Second Revision No. 7736-NFPA 70-2021 [Definition: Cable Management System (Electrified Truck Park...]

Cable Management System.

An apparatus designed to control and organize ~~unused~~ lengths of cable or cord ~~at electrified truck parking spaces~~ . (CMP-12)

Submitter Information Verification

Committee: NEC-P12

Submittal Date: Thu Oct 14 15:40:48 EDT 2021

Committee Statement

Committee Statement: Definition revised for broader use throughout the NEC. Consequently, the revised definition is no longer purview of (CMP-12).

Response Message: SR-7736-NFPA 70-2021

Public Comment No. 1077-NFPA 70-2021 [Definition: Cable Management System.]

Second Revision No. 7575-NFPA 70-2021 [Definition: Control Space (foras applied to Elevatorelevat...]

Control Space ~~(as applied to elevator, dumbwaiter)~~ .

A space inside or outside the hoistway~~, other than a hoistway~~ intended to be accessed with or without full bodily entry~~,~~ that contains the elevator motor controller. This space could also contain electrical and/or mechanical equipment used directly in connection with the elevator, dumbwaiter, escalator, moving walk, or platform lift, but not the electrical driving machine or the hydraulic machine. (620) (CMP-12)

Submitter Information Verification

Committee: NEC-P12

Submittal Date: Wed Oct 13 16:14:08 EDT 2021

Committee Statement

Committee Statement: The modification to the definition more closely aligns with the definition of ASME A17.1/CSA B44.

Response Message: SR-7575-NFPA 70-2021

Public Comment No. 989-NFPA 70-2021 [Definition: Control Space (as applied to elevator, dumbwai...]

Second Revision No. 7579-NFPA 70-2021 [Definition: Controller, Motion. (Motion Controller)]

Controller, Motion. (Motion Controller)

The electrical device(s) for that part of the control system that governs the acceleration, speed, retardation, and stopping of the moving member. (620) (CMP-12)

Informational Note: The motor control function may be integral to the motion controller.

Submitter Information Verification

Committee: NEC-P12

Submittal Date: Wed Oct 13 16:27:37 EDT 2021

Committee Statement

Committee Statement: The informational note was added to Controller, Motion to clarify that motor control function may be integral to the Motion Controller.

Response Message: SR-7579-NFPA 70-2021

Second Revision No. 7578-NFPA 70-2021 [Definition: Controller, Motor. (Motor Controller)]

~~**Controller, Motor. (Motor Controller)**~~

~~The operative units of the control system comprising the starter device(s) and power conversion equipment used to drive an electric motor or the pumping unit used to power hydraulic control equipment. (620) (CMP-12)~~

Submitter Information Verification

Committee: NEC-P12

Submittal Date: Wed Oct 13 16:26:17 EDT 2021

Committee Statement

Committee Statement: The deletion of the definition removes redundancy.

Response Message: SR-7578-NFPA 70-2021

Public Comment No. 229-NFPA 70-2021 [Definition: Controller, Motor. (Motor Controller)]

Second Revision No. 7739-NFPA 70-2021 [Definition: Cord Connector (as applied to Electrified Truck...]

~~**Cord Connector (as applied to Electrified Truck Parking Spaces).**~~

~~The necessary equipment usually consisting of a circuit breaker or switch and fuses, and their accessories, located near the point of entrance of supply conductors in an electrified truck parking space and intended to constitute the means of cutoff for the supply to that truck. (626) (CMP-12)~~

Submitter Information Verification

Committee: NEC-P12

Submittal Date: Thu Oct 14 15:51:53 EDT 2021

Committee Statement

Committee Statement: The definition of cord connector as applied to electrified truck parking spaces is deleted due to redundancy.

Response Message: SR-7739-NFPA 70-2021

Public Comment No. 1659-NFPA 70-2021 [Definition: Cord Connector (as applied to Electrified Truck...]

Second Revision No. 7740-NFPA 70-2021 [Definition: Disconnecting Means, Parking Space. (Parking Sp...]

~~**Disconnecting Means, Parking Space. (Parking Space Disconnecting Means)**~~

~~The necessary equipment usually consisting of a circuit breaker or switch and fuses, and their accessories, located near the point of entrance of supply conductors in an electrified truck parking space and intended to constitute the means of cutoff for the supply to that truck. (626) (CMP-12)~~

Submitter Information Verification

Committee: NEC-P12

Submittal Date: Thu Oct 14 15:54:12 EDT 2021

Committee Statement

Committee Statement: The definition of parking space disconnecting means is deleted due to redundancy.

Response Message: SR-7740-NFPA 70-2021

Public Comment No. 454-NFPA 70-2021 [Definition: Disconnecting Means, Parking Space. (Parking Sp...]

Public Comment No. 1261-NFPA 70-2021 [Definition: Disconnecting Means, Parking Space. (Parking Sp...]

Second Revision No. 7744-NFPA 70-2021 [Definition: Electric Vehicle Supply Equipment (EVSE).]

Electric Vehicle Supply Equipment (EVSE).

Equipment for plug-in charging ~~comprising the conductors~~ , 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.

Submitter Information Verification

Committee: NEC-P12

Submittal Date: Thu Oct 14 16:09:34 EDT 2021

Committee Statement

Committee Statement: The definition of electric vehicle supply equipment is revised to remove mandatory language.

Response Message: SR-7744-NFPA 70-2021

Public Comment No. 992-NFPA 70-2021 [Definition: Electric Vehicle Supply Equipment (EVSE).]

Second Revision No. 7701-NFPA 70-2021 [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 that are not communications equipment ~~as defined in Part I of Article 100~~ and do not process communications circuits ~~as defined in 805.2~~ . (CMP-12)

Informational Note: ~~For information on listing requirements for both information technology equipment and communications equipment, see~~ See UL 60950-1-~~2014~~ , *Information Technology Equipment — Safety — Part 1: General Requirements*, or UL 62368-1-~~2014~~ , *Audio/Video Information and Communication Technology Equipment Part 1: Safety Requirements*, for information on listing requirements for both information technology equipment and communications equipment .

Submitter Information Verification

Committee: NEC-P12

Submittal Date: Thu Oct 14 12:50:33 EDT 2021

Committee Statement

Committee Statement: The references to other articles were removed from the definition as all definitions reside in Article 100. In addition, the dates were removed from the informational note references to align with 90.5.

Response Message: SR-7701-NFPA 70-2021

Public Comment No. 1942-NFPA 70-2021 [Definition: Information Technology Equipment (ITE).]

Second Revision No. 7748-NFPA 70-2021 [Definition: Load Management System.]

~~**Load Management System.**~~

~~Associated interconnected equipment that will actively regulate the individual loads via load control equipment such that the total load on the electrical supply system stays below a given maximum permitted total value. The system performs the task of load management. (625) (CMP-12)~~

~~Informational Note: Load control equipment consists of equipment or modules within a piece of equipment that communicate with individual loads and other load control equipment within a load management system to manage the total load on the electrical supply system. The communications between load control equipment, as well as the implementation of the control process, may be achieved through hardware, software, or a combination of both.~~

Submitter Information Verification

Committee: NEC-P12

Submittal Date: Thu Oct 14 16:18:51 EDT 2021

Committee Statement

Committee Statement: Definition deleted due to redundancy with the definition of Energy Management System and the requirements of Article 750.

Response Message: SR-7748-NFPA 70-2021

Public Comment No. 1034-NFPA 70-2021 [Definition: Load Management System.]

Second Revision No. 7749-NFPA 70-2021 [Definition: Power-Supply Cord (as applied to EVSE).]

~~**Power-Supply Cord (as applied to EVSE).**~~

~~An assembly consisting of an attachment plug and length of flexible cord that connects equipment to a receptacle. (625) (CMP-12)~~

Submitter Information Verification

Committee: NEC-P12

Submittal Date: Thu Oct 14 16:20:27 EDT 2021

Committee Statement

Committee Statement: The definition of power-supply cord as applied to EVSE was deleted due to redundancy.

Response Message: SR-7749-NFPA 70-2021

Public Comment No. 1662-NFPA 70-2021 [Definition: Power-Supply Cord (as applied to EVSE).]

Second Revision No. 7753-NFPA 70-2021 [Definition: Wireless Power Transfer Equipment (WPTE).]

Wireless Power Transfer Equipment (WPTE).

Equipment ~~comprising the conductors, including the ungrounded, grounded, and equipment grounding conductors, personnel protection system, power and control electronics, communication electronics, the output cable to the primary pad, the primary pad 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 without physical electrical contact. (625) (CMP-12)

Informational Note No. 1: The general form of WPTE consists of two physical packages: a control box and a primary pad.

Informational Note No. 2: Electric vehicle power export equipment and wireless power transfer equipment are sometimes contained in one set of equipment, sometimes referred to as a bidirectional WPTE.

Submitter Information Verification

Committee: NEC-P12

Submittal Date: Thu Oct 14 16:30:10 EDT 2021

Committee Statement

Committee Statement: The definition of wireless power transfer equipment was revised to remove mandatory language.

Response Message: SR-7753-NFPA 70-2021

Public Comment No. 994-NFPA 70-2021 [Definition: Wireless Power Transfer Equipment (WPTE).]

Second Revision No. 7760-NFPA 70-2021 [Definitions (100): Cable, Aban... to Cable, Aban...]

~~**Cable, Abandoned Audio Distribution. (Abandoned Audio Distribution Cable)**~~

~~Installed audio distribution cable that is not terminated at equipment and not identified for future use with a tag. (640) (CMP-12)~~

~~**Cable, Abandoned Supply Circuits and Interconnecting. (Abandoned Supply Circuits and Interconnecting Cables)**~~

~~Installed supply circuits and interconnecting cables that are not terminated at equipment and not identified for future use with a tag. (645) (CMP-12)~~

Submitter Information Verification

Committee: NEC-P12

Submittal Date: Thu Oct 14 17:03:30 EDT 2021

Committee Statement

Committee Statement: The definitions have been deleted due to redundancy and the abandoned cable TG will be creating one definition.

