~~- A nonlocking, 2 A~~ 2 -pole, 3-wire grounding-type receptacle outlet rated at 60 volts dc maximum, 15 or 20 amperes
- (11) A locking, pin-and-sleeve, 3-pole, 4-wire grounding-type receptacle outlet rated 277/480 volts, three-phase 60 amperes or 100 amperes

(B) Hand Fastened Equipment.

Equipment that is hand fastened shall be connected to the premises wiring system by one of the following methods:

- (1) A ~~nonlocking~~, 2-pole, 3-wire grounding-type receptacle outlet rated 125 volts or 250 volts, single phase in accordance with one of the following:
 - (2) 15 or 20 amperes
 - (3) 30 or 50 amperes listed for EVSE and WPTE use
- (4) A ~~nonlocking~~, 3-pole, 4-wire grounding-type receptacle outlet rated 250 volts, three phase in accordance with one of the following:
 - (5) 15 or 20 amperes
 - (6) 30, 50, or 60 amperes listed for EVSE and WPTE use
- (7) A ~~nonlocking~~, 3-pole, 4-wire grounding-type receptacle outlet rated 125/250 volts, single phase in accordance with one of the following:
 - (8) 15 or 20 amperes
 - (9) 30, 50, or 60 amperes listed for EVSE and WPTE use
- (10) A ~~nonlocking~~, 2-pole, 3-wire grounding-type receptacle outlet rated 277 volts, single phase in accordance with one of the following:
 - (11) 15 or 20 amperes
 - (12) 30, 50, or 60 amperes listed for EVSE and WPTE use
- (13) A ~~nonlocking~~, 3-pole, 4-wire grounding-type receptacle outlet rated at 120/208 volts, three phase in accordance with one of the following:
 - (14) 15 or 20 amperes
 - (15) 30, 50, or 60 amperes listed for EVSE and WPTE use
- (16) ~~A nonlocking, 2 A~~ 2-pole, 3-wire grounding-type receptacle outlet rated 60 volts dc maximum, 15 or 20 amperes
- (17) A locking, pin-and-sleeve, 3-pole, 4-wire grounding type receptacle outlet rated 277/480 volts, three phase 60 amperes or 100 amperes

Statement of Problem and Substantiation for Public Input

Propose to delete "non-locking" to expand use to either locking or non-locking receptacles. EVs and listed EVSEs are designed to SAE J1772 or SAE J3400 protocol that have safety interlocks that prevents EV from being driven off while EV connector is connected to the EV chargeport. This is applicable to all listed EVSEs, whether they are connected to locking pin-sleeve receptacles, or any NEMA style connectors.

Submitter Information Verification

Submitter Full Name: Indra Wiryadinata

Organization:

Street Address:

City:

State:

Zip:

Submittal Date: Tue Feb 24 11:52:46 EST 2026

Committee: NEC-P12



Sections 625.44(A), 625.44(B)

(A) Portable Equipment.

Portable equipment shall be connected to the premises wiring system by one or more of the following methods:

- (1) A nonlocking, 2-pole, 3-wire grounding-type ~~receptacle-outlet-rated~~ receptacle rated at 125 volts or 250 volts, single phase in accordance with one of the following:
 - (2) 15 or 20 amperes
 - (3) 30 or 50 amperes listed for EVSE and WPTE use
- (4) A nonlocking, 3-pole, 4-wire grounding-type receptacle ~~outlet-~~ rated at 125/250 volts, single phase in accordance with one of the following:
 - (5) 15 or 20 amperes
 - (6) 30, 50, or 60 amperes listed for EVSE and WPTE use
- (7) A nonlocking, 2-pole, 3-wire grounding-type receptacle ~~outlet-~~ rated at 277 volts, single phase in accordance with one of the following:
 - (8) 15 or 20 amperes
 - (9) 30 or 50 amperes listed for EVSE and WPTE use
- (10) A nonlocking, 2-pole, 3-wire grounding-type receptacle ~~outlet-~~ rated at 60 volts dc maximum, 15 or 20 amperes
- (11) A locking, pin-and-sleeve, 3-pole, 4-wire grounding-type ~~receptacle-outlet-rated~~ receptacle rated 277/480 volts, three-phase 60 amperes or 100 amperes

(B) Hand Fastened Equipment.

Equipment that is hand fastened shall be connected to the premises wiring system by one of the following methods:

- (1) A nonlocking, 2-pole, 3-wire grounding-type ~~receptacle outlet rated~~ receptacle rated 125 volts or 250 volts, single phase in accordance with one of the following:
 - (2) 15 or 20 amperes
 - (3) 30 or 50 amperes listed for EVSE and WPTE use
- (4) A nonlocking, 3-pole, 4-wire grounding-type receptacle ~~outlet~~ rated 250 volts, three phase in accordance with one of the following:
 - (5) 15 or 20 amperes
 - (6) 30, 50, or 60 amperes listed for EVSE and WPTE use
- (7) A nonlocking, 3-pole, 4-wire grounding-type receptacle ~~outlet~~ rated 125/250 volts, single phase in accordance with one of the following:
 - (8) 15 or 20 amperes
 - (9) 30, 50, or 60 amperes listed for EVSE and WPTE use
- (10) A nonlocking, 2-pole, 3-wire grounding-type receptacle ~~outlet~~ rated 277 volts, single phase in accordance with one of the following:
 - (11) 15 or 20 amperes
 - (12) 30, 50, or 60 amperes listed for EVSE and WPTE use
- (13) A nonlocking, 3-pole, 4-wire grounding-type receptacle ~~outlet~~ rated at 120/208 volts, three phase in accordance with one of the following:
 - (14) 15 or 20 amperes
 - (15) 30, 50, or 60 amperes listed for EVSE and WPTE use
- (16) A nonlocking, 2-pole, 3-wire grounding-type receptacle ~~outlet~~ rated 60 volts dc maximum, 15 or 20 amperes
- (17) A locking, pin-and-sleeve, 3-pole, 4-wire grounding type receptacle outlet rated 277/480 volts, three phase 60 amperes or 100 amperes

Statement of Problem and Substantiation for Public Input

Receptacle, outlet, and receptacle outlet are all defined terms, and the appropriate term is receptacle in 625.44. This change simply removes the term without changing the technical merit of 625.44.

Submitter Information Verification

Submitter Full Name: Todd Lottmann

Organization: Eaton

Street Address:

City:

State:

Zip:

Submittal Date: Mon Apr 06 21:09:58 EDT 2026

Committee: NEC-P12



Public Input No. 1578-NFPA 70-2026 [Section No. 625.44(B)]

(B) Hand Fastened Equipment.

Equipment that is hand fastened shall be connected to the premises wiring system by one of the following methods:

- (1) A nonlocking, 2-pole, 3-wire grounding-type receptacle outlet rated 125 volts or 250 volts, single phase in accordance with one of the following:
 - (2) 15 or 20 amperes
 - (3) 30 or 50 amperes listed for EVSE and WPTE use
- (4) A nonlocking, 3-pole, 4-wire grounding-type receptacle outlet rated 250 volts, three phase in accordance with one of the following:
 - (5) 15 or 20 amperes
 - (6) 30, 50, or 60 amperes listed for EVSE and WPTE use
- (7) A nonlocking, 3-pole, 4-wire grounding-type receptacle outlet rated 125/250 volts, single phase in accordance with one of the following:
 - (8) 15 or 20 amperes
 - (9) 30, 50, or 60 amperes listed for EVSE and WPTE use
- (10) A nonlocking, 2-pole, 3-wire grounding-type receptacle outlet rated 277 volts, single phase in accordance with one of the following:
 - (11) 15 or 20 amperes
 - (12) 30, 50, or 60 amperes listed for EVSE and WPTE use
- (13) A nonlocking,
3
- (14) 2 -pole,
4
- (15) 3 -wire grounding-type receptacle outlet rated
at 120/208 volts, three phase
- (16) 60 volts dc maximum, in accordance with one of the following:
 - (17) 15 or 20 amperes
 - (18) 30, 50, or 60 amperes listed for EVSE and WPTE use
- (19) A nonlocking, 2-pole, 3-wire grounding-type receptacle outlet rated 60 volts dc maximum,
15 or 20 amperes
A
- (20)
 - a. 15 amperes
 - b. 20 amperes
- (21) A locking, pin-and-sleeve, 3-pole, 4-wire grounding type receptacle outlet rated
277/480 volts, three phase 60 amperes or 100 amperes in accordance with one of the
following:
 - a. 60 amperes

b. 100 amperes

Additional Proposed Changes

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
625_44_B_Draft_V1.docx		

Statement of Problem and Substantiation for Public Input

The receptacle type in list item 5 does not exist. There is no such configuration for a 3-pole, 4-wire receptacle rated 120/208 volts, three-phase. There is a 4-pole, 4 wire receptacle with this rating, but that receptacle is a non-grounded type receptacle and should not be used. The deletion of list item 5 would require renumbering of list items 6 and 7 as shown. Additionally, revision to those two list items moves the rating to sub-items a. and b. to address parallel construction of the list items as required by the style manual in clause 2.1.8.2.

Submitter Information Verification

Submitter Full Name: Scott Picco

Organization: UL Solutions

Street Address:

City:

State:

Zip:

Submittal Date: Mon Mar 16 18:59:59 EDT 2026

Committee: NEC-P12

List items 5,6, and 7 of 625.44(B)

~~5) A nonlocking, 3-pole, 4-wire grounding type receptacle outlet rated at 120/208 volts, three phase in accordance with one of the following:~~

~~a. 15 or 20 amperes~~

~~b. 30, 50, or 60 amperes listed for EVSE and WPTE use~~

~~(65) A nonlocking, 2-pole, 3-wire grounding-type receptacle outlet rated 60 volts dc maximum, in accordance with one of the following:~~~~15 or 20 amperes~~

~~_____ a. 15 amperes~~

~~_____ b. 20 amperes~~

~~(76) A locking, pin-and-sleeve, 3-pole, 4-wire grounding type receptacle outlet rated 277/480 volts, three phase in accordance with one of the following:~~~~60 amperes or 100 amperes~~

~~_____ a. 60 amperes~~

~~_____ b. 100 amperes~~

Rationale: The receptacle type in list item 5 does not exist. There is no such configuration for a 3-pole, 4-wire receptacle rated 120/208 volts, three-phase. There is a 4-pole, 4 wire receptacle with this rating, but that receptacle is a non-grounded type receptacle and should not be used. The deletion of list item 5 would require renumbering of list items 6 and 7 as shown. Additionally, revision to those two list items moves the rating to sub-items a. and b. to address parallel construction of the list items as required by the style manual in clause 2.1.8.2.



Public Input No. 1952-NFPA 70-2026 [Section No. 625.44(B)]

(B) Hand Fastened Equipment.

Equipment that is hand fastened shall be connected to the premises wiring system by one of the following methods:

- (1) A nonlocking, 2-pole, 3-wire grounding-type receptacle outlet rated ~~125 volts or 250 volts~~ 125 through 277 volts , single phase in accordance with one of the following:
 - (2) 15 or 20 amperes
 - (3) 30 or 50 amperes listed for EVSE and WPTE use
- (4) A nonlocking, 3-pole, 4-wire grounding-type receptacle outlet rated 250 volts, three phase in accordance with one of the following:
 - (5) 15 or 20 amperes
 - (6) 30, 50, or 60 amperes listed for EVSE and WPTE use
- (7) ~~A nonlocking, 3-pole, 4-wire grounding-type receptacle outlet rated 125/250 volts, single phase in accordance with one of the following:~~
 - (8) ~~15 or 20 amperes~~
 - (9) ~~30, 50, or 60 amperes listed for EVSE and WPTE use~~
- ~~A nonlocking,~~
 - (10) 2-pole, 3-wire grounding-type receptacle outlet rated 277 volts, single phase in accordance with one of the following:
 - (11) ~~15 or 20 amperes~~
 - (12) ~~30, 50, or 60 amperes listed for EVSE and WPTE use~~
 - (13) ~~A nonlocking, 3-pole, 4-wire grounding-type receptacle outlet rated at 120/208 volts, three phase in accordance with one of the following:~~
 - (14) ~~15 or 20 amperes~~
 - (15) ~~30, 50, or 60 amperes listed for EVSE and WPTE use~~
- (16) ~~A nonlocking, 2-pole, 3-wire grounding-type receptacle outlet rated 60 volts dc maximum, 15 or 20 amperes~~
- (17) A locking, pin-and-sleeve, 3-pole, 4-wire grounding type receptacle outlet rated ~~277/480 volts~~ 416/240 or 480/277 volts , three phase 60 amperes or 100 amperes

Statement of Problem and Substantiation for Public Input

There are no light-duty EV charging standards that require an EVSE to use a 120/240 V split-phase load with both line-to-line and line-to-neutral power. Under SAE J1772, AC charging for light-duty

vehicles is based on 120 V Level 1 charging and 208/240 V single-phase Level 2 charging. NACS, now covered by SAE J3400, follows the same general approach for AC charging. Three-phase AC charging is addressed separately under SAE J3068. In other words, the mainstream EV charging standards are built around a single utilization voltage, not a 120/240 V split-phase (or 120/208) load that requires a neutral.

In the field, however, there have been many reports of installers using NEMA 14-50 receptacles for 240 V EVSE while supplying them with 3-wire SE cable, with no insulated neutral conductor installed and the bare conductor terminated as the equipment grounding conductor. A close reading of NEC 406, including 406.12(C), appears not to require that the neutral contact of a NEMA 14-50 be connected when the load does not use a neutral. Since Level 2 EVSE is widely understood to operate at 208/240 V AC and generally does not require a neutral for charging, some installers have opted to save cost by omitting the insulated neutral conductor and the AHJ is required to approve the installation. This clear safety issue (someone might plug in a RV or other load that needs a neutral) has been discussed repeatedly on Mike Holt and other electrical forums.

Further more correctly installed NEMA 14-50's also are a waste of material and added cost. Using annual U.S. EV sales as a rough stand-in for annual EVSE installations, Cox Automotive reported about 1.3 million EVs sold in the United States in 2024. Using #6 copper at about 79.5 pounds per 1,000 feet, an unused 20-foot neutral conductor adds about 1.59 pounds of copper per installation. Across 1.3 million installations, that comes to about 2.06 million pounds, or roughly 1,032 short tons of copper in a single year that may be installed with no useful charging function.

Removing the reference to 4-wire 120/240 and 120/208 V receptacles is the simple solution, it will better align the NEC with current the SAE standards. It would also help guide manufacturers and installers toward the correct receptacle configuration for a 208-240 V branch circuit, typically a NEMA 6-50 where permitted by the equipment listing and manufacturer's instructions.

Some may argue that RV and EVSE receptacles should be interchangeable, but a NEMA 14-50 120/240 V, 50 A RV receptacle is installed for a different purpose and under different NEC rules, including wire sizing rules. EV charging equipment should be matched to the electrical characteristics it actually uses, rather than to a receptacle configuration borrowed from an unrelated application.

I have also proposed consolidating the requirements for 125-277 V receptacles and adding 416/240 V, as it is a newer standard system voltage in the same general class as 480/277 V.

I also corrected the voltage notation to match ANSI C84.1 and NEC usage, with the line-to-line voltage shown first and the line-to-ground or line-to-neutral voltage shown after the slash.

Submitter Information Verification

Submitter Full Name: Stephen Schmiechen

Organization: Schmiechen

Street Address:

City:

State:

Zip:

Submittal Date: Thu Mar 26 21:20:24 EDT 2026

Committee: NEC-P12



Public Input No. 515-NFPA 70-2025 [Section No. 625.44(B)]

(B) Hand Fastened Equipment.

Equipment that is hand fastened shall be connected to the premises wiring system by one of the following methods:

- (1) A nonlocking, 2-pole, 3-wire grounding-type receptacle ~~outlet~~ rated 125 volts or 250 volts, single phase in accordance with one of the following:
 - (2) 15 or 20 amperes
 - (3) 30 or 50 amperes listed for EVSE and WPTE use
- (4) A nonlocking, 3-pole, 4-wire grounding-type receptacle ~~outlet~~ rated 250 volts, three phase in accordance with one of the following:
 - (5) 15 or 20 amperes
 - (6) 30, 50, or 60 amperes listed for EVSE and WPTE use
- (7) A nonlocking, 3-pole, 4-wire grounding-type receptacle ~~outlet~~ rated 125/250 volts, single phase in accordance with one of the following:
 - (8) 15 or 20 amperes
 - (9) 30, 50, or 60 amperes listed for EVSE and WPTE use
- (10) A nonlocking, 2-pole, 3-wire grounding-type receptacle ~~outlet~~ rated 277 volts, single phase in accordance with one of the following:
 - (11) 15 or 20 amperes
 - (12) 30, 50, or 60 amperes listed for EVSE and WPTE use
- (13) A nonlocking, 3-pole, 4-wire grounding-type receptacle ~~outlet~~ rated at 120/208 volts, three phase in accordance with one of the following:
 - (14) 15 or 20 amperes
 - (15) 30, 50, or 60 amperes listed for EVSE and WPTE use
- (16) A nonlocking, 2-pole, 3-wire grounding-type receptacle ~~outlet~~ rated 60 volts dc maximum, 15 or 20 amperes
- (17) A locking, pin-and-sleeve, 3-pole, 4-wire grounding type receptacle ~~outlet~~ rated 277/480 volts, three phase 60 amperes or 100 amperes

Statement of Problem and Substantiation for Public Input

This proposal revises the terminology in Section 625.44(B) to replace “receptacle outlet” with “receptacle” for technical accuracy. Using the term “receptacle” aligns with proper NEC definitions and improves clarity by referring directly to the device being regulated. This revision enhances technical accuracy and consistency with NEC terminology without changing the intent or application of the requirement.

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Committee: NEC-P12



Public Input No. 2197-NFPA 70-2026 [Section No. 625.44 [Excluding any Sub-Sections]]

EVSE and WPTE that is connected to the premises wiring shall be connected in accordance with one of the methods in 625.44(A) through 625.44(C).

Cord- and plug-connected equipment shall be provided with an attachment plug rated not less than 125 percent of the maximum rating of the equipment. ~~A 50-ampere-rated receptacle shall not be installed on a 40-ampere branch circuit as permitted in 210.24.~~ The ampere rating of receptacles listed for EVSE and WPTE use shall be the same as the ampere rating of the branch circuit.

Exception: This requirement shall not apply to 15- or 20-ampere branch circuits supplying receptacles.

Statement of Problem and Substantiation for Public Input

Articles 625.40 and 625.41 require EVSEs to be treated as continuous loads and supplied by an individual branch circuit with an exception for PCS managed EVSEs. The reference to Article 210.24, which applies only to branch circuits supplying two or more outlets or receptacles, in the current 625.44 text created a correlation issue for EVSEs not managed by a PCS as permitted in 625.42. 210.21(B) is the correct article for a single receptacle on an individual branch circuit.

The original intent of the 625.44 text was to ensure EVSE branch circuits are not overloaded or operate at 100% during charging, an issue identified by the NEMA-UL task group formed to address issues related to EV charging. A specific example is a 40A EVSE with a 50A plug being plugged into a 50A receptacle supplied by a 40A branch circuit, whose original purpose was to supply a 32A EVSE. The same concern also exists for EVSEs managed by a PCS. The original branch circuit installation is code compliant for the original intent, but susceptible to uses that violate requirements of 210.19, 210.20 and for branch circuit conductor size and overcurrent protection.

By requiring the receptacle rating to be the same as the branch circuit rating, this proposal ensures compliance with the safety principles of 210.19 and 210.20 for all cord-connected EVSE usage.

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Committee: NEC-P12



Public Input No. 2229-NFPA 70-2026 [Section No. 625.46]

625.46 Loss of Primary Source.

Means shall be provided such that, upon loss of voltage from the utility or other electrical system(s), energy ~~cannot be~~ shall not be back fed through the electric vehicle and the supply equipment to the premises wiring system unless permitted by 625.48.

Statement of Problem and Substantiation for Public Input

If the rule here is, to not have energy be back fed through the EV and supply equipment, and if this is a mandatory rule then per 90.5(A) the language used here should be "shall not" instead of "cannot."

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Committee: NEC-P12



Public Input No. 2830-NFPA 70-2026 [Section No. 625.48]

625.48 Interactive Equipment.

~~EVSE or WPTE that incorporates a power export function and EV power transfer system equipment with power export capability, that is part of an interconnected interactive system that serves as an optional standby system, an electric power production source, or a bidirectional power feed or multimode system~~ shall be listed and marked as suitable for that ~~purpose~~ each purpose. When used as an optional standby system, the requirements of Article 702 shall apply. When used as an electric power production source to a premise wiring system, the requirements of Article 705 shall apply. EVPE that provides a receptacle outlet other than one provided as part of the equipment as its point of power export shall be in accordance with 625.60.

Informational Note No. ~~4~~ 1: See UL 1741, ~~Inverters, Converters, Controllers and Interconnection System Equipment for Use with Distributed Energy Resources~~, for further information on supply equipment.

Informational Note No. ~~2~~: See UL 9741, ~~Bidirectional Electric Vehicle (EV) Charging System Equipment~~, for vehicle interactive systems.

Informational Note No. ~~3~~: See SAE J3072, ~~Standard for Interconnection Requirements for Onboard, Utility-Interactive Inverter Systems~~, for further information.

Statement of Problem and Substantiation for Public Input

Per our other comments, 625.2 already requires equipment to be listed, and Annex A.1(2) lists UL 1741, and UL 9741 (with a different title BTW), which is the correct location to list such standards. Article 705 uses different terminology than this section, and consideration of other Articles (706, 710, etc. are likely appropriate).

Per section 90.7 the NEC does not regulate listed equipment such as factory V2L devices, but if an EVPE feeds premise or even construction site receptacles in island mode or stand alone mode it is reasonable for the NEC to regulate such installations, but some differentiation is required between that and listed equipment.

For listed V2L devices the installation starts at the cord connector and only in rare circumstances would such installations be subject to any permitting and inspection process, per section 90.4, so the NEC should not attempt to regulate the majority of such installations.

The correlating committee or standards council can provide guidance on such contradictions and scope violations if that would be helpful.

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Committee: NEC-P12



Public Input No. 2555-NFPA 70-2026 [Sections 625.48, 625.49]

Sections 625.48, 625.49

~~625.48~~ Interactive Equipment ~~48~~ Electric Vehicle Power Export Equipment (EVPE) .

EVSE or WPTE that incorporates a power export function and that is part of an interactive system that serves as an optional standby system, an electric power production source, or a bidirectional power feed shall be listed and marked as suitable for that purpose. ~~When used as an optional standby system, the requirements of Article 702 shall apply. When used as an electric power production source, the requirements of Article 705 shall apply. EVPE that provides a receptacle outlet as its point of power export shall be in accordance with 625.60 :~~

Informational Note No. 1 : See UL 1741, ~~Inverters, Converters, Controllers and Interconnection System Equipment for Use with Distributed Energy Resources~~ , for further information on supply equipment. Informational Note No. 2: See UL 9741, ~~Bidirectional Electric Vehicle (EV) Charging System Equipment~~, for vehicle interactive systems.

Informational Note No. 3: See SAE J3072, ~~Standard for Interconnection Requirements for Onboard, Utility-Interactive Inverter Systems~~ , for further information.

~~625.49~~ Island Mode:

EVPE and bidirectional EVSE that incorporate a power export function shall be permitted to be a part of an interconnected power system operating in island mode.

