First Revision No. 34-NFPA 79-2025 [Global Input]

Change "NEMA 250" to "NEMA EN 10250" using the attached Word doc.

Supplemental Information

File Name	Description	Approved
GLOBAL_on_NEMA_250_changes_v2_3-24-2025.docx	Global on NEMA 250 changes v2 after editorial review on 3-24-2025 as affecting Section 2.3.5 and FR-3	
79_Global_FR-34_legislative_changes.docx	for prod use	
79_Global_FR-34_FINAL.docx	for balloting	

Submitter Information Verification

Committee: EEI-AAA
Submittal Date: Wed Mar 12 07:46:40 EDT 2025

Committee Statement

Committee Statement: Revision reflect the current edition of NEMA 250 as changed to NEMA EN 10250.
Response Message: FR-34-NFPA 79-2025

[FR-34]

6.2.3 Protection by Enclosures.

Equipment enclosures, enclosure openings, and observation windows shall meet the requirements of UL 508, UL 508A, UL 50, or NEMA EN 10250~~NEMA 250~~.

11.1.2

Minimum control enclosure construction shall comply with UL 508, UL 508A, UL 50, or NEMA EN 10250~~NEMA 250~~ for metallic and nonmetallic enclosures.

11.4.7

Door fasteners on enclosures and compartments with door openings shall comply with UL 50, UL 508, UL 508A, or NEMA EN 10250~~NEMA 250~~.

A.10.1.3

For further information on degrees of protection, see Annex F. Also see NEMA ~~250~~EN 10250, UL 50, UL 508, and IEC 60529.

A.11.3.1

The degrees of protection against ingress of water and other liquids are covered by NEMA EN 10250~~NEMA 250~~. See also Annex F.

F.1 Disclaimer.

Only IEC 60529 should be considered the source document for accurate information regarding IP-rating; UL 50, UL 508, and/or NEMA ~~250~~ EN 10250 should be considered the source documents regarding type-rating. The information presented in Annex F is limited and intended as introductory information. This annex is meant to give the user a sense of the IP-rating system and how it differs from the NEMA EN 10250~~NEMA 250~~ type-rating system.

F.2.1

Electrical enclosures are type-rated according to NEMA EN 10250~~NEMA 250~~, UL 50, and UL 508 or IP-rated according to IEC 60529 based upon the degree of protection provided.

F.5.3

A brief description of the IP code elements is contained in Table F.5.3.

Table F.5.3 IP Code Elements and Their Meaning

Element	Numerals or Letters	Meaning for the Protection of Equipment	Meaning for the Protection of Persons
Code Letters	**IP**		
First Characteristic Numerals		*Against ingress of solid foreign objects*	*Against access to hazardous parts with the following:*
	0	Nonprotected	Nonprotected
	1	50 mm diameter	Back of hand
	2	12.5 mm diameter	Finger
	3	2.5 mm diameter	Tool
	4	1.0 mm diameter	Wire
	5	Dust protected	Wire

Element	Numerals or Letters	Meaning for the Protection of Equipment	Meaning for the Protection of Persons
Code Letters	**IP**		
	6	Dusttight	Wire
Second Characteristic Numerals		*Against ingress of water with harmful effects*	
	0	Nonprotected	
	1	Vertically dripping	
	2	Dripping (15°tilted)	
	3	Spraying	
	4	Splashing	
	5	Jetting	
	6	Powerful jetting	
	7	Temporary immersion	
	8	Continuous immersion	
Additional letter (optional)			*Against access to hazardous parts with the following:*
	A		Back of hand
	B		Finger
	C		Tool
	D		Wire
Supplementary letter (optional)		*Supplementary information specific to the following:*	
	H	High-voltage apparatus	
	M	Motion during water test	
	S	Stationary during water test	
	W	Weather conditions	

Where more than one supplementary letter is used, the following alphabetic sequence applies:

(1) *IPXXA*. Protected against access with the back of hand

(2) *IPXXB*. Protected against access with finger

(3) *IPXXC*. Protected against access with a tool

(4) *IPXXD*. Protected against access with a wire

These letter designations (A, B, C, D) can be used for referencing the protection of live parts while the enclosure is accessed. There is not a comparable NEMA EN 10250~~NEMA 250~~–type rating to this application.

F.5.4

Electrical enclosures that carry only an IP-rating have not been designed to the additional NEMA EN 10250~~NEMA 250~~ type–rating requirements. Therefore, a type-rating cannot be assigned to an enclosure that has only been IP-rated because of the exclusion of the additional requirements of the type-rating system. Enclosure types are shown in Table F.5.4.

F.5.5

However, because the IP requirements can be interpreted to be inclusive to the type-rating requirements, a conservative IP-rating can be assigned to a type-rated enclosure as shown in Table F.5.5.

As a practical matter, many electrical enclosures are tested to both the IP and type requirements and carry both IP-rating and type-rating designations.

Table F.5.5 Assignment of IP-Ratings to Type-Rated Enclosures

A*														B†
	Enclosure Type													
IP First Character	1	2	3	3R	3S	4	4X	5	6	6P	12	12K	13	IP Second Character
IP0_	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	IP_0
IP1_	A	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	IP_1
IP2_	A	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	IP_2
IP3_	A	—	AB	B	AB	AB	AB	AB	AB	AB	AB	AB	AB	IP_3
IP4_	—	—	AB	B	AB	AB	AB	AB	AB	AB	AB	AB	AB	IP_4
IP5_	—	—	AB	—	AB	AB	AB	A	AB	AB	A	A	A	IP_5
IP6_	—	—	A	—	A	AB	AB	—	AB	AB	—	—	—	IP_6
N/A	—	—	—	—	—	—	—	—	B	B	—	—	—	IP_7
N/A	—	—	—	—	—	—	—	—	—	B	—	—	—	IP_8

N/A: Not applicable.