Response Message: SR-7760-NFPA 70-2021

Second Revision No. 7584-NFPA 70-2021 [Section No. 610.13(D)]

~~**(D)** Class 1, Class 2, and Class 3 Circuits.~~

~~Conductors for Class 1, Class 2, and Class 3 remote-control, signaling, and power-limited circuits, installed in accordance with Article 725 , shall be permitted.~~

Submitter Information Verification

Committee: NEC-P12

Submittal Date: Wed Oct 13 16:48:07 EDT 2021

Committee Statement

Committee Statement: Section 610.13(D) has been removed as it is redundant with 90.3.

Response Message: SR-7584-NFPA 70-2021

Second Revision No. 7777-NFPA 70-2021 [Section No. 610.13 [Excluding any Sub-Sections]]

Conductors shall comply with Table 310.4(1) unless otherwise permitted in 610.13(A) through (~~D~~ C).

Submitter Information Verification

Committee: NEC-P12
Submittal Date: Fri Oct 15 07:41:52 EDT 2021

Committee Statement

Committee Statement: Editorial correction changing (D) to (C) since (D) was deleted.
Response Message: SR-7777-NFPA 70-2021

Second Revision No. 7503-NFPA 70-2021 [Section No. 620.1]

620.1 Scope.

This article covers the installation of electrical equipment and wiring used in connection with elevators, dumbwaiters, escalators, moving walks, platform lifts, and stairway chairlifts.

Informational Note No. 1: ~~For further information, see~~ See ASME A17.1-~~2016~~ /CSA B44-~~16~~ , *Safety Code for Elevators and Escalators*, for information on the installation of elevators and escalators .

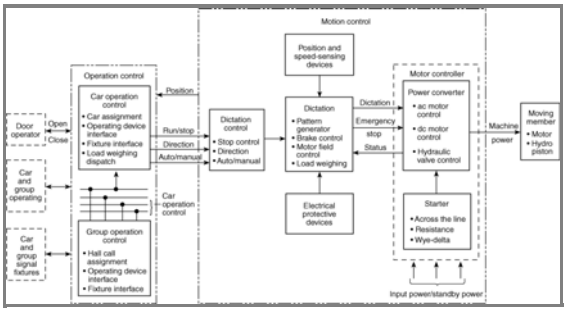
Informational Note No. 2: ~~For further information, see~~ See CSA B44.1-~~14~~ /ASME A17.5-~~2014~~ , *Elevator and ~~Escalator Electrical Equipment~~ escalator electrical equipment* , for information on elevator and escalator electrical equipment .

Informational Note No. 3: ~~The term *wheelchair lift* has been changed to *platform lift* . For further information, see~~ See ASME A18.1-~~2014~~ , *Safety Standard for Platform Lifts and Stairway Chairlifts*, for information on installation of platform lifts and stairway chairlifts. The term *wheelchair lift* has been changed to platform lift .

Informational Note No. 4: The motor controller, motion controller, and operation controller are located in a single enclosure or a combination of enclosures.

Informational Note No. 5: See Informational Note Figure 620.1~~, No. 5 is~~ for information only.

Figure Informational Note Figure 620.1 Control System.



Submitter Information Verification

Committee: NEC-P12

Submittal Date: Wed Oct 13 11:07:30 EDT 2021

Committee Statement

Committee Statement: The information notes have been edited to comply with the NFPA Style Manual.

Response Message: SR-7503-NFPA 70-2021

Public Comment No. 943-NFPA 70-2021 [Section No. 620.1]

Second Revision No. 7507-NFPA 70-2021 [Section No. 620.6]

620.6 Ground-Fault Circuit-Interrupter Protection for Personnel.

(A) ~~GFCI Receptacle~~ 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) ~~GFCI Receptacle or GFCI Circuit Breaker~~ 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, ~~and~~ control rooms, and truss interiors shall have listed Class A ground-fault circuit-interrupter protection for personnel.

(C) ~~Single Receptacle GFCI Protected~~ GFCI Receptacle, Sump Pumps .

A permanently installed sump pump shall be permanently wired or shall be supplied by a ~~single~~ receptacle that is protected by a listed Class A ground-fault circuit-interrupter.

Submitter Information Verification

Committee: NEC-P12

Submittal Date: Wed Oct 13 11:16:33 EDT 2021

Committee Statement

Committee Statement: The titles of the subsections of 620.6 were revised to clarify the intent of the subsections, and 620.6(C) was revised to eliminate the single GFCI receptacle requirement.

Section 620.6(B) was revised to add “truss interior” to 620.6(B) to align with the addition of “truss interiors” in 620.23.

Response Message: SR-7507-NFPA 70-2021

Public Comment No. 2031-NFPA 70-2021 [Section No. 620.6(C)]

Public Comment No. 240-NFPA 70-2021 [Section No. 620.6]

Second Revision No. 7510-NFPA 70-2021 [Section No. 620.12(A)(2)]

(2) Class 2 and Communications Circuits.

~~Cables~~ Communications cables used for Class 2 or communications circuits shall ~~be listed as Type CMP-LP or CMR-LP with~~ have a current limit equal to or greater than the current required to power the powered Class 2 or communications device. Communications cables shall comply with 800.179 . The minimum conductor size for communications circuits shall be 24 AWG.

Submitter Information Verification

Committee: NEC-P12

Submittal Date: Wed Oct 13 11:22:56 EDT 2021

Committee Statement

Committee Statement: The word “Communications” has been added in 620.12(A) (2) before “Cables” for clarity. Types of Communications Cables have been eliminated. Through extensive discussion with traveling cable manufacturers minimum wire gauge for communications circuits should be #24 AWG and not #26 AWG.

Response Message: SR-7510-NFPA 70-2021

Public Comment No. 2062-NFPA 70-2021 [Section No. 620.12(A)(2)]

Public Comment No. 2122-NFPA 70-2021 [Section No. 620.12(A)(2)]

Public Comment No. 1845-NFPA 70-2021 [Section No. 620.12]

Second Revision No. 7511-NFPA 70-2021 [Section No. 620.21]

620.21 Wiring Methods.

Conductors, cables, and optical fiber cables located in hoistways, escalator and moving walk wellways, platform lifts, stairway chairlift runways, machinery spaces, control spaces, in or on cars, machine rooms, and control rooms, not including the traveling cables connecting the car or counterweight and hoistway wiring, shall be installed in rigid metal conduit, intermediate metal conduit, electrical metallic tubing, rigid nonmetallic conduit, or wireways, or shall be Type MC, MI, or AC cable unless otherwise permitted in 620.21(A) through (C). Unused conductors in an enclosure shall be insulated or protected from accidental contact with exposed live parts.

Exception: Cords and cables of listed cord-and-plug-connected equipment shall not be required to be installed in a raceway.

Informational Note: When an elevator is classified as a fire service access elevator or occupant evacuation operation elevator, some building codes require additional protection for conductors that are located outside of the elevator hoistway and machine room.

(A) Elevators.

(1) Hoistways and Pits.

(a) Types CL2P, CL2R, and CL2 cables shall be permitted, provided the cables are supported and protected from physical damage. Substitute cables for Class 2 cables installed in accordance with ~~725.154(A)~~ 722.135(E) shall be permitted.

(b) Flexible cords and cables that are components of listed equipment and used in circuits operating at 30 volts rms or less or 42 volts dc or less shall be permitted, provided the cords and cables are supported and protected from physical damage and are of a jacketed and flame-retardant type.

(c) The following wiring methods shall be permitted in the hoistway in lengths not to exceed 1.8 m (6 ft):

(1) Flexible metal conduit.

(2) Liquidtight flexible metal conduit.

(3) Liquidtight flexible nonmetallic conduit.

(4) Flexible cords and cables, or conductors grouped together and taped or corded, shall be permitted to be installed without a raceway. They shall be located to be protected from physical damage, shall be of a flame-retardant type, and shall be part of one of the following:

a. Listed equipment

b. Driving machine

c. Driving machine brake

Exception to 620.21(A)(1)(c)(1), (A)(1)(c)(2), and (A)(1)(c)(3): The conduit length shall not be required to be limited between risers and limit switches, interlocks, operating buttons, and similar devices.

(d) A sump pump or oil recovery pump located in the pit shall be permitted to be cord connected. The cord shall be a hard usage oil-resistant type, of a length not to exceed 1.8 m (6 ft), and shall be located to be protected from physical damage.

(e) Hard-service cords and junior hard-service cords that conform to the requirements of Article 400 (Table 400.4) shall be permitted as flexible connections between the fixed wiring in the hoistway and hoistway access switches when located in the hoistway door sight guard.

Informational Note: See ASME A17.1-2019/CSA B44-19, *Safety Code for Elevators and Escalators*.

(2) Cars.

(a) Flexible metal conduit, liquidtight flexible metal conduit, or liquidtight flexible nonmetallic conduit of metric designator 12 (trade size ⅜), or larger, not exceeding 1.8 m (6 ft) in length, shall be permitted on cars where so located as to be free from oil and if securely fastened in place.

Exception: Liquidtight flexible nonmetallic conduit of metric designator 12 (trade size ⅜), or larger, as defined ~~by~~ in ~~356.2(2)~~ Article 100 (LFNC-B) , shall be permitted in lengths in excess of 1.8 m (6 ft).

