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WORKING DRAFT OF CODE-MAKING PANEL MEETING OUTPUT

CONTENT NOT FINAL –SUBJECT TO REVISION PRIOR TO LETTER BALLOT AND PUBLICATION OF FIRST DRAFT REPORT

Document: National Electrical Code®

Revision Cycle: A2019

Meeting Date: January 8 – 20, 2018

Committee Activity: Input Stage

This is a working draft, prepared by NFPA staff, to record the output generated at the Code-Making Panel's First Draft Meetings. It includes draft copies of the First Revisions and any Global Revisions.

It is being made available to Committee members for the purpose of facilitating early review, particularly for those Committee members who may be seeking input from their respective organizations in preparation for the Letter Ballot of the Committee.

First Revision No. 8759-NFPA 70-2018 [Annex A]

Informative Annex A Product Safety Standards

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

This informative annex provides a list of product safety standards used for product listing where that listing is required by this *Code*. It is recognized that this list is current at the time of publication but that new standards or modifications to existing standards can occur at any time while this edition of the *Code* is in effect.

This informative annex does not form a mandatory part of the requirements of this *Code* but is intended ~~only~~ to ~~provide~~ identify for the *Code* users ~~with informational guidance about the product characteristics about~~ the standards upon which *Code* requirements have been based.

Product Standard Name	Product Standard Number
Aboveground Reinforced Thermosetting Resin Conduit (RTRC) and Fittings	UL 2515
Adjustable Speed Electrical Power Drive Systems — Part 5-1: Safety Requirements — Electrical, Thermal and Energy	UL 61800-5-1
Antenna-Discharge Units	UL 452
Arc-Fault Circuit-Interrupters	UL 1699
Armored Cable	UL 4
Attachment Plugs and Receptacles	UL 498
Audio, Video and Similar Electronic Apparatus — Safety Requirements	UL 60065
Audio/Video, Information and Communication Technology Equipment — Part 1: Safety Requirements	UL 62368-1
Automatic Electrical Controls	UL 60730-1
Batteries for Use in Electric Vehicles	UL 2580
Batteries for Use in Light Electric Rail (LER) Applications and Stationary Applications	UL 1973
Belowground Reinforced Thermosetting Resin Conduit (RTRC) and Fittings	UL 2420
Bidirectional Electric Vehicle (EV) Charging System Equipment	UL Subject 9741
Busways	UL 857
Cables — Thermoplastic-Insulated Underground Feeder and Branch-Circuit Cables	UL 493
Cables — Thermoplastic-Insulated Wires and Cables	UL 83
Cables — Thermoset-Insulated Wires and Cables	UL 44
Cable and Cable Fittings for Use in Hazardous (Classified) Locations	UL 2225
Cable Routing Assemblies and Communications Raceways	UL 2024
Cables for Non–Power-Limited Fire-Alarm Circuits	UL 1425
Cables for Power-Limited Fire-Alarm Circuits	UL 1424
Capacitors	UL 810
Cellular Metal Floor Raceways and Fittings	UL 209
Circuit Breakers for Use in Communication Equipment	UL 489A
Circuit Integrity (CI) Cable — Fire Tests for Electrical Circuit Protective Systems	Subject 1724
Circuit Integrity (CI) Cable — Tests for Fire Resistive Cables	UL 2196
Class 2 Power Units	UL 1310
Communications-Circuit Accessories	UL 1863
Communications Cables	UL 444
Community-Antenna Television Cables	UL 1655
Concentrator Photovoltaic Modules and Assemblies	Subject 8703
Conduit, Tubing, and Cable Fittings	UL 514B
Connectors for Use in Photovoltaic Systems	Subject 6703
Cord Sets and Power-Supply Cords	UL 817
Cover Plates for Flush-Mounted Wiring Devices	UL 514D

Product Standard Name	Product Standard Number
Data-Processing Cable	UL 1690
Distributed Generation Wiring Harnesses	Subject 9703
Electric Duct Heaters	UL 1996
Electric Generators	UL 1004-4
Electric Heating Appliances	UL 499
Electric Sign Components	UL 879
Electric Signs	UL 48
Electric Spas, Equipment Assemblies, and Associated Equipment	UL 1563
Electric Vehicle (EV) Charging System Equipment	UL 2202
Electric Vehicle Supply Equipment	UL 2594
Electric Water Heaters for Pools and Tubs	UL 1261
Electrical Apparatus for Explosive Gas Atmospheres — Part 15: Type of Protection “n”	UL 60079-15
Electrical Apparatus for Use in Class I, Zone 1 Hazardous (Classified) Locations Type of Protection — Encapsulation “m”	UL 60079-18
Electrical Apparatus for Use in Zone 20, Zone 21, and Zone 22 Hazardous (Classified) Locations — Protection by Encapsulation “mD”	UL 61241-18
Electrical Apparatus for Use in Zone 21 and Zone 22 Hazardous (Classified) Locations — Protection by Enclosure “tD”	UL 61241-1
Electrical Apparatus for Use in Zone 20, Zone 21, and Zone 22 Hazardous (Classified) Locations — General Requirements	UL 61241-0
Electrical Apparatus for Use in Zone 20, Zone 21, and Zone 22 Hazardous (Classified) Locations — Protection by Intrinsic Safety “iD”	UL 61241-11
Electrical Apparatus for Use in Zone 21 and Zone 22 Hazardous (Classified) Locations — Protection by Pressurization “pD”	UL 61241-2
Electrical Equipment for Measurement, Control, and Laboratory Use —- Part 2-201: Particular Requirements for Control Equipment	UL 61010-2-201
Electrical Intermediate Metal Conduit — Steel	UL 1242
Electrical Metallic Tubing — Aluminum and Stainless Steel	UL 797A
Electrical Metallic Tubing — Steel	UL 797
Electrical Nonmetallic Tubing	UL 1653
Electrical Resistance Heat Tracing for Industrial Applications	IEEE 515
Electrical Rigid Metal Conduit — Steel	UL 6
Electric-Battery-Powered Industrial Trucks	UL 583
Electrochemical Capacitors	UL 810A
Emergency Lighting and Power Equipment	UL 924
Enclosed and Dead-Front Switches	UL 98
Enclosed and Dead-Front Switches for Use in Photovoltaic Systems	Subject 98B
Enclosures for Electrical Equipment, Non-Environmental Considerations	UL 50
Enclosures for Electrical Equipment, Environmental Considerations	UL 50E
Energy Management Equipment	UL 916
Energy Storage Systems and Equipment	UL 9540
Explosion-Proof and Dust-Ignition-Proof Electrical Equipment for Use in Hazardous (Classified) Locations	UL 1203
Explosive Gas Atmospheres — Part 0: Equipment- General requirements	UL 60079-0
Explosive Gas Atmospheres — Part 7: Increased safety “e”	UL 60079-7
Explosive Gas Atmospheres — Part 1: Type of protection – Flameproof “d”	UL 60079-1

Product Standard Name	Product Standard Number
Explosive Gas Atmospheres — Part 5: Type of protection – Powder filling “q”	UL 60079-5
Explosive Gas Atmospheres — Part 6: Type of protection – Oil immersion “o”	UL 60079-6
Fire Pump Controllers	UL 218
Fire Pump Motors	UL 1004-5
Fire Resistive Cables, Test for	UL 2196
Fixture Wire	UL 66
Flame Propagation Height of Electrical and Optical-Fiber Cables Installed Vertically in Shafts, Test for	UL 1666
Flat-Plate Photovoltaic Modules and Panels	UL 1703
Flexible Cords and Cables	UL 62
Flexible Lighting Products	UL 2388
Flexible Metal Conduit	UL 1
Fluorescent-Lamp Ballasts	UL 935
Gas and Vapor Detectors and Sensors	UL 2075
Gas-Burning Heating Appliances for Manufactured Homes and Recreational Vehicles	UL 307B
Gas-Tube-Sign Cable	UL 814
General-Use Snap Switches	UL 20
Ground-Fault Circuit-Interrupters	UL 943
Ground-Fault Sensing and Relaying Equipment	UL 1053
Grounding and Bonding Equipment	UL 467
Hardware for the Support of Conduit, Tubing and Cable	UL 2239
Heating and Cooling Equipment	UL 1995
High-Intensity-Discharge Lamp Ballasts	UL 1029
Household and Similar Electrical Appliances, Part 2: Particular Requirements for Electrical Heat Pumps, Air Conditioners and Dehumidifiers	UL 60335-2-40
Household and Similar Electrical Appliances, Part 2: Particular Requirements for Refrigerating Appliances, Ice-Cream Appliances, and Ice-makers	UL 60335-2-24
Household Refrigerators and Freezers	UL 250
Impedance Protected Motors	UL 1004-2
Industrial Battery Chargers	UL 1564
Industrial Control Equipment	UL 508
Industrial Control Panels	UL 508A
Information Technology Equipment Safety — Part 1: General Requirements	UL 60950-1
Information Technology Equipment Safety — Part 21: Remote Power Feeding	UL 60950-21
Information Technology Equipment Safety — Part 22: Equipment to be Installed Outdoors	UL 60950-22
Information Technology Equipment Safety — Part 23: Large Data Storage Equipment	UL 60950-23
Instrumentation Tray Cable	UL 2250
Insulated Multi-Pole Splicing Wire Connectors	UL 2459
Inverters, Converters, Controllers and Interconnection System Equipment for Use with Distributed Energy Resources	UL 1741
Isolated Power Systems Equipment	UL 1047
Junction Boxes for Swimming Pool Luminaires	UL 1241
Light Emitting Diode (LED) Equipment for Use in Lighting Products	UL 8750
Line Insolation Monitors	UL 1022