*A: The first IP character designation is the protection against access to hazardous parts and solid foreign objects. The respective enclosure type meets the requirements for the IEC 60529 IP first character designation.

†B: The IP second character designation is the protection against ingress of water. The respective enclosure type meets the requirements for the IEC 60529 IP second character designation.

Notes:

(1) Type-rated enclosures for hazardous locations and potentially explosive areas have been excluded from the table. The additional and supplementary letters for IP-ratings have also been excluded from the table. *(See NEMA EN 10250~~NEMA 250~~, UL 508, and IEC 60529.)*

(2) This table should be used only to assign an IP-rating to a type-rated enclosure, and not to assign a type-rating to an IP-rated enclosure. This table assists in specifying enclosure ratings and should not be used as a definitive guide. For example, if the conditions of installation require an IP 55, this table indicates that a Type 3, Type 3S, Type 4, Type 4X, Type 6, or Type 6P enclosure can be utilized. However, if the conditions of installation require a Type 4, an enclosure that is only IP-rated cannot be used as a substitute.

(3) Although the corresponding enclosure type-ratings meet or exceed the corresponding IP-ratings as indicated in the table, IEC does not currently accept these type-ratings without further IEC testing.

K.1.2.7 NEMA Publications.

National Electrical Manufacturers Association, 1300 North 17th Street, Suite 900, Arlington, VA 22209.

NEMA MG1, *Motors and Generators*, 2016.

NEMA EN 10250~~NEMA 250~~, *Enclosures for Electrical Equipment (1000 Volts Maximum)*, 2020.

First Revision No. 8-NFPA 79-2025 [Global Input]

Make changes involving the term "graphical user interface [GIU]" per attached Word doc.

Supplemental Information

File Name	Description	Approved
GLOBAL_on_GUIs_3-04-2025_.docx	GLOBAL on GUIs	
79_Global_FR-8_legislative_changes.docx	for prod use	
79_Global_FR-8_FINAL.docx	for balloting	

Submitter Information Verification

Committee: EEI-AAA
Submittal Date: Mon Mar 10 10:45:42 EDT 2025

Committee Statement

Committee Statement: The defined term Color graphical user interface was revised to provide for all interface types. Other affected sections are also revised to include this language.

Response Message: FR-8-NFPA 79-2025

[FR-8]

10.2 Pushbutton Actuators and ~~Color Graphic Interface Devices~~Graphical User Interfaces.

10.2.1 Pushbutton Actuators.

Pushbutton actuators used to initiate a stop function shall be of the extended operator or mushroom-head type.

10.2.2 Colors.

Pushbutton actuators and action initiating icons of color ~~graphic~~graphical interface devices shall be color-coded in accordance with 10.2.2.1 through 10.2.2.6.

10.2.2.1 Start or On.

The preferred color of start or on shall be GREEN, except that BLACK, WHITE, or GRAY shall be permitted. RED shall not be used for start or on.

10.2.2.2 Stop or Off.

The preferred color of stop or off shall be RED, except that BLACK, WHITE, or GRAY shall be permitted. GREEN shall not be used for stop or off.

Exception: Stop function operators of the wobble-stick or rod-operated types in the bottom of a pendant station need not be colored RED.

10.3 Indicator Lights and Icons of ~~Color Graphic Interface Devices~~Graphical User Interfaces.

10.3.1 Modes of Use.

Indicator lights and icons of color ~~graphic~~graphical~~interface~~interfaces ~~devices~~ shall provide the following information:

(1) Indication to attract the operator's attention or to indicate that a certain task should be performed. The colors RED, YELLOW (AMBER), GREEN, and BLUE are normally used in this mode.

(2) Confirmation of a command or a condition, or the termination of a change or transition period. The colors BLUE and WHITE are normally used in this mode. GREEN shall be permitted to be used in some cases.

10.3.2 Indicator Light Circuits for Warning or Danger.

Indicator light circuits used for warning or danger lights shall be fitted with facilities to check the operability of these lights.

10.3.3* Colors.

Indicator lights and icons of color ~~graphic~~graphical user ~~interface~~interfaces ~~devices~~ shall be color-coded with respect to the condition (status) of the machine in accordance with Table 10.3.3. Alternative purposes shall be permitted to indicate machine or process status.

10.7.2.4
Emergency stop switches shall not be flat switches or graphic representations ~~based~~ on ~~software applications~~graphical user interfaces.

10.8.2.3
Emergency switching off devices shall not be flat switches or graphic representations ~~based~~ on ~~software applications~~graphical user interfaces.

10.9* Displays.
Displays (e.g., visual display units, alarm annunciators, indicator lights, and the action-initiating icons of ~~graphic~~graphical user ~~interface~~interfaces ~~devices~~) shall be selected and installed in such a manner as to be visible from the normal position of the operator.

16.3* Function Identification.
Control devices, visual indicators, ~~and~~ displays and action-initiating icons of graphical user interfaces used in the operator–machine interface shall be clearly and durably marked with regard to their functions either on or adjacent to the unit.

A.16.3
Such markings can be as agreed between the user and the supplier of the equipment. See Annex B for additional information.

For further information on symbols, see IEC 60417 and ISO 7000.