(b) Hard-service cords and junior hard-service cords that conform to the requirements of Article 400 (Table 400.4) shall be permitted as flexible connections between the fixed wiring on the car and devices on the car doors or gates. Hard-service cords only shall be permitted as flexible connections for the top-of-car operating device or the car-top work light. Devices or luminaires shall be grounded by means of an equipment grounding conductor run with the circuit conductors. Cables with smaller conductors and other types and thicknesses of insulation and jackets shall be permitted as flexible connections between the fixed wiring on the car and devices on the car doors or gates, if listed for this use.

(c) Flexible cords and cables that are components of listed equipment and used in circuits operating at 30 volts rms or less or 42 volts dc or less shall be permitted, provided the cords and cables are supported and protected from physical damage and are of a jacketed and flame-retardant type.

(d) The following wiring methods shall be permitted on the car assembly in lengths not to exceed 1.8 m (6 ft):

(1) Flexible metal conduit

(2) Liquidtight flexible metal conduit

(3) Liquidtight flexible nonmetallic conduit

(4) Flexible cords and cables, or conductors grouped together and taped or corded, shall be permitted to be installed without a raceway. They shall be located to be protected from physical damage and shall be of a flame-retardant type and shall be part of one of the following:

a. Listed equipment

b. A driving machine

c. A driving machine brake

(3) Within Machine Rooms, Control Rooms, and Machinery Spaces and Control Spaces.

(a) Flexible metal conduit, liquidtight flexible metal conduit, or liquidtight flexible nonmetallic conduit of metric designator 12 (trade size ⅜), or larger, not exceeding 1.8 m (6 ft) in length, shall be permitted between control panels and machine motors, machine brakes, motor-generator sets, disconnecting means, and pumping unit motors and valves.

Exception: Liquidtight flexible nonmetallic conduit metric designator 12 (trade size ⅜) or larger, as defined in ~~356.2(2)~~ Article 100 (LFNC-B) , shall be permitted to be installed in lengths in excess of 1.8 m (6 ft).

(b) Where motor-generators, machine motors, or pumping unit motors and valves are located adjacent to or underneath control equipment and are provided with extra-length terminal leads not exceeding 1.8 m (6 ft) in length, such leads shall be permitted to be extended to connect directly to controller terminal studs without regard to the carrying-capacity requirements of Articles 430 and 445. Auxiliary gutters shall be permitted in machine and control rooms between controllers, starters, and similar apparatus.

(c) Flexible cords and cables that are components of listed equipment and used in circuits operating at 30 volts rms or less or 42 volts dc or less shall be permitted, provided the cords and cables are supported and protected from physical damage and are of a jacketed and flame-retardant type.

(d) On existing or listed equipment, conductors shall also be permitted to be grouped together and taped or corded without being installed in a raceway. Such cable groups shall be supported at intervals not over 900 mm (3 ft) and located so as to be protected from physical damage.

(e) Flexible cords and cables in lengths not to exceed 1.8 m (6 ft) that are of a flame-retardant type and located to be protected from physical damage shall be permitted in these rooms and spaces without being installed in a raceway. They shall be part of one of the following:

(1) Listed equipment

(2) A driving machine

(3) A driving machine brake

(4) Counterweight.

The following wiring methods shall be permitted on the counterweight assembly in lengths not to exceed 1.8 m (6 ft):

(1) Flexible metal conduit

(2) Liquidtight flexible metal conduit

(3) Liquidtight flexible nonmetallic conduit

(4) Flexible cords and cables, or conductors grouped together and taped or corded, shall be permitted to be installed without a raceway. They shall be located to be protected from physical damage, shall be of a flame-retardant type, and shall be part of one of the following:

a. Listed equipment

b. A driving machine

c. A driving machine brake

(B) Escalators.

(1) Wiring Methods.

Flexible metal conduit, liquidtight flexible metal conduit, or liquidtight flexible nonmetallic conduit shall be permitted in escalator and moving walk wellways. Flexible metal conduit or liquidtight flexible conduit of metric designator 12 (trade size ⅜) shall be permitted in lengths not in excess of 1.8 m (6 ft).

Exception: Metric designator 12 (trade size ⅜), nominal, or larger liquidtight flexible nonmetallic conduit, as defined in ~~356.2(2)~~ Article 100 (LFNC-B) , shall be permitted to be installed in lengths in excess of 1.8 m (6 ft).

(2) Class 2 Circuit Cables.

Types CL2P, CL2R, and CL2 cables shall be permitted to be installed within escalators and moving walkways, provided the cables are supported and protected from physical damage. Substitute cables for Class 2 cables installed in accordance with ~~725.154(A)~~ 722.135(E) shall be permitted.

(3) Flexible Cords.

Hard-service cords that conform to the requirements of Article 400 (Table 400.4) shall be permitted as flexible connections on escalators and moving walk control panels and disconnecting means where the entire control panel and disconnecting means are arranged for removal from machine spaces as permitted in 620.5.

(C) Platform Lifts and Stairway Chairlift Raceways.

(1) Wiring Methods.

Flexible metal conduit or liquidtight flexible metal conduit shall be permitted in platform lifts and stairway chairlift runways and machinery spaces. Flexible metal conduit or liquidtight flexible conduit of metric designator 12 (trade size ⅜) shall be permitted in lengths not in excess of 1.8 m (6 ft).

Exception: Metric designator 12 (trade size ⅜) or larger liquidtight flexible nonmetallic conduit, as defined in ~~356.2(2)~~ Article 100 (LFNC-B) , shall be permitted to be installed in lengths in excess of 1.8 m (6 ft).

(2) Class 2 Circuit Cables.

Types CL2P, CL2R, and CL2 cables shall be permitted to be installed within platform lifts and stairway chairlift runways and machinery spaces, provided the cables are supported and protected from physical damage. Substitute cables for Class 2 cables installed in accordance with ~~725.154(A)~~ 722.135(E) shall be permitted.

(3) Flexible Cords and Cables.

Flexible cords and cables that are components of listed equipment and used in circuits operating at 30 volts rms or less or 42 volts dc or less shall be permitted in lengths not to exceed 1.8 m (6 ft), provided the cords and cables are supported and protected from physical damage and are of a jacketed and flame-retardant type.

Submitter Information Verification

Committee: NEC-P12

Submittal Date: Wed Oct 13 11:30:24 EDT 2021

Committee Statement

Committee Statement: Section references have been aligned with actions taken by CMP-3 to move requirements from Article 725 to new Article 722.

Response Message: SR-7511-NFPA 70-2021

Public Comment No. 2146-NFPA 70-2021 [Section No. 620.21(A)(1)]

Public Comment No. 1864-NFPA 70-2021 [Section No. 620.21(B)]

Public Comment No. 2149-NFPA 70-2021 [Section No. 620.21(B)(2)]

Public Comment No. 98-NFPA 70-2021 [Section No. 620.21]

Public Comment No. 1861-NFPA 70-2021 [Section No. 620.21(A)]

Second Revision No. 7515-NFPA 70-2021 [Section No. 620.22(A)]

(A) Car Light Receptacles, Auxiliary Lighting, and Ventilation.

A separate branch circuit shall supply the car lights. The car lights branch circuit shall be permitted to supply receptacles~~, accessory equipment~~ (alarm devices, ~~alarm bells,~~ emergency responder radio coverage (ERRC), car ventilation purification systems, monitoring devices not part of the control system), auxiliary lighting power source, car emergency signaling, communications devices (including their associated charging circuits), and ventilation on each elevator car or inside the operation controller. The overcurrent device protecting the branch circuit shall be located in the elevator machine room, control room, machinery space, or control space. Where there is no machine room, control room, machinery space, or control space outside the hoistway, the overcurrent device shall be located outside the hoistway and accessible to qualified persons only.

Required lighting shall not be connected to the load side of a ground-fault circuit interrupter.

Submitter Information Verification

Committee: NEC-P12

Submittal Date: Wed Oct 13 11:39:22 EDT 2021

Committee Statement

Committee Statement: Requirements in 620.22(A) have been revised to specify permissible loads on the car light circuit.

Response Message: SR-7515-NFPA 70-2021

Public Comment No. 1852-NFPA 70-2021 [Section No. 620.22]

Public Comment No. 2126-NFPA 70-2021 [Section No. 620.22(A)]

Second Revision No. 7530-NFPA 70-2021 [Section No. 620.23]

620.23 Branch Circuits for Machine Room, Control Room/Machinery Space, Control Space, ~~Cartop Lighting,~~ or Truss Interior Lighting and Receptacle(s).

(A) Separate Branch Circuits.

The branch circuit(s) supplying the lighting for machine rooms, control rooms, machinery spaces, control spaces, ~~cartop lighting,~~ or truss ~~interior lighting~~ interiors, where required, shall be separate from the branch circuit(s) supplying the receptacle(s) 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.

(B) Lighting Switch.

The machine room, control room/machinery space, or control space lighting switch shall be located at the point of entry.

(C) Duplex Receptacle.

At least one 125-volt, single-phase, 15- or 20-ampere duplex receptacle shall be provided in each machine room, control room and machinery space, control space, and in truss ~~interior~~ interiors where required .

Informational Note: See ASME A17.1-~~2019~~ /CSA B44-~~19~~ , *Safety Code for Elevators and Escalators*, for illumination levels and receptacle requirements .

Submitter Information Verification

Committee: NEC-P12

Submittal Date: Wed Oct 13 12:44:20 EDT 2021

Committee Statement

Committee Statement: The cartop lighting was removed from the lighting branch circuit to lessen the risk to maintenance workers of cartop circuit failure. The term truss interior was not removed as it identifies the structure of moving walkways and escalators.