Product Standard Name	Product Standard Number
Liquid Fuel-Burning Heating Appliances for Manufactured Homes and Recreational Vehicles	UL 307A
Liquid-Tight Flexible Nonmetallic Conduit	UL 1660
Liquid-Tight Flexible Metal Conduit	UL 360
Lithium Batteries	UL 1642
Low-Voltage Fuses — Fuses for Photovoltaic Systems	Subject 2579
Low-Voltage Fuses — Part 1: General Requirements	UL 248-1
Low-Voltage Fuses — Part 2: Class C Fuses	UL 248-2
Low-Voltage Fuses — Part 3: Class CA and CB Fuses	UL 248-3
Low-Voltage Fuses — Part 4: Class CC Fuses	UL 248-4
Low-Voltage Fuses — Part 5: Class G Fuses	UL 248-5
Low-Voltage Fuses — Part 6: Class H Non-Renewable Fuses	UL 248-6
Low-Voltage Fuses — Part 7: Class H Renewable Fuses	UL 248-7
Low-Voltage Fuses — Part 8: Class J Fuses	UL 248-8
Low-Voltage Fuses — Part 9: Class K Fuses	UL 248-9
Low-Voltage Fuses — Part 10: Class L Fuses	UL 249-10
Low-Voltage Fuses — Part 11: Plug Fuses	UL 248-11
Low-Voltage Fuses — Part 12: Class R Fuses	UL 248-12
Low-Voltage Fuses — Part 13: Semiconductor Fuses	UL 248–13
Low-Voltage Fuses — Part 14: Supplemental Fuses	UL 248–14
Low-Voltage Fuses — Part 15: Class T Fuses	UL 248-15
Low-Voltage Fuses — Part 16: Test Limiters	UL 248-16
Low-Voltage Landscape Lighting Systems	UL 1838
Low-Voltage Lighting Fixtures for Use in Recreational Vehicles	UL 234
Low-Voltage Lighting Systems	UL 2108
Low-Voltage Switchgear and Controlgear — Part 1: General Rules	UL 60947-1
Low-Voltage Switchgear and Controlgear — Part 4-1: Contactors and Motor-Starters — Electromechanical Contactors and Motor-Starters	UL 60947-4-1
Low-Voltage Switchgear and Controlgear —- Part 4-2: Contactors and Motor-Starters —- AC Semiconductor Motor Controllers and Starters	UL 60947-4-2
Low-Voltage Switchgear and Controlgear —- Part 5-1: Control Circuit Devices and Switching Elements —- Electromechanical Control Circuit Devices	UL 60947-5-1
Low-Voltage Switchgear and Controlgear — Part 5-2: Control Circuit Devices and Switching Elements — Proximity Switches	UL 60947-5-2
Low-Voltage Switchgear and Controlgear — Part 7-1: Ancillary Equipment — Terminal Blocks for Copper Conductors	UL 60947-7-1
Low-Voltage Switchgear and Controlgear — Part 7-2: Ancillary Equipment — Protective Conductor Terminal Blocks for Copper Conductors	UL 60947-7-2
Low-Voltage Switchgear and Controlgear — Part 7-3: Ancillary Equipment — Safety Requirements for Fuse Terminal Blocks	UL 60947-7-3
Low Voltage Transformers — Part 1: General Requirements	UL 5085-1
Low Voltage Transformers — Part 3: Class 2 and Class 3 Transformers	UL 5085-3
Luminaire Reflector Kits for Installation on Previously Installed Fluorescent Luminaires, Supplemental Requirements	UL 1598B
Luminaires	UL 1598
Machine-Tool Wires and Cables	UL 1063
Manufactured Wiring Systems	UL 183

Product Standard Name	Product Standard Number
Medical Electrical Equipment — Part 1: General Requirements for Safety	UL 60601–1
Medium-Voltage AC Contactors, Controllers, and Control Centers	UL 347
Medium-Voltage Power Cables	UL 1072
Metal-Clad Cables	UL 1569
Metallic Outlet Boxes	UL 514A
Mobile Home Pipe Heating Cable	Subject 1462
Modular Data Centers	UL Subject 2755
Molded-Case Circuit Breakers, Molded-Case Switches, and Circuit-Breaker Enclosures	UL 489
Molded-Case Circuit Breakers, Molded-Case Switches, and Circuit-Breaker Enclosures for Use with Photovoltaic (PV) Systems	Subject 489B
Molded-Case Circuit Breakers and Molded-Case Switches for Use with Wind Turbines	Subject 489C
Motor Control Centers	UL 845
Motor-Operated Appliances	UL 73
Multi-Pole Connectors for Use in Photovoltaic Systems	Subject 6703A
Neon Transformers and Power Supplies	UL 2161
Nonincendive Electrical Equipment for Use in Class I and II, Division 2 and Class III, Divisions 1 and 2 Hazardous (Classified) Locations	ANSI/ISA-12.12.01
Nonmetallic Outlet Boxes, Flush-Device Boxes, and Covers	UL 514C
Nonmetallic Surface Raceways and Fittings	UL 5A
Nonmetallic Underground Conduit with Conductors	UL 1990
Office Furnishings	UL 1286
Optical Fiber Cable	UL 1651
Panelboards	UL 67
Performance Requirements of Detectors for Flammable Gases	UL 60079-29-1
Personnel Protection Systems for Electric Vehicle (EV) Supply Circuits: Part 1: General Requirements	UL 2231–1
Personnel Protection Systems for Electric Vehicle (EV) Supply Circuits: Part 2: Particular Requirements for Protection Devices for Use in Charging Systems	UL 2231–2
Photovoltaic DC Arc-Fault Circuit Protection	Subject 1699B
Photovoltaic Junction Boxes	Subject 3730
Photovoltaic Wire	UL 4703
Plugs, Receptacles and Couplers for Electrical Vehicles	UL 2251
Portable Electric Luminaires	UL 153
Portable Power-Distribution Equipment	UL 1640
Potting Compounds for Swimming Pool, Fountain, and Spa Equipment	UL 676A
Power Distribution Blocks	UL Subject 1953
Power Outlets	UL 231
Power Units Other Than Class 2	UL 1012
Power-Limited Circuit Cables	UL 13
Power Ventilators	UL 705
Professional Video and Audio Equipment	UL 1419
Programmable Controllers – Part 2: Equipment Requirements and Tests	UL 61131-2
Protectors for Coaxial Communications Circuits	UL 497C

Product Standard Name	Product Standard Number
Protectors for Data Communication and Fire Alarm Circuits	UL 497B
Protectors for Paired-Conductor Communications Circuits	UL 497
Reference Standard for Electrical Wires, Cables, and Flexible Cords	UL 1581
Requirements for Process Sealing Between Electrical Systems and Flammable or Combustible Process Fluids	ANSI/ISA-12.27.01
Residential Pipe Heating Cable	Subject 2049
Roof and Gutter De-Icing Cable Units	Subject 1588
Room Air Conditioners	UL 484
Rotating Electrical Machines — General Requirements	UL 1004-1
Safety of Power Converters for Use in Photovoltaic Power Systems — Part 1: General Requirements	UL 62109-1
Safety of Power Converters for Use in Photovoltaic Power Systems — Part 2: Particular Requirements for Inverters	UL 62109-2
Schedule 40, 80, Type EB and A Rigid PVC Conduit and Fittings	UL 651
Schedule 40 and 80 High Density Polyethylene (HDPE) Conduit	UL 651A
Sealed Wire Connector Systems	UL 486D
Seasonal and Holiday Decorative Products	UL 588
Secondary Protectors for Communications Circuits	UL 497A
Self-Ballasted Lamps and Lamp Adapters	UL 1993
Service-Entrance Cables	UL 854
Smoke Detectors for Fire Alarm Signaling Systems	UL 268
Solar Trackers	Subject 3703
Solid State Overcurrent Protectors	UL 2367
Specialty Transformers	UL 506
Splicing Wire Connectors	UL 486C
Stage and Studio Luminaires and Connector Strips	UL 1573
Standby Batteries	UL 1989
Stationary Engine Generator Assemblies	UL 2200
Strut-Type Channel Raceways and Fittings	UL 5B
Supplemental Requirements for Extra-Heavy Wall Reinforced Thermosetting Resin Conduit (RTRC) and Fittings	UL 2515A
Surface Metal Raceways and Fittings	UL 5
Surface Raceways and Fittings for Use with Data, Signal and Control Circuits	UL 5C
Surge Arresters — Gapped Silicon-Carbide Surge Arresters for AC Power Circuits	IEEE C62.1
Surge Arresters — Metal-Oxide Surge Arresters for AC Power Circuits	IEEE C62.11
Surge Protective Devices	UL 1449
Swimming Pool Pumps, Filters, and Chlorinators	UL 1081
Switchboards	UL 891
Thermally Protected Motors	UL 1004-3
Transfer Switch Equipment	UL 1008
Underfloor Raceways and Fittings	UL 884
Underwater Luminaires and Submersible Junction Boxes	UL 676
Uninterruptible Power Systems	UL 1778
Vacuum Cleaners, Blower Cleaners, and Household Floor Finishing Machines	UL 1017
Waste Disposers	UL 430