Consideration should be given to the use of IEC symbols for pushbuttons and action-initiating icons of graphical user interfaces. See Figure A.16.3(a) through Figure A.16.3(d).

First Revision No. 1-NFPA 79-2025 [Section No. 1.1.1]

1.1.1

The provisions of this standard shall apply to the electrical/electronic equipment, apparatus, or systems of industrial machines supplied from a nominal voltage of 1000 volts ac,1500 volts dc, or less, and commencing at the point of connection of the supply circuit conductors to the electrical equipment of the machine.

Submitter Information Verification

Committee: EEI-AAA
Submittal Date: Mon Mar 10 09:37:17 EDT 2025

Committee Statement

Committee Statement: This change is consistent with several articles in NFPA 70.
Response Message: FR-1-NFPA 79-2025

Public Input No. 28-NFPA 79-2024 [Section No. 1.1.1]

First Revision No. 31-NFPA 79-2025 [Section No. 1.4]

1.4 Specific Provisions Other Than NFPA 79.

The size and overcurrent protection of the supply conductors to a machine shall be covered by Article 670 of *NFPA 70*. The wiring between component machines of an ~~industrial manufacturing~~ integrated machinery system shall be covered by *NFPA 70*.

Exception: Wiring of component machines of an ~~industrial manufacturing~~ integrated machinery system that is supplied by the manufacturer and is an integral part of the system, is adequately protected and supported, and meets the requirements of this standard.

Submitter Information Verification

Committee: EEI-AAA

Submittal Date: Tue Mar 11 15:21:07 EDT 2025

Committee Statement

Committee Statement: The proposed change replaces the term “industrial manufacturing system” with “integrated machinery system” to align with ANSI B11.20 terminology for systems of machines.

Response Message: FR-31-NFPA 79-2025

First Revision No. 3-NFPA 79-2025 [Section No. 2.3.5]

2.3.5 NEMA Publications.

National Electrical Manufacturers Association, ~~1300 North 17th Street~~ 1812 North Moore Street , Suite ~~900~~ 2200 , Arlington, VA 22209.

NEMA ICS 2, *Industrial Control and Systems: Controllers, Contactors, and Overload Relays Rated 600 Volts*, ~~2000, errata 2008~~ 2020 .

NEMA MG 1, *Motors and Generators*, ~~2016~~ 2024 .

NEMA ~~250~~ EN 10250 , *Enclosures for Electrical Equipment (1000 Volts Maximum)*, ~~2014~~ 2024 .

Submitter Information Verification

Committee: EEI-AAA

Submittal Date: Mon Mar 10 09:45:45 EDT 2025

Committee Statement

Committee Statement: Revisions reflect the current editions of NEMA and the new address.

Response Message: FR-3-NFPA 79-2025

Public Input No. 46-NFPA 79-2024 [Section No. 2.3.5]

First Revision No. 4-NFPA 79-2025 [Section No. 2.3.6]

2.3.6 UL Publications.

~~Underwriters Laboratories Inc., 333 Pfingsten Road, Northbrook, IL 60062-2096.~~ UL Standards and Engagement, 1603 Orrington Ave #2000, Evanston, IL 60201.

UL 50, *Enclosures for Electrical Equipment, Non-Environmental Considerations*, ~~2020~~ 2024 .

UL 50E, *Enclosures for Electrical Equipment, Environmental Considerations*, ~~2018~~ 2020 , revised ~~2020~~ 2024 .

UL 508, *Industrial Control Equipment*, ~~2018, revised 2021~~ 2024 .

UL 508A, *Industrial Control Panels*, 2018, revised ~~2021~~ 2022 .

UL 870, *Wireways, Auxiliary Gutters, and Associated Fittings*, 2016, revised ~~2018~~ 2023 .

UL 1063, *Machine-Tool Wires and Cables*, ~~2017, revised 2020~~ 2023 .

UL 1581, *Electrical Wires, Cables, and Flexible Cords*, 2001, revised ~~2021~~ 2023 .

Submitter Information Verification

Committee: EEI-AAA
Submittal Date: Mon Mar 10 09:47:00 EDT 2025

Committee Statement

Committee Statement: Revisions reflect the current editions of UL publications
Response Message: FR-4-NFPA 79-2025

Public Input No. 88-NFPA 79-2025 [Section No. 2.3.6]
Public Input No. 34-NFPA 79-2024 [Section No. 2.3.6]

First Revision No. 5-NFPA 79-2025 [Section No. 3.3.9]

3.3.9 Attachment Plug (Plug Cap) (Plug).

A device that, by insertion in a receptacle, establishes a connection between the conductors of the attached flexible cord or cable and the conductors connected permanently to the receptacle. [~~**70,** 2023~~]

Submitter Information Verification

Committee: EEI-AAA

Submittal Date: Mon Mar 10 09:59:21 EDT 2025

Committee Statement

Committee Statement: The definition has been updated to reflect the permitted use in Chapter 13 of attachment plugs with cables. This is consistent with the definition in the product standard of attachment plug in UL 498.

Response Message: FR-5-NFPA 79-2025

Public Input No. 11-NFPA 79-2024 [Section No. 3.3.9]

First Revision No. 6-NFPA 79-2025 [Section No. 3.3.13]

3.3.13 Branch Circuit (Branch-Circuit).

The circuit conductors between the final overcurrent device protecting the circuit and load. ~~the outlet(s).~~ [~~**70,** 2023~~]

Submitter Information Verification

Committee: EEI-AAA
Submittal Date: Mon Mar 10 10:12:18 EDT 2025

Committee Statement

Committee Statement: “Load” is the more appropriate term for industrial machinery.
Response Message: FR-6-NFPA 79-2025

Public Input No. 12-NFPA 79-2024 [Section No. 3.3.13]

First Revision No. 7-NFPA 79-2025 [Section No. 3.3.19]

3.3.51 ~~Color Graphic Interface Device~~ Graphical User Interface .