Statement of Problem and Substantiation for Public Input

This public input aims to consolidate the requirements of 625.48 and 625.49 within a singular conditional requirement for electric vehicle power export equipment (EVPE).

- The title has been updated accurately reflect the proposed scope of this section.
- Article 705 applies to all interconnected electric power production sources and includes EVPE that operates in parallel with a primary source. Recommending deletion of unnecessary reference to 705. Systems that operate in island mode, which are often referred to as vehicle-to-home (V2H) systems, are required to be installed in accordance with Article 702 when installed as an optional standby system. Recommending deletion of unnecessary reference to 702.
- 625.60 should be deleted entirely due to it being outside of the scope of NFPA 70. Please see Public Input 2553. Removing reference to correlate with the reference public input.
- UL 9741 is the appropriate standard for listed EVPE. UL 1741 is referenced in Article 705 for interconnected power production sources that operate in parallel with a primary source. UL 1741, including its supplements and certification requirement decisions (CRD), outline the grid performance requirements for interactive EVPE equipment. This includes the UL 1741 CRD for DER Systems and UL 1741 SC. Both will be valid grid performance pathways for grid interactive EVPE systems. UL 1741 SC includes the appropriate application of SAE J3072. Recommending deletion of both UL 1741 and SAE J3072 due to the Article 705 appropriately accounting for them.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
<u>Public Input No. 2553-NFPA 70-2026 [Section No. 625.60]</u>	related

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Committee: NEC-P12



Public Input No. 1951-NFPA 70-2026 [New Section after 625.49]

Wire means for Bidirectional Chargers

All bidirectional vehicle chargers shall be hard wired

** Reason if on a cord and plug the user could get an electrical shock when unplugging equipment during a backfeed

Statement of Problem and Substantiation for Public Input

** Reason if on a cord and plug the user could get an electrical shock when unplugging equipment during a back feed

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Committee: NEC-P12



Public Input No. 2842-NFPA 70-2026 [Section No. 625.49]

625.49— 49 Stand-alone or Island Mode.

EVPE and bidirectional EVSE that incorporate a power export function shall be permitted to be a part of a stand alone system or an interconnected power system operating in island mode.

Statement of Problem and Substantiation for Public Input

Per our other PI on 625.1 and 625.60, in addition to interconnected systems (island or interactive), if article 625 is going to continue to attempt to regulate the receptacle on EVs, but not other passenger, light-duty, and other road vehicles, then they should also acknowledge they are covering stand-alone systems.

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Public Input No. 2116-NFPA 70-2026 [Section No. 625.50]

625.50 Location.

The EVSE shall be located for direct electrical coupling of the EV connector (conductive or inductive) to the electric vehicle. Unless specifically listed and marked for the location, the coupling means of the EVSE shall be stored or located at a height of not less than 450 mm (18 in.) above the floor level for indoor locations or 600 mm (24 in.) above the grade level for outdoor locations. This requirement does not apply to portable EVSE constructed in accordance with 625.44(A). (See Annex 625.50).

Additional Proposed Changes

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
PI_2116_-_Annex_Content_for_Section_625.50.docx	Annex content for Section 625.50	

Statement of Problem and Substantiation for Public Input

EVSEs are required to be accessible to people with disabilities in certain situations. The new annex text provides guidance for designers and installers so they recognize when these requirements may apply so that 1) they meet the intended usability goals in the accessibility standards and 2) they avoid unnecessary enforcement action.

The entire series of PIs submitted by the Task Group is attached to PI 2111.

The Disability Access Review Task Group consists of members from CMP-2, CMP-10, CMP-18 and the NFPA Disability Access Review and Advisory Committee (DARAC). It was directed by the Correlating Committee to review specific articles concerning components such as receptacles, switches and circuit breakers and their usability for the disabled. The task group shall develop Public Inputs for the 2029 code as necessary. The NFPA Disability Access Review Advisory Committee (DARAC: www.nfpa.org/darac) has reviewed this Public Input, and by letter ballot, concurs with the proposed language and the substantiation provided.

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Committee: NEC-P12

PI 2116 – CMP-12

625.50 Location.

The EVSE shall be located for direct electrical coupling of the EV connector (conductive or inductive) to the electric vehicle. Unless specifically listed and marked for the location, the coupling means of the EVSE shall be stored or located at a height of not less than 450 mm (18 in.) above the floor level for indoor locations or 600 mm (24 in.) above the grade level for outdoor locations. This requirement does not apply to portable EVSE constructed in accordance with 625.44(A). [\(See Annex 625.50\)](#)

[\[NEW\] Annex 625.50 Location.](#)

[The location allowed in this section may be higher than can be reached by someone using a wheelchair. A clear floor space sized for a wheelchair plus an accessible route to that location may also be required. Where installed to meet accessibility requirements prescribed by other codes or standards, consult ICC A117.1 for the applicable accessible route, clear floor space, and reach range requirements.](#)



Public Input No. 2844-NFPA 70-2026 [Section No. 625.50]

625.50 Location.

~~The EVSE shall be located for direct EV power transfer system equipment for electrical coupling of the EV connector (conductive or inductive) to the electric vehicle.~~ connector to the electric vehicle or to the primary pad, shall be located to allow direct connection. Unless specifically listed and marked for the location, the ~~coupling means of the EVSE~~ EV connector shall be stored or located at a height of not less than 450 mm (18 in.) above the floor level for indoor locations or 600 mm (24 in.) above the grade level for outdoor locations. This requirement does not apply to portable EVSE constructed in accordance with 625.44(A).

Statement of Problem and Substantiation for Public Input

Since EVSE according to the UL standard referenced for listing in Annex A.1(2) as referenced by section 625.2 covers only AC coupling for charging (EVPE covers export, WPTE is a separate standard currently noted in an informative note), but presumably you mean to regulate the EV connector since it has the exposed terminals.

Primary pads, as defined by this CMP, are located below the specified location so presumably you don't mean to cover WPTE.

The output cable to the EV is already specified, and protected by UL 2231-1/2, to be suitable for wet locations and drive-over, however the EV connector should be stored at a suitable height.

While there is no shock hazard, it would be more prone to drive-over damage, flood damage, etc. if not stored as noted.

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Committee: NEC-P12



Public Input No. 1923-NFPA 70-2026 [New Section after 625.54]

625.55 Surge Protection

Surge Protection shall be installed as an integral part or located immediately adjacent to the input of the equipment power supply for Electric Vehicle Supply Equipment (EVSE). The SPD shall have a Nominal Discharge Current (In) rating of not less than 10kA.

Statement of Problem and Substantiation for Public Input

This surge requirement is necessary to ensure proper protection is provided for this equipment. This requirement is necessary to address applications that are more likely to be subjected to surge events. This requirement also aligns with other areas of the electrical code that includes the requirement for a Nominal Discharge Current (In) rating of not less than 10kA.

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Committee: NEC-P12



625.54 ~~Ground-Fault Circuit-Interrupter Protection for Personnel.~~

~~All receptacles installed for the connection of electric vehicle charging shall have ground-fault circuit-interrupter protection for personnel.~~

.

Branch circuits supplying EVSE and WPTE shall be provided with protection against ground faults in accordance with 625.54(A) or 625.54(B). These methods shall be coordinated with the personnel protection system incorporating a charge circuit interrupting device (CCID).

(A) Cord and Plug-Connected EVSE and WPTE.

The branch circuit supplying receptacles installed for the connection EVSE and WPTE as permitted in 625.44(A) and (B) shall be provided with one of the following:

- (1) Class A GFCI protection, where the branch circuit does not exceed 150 volts to ground
- (2) Class C SPGFCI protection, where the branch circuit is rated 30 amperes or more and does not exceed 150 volts to ground
- (3) Class C SPGFCI protection, where the branch circuit does not exceed 300 volts to ground

Exception: GFCI-type receptacles shall be permitted in branch circuits rated 15- and 20-amperes, 150 volts to ground or less.

(B) Securely Fastened in Place EVSE and WPTE.

Protection against ground faults for EVSE and WPTE covered by 625.44(C) shall be provided in accordance with 625.54(B)(1) or 625.54(B)(2).

- (1) **Installation in a Raceway.** Protection of branch circuit conductors and cables against physical damage shall be provided by installation in a listed raceway and comply with the following:
 - (2) The raceway itself shall qualify as an equipment grounding conductor in accordance with 250.118 or the raceway shall contain an insulated wire-type equipment grounding conductor.
 - (3) All exposed conductive surfaces of EVSE, WPTE, enclosures and support structures shall be bonded to the equipment grounding conductor.

- (4) **GFCI or SPGFCI Protection.** Protection of the branch circuit supplying EVSE or WPTE shall be provided by a listed GFCI or SPGFCI.

(C) **Markings** for GFCI or SPGFCI required by 625.54(A) and 625.54(B)(2) shall be "HF" and marked "For Use with EVSE".

Informational Note 1: Per 625.2 the Personnel Protection System inside the EVSE includes a charge circuit-interrupting device (CCID) for ground-faults between the EVSE and the electric vehicle and upstream and downstream ground monitoring. See Article 100 for the definition of Personnel Protection System. See UL 2231-1 and 2231-2: Personnel Protection Systems for Electric Vehicle (EV) Supply Circuits.

Informational Note No. 2: The requirements of this section modify the requirements in 210.8.

Informational Note No. 3: Not all CCID and GFCI/SPGFCI configurations are compatible. The manufacturer's instructions provide guidance on choosing among the methods permitted by 625.54 providing coordination.

Statement of Problem and Substantiation for Public Input

This Public Input is the product of work by the task group that was formed to evaluate concerns raised during the NFPA appeals process that took place at the Standards Council meeting of August 18-20, 2025, for Certified Amending Motions (CAMs) 70-58/77/147/151/178 (SC #25-8-6-d-1_d-3). The appeal was upheld by the Council (D#25-2) after determining that the appeal presented a clear and substantial basis upon which to overturn the results yielded by the standards development process. The substantiation and support for the appeal can be reviewed in the "Supplemental Agenda – 15 August 2025 Standards Council Meeting".

The balanced task group spent a considerable amount of time developing this Public Input for the 2029 edition of NFPA 70. The focus of the Public Input was to address outstanding compatibility issues between GFCI, or SPGFCI, and EVSE that have listed personnel protection systems (i.e., CCID functions) and to ensure a comprehensive set of requirements for ground-fault protection between the overcurrent protection device and the listed EVSE. The Public Input accomplishes this in the following ways:

1. Provides detailed GFCI/SPGFCI requirements for receptacles of plug-in connected EVSE based on voltage and amperes of the branch circuit to ensure compatibility across EVSE types.
2. Details how to appropriately address ground-fault concerns between the overcurrent protection device and the listed EVSE using installation practices that protect conductors against physical damage and have compliant grounding and bonding of the equipment grounding conductor.
3. Establishes that any GFCI or SPGFCI used for EVSE shall be HF (high frequency) and marked "For Use with EVSE" to ensure the device has been evaluated for EVSE compatibility.

Additionally, the title of Section 625.54 was updated to reflect that requirements are specific to ground-fault protection and that they are not solely based on GFCI. The Public Input provides options for ground-fault protection using installation-based raceway requirements or the use of GFCI/SPGFCI for protection of the branch circuit.

For Item #1 (above) for cord-and-plug EVSE, Class A GFCI is required at 150 volts to ground or less, to align with the 2026 code language for typical residential circuits. The proposed Public Input alternatively requires Class C SPGFCI at 150 volts to ground or less, but only at 30 amps or more. The 30-amp limit is intentional because it keeps SPGFCI out of 15- and 20-amp receptacles where the lower trip threshold is needed for let-go protection for receptacle types used for general-purpose extension cords. For circuits above 150 volts to ground up to 300 volts, SPGFCI is required.

Item #2 (above) is addressed in 625.54(B)(1) of the Public Input. It allows a system to provide protection of the conductors to limit the opportunity for a ground fault between the overcurrent protection device and the EVSE by requiring installation in a raceway. That raceway must qualify as an equipment grounding conductor (EGC) or contain an insulated EGC. Also, all exposed conductive surfaces must be bonded to the EGC. The protection provided by the raceway and a bonded EGC addresses the concerns brought up in the NFPA Technical Session and the Standards Council Meeting, where concerns that the conductors may be unprotected and experience damage that may result in a ground-fault hazard.

For Item #3 (above), if the installation does not meet the requirements of 625.54(B)(1), then 625.54(B)(2) alternatively requires an HF GFCI or an HF SPGFCI, for providing ground-fault protection between the overcurrent protection device and the EVSE (625.54(B)(2) and 625.54(C)). A specific evaluation of GFCI or SPGFCI, for use with EVSE, is needed due to the compatibility issues between these types of devices and the listed personnel protection system of the EVSE (i.e., CCID). Compatibility through coordination of the EVSE and GFCI/SPGFCI, when used, is crucial. These issues were presented during the appeal at the Standards Council meeting and can be reviewed in detail in the "Supplemental Agenda – 15 August 2025 Standards Council Meeting".

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Committee: NEC-P12



Public Input No. 2795-NFPA 70-2026 [Section No. 625.54]

625.54 Ground-Fault ~~Circuit-Interrupter~~ Protection for Personnel.

All receptacles and outlets installed for the connection of electric vehicle charging shall have ground-fault circuit-interrupter protection for personnel.

(A) Cord- and Plug-Connected.

(1) 150 Volts or Less to Ground.

All receptacles and outlets rated 150 volts or less to ground, installed for the connection of electric vehicle charging shall have ground-fault circuit-interrupter protection Class A GFCI for personnel protection.

(2) Greater than 150 Volts to Ground.

All receptacles rated greater than 150 volts to ground shall have Class D or E GFCI with a ground-fault trip current not exceeding 20 mA for personnel protection.

(B) Permanently Wired.

(1) 150 Volts or Less to Ground.

All outlets rated 150 volts or less to ground, installed for the connection of electric vehicle charging, shall have Class A GFCI for personnel protection or Class F GFCI.

(2) Greater than 150 Volts to Ground.

All outlets installed for permanently wired electric vehicle charging, shall have Class D or E GFCI with a ground-fault trip current not exceeding 20 mA for personnel protection.

Exception No. 1 to (B)(1) and (B)(2): Outlets installed to supply dc charging shall not require GFCI protection.

Exception No. 2 to (B)(1) and (B)(2): Outlets installed for electric vehicle bidirectional charging shall not require GFCI protection.

Additional Proposed Changes

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
FIGURE_1.pdf	FIGURE 1	
FIGURE_2.pdf	FIGURE 2	
FIGURE_3.pdf	FIGURE 3	
FIGURE_4.pdf	FIGURE 4	
625.54_PI_Complete_with_Figures.pdf	625.54_PI_Complete with Figures	

Statement of Problem and Substantiation for Public Input

In recent National Electrical Code (NEC) development cycles, there has been significant emphasis on mitigating shock hazards associated with outdoor outlets. Multiple revisions to NEC 210.8 reflect this increased focus, particularly as outdoor environments and user interaction present higher risk conditions.

Electric vehicle supply equipment (EVSE) represents a subset of outdoor-connected electrical loads that warrants particular attention. Due to the high level of consumer interaction during vehicle charging, these systems introduce elevated shock exposure risks when compared with other outdoor electrical equipment.

During the previous code cycle, CMP 12 recognized this elevated hazard and supported changes to NEC 625.54 intended to improve personnel protection. Despite strong internal support—a vote of 16 in

favor and 3 against—these changes were ultimately removed due to an appeal. The strong consensus within CMP 12 underscores the recognition that EVSE related shock hazards require further action.

EVSE Usage and Interaction Risks

EVSE presents unique usage characteristics that amplify the need for protective measures.

High Consumer Interaction

End users frequently handle connectors, cables, and interfaces in a variety of environmental conditions. This increases opportunities for consumer exposure to unsafe electrical conditions.

Limited Protection Zone

Current EVSE designs only provide personnel protection downstream of the charging equipment. The incoming supply conductors remain unprotected, leaving a portion of the circuit vulnerable to ground fault hazards and presenting a potential failure zone that consumers can contact.

Documented Shock Incidents

A study by the Electrical Safety Foundation International (ESFI) highlights consumer challenges and safety issues related to EV charging. Notable findings include:

- 8% of EV owners reported receiving an electric shock while charging their vehicle.
- 23% reported being unable to charge due to incompatible charger types, encouraging unsafe workarounds involving adapters and questionable equipment.

Source: <https://www.esfi.org/news/esfi-releases-consumer-electric-vehicle-survey-results/>

In addition, a review of Consumer Product Safety Commission (CPSC) data shows a reported EV charging shock incident as recent as 2024 (Case #240518037). Together, these data points reflect real world evidence of shock exposure associated with EV charging.

Faulty and Mismatched Equipment

Frequent reports of faulty connectors, worn cables, and improvised charging arrangements—often resulting from a lack of charger compatibility—further elevate the potential for hazardous conditions.

Need for Full Circuit Protection

Given that existing EVSE ground fault protection does not protect the circuit feeding or the EVSE itself, the only way to fully safeguard users is to provide protection that extends from the source all the way to the vehicle connection point.

New Class F GFCI technology

Last cycle since GFCI protection for hardwired Electric vehicle chargers (EVSE) was removed by appeal based on a concern from the Electric vehicle chargers (EVSE) industry regarding interoperability a new type of GFCI technology was created to address the perceived interoperability concerns. New Class F GFCI requirements in UL943C allow up to 20 mA to flow on the equipment grounding conductor while providing Class A protection on ground fault – see figures 1 and 2.

Figure 1 - Up to 20mA of current allowed to flow on the equipment grounding conductor

Figure 2 - If a ground fault occurs, Class A 4-6mA protection is provided

The equipment grounding conductor GFCI level is same as CCID levels in UL2231. This is hybrid solution is intended to be tuned to applications such as this – see figure 3

Figure 3 - GFCI protection level on the EGC is the same as the protection provided by EVSE

In addition, it protects the circuit all the way down to the vehicle – a major advantage over the current CCID protection in UL2231 which only protects downstream from the charger – see figure 4

Figure 4 - Class F will provide protection all the way down to the vehicle

This public input proposes critical updates to NEC 625.54 to enhance safety for EVSE installations while fully considering previous appeal concerns. The recommendations include:

- Adding GFCI protection requirements to 625.54 using the newly developed Class F GFCI technology.
- Permitting Class F protection for hardwired outdoor EVSE outlets rated 150 V or less to ground.
- Allowing Class D and E protection methods for higher voltage EVSE applications.
- Reinstating exceptions for DC charging and bi directional systems as these technologies continue

to evolve.

- Ensuring protection that covers the entire circuit, not just downstream of the EVSE, representing a major improvement overcurrent requirements.

This proposal represents a significant step forward in personnel safety and aligns with NEC 90.2(B)—the practical safeguarding of persons and property from hazards arising from the use of electricity.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
Public Input No. 2797-NFPA 70-2026 [New Definition after Definition: Ground-Fault Circuit Inter...]	

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Committee: NEC-P12

FIGURE 1

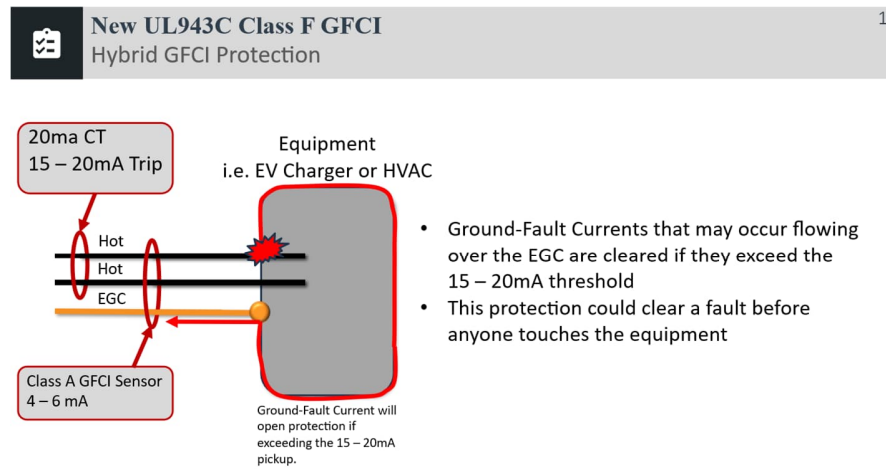


FIGURE 2

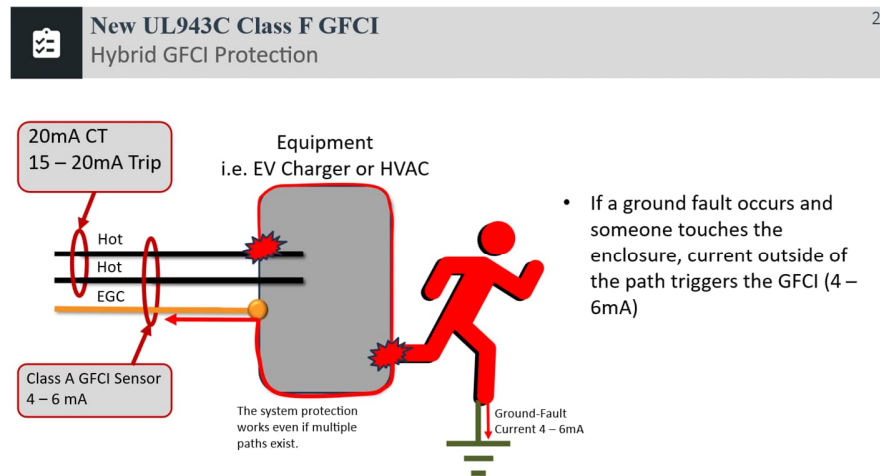


FIGURE 3

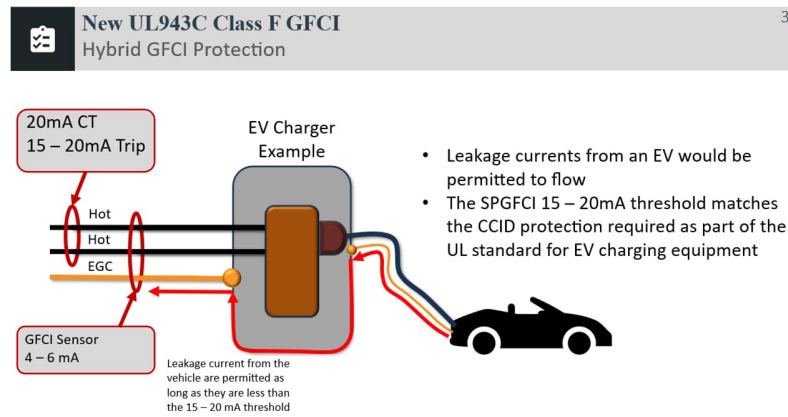
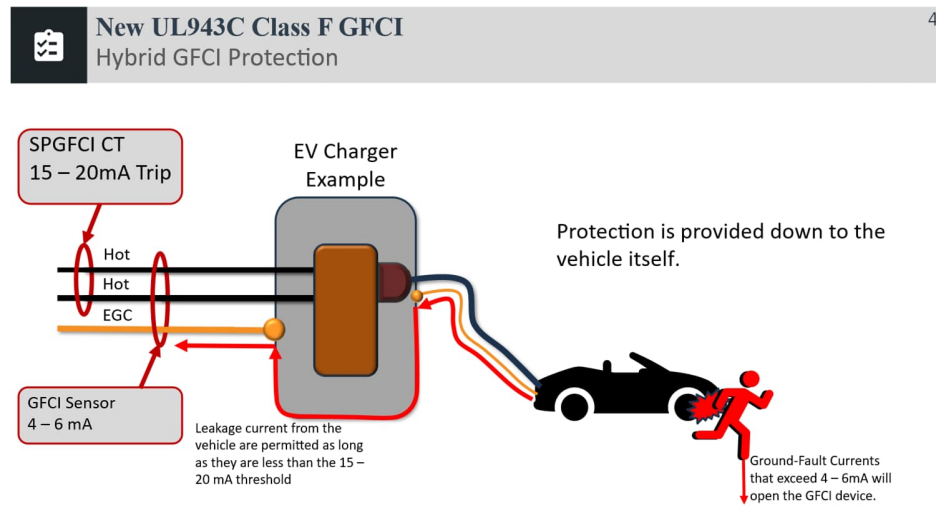


FIGURE 4



NFPA Public Input Form

NOTE: All Public Input must be received by 5:00 pm EST/EDST on the published Public Input Closing Date.