Product Standard Name	Product Standard Number
Wind Turbine Generating Systems	Subject 6140
Wind Turbine Generating Systems — Large	UL 6141
Wind Turbine Generating Systems — Small	UL 6142
Wire Connectors	UL 486A, UL 486B
Wireways, Auxiliary Gutters, and Associated Fittings	UL 870

Supplemental Information

File Name	Description	Approved
Annex_A_-_Attachment_Identification_of_Standards_being_added_.1504722261259_REV01_-_McKinney_MEETING.doc	Replacement table - FOR STAFF USE	✓

Submitter Information Verification

Submitter Full Name: NEC-CMP Panel 01
Organization: [Not Specified]
Street Address:
City:
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Submittal Date: Thu Jan 18 22:00:21 EST 2018

Make Editorial Changes Based on Committee Text

Committee Statement and Meeting Notes

Committee Statement: As noted in Section 90.7 “suitability shall be determined by application of requirements that are compatible with this Code”. Rewording of the introductory text aligns with the requirement in 90.7 regarding the use of Standards enumerated in Annex A.

Additionally, the current tabular format doesn’t provide correlation with various Code Articles. Reformatting the present list into a table will assist the user of this Code in determining which Articles, products, and systems apply with which standards. The list of Standards was also reviewed and Standards added that were deemed appropriate. Information included in an attachment to this Public Input identifies those Standards which have been added as part of this Public Input.

Finally, these standards are being added to reflect approved ANSI standards. The Annex requires updating to reflect changes in the UL and to reflect those standards that are suitable for evaluating products and identifying them for a particular purpose.

Response Message:

Committee Notes:

Date	Submitted By	
Jan 18, 2018	NEC-CMP Panel 01	The current table is being replaced by the one in the attachment. The color coding is provided only to indicate to staff which standards are being added to the list. The text above the table in the attachment is not part of the revision.

Public Input No. 2932-NFPA 70-2017 [Annex A]

Public Input No. 3952-NFPA 70-2017 [Annex A]

Public Input No. 3547-NFPA 70-2017 [Annex A]

Public Input No. 3023-NFPA 70-2017 [Annex A]

Public Input No. 3176-NFPA 70-2017 [Annex A]

Public Input No. 3189-NFPA 70-2017 [Annex A]

First Revision No. 8760-NFPA 70-2018 [Annex H [Excluding any Sub-Sections]]

Informative Annex H is not a part of the requirements of this NFPA document and is included for informational purposes only. ~~This informative annex is informative unless specifically adopted by the local jurisdiction~~ Informative Annex H is intended to provide a template and sample language for local jurisdictions adopting the National Electrical Code®.

Submitter Information Verification

Submitter Full Name: NEC-CMP Panel 01
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Make Editorial Changes Based on Committee Text

Committee Statement and Meeting Notes

Committee Statement: This revision provides additional clarity and removes redundant language.
Response Message:

Public Input No. 3880-NFPA 70-2017 [Annex H [Excluding any Sub-Sections]]

First Revision No. 8762-NFPA 70-2018 [Annex I]

Informative Annex I Recommended Tightening Torque Tables from UL Standard 486A-~~B~~ 486B

This informative annex is not a part of the requirements of this NFPA document, but is included for informational purposes only.

In the absence of connector or equipment manufacturer's recommended torque values, Table I.1, Table I.2, and Table I.3 may be used to correctly tighten screw-type connections for power and lighting circuits*. Control and signal circuits may require different torque values, and the manufacturer should be contacted for guidance.

*For proper termination of conductors, it is very important that field connections be properly tightened. In the absence of manufacturer's instructions on the equipment, the torque values given in these tables are recommended. Because it is normal for some relaxation to occur in service, checking torque values sometime after installation is not a reliable means of determining the values of torque applied at installation.

Table I.1 Tightening Torque for Screws

	Tightening Torque, N-m (lbf-in.)							
	Slotted head No. 10 and larger*							
Test Conductor Installed in Connector		Slot width 1.2 mm (0.047 in.) or less and slot length 6.4 mm (1/4 in.) or less		Slot width over 1.2 mm (0.047 in.) or slot length over 6.4 mm (1/4 in.)		Split-bolt connectors		Other connectors	
AWG or kcmil	mm^2								
30–10	0.05–5.3	2.3	(20)	4.0	(35)	9.0	(80)	8.5	(75)
8	8.4	2.8	(25)	4.5	(40)	9.0	(80)	8.5	(75)
6–4	13.2–21.2	4.0	(35)	5.1	(45)	18.5	(165)	12.4	(110)
3	26.7	4.0	(35)	5.6	(50)	31.1	(275)	16.9	(150)
2	33.6	4.5	(40)	5.6	(50)	31.1	(275)	16.9	(150)
1	42.4	—		5.6	(50)	31.1	(275)	16.9	(150)
1/0–2/0	53.5–67.4	—		5.6	(50)	43.5	(385)	20.3	(180)
3/0–4/0	85.0–107.2	—		5.6	(50)	56.5	(500)	28.2	(250)
250–350	127–177	—		5.6	(50)	73.4	(650)	36.7	(325)
400	203	—		5.6	(50)	93.2	(825)	36.7	(325)
500	253	—		5.6	(50)	93.2	(825)	42.4	(375)
600–750	304–380	—		5.6	(50)	113.0	(1000)	42.4	(375)
800–1000	405–508	—		5.6	(50)	124.3	(1100)	56.5	(500)
1250–2000	635–1010	—		—		124.3	(1100)	67.8	(600)

* For values of slot width or length not corresponding to those specified, select the largest torque value associated with the conductor size. Slot width is the nominal design value. Slot length shall be measured at the bottom of the slot.

Table I.2 Tightening Torque for Slotted Head Screws Smaller Than No. 10 Intended for Use with 8 AWG (8.4 mm^2) or Smaller Conductors

Slot Length of Screw[a]		Tightening Torque, N-m (lbf-in.)	
		Slot width of screw smaller than 1.2 mm (0.047 in.)[b]	Slot width of screw 1.2 mm (0.047 in.) and larger[b]
mm	in.		
Less than 4	Less than 5/32	0.79 (7)	1.0 (9)
4	5/32	0.79 (7)	1.4 (12)
4.8	3/16	0.79 (7)	1.4 (12)
5.5	7/32	0.79 (7)	1.4 (12)
6.4	1/4	1.0 (9)	1.4 (12)
7.1	9/32		

	1.7 (15)
Above 7.1	Above 9/32

	2.3 (20)

[a] For slot lengths of intermediate values, select torques pertaining to next shorter slot lengths. Also, see 9.1.9.6 of UL 486A-

~~2003~~

486B-2013 , *Wire Connectors*

~~and Soldering Lugs for Use with Copper Conductors~~

, for screws with multiple tightening means. Slot length shall be measured at the bottom of the slot.

[b] Slot width is the nominal design value.

Table I.3 Tightening Torque for Screws with Recessed Allen or Square Drives

Socket Width Across Flats [a]		Tightening Torque, N-m (lbf-in.)	
mm	in.		
3.2	1/8	5.1	(45)
4.0	5/32	11.3	(100)
4.8	3/16	13.5	(120)
5.5	7/32	16.9	(150)
6.4	1/4	22.5	(200)
7.9	5/16	31.1	(275)
9.5	3/8	42.4	(375)
12.7	1/2	56.5	(500)
14.3	9/16	67.8	(600)

[a] See 9.1.9.6 of UL 486A-2003, *Wire Connectors and Soldering Lugs for Use with Copper Conductors* , for screws with multiple tightening means.

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Make Editorial Changes Based on Committee Text

Committee Statement and Meeting Notes

Committee Statement: The reference to UL 486A is revised to reflect the correct reference of UL 486A-486B, “Wire Connectors”.