~~An~~ A digital display interface between the operator and the machine, where ~~a color video display and either~~ a touch screen ~~or~~ , touch pad ~~or~~ , keyboard, or computer mouse ~~are~~ is used to display, configure, or initiate machine action by the selection of on-screen graphical elements (e.g., icons, menus, entry fields) .

~~**A.3.3.51** Color Graphic Interface Device.~~

~~This does not include monochrome or black and white displays.~~

Supplemental Information

File Name	Description	Approved
PI-13_on_Section_3.3.19.docx	PI-13 on Section 3.3.19	
79_FR-7_3.3.19_legislative_changes.docx	for prod use	

Submitter Information Verification

Committee: EEI-AAA

Submittal Date: Mon Mar 10 10:30:07 EDT 2025

Committee Statement

Committee Statement: The proposed change replaces the term “color graphic interface device” with “graphical user interface” to align with contemporary industry terminology. The reference to color has been removed and annex note deleted to accommodate grayscale/monochrome devices. This new term is intended to apply to both color and monochromatic interfaces.

Response Message: FR-7-NFPA 79-2025

Public Input No. 13-NFPA 79-2024 [Section No. 3.3.19]

First Revision No. 9-NFPA 79-2025 [New Section after 3.3.35]

3.3.34 Electroactive.

A material that exhibits a change in size or shape when stimulated by an electric field.

Submitter Information Verification

Committee: EEI-AAA
Submittal Date: Mon Mar 10 11:13:08 EDT 2025

Committee Statement

Committee Statement: Definition is needed to reflect the expansion of examples to machine actuators.
Response Message: FR-9-NFPA 79-2025

Public Input No. 14-NFPA 79-2024 [New Section after 3.3.35]

First Revision No. 33-NFPA 79-2025 [Section No. 3.3.41]

3.3.41* Energized, Likely to Become (Likely to Become Energized).

Conductive material that could become energized because of the failure of electrical insulation or electrical spacing. [**70,** 2023]

A.3.3.41 Energized, Likely to Become (Likely to Become Energized).

Conductive material is considered “likely to become energized” where it can come into direct contact with live parts as a result of failure of insulation or electrical spacings (e.g., raceways, cable trays, electrical enclosures, motor housings, structural parts supporting electrical conductors).

Submitter Information Verification

Committee: EEI-AAA

Submittal Date: Tue Mar 11 16:33:05 EDT 2025

Committee Statement

Committee Statement: The annex note provides additional guidance and examples of likely to become energized conductive material.

Response Message: FR-33-NFPA 79-2025

First Revision No. 10-NFPA 79-2025 [Section No. 3.3.63]

3.3.67 ~~Industrial Manufacturing~~ Integrated Machinery System.

A systematic array of one or more industrial machines that is not portable by hand and includes any associated material handling, manipulating, gauging, measuring, or inspection equipment.

Submitter Information Verification

Committee: EEI-AAA

Submittal Date: Mon Mar 10 11:50:57 EDT 2025

Committee Statement

Committee Statement: The term has been updated to current industry terminology such as ANSI B.11 and ISO 10218 and 11161.

Response Message: FR-10-NFPA 79-2025

Public Input No. 16-NFPA 79-2024 [Section No. 3.3.63]

First Revision No. 13-NFPA 79-2025 [Section No. 5.1.9.1]

5.1.9.1

A machine supply circuit disconnecting means shall be provided for the following:

(1) Each machine supply circuit

(2) Each machine supply circuit to a machine or a number of machines connecting to a feeder system using collector wires, collector bars, slip-ring assemblies, or flexible cable systems (reeled, festooned)

(3) Each on-board power source (e.g., batteries, generators, uninterruptible power supplies)

Exception: Communication, remote control, and signaling circuits of less than 50 volts rms ac or 60 volts dc shall not be required to be provided with a machine supply circuit disconnecting means.

Submitter Information Verification

Committee: EEI-AAA

Submittal Date: Mon Mar 10 13:31:23 EDT 2025

Committee Statement

Committee Statement: The addition of batteries as a supply source is an appropriate addition.

Response Message: FR-13-NFPA 79-2025

Public Input No. 31-NFPA 79-2024 [Section No. 5.1.9.1]

First Revision No. 14-NFPA 79-2025 [Section No. 5.1.13]

5.1.13 Excepted Circuits.

5.1.13.1

The following circuits shall not be required to be disconnected by the machine supply circuit disconnecting means:

(1) Lighting circuits for lighting needed during maintenance or repair

(2) ~~Attachment plugs and~~ Circuits supplying receptacles for the exclusive connection of repair or maintenance tools and equipment (e.g., hand drills, test equipment)

(3) Undervoltage protection circuits that are only used for automatic tripping in the event of supply circuit failure

(4) Circuits supplying equipment that need to remain energized for satisfactory operation [e.g., temperature-controlled measuring devices, product (work in progress) heaters, program storage devices, inputs, non-motion outputs, displays, and safety interlocks]

(5) Circuits supplying both voltage detection devices and absence of voltage testers used for testing for the absence of voltage if listed for use on the line side of the disconnecting means.