For further information on the standards-making process, please contact the Codes and Standards Administration at 617-984-7249 or visit www.nfpa.org/codes.

For technical assistance, please call NFPA at 1-800-344-3555

FOR OFFICE USE ONLY

Log #: _____

Date Rec'd: _____

Date _____ Name ACBMA Tel. No. _____

Company _____ Email _____

Street Address _____ City _____ State _____ Zip _____

Please indicate organization represented (if any) _____

1. (a) Title of NFPA Standard National Electric Code (NEC) NFPA No. & Year 70 / 2029

(b) Section/Paragraph 625.54

2. Public Input Recommends (check one): ☐ new text ☒ revised text ☐ deleted text

3. Proposed Text of Public Input (include proposed new or revised wording, or identification of wording to be deleted):

[Note: Proposed text should be in legislative format; i.e., use underscore to denote wording to be inserted (inserted wording) and strike-through to denote wording to be deleted (~~deleted wording~~).]

625.54 Ground-Fault Circuit-Interrupter Protection for Personnel.

All receptacles and outlets installed for the connection of electric vehicle charging shall have ground-fault circuit-interrupter protection for personnel.

(A) Cord- and Plug-Connected.

(1) 150 Volts or Less to Ground.

All receptacles and outlets rated 150 volts or less to ground, installed for the connection of electric vehicle charging shall have ground-fault circuit-interrupter protection Class A GFCI for personnel protection.

(2) Greater than 150 Volts to Ground.

All receptacles rated greater than 150 volts to ground shall have Class D or E GFCI with a ground-fault trip current not exceeding 20 mA for personnel protection.

(B) Permanently Wired.

(1) 150 Volts or Less to Ground.

All outlets rated 150 volts or less to ground, installed for the connection of electric vehicle charging, shall have Class A GFCI for personnel protection or Class F GFCI.

(2) Greater than 150 Volts to Ground.

All outlets installed for permanently wired electric vehicle charging, shall have Class D or E GFCI with a ground-fault trip current not exceeding 20 mA for personnel protection.

Exception No. 1 to (B)(1) and (B)(2): Outlets installed to supply dc charging shall not require GFCI protection.

Exception No. 2 to (B)(1) and (B)(2): Outlets installed for electric vehicle bidirectional charging shall not require GFCI protection.

4. Statement of Problem and Substantiation for Public Input: (Note: State the problem that would be resolved by your recommendation; give the specific reason for your Public Input, including copies of tests, research papers, fire experience, etc. If more than 200 words, it may be abstracted for publication.)

In recent National Electrical Code (NEC) development cycles, there has been significant emphasis on mitigating shock hazards associated with outdoor outlets. Multiple revisions to **NEC 210.8** reflect this increased focus, particularly as outdoor environments and user interaction present higher-risk conditions.

Electric vehicle supply equipment (EVSE) represents a subset of outdoor-connected electrical loads that warrants particular attention. Due to the high level of consumer interaction during vehicle charging, these systems introduce elevated shock exposure risks when compared with other outdoor electrical equipment.

During the previous code cycle, **CMP-12 recognized this elevated hazard and supported changes to NEC 625.54** intended to improve personnel protection. Despite strong internal support—a **vote of 16 in favor and 3 against**—these changes were ultimately removed due to an appeal. The strong consensus within CMP-12 underscores the recognition that EVSE-related shock hazards require further action.

EVSE Usage and Interaction Risks

EVSE presents unique usage characteristics that amplify the need for protective measures.

High Consumer Interaction

End users frequently handle connectors, cables, and interfaces in a variety of environmental conditions. This increases opportunities for consumer exposure to unsafe electrical conditions.

Limited Protection Zone

Current EVSE designs only provide personnel protection downstream of the charging equipment. The incoming supply conductors remain unprotected, leaving a portion of the circuit vulnerable to ground-fault hazards and presenting a potential failure zone that consumers can contact.

Documented Shock Incidents

A study by the Electrical Safety Foundation International (ESFI) highlights consumer challenges and safety issues related to EV charging. Notable findings include:

- **8% of EV owners reported receiving an electric shock while charging their vehicle.**
- **23% reported being unable to charge due to incompatible charger types**, encouraging unsafe workarounds involving adapters and questionable equipment.
- Source: <https://www.esfi.org/news/esfi-releases-consumer-electric-vehicle-survey-results/>

In addition, a review of Consumer Product Safety Commission (CPSC) data shows a reported EV charging shock incident as recent as 2024 (Case #240518037). Together, these data points reflect real-world evidence of shock exposure associated with EV charging.

Faulty and Mismatched Equipment

Frequent reports of faulty connectors, worn cables, and improvised charging arrangements—often resulting from a lack of charger compatibility—further elevate the potential for hazardous conditions.

Need for Full-Circuit Protection

Given that existing EVSE ground-fault protection does not protect the circuit feeding or the EVSE itself, the only way to fully safeguard users is to provide protection that extends from the source all the way to the vehicle connection point.

New Class F GFCI technology

Last cycle since GFCI protection for hardwired Electric vehicle chargers (EVSE) was removed by appeal based on a concern from the Electric vehicle chargers (EVSE) industry regarding interoperability a new type of GFCI technology was created to address the perceived interoperability concerns. New Class F GFCI requirements in UL943C allow up to 20 mA to flow on the equipment grounding conductor while providing Class A protection on ground fault – see figures 1 and 2.

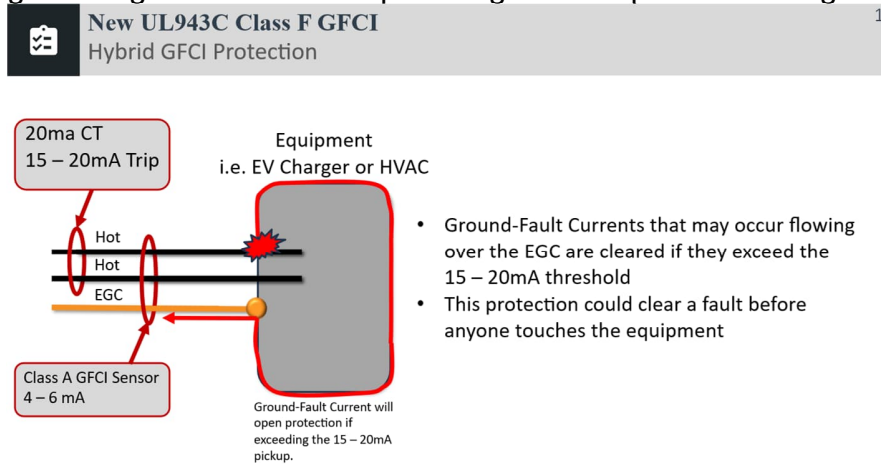


Figure 1 - Up to 20mA of current allowed to flow on the equipment grounding conductor

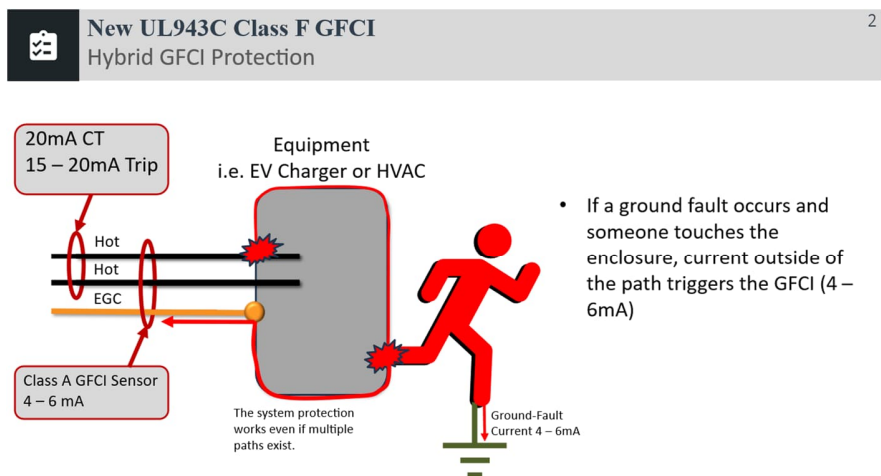


Figure 2 - If a ground fault occurs, Class A 4-6mA protection is provided

The equipment grounding conductor GFCI level is same as CCID levels in UL2231. This is hybrid solution is intended to be tuned to applications such as this – see figure 3



New UL943C Class F GFCI Hybrid GFCI Protection

3

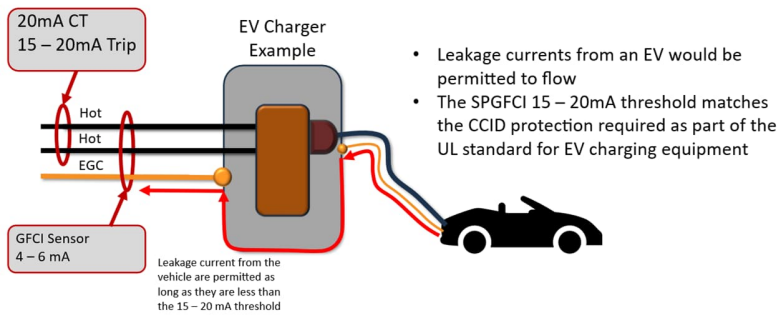


Figure 3 - GFCI protection level on the EGC is the same as the protection provided by EVSE

In addition, it protects the circuit all the way down to the vehicle – a major advantage over the current CCID protection in UL2231 which only protects downstream from the charger – see figure 4



New UL943C Class F GFCI Hybrid GFCI Protection

4

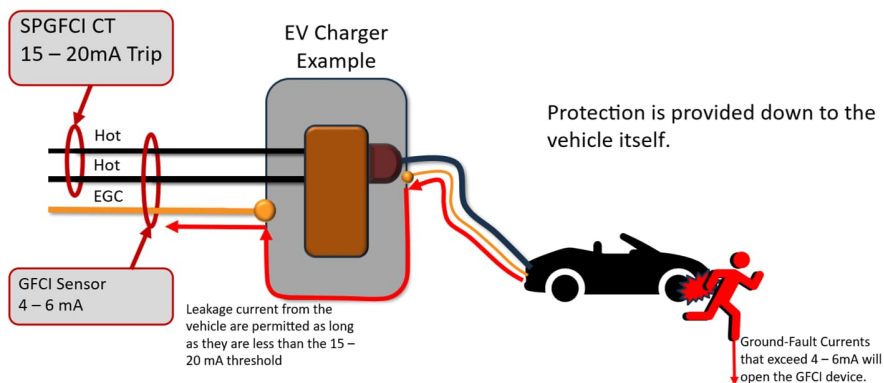


Figure 4 - Class F will provide protection all the way down to the vehicle

This public input proposes critical updates to NEC 625.54 to enhance safety for EVSE installations while fully considering previous appeal concerns. The recommendations include:

- Adding GFCI protection requirements to 625.54 using the newly developed Class F GFCI technology.
- Permitting Class F protection for hardwired outdoor EVSE outlets rated 150 V or less to ground.
- Allowing Class D and E protection methods for higher-voltage EVSE applications.
- Reinstating exceptions for DC charging and bi-directional systems as these technologies continue to evolve.
- Ensuring protection that covers the **entire circuit**, not just downstream of the EVSE, representing a major improvement overcurrent requirements.

This proposal represents a significant step forward in personnel safety and aligns with NEC **90.2(B)**—the practical safeguarding of persons and property from hazards arising from the use of electricity.

5. Copyright Assignment

- (a) ☐ I am the author of the text or other material (such as illustrations, graphs) proposed in the Public Input.
- (b) ☐ Some or all of the text or other material proposed in this Public Input was not authored by me. Its source is as follows: (please identify which material and provide complete information on its source)

I hereby grant and assign to the NFPA all and full rights in copyright in this Public Input (including both the Proposed Text and the Statement of Problem and Substantiation). I understand that I acquire no rights in any publication of NFPA in which this Public Input in this or another similar or analogous form is used. Except to the extent that I do not have authority to make an assignment in materials that I have identified in (b) above, I hereby warrant that I am the author of this Public Input and that I have full power and authority to enter into this assignment.

Signature (Required) _____

PLEASE USE SEPARATE FORM FOR EACH PUBLIC INPUT

To: Secretary, Standards Council National Fire Protection Association
1 Batterymarch Park · Quincy, MA 02169-7471 OR
Fax to: (617) 770-3500 OR Email to: proposals_comments@nfpa.org

4/6/2026



Public Input No. 3108-NFPA 70-2026 [Section No. 625.54]

625.

~~54 Ground~~

54 Ground -Fault Circuit-Interrupter Protection

~~for Personnel~~

~~.~~

~~All~~

Only receptacles installed for the connection of

~~electric vehicle charging shall have ground-fault circuit-interrupter protection for personnel.~~

EVSE and WPTE shall be required to have GFCI protection. Other EV power transfer system equipment shall not require GFCI protection for personnel. Class A "HF" or "HF+" GFCI protection for personnel or Class C SPGFCI shall be permitted.

Informational Note: EV power transfer system equipment is required to include personnel protection equipment as part of their listing, that is equivalent in shock protection to GFCI Class A, but it may not be compatible with GFCI Class A installed upstream. Class A HF, HF+, or Class C SPGFCI improve compatibility.

Statement of Problem and Substantiation for Public Input

NEC Style Manual 4.1.2 indicates "General requirements contained in Chapter 1 shall not be repeated in other articles of the document."

The correlating committee is responsible to enforce the NEC Style Manual per NEC SOP 3.3.2, thus since 210.8A covers dwelling unit outdoor and garage receptacles, etc., and 210.8B covers other than dwelling unit outdoor, garage, etc., receptacles, per section 90.3 this section either supplements or modifies 210.8, or shall be deleted.

Based on SC D2-25, and proposed TIA 1892, we agree there is some value in limiting the applicability to EVSE and WPTE, but it would be better to allow for Class A HF, HF+, and SPGFCI Class C in lieu of GFCI Class A, based on the understanding that 625.2 requires listing and that in turn requires compliance with UL 2231-1/2 Personnel Protection Equipment thus providing shock protection. That explanation could be added as an explanatory note if you believe it helpful for code users to explain the modification of 210.8.

Submitter Information Verification

Submitter Full Name: Kevin Cheong

Organization: Chargepoint Canada Inc.

Affiliation: Chargepoint Inc.

Street Address:

City:

State:

Zip:

Submittal Date: Tue Apr 07 20:29:46 EDT 2026

Committee: NEC-P12



Public Input No. 3204-NFPA 70-2026 [Section No. 625.54]

625.54 Ground-Fault Circuit-Interrupter Protection for Personnel.

All receptacles installed for the connection of ~~electric vehicle charging~~ EVSE and WPTE shall have ground-fault circuit-interrupter protection for personnel.

Ground-fault circuit interrupter protection for personnel is not required for outlets supplying EVSE and WPTE installed in accordance with 625.44(C).

Statement of Problem and Substantiation for Public Input

There is potential for article 210.8(f), which requires GFCI for outdoor outlets, to be enforced against "hardwired" EVSEs installed in such outdoor locations.

The proposed text makes clear that permanently wired EVSEs are not required to have upstream GFCI protection, because they include CCID for personnel protection as part of the listing requirements.

Clarifying the "connection" being referenced should help prevent misapplication of "receptacle" generically to EVSE output-to-vehicle wiring as well.

Submitter Information Verification

Submitter Full Name: Robert Snell

Organization: Hubbell

Street Address:

City:

State:

Zip:

Submittal Date: Wed Apr 08 13:42:18 EDT 2026

Committee: NEC-P12



Public Input No. 3359-NFPA 70-2026 [Section No. 625.54]

625.54 Ground-Fault Circuit-Interrupter Protection for Personnel (GFCI) Protection and Special Purpose Ground-Fault Circuit-Interrupter (SPGFCI) Protection .

All receptacles installed for the connection of electric vehicle charging shall have GFCI or SPGFCI protection for personnel in accordance with 625.54(A) & 625.54(B).

(A) For Circuits Not Exceeding 150 Volts to Ground.

Receptacles rated 150 volts or less to ground, single - fault circuit-interrupter protection for personnel or 3-phase, shall be provided with a listed Class A GFCI.

(B) For Circuits Exceeding 150 Volts to Ground.

Receptacles rated above 150 volts to ground, single- or 3-phase, shall be provided with a listed SPGFCI with a ground-fault trip current not exceeding 20 mA. SPGFCI protective equipment that is listed only for use with protected equipment that employs a double insulation system shall not be used for this purpose .

Statement of Problem and Substantiation for Public Input

This public input is being submitted on behalf of the Minnesota Department of Labor and Industry. Currently, the Department's electrical inspection staff includes 15 office/field staff, 77 state field electrical inspectors and 11 virtual inspectors that completed over 190,000 electrical inspections in 2025.

SPGFCI language should be added for the new voltages allowed for electric vehicle equipment that was changed in the 2026 cycle. Similar language was added to clarify GFCI & SPGFCI requirement in 410.184 for horticultural lighting. This new proposed language in a list format will make the intent of the requirements clearer for both installers and inspectors.

Submitter Information Verification

Submitter Full Name: Luke Nemeth

Organization: Minnesota Department of Labor

Street Address:

City:

State:

Zip:

Submittal Date: Wed Apr 08 20:53:41 EDT 2026

Committee: NEC-P12



Public Input No. 3602-NFPA 70-2026 [Section No. 625.54]

625.54 Ground-Fault Circuit-Interrupter Protection for Personnel.

All receptacles installed for the connection of electric vehicle charging shall have ground-fault circuit-interrupter protection for personnel.

Exception: A listed locking finger-safe receptacle marked for use with EVSE and WPTE shall not require GFCI protection. Suitable connectors must prevent contact with live conductors during all phases of insertion and operation. Associated systems must use means to shut down power unless the connector is fully engaged. The branch circuit must be physically protected as specified in PI-1917 625.54 (B)(1).

Statement of Problem and Substantiation for Public Input

Substantiation:

In a variety of use cases, protection against shock hazard can be completed with mechanical means.

Among use cases are wheeled DC fast charging EVSE serving truck, boat, train or airport docking bays. No suitable GFCI is available at these power levels. The cost of supplying all bays with DCFC is prohibitive.

The finger safe receptacles are paired with systems featuring a release button or a shorter control pin that breaks before the power conductors, ensuring that power is well and truly off unless a connector is properly engaged. At idle power is off.

Protection from the OCPD to the receptacle is the topic of a separate PI created by the Standards Council D25-2 task group. This proposed PI is designed to be completely compatible with that PI (like peanut butter and chocolate :-). To avoid duplication the OCPD to receptacle improvements are not repeated in this PI.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
<u>Public Input No. 3601-NFPA 70-2026</u> <u>[Section No. 624.54]</u>	Parallel issue. Extra important in 624 actually -- more use cases.
<u>Public Input No. 3689-NFPA 70-2026</u> <u>[Section No. 624.54]</u>	

Submitter Information Verification

Submitter Full Name: Bryce Nesbitt

Organization: Obviously Technical Inspections

Affiliation: Member of the Standards Council D25-2 task group, which did a deep dive on this. But the PI is submitted individually.

Street Address:

City:

State:

Zip:

Submittal Date: Thu Apr 09 14:20:00 EDT 2026



Public Input No. 3694-NFPA 70-2026 [Section No. 625.54]

625.54 Ground-Fault Circuit-Interrupter Protection for Personnel.

All receptacles installed for the connection of electric vehicle charging shall have ground-fault circuit-interrupter protection for personnel.

American Honda Motor Company, Inc.

Public Comments regarding NFPA 70 – NEC Section 625.54

April 9, 2026

American Honda Motor Company, Inc. (Honda) appreciates the opportunity to offer Public Comments in support of updates to the 2029 Edition of the National Electrical Code (NEC). These comments specifically apply to Section 625.54.

During the formal public processes undertaken by NFPA during the updates to the 2026 Edition of the NEC, Honda participated in an Appeal regarding NEC 625.54 which was presented to NFPA's Executive Committee on August 18, 2025.

At that time, NFPA's Executive Committee recommended the formation of a Special Task Force was ordered to further investigate alignments in support of revisions to the Section 625.54 language which incorporate suitable technical and safety requirements in alignment with existing Codes and Standards requirements.

During the Special Task Force meetings held in late 2025 and early 2026, consensus recommendations identified in the following text emerged.

625.54 Ground-Fault Protection

Branch circuits supplying EVSE and WPTE shall be provided with protection against ground faults in accordance with 625.54(A) or 625.54(B). These methods shall be coordinated with the personnel protection system incorporating a charge circuit interrupting device (CCID).

(A) . Cord-and Plug-Connected EVSE and WPTE. .

The branch circuit supplying receptacles installed for the connection EVSE and WPTE as permitted in 625.44(A) and (B) shall be provided with one of the following:

- (1) Class A GFCI protection, where the branch circuit does not exceed 150 volts to ground
- (2) Class C SPGFCI protection, where the branch circuit is rated 30 amperes or more and does not exceed 150 volts to ground
- (3) Class C SPGFCI protection, where the branch circuit does not exceed 300 volts to ground

Exception: GFCI-type receptacles shall be permitted in branch circuits rated 15- and 20-amperes, 150 volts to ground or less.

(B) . Securely Fastened in Place EVSE and WPTE.

Protection against ground faults for EVSE and WPTE covered by 625.44(C) shall be provided in accordance with 625.54(B)(1) or 625.54(B)(2).

- (1) **Installation in a Raceway.** Protection of branch circuit conductors and cables against physical damage shall be provided by installation in a listed raceway and comply with the following:
 - (2) The raceway itself shall qualify as an equipment grounding conductor in accordance with 250.118 or the raceway shall contain an insulated wire-type equipment grounding conductor.
 - (3) All exposed conductive surfaces of EVSE, WPTE, enclosures and support structures shall be bonded to the equipment grounding conductor.

- (4) **GFCI or SPGFCI Protection .** Protection of the branch circuit supplying EVSE or WPTE shall be provided by a listed GFCI or SPGFCI.

(C) Markings for GFCI or SPGFCI required by 625.54(A) and 625.54(B)(2) shall be “HF” and marked “For Use with EVSE”.

Informational Note 1: Per 625.2 the Personnel Protection System inside the EVSE includes a charge circuit-interrupting device (CCID) for ground-faults between the EVSE and the electric vehicle and upstream and downstream ground monitoring. See Article 100 for the definition of Personnel Protection System. See UL 2231-1 and 2231-2: Personnel Protection Systems for Electric Vehicle (EV) Supply Circuits.