Response Message:

Committee Notes:

Date	Submitted By	
Jan 18, 2018	NEC-CMP Panel 01	Only changes are to update reference to UL 486A-486B.

Public Input No. 366-NFPA 70-2017 [Global Input]

First Revision No. 8304-NFPA 70-2018 [Definition: Accessible (as applied to equipment).]

[100] Accessible (as applied to equipment).

~~Admitting close approach; not guarded by locked doors, elevation, or other effective means~~ Capable of being reached for operation, renewal, and inspection .

(CMP-1)

Submitter Information Verification

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Make Editorial Changes Based on Committee Text

Committee Statement and Meeting Notes

Committee Statement: The definition is revised for clarity where applied in the code. The changes will more closely correlate the definition to that of Accessible, Readily.

Response Message:

Public Input No. 1009-NFPA 70-2017 [Definition: Accessible (as applied to equipment).]

First Revision No. 8332-NFPA 70-2018 [Definition: Field Evaluation Body (FEB).]

[100] Field Evaluation Body (FEB).

An organization or part of an organization that performs field evaluations of electrical or other equipment. [**790,**~~2012~~ 2018] (CMP-1)

Informational Note: NFPA 790-2018, *Standard for Competency of Third-Party Field Evaluation Bodies* , provides guidelines for establishing the qualification and competency of a body performing field evaluations of electrical products and assembles with electrical components.

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Make Editorial Changes Based on Committee Text

Committee Statement and Meeting Notes

Committee Statement: The term “Field Evaluation Body (FEB)" and the accompanying definition are not clear to many users of the NEC. The new informational note adds clarity to those unfamiliar with the term and can guide the user to another resource for additional information. The standard reference to NFPA 790 is updated to the latest edition.

Response Message:

Public Input No. 2695-NFPA 70-2017 [Definition: Field Evaluation Body (FEB).]

Public Input No. 3414-NFPA 70-2017 [Definition: Field Evaluation Body (FEB).]

First Revision No. 8338-NFPA 70-2018 [Definition: Field Labeled (as applied to evaluated products...]

[100] Field Labeled (as applied to evaluated products).

Equipment or materials to which has been attached a label, symbol, or other identifying mark of an FEB indicating the equipment or materials were evaluated and found to comply with requirements as described in an accompanying field evaluation report. [**790,** 2018] (CMP-1)

Submitter Information Verification

Submitter Full Name: NEC-CMP Panel 01
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jan 16 10:27:46 EST 2018

Make Editorial Changes Based on Committee Text

Committee Statement and Meeting Notes

Committee Statement: This definition is extracted from NFPA 790, so the extract tag has been added to the end of the definition for clarity.
Response Message:

Public Input No. 628-NFPA 70-2017 [Definition: Field Labeled (as applied to evaluated products...]

First Revision No. 8342-NFPA 70-2018 [Definition: Fitting.]

[100] Fitting.

~~An accessory such as a locknut, bushing, or other part of a wiring system that is intended primarily to perform a mechanical rather than an electrical function.~~ A means for connecting raceway, cable or cord to an enclosure, box, or raceway system.

(CMP-1)

Submitter Information Verification

Submitter Full Name: NEC-CMP Panel 01
Organization: [Not Specified]
Street Address:
City:
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Submittal Date: Tue Jan 16 10:38:02 EST 2018

Make Editorial Changes Based on Committee Text

Committee Statement and Meeting Notes

Committee Statement: The definition of "Fitting" was revised for clarity. The revised definition corresponds with applicable product standards. The proposed phrase “for connecting units or sections forming structural systems” was not added because it is unclear what “structural systems” refers to.

Response Message:

Public Input No. 3981-NFPA 70-2017 [Definition: Fitting.]

First Revision No. 8360-NFPA 70-2018 [Definition: Labeled.]

[100] Labeled.

Equipment or materials to which has been attached a label, symbol, or other identifying mark of an organization that is acceptable to the authority having jurisdiction and concerned with product evaluation, that maintains periodic inspection of production of labeled equipment or materials, and by whose labeling the manufacturer indicates compliance with appropriate standards or performance in a specified manner. (CMP-1)

Informational Note: When a listed product is of such a size, shape, material or surface texture that it is not prossible to apply legibly the complete label to the product, the complete label may appear on the smallest unit container in which the product is packaged.

Submitter Information Verification

Submitter Full Name: NEC-CMP Panel 01
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Street Address:
City:
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Make Editorial Changes Based on Committee Text

Committee Statement and Meeting Notes

Committee Statement: The added informational note explains that even though a section of the NEC may require a product to be labeled, it is common practice to have the label, symbol, or other identifying mark applied to the packaging or a tag in some instances.

Response Message:

Public Input No. 3148-NFPA 70-2017 [Definition: Labeled.]

First Revision No. 8381-NFPA 70-2018 [Definition: Qualified Person.]

[100] Qualified Person.

One who has skills and knowledge related to the construction and operation of the electrical equipment and installations and has received safety training to recognize and avoid the hazards involved.

(CMP-1)

Informational Note: Refer to NFPA 70E-~~2012~~ 2018 , *Standard for Electrical Safety in the Workplace*, for electrical safety training requirements.

Submitter Information Verification

Submitter Full Name: NEC-CMP Panel 01
Organization: [Not Specified]
Street Address:
City:
State:
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Make Editorial Changes Based on Committee Text

Committee Statement and Meeting Notes

Committee Statement: Utilizing the most current version of NFPA 70E, the 2018 edition, will assist the user as well as make the Informational Note accurate and up to date.

Response Message:

Public Input No. 4202-NFPA 70-2017 [Definition: Qualified Person.]

First Revision No. 8370-NFPA 70-2018 [Detail]

New 90.2(A)(5)

(5) Installations supplying shore power to ships and watercraft including monitoring of leakage current

Submitter Information Verification

Submitter Full Name: NEC-CMP Panel 01
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jan 16 12:52:36 EST 2018

Make Editorial Changes Based on Committee Text

Committee Statement and Meeting Notes

Committee Statement: This revision clarifies that the NEC has purview over the hazards created when watercraft are connected to shore power.

Note that this Detail Revision falls within FR 8206 on 90.2(A) but is to be voted on separately.

Response Message:

Public Input No. 2560-NFPA 70-2017 [Section No. 90.2(A)]

First Revision No. 8763-NFPA 70-2018 [Detail]

In the note for Table 110.31, update the edition of ANSI/IEEE C2 to 2017.

Submitter Information Verification

Submitter Full Name: NEC-CMP Panel 01
Organization: [Not Specified]
Street Address:
City:
State:
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Submittal Date: Thu Jan 18 22:29:24 EST 2018

Make Editorial Changes Based on Committee Text

Committee Statement and Meeting Notes

Committee Statement: The latest edition of ANSI/IEEE C2 is the 2017 Edition. The revised text will provide consistency in the reference throughout the NEC. The National Electrical Safety Code is referenced in numerous places in the NEC. The reference is updated to reflect the date of the latest edition.

Response Message:

First Revision No. 8758-NFPA 70-2018 [Global Input]

Modify the Scope of Article 100 as follows:

Scope. This article contains only those definitions essential to the application of this Code. It is not intended to include commonly defined general terms or commonly defined technical terms from related codes and standards. In general, only those terms that are used in two or more articles are defined in Article 100. ~~Other definitions are included in the article in which they are used but may be referenced in Article 100.~~ Definitions are also found in the xxx.2 sections of other articles.

Part I of this article contains definitions intended to apply wherever the terms are used throughout this Code. Part II contains definitions applicable to installations and equipment operating at over 1000 volts, nominal. Part III contains definitions applicable to Hazardous (Classified) Locations.

Create a new Part III in Article 100, move the following definitions from Part I into the new Part III, and strike "[as applied to Hazardous (Classified) Locations]" as follows:

Part III. Hazardous (Classified Locations)

Associated Apparatus ~~[as applied to Hazardous (Classified) Locations].~~

Apparatus in which the circuits are not necessarily intrinsically safe themselves but that affects the energy in the intrinsically safe circuits and is relied on to maintain intrinsic safety. Such apparatus is one of the following:

(1) Electrical apparatus that has an alternative type of protection for use in the appropriate hazardous (classified) location

(2) Electrical apparatus not so protected that shall not be used within a hazardous (classified) location

(CMP-14)

Informational Note No. 1: Associated apparatus has identified intrinsically safe connections for intrinsically safe apparatus and also may have connections for nonintrinsically safe apparatus.

Informational Note No. 2: An example of associated apparatus is an intrinsic safety barrier, which is a network designed to limit the energy (voltage and current) available to the protected circuit in the hazardous (classified) location, under specified fault conditions.