5.1.13.2

Excepted circuits shall be provided with all of the following:

(1) A disconnecting means, isolating transformer, and overcurrent protection mounted in an enclosure adjacent to or within the control enclosure containing the machine supply circuit disconnecting means

Exception: This requirement shall not apply to circuits containing voltage detection devices and absence of voltage testers, provided the supply circuit conductors do not extend beyond the enclosure containing the machine supply circuit disconnecting means.

(2) Line side (of the machine supply circuit disconnecting means) supply circuit conductors, when internal to the control enclosure, that are separate from and do not share a raceway with other conductors and that are encased in a raceway if they are longer than 460 mm (18 in.)

5.1.13.3

The control interlocking circuits shall be capable of being disconnected at the control panel from which they are sourced.

5.1.13.4

Where the excepted circuits are not disconnected by the machine supply circuit disconnecting means, all of the following requirements shall be met:

(1) A permanent safety sign(s) is located adjacent to the machine supply circuit disconnecting means operating handle(s) indicating that it does not de-energize all the exposed live parts when it is in the open (off) position as in 16.2.4.

(2) A statement containing the information from 16.2.4 is included in the machine documentation.

(3) A permanent safety sign is located on a nonremovable part inside the control enclosure in proximity to each excepted circuit or each excepted circuit is identified by color as defined in 13.2.4.

Exception: These requirements shall not apply to circuits containing voltage detection devices and absence of voltage testers if these devices have no exposed live parts.

Supplemental Information

File Name	Description	Approved
Public_Input_No._64_80-NFPA_79_5.1.13_Excepted_Circuits._FRTG2_2.docx	PI-64 and PI-80 on 5.1.13	
79_FR-14_5.1.13_legislative_changes.docx	for prod use	

Submitter Information Verification

Committee: EEI-AAA

Submittal Date: Mon Mar 10 14:30:08 EDT 2025

Committee Statement

Committee Statement: The addition of these products for use without a disconnecting means allows for them to be installed per their instructions.

The change in 5.1.13.1(2) improves clarity of the requirement and correlates with the charging paragraph.

Response Message: FR-14-NFPA 79-2025

Public Input No. 80-NFPA 79-2025 [Section No. 5.1.13.1]

Public Input No. 64-NFPA 79-2024 [Section No. 5.1.13]

First Revision No. 15-NFPA 79-2025 [Section No. 6.4.1]

6.4.1 General Requirements.

6.4.1.1

~~The use of~~ PELV, as described in Section 6.4, shall be permitted to be used to protect persons against electric shock from indirect contact and limited area direct contact.

6.4.1.2

Class 2 circuits, as covered in ~~13.1.1 and Article~~ Articles 722 and 725 of *NFPA 70* (NEC), shall be permitted to be used to provide protection from electric shock and other hazards.

6.4.1.3

Where electrical devices are marked to require supply from PELV or Class 2 sources, those sources and circuits supplying the devices shall be in accordance with Section 6.4.

Submitter Information Verification

Committee: EEI-AAA

Submittal Date: Mon Mar 10 14:51:28 EDT 2025

Committee Statement

Committee Statement: The changes made provide improved clarity of the requirements. Updates were made to delete reference to 13.1.1 as this section does not contain any class 2 information. The addition of Article 722 is to update the document to meet the changes made in the 2023 NEC.

Response Message: FR-15-NFPA 79-2025

Public Input No. 38-NFPA 79-2024 [Section No. 6.4.1.2]

Public Input No. 75-NFPA 79-2025 [Section No. 6.4.1]

Public Input No. 18-NFPA 79-2024 [Section No. 6.4.1.2]

First Revision No. 28-NFPA 79-2025 [Section No. 7.2.10.1.2 [Excluding any Sub-Sections]]

Table 7.2.10.1.1 shall not apply to Design B energy efficient, premium efficient, or Design BE motor circuits.

Submitter Information Verification

Committee: EEI-AAA

Submittal Date: Tue Mar 11 14:32:50 EDT 2025

Committee Statement

Committee Statement: A reference to Design B premium efficient and Design BE motors has been added. The US Department of Energy requirements for motor energy efficiency have driven the new motor design and inclusion into the NEC and ANSI/NEMA MG1.

Response Message: FR-28-NFPA 79-2025

Public Input No. 40-NFPA 79-2024 [Section No. 7.2.10.1.2 [Excluding any Sub-Sections]]

First Revision No. 29-NFPA 79-2025 [Section No. 7.2.10.1.2.1]

7.2.10.1.2.1

The provisions of *NFPA 70* shall be observed for Design B energy efficient, Design B premium efficient, and Design BE motor circuits.

Submitter Information Verification

Committee: EEI-AAA

Submittal Date: Tue Mar 11 14:36:41 EDT 2025

Committee Statement

Committee Statement: A reference to Design B premium efficient and Design BE motors has been added. The US Department of Energy requirements for motor energy efficiency have driven the new motor design and inclusion into the NEC and ANSI/NEMA MG1.

Response Message: FR-29-NFPA 79-2025

Public Input No. 41-NFPA 79-2024 [Section No. 7.2.10.1.2.1]

First Revision No. 30-NFPA 79-2025 [Section No. 7.2.10.1.10]

7.2.10.1.10

Where a listed self-protected combination controller has an adjustable, instantaneous trip setting, the setting shall not exceed 1300 percent of full-load motor current for other than Design B energy efficient motors and not more than 1700 percent of full-load motor current for Design B energy efficient, Design B premium efficient, and Design BE motors.