Informational Note No. 2: The requirements of this section modify the requirements in 210.8.

Informational Note No. 3: Not all CCID and GFCI/SPGFCI configurations are compatible. The manufacturer’s instructions provide guidance on choosing among the methods permitted by 625.54 providing coordination.

Honda recommends adoption of the foregoing language in total. The Special Task Force consists of experts who are duly familiar with issues facing coordination and reliable operation of all aspects of personnel protection methods and practices as they relate to this and all related sections of the NEC. Their work product in establishing this recommended language is the result of a fair and balanced approach to the issues related to product and public safety.

—

Additional Proposed Changes

<u>File Name</u>	<u>Description Approved</u>
AHM_Public_Comments_on_2029_Edition_of_NFPA_70_Section_625.54_.docx	American Honda Motor Company, Inc. public comments on NFPA 70 Section 625.54

Statement of Problem and Substantiation for Public Input

Updates to the Section 625.54 have been focused upon by a Special Task Force created by NFPA Executive Committee on August 18, 2025. The attached comments are in support of the Special Task Force comments and recommended language. Without adoption of these recommendations for the relevant code language, the industry is at risk for stranding of vehicles and unsafe electrical operation of facility equipment.

Submitter Information Verification

Submitter Full Name: John Holmes

Organization: American Honda Motor Co., Inc.

Street Address:

City:

State:

Zip:

Submittal Date: Thu Apr 09 17:18:28 EDT 2026

Committee: NEC-P12

American Honda Motor Company, Inc.

Public Comments regarding NFPA 70 – NEC Section 625.54

April 9, 2026

American Honda Motor Company, Inc. (Honda) appreciates the opportunity to offer Public Comments in support of updates to the 2029 Edition of the National Electrical Code (NEC). These comments specifically apply to Section 625.54.

During the formal public processes undertaken by NFPA during the updates to the 2026 Edition of the NEC, Honda participated in an Appeal regarding NEC 625.54 which was presented to NFPA's Executive Committee on August 18, 2025.

At that time, NFPA's Executive Committee recommended the formation of a Special Task Force was ordered to further investigate alignments in support of revisions to the Section 625.54 language which incorporate suitable technical and safety requirements in alignment with existing Codes and Standards requirements.

During the Special Task Force meetings held in late 2025 and early 2026, consensus recommendations identified in the following text emerged.

625.54 Ground-Fault Protection

Branch circuits supplying EVSE and WPTE shall be provided with protection against ground faults in accordance with 625.54(A) or 625.54(B). These methods shall be coordinated with the personnel protection system incorporating a charge circuit interrupting device (CCID).

(A) Cord-and Plug-Connected EVSE and WPTE.

The branch circuit supplying receptacles installed for the connection EVSE and WPTE as permitted in 625.44(A) and (B) shall be provided with one of the following:

1. Class A GFCI protection, where the branch circuit does not exceed 150 volts to ground
 2. Class C SPGFCI protection, where the branch circuit is rated 30 amperes or more and does not exceed 150 volts to ground
 3. Class C SPGFCI protection, where the branch circuit does not exceed 300 volts to ground
- Exception: GFCI-type receptacles shall be permitted in branch circuits rated 15- and 20-amperes, 150 volts to ground or less.

(B) Securely Fastened in Place EVSE and WPTE.

Protection against ground faults for EVSE and WPTE covered by 625.44(C) shall be provided in accordance with 625.54(B)(1) or 625.54(B)(2).

1. **Installation in a Raceway.** Protection of branch circuit conductors and cables against physical damage shall be provided by installation in a listed raceway and comply with the following:

1. The raceway itself shall qualify as an equipment grounding conductor in accordance with 250.118 or the raceway shall contain an insulated wire-type equipment grounding conductor.
 2. All exposed conductive surfaces of EVSE, WPTE, enclosures and support structures shall be bonded to the equipment grounding conductor.
2. **GFCI or SPGFCI Protection.** Protection of the branch circuit supplying EVSE or WPTE shall be provided by a listed GFCI or SPGFCI.
- (C) **Markings** for GFCI or SPGFCI required by 625.54(A) and 625.54(B)(2) shall be "HF" and marked "For Use with EVSE".

Informational Note 1: Per 625.2 the Personnel Protection System inside the EVSE includes a charge circuit-interrupting device (CCID) for ground-faults between the EVSE and the electric vehicle and upstream and downstream ground monitoring. See Article 100 for the definition of Personnel Protection System. See UL 2231-1 and 2231-2: Personnel Protection Systems for Electric Vehicle (EV) Supply Circuits.

Informational Note No. 2: The requirements of this section modify the requirements in 210.8.

Informational Note No. 3: Not all CCID and GFCI/SPGFCI configurations are compatible. The manufacturer's instructions provide guidance on choosing among the methods permitted by 625.54 providing coordination.

Honda recommends adoption of the foregoing language in total. The Special Task Force consists of experts who are duly familiar with issues facing coordination and reliable operation of all aspects of personnel protection methods and practices as they relate to this and all related sections of the NEC. Their work product in establishing this recommended language is the result of a fair and balanced approach to the issues related to product and public safety.



625.65 Bidirectional Electric Vehicle Power Transfer Systems

(A) Scope. The provisions of 625.50 apply to bidirectional EV power transfer systems (BEPTS), commonly referred to as vehicle-to-home (V2H) or vehicle-to-grid (V2G) systems, that are capable of transferring electric power from an electric vehicle to the premises wiring or the electric power production and distribution network.

(B) Listing. Bidirectional EVSE used in BEPTS applications shall be listed for bidirectional power transfer service.

(C) Anti-Islanding. BEPTS shall incorporate listed anti-islanding protection evaluated in accordance with UL 1741.

(D) Disconnecting Means. A readily accessible disconnecting means complying with 705.20 shall be provided for all BEPTS installations.

(E) Grounding and Bonding. Bidirectional EVSE shall be grounded and bonded in accordance with Article 250.

(F) Optional Standby Applications. Where a BEPTS is used to supply backup power to a dwelling unit, the installation shall comply with the applicable requirements of Article 702 for optional standby systems. A listed bidirectional EVSE that incorporates integral transfer switching and anti-islanding functionality complying with UL 1741 shall not be required to provide separate transfer equipment under 702.5.

(G) Identification. BEPTS installations shall include identification at the service equipment indicating the location of the BEPTS disconnecting means in accordance with 705.10.

Informational Note: No. 1: UL 9741, the Standard for Bidirectional Electric Vehicle (EV) Charging System Equipment, is the applicable listing standard for BEPTS equipment and is currently under development.

Informational Note: No. 2: See Article 702 for optional standby system requirements applicable to V2H backup power applications. See 705.40 for loss of primary source disconnection requirements applicable to BEPTS operating in interactive mode.

Statement of Problem and Substantiation for Public Input

The rapid growth of bidirectional EV platforms (Ford F-150 Lightning, GM Energy, Hyundai Ioniq, Tesla Cybertruck) has created significant installer and AHJ uncertainty about applicable code requirements. The 2029 NEC cycle is the appropriate time to establish a clear regulatory framework. The proposed provisions apply existing safety principles from Articles 702 and 705 to bidirectional EV applications. UL 9741 is under development and is expected to be available before the 2029 NEC adoption cycle, providing the product listing standard necessary for enforcement.

Submitter Information Verification

Submitter Full Name: Raymond Horner

Organization: Base Power Company

Street Address:

City:

State:

Zip:

Submittal Date: Wed Apr 08 12:15:10 EDT 2026

Committee: NEC-P12



Public Input No. 2553-NFPA 70-2026 [Section No. 625.60]

~~625.60– Alternating-Current (ac) Receptacle Outlets Used for EVPE:~~

~~Alternating-current (ac) receptacles installed in electric vehicles and intended to allow for connection of off-board utilization equipment shall comply with 625.60(A) through 625.60(D) :~~

~~(A)– Type:~~

~~The receptacle outlet shall be listed:~~

~~(B)– Rating:~~

~~The receptacle outlet shall be rated 250 volts maximum, single phase 50 amperes maximum:~~

~~(C)– Overcurrent Protection:~~

~~Electric vehicles provided with receptacle outlets for power export shall be provided with overcurrent protection integral to the power export system. The overcurrent protection shall have a nominal rating sufficient for the receptacle it protects. The overcurrent protection shall also be sufficiently rated for the maximum available fault current at the receptacle and shall be included in the interactive equipment evaluation. See 625.48 :~~

~~(D)– GFCI Protection for Personnel:~~

~~Ground-fault circuit-interrupter protection for personnel shall be provided for all receptacles. The ground-fault circuit-interrupter indication and reset shall be installed in a readily accessible location:~~

~~Informational Note: There are various methods available to achieve ground-fault circuit-interrupter protection:~~

Statement of Problem and Substantiation for Public Input

Section 625.60 inappropriately prescribes regulations for the design and construction of on-road vehicles that are explicitly excluded from the scope of the NEC in accordance with section 90.2: Scope and Application of the Document. AC outlets are not unique to electric vehicles and have been provided in vehicles powered by internal combustion engines for 2+ decades. Additionally, power inverters are readily purchasable to allow consumers to convert DC power either through a dedicated port or through direct connection to the vehicle battery to allow for power conversion. Neither of the aforementioned topics have previously been regulated by the NEC, the inclusion of such outlets on Electric Vehicles does not result in a greater hazard nor is within the scope or authority of the NEC to regulate.

The design of integrated AC outlets in vehicles is controlled and tested by the automotive industry within standards such as SAE J1673, SAE J1772, and RVIA codes. Where defects in the design and construction of such equipment are discovered to result in safety hazards, remediation of the situation is captured under the NHTSA's expansive recall authority. The inclusion of 625.60 in the document results in an unenforceable requirement, explicitly outside of the scope of the NEC, and infringes on the regulatory domain of organizations and authority having jurisdictions that regulate the design and construction of on-road vehicles.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
Public Input No. 2555-NFPA 70-2026 [Sections 625.48, 625.49]	

Submitter Information Verification

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Submittal Date: Fri Apr 03 17:59:11 EDT 2026

Committee: NEC-P12



Public Input No. 2855-NFPA 70-2026 [Section No. 625.60]

625.60 Alternating-Current (ac) Receptacle Outlets Used for EVPE.

Alternating-current (ac) receptacles ~~installed in electric vehicles and intended to allow for connection of off-board utilization equipment connected to premises wiring systems, supplied from EVPE~~ shall comply with 625.60(A) through 625.60(D).

(A) Type.

The receptacle outlet shall be listed.

(B) Rating.

The receptacle outlet shall be rated 250 volts maximum, single phase ~~50~~ 60 amperes maximum.

(C) Overcurrent Protection.

Electric vehicles provided with receptacle outlets for power export shall be provided with overcurrent protection integral to the power export system. The overcurrent protection shall have a nominal rating sufficient for the receptacle it protects. The overcurrent protection shall also be sufficiently rated for the maximum available fault current at the receptacle and shall be included in the ~~interactive~~ stand-alone equipment evaluation. See 625.48.

(D) GFCI Protection for Personnel.

Ground-fault circuit-interrupter protection for personnel ~~shall~~ , or an equivalent level of protection, shall be provided for all receptacles. The ground-fault circuit-interrupter indication and reset ~~shall~~ , if provided, shall be installed in a readily accessible location.

Informational Note: There are various methods available to achieve ground-fault circuit-interrupter protection.

Statement of Problem and Substantiation for Public Input

Contrary to the informational note, ground fault circuit-interrupter protection for personnel tends to mean a solidly grounded system and 5 mA protection.

While HF and HF+ are in discussion, as far as we know no resolution has been reached.

Similarly, we don't believe that the assumption of a solidly grounded system is appropriate as V2L is at best chassis grounded (high-impedance through tires).

Internationally it is our understanding that it has been agreed to assume the onboard inverter is an isolated system.

Since the 14-60R receptacle has been recognized by this CMP, it should be included by allowing up to 60 A.

As noted in our other PI, it is not appropriate for the NEC to attempt to regulate a receptacle on an EV since that violates the scope of the NEC (90.2(A)(2) regarding automotive vehicles) and violates the scope of Article 625 (covers EV to premises wiring, which is defined as extending to the outlets, excluding internal wiring to equipment, and outlets are defined as the point at which current is taken to supply utilization equipment, so only to not after the receptacle), especially since what is regulated is expected to be inspected (section 90.4), which internal wiring of EVs would not be. The NEC excludes approved equipment "where the record is made generally available through promulgation by organizations properly equipped and qualified" in Section 90.7.

Violating scope violates the Regs 3.3.1.1. It is the responsibility of the correlating committee to resolve contradictions between CMPs and non-compliance with the regs and SOP (Regs 3.4.2, 3.4.3) to approve scopes (NEC SOP 3.3.1), to enforce the NEC Style Manual (NEC SOP 3.3.2), etc.

More importantly onboard receptacles are no different than a receptacle on an internal combustion engine vehicle with an onboard inverter and receptacles since 120 V to ground, and 5 mA is all that is required for a shock hazard to exist.

The NEC should regulate EVPE only when it involves local premises wiring, not wiring within the EV, and as per section 90.7 and 90.4 just the portion of the installation outside the vehicle if connected using EVPE connected via an EV connector.

The correlating committee and standards council can provide guidance how to resolve the contradiction and non-compliance with the NEC Style Manual, NEC SOP, scope, Regs, etc.

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Submittal Date: Mon Apr 06 14:51:39 EDT 2026

Committee: NEC-P12



Public Input No. 3580-NFPA 70-2026 [Section No. 625.60(D)]

(D) GFCI Protection for Personnel.

Ground-fault circuit-interrupter protection for personnel shall be provided for all receptacles. The ground-fault circuit-interrupter indication and reset shall be installed in a readily accessible location.

Exception: A listed locking finger-safe receptacle dedicated for use with EVSE and WPTE power export shall not require GFCI protection. Suitable connectors must prevent contact with live conductors during all phases of insertion and operation. Associated systems must use means to shut down power unless the connector is fully engaged.

Informational Note: There are various methods available to achieve ground-fault circuit-interrupter protection.

Statement of Problem and Substantiation for Public Input

See related PI.

Submitter Information Verification

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Submission Date: Thu Apr 09 13:14:35 EDT 2026

Committee: NEC-P12



Public Input No. 1736-NFPA 70-2026 [Section No. 625.60 [Excluding any Sub-Sections]]

Alternating-current (ac) receptacles installed in electric vehicles and intended to allow for connection of off-board utilization equipment shall comply with 625.60(A) through 625.60(D). Exception: receptacle outlets shall be permitted to supply one-family or two-family dwellings per 250.30(A)(1), exception 5.

Statement of Problem and Substantiation for Public Input

The current rule does not recognize that an EV feeder can serve a one or two family dwelling. To substantiate this change language has been added to 250.30(A)(1) Exception No. 5, which will allow GFCI protection in the EVPE feeder to function.

Submitter Information Verification

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Submission Date: Thu Mar 19 16:55:30 EDT 2026

Committee: NEC-P12



Trailer-, Canopy-, and Carport-Mounted Electric Vehicle Equipment

(A) Scope. This section applies to electric vehicle supply equipment and electric vehicle power export equipment mounted on freestanding photovoltaic trailers, canopies, or carports, including equipment integrated in a plug-in photovoltaic electric vehicle power exchange system as defined in Article 100.

(B) Installation. Electric vehicle supply equipment and electric vehicle power export equipment mounted on a freestanding photovoltaic trailer, canopy, or carport shall comply with all of the following:

- (1) Equipment shall be listed for use in outdoor locations.
- (2) Equipment enclosures and cable management shall provide protection against vehicle contact and environmental exposure appropriate to the installation location.
- (3) The electric vehicle cable and connector shall be managed to prevent contact with ground surfaces or moving vehicles when not in use and shall be protected against physical damage.

(C) Connection to Premises Wiring. A plug-in photovoltaic electric vehicle power exchange system mounted on a freestanding photovoltaic trailer, canopy, or carport shall be permitted to connect to the premises wiring system by means of a cord-and-plug connection in accordance with Article 705, Part III.

(D) Bidirectional Systems. Where electric vehicle power export equipment mounted on a freestanding photovoltaic trailer, canopy, or carport is capable of exporting electric power to the premises wiring system or to the electric utility system, the following shall apply:

- (1) The system shall comply with Article 625, Part VII.
- (2) The connection to the premises wiring system shall comply with Article 705, Part III.
- (3) Where the system is capable of exporting electric power to the electric utility system, notification to the serving electric utility shall be provided in accordance with 705.82(A).
- (4) The rated output current of the electric vehicle power export equipment shall be included in the calculations required by 705.12(D)(4) and 705.12(E).

(E) Combined Systems. Where a plug-in photovoltaic electric vehicle power exchange system integrates a photovoltaic system and electric vehicle power export equipment in a listed assembly, the following shall apply:

- (1) The photovoltaic system shall comply with Article 690 and Article 705, Part III.
- (2) The electric vehicle power export equipment shall comply with Article 625, Part VII, and this section.
- (3) The combined rated output current, including simultaneous photovoltaic generation and rated output current of the electric vehicle power export equipment, shall be included in the calculations required by 705.12(E).

Informational Note: A plug-in photovoltaic electric vehicle power exchange system, as defined in Article 100, combines electric vehicle power export equipment with a cord-and-plug-connected photovoltaic system in a listed assembly. The photovoltaic system is subject to Article 690 and Article 705, Part III. The electric vehicle power export equipment is subject to Article 625, Part VII. The cord-and-plug connection to the premises wiring system is subject to Article 705, Part III.

Additional Proposed Changes

File Name

Description

Approved

US_12_570_173_B2-
VehicularElectricityGeneratingCanopyAppliance.pdf

US_2026-00228848-A1-
TrailerableElectricityGeneratingCanopyAppliance.pdf

US 12,570,173,B2
Vehicular Electricity
Generating Canopy
Appliance
US 2026-00228848-A1
Trailerable Electricity
Generating Canopy
Appliance

Statement of Problem and Substantiation for Public Input

Article 625 addresses electric vehicle supply equipment and electric vehicle power export equipment in configurations that are pedestal-mounted or building-mounted. A combined plug-in photovoltaic electric vehicle power exchange system integrating trailer, canopy or carport-mounted electric vehicle power export equipment that connects to the premises wiring system by means of a cord-and-plug represents an installation topology that is not recognized by Article 625.

First, for bidirectional electric vehicle power export equipment subject to 625.179, Article 625 contains no provision for a trailer, canopy or carport-mounted unit that simultaneously interfaces with an electric vehicle by means of a charging cable and with the premises wiring system by means of a cord-and-plug connection.

Second, Article 625 contains no provision for electric vehicle supply equipment or electric vehicle power export equipment mounted on a freestanding photovoltaic trailer canopy or carport.

Third, export of electric power to the electric utility system from carport-mounted electric vehicle power export equipment has no cross-reference to the utility notification framework of 705, leaving the regulatory status of such export under this topology without an NEC-recognized pathway.

The integrated single-assembly design of a plug-in photovoltaic electric vehicle power exchange system one listed assembly performing photovoltaic generation, electric vehicle supply, and bidirectional electric power exchange represents a technically sound and commercially practical architecture. It minimizes installation complexity, reduces component count, and delivers the full capability of a combined photovoltaic and electric vehicle power exchange system through a single permitted installation. The absence of an NEC-recognized pathway for this topology is a code gap that this proposal is intended to address.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
Public Input No. 2422-NFPA 70-2026 [Definition: Electric Vehicle (EV).]	
Public Input No. 2426-NFPA 70-2026 [Definition: Electric Vehicle Power Export Equipment (EVPE).]	
Public Input No. 2538-NFPA 70-2026 [New Part after III.]	
Public Input No. 2541-NFPA 70-2026 [New Section after 705.12(B)]	
Public Input No. 2543-NFPA 70-2026 [New Section after 705.20(G)]	
Public Input No. 2544-NFPA 70-2026 [New Section after 705.10]	
Public Input No. 2546-NFPA 70-2026 [New Section after 705.12(B)]	
Public Input No. 2548-NFPA 70-2026 [New Section after 705.81]	
Public Input No. 2549-NFPA 70-2026 [New Section after 690.31(G)]	
Public Input No. 2574-NFPA 70-2026 [New Definition after Definition: Scope.]	
Public Input No. 3251-NFPA 70-2026 [New Definition after Definition: Scope.]	
Public Input No. 3251-NFPA 70-2026 [New Definition after Definition: Scope.]	

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Committee: NEC-P12



Public Input No. 1954-NFPA 70-2026 [Section No. 626.4(B)]

(B) Distribution System Voltages.

Unless other voltages are specified, the nominal ac system voltages of 120, 120/240, 208Y/120, 240, 416Y/240, or 480Y/277 shall be used to supply equipment covered by this article.

Statement of Problem and Substantiation for Public Input

Article 120.5(A) now adopts 416/240 as a NEC standard voltage that may be present and desirable in especially with refrigerated containers that are transported internationally. It is important to note that branch circuits derived from this type of 240V system are more similar to 480/277 than 120/240 as 240 is the line to neutral voltage.

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Submittal Date: Thu Mar 26 22:53:32 EDT 2026

Committee: NEC-P12



Public Input No. 218-NFPA 70-2025 [Section No. 626.11]

626.11 Feeder and Service Load Calculations.

(A) Parking Space Load.

The calculated load of a feeder or service shall be not less than the sum of the loads on the branch circuits. Electrical service and feeders shall be calculated on the basis of not less than 11 kVA per electrified truck parking space.

(B) Demand Factors.

Electrified truck parking space electrical wiring system demand factors shall be based upon the climatic temperature zone in which the equipment is installed. The demand factors set forth in Table 626.11(B) shall be the minimum allowable demand factors that shall be permitted for calculating load for service and feeders. No demand factor shall be allowed for any other load, except as provided in this article.

Table 626.11(B) Demand Factors for Services and Feeders

<u>Climatic Temperature Zone</u>	<u>Demand Factor</u>
<u>(USDA Hardiness Zone)</u>	<u>(%)</u>
<u>(See Note)</u>	
1	70
2a	67
2b	62
3a	59
3b	57
4a	55
4b	51
5a	47
5b	43
6a	39
6b	34
7a	29
7b	24
8a	21
8b	20
9a	20
9b	20
10a	21
10b	23
11	24

Note: The climatic temperature zones shown in Table 626.11(B) correlate with those found on the "USDA Plant Hardiness Zone Map," and the climatic temperature zone selected for use with the table shall be determined through the use of this map based on the installation location.

Informational Note: The US Department of Agriculture (USDA) has developed a commonly used "Plant Hardiness Zone" map that is publicly available. The map provides guidance for determining the Climatic Temperature Zone. Data indicate that the HVAC has the highest power requirement in cold climates, with the heating demand representing the greatest load, which in turn is dependent on outside temperature. In very warm climates, where no heating load is necessary, the cooling load increases as the outdoor temperature rises. These demand factors do not apply to the portion of electrical wiring systems that supply the transport refrigerated units (TRUs).

(C) Two or More Electrified Truck Parking Spaces.

Where the electrified truck parking space wiring system is in a location that serves two or more electrified truck parking spaces, the equipment for each space shall comply with 626.11(A), and the calculated load shall be calculated on the basis of each parking space.