Associated Nonincendive Field Wiring Apparatus ~~[as applied to Hazardous (Classified) Locations].~~

Apparatus in which the circuits are not necessarily nonincendive themselves but that affect the energy in nonincendive field wiring circuits and are relied upon to maintain nonincendive energy levels. Such apparatus are one of the following:

(1) Electrical apparatus that has an alternative type of protection for use in the appropriate hazardous (classified) location

(2) Electrical apparatus not so protected that shall not be used in a hazardous (classified) location

(CMP-14)

Informational Note: Associated nonincendive field wiring apparatus has designated associated nonincendive field wiring apparatus connections for nonincendive field wiring apparatus and may also have connections for other electrical apparatus.

Combustible Dust ~~[as applied to Hazardous (Classified) Locations].~~

Dust particles that are 500 microns or smaller (i.e., material passing a U.S. No. 35 Standard Sieve as defined in ASTM E11-2015, *Standard Specification for Woven Wire Test Sieve Cloth and Test Sieves*), and present a fire or explosion hazard when dispersed and ignited in air. (CMP-14)

Informational Note: See ASTM E1226-2012a, *Standard Test Method for Explosibility of Dust Clouds*, or ISO 6184-1, *Explosion protection systems — Part 1: Determination of explosion indices of combustible dusts in air*, for procedures for determining the explosibility of dusts.

Combustible Gas Detection System ~~[as applied to Hazardous (Classified) Locations].~~

A protection technique utilizing stationary gas detectors in industrial establishments. (CMP-14)

Control Drawing ~~[as applied to Hazardous (Classified) Locations].~~

A drawing or other document provided by the manufacturer of the intrinsically safe or associated apparatus, or of the nonincendive field wiring apparatus or associated nonincendive field wiring apparatus, that details the allowed interconnections between the intrinsically safe and associated apparatus or between the nonincendive field wiring apparatus or associated nonincendive field wiring apparatus. (CMP-14)

Cord Connector ~~[as applied to Hazardous (Classified) Locations].~~

A fitting intended to terminate a cord to a box or similar device and reduce the strain at points of termination and may include an explosionproof, a dust-ignitionproof, or a flameproof seal. (CMP-14)

Dust-Ignitionproof ~~[as applied to Hazardous (Classified) Locations].~~

Equipment enclosed in a manner that excludes dusts and does not permit arcs, sparks, or heat otherwise generated or liberated inside of the enclosure to cause ignition of exterior accumulations or atmospheric suspensions of a specified dust on or in the vicinity of the enclosure. (CMP-14)

Informational Note: For further information on dust-ignitionproof enclosures, see ANSI/UL 1202-2013, *Enclosures for Electrical Equipment,* and ANSI/UL 1203-2013, *Explosionproof and Dust-Ignitionproof Electrical Equipment for Hazardous (Classified) Locations.*

Hermetically Sealed ~~[as applied to Hazardous (Classified) Locations].~~

Equipment sealed against the entrance of an external atmosphere where the seal is made by fusion, for example, soldering, brazing, welding, or the fusion of glass to metal. (CMP-14)

Informational Note: For further information, see ANSI/ISA-12.12.01-2013, *Nonincendive Electrical Equipment for Use in Class I and II, Division 2, and Class III, Divisions 1 and 2 Hazardous (Classified) Locations*.

Intrinsically Safe System ~~[as applied to Hazardous (Classified) Locations].~~

An assembly of interconnected intrinsically safe apparatus, associated apparatus, and interconnecting cables, in that those parts of the system that may be used in hazardous (classified) locations are intrinsically safe circuits. (CMP-14)

Informational Note: An intrinsically safe system may include more than one intrinsically safe circuit.

Nonincendive Circuit ~~[as applied to Hazardous (Classified) Locations].~~

A circuit, other than field wiring, in which any arc or thermal effect produced under intended operating conditions of the equipment, is not capable, under specified test conditions, of igniting the flammable gas–air, vapor–air, or dust–air mixture. (CMP-14)

Informational Note: Conditions are described in ANSI/ISA-12.12.01-2013, *Nonincendive Electrical Equipment for Use in Class I and II, Division 2, and Class III, Divisions 1 and 2 Hazardous (Classified) Locations*.

Nonincendive Component ~~[as applied to Hazardous (Classified) Locations].~~

A component having contacts for making or breaking an incendive circuit and the contacting mechanism is constructed so that the component is incapable of igniting the specified flammable gas–air or vapor–air mixture. The housing of a nonincendive component is not intended to exclude the flammable atmosphere or contain an explosion. (CMP-14)

Informational Note: For further information, see ANSI/ISA-12.12.01-2013, *NonincendiveElectrical Equipment for Use in Class I and II, Division 2, and Class III, Divisions 1 and 2 Hazardous (Classified) Locations.*

Nonincendive Equipment ~~[as applied to Hazardous (Classified) Locations].~~

Equipment having electrical/electronic circuitry that is incapable, under normal operating conditions, of causing ignition of a specified flammable gas–air, vapor–air, or dust–air mixture due to arcing or thermal means. (CMP-14)

Informational Note: For further information, see ANSI/ISA-12.12.01-2013, *Nonincendive Electrical Equipment for Use in Class I and II, Division 2, and Class III, Divisions 1 and 2 Hazardous (Classified) Locations*.

Nonincendive Field Wiring ~~[as applied to Hazardous (Classified) Locations].~~

Wiring that enters or leaves an equipment enclosure and, under normal operating conditions of the equipment, is not capable, due to arcing or thermal effects, of igniting the flammable gas–air, vapor–air, or dust–air mixture. Normal operation includes opening, shorting, or grounding the field wiring. (CMP-14)

Nonincendive Field Wiring Apparatus ~~[as applied to Hazardous (Classified) Locations].~~

Apparatus intended to be connected to nonincendive field wiring. (CMP-14)

Informational Note: For further information, see ANSI/ISA-12.12.01-2013, *Nonincendive Electrical Equipment for Use in Class I and II, Division 2, and Class III, Divisions 1 and 2 Hazardous (Classified) Locations*.

Oil Immersion ~~[as applied to Hazardous (Classified) Locations].~~

Electrical equipment immersed in a protective liquid in such a way that an explosive atmosphere that may be above the liquid or outside the enclosure cannot be ignited. (CMP-14)

Pressurized ~~[as applied to Hazardous (Classified) Locations].~~

The process of supplying an enclosure with a protective gas with or without continuous flow, at sufficient pressure to prevent the entrance of combustible dust or ignitible fibers/flyings. (CMP-14)

Process Seal ~~[as applied to Hazardous (Classified) Locations].~~

A seal between electrical systems and flammable or combustible process fluids where a failure could allow the migration of process fluids into the premises' wiring system. (CMP-14)

Purged and Pressurized ~~[as applied to Hazardous (Classified) Locations].~~

The process of (1) purging, supplying an enclosure with a protective gas at a sufficient flow and positive pressure to reduce the concentration of any flammable gas or vapor initially present to an acceptable level; and (2) pressurization, supplying an enclosure with a protective gas with or without continuous flow at sufficient pressure to prevent the entrance of a flammable gas or vapor, a combustible dust, or an ignitible fiber. (CMP-14)

Informational Note: For further information, see ANSI/NFPA 496-2013, *Purged and Pressurized Enclosures for Electrical Equipment*.

Simple Apparatus ~~[as applied to Hazardous (Classified) Locations].~~

An electrical component or combination of components of simple construction with well-defined electrical parameters that does not generate more than 1.5 volts, 100 mA, and 25 mW, or a passive component that does not dissipate more than 1.3 watts and is compatible with the intrinsic safety of the circuit in which it is used.

(CMP-14)

Informational Note: The following apparatus are examples of simple apparatus:

(1) Passive components; for example, switches, junction boxes, resistance temperature devices, and simple semiconductor devices such as LEDs

(2) Sources of stored energy consisting of single components in simple circuits with well-defined parameters; for example, capacitors or inductors, whose values are considered when determining the overall safety of the system

(3) Sources of generated energy; for example, thermocouples and photocells, that do not generate more than 1.5 volts, 100 mA, and 25 mW

Unclassified Locations ~~[as applied to Hazardous (Classified) Locations].~~

Locations determined to be neither Class I, Division 1; Class I, Division 2; Class I, Zone 0; Class I, Zone 1; Class I, Zone 2; Class II, Division 1; Class II, Division 2; Class III, Division 1; Class III, Division 2; Zone 20; Zone 21; Zone 22; nor any combination thereof. (CMP-14)

Submitter Information Verification

Submitter Full Name: NEC-CMP Panel 01
Organization: [Not Specified]
Street Address:

Make Editorial Changes Based on Committee Text

City:

State:

Zip:

Submittal Date: Thu Jan 18 21:20:04 EST 2018

Committee Statement and Meeting Notes

Committee Statement: The Scope of Article 100 is modified to include new Part III “Hazardous Classified Locations”. This revision relocates only those terms with bracketed text [as applied to Hazardous (Classified) Locations] to new Part III for added clarity and usability.