Submitter Information Verification

Committee: EEI-AAA

Submittal Date: Tue Mar 11 14:39:26 EDT 2025

Committee Statement

Committee Statement: A reference to Design B premium efficient and Design BE motors has been added. The US Department of Energy requirements for motor energy efficiency have driven the new motor design and inclusion into the NEC and ANSI/NEMA MG1.

Response Message: FR-30-NFPA 79-2025

Public Input No. 42-NFPA 79-2024 [Section No. 7.2.10.1.10]

First Revision No. 26-NFPA 79-2025 [Section No. 11.2.1.3]

11.2.1.3* Air Space and Barriers.

A.11.2.1.3

See ANSI/UL 508A, Part 1, Section 10 for industrial control panel component spacings.

11.2.1.3.1

Exposed, nonarcing, bare, live parts operating at or greater than 50 volts ac rms or 60 volts dc within an enclosure or compartment shall have an air space of not less than 13 mm (½ in.) between them and the uninsulated walls of the enclosure or compartment, including conduit fittings. The air space for uninsulated doors of an enclosure shall not be less than 25 mm (1 in).

Exception: Less air space shall be permitted for listed equipment that is installed and used in accordance with the instructions included in the listing or labeling.

~~**11.2.1.3.2**~~

~~The air space for uninsulated doors of an enclosure shall be not less than 25 mm (1 in.).~~

11.2.1.3.2

Where barriers between metal enclosures or compartments and arcing parts are required, they shall be of flame-retardant, noncarbonizing insulating materials.

Supplemental Information

File Name	Description	Approved
PIs_4_5_and_6_on_Section_11.2.1.3.docx	PIs 4,5,6,7 on Section 11.2.1.3	
79_FR-26_11.2.1.3_legislative_changes.docx	for prod use	

Submitter Information Verification

Committee: EEI-AAA

Submittal Date: Tue Mar 11 13:55:08 EDT 2025

Committee Statement

Committee Statement: The requirement from 11.2.1.3.2 was relocated here because the exception applies to both conditions. The wording was revised to more clearly state that less air space is allowed if permitted by the listing or labeling.

Response Message: FR-26-NFPA 79-2025

Public Input No. 5-NFPA 79-2024 [Section No. 11.2.1.3.2]

Public Input No. 6-NFPA 79-2024 [Section No. 11.2.1.3.3]

Public Input No. 4-NFPA 79-2024 [Section No. 11.2.1.3.1]

Public Input No. 7-NFPA 79-2024 [New Section after A.10.9]

First Revision No. 27-NFPA 79-2025 [Section No. 11.4.8]

11.4.8

~~A~~ At least one print pocket sized to accommodate physical electrical diagrams or software media shall be attached to the inside or outside of the door of the control enclosure or compartment, as is suitable for the environment .

Exception: It shall be permissible to omit the print pocket and store the electrical diagrams and software media at a remote location provided the location is marked on the enclosure.

~~**11.4.8.1**~~

~~It shall be permissible to place a pocket that is suitable for the environment outside the door of the control enclosure or compartment in a well-identified location.~~

~~**11.4.8.2**~~

~~Single-door and multi-door enclosures shall have at least one print pocket.~~

Supplemental Information

File Name	Description	Approved
PI-53_on_Section_11.4.8.docx	PI-53 on Section 11.4.8	
79_FR-27_11.4.8_legislative_changes.docx	for prod use	

Submitter Information Verification

Committee: EEI-AAA

Submittal Date: Tue Mar 11 14:24:27 EDT 2025

Committee Statement

Committee Statement: This section is revised for usability and to provide an exception for documentation to be stored at a remote location.

Response Message: FR-27-NFPA 79-2025

Public Input No. 53-NFPA 79-2024 [Section No. 11.4.8]

First Revision No. 17-NFPA 79-2025 [New Section after 12.2.6]

12.2.7 Machine Supply Circuit and Terminals.

12.2.7.1

Machine supply circuit conductors shall be permitted to be copper, copper-clad aluminum, or aluminum.

12.2.7.2

Machine supply circuit terminals shall be identified as suitable for the conductor material used for the machine supply circuit.

Submitter Information Verification

Committee: EEI-AAA

Submittal Date: Mon Mar 10 15:41:02 EDT 2025

Committee Statement

Committee Statement: NEC Article 670 does not prohibit the use of copper or aluminum conductors for premises wiring to industrial machinery.

This new section clarifies that machine supply circuits are permitted with the conductor characteristics as specified. The term Identified is a defined term.

Terminals must be compatible in terms of suitability with the supply circuit wiring.

Response Message: FR-17-NFPA 79-2025

Public Input No. 85-NFPA 79-2025 [New Section after 12.2.6]

First Revision No. 20-NFPA 79-2025 [Section No. 13.2.2.1]

13.2.2.1*

The color GREEN with or without one or more YELLOW stripes shall be used to identify the equipment grounding conductor where insulated or covered. This color identification shall be strictly reserved for the equipment grounding conductor. ~~GREEN shall be the predominant color when~~ The color GREEN where used in combination with one or more YELLOW stripes shall be permitted to have a bicolor combination such that one of the colors covers at least 30 percent and not more than 70 percent of the surface of the conductor's insulation or covering and the other color covers the remainder of the surface .

Exception No. 1: Conductors with green insulation or insulation that is green with one or more yellow stripes shall be permitted to be used for other than equipment grounding purposes where all of the following conditions are met:

(1) The conductor is part of a multiconductor cable.

(2) The multiconductor cable containing the conductor contains only circuits supplied from a source limited to less than 50 volts.