~~(D) Conductor Rating:~~

~~Truck space branch-circuit supplied loads shall be considered to be continuous.~~

Statement of Problem and Substantiation for Public Input

1. This paragraph, which refers to branch-circuit loads, is a subparagraph to a paragraph titled "626.11 Feeder and Service Load Calculations."
2. Placing continuous load calculation requirements in a new section in Article 120 (section 120.2), rather than peppering the continuous load requirements in other Articles, increases usability and clarity and closes the opportunity for discrepancies.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
<u>Public Input No. 206-NFPA 70-2025 [New Article after 120]</u>	
<u>Public Input No. 206-NFPA 70-2025 [New Article after 120]</u>	
<u>Public Input No. 207-NFPA 70-2025 [Section No. 120.4]</u>	

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Committee: NEC-P12



Public Input No. 1291-NFPA 70-2026 [Section No. 626.30(C)]

(C) ~~Special Purpose Ground~~ Class C, Class D or Class E Ground -Fault Circuit-Interrupter (SPGFCI) Protection for Personnel.

The electrified truck parking space equipment intended to supply transport refrigerated units shall be designed and constructed such that all receptacle outlets in 626.30, supplied by branch circuits that are rated more than 150 volts to ground, 100 amperes or less, shall be provided with ~~SPGFCI protection~~ a Class C, Class D, or Class E GFCI protection for personnel.

~~This requirement shall become effective January 1, 2029.~~

Statement of Problem and Substantiation for Public Input

This public input clearly identifies a Class C, D or E GFCi protection to align with the defined terms and to be specific in which GFCI devices would be permitted for these applications.

Submitter Information Verification

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Submittal Date: Fri Mar 06 10:15:10 EST 2026

Committee: NEC-P12



Public Input No. 2913-NFPA 70-2026 [Section No. 626.30(C)]

(C) Special Purpose Ground-Fault Circuit-Interrupter (SPGFCI) Protection for Personnel.

The electrified truck parking space equipment intended to supply transport refrigerated units shall be designed and constructed such that all receptacle outlets in 626.30, supplied by branch circuits that are rated more than 150 volts to ground, 100 amperes or less, shall be provided with ~~SPGFCI protection~~ Class F GFCI protection for personnel.

~~This requirement shall become effective January 1, 2029.~~

Additional Proposed Changes

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
626.30_Class_F_TRU_Substantiation.pdf	Substantiation file including figures	

Statement of Problem and Substantiation for Public Input

See attached substantiation file for the figures called out in this substantiation.

This public input updates the GFCI class type to the new Class F GFCI category in UL943C. The future date is removed since the technology exists in both the product standard, UL943C, and will be commercially available before the 2029 NEC will be published.

New Class F GFCI technology

A new Class F GFCI requirements in UL943C allow up to 20 ma to flow on the equipment grounding conductor while providing Class A protection where current flows through a path other than the equipment grounding conductor – see figures 1 and 2.

Figure 1 - Up to 20mA of current allowed to flow on the equipment grounding conductor

Figure 2 - If a ground fault occurs, Class A 4-6mA protection is provided

The equipment grounding conductor GFCI level is set at 20mA max and is hybrid solution intended to be tuned to applications where leakage current on the EGC is necessary for operation – see figure 3

Figure 3 - GFCI protection level on the EGC is the same as the protection provided by EVSE

In addition, it protects the entire circuit all the way down to the connected load – a major advantage over the current equipment protection (I.e EV Charging in UL2231) which only protects downstream from the equipment – see figure 4

Figure 4 - Class F will provide protection all the way down to the vehicle

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Submittal Date: Mon Apr 06 21:15:40 EDT 2026

Committee: NEC-P12

Substantiation:

This public input updates the GFCI class type to the new Class F GFCI category in UL943C. The future date is removed since the technology exists in both the product standard, UL943C, and will be commercially available before the 2029 NEC will be published.

New Class F GFCI technology

A new Class F GFCI requirements in UL943C allow up to 20 ma to flow on the equipment grounding conductor while providing Class A protection where current flows through a path other than the equipment grounding conductor – see figures 1 and 2.

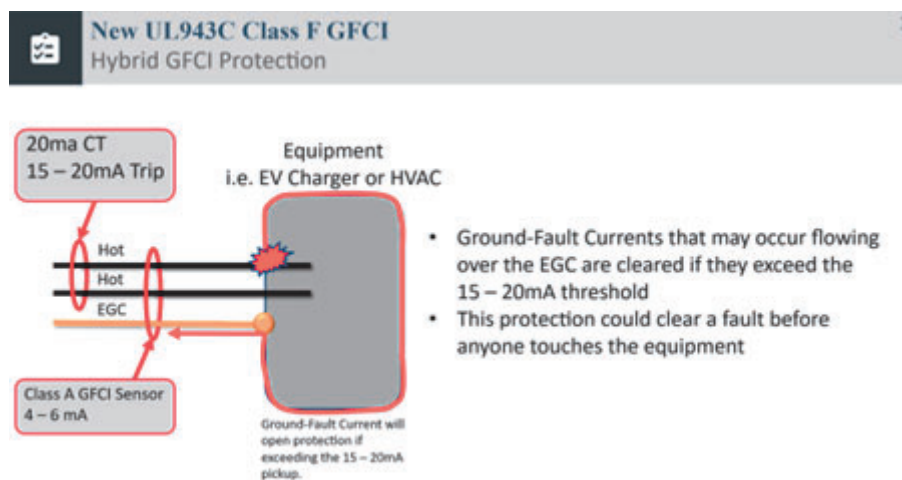


Figure 1 - Up to 20mA of current allowed to flow on the equipment grounding conductor

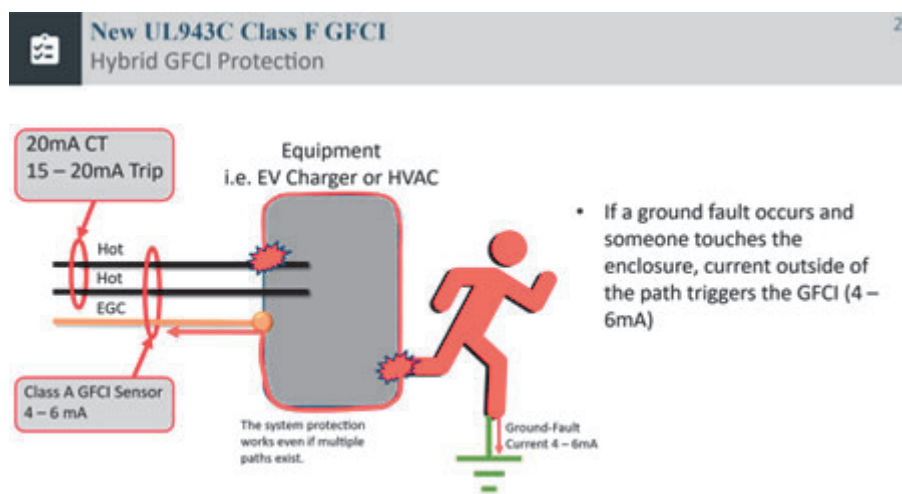


Figure 2 - If a ground fault occurs, Class A 4-6mA protection is provided

The equipment grounding conductor GFCI level is set at 20mA max and is hybrid solution intended to be tuned to applications where leakage current on the EGC is necessary for operation – see figure 3

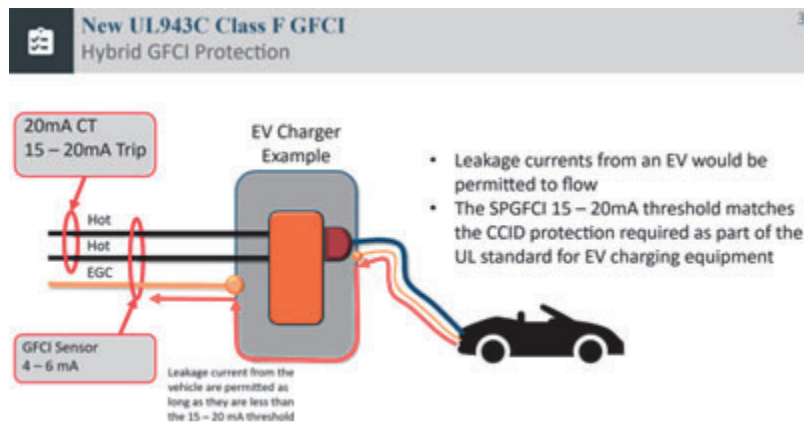


Figure 3 - GFCI protection level on the EGC is the same as the protection provided by EVSE

In addition, it protects the entire circuit all the way down to the connected load – a major advantage over the current equipment protection (I.e EV Charging in UL2231) which only protects downstream from the equipment – see figure 4

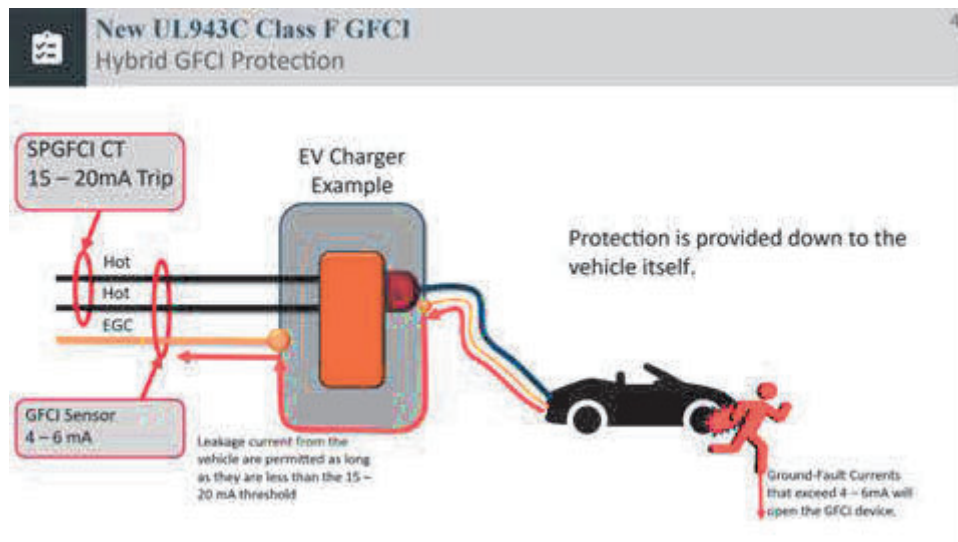


Figure 4 - Class F will provide protection all the way down to the vehicle



Public Input No. 942-NFPA 70-2026 [Section No. 626.30(C)]

~~(C)– Special Purpose~~ _ Ground-Fault Circuit-Interrupter (SPGFCI GFCI) Protection for Personnel.

The electrified truck parking space equipment intended to supply transport refrigerated units shall be designed and constructed such that all receptacle outlets in 626.30, ~~supplied~~ supplied by branch circuits that are rated ~~more than 150 volts to ground,~~ 100 amperes or less, ~~shall be provided with SPGFCI~~ less are provided with GFCI protection for personnel, in accordance with the following .

~~This requirement shall become effective January 1, 2029.~~

(1) For circuits not exceeding 300 volts line-to-ground but not exceeding 600 volts line-to-line, a Class C device shall be installed.

(2) For circuits exceeding 300 volts line-to-ground but not exceeding 600 volts line-to-line, a Class D or Class E device shall be installed.

Statement of Problem and Substantiation for Public Input

This Public Input is submitted on behalf of a Correlating Committee task group consisting of Ryan Jackson (Chair), David Humphrey, Robert Osborne, David Johnson, Thomas Domitrovich, Greg Woyczynski, Dan Buuck, Alan Manche, Dean Hunter, Dan Naughton, and Nehad El-Sherif.

This Public Input, along with other companion Public Inputs, was developed with the goal of improving usability of the code by using accurate terminology and consolidating general requirements for GFCI, AFCI, and GFPE devices.

The task group is submitting public input to create a new article in Chapter 2 (244), revise the definitions of GFCI and SPGFCI in Article 100, and make correlating revisions in the following sections: 210.3, 210.8, 210.12, 215.9, 240.2, 240.3, 410.184, 430.132, 626.30, 680.5, 680.12, 680.22, 680.32, 680.43, 680.44, 680.45, 680.58, and 680.59. The committee suggests that the new article be under Code-Making Panel 2's purview.

The term “special purpose ground-fault circuit interrupter” will be deleted, as the term is not used in any product safety standard or other publication. GFCIs are classified as Class A, Class C, Class D, or Class E in UL 943 and UL 943C. The term “special purpose” is only used in the title of UL 943C but not in its normative text. The Informational Notes in the definitions are also marked for deletion, although the material could be placed in an Informative Annex at the discretion of the CMP.

All references to SPGFCI will be revised to specify Class C, Class D, or Class E GFCI protection. Rules that currently require GFCI protection will not be revised, as 244.10 indicates that a Class A device is required for all GFCI protection unless specifically indicated otherwise.

Much like Article 242 for SPDs, the new article will not specify where or when AFCI, GFCI, or GFPE protection is required. The article is intended to provide general requirements only.

The requirements in 244.2 and 244.3 are currently found in 210.3, 210.8, 210.12, 240.2 and 240.3. Those requirements will be deleted.

The requirements and exceptions in 244.6 are currently located in 210.8, 210.12, and 240.24. The language in 210.8 and 210.12 will be deleted. The language in 240.24 applies to all OCPDs and therefore will be retained.

The requirement in 244.10 setting Class A protection as the default protection throughout the code was

in the definition of GFCI. That definition will be revised.

The limitations in 244.10 and 244.12(A) and (B) come from UL 943 and UL 943C. The restriction in 244.12(C) comes from 430.132 and 680.21(D).

The concept of 244.16 can be found in 215.9, but in limited application. Section 215.9 will be deleted.

The exception to 244.16 and the requirement of 244.17 acknowledge that GFCIs on the primary side of a transformer do not protect against ground faults on the secondary side.

Submitter Information Verification

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Submittal Date: Sat Feb 07 12:14:43 EST 2026

Committee: NEC-P12



Public Input No. 2386-NFPA 70-2026 [Section No. 626.31(C)]

(C) Receptacles and Cord Connectors.

All receptacles and cord connectors shall be listed and of the grounding type. Every electrified truck parking space intended to provide an electrical supply for TRUs shall be equipped with one or more of the following:

- (1) A 30-ampere, 480-volt, 3-phase, 3-pole, 4-wire receptacle or cord connector
- (2) A 60-ampere, 208/250 -volt, 3-phase, 3-pole, 4-wire receptacle or cord connector
- (3) A 20-ampere, 1000-volt, 3-phase, 3-pole, 4-wire receptacle, pin and sleeve type, or cord ~~connector~~ connecto
- (4) A 60-ampere,
~~250-volt, 3-phase, 3-pole, 4-wire receptacle or cord connector~~
- (5) ~~A 60-ampere,~~ 480-volt, 3-phase, 3-pole, 4-wire receptacle or cord connector

Informational Note: See UL 1686-2012, *Pin and Sleeve Configurations*, Figure C2.11 for complete details of the 30-ampere pin and sleeve receptacle configuration for refrigerated containers (TRUs) and for various configurations of 60-ampere pin and sleeve receptacles.

Statement of Problem and Substantiation for Public Input

The receptacles in (2) and (4) are both NEMA 15 receptacles, and therefore redundant.

Submitter Information Verification

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Submittal Date: Thu Apr 02 15:22:18 EDT 2026

Committee: NEC-P12



Public Input No. 1570-NFPA 70-2026 [Section No. 630.8]

630.8 Ground-Fault Circuit-Interrupter Protection for Personnel.

All 125-volt, 15- and 20-ampere receptacles for electrical hand tools or portable lighting equipment, supplied by single-phase branch circuits rated 150 volts or less to ground, installed in work areas where welders are operated shall have ~~ground-fault circuit-interrupter protection~~ GFCI protection for personnel.

Statement of Problem and Substantiation for Public Input

Editorial only. Using GFCI acronym.

Submitter Information Verification

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Submittal Date: Mon Mar 16 17:24:32 EDT 2026

Committee: NEC-P12



Public Input No. 1739-NFPA 70-2026 [Section No. 630.8]

630.8 Ground-Fault Circuit-Interrupter Protection for Personnel.

All 125-volt, 15- and 20-ampere receptacles- ~~for electrical hand tools or portable lighting equipment~~, supplied by single-phase branch circuits rated 150 volts or less to ground, installed in ~~work~~ areas where welders are operated shall have ground-fault circuit-interrupter protection for personnel.

Statement of Problem and Substantiation for Public Input

This public input is being submitted on behalf of the Minnesota Department of Labor and Industry. Currently, the Department's electrical inspection staff includes 15 office/field staff, 77 state field electrical inspectors and 11 virtual inspectors that completed over 190,000 electrical inspections in 2025.

The term "work" was removed because it is ambiguous and unenforceable. Additionally, the language deletes "portable tools and lighting equipment" so the requirement applies to all 15-and 20-amp receptacles in areas where welders are used to ensure consistent protection for any type of utilization equipment -not just portable tools. Welding areas commonly present grounding hazards such as moisture, conductive floors, and contact with metal surfaces, increasing the risk of injury from ground faults. Requiring GFCI protection in these areas maintains appropriate personnel safety.

Submitter Information Verification

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Submittal Date: Thu Mar 19 17:21:57 EDT 2026

Committee: NEC-P12



Public Input No. 857-NFPA 70-2026 [Section No. 630.13]

630.13 Disconnecting Means.

A disconnecting means shall be provided in the supply circuit for each arc welder that is not equipped with a disconnect mounted as an integral part of the welder.

The disconnecting means shall be a switch, circuit breaker, or listed cord and plug connector, and its rating shall be not less than that necessary to accommodate overcurrent protection as specified in 630.12.

Text from 630.33 below

A switch or circuit breaker shall be provided by which each arc welder and its control equipment can be disconnected from the supply circuit. The ampere rating of this disconnecting means shall not be less than the supply conductor ampacity determined in accordance with 630.11 . The supply circuit switch shall be permitted as the welder disconnecting means where the circuit supplies only one welder.

Statement of Problem and Substantiation for Public Input

I don't know how to properly convey my PI, other than I believe the disconnect rules for both arc and resistance welders should be identical. If it's the intent of the CMP for them to be different, please help me understand why.

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Committee: NEC-P12



Public Input No. 345-NFPA 70-2025 [Section No. 640.6(A)]

(A) Installation of Audio Distribution Cables.

Cables installed exposed on the surface of ceilings and sidewalls shall be supported in such a manner that the audio distribution cables will not be damaged by normal building use. Such cables shall be secured by straps, staples, cable ties, hangers, or similar fittings designed and installed so as not to damage the cable. - The installation shall conform to 300.6 and 300.13(A) -

Statement of Problem and Substantiation for Public Input

The words marked for deletion were never needed and are now inaccurate. Article 300's scope was revised to correlate with the creation of Article 720. Many audio systems are regulated by Article 720, not 300. The language is not needed, however, because compliance with Articles 300 and 720 is not optional. Whether this section states it or not, those rules apply.

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Committee: NEC-P12



Public Input No. 346-NFPA 70-2025 [Section No. 640.9(A)]

~~(A) Wiring to and Between Audio Equipment:~~

~~(1) Power Wiring:~~

~~Wiring and equipment from source of power to and between devices connected to the premises wiring systems shall comply with the requirements of Chapters 1 through 4, except as modified by this article.~~

~~(2) Separately Derived Systems:~~

~~Separately derived systems shall comply with the applicable articles of this code, except as modified by this article. Separately derived systems with 60 volts to ground shall be permitted for use in audio system installations as specified in 647.5 :~~

~~(3) Other Wiring:~~

~~All wiring not connected to the premises wiring system or to a wiring system separately derived from the premises wiring system shall comply with Article 725 Part II.~~

Statement of Problem and Substantiation for Public Input

Chapter 6 exists to modify other code rules. There is no need to repeat that fact here. For the 2026 NEC, a large chunk of this article was deleted for this reason. The remaining stragglers should be deleted as well.

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Committee: NEC-P12



Public Input No. 347-NFPA 70-2025 [Section No. 640.10(A)]

(A) Equipment Supplied by Branch-Circuit Power.

Audio system equipment supplied by branch-circuit power shall not be placed horizontally within 1.5 m (5 ft) of the inside wall of a pool, spa, hot tub, or fountain, or within 1.5 m (5 ft) of the prevailing or tidal high water mark. ~~In addition to the requirements in 210.8(B), the equipment shall be provided with branch-circuit power protected by a ground-fault circuit interrupter where required by other articles.~~

Statement of Problem and Substantiation for Public Input

This is already handled by 90.3. Repeating it here is a violation of the Style Manual.

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Submittal Date: Mon Dec 08 16:01:40 EST 2025

Committee: NEC-P12



Public Input No. 3210-NFPA 70-2026 [Section No. 640.41]

640.41 Multipole Branch-Circuit Cable Connectors.

Multipole branch-circuit cable connectors, ~~male plug~~ and ~~female receptacle~~, for power-supply cords and cables shall be so constructed that tension on the cord or cable is not transmitted to the connections. The ~~female receptacle~~ half shall be attached to the load end of the power supply cord or cable. The connector shall be rated in amperes and designed so that differently rated devices cannot be connected together. Alternating-current (ac) multipole connectors shall be polarized and comply with 406.18(A) and 406.18(B) and 406.19. Alternating-current (ac) or direct-current (dc) multipole connectors utilized for connection between loudspeakers and amplifiers, or between loudspeakers, shall not be compatible with nonlocking 15- or 20-ampere rated connectors intended for branch-circuit power or with connectors rated 250 volts or greater and of either the locking or nonlocking type. Signal cabling not intended for such loudspeaker and amplifier interconnection shall not be permitted to be compatible with multipole branch-circuit cable connectors of any accepted configuration.

Informational Note: See 400.14 for pull at terminals.

Statement of Problem and Substantiation for Public Input

The NEC uses “plug” 229 times and “receptacle” 355 times, while the terms “male” and “female” are used only 21 times to describe connectors, resulting in inconsistent terminology. These terms can be seen as non-inclusive and less suitable for international use and translation.

1. In common industry usage, function-based terms are widely understood and are more technically descriptive, such as “plug” (connector with pins or blades) and “receptacle” (connector with sockets or slots).
2. Using “plug” and “receptacle” improves clarity for a broader range of users, including non-specialists, because the terms describe the intended function rather than a metaphor.
3. The proposed terms align with plain-language writing practices and improve translatability for international audiences.
4. The change supports ULSE’s inclusive language goals by replacing gendered terms with neutral, technically descriptive alternatives without changing any technical requirement. Proposals are being made across ULSE’s portfolio supporting inclusive language.

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Public Input No. 403-NFPA 70-2025 [Section No. 645.1]

645.1 Scope.

This article covers equipment, power-supply wiring, equipment interconnecting wiring, and grounding of information technology equipment and systems in an information technology equipment room.

Informational Note: See NFPA 75-2024 , *Standard for the Fire Protection of Information Technology Equipment*, which covers the requirements for the protection of information technology equipment and information technology equipment areas.

Statement of Problem and Substantiation for Public Input

The current edition of NFPA 75 is 2024. The NFPA Manual of Style for NFPA Technical Documents, Chapter 6 Referenced Publications, requires that a reference to a NFPA document include the year of the edition.

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Public Input No. 354-NFPA 70-2025 [New Section after 645.5]

645.4 Applicability. The requirements of this article shall only apply where information technology equipment is installed in information technology equipment areas constructed in accordance with recognized fire protection standards.