Response Message: SR-7530-NFPA 70-2021

Public Comment No. 1853-NFPA 70-2021 [Section No. 620.23]

Public Comment No. 2132-NFPA 70-2021 [Section No. 620.23]

Public Comment No. 1680-NFPA 70-2021 [Section No. 620.23]

Second Revision No. 7545-NFPA 70-2021 [Section No. 620.36]

620.36 Different Systems in One Raceway or Traveling Cable.

Optical fiber cables and conductors for operating devices, operation and motion control, power, signaling, fire alarm, lighting, heating, and air-conditioning circuits of 1000 volts or less shall be permitted to be run in the same traveling cable or raceway system if all conductors are insulated for the maximum voltage applied to any conductor within the cables or raceway system and if all live parts of the equipment are insulated from ground for this maximum voltage. ~~Such a traveling~~ Traveling cable or raceway shall also be permitted to include shielded pairs, coaxial cables, and other communications circuits . Type CMP-LP or CMR-LP cables complying with 800.179 shall be permitted in raceways .

Submitter Information Verification

Committee: NEC-P12

Submittal Date: Wed Oct 13 14:06:50 EDT 2021

Committee Statement

Committee Statement: The requirement that communications conductors comply with Article 800.179 ensures that cable types used will be suitable for the purpose. The addition of shielded pair and coaxial cables for communications purposes allows for the greatest flexibility in installation while maintaining safety.

Response Message: SR-7545-NFPA 70-2021

Public Comment No. 2076-NFPA 70-2021 [Section No. 620.36]

Public Comment No. 1855-NFPA 70-2021 [Section No. 620.36]

Public Comment No. 2138-NFPA 70-2021 [Section No. 620.36]

Second Revision No. 7546-NFPA 70-2021 [Section No. 620.37]

620.37 Wiring in Hoistways, Machine Rooms, Control Rooms, Machinery Spaces, and Control Spaces.

(A) Uses Permitted.

~~Only such electrical~~ Electrical wiring, raceways, and cables used directly in connection with the elevator or dumbwaiter~~, including wiring for signals, for communication with the car, for lighting, heating, air conditioning, and ventilating the elevator car, for fire-detecting systems, for pit sump pumps, or branch circuits identified in 620.24, and for heating, lighting, and ventilating the hoistway,~~ shall be permitted inside the hoistway, machine rooms, control rooms, machinery spaces, and control spaces, including wiring for the following:

(1) Signals

(2) Communications with the car

(3) Fire detection systems

(4) Pit sump pumps

(5) Branch circuits in 620.24

(6) Heating, lighting, and ventilating the hoistway

(7) Heating, air conditioning, lighting, and ventilating the elevator car

.

(B) Lightning Protection.

Bonding of elevator rails (car and/or counterweight) to a lightning protection system down conductor(s) shall be permitted. The lightning protection system down conductor(s) shall not be located within the hoistway. Elevator rails or other hoistway equipment shall not be used as the down conductor for lightning protection systems.

Informational Note No. 1: See 250.106 for bonding requirements.

Informational Note No. 2: See NFPA 780-2020, *Standard for the Installation of Lightning Protection Systems*, for further information.

(C) Feeders.

Feeders for supplying power to elevators and dumbwaiters shall be installed outside the hoistway unless as follows:

(1) By special permission, feeders for elevators shall be permitted within an existing hoistway if no conductors are spliced within the hoistway.

(2) Feeders shall be permitted inside the hoistway for elevators with driving machine motors located in the hoistway or on the car or counterweight.

Submitter Information Verification

Committee: NEC-P12

Submittal Date: Wed Oct 13 14:14:05 EDT 2021

Committee Statement

Committee Statement: Section 620.37 was revised to align with the style manual.

Response Message: SR-7546-NFPA 70-2021

Public Comment No. 946-NFPA 70-2021 [Section No. 620.37]

Second Revision No. 7627-NFPA 70-2021 [Section No. 620.38]

620.38 Electrical Equipment in Garages and Similar Occupancies.

Electrical equipment and wiring used for elevators, dumbwaiters, escalators, moving walks, and platform lifts and stairway chairlifts in garages shall comply with the requirements of ~~Article~~ ~~511~~ 511.3(A) .

Informational Note: Garages used for parking or storage and where no repair work is done in accordance with 511.3(A) are not classified.

Submitter Information Verification

Committee: NEC-P12

Submittal Date: Thu Oct 14 09:29:13 EDT 2021

Committee Statement

Committee Statement: Section 620.38 was revised to align with the style manual.

Response Message: SR-7627-NFPA 70-2021

Public Comment No. 826-NFPA 70-2021 [Section No. 620.38]

Second Revision No. 7549-NFPA 70-2021 [Section No. 620.51(A)]

(A) Type.

The disconnecting means shall be an enclosed externally operable fused motor circuit switch or circuit breaker that is lockable only in the open position in accordance with 110.25.

The disconnecting means shall be a listed device.

Informational Note No. 1: See ASME A17.1-2019/CSA B44-19, *Safety Code for Elevators and Escalators*, for additional information.

Informational Note No. 2: See ASME A18.1-2017, *Safety Standard for Platform Lifts and Stairway Chairlifts*, for additional information.

Exception No. 1: Where an individual branch circuit supplies a platform lift, the disconnecting means required by 620.51(C)(4) shall be permitted to comply with 430.109(C). This disconnecting means shall be listed and shall be lockable open in accordance with 110.25.

Exception No. 2: Where an individual branch circuit supplies a stairway chairlift or where a stairway chairlift is supplied by batteries as the primary source , the stairway chairlift shall be permitted to be cord-and-plug-connected, provided it complies with 422.16(A) and the cord does not exceed 1.8 m (6 ft) in length.

Submitter Information Verification

Committee: NEC-P12

Submittal Date: Wed Oct 13 14:41:24 EDT 2021

Committee Statement

Committee Statement: Exception No. 2 was modified to identify situations where a cord-and-plug connection is permitted.

Response Message: SR-7549-NFPA 70-2021

Public Comment No. 1529-NFPA 70-2021 [Section No. 620.51(A)]

Second Revision No. 7556-NFPA 70-2021 [Section No. 620.51(D)(1)]

~~(1) More than One Driving Machine.~~

~~Where there is more than one driving machine in a machine room, the disconnecting means shall be provided with a unique identification corresponding to the driving machine controlled.~~

~~The disconnecting means shall be provided with a sign to identify the location of the supply-side overcurrent protective device.~~

~~Informational Note: See ASME A17.1-2019/CSA B44-19, *Safety Code for Elevators and Escalators* , for information on identification of elevators and associated equipment.~~

Submitter Information Verification

Committee: NEC-P12

Submittal Date: Wed Oct 13 15:11:19 EDT 2021

Committee Statement

Committee Statement: Section 620.51(D)(1) has been deleted to align with the style manual section 4.1.1. This requirement is covered by 110.22 and does not need to be repeated. Renumber subsequent sections.

Response Message: SR-7556-NFPA 70-2021

Public Comment No. 947-NFPA 70-2021 [Section No. 620.51(D)(1)]

Second Revision No. 7558-NFPA 70-2021 [Section No. 620.51(D)(2)]

(1) Available Fault Current Field Marking.

~~Where an elevator control panel is used, it~~ 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.

When modifications to the electrical installation occur that affect the available fault current at the ~~elevator control panel~~ disconnecting means , the available fault current shall be verified or recalculated as necessary to ensure the elevator ~~control panel's~~ 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.

Submitter Information Verification

Committee: NEC-P12

Submittal Date: Wed Oct 13 15:12:52 EDT 2021

Committee Statement

Committee Statement: Article 620.51 deals with Disconnecting means, so the “it” in 620.51(d)(2) refers to the disconnecting means, not the elevator control panel. This change is needed to clarify that point. Also, if there is a Drive Isolation Transformer between the disconnect and the controller that would impact the marking, so it needs to be on the disconnecting means.

Response Message: SR-7558-NFPA 70-2021

Public Comment No. 2140-NFPA 70-2021 [Section No. 620.51(D)(2)]

Public Comment No. 1857-NFPA 70-2021 [Section No. 620.51(D)]

Second Revision No. 7567-NFPA 70-2021 [Section No. 620.51(E)]

(E) ~~Overvoltage~~ Surge Protection.

Where any of the disconnecting means in 620.51 has been designated as supplying an emergency system load, a legally required system load, or a critical operation power system load, a listed surge-protective device (SPD) shall be installed in accordance with Part II of Article 242.

Submitter Information Verification

Committee: NEC-P12

Submittal Date: Wed Oct 13 15:46:18 EDT 2021

Committee Statement

Committee Statement: The title of 620.51 (E) was revised to align with the title of Part II of Article 242.

Response Message: SR-7567-NFPA 70-2021

Second Revision No. 7703-NFPA 70-2021 [Section No. 625.6]

625.6 Listed.

~~All equipment covered by the scope of this article~~ Electric vehicle power transfer system equipment for the purposes of charging, power export, or bidirectional current flow shall be listed.

Submitter Information Verification

Committee: NEC-P12

Submittal Date: Thu Oct 14 13:07:17 EDT 2021

Committee Statement

Committee Statement: The sentence was revised to clarify which equipment is required to be listed.

Response Message: SR-7703-NFPA 70-2021

Public Comment No. 948-NFPA 70-2021 [Section No. 625.6]

Second Revision No. 7713-NFPA 70-2021 [Section No. 625.22]

625.22 Personnel Protection System.

EVSE ~~that is provided with a conductive connection to the vehicle~~ shall have a listed system of protection against electric shock of personnel. Where cord-and-plug-connected equipment is used, the interrupting device of a listed personnel protection system shall be provided according to 625.17(A). A personnel protection system shall not be required for EVSE that supplies less than 60 volts dc ~~and WPTE~~ .