(3) The multiconductor cable containing the conductor contains only circuits supplied from a source limited to no more than a power-limited Class 2 energy level.

(4) The conductor is reidentified at all accessible locations, or the multiconductor cable is part of a listed assembly.

Exception No. 2: It shall be permitted to use conductors of any color, provided the insulation or cover is appropriately identified at all points of access.

Exception No. 3: For grounded control circuits, use of a GREEN insulated conductor with or without one or more YELLOW stripes or a bare conductor from the transformer terminal to a grounding terminal on the control panel shall be permitted.

Supplemental Information

File Name	Description	Approved
PI-2_on_13.2.2.1.docx	PI-2 on 13.2.2.1	
79_FR-20_13.2.2.1_legislative_changes.docx	for prod use	

Submitter Information Verification

Committee: EEI-AAA
Submittal Date: Tue Mar 11 10:15:14 EDT 2025

Committee Statement

Committee Statement: The proposed revision better aligns NFPA79 with IEC 60204-1 while still giving wire and cable OEMs flexibility in ratio of yellow to green color.

Response Message: FR-20-NFPA 79-2025

Public Input No. 2-NFPA 79-2024 [Section No. 13.2.2.1]

First Revision No. 32-NFPA 79-2025 [Section No. 13.5.10]

13.5.10 Cable Trays.

Cable trays to be used for cable or raceway support on industrial machines shall be permitted. Cable trays shall be permitted to support the following:

(1) Single conductors 1/0 or larger that are otherwise permitted on industrial machines

(2) Multiconductor flexible cables and cables with flexible properties that are otherwise permitted on industrial machines

(3) Raceways functionally associated with ~~industrial manufacturing~~ integrated machinery systems

(4) Special conductors and cables that are otherwise permitted on industrial machines *(See Section 12.9.)*

Submitter Information Verification

Committee: EEI-AAA

Submittal Date: Tue Mar 11 15:26:07 EDT 2025

Committee Statement

Committee Statement: The proposed change replaces the term “industrial manufacturing system” with “integrated machinery system” to align with ANSI B11.20 terminology for systems of machines.

Response Message: FR-32-NFPA 79-2025

First Revision No. 21-NFPA 79-2025 [Section No. 16.2.4]

16.2.4

A safety sign shall be provided adjacent to the disconnecting means operating handle(s) where the disconnecting means ~~that is interlocked with the enclosure door or cover~~ does not de-energize all the exposed live parts when the disconnecting means is in the open (off) position.

Submitter Information Verification

Committee: EEI-AAA

Submittal Date: Tue Mar 11 10:25:42 EDT 2025

Committee Statement

Committee Statement: A safety sign is required where the disconnecting means does not de-energize all exposed live parts, whether or not the disconnect is interlocked with the enclosure door or cover.

Response Message: FR-21-NFPA 79-2025

Public Input No. 60-NFPA 79-2024 [Section No. 16.2.4]

First Revision No. 22-NFPA 79-2025 [Section No. A.13.2.2.1]

A.13.2.2.1

~~The international standards reserve~~ IEC 60204-1 allows the use of the bicolor combination GREEN-AND-YELLOW for this purpose. The bicolor combination is such that on any 15 mm (0.6 in.) or greater length, one of the colors covers at least 30 percent and not more than 70 percent of the surface of the conductor, and the other color covers the remainder of the surface.

Submitter Information Verification

Committee: EEI-AAA

Submittal Date: Tue Mar 11 11:11:55 EDT 2025

Committee Statement

Committee Statement: The proposed revision better aligns NFPA79 with IEC 60204-1 while still giving wire and cable OEMs flexibility in ratio of yellow to green color.

Response Message: FR-22-NFPA 79-2025

Public Input No. 3-NFPA 79-2024 [Section No. A.13.2.2.1]

First Revision No. 23-NFPA 79-2025 [New Section after C.7]

C.8 Robotics.

Examples of robots are as follows:

(1) Robots that are permanently mounted:

(a) Multi-axis articulated arms

(b) Cartesian gantry

(c) Delta arm

(d) Selective compliance assembly robot arm (SCARA)

(e) Dual arm

(2) Robots that are mobile:

(a) Wheeled

(b) Tracked

(c) Legged

Supplemental Information

File Name	Description	Approved
79_FR-23_C.8_NEW.docx	for prod use	

Submitter Information Verification

Committee: EEI-AAA

Submittal Date: Tue Mar 11 11:15:55 EDT 2025

Committee Statement

Committee Statement: A new section was added to provide examples of robotics in industrial machine applications

Response Message: FR-23-NFPA 79-2025

Public Input No. 19-NFPA 79-2024 [New Section after C.7]

First Revision No. 24-NFPA 79-2025 [Section No. K.1.1]

K.1.1 NFPA Publications.

National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471.

NFPA *70*®, *National Electrical Code*®, 2023 edition.

~~NFPA *70E* ® , *Standard for Electrical Safety in the Workplace* ® , 2021 edition.~~

NFPA *70E*®, *Standard for Electrical Safety in the Workplace*®, 2024 edition.

NFPA 77, *Recommended Practice on Static Electricity*, 2024 edition.

Supplemental Information

File Name	Description	Approved
79_FR-24_K.1.1_legislative_changes.docx	for prod use	

Submitter Information Verification

Committee: EEI-AAA

Submittal Date: Tue Mar 11 11:31:06 EDT 2025

Committee Statement

Committee Statement: NFPA 70B has been added to the NFPA Publication as proper maintenance of industrial machinery is included in NFPA 70B. The edition date for the NFPA 70E has been updated.