Informational Note: NFPA 75 is one example of a recognized standard that contains fire protection requirements for information technology equipment and information technology equipment areas.

Statement of Problem and Substantiation for Public Input

For decades, complying with this article was totally optional. If you chose to follow its requirements, you were awarded with the ability to install non plenum-rated cables under the floor. Recent changes have muddled the waters considerably. Strictly using the scope and definitions of today's NEC, Article 645 applies to anywhere that IT equipment is used, including dwelling units. This is obviously not the intent, and it never was. It was also never intended to apply to small office equipment like desktop computers, but today's scope and definitions indicate otherwise. Certainly the intent is not to require a disconnecting means at the door of every office in a commercial building, but that seems to be what is required. The applicability of this article needs to be clarified.

My suggested language might be better in the scope of the article, but I suggested placing it in a new 645.4 to at least start the conversation. The Enhanced Content in NFPA link and even previous panel statements from CMP 12 suggest that this article only applies to a room that is built to comply with NFPA 75. I know of no style manual-compliant way of saying that in the text other than the way I have suggested it.

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Public Input No. 1147-NFPA 70-2026 [Section No. 645.5]

~~645.5– Special Requirements for Information Technology Equipment Room:~~

~~The alternative wiring methods to 722.120 for signaling wiring and 722.160 for optical fiber cabling shall be permitted where all of the following conditions are met:~~

- ~~(1) Disconnecting means complying with 645.10 are provided.~~
- ~~(2) A heating/ventilating/air-conditioning (HVAC) system is provided in one of the methods identified in the following:~~
 - ~~(3) A separate HVAC system that is dedicated for information technology equipment use and is separated from other areas of occupancy~~
 - ~~(4) An HVAC system that serves other occupancies and meets all of the following:~~
 - ~~(5) Also serves the information technology equipment room~~
 - ~~(6) Provides fire/smoke dampers at the point of penetration of the room boundary~~
 - ~~(7) Activates the damper operation upon initiation by smoke detector alarms, by operation of the disconnecting means required by 645.10, or by both~~

~~Informational Note No. 1: See NFPA 75, *Standard for the Fire Protection of Information Technology Equipment*, Section 11.1, 11.1.1, 11.1.2, and 11.1.3, for further information.~~

- ~~(8) All information technology and communications equipment installed in the room, including measurement, control, and laboratory equipment, is listed.~~
- ~~(9) The room is occupied by, and accessible to, only those personnel needed for the maintenance and functional operation of the installed information technology equipment.~~
- ~~(10) The room is separated from other occupancies by fire-resistant-rated walls, floors, and ceilings with protected openings.~~

~~Informational Note No. 2: See NFPA 75, *Standard for the Fire Protection of Information Technology Equipment*, Chapter 6, for further information on room construction requirements.~~

- ~~(11) Only electrical equipment and wiring associated with the operation of the information technology room is installed in the room.~~

~~Informational Note No. 3: HVAC systems, communications systems, and monitoring systems such as telephone, fire alarm systems, security systems, water detection systems, and other related protective equipment are examples of equipment associated with the operation of the information technology room.~~

That is a lot of text to say nothing. What are you trying to say?

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Public Input No. 404-NFPA 70-2025 [Section No. 645.5]

645.5 Special Requirements for Information Technology Equipment Room.

The alternative wiring methods to 722.120 for ~~signaling wiring and 722.160 for optical fiber cabling~~ limited-energy cables shall be permitted where all of the following conditions are met:

- (1) Disconnecting means complying with 645.10 are provided.
- (2) A heating/ventilating/air-conditioning (HVAC) system is provided in one of the methods identified in the following:
 - (3) A separate HVAC system that is dedicated for information technology equipment use and is separated from other areas of occupancy
 - (4) An HVAC system that serves other occupancies and meets all of the following:
 - (5) Also serves the information technology equipment room
 - (6) Provides fire/smoke dampers at the point of penetration of the room boundary
 - (7) Activates the damper operation upon initiation by smoke detector alarms, by operation of the disconnecting means required by 645.10, or by both

Informational Note No. 1: See NFPA 75-2024, *Standard for the Fire Protection of Information Technology Equipment*, Section 11.1, 11.1.1, 11.1.2, and 11.1.3, for further information.

- (8) All information technology and communications equipment installed in the room, including measurement, control, and laboratory equipment, is listed.
- (9) The room is occupied by, and accessible to, only those personnel needed for the maintenance and functional operation of the installed information technology equipment.
- (10) The room is separated from other occupancies by fire-resistant-rated walls, floors, and ceilings with protected openings.

Informational Note No. 2: See NFPA 75-2024, *Standard for the Fire Protection of Information Technology Equipment*, Chapter 6, for further information on room construction requirements.

- (11) Only electrical equipment and wiring associated with the operation of the information technology room is installed in the room.

Informational Note No. 3: HVAC systems, communications systems, and monitoring systems such as telephone, fire alarm systems, security systems, water detection systems, and other related protective equipment are examples of equipment associated with the operation of the information technology room.

Statement of Problem and Substantiation for Public Input

Optical fiber cabling is included in “limited-energy wiring”. CCCA has submitted a series of Public Inputs for Article 722 to simplify the article by including all the requirements for limited-energy wiring in one place. Consequently, reference to optical fiber cabling becomes redundant.

The current edition of NFPA 75 is 2024. The NFPA Manual of Style for NFPA Technical Documents, Chapter 6 Referenced Publications, requires that a reference to a NFPA document include the year of the edition.

The underlining in 645.5(2)a & b was done by TerraView and is not a part of this PI.

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Committee: NEC-P12



645.6 Supply Circuits and Interconnecting Cables.

~~(B)~~

(A) Branch Circuits.

~~Information technology equipment shall be considered a continuous load for branch circuits.~~

Power-Supply Cords.

Information technology equipment shall be permitted to be connected to branch circuits by power-supply cords that comply with the following:

- (1) Power-supply cords shall not exceed 4.5 m (15 ft).
- (2) Power-supply cords shall be listed and a type permitted for use on listed information technology equipment or shall be constructed of listed flexible cord and listed attachment plugs and cord connectors of a type permitted for information technology equipment.
- (3) Plugs and receptacles used to connect the power-supply cords shall be listed and identified for the system voltage and current applied.

Informational Note No. 1: See UL 60950-1, *Safety of Information Technology Equipment — Safety — Part 1: General Requirements*; or UL 62368-1, *Audio/Video, Information and Communication Technology Equipment — Part 1: Safety Requirements*, for one method of determining if cords are of a permitted type.

Informational Note No. 2: See ANSI/NEMA WD-6, *Wiring Devices — Dimensional Specifications*, which identifies plug and receptacle configurations L25-30P and L25-30R for 240 Vac and L26-30P and L26-30R for 240/415 Vac.

~~(B)~~ Interconnecting Cables.

Separate information technology equipment units shall be permitted to be interconnected by means of listed cables and cable assemblies. The 4.5 m (15 ft) limitation in 645.6(B)(1) shall not apply to interconnecting cables.

~~(C)~~ Physical Protection.

Where exposed to physical damage, power-supply cords, branch-circuit supply conductors, and interconnecting cables shall be protected.

~~(D)~~ Under Raised Floors.

Where the area under the floor is accessible and openings minimize the entrance of debris beneath the floor, power-supply cords, communications cables, connecting cables, interconnecting cables, cord and plug connections, and receptacles associated with the information technology equipment shall be permitted under a raised floor of approved construction. The installation requirement shall comply with 645.6(E)(1) through 645.6(E)(3).

(1) Installation Requirements for Branch-Circuit Supply Conductors Under a Raised Floor.

(a) The supply conductors shall be installed in accordance with 300.13.

(b) In addition to the wiring methods of 300.25(C), the following wiring methods shall also be permitted:

- (3) Rigid metal conduit
- (4) Rigid nonmetallic conduit
- (5) Intermediate metal conduit
- (6) Electrical metallic tubing
- (7) Electrical nonmetallic tubing
- (8) Metal wireway
- (9) Nonmetallic wireway
- (10) Surface metal raceway with metal cover
- (11) Surface nonmetallic raceway
- (12) Flexible metal conduit
- (13) Liquidtight flexible metal conduit
- (14) Liquidtight flexible nonmetallic conduit
- (15) Type MI cable
- (16) Type MC cable
- (17) Type AC cable
- (18) Associated metallic and nonmetallic boxes or enclosures
- (19) Type TC power and control tray cable

(2) Installation Requirements for Power-Supply Cords, Data Cables, Interconnecting Cables, and Grounding Conductors Under a Raised Floor.

The following cords, cables, and conductors shall be permitted to be installed under a raised floor:

- (1) Power-supply cords of listed information technology equipment in accordance with 645.6(B).
- (2) Interconnecting cables enclosed in a raceway.
- (3) Equipment grounding conductors.
- (4) Where the air space under a raised floor is protected by an automatic fire suppression system, the following cables shall be permitted under raised floors:
 - (5) Types CL2P, CL3P, CL4P, CMP plenum cables
 - (6) Types CL2R, CL3R, CL4R, CMR riser cables
 - (7) Types CL2, CL3, CL4, CM, CMG general-purpose cables
- (8) Where the air space under a raised floor is not protected by an automatic fire suppression system, only Types CL2P, CL3P, CL4P, and CMP plenum cables shall be permitted.
- (9) Listed Type DP cable having fire-resistant characteristics suitable for use under raised floors of an information technology equipment room.

Informational Note: See CSA C22.2 No. 0.3, *Test Methods for Electrical Wires and Cables*, CSA Vertical Flame Test-Cables in Cable Trays for one method of defining resistance to the spread of fire where the damage (char length) of the cable does not exceed 1.5 m (4 ft 11 in.) or UL 1685, *Vertical-Tray Fire-Propagation and Smoke-Release Test for Electrical and Optical-Fiber Cables*, UL Flame Exposure, Vertical Flame Tray Test. The smoke measurements in the test method are not applicable.

(3) Installation Requirements for Optical Fiber Cables Under a Raised Floor.

The installation of optical fiber cables shall comply with either of the following:

- (1) Where the air space under a raised floor is protected by an automatic fire suppression system, Types OFNP, OFCP, OFNR, OFCR, OFNG, OFCG, OFN, and OFC shall be permitted under raised floors.
- (2) Where the air space under a raised floor is not protected by an automatic fire suppression system, only Types OFNP and OFCP cables shall be permitted under raised floors.

(F E) Securing in Place.

Power-supply cords; communications cables, connecting cables, interconnecting cables, and associated boxes, connectors, plugs, and receptacles that are listed as part of, or for, information technology equipment shall not be required to be secured in place where installed under raised floors.

Informational Note: See 300.13 for securement requirements for raceways and cables not listed as part of, or for, information technology equipment.

(G F) Abandoned Supply Circuits and Interconnecting Cables.

The accessible portion of abandoned supply circuits and interconnecting cables shall be removed unless contained in a raceway.

(H G) Installed Supply Circuits and Interconnecting Cables Identified for Future Use.

(1) Cable Identification Means.

Supply circuits and interconnecting cables identified for future use shall be marked with a tag of sufficient durability to withstand the environment involved.

(2) Cable Tag Criteria.

Supply circuit tags and interconnecting cable tags shall have the following information:

- (1) Date identified for future use
- (2) Date of intended use
- (3) Information relating to the intended future use

Statement of Problem and Substantiation for Public Input

Placing continuous load calculation requirements in a new section in Article 120 (section 120.2), rather than peppering the continuous load requirements in other Articles, increases usability and clarity and closes the opportunity for discrepancies.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
<u>Public Input No. 206-NFPA 70-2025 [New Article after 120]</u>	
<u>Public Input No. 206-NFPA 70-2025 [New Article after 120]</u>	
<u>Public Input No. 207-NFPA 70-2025 [Section No. 120.4]</u>	

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Public Input No. 2215-NFPA 70-2026 [Sections 645.6(B), 645.6(C)]

Sections 645.6(B), 645.6(C)

(B) Power-Supply Cords and Cables .

Information technology equipment shall be permitted to be connected to branch circuits by power-supply cords and cables that comply with the following:

- (1) Power-supply cords and cables shall not exceed 4.5 m (15 ft).
- (2) Power-supply cords and cables shall be listed and of a type permitted for use on listed information technology equipment or shall be constructed of listed flexible cord or flexible cable, and listed attachment plugs and cord connectors of a type permitted for information technology equipment.
- (3) Plugs, connectors and receptacles used to connect the power-supply cords and cables shall be listed and identified for the system voltage and current applied.

Informational Note No. 1: See UL 60950-1, *Safety of Information Technology Equipment — Safety — Part 1: General Requirements*; or UL 62368-1, *Audio/Video, Information and Communication Technology Equipment — Part 1: Safety Requirements*, for one method of determining if cords and cables are of a permitted type.

Informational Note No. 2: See ANSI/NEMA WD-6, *Wiring Devices — Dimensional Specifications*, which identifies plug and receptacle configurations L25-30P and L25-30R for 240 Vac and L26-30P and L26-30R for 240/415 Vac.

Informational Note No. 3: See UL 1682, Plugs, Receptacles, and Cable Connectors, of the Pin and Sleeve Type, or UL 1691, Single Pole Locking-Type Separable Connectors, for information on additional wiring device types.

(C) Interconnecting Cables.

Separate information technology equipment units shall be permitted to be interconnected by means of listed cables, cord sets and cable assemblies. The 4.5 m (15 ft) limitation in 645.6(B) (1) shall not apply to interconnecting cables.

Informational Note: See UL 817A, Outline of Investigation for Data Center Cord Sets and Power Supply Cords, for listing requirements.

Statement of Problem and Substantiation for Public Input

This proposal aligns terminology references to be consistent with Article 400, which covers both flexible cords and flexible cables. This editorial update clarifies the already-established alignment between this article, Informational Note No. 1 of 645.6(B), and paragraph G.7ADV.3 (which references Chapter 4 Tables 400.5(A)(1) and 400.5(A)(2)) permitted power supply cords in UL standard UL62368-1, to ensure ALL IT equipment listed to UL62368-1 standard are accepted based in their listing.

Informational Note No. 3 is being added to 645.6(B) to provide information on plugs, connectors and receptacles, other than NEMA WD-6 configurations, currently used to supply or connect IT equipment.

Informational Note added to 645.6(C) to provide information on UL standard for listing Data Center Cord Sets, with scope covering maximum of 2000 volts and 700 amperes.

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Public Input No. 405-NFPA 70-2025 [Section No. 645.10(B)]

(B) Critical Operations Data Systems.

Remote disconnecting controls shall not be required for critical operations data systems when all of the following conditions are met:

- (1) An approved procedure has been established and maintained for removing power and air movement within the room or zone.
- (2) Qualified personnel are continuously available to advise emergency responders and to instruct them of disconnecting methods.
- (3) A smoke-sensing fire detection system is in place.

Informational Note: See *NFPA 72-2025*, *National Fire Alarm and Signaling Code*, for further information.

- (4) An approved fire suppression system suitable for the application is in place.
- (5) Cables installed under a raised floor, other than branch-circuit wiring, and power cords are installed in compliance with 645.6(E)(2) or 645.6(E)(3), or in compliance with Table 645.10(B).

Table 645.10(B) Cables Installed Under Raised Floors

Cable Type	Applicable Sections
Branch circuits under raised floors	645.6(E)(1)
Supply cords of listed information technology equipment	645.6(E)(2)(1), 300.25(C)
~~Glass 2 and Class 3 remote control and Class 4 Limited-energy cables~~ in other spaces used for environmental air (plenums)	~~Table 722.120~~
~~Optical fiber cable in other spaces used for environmental air (plenums)~~	~~Table 722.120 and 722.160(A)(1)~~
~~Communications wires and cables, cable routing assemblies, and communications raceways in other spaces used for environmental air (plenums)~~	~~Table 722.120, Table 722.130, 723.20, 723.22, 723.30, and 723.32~~
~~Coaxial CATV and radio distribution cables in other spaces used for environmental air (plenums)~~	~~Table 722.120 and 722.133~~
<u>722.120</u>	

Statement of Problem and Substantiation for Public Input

Class 2, 3 & 4 cables, communications cables, CATV cables, and optical fiber cables are included in "limited-energy wiring". CCCA has submitted a series of Public Inputs for Article 722 to simplify the article by including all the requirements for limited-energy wiring in one place. Consequently, references to Class 2, 3 & 4 cables, communications cables, CATV cables, optical fiber cables become redundant.

The current edition of NFPA 72 is 2025. The NFPA Manual of Style for NFPA Technical Documents, Chapter 6 Referenced Publications, requires that a reference to a NFPA document include the year of the edition.

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Public Input No. 3127-NFPA 70-2026 [Section No. 645.10 [Excluding any Sub-Sections]]

An Where an IT Equipment Room is protected by an alternative Automatic Fire-Extinguishing System such as Clean Agent Systems per NFPA 2001, Dry-Chemical systems per NFPA 17, or Carbon-Dioxide Systems per NFPA 12, an approved means shall be provided to disconnect power to all electronic equipment in the information technology equipment room or in designated zones within the room. There shall also be a similar approved means to disconnect the power to all dedicated HVAC systems serving the room or designated zones and to cause all required fire/smoke dampers to close. The disconnecting means shall comply with either 645.10(A) or 645.10(B).

Exception: These requirements shall not apply to installations complying with Article 685.

Statement of Problem and Substantiation for Public Input

IT Equipment rooms have a wide array of locations and installations. Most often equipment rooms contain wall mounted equipment, wall mounted rack, or up to (2) floor-mounted racks. These rooms are often less than 100 SF and contain only a light, switch, and a couple receptacles for the IT equipment power supply. There is no need for a disconnecting means described by 645.10 in small IT rooms for a business office, restaurant, or retail store. The proposed language clarifies that the need for this disconnecting means is triggered by the use of alternative fire-extinguishing systems rather than standard wet sprinkler systems, or no sprinkler systems in occupancies where they are not required. This should limit this requirement to large, complex, or critical locations where this is needed.

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Committee: NEC-P12



Public Input No. 856-NFPA 70-2026 [Section No. 645.15]

645.15 Equipment Grounding and Bonding.

All exposed non-current-carrying metal parts of an information technology system shall be bonded to the equipment grounding conductor in accordance with Article 250 Parts I, V, VI, VII, and VIII or shall be double insulated. Where signal reference structures are installed, they shall be bonded to the equipment grounding conductor provided for the information technology equipment. - Any auxiliary grounding electrode(s) installed for information technology equipment shall be installed in accordance with 250.54 -

Informational Note: See 250.146(D) and 406.11(C) for information on isolated grounding-type receptacles.

Statement of Problem and Substantiation for Public Input

Delete this rule that requires an auxilliary grounding electrode for ITE. An auxilliary electrode per 250.54, is an electrode that is not required by the NEC.

If it is the intent of the CMP to require an electrode for ITC (bad idea, watch MikeHolt.com/AUX), then this is not an auxiliary electrode, and specific requirements must be given.

If the intent of the CMP is NOT to require an electrode by to simply state that if an auxillary electrode is installed, then it must comply with 250.54, then this rule needs to be deleted since it's redundant with 250.54. A similuar auxiliary electrode requirement for PV Arrays was deleted from 690.47 in the 2026 NEC.

In accordance with NEC style manual 4.1.1 the use of redundant references shall be avoided.

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Submittal Date: Sun Feb 01 12:28:22 EST 2026

Committee: NEC-P12



Public Input No. 2224-NFPA 70-2026 [Section No. 645.17]

645.17 Power Distribution Units.

Power distribution units that are used for information technology equipment shall be permitted to have multiple panelboards within a single cabinet if the power distribution unit is utilization equipment listed for information technology application.

Informational Note: See UL 62368-1, Audio/Video, Information and Communication Technology Equipment - Part 1: Safety Requirements, Or UL1801, Outline of Investigation for Power Distribution Centers for Communications Equipment, for listing requirements of alternating current (ac) or direct current (dc) power distribution units for use with information technology equipment.

Statement of Problem and Substantiation for Public Input

The added Informational Note intends to provide clarity on the correct UL standards for listing of ITE-specific PDUs, cord-and-plug connected rack-mount type, which historically had been listed under UL62368-1 (Scope paragraph 1DV.5.1.1) for ac, with UL 1801 created in early 2000 for PDUs intended for dc applications.

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Committee: NEC-P12



Public Input No. 1964-NFPA 70-2026 [Section No. 645.27(B)]

(B) Replacements.

~~Where critical operations data system(s) OCPDs are replaced, they shall~~ Selective coordination shall be re-evaluated to ensure selective coordination of the ~~if replacement OCPDs that supply the~~ critical operations data system (s) is maintained with all supply-side and ~~lead-side OCPDs loads are not replaced with the same manufacturer and type of OCPDs and with the same ratings or settings .~~

Statement of Problem and Substantiation for Public Input

If an OCPD is replaced with the same manufacturer, type, ratings and settings, then a reevaluation for selective coordination shouldn't be required for the system. Similar requirements are found in emergency systems and legally required standby systems and would help to coordinate the same rules throughout the code when selective coordination is required when replacing an OCPD.

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Public Input No. 406-NFPA 70-2025 [Section No. 646.1]

646.1 Scope.

This article covers modular data centers.

Informational Note No. 1: Modular data centers include the installed information technology equipment (ITE) and support equipment, electrical supply and distribution, wiring and protection, working space, grounding, HVAC, and the like, that are located in an equipment enclosure.

Informational Note No. 2: See NFPA 75-2024, *Standard for the Fire Protection of Information Technology Equipment*, which covers the requirements for the protection of information technology equipment and systems in an information technology equipment room.

Informational Note No. 3: See UL 60950-1, *Information Technology Equipment — Safety — Part 1: General Requirements*, and UL 62368-1, *Audio/Video, Information and Communication Technology Equipment — Part 1: Safety Requirements*, for information on listing requirements for both information technology equipment and communications equipment contained within a modular data center.

Informational Note No. 4: *Modular data centers* are sometimes referred to as containerized data centers.

Informational Note No. 5: Equipment enclosures housing only support equipment (e.g., HVAC or power distribution equipment) that are not part of a specific modular data center are not considered a modular data center.

Statement of Problem and Substantiation for Public Input

The current edition of NFPA 75 is 2024. The NFPA Manual of Style for NFPA Technical Documents, Chapter 6 Referenced Publications, requires that a reference to a NFPA document include the year of the edition.

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Committee: NEC-P12



Public Input No. 1904-NFPA 70-2026 [Section No. 646.7(A)]

(A) Size.

~~The size of the supply conductor shall be such as to have an ampacity not less than 125 percent of the full load current rating~~ A modular data center shall be considered a continuous load based on its full load current rating when sizing the supply conductors.

Informational Note No. 1: See the 0–2000-volt ampacity tables of Article 310 for ampacity of conductors rated 600 V and below.

Informational Note No. 2: See 430.22(E) and 430.26 for duty cycle requirements.

Statement of Problem and Substantiation for Public Input

This public input is being submitted on behalf of the NEC Correlating Committee Continuous Load Task Group in order to provide consistency throughout the National Electrical Code. The task group members are John McCamish, Donny Cook, Brett Larson, Bryan Tatum, David Kendall, Christel Hunter, Larry Wildermuth Jr., Rob Zachariason, Todd Crisman, and Greg Woyczynski.

In many cases sizing of conductors the use of the terms “Continuous Load” and “125% of the load” have been used interchangeably. When adjustment and correction factors are involved for branch, feeder or service conductors, the calculation results for a continuous load and 125% of the load result in different values. Below is an example which illustrates this difference:

Calculation of Ampacity for Continuous Loads Versus Loads requiring 125% Ampacity.