Response Message:

Public Input No. 1202-NFPA 70-2017 [Article 100 [Excluding any Sub-Sections]]

Public Input No. 3618-NFPA 70-2017 [Article 100]

First Revision No. 8484-NFPA 70-2018 [New Section after 110.12(B)]

110.12

(C) Cables and Conductors.

Cables and conductors installed exposed on the surface of ceilings and sidewalls shall be supported by the building structure in such a manner that the cables and conductors will not be damaged by normal building use. Such cables and conductors shall be secured by hardware including straps, staples, cable ties, hangers, or similar fittings designed and installed so as not to damage the cable. The installation shall also conform with 300.4 and 300.11. Nonmetallic cable ties and other nonmetallic cable accessories used to secure and support cables in other spaces used for environmental air (plenums) shall be listed as having low smoke and heat release properties.

Informational Note No. 1: Accepted industry practices are described in ANSI/NECA/BICSI 568-2006, Standard for Installing Commercial Building Telecommunications Cabling; ANSI/NECA/FOA 301-2009, Standard for Installing and Testing Fiber Optic Cables; and other ANSI-approved installation standards.

Informational Note No. 2: See 4.3.11.2.6.5 and 4.3.11.5.5.6 of NFPA 90A-2018, Standard for the Installation of Air-Conditioning and Ventilating Systems, for discrete combustible components installed in accordance with 300.22(C).

Informational Note No. 3: Paint, plaster, cleaners, abrasives, corrosive residues, or other contaminants may result in an undetermined alteration of optical fiber cable properties.

Submitter Information Verification

Submitter Full Name: NEC-CMP Panel 01
Organization: [Not Specified]
Street Address:
City:
State:
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Submittal Date: Wed Jan 17 08:15:06 EST 2018

Make Editorial Changes Based on Committee Text

Committee Statement and Meeting Notes

Committee Statement: This revision coordinates with potential actions to relocate the content of sections 760.24, 770.24, 725.24, 800.24, 820.24, 830.24, and 840.24 to a new Section 110.12(C). This is the recommendation of the Correlating Committee Usability task group to improve the usability of Chapters 7 and 8. This action would support consolidation of redundant requirements and relocating them into a new general rule.

Response Message:

Public Input No. 2909-NFPA 70-2017 [New Section after 110.12(B)]

First Revision No. 8510-NFPA 70-2018 [Section No. 110.14(D)]

(D) ~~Installation~~ Terminal Connection Torque .

~~Where a tightening torque is indicated as a numeric value~~ Tightening torque values for terminal connections shall be as indicated on equipment or in installation instructions provided by the manufacturer~~, a calibrated torque tool~~ . An approved means shall be used to achieve the indicated torque value~~, unless the equipment manufacturer has provided installation instructions for an alternative method of achieving the required torque.~~ .

Informational Note No. 1: Examples of approved means of achieving the indicated torque values include torque tools or visual indicators that demonstrate that the proper torque has been applied.

Informational Note No. 2: Informative Annex I, Recommended Tightening Torque Tables from UL Standard 486A-486B, provides torque values in the absence of manufacturer's recommendations.

Informational Note No. 3: Additional information for torqueing threaded connections and terminations can be found in Section 8.11 of NFPA 70B-2016, *Recommended Practice for Electrical Equipment Maintenance* .

Submitter Information Verification

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Organization: [Not Specified]
Street Address:
City:
State:
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Submittal Date: Wed Jan 17 09:39:18 EST 2018

Make Editorial Changes Based on Committee Text

Committee Statement and Meeting Notes

Committee Statement: Revision of the sub-section title provides clarity by reflecting the content of the sub-section. The added informational notes provide insight into providing correct torque for threaded connections and terminations. The first sentence is edited for clarity. The word "calibrated" is deleted. A new requirement for an approved means was introduced to allow viable practical approaches that conform to the appropriate torqueing requirements. A new informational note was added to provide guidance to help ensure that a proper torque has been achieved, including an option for visual indicators.

Response Message:

Public Input No. 1613-NFPA 70-2017 [Section No. 110.14(D)]

Public Input No. 2645-NFPA 70-2017 [Section No. 110.14(D)]

Public Input No. 1619-NFPA 70-2017 [Section No. 110.14(D)]

Public Input No. 3418-NFPA 70-2017 [New Section after 110.14(D)]

Public Input No. 522-NFPA 70-2017 [Section No. 110.14(D)]

First Revision No. 8575-NFPA 70-2018 [Section No. 110.16(B)]

(B) Service Equipment.

In other than dwelling units, in addition to the requirements in (A), a permanent label shall be field or factory applied to service equipment rated 1200 amps or more. The label shall meet the requirements of 110.21(B) and contain the following information:

(1) Nominal system voltage

(2) Available fault current at the service overcurrent protective devices

(3) The clearing time of service overcurrent protective devices based on the available fault current at the service equipment

(4) The date the label was applied

Exception: Service equipment labeling shall not be required if an arc flash label is applied in accordance with acceptable industry practice.

Informational Note No. 1: *NFPA 70E*-~~2015~~ 2018 , *Standard for Electrical Safety in the Workplace*, provides guidance, such as determining severity of potential exposure, planning safe work practices, arc flash labeling, and selecting personal protective equipment.

Informational Note No. 2: ANSI Z535.4-2011, *Product Safety Signs and Labels*, provides guidelines for the design of safety signs and labels for application to products.

Informational Note No. 3: Acceptable industry practices for equipment labeling are described in *NFPA 70E*-~~2015~~ 2018 *Standard for Electrical Safety in the Workplace*. This standard provides specific criteria for developing arc-flash labels for equipment that provides nominal system voltage, incident energy levels, arc-flash boundaries, minimum required levels of personal protective equipment, and so forth.

Submitter Information Verification

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City:
State:
Zip:
Submittal Date: Wed Jan 17 13:54:57 EST 2018

Make Editorial Changes Based on Committee Text

Committee Statement and Meeting Notes

Committee Statement: The reference to NFPA 70E has been updated to the most recent edition.
Response Message:

Public Input No. 3559-NFPA 70-2017 [Section No. 110.16]

First Revision No. 8580-NFPA 70-2018 [Section No. 110.21(A)(2)]

(2) Reconditioned Equipment.

Reconditioned equipment shall be marked with the name, trademark, or other descriptive marking by which the organization responsible for reconditioning the electrical equipment can be identified, along with the date of the reconditioning.

Reconditioned equipment shall be identified as “reconditioned” and approval of the reconditioned equipment shall not be based solely on the equipment’s original listing.

Exception: In industrial occupancies, where conditions of maintenance and supervision ensure that only qualified persons service the equipment, the markings indicated in 110.21(A)(2) shall not be required for equipment that is reconditioned by the owner or operator as part of a regular equipment maintenance program .

Informational Note No. 1 : Industry standards are available for application of reconditioned and refurbished equipment. Normal servicing of equipment that remains within a facility should not be considered reconditioning or refurbishing.

Informational Note No. 2: The term "reconditioned" may be interchangeable with the terms "rebuilt", "refurbished", or "remanufactured".

Submitter Information Verification

Submitter Full Name: NEC-CMP Panel 01
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Street Address:
City:
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Submittal Date: Wed Jan 17 14:23:49 EST 2018

Make Editorial Changes Based on Committee Text

Committee Statement and Meeting Notes

Committee Statement: This revision provides clarity as to when the exception applies. The additional informational note provides clarity about terms that may be interchangeable.

Response Message:

Public Input No. 1039-NFPA 70-2017 [Section No. 110.21(A)(2)]

Public Input No. 1040-NFPA 70-2017 [Section No. 110.21(A)(2)]

First Revision No. 8600-NFPA 70-2018 [Section No. 110.22(A)]

(A) General.

Each disconnecting means shall be legibly marked to indicate its purpose unless located and arranged so the purpose is evident. In other than one- or two-family dwellings, the marking shall include the identification of the circuit source that supplies the disconnecting means. The marking shall be of sufficient durability to withstand the environment involved.

Submitter Information Verification

Submitter Full Name: NEC-CMP Panel 01
Organization: [Not Specified]
Street Address:
City:
State:
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Submittal Date: Wed Jan 17 15:12:46 EST 2018

Make Editorial Changes Based on Committee Text

Committee Statement and Meeting Notes

Committee Statement: Identifying the source of a circuit or feeder at the disconnecting enclosure will correlate with 408.4 and promote safety.

Response Message:

Public Input No. 1784-NFPA 70-2017 [Section No. 110.22(A)]

First Revision No. 8617-NFPA 70-2018 [Section No. 110.24(A)]

(A) Field Marking.

Service equipment at other than dwelling units shall be legibly marked in the field with the ~~maximum~~ available fault current. The field marking(s) shall include the date the fault-current calculation was performed and be of sufficient durability to withstand the environment involved. The calculation shall be documented and made available to those authorized to design, install, inspect, maintain, or operate the system.