Response Message: FR-24-NFPA 79-2025

Public Input No. 44-NFPA 79-2024 [Section No. K.1.1]

Public Input No. 74-NFPA 79-2024 [Section No. K.1.1]

First Revision No. 25-NFPA 79-2025 [Section No. K.1.2.6]

K.1.2.6 ISO Publications.

International Organization for Standardization, ISO Central Secretariat, BIBC II, Chemin de Blandonnet 8, CP 401, 1214 Vernier, Geneva, Switzerland.

ISO 7000, *Graphical symbols for use on equipment —Registered symbols*, 2019.

ISO 12100, *Safety of machinery — General principles for design — Risk assessment and risk reduction*, 2010.

ISO 13849-1, *Safety of machinery — Safety-related parts of control systems — Part 1: General principles for design*, ~~2015~~ 2023 .

ISO 13849-2, *Safety of machinery — Safety-related parts of control systems — Part 2: Validation*, 2012.

ISO 13850, *Safety of machinery — Emergency stop function — Principles for design*, 2015.

ISO/TR 22100-4, *Safety of machinery — Relationship with ISO 12100 — Part 4: Guidance to machinery manufacturers for consideration of related IT-security (cyber security) aspects*, 2018.

Submitter Information Verification

Committee: EEI-AAA
Submittal Date: Tue Mar 11 11:35:18 EDT 2025

Committee Statement

Committee Statement: The revision date of ISO 13849-1 has been updated.
Response Message: FR-25-NFPA 79-2025

Public Input No. 73-NFPA 79-2024 [Section No. K.1.2.6]

First Revision No. 11-NFPA 79-2025 [Section No. K.1.2.7]

Global FR-34

K.1.2.7 NEMA Publications.

National Electrical Manufacturers Association, ~~1300 North 17th~~1812 North Moore Street, Suite ~~900~~2200, Arlington, VA 22209.

NEMA MG 1, *Motors and Generators*, ~~2016~~2024.

NEMA ~~250~~EN 10250, *Enclosures for Electrical Equipment (1000 Volts Maximum)*, ~~2020~~2024.

Submitter Information Verification

Committee: EEI-AAA
Submittal Date: Mon Mar 10 12:25:38 EDT 2025

Committee Statement

Committee Statement: Revisions reflect the current editions of NEMA and the new address.
Response Message: FR-11-NFPA 79-2025

Public Input No. 45-NFPA 79-2024 [Section No. K.1.2.7]

First Revision No. 12-NFPA 79-2025 [Section No. K.1.2.10]

K.1.2.10 UL Publications.

~~Underwriters Laboratories Inc., 333 Pfingsten Road, Northbrook, IL 60062-2096~~ UL Standards and Engagement, 1603 Orrington Avenue #2000, Evanston, IL 60201 .

UL 50, *Enclosures for Electrical Equipment*, *Non-Environmental Considerations,*~~2015~~ 2024 .

UL 62, *Flexible Cord and Cables*, 2018, revised 2023 .

UL 248-14, *Low-Voltage Fuses — Part 14: Supplemental Fuses*, 2000, revised 2020.

UL 489, *Molded-Case Circuit Breakers, Molded-Case Switches, and Circuit-Breaker Enclosures,* 2016, revised 2019.

UL 498, *Attachment Plugs and Receptacles*, 2017, revised ~~2021~~ 2024 .

UL 508, *Industrial Control Equipment*, ~~2018, revised 2021~~ 2024 .

UL 508A, *Industrial Control Panels*, 2018, revised ~~2021~~ 2022 .

UL 651, *Schedule 40, 80, Type EB and A Rigid PVC Conduit and Fittings*, 2011, revised ~~2020~~ 2022 .

UL 758, *Appliance Wiring Material*, 2014, revised ~~2021~~ 2024 .

UL 1004-1, *Rotating Electrical Machines — General Requirements*, 2012, revised 2020.

UL 1077, *Supplementary Protectors for Use in Electrical Equipment*, 2015, revised 2021.

UL 1682, *Plugs, Receptacles, and Cable Connectors of the Pin and Sleeve Type,*~~2017~~ 2024 .

UL 2237, ~~*Outline of Investigation for*~~ *Multi-Point Interconnection Power Cable Assemblies for Industrial Machinery*, 2019, revised 2021.

UL 2238, *Cable Assemblies and Fittings for Industrial Control and Signal Distribution*, 2018, revised ~~2021~~ 2023 .

UL 2900-2-3, *Software Cybersecurity for Network-Connectable Products, Part 2-3: Particular Requirements for Security and Life Safety Signaling Systems*, 2020, revised 2023 .

UL 6420, *Standard for Equipment Used for System Isolation and Rated as a Single Unit*, 2012, revised ~~2018~~ 2023 .

UL 60947-4-1, *Low-Voltage Switchgear and Controlgear — Part 4-1: Contactors and Motor-Starters — Electromechanical Contactors and Motor-Starters*, ~~2014, revised 2017~~ 2022 .

UL 60950-1, *Information Technology Equipment — Safety — Part I: General Requirements*, 2007, revised 2019.

UL 61010-1, *Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use — Part 1: General Requirements*, 2012, revised ~~2019~~ 2024 .

Submitter Information Verification

Committee: EEI-AAA
Submittal Date: Mon Mar 10 12:42:09 EDT 2025

Committee Statement

Committee Statement: Revisions reflect the current editions of UL publications
Response Message: FR-12-NFPA 79-2025

Public Input No. 89-NFPA 79-2025 [Section No. K.1.2.10]