Submitter Information Verification

Committee: NEC-P12

Submittal Date: Thu Oct 14 14:31:53 EDT 2021

Committee Statement

Committee Statement: The Section was revised to require PPS for WPTE. WPTE has cables and components that are typically mounted in areas subject to water and other contaminants. Failures in these cables and components could create a shock hazard. A listed PPS is still needed for WPTE because it is exposed to damp and wet conditions.

Response Message: SR-7713-NFPA 70-2021

Public Comment No. 1113-NFPA 70-2021 [Section No. 625.22]

Second Revision No. 7714-NFPA 70-2021 [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 ~~provided a load management system is used~~ as permitted by 625.42(A) or (B) .

Submitter Information Verification

Committee: NEC-P12

Submittal Date: Thu Oct 14 14:36:17 EDT 2021

Committee Statement

Committee Statement: The Exception was revised for clarity and consistency. The term “load management system” was removed and replaced with specific NEC Sections.

Response Message: SR-7714-NFPA 70-2021

Public Comment No. 2014-NFPA 70-2021 [Section No. 625.40]

Second Revision No. 7716-NFPA 70-2021 [Section No. 625.42(A)]

(A) ~~Load~~ Energy Management System (EMS) .

Where ~~a~~ an EMS in accordance with 750.30 provides load management ~~system is used~~ of EVSE , the maximum equipment load on a service and feeder shall be the maximum load permitted by the ~~load management system~~ EMS . The ~~load management system~~ EMS shall be permitted to be integral to one piece of equipment or integral to a listed system consisting of 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.

Submitter Information Verification

Committee: NEC-P12

Submittal Date: Thu Oct 14 14:46:34 EDT 2021

Committee Statement

Committee Statement: This section has been revised for the purposes of clarity and consistency with the broader term of Energy Management System to include both load and source.

Response Message: SR-7716-NFPA 70-2021

Public Comment No. 1041-NFPA 70-2021 [Section No. 625.42(A)]

Public Comment No. 2022-NFPA 70-2021 [Section No. 625.42(A)]

Second Revision No. 7721-NFPA 70-2021 [Section No. 625.42(B)]

(B) EVSE with Adjustable Settings.

~~Adjustable settings~~ EVSE with restricted access to an ampere adjusting means shall be permitted. If adjustments have an impact on the rating label, those changes shall be in accordance with manufacturer's instructions, and the adjusted rating shall appear on the rating label with sufficient durability to withstand the environment involved. ~~Electric vehicle supply equipment~~ EVSE ~~with restricted access to an ampere adjusting means~~ as referenced shall be permitted to have ampere ratings that are equal to the adjusted current setting. ~~Sizing the service and feeder to match the adjusting means shall be permitted. Access to the ampere adjusting means of an EVSE shall be restricted if it is not to be accessed by a user after installation. Such restricted access shall be accomplished by at least one of the following:~~

(0) ~~A cover or door that requires the use of a tool to open~~

(0) ~~Locked doors accessible only to qualified personnel~~

(0) ~~Password protected commissioning software accessible only to qualified personnel~~

(0) ~~Commissioning software that defaults to the factory setting after the initial installation setting with the factory setting being the lowest setting in the range~~

Submitter Information Verification

Committee: NEC-P12

Submittal Date: Thu Oct 14 15:05:46 EDT 2021

Committee Statement

Committee Statement: Common requirements for EMS are relocated to Article 750 to provide consistency and eliminate redundant requirements across the Code.

Response Message: SR-7721-NFPA 70-2021

Public Comment No. 1042-NFPA 70-2021 [Section No. 625.42(B)]

Second Revision No. 7715-NFPA 70-2021 [Section No. 625.42 [Excluding any Sub-Sections]]

The EVSE shall have sufficient rating to supply the load served. Electric vehicle charging loads shall be considered to be continuous loads for the purposes of this article. Service and feeder shall be sized in accordance with the product ratings, unless the overall rating of the installation can be limited through controls as permitted by 625.42(A)~~and~~ or (B).

Submitter Information Verification

Committee: NEC-P12

Submittal Date: Thu Oct 14 14:39:29 EDT 2021

Committee Statement

Committee Statement: The Panel is changing the term “and” to “or” to address the submitter’s intent and is per the NEC Style Manual.

Response Message: SR-7715-NFPA 70-2021

Public Comment No. 2021-NFPA 70-2021 [Section No. 625.42 [Excluding any Sub-Sections]]

Second Revision No. 7722-NFPA 70-2021 [Section No. 625.43]

625.43 Disconnecting Means.

For EVSE and WPTE rated more than 60 amperes or more than 150 volts to ground, the disconnecting means shall be provided and installed in a readily accessible location~~, adjacent to or remote from the equipment~~ . 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.

Submitter Information Verification

Committee: NEC-P12

Submittal Date: Thu Oct 14 15:09:41 EDT 2021

Committee Statement

Committee Statement: Readily accessible is a defined term. Adjacent and remote are not defined and their use is discouraged by the style manual.

Response Message: SR-7722-NFPA 70-2021

Public Comment No. 949-NFPA 70-2021 [Section No. 625.43]

Second Revision No. 7725-NFPA 70-2021 [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, 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 125/250 volts, single-phase, 30, 50, or ~~50~~ 60 amperes

(4) A nonlocking, 2-pole, 3-wire grounding-type receptacle outlet rated at 60 volts dc maximum, 15 or 20 amperes

Submitter Information Verification

Committee: NEC-P12

Submittal Date: Thu Oct 14 15:18:03 EDT 2021

Committee Statement

Committee Statement: Section revised to allow 14-60R receptacles.

Response Message: SR-7725-NFPA 70-2021

Public Comment No. 2025-NFPA 70-2021 [Section No. 625.44(A)]

Second Revision No. 7727-NFPA 70-2021 [Section No. 625.44(B)]

(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 ~~50~~ 60 amperes

(4) A nonlocking, 2-pole, 3-wire grounding-type receptacle outlet rated 60 volts dc maximum, 15 or 20 amperes

Submitter Information Verification

Committee: NEC-P12

Submittal Date: Thu Oct 14 15:18:50 EDT 2021

Committee Statement

Committee Statement: Section revised to allow 14-60R receptacles.

Response Message: SR-7727-NFPA 70-2021

Public Comment No. 2026-NFPA 70-2021 [Section No. 625.44(B)]

Second Revision No. 7728-NFPA 70-2021 [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 back fed through the electric vehicle and the supply equipment to the premises wiring system unless permitted ~~in~~ by 625.48.

Submitter Information Verification

Committee: NEC-P12

Submittal Date: Thu Oct 14 15:20:36 EDT 2021

Committee Statement

Committee Statement: Section revised for clarity.

Response Message: SR-7728-NFPA 70-2021

Public Comment No. 1268-NFPA 70-2021 [Section No. 625.46]

Second Revision No. 7731-NFPA 70-2021 [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 ~~in accordance with 210.8~~ .

Submitter Information Verification

Committee: NEC-P12

Submittal Date: Thu Oct 14 15:23:31 EDT 2021

Committee Statement

Committee Statement: Section revised for clarity and eliminated confusion.

Response Message: SR-7731-NFPA 70-2021

Public Comment No. 951-NFPA 70-2021 [Section No. 625.54]

Second Revision No. 7585-NFPA 70-2021 [Section No. 630.8]

630.8 Ground-Fault Circuit-Interrupter Protection for Personnel.

All 125-volt, ~~single-phase,~~ 15- and 20-ampere receptacles, supplied by single-phase branch circuits rated 150 volts or less to ground, installed in work areas where welders are operated, for electrical hand tools or portable lighting equipment shall have ground-fault circuit-interrupter protection for personnel.

Submitter Information Verification

Committee: NEC-P12

Submittal Date: Wed Oct 13 16:50:23 EDT 2021

Committee Statement

Committee Statement: The requirement in 630.8 was revised to align with the requirements in 210.8.

Response Message: SR-7585-NFPA 70-2021

Public Comment No. 954-NFPA 70-2021 [Section No. 630.8]

Public Comment No. 1679-NFPA 70-2021 [Section No. 630.8]

Second Revision No. 7589-NFPA 70-2021 [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 identity shall be marked in accordance with 110.22(A) .~~

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.

Submitter Information Verification

Committee: NEC-P12

Submittal Date: Wed Oct 13 17:18:17 EDT 2021

Committee Statement

Committee Statement: The reference to 110.22 was removed as it is redundant according to NEC style manual 4.1.1. The committee would like to clarify marking of all disconnecting means options is required and necessary for the safe use of electric welders including cord and plug connected equipment.

Response Message: SR-7589-NFPA 70-2021

Public Comment No. 2037-NFPA 70-2021 [Section No. 630.13]

Second Revision No. 7590-NFPA 70-2021 [Section No. 630.33]

630.33 Disconnecting Means.

A switch or circuit breaker shall be provided by which each resistance 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 630.31. The supply circuit switch shall be permitted as the welder disconnecting means where the circuit supplies only one welder. ~~The disconnecting means identity shall be marked in accordance with 110.22(A).~~

Submitter Information Verification

Committee: NEC-P12

Submittal Date: Wed Oct 13 17:19:54 EDT 2021

Committee Statement

Committee Statement: The reference to 110.22 was removed as it is redundant according to NEC style manual 4.1.1.

Response Message: SR-7590-NFPA 70-2021

Public Comment No. 956-NFPA 70-2021 [Section No. 630.33]

Second Revision No. 7663-NFPA 70-2021 [Section No. 640.3]

640.3 Locations and Other Articles.

Circuits and equipment shall comply with 640.3(A) through (N), as applicable.

(A) Spread of Fire or Products of Combustion.

Section 300.21 shall apply.

(B) Ducts, Plenums, and Other Air-Handling Spaces.