Informational Note No. 1 : The available fault-current marking(s) addressed in 110.24 is related to required short-circuit current ratings of equipment. *NFPA 70E* ~~2015~~ 2018 , *Standard for Electrical Safety in the Workplace,* provides assistance in determining the severity of potential exposure, planning safe work practices, and selecting personal protective equipment.

Informational Note No. 2: Values of available fault current for use in determining appropriate minimum short circuit current ratings of service equipment are available from electric utilities in published or other forms.

Submitter Information Verification

Submitter Full Name: NEC-CMP Panel 01
Organization: [Not Specified]
Street Address:
City:
State:
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Submittal Date: Wed Jan 17 16:11:35 EST 2018

Make Editorial Changes Based on Committee Text

Committee Statement and Meeting Notes

Committee Statement: "Maximum" is deleted in front of "maximum available fault current" because it is not needed. The reference to NFPA 70E is updated to the latest edition. A new informational note was added to advise that values of available fault current for use in determining appropriate minimum short circuit current ratings of service equipment are available from electric utilities in published or other forms.

Response Message:

Public Input No. 1622-NFPA 70-2017 [Section No. 110.24(A)]

Public Input No. 1249-NFPA 70-2017 [Section No. 110.24(A)]

First Revision No. 8620-NFPA 70-2018 [Section No. 110.24(B)]

(B) Modifications.

When modifications to the electrical installation occur that affect the ~~maximum~~ available fault current at the service, the ~~maximum~~ available fault current shall be verified or recalculated as necessary to ensure the service equipment ratings are sufficient for the ~~maximum~~ available fault current at the line terminals of the equipment. The required field marking(s) in 110.24(A) shall be adjusted to reflect the new level of ~~maximum~~ available fault current.

Exception: The field marking requirements in 110.24(A) and 110.24(B) shall not be required in industrial installations where conditions of maintenance and supervision ensure that only qualified persons service the equipment.

Submitter Information Verification

Submitter Full Name: NEC-CMP Panel 01
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Make Editorial Changes Based on Committee Text

Committee Statement and Meeting Notes

Committee Statement: "Maximum" is deleted in front of "maximum available fault current" because it is not needed.

Response Message:

Public Input No. 1250-NFPA 70-2017 [Section No. 110.24(B)]

First Revision No. 8621-NFPA 70-2018 [Section No. 110.26(A) [Excluding any Sub-Sections]]

Working space for equipment operating at 1000 volts, nominal, or less to ground and likely to require examination, adjustment, servicing, or maintenance while energized shall comply with the dimensions of 110.26(A)(1), (A)(2), (A)(3), and (A)(4) or as required or permitted elsewhere in this *Code*.

Informational Note: NFPA 70E-~~2015~~ 2018 , *Standard for Electrical Safety in the Workplace*, provides guidance, such as determining severity of potential exposure, planning safe work practices including establishing an electrically safe work condition , arc flash labeling, and selecting personal protective equipment. Requirements in this Code do not endorse unjustified work on energized electrical equipment.

Submitter Information Verification

Submitter Full Name: NEC-CMP Panel 01
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Street Address:
City:
State:
Zip:
Submittal Date: Wed Jan 17 17:16:03 EST 2018

Make Editorial Changes Based on Committee Text

Committee Statement and Meeting Notes

Committee Statement: The new text raises awareness of the hazards that arise while working on energized electrical equipment. The reference to NFPA 70E has been updated to the current edition.

Response Message:

Public Input No. 2662-NFPA 70-2017 [Section No. 110.26]

First Revision No. 8653-NFPA 70-2018 [Section No. 110.26(C)(2)]

(2) Large Equipment.

For equipment rated 1200 amperes or more and over 1.8 m (6 ft) wide that contains overcurrent devices, switching devices, or control devices, or where the combined ampere rating of service disconnecting means installed in accordance with 230.71 is 1200 amperes or more, 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 (6½ ft) high at each end of the working space.

A single entrance to and egress from the required working space shall be permitted where either of the conditions in 110.26(C)(2)(a) or (C)(2)(b) is met.

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

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

Submitter Information Verification

Submitter Full Name: NEC-CMP Panel 01
Organization: [Not Specified]
Street Address:
City:
State:
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Submittal Date: Thu Jan 18 09:09:57 EST 2018

Make Editorial Changes Based on Committee Text

Committee Statement and Meeting Notes

Committee Statement: This revision addresses the hazards presented by two or more service disconnects with combined ratings of 1200 amps or more.

Response Message:

Public Input No. 2693-NFPA 70-2017 [Section No. 110.26(C)(2)]

First Revision No. 8658-NFPA 70-2018 [Section No. 110.26(C)(3)]

(3) Personnel Doors.

Where equipment rated 800 A or more that contains overcurrent devices, switching devices, or control devices is installed and there is a personnel door(s) intended for entrance to and egress from the working space less than 7.6 m (25 ft) from the nearest edge of the working space, the door(s) shall open in the direction of egress and be equipped with listed panic hardware or listed fire exit hareware .

Informational Note: For information on panic hardware, see UL 305, Standard For Safety For Panic Hardware. For fire exit hardware, see UL 305, Standard For Panic Hardware, and UL 10C, Standard for Safety for Positive Pressure Fire Tests of Door Assemblies.

Submitter Information Verification

Submitter Full Name: NEC-CMP Panel 01
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Thu Jan 18 09:24:53 EST 2018

Make Editorial Changes Based on Committee Text

Committee Statement and Meeting Notes

Committee Statement: This revision will add clarity regarding appropriate hardware.
Response Message:

Public Input No. 3548-NFPA 70-2017 [Section No. 110.26(C)(3)]

Public Input No. 692-NFPA 70-2017 [Section No. 110.26(C)(3)]

First Revision No. 8661-NFPA 70-2018 [Section No. 110.26(E)(2)]

(2) Outdoor.

Outdoor installations shall comply with 110.26(E)(2)(a)through (c).

(a) *Installation Requirements.* Outdoor electrical equipment shall be the following:

(2) Installed in identified enclosures

(3) Protected from accidental contact by unauthorized personnel or by vehicular traffic

(4) Protected from accidental spillage or leakage from piping systems

(e) *Work Space.* The working clearance space shall include the zone described in 110.26(A). No architectural appurtenance or other equipment shall be located in this zone.

~~Exception:~~ ~~Structural overhangs or roof extensions shall be permitted in this zone.~~

(f) *Dedicated Equipment Space.* The space equal to the width and depth of the equipment, and extending from grade to a height of 1.8 m (6 ft) above the equipment, shall be dedicated to the electrical installation. No piping or other equipment foreign to the electrical installation shall be located in this zone.

Exception: Structural overhangs or roof extensions shall be permitted in this zone.

Submitter Information Verification

Submitter Full Name: NEC-CMP Panel 01
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Thu Jan 18 09:50:27 EST 2018

Make Editorial Changes Based on Committee Text

Committee Statement and Meeting Notes

Committee Statement: The relocation of the text to item (c) is appropriate because the exception applies to dedicated equipment space.

Response Message:

Committee Notes:

Date	Submitted By	
Jan 18, 2018	NEC-CMP Panel 01	Only change is to move exception from (b) to (c)

Public Input No. 2867-NFPA 70-2017 [Section No. 110.26(E)(2)]

Public Input No. 3226-NFPA 70-2017 [Section No. 110.26(E)(2)]

First Revision No. 8672-NFPA 70-2018 [Section No. 110.28]

110.28 Enclosure Types.

Enclosures (other than surrounding fences or walls covered in 110.31) of switchboards, switchgear, panelboards, industrial control panels, motor control centers, meter sockets, enclosed switches, transfer switches, power outlets, circuit breakers, adjustable-speed drive systems, pullout switches, portable power distribution equipment, termination boxes, general-purpose transformers, fire pump controllers, fire pump motors, and motor controllers, rated not over 1000 volts nominal and intended for such locations, shall be marked with an enclosure-type number as shown in Table 110.28.

Table 110.28 shall be used for selecting these enclosures for use in specific locations other than hazardous (classified) locations. The enclosures are not intended to protect against conditions such as condensation, icing, corrosion, or contamination that may occur within the enclosure or enter via the conduit or unsealed openings.