The 125 percent multiplier used for ampacity calculations can be required for reasons other than continuous loads and require different methods to calculate the ampacity of a conductor [see 120.6, Informational Note].

1. Calculate Ampacity of the Branch Circuit Conductors for 47 Ampere Continuous Load, 75 degree C conductors and terminations, Ambient Temperature 102 degree F, two current carrying conductors in a raceway.

[see 210.19]

Compare the following two totals:

$47 \text{ A} \times 125\% = 58.75 \text{ A}$ [see 210.19 (A)(1)]

$47 \text{ A} / 0.88 = 53.4 \text{ A}$ [see 210.19(A)(2), 310.15(B), Table 310.15(B)(1)(1)]

$58.75 \text{ A} > 53.4 \text{ A}$, therefore the required ampacity of the conductor is 58.75A.

2. Calculate Ampacity of the Branch Circuit Conductors for 47 Ampere Load, 75 degree C conductors and terminations, Ambient Temperature 102 degree F, two current carrying conductors in a raceway. The load requires an ampacity of 125%.

Since the load is not specified as a continuous load, no comparison is permitted. The ampacity of the conductor under the conditions of use must have an ampacity of 125% of the 47 A load.

$47 \text{ A} \times 125\% = 58.75 \text{ A}$

$58.75 \text{ A} / 0.88 = 66.76 \text{ A}$, therefore the required ampacity of the conductor is 66.76 A.

According to the enhanced content in NFPA Link, modular data centers are considered a continuous load. By changing the language to identify a modular data center as a continuous load rather than requiring it to be multiplied by 125%, the requirements of 210, 215, and 230 will require the minimum ampacity of the supply conductors to be 125% of the full load current on the nameplate. This will also ensure that the correction and adjustment factors are properly applied.

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Public Input No. 2247-NFPA 70-2026 [Section No. 646.10]

646.10 Flexible Power Cords and Flexible Cables for Connecting Equipment Enclosures of an MDC System.

(A) Uses Permitted.

Flexible power cords and flexible cables shall be permitted to be used for connections between equipment enclosures of an MDC system where not subject to physical damage. Where flexible power cords or flexible cables are used, they shall be listed as suitable for extra-hard usage. Where used outdoors, flexible power cords and flexible cables shall also be listed as suitable for wet locations and shall be sunlight resistant.

Informational Note: One example of flexible power cord or flexible cable usage for connections between equipment enclosures of an MDC system is between an MDC enclosure containing only servers and one containing power distribution equipment.

(B) Uses Not Permitted.

Flexible power cords and flexible cables shall not ~~be used for connection~~ terminate directly to external sources of power.

Informational Note: Examples of external sources of power are electrical services, feeders, and premises branch circuits.

(C) Single-Conductor Cable.

Single-conductor power cable shall be permitted to be used only in sizes 2 AWG or larger.

Informational Note: See UL 1691, Single Pole Locking Type Separable Connectors, for suitable plug and connector listing requirements.

Statement of Problem and Substantiation for Public Input

This proposal intends to align references with article 400, which covers flexible cords and flexible cables, to ensure consistency. 646.10(B) is revised to clarify that flexible cords and flexible cables shall not terminate directly to the sources of power, they are terminated to the terminals of plugs and connectors. Informational Note is added to 646.10(C) to provide information on suitable plugs and connectors for use with single-conductor cables.

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~~Article 647— Sensitive Electronic Equipment~~ Article 647. 60/120-Volt Balanced Power Systems

647.1 Scope.

This article covers the installation and wiring of separately derived systems operating at 120 volts line-to-line and 60 volts to ground for sensitive electronic equipment.

647.4 General.

Use of a separately derived 120-volt single-phase 3-wire system with 60 volts on each of two ungrounded conductors to an equipment grounding conductor shall be permitted for the purpose of reducing objectionable noise in sensitive electronic equipment locations, provided the following conditions apply:

- (1) The system is installed only in commercial or industrial occupancies.
- (2) The system's use is restricted to areas under close supervision by qualified personnel.
- (3) All of the requirements in 647.5 through 647.9 are met.

647.5 Wiring Methods.

(A) Panelboards and Overcurrent Protection.

Use of standard single-phase panelboards and distribution equipment with a higher voltage rating shall be permitted. The system shall be clearly marked on the face of the panel or on the inside of the panel doors. Common trip two-pole circuit breakers or a combination two-pole fused disconnecting means that are identified for use at the system voltage shall be provided for both ungrounded conductors in all feeders and branch circuits. Branch circuits and feeders shall be provided with a means to simultaneously disconnect all ungrounded conductors.

(B) Junction Boxes.

All junction box covers shall be clearly marked to indicate the distribution panel and the system voltage.

(C) Conductor Identification.

All feeders and branch-circuit conductors installed under this section shall be identified as to system at all splices and terminations by color, marking, tagging, or equally effective means. The means of identification shall be posted at each branch-circuit panelboard and at the disconnecting means for the building.

(D) Voltage Drop.

The voltage drop on any branch circuit shall not exceed 1.5 percent. The combined voltage drop of feeder and branch-circuit conductors shall not exceed 2.5 percent.

(1) Fixed Equipment.

The voltage drop on branch circuits supplying equipment connected using wiring methods in Chapter 3 shall not exceed 1.5 percent. The combined voltage drop of feeder and branch-circuit conductors shall not exceed 2.5 percent.

(2) Cord-Connected Equipment.

The voltage drop on branch circuits supplying receptacles shall not exceed 1 percent. For the purposes of making this calculation, the load connected to the receptacle outlet shall be considered to be 50 percent of the branch-circuit rating. The combined voltage drop of feeder and branch-circuit conductors shall not exceed 2.0 percent.

Informational Note: The purpose of this provision is to limit voltage drop to 1.5 percent where portable cords may be used as a means of connecting equipment.

647.6 Three-Phase Systems.

Where 3-phase power is supplied, a separately derived 6-phase "wye" system with 60 volts to ground shall be configured as three separately derived 120-volt single-phase systems having a combined total of no more than six disconnects.

647.7 Grounding.

(A) General.

The transformer secondary center tap of the 60/120-volt, 3-wire system shall be grounded as provided in 250.30.

(B) Equipment Grounding Conductors Required.

Permanently wired utilization equipment and receptacles shall be grounded by means of an equipment grounding conductor run with the circuit conductors and connected to an equipment grounding bus prominently marked "Technical Equipment Ground" in the branch-circuit panelboard. The equipment grounding bus shall be connected to the grounded conductor on the line side of disconnecting means supplied by the separately derived system. The equipment grounding conductor shall not be smaller than that specified in Table 250.122 and run with the feeder conductors. The technical equipment grounding bus shall not be required to be bonded to the panelboard enclosure. Other equipment grounding methods authorized elsewhere in this code shall be permitted where the impedance of the equipment grounding return path does not exceed the impedance of equipment grounding conductors sized and installed in accordance with this article.

Informational Note No. 1: See 250.122 for equipment grounding conductor sizing requirements where circuit conductors are adjusted in size to compensate for voltage drop.

Informational Note No. 2: These requirements limit the impedance of the ground fault return path where only 60 volts apply to a fault condition instead of the usual 120 volts.

647.8 Receptacles.

(A) General.

Where receptacles are used as a means of connecting equipment, the following conditions shall be met:

- (1) All 15- and 20-ampere receptacles shall be GFCI protected.
- (2) All receptacle outlet strips, adapters, receptacle covers, and faceplates shall be marked with the following words or equivalent:

WARNING — TECHNICAL POWER

Do not connect to lighting equipment. For electronic equipment use only. 60/120 V. 1Φac
GFCI protected

The warning sign(s) or label(s) shall comply with 110.21(B).

- (3) A 125-volt, single-phase, 15- or 20-ampere-rated receptacle having one of its current-carrying poles connected to a grounded circuit conductor shall be located within 1.8 m (6 ft) of all permanently installed 15- or 20-ampere-rated 60/120-volt technical power-system receptacles.
- (4) All 125-volt receptacles used for 60/120-volt technical power shall have a unique configuration and be identified for use with this class of system.

Exception: Receptacles and attachment plugs rated 125-volt, single-phase, 15- or 20-amperes, and that are identified for use with grounded circuit conductors, shall be permitted in machine rooms, control rooms, equipment rooms, equipment racks, and other similar locations that are restricted to use by qualified personnel.

(B) Isolated Ground Receptacles.

Isolated ground receptacles shall be permitted as described in 250.146(D); however, the branch-circuit equipment grounding conductor shall be terminated as required in 647.7(B).

647.9 Lighting Equipment.

Lighting equipment installed under this article for the purpose of reducing electrical noise originating from lighting equipment shall meet the conditions of 647.9(A) through 647.9(C).

(A) Disconnecting Means.

All luminaires connected to separately derived systems operating at 60 volts to ground, and associated control equipment if provided, shall have a disconnecting means that simultaneously opens all ungrounded conductors. The disconnecting means shall be located within sight of the luminaire in accordance with 110.29 or be lockable open in accordance with 110.25.

(B) Luminaires.

All luminaires shall be permanently installed and listed for connection to a separately derived system at 120 volts line-to-line and 60 volts to ground.

(C) Screw Shell.

Luminaires installed under this section shall not have an exposed lamp screw shell.

Statement of Problem and Substantiation for Public Input

The existing title, Sensitive Electronic Equipment, describes an application, not the wiring system actually regulated by the article. Article 647 addresses a specific separately derived system operating at 120 volts line-to-line and 60 volts to ground, and that system is commonly referred to in industry use as balanced power. The proposed title, 60/120-Volt Balanced Power Systems, more accurately

identifies the subject of the article by naming both the technical configuration and the commonly used industry term.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
Public Input No. 1956-NFPA 70-2026 [Section No. 647.1]	Broaden scope of this section
Public Input No. 1955-NFPA 70-2026 [Section No. 647.4]	Broaden scope of this section
Public Input No. 1961-NFPA 70-2026 [Section No. 647.9(B)]	

Submitter Information Verification

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Public Input No. 1956-NFPA 70-2026 [Section No. 647.1]

647.1 Scope.

This article covers the installation and wiring of separately derived systems operating at 120 volts line-to-line and 60 volts to ground- ~~for sensitive electronic equipment~~ .

Statement of Problem and Substantiation for Public Input

this section should contain general rules for balanced 60/120 V power systems. The NEC's purpose is the practical safeguarding of persons and property from hazards arising from the use of electricity; it is not intended to dictate that an otherwise safe wiring method may be used only for a particular purpose. Article 647 already contains the technical requirements that address the actual hazards of this system, including the detailed rules in 647.5 through 647.9 and the article's mandatory voltage-drop and receptacle/GFCI provisions. Those safety requirements can be applied regardless of what the system purpose is.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
<u>Public Input No. 1957-NFPA 70-2026 [Article 647]</u>	
<u>Public Input No. 1961-NFPA 70-2026 [Section No. 647.9(B)]</u>	

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Public Input No. 1955-NFPA 70-2026 [Section No. 647.4]

647.4 General.

Use of a separately derived 120-volt single-phase 3-wire system with 60 volts on each of two ungrounded conductors to an equipment grounding conductor shall be permitted ~~for the purpose of reducing objectionable noise in sensitive electronic equipment locations, provided the following conditions apply:~~

- ~~The system is installed only in commercial or industrial occupancies.~~
- ~~The system's use is restricted to areas under close supervision by qualified personnel.~~

~~All of the where all of the requirements in 647.5 through 647.9 are met.~~

Statement of Problem and Substantiation for Public Input

The proposed revision removes application limits that act more like design restrictions than safety rules. The NEC's purpose is the practical safeguarding of persons and property from hazards arising from the use of electricity; it is not intended to dictate that an otherwise safe wiring method may be used only for a particular purpose, only in commercial or industrial occupancies, or only under close supervision by qualified personnel.

Article 647 already contains the technical requirements that address the actual hazards of this system, including the detailed rules in 647.5 through 647.9 and the article's mandatory voltage-drop and receptacle/GFCI provisions. Those safety requirements can be applied regardless of occupancy. Balanced 60/120 V power systems are also plainly not limited in practice to industrial or commercial settings, as manufacturers market symmetrically balanced power products for home theater and home studio use for decades.

Retaining the technical safeguards while deleting the purpose and occupancy/use restrictions would better align 647.4 with the NEC's safety function under 90.2(A). Overly restrictive requirements can also have the effect of stifling innovation. There may be applications where a 60/120-volt lighting system is useful outside of sensitive electronic equipment locations.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
<u>Public Input No. 1957-NFPA 70-2026 [Article 647]</u>	
<u>Public Input No. 1961-NFPA 70-2026 [Section No. 647.9(B)]</u>	

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Public Input No. 1961-NFPA 70-2026 [Section No. 647.9(B)]

(B)– Luminaires:

~~All luminaires shall be permanently installed and listed for connection to a separately derived system at 120 volts line-to-line and 60 volts to ground.~~

Statement of Problem and Substantiation for Public Input

The requirement in 647.8(B) should be deleted because it imposes a special listing requirement that does not appear to exist. UL 1598 does not appear to create a named, dedicated Article 647 or 60/120-volt balanced-power luminaire category. UL 1598 Clause 6.4.1.4 addresses a single-pole photocontrol switch used on a line-to-line supply and requires a caution marking to disconnect power before servicing. Clause 6.7.1.4 addresses a luminaire intended to be connected to the line-to-line conductors of a branch circuit and provides the required protection rules for lamp screwbases and grounding or bonding, so the product standard already contains the intended safety protections without the need to create a separate category.

The NEC addresses the safety considerations in the other two subsections. Section 647.8(A) already requires a disconnecting means that simultaneously opens all ungrounded conductors, and 647.8(C) already prohibits luminaires with an exposed lamp screw shell. Those two provisions address the principal installation and contact hazards associated with lighting supplied by these systems. Overly restrictive requirements can also have the effect of stifling innovation. There may be applications where a 60/120-volt lighting system is useful outside of sensitive electronic equipment locations.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
<u>Public Input No. 1956-NFPA 70-2026 [Section No. 647.1]</u>	
<u>Public Input No. 1955-NFPA 70-2026 [Section No. 647.4]</u>	
<u>Public Input No. 1957-NFPA 70-2026 [Article 647]</u>	

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Public Input No. 407-NFPA 70-2025 [Section No. 650.4(B)]

(B) Limited-Energy Cables.

Installations of limited-energy cables shall be in accordance with ~~Table with 722.120- and 722.131.~~ 722.120.

Statement of Problem and Substantiation for Public Input

CCCA has submitted a series of Public Inputs for Article 722 to simplify the article by including all the requirements for limited-energy wiring in one place, in 722.120.

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Submittal Date: Tue Dec 23 12:21:56 EST 2025

Committee: NEC-P12



Public Input No. 3061-NFPA 70-2026 [Section No. 650.7(A)]

(A) Size.

The minimum conductor size shall be not less than 28 AWG for electronic signal circuits and not less than 26 AWG for electromagnetic valve supply and the like. The minimum conductor size of a main common-return conductor in the electromagnetic supply shall not be less than 14 AWG copper or 12 AWG copper-clad aluminum .

Additional Proposed Changes

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
PI_650.7_A_.pdf	pdf file to ensure clarity on text changes from Terra entries	

Statement of Problem and Substantiation for Public Input

Copper-clad aluminum conductors were introduced into the National Electrical Code (NEC) in the 1971 Edition. The use of copper-clad aluminum grew throughout the 1970s but then waned as the price of copper made it less economically viable. Beginning in the late 2000's with copper prices escalating, the use of copper-clad aluminum has experienced a strong resurgence. The 2023 and 2026 editions of the NEC had many changes adopted to update for copper-clad aluminum conductors. Because of this increased usage, and after a more thorough review of the subject matter, it was determined the NEC needed additional updates in a number of areas to provide installers and inspectors with information for the applications of copper-clad aluminum.

This public input is to update these requirements to allow 12 AWG copper-clad aluminum conductors for use with pipe organs. The NEC has recognized 12 AWG and larger copper-clad aluminum conductors for 15 ampere rated circuits, the same as 14 AWG copper. As presently worded, with the default material statement in 110.5, this section only permits copper conductors. There is no technical reason that 12 AWG or larger copper-clad aluminum conductors applied within the ampacities and other NEC installation requirements cannot be used for these applications.

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Submittal Date: Tue Apr 07 17:14:43 EDT 2026

Committee: NEC-P12

650.7 Conductors.

Conductors shall comply with [650.7\(A\)](#) through [650.7\(D\)](#).

(A) Size. The minimum conductor size shall be not less than 28 AWG for electronic signal circuits and not less than 26 AWG for electromagnetic valve supply and the like. The minimum conductor size of a main common-return conductor in the electromagnetic supply shall not be less than 14 AWG [copper or 12 AWG copper-clad aluminum](#).

Substantiation

Copper-clad aluminum conductors were introduced into the National Electrical Code (NEC) in the 1971 Edition. The use of copper-clad aluminum grew throughout the 1970s but then waned as the price of copper made it less economically viable. Beginning in the late 2000's with copper prices escalating, the use of copper-clad aluminum has experienced a strong resurgence. The 2023 and 2026 editions of the NEC had many changes adopted to update for copper-clad aluminum conductors. Because of this increased usage, and after a more thorough review of the subject matter, it was determined the NEC needed additional updates in a number of areas to provide installers and inspectors with information for the applications of copper-clad aluminum.

This public input is to update these requirements to allow 12 AWG copper-clad aluminum conductors for use with pipe organs. The NEC has recognized 12 AWG and larger copper-clad aluminum conductors for 15 ampere rated circuits, the same as 14 AWG copper. As presently worded, with the default material statement in 110.5, this section only permits copper conductors. There is no technical reason that 12 AWG or larger copper-clad aluminum conductors applied within the ampacities and other NEC installation requirements cannot be used for these applications.



Public Input No. 356-NFPA 70-2025 [Section No. 660.1]

660.1 Scope.

This article covers all X-ray equipment operating at any frequency or voltage for industrial or other nonmedical or nondental use.

Informational Note: See Article 517 Part V for X-ray installations in health care facilities.

~~Nothing in this article shall be construed as specifying safeguards against the useful beam or stray X-ray radiation:~~

~~Informational Note No. 1: Radiation safety and performance requirements of several classes of X-ray equipment are regulated under Public Law 90-602 and are enforced by the Department of Health and Human Services.~~

~~Informational Note No. 2: In addition, information on radiation protection by the National Council on Radiation Protection and Measurements is published as *Reports of the National Council on Radiation Protection and Measurement*. These reports can be obtained from NCRP Publications, 7910 Woodmont Ave., Suite 1016, Bethesda, MD 20814.~~

Statement of Problem and Substantiation for Public Input

This was probably good information in 1920 when people thought an X-ray beam would turn a gorilla into King Kong, but is it really needed in 2029?

And how exactly does one enforce this "requirement" without resorting to an application of Orwellian thought crime? "Shall not be construed"? Really?

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Committee: NEC-P12



Public Input No. 639-NFPA 70-2026 [Section No. 660.5]

660.5 Connection to Supply Circuit.

(A) Fixed and Stationary Equipment.

Fixed and stationary X-ray equipment shall be connected to the power supply by means of a wiring method meeting the general requirements of this code. Equipment properly supplied by a branch circuit rated at not over 30 amperes shall be permitted to be supplied through ~~a suitable~~ an attachment plug cap and hard-service cable or power-supply cord.

(B) Portable, Mobile, and Transportable Equipment.

Individual branch circuits shall not be required for portable, mobile, and transportable X-ray equipment requiring a capacity of not over 60 amperes. Portable and mobile types of X-ray equipment of any capacity shall be supplied through a suitable hard-service cable or power-supply cord. Transportable X-ray equipment of any capacity shall be permitted to be connected to its power supply by ~~suitable~~ connections and hard-service cable or power-supply cord.

Statement of Problem and Substantiation for Public Input

'suitable' is listed as a unenforceable term per NEC style Manual 3.2.1 and should be removed

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Committee: NEC-P12



Public Input No. 638-NFPA 70-2026 [Section No. 660.6]

660.6 Disconnecting Means.

(~~A disconnecting means of adequate capacity for at least 50 percent~~) A cord and plug connected, , flanged surface inlet and cord connector, or attachment plug and cord connector having ratings no less than the OCPD shall be permitted to serve as the disconnecting means. .

-

(B) The disconnecting means capacity rating is not less than 50 percent of the input required for the momentary rating, or 100 percent of the input required for the long-time rating, of the X-ray equipment, whichever is greater, shall be provided in the supply circuit. The disconnecting means shall be located within sight from the X-ray control and readily accessible.

Exception: The disconnecting means for the X-ray equipment shall not be required under either of the following conditions, provided that the controller disconnecting means is lockable open in accordance with 110.25:

- (1) Where such a location of the disconnecting means for the X-ray equipment is impracticable or introduces additional or increased hazards to persons or property*
- (2) In industrial installations, with written safety procedures, where conditions of maintenance and supervision ensure that only qualified persons service the equipment*

Statement of Problem and Substantiation for Public Input

as indicated in 660.4 some portable x-ray equipment are permitted to be cord and plug connected and some have a factory supplied cord sets, Section 660.5 leads the user to believe an addition disconnect device with the rating indicated in the section to be provided. The new section clarify a cord and plug connection is also recognized as a disconnecting means. 'Adequate' in a vague and unenforceable term according to the NEC style Manuel 3.2.1 and should be removed for clarity.

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Public Input No. 3063-NFPA 70-2026 [Section No. 660.9]

660.9 Minimum Size of Conductors.

Size 18 AWG or 16 AWG copper or 16 AWG or 14 AWG copper-clad aluminum fixture wires, as specified in 724.49, and flexible cords shall be permitted for the control and operating circuits of X-ray and auxiliary equipment where protected by not larger than 20-ampere OCPDs.

Additional Proposed Changes

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
PI_660.9.pdf	Pdf file provided to ensure clarity of proposed text changes from Terra entries	

Statement of Problem and Substantiation for Public Input

Copper-clad aluminum conductors were introduced into the National Electrical Code (NEC) in the 1971 Edition. The use of copper-clad aluminum grew throughout the 1970s but then waned as the price of copper made it less economically viable. Beginning in the late 2000's with copper prices escalating, the use of copper-clad aluminum has experienced a strong resurgence. The 2023 and 2026 editions of the NEC had many changes adopted to update for copper-clad aluminum conductors. Because of this increased usage, and after a more thorough review of the subject matter, it was determined the NEC needed additional updates in a number of areas to provide installers and inspectors with information for the applications of copper-clad aluminum.

This public input is to update these requirements to allow 16 AWG and 14 AWG copper-clad aluminum conductors for control and operating X-ray equipment. In the 2026 NEC cycle 16 AWG, and 14 AWG copper-clad aluminum conductors were added to Table 402.5 for fixture wires. In addition, 14 AWG copper-clad aluminum was added for general branch circuit use in 310.5(A) and to Table 310.16 for ampacity. 14 AWG copper-clad aluminum is permitted to be insulated with THHN insulation, the same as 14 AWG copper. As presently worded with the default material statement in 110.5, this section only permits copper conductors. There is no technical reason that copper-clad aluminum applied within the ampacities and other NEC installation requirements cannot be used for these applications.