Section 300.22(B) shall apply to circuits and equipment installed in ducts specifically fabricated for environmental air. Section 300.22(C) shall apply to circuits and equipment installed in other spaces used for environmental air (plenums).

Exception No. 1: Class 2 and Class 3 cables installed in accordance with ~~725.135(B)~~ 722.135(B) ~~and Table 725.154~~ shall be permitted to be installed in ducts specifically fabricated for environmental air.

Exception No. 2: Class 2 and Class 3 cables installed in accordance with ~~725.135(C)~~ 722.135(B) ~~and Table 725.154~~ shall be permitted to be installed in other spaces used for environmental air (plenums).

Informational Note: See NFPA 90A~~-2021~~ , *Standard for the Installation of Air-Conditioning and Ventilating Systems*, 4.3.11.2.6.5, which permits loudspeakers, loudspeaker assemblies, and their accessories listed in accordance with UL 2043-2013, *Fire Test for Heat and Visible Smoke Release for Discrete Products and Their Accessories Installed in Air-Handling Spaces*, to be installed in other spaces used for environmental air (ceiling cavity plenums).

(C) Communications Cables.

Types CMP, CMR, CMG, and CM communications cables shall be permitted to substitute for Class 2 and Class 3 cables in accordance with ~~725.154(A)~~ 722.135(E) .

(D) Cable Trays.

Cable trays and cable tray systems shall be installed in accordance with Part II of Article 392. The installation of Class 2, Class 3, and Type PLTC cables in cable trays shall be in accordance with ~~725.135(H), 725.136(G), and Table 725.154~~ 722.135(B) .

~~Informational Note: See 725.135(H), 725.136(G), and Table 725.154 for the use of Class 2, Class 3, and Type PLTC cable in cable trays.~~

(E) Hazardous (Classified) Locations.

Equipment used in hazardous (classified) locations shall comply with the applicable requirements of Chapter 5.

(F) Assembly Occupancies.

Equipment used in assembly occupancies shall comply with Article 518.

(G) Theaters, Audience Areas of Motion Picture and Television Studios, and Similar Locations.

Equipment used in theaters, audience areas of motion picture and television studios, and similar locations shall comply with Article 520.

(H) Carnivals, Circuses, Fairs, and Similar Events.

Equipment used in carnivals, circuses, fairs, and similar events shall comply with Article 525.

(I) Motion Picture and Television Studios.

Equipment used in motion picture and television studios shall comply with Article 530.

(J) Swimming Pools, Fountains, and Similar Locations.

Audio equipment used in or near swimming pools, fountains, and similar locations shall comply with Article 680.

(K) Combination Systems.

Where the authority having jurisdiction permits audio systems for paging or music, or both, to be combined with fire alarm systems, the wiring shall comply with Article 760.

Informational Note: See *NFPA 72* ~~2019~~ , *National Fire Alarm and Signaling Code*, and NFPA *101* ~~2021~~ , *Life Safety Code*, for installation requirements for such combination systems.

(L) Antennas.

Equipment used in audio systems that contain an audio or video tuner and an antenna input shall comply with Article 810. Wiring other than antenna wiring that connects such equipment to other audio equipment shall comply with this article.

(M) Generators.

Generators shall be installed in accordance with 445.10 through 445.12, 445.14 through 445.16, and 445.18. Grounding of portable and vehicle-mounted generators shall be in accordance with 250.34.

(N) Organ Pipes.

Additions of pipe organ pipes to an electronic organ shall be in accordance with 650.4 through 650.9.

Submitter Information Verification

Committee: NEC-P12

Submittal Date: Thu Oct 14 10:52:46 EDT 2021

Committee Statement

Committee Statement: The changes made refer to Article 725 which has been changed to Article 722.

Response Message: SR-7663-NFPA 70-2021

Public Comment No. 100-NFPA 70-2021 [Section No. 640.3]

Second Revision No. 7667-NFPA 70-2021 [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~~-2020~~ , *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.

Submitter Information Verification

Committee: NEC-P12

Submittal Date: Thu Oct 14 11:00:23 EDT 2021

Committee Statement

Committee Statement: The date in the information note was deleted to align with 90.5.

Response Message: SR-7667-NFPA 70-2021

Public Comment No. 958-NFPA 70-2021 [Section No. 645.1]

Second Revision No. 7669-NFPA 70-2021 [Section No. 645.3(B)]

(B) Wiring and Cabling in Other Spaces Used for Environmental Air (Plenums).

The following sections and tables shall apply to wiring and cabling in other spaces used for environmental air (plenums) above an information technology equipment room:

(1) Wiring methods: 300.22(C)(1)

(2) Class 2, Class 3, and PLTC cables: ~~725.135(C)~~ 722.135(B) ~~and Table 725.154~~

(3) Fire alarm systems: 760.53(B)(2), 760.135(C), and Table 760.154

(4) Optical fiber cables: 770.113(C) and Table 770.154(a)

(5) Communications circuits: 800.133(C) and Table 800.154(a)

(6) CATV and radio distribution systems: 800.113(C) and Table 800.154(a)

Submitter Information Verification

Committee: NEC-P12

Submittal Date: Thu Oct 14 11:07:32 EDT 2021

Committee Statement

Committee Statement: Global FR-9582 created the First Draft text for new Article 722, Cables for Power-Limited Circuits. The cable installation requirements in Article 725 have been moved to 722.135(B) and the cable substitution requirements in 725.154(A) have been moved to 722.135(E). The second draft text correlates with these changes.

Response Message: SR-7669-NFPA 70-2021

Public Comment No. 187-NFPA 70-2021 [Section No. 645.3(B)]

Second Revision No. 7673-NFPA 70-2021 [Section No. 645.3(F)]

(F) Cable Routing Assemblies, Communications Wires, Cables, Raceways, and Equipment.

Sections 800.110, 800.113, and 800.154 shall apply to cable routing assemblies and communications raceways. Parts I, II, III, IV, and V of Articles 800 and 805 shall apply to communications wires, cables, and equipment installed in an information technology equipment room. Only communications wires and cables listed in accordance with ~~805.179~~ 800.179 , cable routing assemblies, and communications raceways listed in accordance with 800.182, and communications equipment listed in accordance with ~~800.179 and 805.170~~ 800.171 shall be permitted to be installed in an information technology equipment room. Article 645 shall apply to the powering of communications equipment in an information technology equipment room.

Informational Note: See Article 100, Definitions, for a definition of *communications equipment*.

Submitter Information Verification

Committee: NEC-P12

Submittal Date: Thu Oct 14 11:13:07 EDT 2021

Committee Statement

Committee Statement: Listing requirements for nearly all communications wires and cables are in 800.179 in the First Draft report. The second draft text correlates with these changes.

Response Message: SR-7673-NFPA 70-2021

Public Comment No. 230-NFPA 70-2021 [Section No. 645.3(F)]

Second Revision No. 7675-NFPA 70-2021 [Section No. 645.3(G)]

(G) Community Antenna Television and Radio Distribution Systems Cables and Equipment.

Parts I, II, III, IV, and V of Articles 800 and 820 shall apply to community antenna television and radio distribution systems cables and equipment installed in an information technology equipment room. Only community antenna television and radio distribution cables listed in accordance with ~~820.179~~ 800.179 and listed CATV equipment shall be permitted to be installed in an information technology equipment room. Article 645 shall apply to the powering of community antenna television and radio distribution systems equipment installed in an information technology equipment room.

Submitter Information Verification

Committee: NEC-P12

Submittal Date: Thu Oct 14 11:18:03 EDT 2021

Committee Statement

Committee Statement: Listing requirements for CATV type coaxial cables are in 800.179.

Response Message: SR-7675-NFPA 70-2021

Public Comment No. 232-NFPA 70-2021 [Section No. 645.3(G)]

Second Revision No. 7677-NFPA 70-2021 [Section No. 645.5(B)]

(B) 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-~~2007~~ , *Safety of Information Technology Equipment — Safety — Part 1: General Requirements*; or UL 62368-1-~~2012~~ , *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-~~2016~~ , *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.

Submitter Information Verification

Committee: NEC-P12

Submittal Date: Thu Oct 14 11:20:37 EDT 2021

Committee Statement

Committee Statement: The second draft text added “current” in order to improve usability.The dates to references have been deleted so that the most current edition would be applied.

Response Message: SR-7677-NFPA 70-2021

Public Comment No. 976-NFPA 70-2021 [Section No. 645.5(B)]

Second Revision No. 7681-NFPA 70-2021 [Section No. 645.5(E)(2)]

(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 645.5(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, in addition to wiring installed in compliance with ~~725.135(C)~~ 722.135(B) , Types CL2R, CL3R, CL2, and CL3 and substitute cables, including CMP, CMR, CM, and CMG, installed in accordance with ~~725.154(A)~~ 722.135(E) shall be permitted under raised floors.

~~Informational Note No. 1: Figure 725.154(A)illustrates the cable substitution hierarchy for Class 2 and Class 3 cables.~~

(5) Where the air space under a raised floor is not protected by an automatic fire suppression system, in addition to wiring installed in compliance with ~~725.135(C)~~ 722.135(B) , substitute cable Type CMP installed in accordance with ~~725.154(A)~~ 722.135(E) shall be permitted under raised floors.

(6) Listed Type DP cable having adequate fire-resistant characteristics suitable for use under raised floors of an information technology equipment room.

Informational Note: See CSA “Vertical Flame Test-Cables in Cable Trays” as described in CSA C22.2 No. 0.3~~-09-R2019~~ , *Test Methods for Electrical Wires and Cables*, 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 Flame Exposure, Vertical Flame Tray Test” in UL 1685~~-2015~~ , *Standard for Safety for Vertical-Tray Fire-Propagation and Smoke-Release Test for Electrical and Optical-Fiber Cables*. The smoke measurements in the test method are not applicable.

Submitter Information Verification

Committee: NEC-P12

Submittal Date: Thu Oct 14 11:28:43 EDT 2021

Committee Statement

Committee Statement: Global FR-9582 created the First Draft text for new Article 722, Cables for Power-Limited Circuits. The cable installation requirements in Article 725 have been moved to 722.135(B) and the cable substitution requirements in 725.154(A) have been moved to 722.135(E). The second draft text correlates with these changes. The dates to references have been deleted so that the most current edition would be applied.

Response Message: SR-7681-NFPA 70-2021

Public Comment No. 234-NFPA 70-2021 [Section No. 645.5(E)(2)]

Second Revision No. 7683-NFPA 70-2021 [Sections 645.10(A), 645.10(B)]

(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 identified. 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-~~2020~~ , *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 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*-~~2019~~ , *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 645.5(E)(2) or (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	645.5(E)(1)
Supply cords of listed information technology equipment	645.5(E)(2)(1), 300.22(C)
Class 2 and Class 3 remote control and PLTC cables in other spaces used for environmental air (plenums)	~~725.135(C)~~ 722.135(B) ~~and Table 725.154~~
Optical fiber cable in other spaces used for environmental air (plenums)	770.113(C) and Table 770.154(a)
Communications wires and cables, cable routing assemblies, and communications raceways in other spaces used for environmental air (plenums)	800.113(C) and Tables 800.154(a), (b), and (c)
Coaxial CATV and radio distribution cables in other spaces used for environmental air (plenums)	800.113(C) and Table 800.154(a)

Submitter Information Verification

Committee: NEC-P12

Submittal Date: Thu Oct 14 11:34:37 EDT 2021

Committee Statement

Committee Statement: Global FR-9582 created the First Draft text for new Article 722, Cables for Power-Limited Circuits. The cable installation requirements in Article 725 have been moved to 722.135(B) and the cable substitution requirements in 725.154(A) have been moved to 722.135(E). The second draft text correlates with these changes. Also the references to NFPA 72 & 75 were simplified by dropping the issue year since it is now understood that the latest issue applies; see 90.5(C), FR-8379.

Response Message: SR-7683-NFPA 70-2021

Public Comment No. 189-NFPA 70-2021 [Section No. 645.10(B)]

Second Revision No. 7684-NFPA 70-2021 [Section No. 645.11]

645.11 Uninterruptible Power Supply (UPS).

UPS systems installed within the information technology equipment room and their supply and output circuits shall comply with 645.10, except for the following installations and constructions:

(1) Installations complying with Parts I and II of Article 685

(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 1778-2014 (R2017) , *Uninterruptible Power Systems*, and UL 62368-1-2014 , *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.

Submitter Information Verification

Committee: NEC-P12

Submittal Date: Thu Oct 14 11:42:36 EDT 2021

Committee Statement

Committee Statement: Reference to an entire Article has been revised to align with the style manual. The dates to references have been deleted so that the most current edition would be applied.

Response Message: SR-7684-NFPA 70-2021

Public Comment No. 964-NFPA 70-2021 [Section No. 645.11]

Second Revision No. 7685-NFPA 70-2021 [Section No. 645.18]

645.18 ~~Overvoltage~~ Surge Protection for Critical Operations Data Systems.

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

Submitter Information Verification

Committee: NEC-P12

Submittal Date: Thu Oct 14 11:48:08 EDT 2021

Committee Statement

Committee Statement: The title of 645.18 was revised to align with the title of Part II of Article 242.

Response Message: SR-7685-NFPA 70-2021

Public Comment No. 1080-NFPA 70-2021 [Section No. 645.18]

Second Revision No. 7687-NFPA 70-2021 [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-~~2020~~ , *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-~~2007~~ , *Information Technology Equipment — Safety — Part 1: General Requirements,* and UL 62368-1-~~2019~~ , *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.

Submitter Information Verification

Committee: NEC-P12

Submittal Date: Thu Oct 14 12:12:04 EDT 2021

Committee Statement

Committee Statement: The dates to references have been deleted so that the most current edition would be applied.

Response Message: SR-7687-NFPA 70-2021

Public Comment No. 978-NFPA 70-2021 [Article 646]

Second Revision No. 7688-NFPA 70-2021 [Section No. 646.3(B)]

(B) Wiring and Cabling in Other Spaces Used for Environmental Air (Plenums).

The following sections and tables shall apply to wiring and cabling in other spaces used for environmental air (plenums) within a modular data center space:

(1) Wiring methods: 300.22(C)(1)

(2) Class 2, Class 3, and PLTC cables: ~~725.135(C)~~ 722.135(B) ~~and Table 725.154~~

(3) Fire alarm systems: 760.53(B)(2), 760.135(C), and Table 760.154

(4) Optical fiber cables: 770.113(C) and Table 770.154(a)

(5) Communications circuits: 800.113(C) and Table 800.154(a)

(6) CATV and radio distribution systems: 800.113(C) and Table 800.154(a)

Informational Note: Environmentally controlled working spaces, aisles, and equipment areas in an MDC are not considered a plenum.

Submitter Information Verification

Committee: NEC-P12

Submittal Date: Thu Oct 14 12:14:00 EDT 2021

Committee Statement

Committee Statement: Global FR-9582 created the First Draft text for new Article 722, Cables for Power-Limited Circuits. The cable installation requirements in Article 725 have been moved to 722.135(B) and the cable substitution requirements in 725.154(A) have been moved to 722.135(E). The second draft text correlates with these changes.

Response Message: SR-7688-NFPA 70-2021

Public Comment No. 188-NFPA 70-2021 [Section No. 646.3(B)]

Second Revision No. 7689-NFPA 70-2021 [Section No. 646.3(C)]

(C) Grounding and Bonding .

~~Grounding and bonding of an MDC shall comply with Parts I through X of Article~~ ~~250~~ ~~.~~ The non-current-carrying conductive members of optical fiber cables in an MDC shall be grounded in accordance with 770.114. Grounding and bonding of communications protectors, cable shields, and non-current-carrying metallic members of cable shall comply with Part IV of Article 805.

Submitter Information Verification

Committee: NEC-P12

Submittal Date: Thu Oct 14 12:15:02 EDT 2021

Committee Statement

Committee Statement: The second draft text eliminates redundant reference to Article 250 in order to comply with 4.1.1 of the NEC Style Manual. The title of the subsection was revised to add “bonding” to improve clarity.

Response Message: SR-7689-NFPA 70-2021

Public Comment No. 966-NFPA 70-2021 [Section No. 646.3(C)]

Second Revision No. 7691-NFPA 70-2021 [Section No. 646.3(F)]

(F) Cable Routing Assemblies and Communications Wires, Cables, Raceways, and Equipment.

Sections 800.110, 800.113, and 800.154 shall apply to cable routing assemblies and communications raceways. Parts I, II, III, IV, and V of Articles 800 and 805 shall apply to communications wires, cables, and equipment installed in an MDC. Only communications wires and cables listed in accordance with ~~805.179~~ 800.179 , cable routing assemblies and communications raceways listed in accordance with 800.182, and communications equipment listed in accordance with ~~800.179 and 805.179~~ 800.171 shall be permitted to be installed in an MDC.

Informational Note: See Article 100 for a definition of *communications equipment*.

Submitter Information Verification

Committee: NEC-P12

Submittal Date: Thu Oct 14 12:17:10 EDT 2021

Committee Statement

Committee Statement: Listing requirements for nearly all communications wires and cables are in 800.179 in the First Draft report. The second draft text correlates with these changes.

Response Message: SR-7691-NFPA 70-2021

Public Comment No. 231-NFPA 70-2021 [Section No. 646.3(F)]

Second Revision No. 7693-NFPA 70-2021 [Section No. 646.3(G)]

(G) Community Antenna Television and Radio Distribution Systems Cables and Equipment.

Parts I, II, III, IV, and V of Articles 800 and 820 shall apply to community antenna television and radio distribution systems equipment installed in an MDC. Only community antenna television and radio distribution cables listed in accordance with ~~820.179~~ 800.179 and listed CATV equipment shall be permitted to be installed in an MDC.

Submitter Information Verification

Committee: NEC-P12

Submittal Date: Thu Oct 14 12:23:38 EDT 2021

Committee Statement

Committee Statement: Listing requirements for CATV type coaxial cables are in 800.179.

Response Message: SR-7693-NFPA 70-2021

Public Comment No. 233-NFPA 70-2021 [Section No. 646.3(G)]

Second Revision No. 7694-NFPA 70-2021 [Section No. 646.3(H)]

~~**(H)** Storage Batteries.~~

~~Installation of storage batteries shall comply with Article 480 .~~

~~*Exception: This requirement shall not apply to batteries that are part of listed and labeled equipment and installed in accordance with the listing requirements.*~~

Submitter Information Verification

Committee: NEC-P12

Submittal Date: Thu Oct 14 12:25:05 EDT 2021

Committee Statement

Committee Statement: Section 646.3(H) is redundant; it is eliminated to comply with 4.1.4 of the NEC Style Manual. Re-letter subsequent sections.

Response Message: SR-7694-NFPA 70-2021

Public Comment No. 969-NFPA 70-2021 [Section No. 646.3(H)]

Second Revision No. 7696-NFPA 70-2021 [Section No. 646.3 [Excluding any Sub-Sections]]

Circuits and equipment shall comply with 646.3(A) through (~~N~~ M) as applicable. Wherever the requirements of other articles of this *Code* and Article 646 differ, the requirements of Article 646 shall apply.

Submitter Information Verification

Committee: NEC-P12

Submittal Date: Thu Oct 14 12:30:25 EDT 2021

Committee Statement

Committee Statement: Editorial correction due to the deletion of (H).