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Committee: NEC-P12

660.9 Minimum Size of Conductors. Size 18 AWG or 16 AWG [copper or 16 AWG or 14 AWG copper-clad aluminum](#) fixture wires, as specified in [724.49](#), and flexible cords shall be permitted for the control and operating circuits of X-ray and auxiliary equipment where protected by not larger than 20-ampere OCPDs.

Substantiation

Copper-clad aluminum conductors were introduced into the National Electrical Code (NEC) in the 1971 Edition. The use of copper-clad aluminum grew throughout the 1970s but then waned as the price of copper made it less economically viable. Beginning in the late 2000's with copper prices escalating, the use of copper-clad aluminum has experienced a strong resurgence. The 2023 and 2026 editions of the NEC had many changes adopted to update for copper-clad aluminum conductors. Because of this increased usage, and after a more thorough review of the subject matter, it was determined the NEC needed additional updates in a number of areas to provide installers and inspectors with information for the applications of copper-clad aluminum.

This public input is to update these requirements to allow 16 AWG and 14 AWG copper-clad aluminum conductors for control and operating X-ray equipment. In the 2026 NEC cycle 16 AWG, and 14 AWG copper-clad aluminum conductors were added to Table 402.5 for fixture wires. In addition, 14 AWG copper-clad aluminum was added for general branch circuit use in 310.5(A) and to Table 310.16 for ampacity. 14 AWG copper-clad aluminum is permitted to be insulated with THHN insulation, the same as 14 AWG copper. As presently worded with the default material statement in 110.5, this section only permits copper conductors. There is no technical reason that copper-clad aluminum applied within the ampacities and other NEC installation requirements cannot be used for these applications.



Public Input No. 3240-NFPA 70-2026 [Section No. 668.21(B)]

(B) Noninterchangeability.

Receptacles and their ~~mating~~ connecting plugs for ungrounded equipment shall not have provision for an equipment grounding conductor and shall be of a configuration that prevents their use for equipment required to be grounded.

Statement of Problem and Substantiation for Public Input

The term mating can be seen as non-inclusive and less suitable for international use and translation.

1. In common industry usage, function-based terms are widely understood and are more technically descriptive, such as interconnecting, matching, and connecting.
2. Using the proposed term(s) improves clarity for a broader range of users, including non-specialists, because the term(s) describe the intended function rather than a metaphor.
3. The proposed term(s) align with plain-language writing practices and improve translatability for international audiences.
4. The change supports ULSE's inclusive language goals by replacing gendered terms with neutral, technically descriptive alternatives without changing any technical requirement. Proposals are being made across ULSE's portfolio supporting inclusive language.

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Public Input No. 1905-NFPA 70-2026 [Section No. 669.5]

669.5 Branch-Circuit Conductors.

~~Branch-circuit conductors supplying one or more units of equipment shall have an ampacity of not less than 125 percent of the total connected load.~~ Electroplating equipment shall be considered a continuous load when sizing its supply conductors. The ampacities for busbars shall be in accordance with 366.23.

Statement of Problem and Substantiation for Public Input

This public input is being submitted on behalf of the NEC Correlating Committee Continuous Load Task Group in order to provide consistency throughout the National Electrical Code. The task group members are John McCamish, Donny Cook, Brett Larson, Bryan Tatum, David Kendall, Christel Hunter, Larry Wildermuth Jr., Rob Zachariason, Todd Crisman, and Greg Woyczynski.

In many cases sizing of conductors the use of the terms “Continuous Load” and “125% of the load” have been used interchangeably. When adjustment and correction factors are involved for branch, feeder or service conductors, the calculation results for a continuous load and 125% of the load result in different values. Below is an example which illustrates this difference:

Calculation of Ampacity for Continuous Loads Versus Loads requiring 125% Ampacity.

The 125 percent multiplier used for ampacity calculations can be required for reasons other than continuous loads and require different methods to calculate the ampacity of a conductor [see 120.6, Informational Note].

1. Calculate Ampacity of the Branch Circuit Conductors for 47 Ampere Continuous Load, 75 degree C conductors and terminations, Ambient Temperature 102 degree F, two current carrying conductors in a raceway.

[see 210.19]

Compare the following two totals:

$47 \text{ A} \times 125\% = 58.75 \text{ A}$ [see 210.19 (A)(1)]

$47 \text{ A} / 0.88 = 53.4 \text{ A}$ [see 210.19(A)(2), 310.15(B), Table 310.15(B)(1)(1)]

$58.75 \text{ A} > 53.4 \text{ A}$, therefore the required ampacity of the conductor is 58.75A.

2. Calculate Ampacity of the Branch Circuit Conductors for 47 Ampere Load, 75 degree C conductors and terminations, Ambient Temperature 102 degree F, two current carrying conductors in a raceway. The load requires an ampacity of 125%.

Since the load is not specified as a continuous load, no comparison is permitted. The ampacity of the conductor under the conditions of use must have an ampacity of 125% of the 47 A load.

$47 \text{ A} \times 125\% = 58.75 \text{ A}$

$58.75 \text{ A} / 0.88 = 66.76 \text{ A}$, therefore the required ampacity of the conductor is 66.76 A.

The existing requirement to increase the ampacity of the branch circuit conductors supplying electroplating equipment by 125% implies that it is a continuous load. By changing the language to identify electroplating equipment as a continuous load, the requirements of 210, 215, and 230 will require the minimum ampacity of the supply conductors to be 125% of the connected load. This will also ensure that the correction and adjustment factors are properly applied.

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Public Input No. 717-NFPA 70-2026 [Section No. 670.7]

670.7 ~~Surge Protection~~ Protective Devices (SPDs) .

Industrial machinery with safety circuits shall ~~have surge protection~~. have SPD(s) to protect against the effects of overvoltages due to transients or switching surges. The type of SPD(s) shall be selected to protect, at a minimum, the safety circuit devices and shall be permitted to be integral to secondary derived voltage sources.

Exception: SPD(s) shall not be required where the risks associated with the effects of overvoltages are mitigated such that the safety performance determined by a risk assessment is met.

Statement of Problem and Substantiation for Public Input

The problem is that the current wording in NFPA 70 does not align with the requirements in NFPA 79, particularly regarding the exception to the requirement for surge protection as stated in NFPA 79. The proposed wording in this public input aligns with NFPA 79 7.8.1, including allowing for the exception to the requirement where risks associated to overvoltages are mitigated and the safety performance determined by a risk assessment is met. Alternatively, the committee could consider simpler wording incorporating the NFPA 79 requirements by reference, such as "Industrial machinery with safety circuits shall have surge protection in accordance with NFPA 79" or similar wording. The intent of this input is to ensure that the requirements in NFPA 70 do not conflict with the requirements in NFPA 79 and also to not require surge protection where it not needed to maintain the safety function of the machine.

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Committee: NEC-P12



Public Input No. 2271-NFPA 70-2026 [Section No. D.15]

D.15 Example D9 Feeder Ampacity Determination for Generator Field Control

[see 215.4, 430.24, 430.24 Exception No. 1, 620.13, 620.14, 620.61, and Table 430.22(E)]

Determine the conductor ampacity for a 460-V 3-phase, 60-Hz ac feeder supplying a group of six elevators. The 460-V ac drive motor nameplate rating of the largest MG set for one elevator is 40 hp and 52 A, and the remaining elevators each have a 30-hp, 40-A, ac drive motor rating for their MG sets. In addition to a motor controller, each elevator has a separate motion/operation controller rated 10 A continuous to operate microprocessors, relays, power supplies, and the elevator car door operator. The MG sets are rated continuous.

D.15.1 Conductor Ampacity

Conductor ampacity is determined as follows:

(a) In accordance with 620.13(D) and 620.61(B)(1), use Table 430.22(E), for intermittent duty (elevators). For intermittent duty using a continuous rated motor, the percentage of nameplate current rating to be used is 140%.

(b) For the 30-hp ac drive motor,

$$140\% \times 40 \text{ A} = 56 \text{ A}$$

(c) For the 40-hp ac drive motor,

$$140\% \times 52 \text{ A} = 72.8 \text{ A}$$

(d) The total conductor ampacity is the sum of all the motor currents:

$$(1 \text{ motor} \times 72.8 \text{ A}) + (5 \text{ motors} \times 56 \text{ A}) = 352.8 \text{ A}$$

(e) In accordance with 620.14 and Table 620.14, the conductor (feeder) ampacity would be permitted to be reduced by the use of a demand factor. Constant loads are not included [see Table 620.14]. For six elevators, the demand factor is 0.79. The feeder diverse ampacity is, therefore, $0.79 \times 352.8 \text{ A} = 278.7 \text{ A}$.

(f) In accordance with 620.13(D), 430.24 and 215.5, the controller continuous current is $125\% \times 10 \text{ A} = 12.5 \text{ A}$.

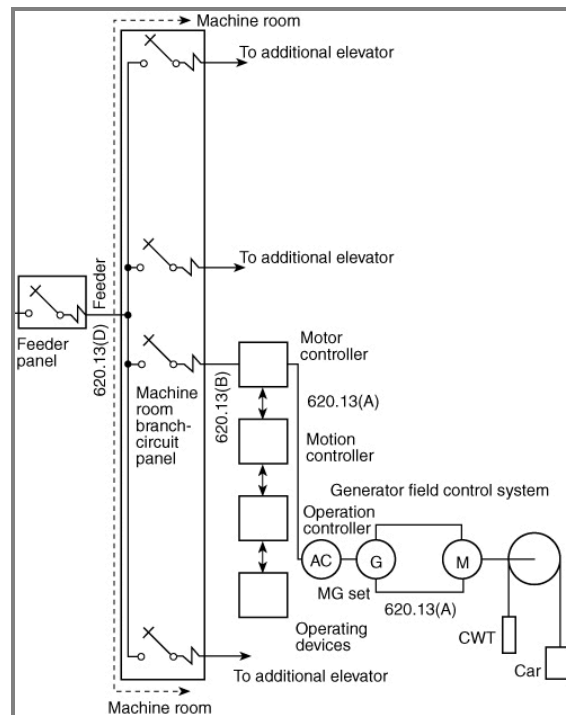
(g) The total feeder ampacity is the sum of the diverse current and all the controller continuous current.

$$I_{\text{total}} = 278.7 \text{ A} + (6 \text{ elevators} \times 12.5 \text{ A}) = 353.7 \text{ A}$$

(h) This ampacity would be permitted to be used to select the wire size of the feeder.

See Figure D9.

Figure D9 Generator Field Control.



Statement of Problem and Substantiation for Public Input

This public input is part of the work done by the Annex D Task Group. The members of the task group are Brett Larson, David Johnson and John McCamish. The purpose of the task group is to review the calculations of Annex D to add clarity, consistency, and where needed, update or modify the examples

to align with code requirements.

Conductor references were put in [brackets] for consistency. The calculations were modified to comply with 120.5 where rounding only is permitted for load calculations, rounding is not permitted for conductor ampacity. A reference to 620.13(D) is added to clarify why the use of 430.24 and 215.5 is done. In (h) text was added to point out it this is the feeder that is being calculated.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
<u>Public Input No. 1926-NFPA 70-2026 [Annex D [Excluding any Sub-Sections]]</u>	Annex D Task Group
<u>Public Input No. 1930-NFPA 70-2026 [Section No. D.1]</u>	Annex D Task Group
<u>Public Input No. 1938-NFPA 70-2026 [Section No. D.2]</u>	Annex D Task Group
<u>Public Input No. 1941-NFPA 70-2026 [Section No. D.3]</u>	Annex D Task Group
<u>Public Input No. 1942-NFPA 70-2026 [Section No. D.4]</u>	Annex D Task Group
<u>Public Input No. 1944-NFPA 70-2026 [Section No. D.5]</u>	Annex D Task Group
<u>Public Input No. 1959-NFPA 70-2026 [Section No. D.6]</u>	Annex D Task Group
<u>Public Input No. 1960-NFPA 70-2026 [Section No. D.7]</u>	Annex D Task Group
<u>Public Input No. 1966-NFPA 70-2026 [Section No. D.8]</u>	Annex D Task Group
<u>Public Input No. 1975-NFPA 70-2026 [Section No. D.9]</u>	Annex D Task Group
<u>Public Input No. 2206-NFPA 70-2026 [Section No. D.10]</u>	Annex D Task Group
<u>Public Input No. 2211-NFPA 70-2026 [Section No. D.11]</u>	Annex D Task Group
<u>Public Input No. 2258-NFPA 70-2026 [Section No. D.12]</u>	Annex D Task Group
<u>Public Input No. 2263-NFPA 70-2026 [Section No. D.13]</u>	Annex D Task Group
<u>Public Input No. 2268-NFPA 70-2026 [Section No. D.14]</u>	Annex D Task Group
<u>Public Input No. 2273-NFPA 70-2026 [Section No. D.16]</u>	Annex D Task Group
<u>Public Input No. 2281-NFPA 70-2026 [Section No. D.17]</u>	Annex D Task Group
<u>Public Input No. 2284-NFPA 70-2026 [Section No. D.18]</u>	Annex D Task Group
<u>Public Input No. 2297-NFPA 70-2026 [Section No. D.19 [Excluding any Sub-Sections]]</u>	Annex D Task Group
<u>Public Input No. 2298-NFPA 70-2026 [Section No. D.21]</u>	Annex D Task Group
<u>Public Input No. 1926-NFPA 70-2026 [Annex D [Excluding any Sub-Sections]]</u>	
<u>Public Input No. 1938-NFPA 70-2026 [Section No. D.2]</u>	

[Public Input No. 1941-NFPA 70-2026 \[Section No. D.3\]](#)
[Public Input No. 1942-NFPA 70-2026 \[Section No. D.4\]](#)
[Public Input No. 1944-NFPA 70-2026 \[Section No. D.5\]](#)
[Public Input No. 1959-NFPA 70-2026 \[Section No. D.6\]](#)
[Public Input No. 1960-NFPA 70-2026 \[Section No. D.7\]](#)
[Public Input No. 1966-NFPA 70-2026 \[Section No. D.8\]](#)
[Public Input No. 1975-NFPA 70-2026 \[Section No. D.9\]](#)
[Public Input No. 2206-NFPA 70-2026 \[Section No. D.10\]](#)
[Public Input No. 2211-NFPA 70-2026 \[Section No. D.11\]](#)
[Public Input No. 2258-NFPA 70-2026 \[Section No. D.12\]](#)
[Public Input No. 2263-NFPA 70-2026 \[Section No. D.13\]](#)
[Public Input No. 2268-NFPA 70-2026 \[Section No. D.14\]](#)
[Public Input No. 2273-NFPA 70-2026 \[Section No. D.16\]](#)
[Public Input No. 2281-NFPA 70-2026 \[Section No. D.17\]](#)
[Public Input No. 2284-NFPA 70-2026 \[Section No. D.18\]](#)
[Public Input No. 2297-NFPA 70-2026 \[Section No. D.19 \[Excluding any Sub-Sections\]\]](#)
[Public Input No. 2298-NFPA 70-2026 \[Section No. D.21\]](#)

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Public Input No. 2273-NFPA 70-2026 [Section No. D.16]

D.16 Example D10 Feeder Ampacity Determination for Adjustable Speed Drive Control [see 215.4, 430.24, 620.13, 620.14, 620.61, and Table 430.22(E)]

Determine the conductor ampacity for a 460-V, 3-phase, 60-Hz ac feeder supplying a group of six identical elevators. The system is adjustable-speed SCR dc drive. The power transformers are external to the drive (motor controller) cabinet. Each elevator has a separate motion/operation controller connected to the load side of the main line disconnect switch rated 10 A continuous to operate microprocessors, relays, power supplies, and the elevator car door operator. Each transformer is rated 95 kVA with an efficiency of 90%.

D.16.1 Conductor Ampacity

Conductor ampacity is determined as follows:

(a) Calculate the nameplate rating of the transformer:

$$I = \frac{95 \text{ kVA} \times 1000}{\sqrt{3} \times 460 \text{ V} \times 0.90_{\text{eff}}} = 133 \text{ A} \quad \text{[D10]}$$

132.5 A

(b) In accordance with 620.13(D), for six elevators, the total conductor ampacity is the sum of all the currents.

$$6 \text{ elevators} \times 133 \text{ A} = 798 \text{ A} \quad \underline{132.5 \text{ A}} = 795 \text{ A}$$

(c) In accordance with 620.14 and Table 620.14, the conductor (feeder) ampacity would be permitted to be reduced by the use of a demand factor. Constant loads are not included { [see 620.13 Informational Note No. 2)]. For six elevators, the demand factor is 0.79. The feeder diverse ampacity is, therefore, $0.79 \times 798 \text{ A} = 630 \text{ A}$ 628.1 A.

(d) In accordance with 430.24 and 215.5, the controller continuous current is $125\% \times 10 \text{ A} = 13 \text{ A}$.

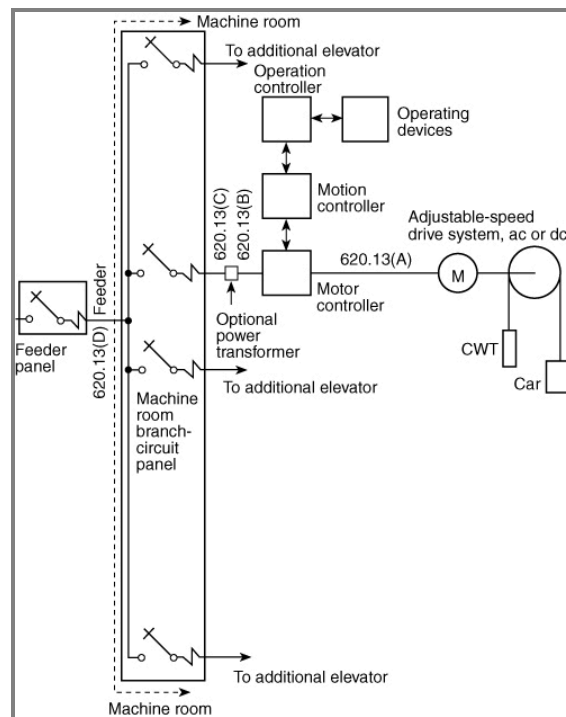
(e) The total feeder ampacity is the sum of the diverse current and all the controller constant current.

$$I_{\text{total}} = 630 \text{ A} + (6 \text{ elevators} \times 12.5 \text{ A}) = 705 \text{ A} \quad \underline{703.1 \text{ A}}$$

(f) This ampacity would be permitted to be used to select the wire size of the feeder.

See Figure D10.

Figure D10 Adjustable Speed Drive Control.



Statement of Problem and Substantiation for Public Input

This public input is part of the work done by the Annex D Task Group. The members of the task group are Brett Larson, David Johnson and John McCamish. The purpose of the task group is to review the calculations of Annex D to add clarity, consistency, and where needed, update or modify the examples to align with code requirements.

Removed rounding of values for conductor ampacity. 120.5(E) permits rounding for load calculations, not ampacity of conductors. Code references are in [brackets] for consistency with other examples in Annex D, Text was added to clarify the conductor ampacity calculated is for the feeder.

Note to Staff: The formula would need to be updated with a new value of 132.5

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
<u>Public Input No. 1926-NFPA 70-2026 [Annex D [Excluding any Sub-Sections]]</u>	Annex D Task Group
<u>Public Input No. 1930-NFPA 70-2026 [Section No. D.1]</u>	Annex D Task Group
<u>Public Input No. 1938-NFPA 70-2026 [Section No. D.2]</u>	Annex D Task Group
<u>Public Input No. 1941-NFPA 70-2026 [Section No. D.3]</u>	Annex D Task Group
<u>Public Input No. 1942-NFPA 70-2026 [Section No. D.4]</u>	Annex D Task Group
<u>Public Input No. 1944-NFPA 70-2026 [Section No. D.5]</u>	Annex D Task Group
<u>Public Input No. 1959-NFPA 70-2026 [Section No. D.6]</u>	Annex D Task Group
<u>Public Input No. 1960-NFPA 70-2026 [Section No. D.7]</u>	Annex D Task Group
<u>Public Input No. 1966-NFPA 70-2026 [Section No. D.8]</u>	Annex D Task Group
<u>Public Input No. 1975-NFPA 70-2026 [Section No. D.9]</u>	Annex D Task Group
<u>Public Input No. 2206-NFPA 70-2026 [Section No. D.10]</u>	Annex D Task Group
<u>Public Input No. 2211-NFPA 70-2026 [Section No. D.11]</u>	Annex D Task Group
<u>Public Input No. 2258-NFPA 70-2026 [Section No. D.12]</u>	Annex D Task Group
<u>Public Input No. 2263-NFPA 70-2026 [Section No. D.13]</u>	Annex D Task Group
<u>Public Input No. 2268-NFPA 70-2026 [Section No. D.14]</u>	Annex D Task Group
<u>Public Input No. 2271-NFPA 70-2026 [Section No. D.15]</u>	Annex D Task Group
<u>Public Input No. 2281-NFPA 70-2026 [Section No. D.17]</u>	Annex D Task Group
<u>Public Input No. 2284-NFPA 70-2026 [Section No. D.18]</u>	Annex D Task Group
<u>Public Input No. 2297-NFPA 70-2026 [Section No. D.19 [Excluding any Sub-Sections]]</u>	Annex D Task Group
<u>Public Input No. 2298-NFPA 70-2026 [Section No. D.21]</u>	Annex D Task Group
<u>Public Input No. 1926-NFPA 70-2026 [Annex D [Excluding any Sub-Sections]]</u>	
<u>Public Input No. 1938-NFPA 70-2026 [Section No. D.2]</u>	

[Public Input No. 1941-NFPA 70-2026 \[Section No. D.3\]](#)
[Public Input No. 1942-NFPA 70-2026 \[Section No. D.4\]](#)
[Public Input No. 1944-NFPA 70-2026 \[Section No. D.5\]](#)
[Public Input No. 1959-NFPA 70-2026 \[Section No. D.6\]](#)
[Public Input No. 1960-NFPA 70-2026 \[Section No. D.7\]](#)
[Public Input No. 1966-NFPA 70-2026 \[Section No. D.8\]](#)
[Public Input No. 1975-NFPA 70-2026 \[Section No. D.9\]](#)
[Public Input No. 2206-NFPA 70-2026 \[Section No. D.10\]](#)
[Public Input No. 2211-NFPA 70-2026 \[Section No. D.11\]](#)
[Public Input No. 2258-NFPA 70-2026 \[Section No. D.12\]](#)
[Public Input No. 2263-NFPA 70-2026 \[Section No. D.13\]](#)
[Public Input No. 2268-NFPA 70-2026 \[Section No. D.14\]](#)
[Public Input No. 2271-NFPA 70-2026 \[Section No. D.15\]](#)
[Public Input No. 2281-NFPA 70-2026 \[Section No. D.17\]](#)
[Public Input No. 2284-NFPA 70-2026 \[Section No. D.18\]](#)
[Public Input No. 2297-NFPA 70-2026 \[Section No. D.19 \[Excluding any Sub-Sections\]\]](#)
[Public Input No. 2298-NFPA 70-2026 \[Section No. D.21\]](#)

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Public Input No. 1146-NFPA 70-2026 [Part I.]

Part I. General

I'm sure you already know this, but update this article to match the text in Article 625.
The 2026 text for 624 matches the 2023 text for 625.

Statement of Problem and Substantiation for Public Input

I'm sure you already know this, but update this article to match the text in Article 625. The 2026 text for 624 matches the 2023 text for 625.

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Committee: NEC-P12