Response Message: SR-7696-NFPA 70-2021

Second Revision No. 7794-NFPA 70-2021 [Section No. 646.5]

646.5 Nameplate Data.

A permanent nameplate shall be attached to each equipment enclosure of an MDC and shall be plainly visible after installation. The nameplate shall include the following information ~~in 646.5(1) through (6)~~ , as applicable:

(1) Supply voltage, number of phases, frequency, 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.

~~Informational Note No. 2: For listed equipment, the full-load current shown on the nameplate may be the maximum, measured, 15-minute, average full-load current.~~

(2) For MDCs powered by a separate service, the short-circuit current rating of the service equipment provided as part of the MDC.

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 Parts III and IV of Article 220 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 Parts III and IV of Article 220 , 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. ~~As an alternative to the feeder and service load calculations required by Parts III and IV of Article~~ 220 ~~, feeder and service load calculations for new, future, or existing loads may be permitted to be used if performed by qualified persons under engineering supervision.~~

(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.

Supplemental Information

File Name	Description	Approved
NEC_CMP_12_SR7794_646.5.docx	For Staff Use	

Submitter Information Verification

Committee: NEC-P12

Submittal Date: Fri Oct 15 11:47:24 EDT 2021

Committee Statement

Committee Statement: Statement: The second draft text removes mandatory requirements from informational notes (Style Manual violation, 3.1.2 & 3.1.3) and changes the mandatory text to add these requirements.

Response Message: SR-7794-NFPA 70-2021

Public Comment No. 827-NFPA 70-2021 [Section No. 646.5]

Second Revision No. 7699-NFPA 70-2021 [Section No. 646.19 [Excluding any Sub-Sections]]

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 ½ ft) high at each end of the working space. Doors shall open ~~at least 90 degrees in the direction of egress~~ 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 646.19(A) or (B) is met.

Submitter Information Verification

Committee: NEC-P12

Submittal Date: Thu Oct 14 12:39:28 EDT 2021

Committee Statement

Committee Statement: Not all utility room doors are swing-type. Some locations use roll-up doors, and other locations use sliding type doors (door rolls sideways on a track similar to barn doors or pocket doors).

Response Message: SR-7699-NFPA 70-2021

Public Comment No. 1100-NFPA 70-2021 [Section No. 646.19 [Excluding any Sub-Sections]]

Second Revision No. 7592-NFPA 70-2021 [Section No. 660.4(A)]

(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 attachment plug cap and hard-service cable or power-supply cord.

Submitter Information Verification

Committee: NEC-P12

Submittal Date: Wed Oct 13 17:22:09 EDT 2021

Committee Statement

Committee Statement: The requirements of 660.4(A) were revised to provide clarity by aligning to the proposed definition for “Power-Supply Cord.”

Response Message: SR-7592-NFPA 70-2021

Second Revision No. 7593-NFPA 70-2021 [Section No. 660.4(B)]

(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.

Submitter Information Verification

Committee: NEC-P12

Submittal Date: Wed Oct 13 17:23:52 EDT 2021

Committee Statement

Committee Statement: The requirements of 660.4(B) were revised to provide clarity by aligning to the proposed definition for “Power-Supply Cord.”

Response Message: SR-7593-NFPA 70-2021

Second Revision No. 7594-NFPA 70-2021 [Section No. 660.7]

660.7 Wiring Terminals.

X-ray equipment not provided with a permanently attached power-supply cord ~~or cord set~~ shall be provided with suitable wiring terminals or leads for the connection of power-supply conductors of the size required by the rating of the branch circuit for the equipment.

Submitter Information Verification

Committee: NEC-P12

Submittal Date: Wed Oct 13 17:25:02 EDT 2021

Committee Statement

Committee Statement: The requirements of 660.7 were revised to provide clarity by aligning to the proposed definition for “Power-Supply Cord.”

Response Message: SR-7594-NFPA 70-2021

Second Revision No. 7595-NFPA 70-2021 [Section No. 660.9]

660.9 Minimum Size of Conductors.

Size 18 AWG or 16 AWG fixture wires, as specified in ~~725.49~~ 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 overcurrent devices.

Submitter Information Verification

Committee: NEC-P12

Submittal Date: Wed Oct 13 17:26:17 EDT 2021

Committee Statement

Committee Statement: The reference to Class 1 circuits was revised to new article 724 in section 724.49.

Response Message: SR-7595-NFPA 70-2021

Second Revision No. 7597-NFPA 70-2021 [Section No. 660.47(A)]

(A) ~~Medium-Voltage and~~ High-Voltage Parts.

All ~~medium-voltage and~~ high-voltage parts, including X-ray tubes, shall be mounted within grounded enclosures. Air, oil, gas, or other suitable insulating media shall be used to insulate the high voltage from the grounded enclosure. The connection from the high-voltage equipment to X-ray tubes and other high-voltage components shall be made with high-voltage shielded cables.

Submitter Information Verification

Committee: NEC-P12

Submittal Date: Wed Oct 13 17:33:20 EDT 2021

Committee Statement

Committee Statement: The title and wording in section 660.47(A) were revised to remove medium voltage per correlating committee guidance.

Response Message: SR-7597-NFPA 70-2021

Public Comment No. 970-NFPA 70-2021 [Section No. 660.47(A)]

Second Revision No. 7599-NFPA 70-2021 [Section No. 665.4]

~~**665.4** Hazardous (Classified) Locations.~~

~~Heating equipment shall not be installed in hazardous (classified) locations as defined in Article 500 unless the equipment and wiring are designed and approved for the hazardous (classified) locations.~~

Submitter Information Verification

Committee: NEC-P12

Submittal Date: Wed Oct 13 17:39:42 EDT 2021

Committee Statement

Committee Statement: Section 665.4 was removed as it is redundant according to 90.3. The requirements for allowable equipment in hazardous locations are contained in chapter 5 and should be used for determination of suitability for heating equipment.

Response Message: SR-7599-NFPA 70-2021

Public Comment No. 1564-NFPA 70-2021 [Section No. 665.4]

Second Revision No. 7648-NFPA 70-2021 [Section No. 670.1]

670.1 Scope.

This article covers the definition of, the nameplate data for, overvoltage protection for, and the size and overcurrent protection of supply conductors to industrial machinery.

Informational Note No. 1: See NFPA 79-~~2021~~ , *Electrical Standard for Industrial Machinery*, for further information.

Informational Note No. 2: See 110.26 for information on the workspace requirements for equipment containing supply conductor terminals.

Informational Note No. 3: See NFPA 79-~~2021~~ , *Electrical Standard for Industrial Machinery*, for information on the workspace requirements for machine power and control equipment.

Submitter Information Verification

Committee: NEC-P12

Submittal Date: Thu Oct 14 10:30:00 EDT 2021

Committee Statement

Committee Statement: The scope in 670.1 is proposed to be revised to include overvoltage protection as pointed out by the correlating committee. Not all machinery is designed to NFPA 79, however overvoltage protection is necessary for all industrial machinery with safety circuits as substantiated by the NFPA research report “Data Assessment for Electrical Surge Protective Devices” commissioned by the Fire Protection Research Foundation, 1 Batterymarch Park, Quincy, MA 02169-7471. The informational notes each have a separate purpose. Informational note 1 points the user to NFPA 79 for constructions requirements for machinery. Informational notes 2 and 3 point the user to the proper workspace requirements and were purposefully placed in the scope by a joint NEC/NFPA 79 task group to clarify where the user should go for workspace clearances.

Response Message: SR-7648-NFPA 70-2021

Public Comment No. 979-NFPA 70-2021 [Section No. 670.1]

Second Revision No. 7654-NFPA 70-2021 [Section No. 670.4(B)]

(B) Disconnecting Means.

A machine shall be considered as an individual unit and therefore shall be provided with disconnecting means. The disconnecting means shall be permitted to be supplied by branch circuits protected by either fuses or circuit breakers. The disconnecting means shall not be required to incorporate overcurrent protection.

Informational Note: See NFPA *70E* ~~2021~~ , *Standard for Electrical Safety in the Workplace*, which provides guidance for ~~safely verifying the absence of voltage. A permanently mounted absence of voltage tester (AVT) is an example of an approved method per NFPA *70E*~~ creating an electrically safe work condition for performing maintenance or other work on the machine .

Submitter Information Verification

Committee: NEC-P12

Submittal Date: Thu Oct 14 10:36:00 EDT 2021

Committee Statement

Committee Statement: The second sentence of the informational note in 670.4(B) was deleted as there are multiple methods of verifying absence of voltage and the pointer to NFPA 70E is all that is necessary. The informational note was revised to clarify the application of NFPA 70E.

Response Message: SR-7654-NFPA 70-2021

Public Comment No. 1956-NFPA 70-2021 [Section No. 670.4(B)]

Public Comment No. 1957-NFPA 70-2021 [Section No. 670.4(B)]

Public Comment No. 2036-NFPA 70-2021 [Section No. 670.4(B)]

Second Revision No. 7644-NFPA 70-2021 [Section No. 670.6]

670.6 Overvoltage Protection.

Industrial machinery with safety circuits shall have overvoltage protection ~~installed. If a surge protective device is used, it shall be listed and installed in accordance with Part II of Article 242~~ .

Submitter Information Verification

Committee: NEC-P12

Submittal Date: Thu Oct 14 10:19:05 EDT 2021

Committee Statement

Committee Statement: The last sentence of 670.6 was deleted as article 242 already requires listing and the requirements of Ch 1-4 are not necessary to repeat per the NEC Style manual 4.1.1.

Response Message: SR-7644-NFPA 70-2021

Public Comment No. 972-NFPA 70-2021 [Section No. 670.6]