Table 110.28 Enclosure Selection

Provides a Degree of Protection Against the Following Environmental Conditions	For Outdoor Use									
	Enclosure Type Number									
	3	3R	3S	3X	3RX	3SX	4	4X	6	6P
Incidental contact with the enclosed equipment	X	X	X	X	X	X	X	X	X	X
Rain, snow, and sleet	X	X	X	X	X	X	X	X	X	X
Sleet*	—	—	X	—	—	X	—	—	—	—
Windblown dust	X	—	X	X	—	X	X	X	X	X
Hosedown	—	—	—	—	—	—	X	X	X	X
Corrosive agents	—	—	—	X	X	X	—	X	—	X
Temporary submersion	—	—	—	—	—	—	—	—	X	X
Prolonged submersion	—	—	—	—	—	—	—	—	—	X

Provides a Degree of Protection Against the Following Environmental Conditions	For Indoor Use									
	Enclosure Type Number									
	1	2	4	4X	5	6	6P	12	12K	13
Incidental contact with the enclosed equipment	X	X	X	X	X	X	X	X	X	X
Falling dirt	X	X	X	X	X	X	X	X	X	X
Falling liquids and light splashing	—	X	X	X	X	X	X	X	X	X
Circulating dust, lint, fibers, and flyings	—	—	X	X	—	X	X	X	X	X
Settling airborne dust, lint, fibers, and flyings	—	—	X	X	X	X	X	X	X	X
Hosedown and splashing water	—	—	X	X	—	X	X	—	—	—
Oil and coolant seepage	—	—	—	—	—	—	—	X	X	X
Oil or coolant spraying and splashing	—	—	—	—	—	—	—	—	—	X
Corrosive agents	—	—	—	X	—	—	X	—	—	—
Temporary submersion	—	—	—	—	—	X	X	—	—	—
Prolonged submersion	—	—	—	—	—	—	X	—	—	—

*Mechanism shall be operable when ice covered.

Informational Note No. 1: The term *raintight* is typically used in conjunction with Enclosure Types 3, 3S, 3SX, 3X, 4, 4X, 6, and 6P. The term *rainproof* is typically used in conjunction with Enclosure Types 3R and 3RX. The term *watertight* is typically used in conjunction with Enclosure Types 4, 4X, 6, and 6P. The term *driptight* is typically used in conjunction with Enclosure Types 2, 5, 12, 12K, and 13. The term *dusttight* is typically used in conjunction with Enclosure Types 3, 3S, 3SX, 3X, 4, 4X, 5, 6, 6P, 12, 12K, and 13.

Informational Note No. 2: Ingress protection (IP) ratings may be found in ANSI/IEC 60529, *Degrees of Protection Provided by Enclosures*. IP ratings are not a substitute for Enclosure Type ratings.

Informational Note No. 3: Dusttight rated enclosures are permitted in hazardous locations in accordance with Sections 502.10(B)(4), 503.10(A)(2), and 506.15(C)(8).

Informational Note No. 4: Dusttight enclosures are suitable for use in unclassified locations and in Class II, Division 2; Class III; and Zone 22 hazardous (classified) locations.

Submitter Information Verification

Submitter Full Name: NEC-CMP Panel 01
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Thu Jan 18 10:50:40 EST 2018

Make Editorial Changes Based on Committee Text

Committee Statement and Meeting Notes

Committee Statement: The new informational notes add clarity relative to installing enclosure types in the specified environments. Type 4, 4X, 6, and 6P are considered dusttight and are added to informational note 1 for clarity.

Response Message:

Public Input No. 2669-NFPA 70-2017 [Section No. 110.28]

Public Input No. 2699-NFPA 70-2017 [Section No. 110.28]

First Revision No. 8765-NFPA 70-2018 [Section No. 110.3(A)]

(A) Examination.

In judging equipment, considerations such as the following shall be evaluated:

(1) Suitability for installation and use in conformity ~~with the provisions of this~~ with this *Code*

Informational Note No. 1: Equipment may be new, reconditioned, refurbished, or remanufactured.

Informational Note No. 2: Suitability of equipment use may be identified by a description marked on or provided with a product to identify the suitability of the product for a specific purpose, environment, or application. Special conditions of use or other limitations and other pertinent information may be marked on the equipment, included in the product instructions, or included in the appropriate listing and labeling information. Suitability of equipment may be evidenced by listing or labeling.

(2) Mechanical strength and durability, including, for parts designed to enclose and protect other equipment, the adequacy of the protection thus provided

(3) Wire-bending and connection space

(4) Electrical insulation

(5) Heating effects under normal conditions of use and also under abnormal conditions likely to arise in service

(6) Arcing effects

(7) Classification by type, size, voltage, current capacity, and specific use

(8) Other factors that contribute to the practical safeguarding of persons using or likely to come in contact with the equipment

Submitter Information Verification

Submitter Full Name: NEC-CMP Panel 01
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Thu Jan 18 22:36:49 EST 2018

Make Editorial Changes Based on Committee Text

Committee Statement and Meeting Notes

Committee Statement: The phrase “the provisions of” is overused and redundant and may be deleted (with proper editorial revision of remaining text) without affecting the Code technical requirements.

Response Message:

First Revision No. 8392-NFPA 70-2018 [Section No. 110.3(B)]

(B) Installation and Use.

~~Listed or labeled equipment~~ Equipment that is listed, labeled, or both shall be installed and used in accordance with any instructions included in the listing or labeling.

Submitter Information Verification

Submitter Full Name: NEC-CMP Panel 01
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jan 16 14:54:02 EST 2018

Make Editorial Changes Based on Committee Text

Committee Statement and Meeting Notes

Committee Statement: The requirement was modified for clarity and usability to address equipment that is listed, labeled, or both.

Response Message:

Public Input No. 3150-NFPA 70-2017 [Section No. 110.3(B)]

First Revision No. 8766-NFPA 70-2018 [Section No. 110.30]

110.30 General.

Conductors and equipment used on circuits over 1000 volts, nominal, shall comply with Part I of this article and with 110.30 through 110.41, which supplement or modify Part I. In no case shall ~~the provisions of~~ this part apply to equipment on the supply side of the service point.

Submitter Information Verification

Submitter Full Name: NEC-CMP Panel 01
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Thu Jan 18 22:37:45 EST 2018

Make Editorial Changes Based on Committee Text

Committee Statement and Meeting Notes

Committee Statement: The phrase “the provisions of” is overused and redundant and may be deleted (with proper editorial revision of remaining text) without affecting the Code technical requirements.

Response Message:

First Revision No. 8682-NFPA 70-2018 [Section No. 110.31(A)(4)]

(4) Locks.

Doors shall be equipped with locks, and doors shall be kept locked, with access allowed only to qualified persons. Personnel doors shall ~~swing out~~ open in the direction of egress and be equipped with listed panic ~~bars, pressure plates, or other devices that are normally latched but that open under simple pressure~~ hardware or fire exit hardware .

Submitter Information Verification

Submitter Full Name: NEC-CMP Panel 01
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Thu Jan 18 11:15:33 EST 2018

Make Editorial Changes Based on Committee Text

Committee Statement and Meeting Notes

Committee Statement: This revision will add clarity regarding appropriate hardware and the direction of opening of personnel doors. “Panic bars, pressure plates, or other devices…” is removed because it falls under listed panic hardware or fire exit hardware.

Response Message:

Public Input No. 1928-NFPA 70-2017 [Section No. 110.31(A)(4)]

Public Input No. 693-NFPA 70-2017 [Section No. 110.31(A)(4)]

Public Input No. 776-NFPA 70-2017 [Section No. 110.31(A)(4)]

First Revision No. 8686-NFPA 70-2018 [Section No. 110.32]

110.32 Work Space About Equipment.

Sufficient space shall be provided and maintained about electrical equipment to permit ready and safe operation and maintenance of such equipment. Where energized parts are exposed, the minimum clear work space shall be not less than 2.0 m (6½ ft) high (measured vertically from the floor or platform) ~~or not less than~~ and the width of the equipment or 914 mm (3 ft) wide (measured parallel to the equipment), whichever is greater. The depth shall be as required in 110.34(A). In all cases, the work space shall permit at least a 90 degree opening of doors or hinged panels. Within the height requirements of this section, other equipment that is associated with the electrical installation and is located above or below the electrical equipment shall be permitted to extend not more than 150 mm (6 in.) beyond the front of the electrical equipment. Working space required by this section shall not be used for storage. When normally enclosed live parts are exposed for inspection or servicing, the working space, if in a passageway or general open space, shall be suitably guarded.

Submitter Information Verification

Submitter Full Name: NEC-CMP Panel 01
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Thu Jan 18 11:25:59 EST 2018

Make Editorial Changes Based on Committee Text

Committee Statement and Meeting Notes

Committee Statement: The word “or” is changed to “and” to require both conditions because it is a combination of height and width that creates the work space. The “width of the equipment” requirement and the new sentences are added to be consistent with requirements for installations less than 1000 volts.

Response Message:

Public Input No. 593-NFPA 70-2017 [Section No. 110.32]

Public Input No. 2866-NFPA 70-2017 [Section No. 110.32]

Public Input No. 595-NFPA 70-2017 [New Section after 110.32]

Public Input No. 594-NFPA 70-2017 [Section No. 110.32]

First Revision No. 8689-NFPA 70-2018 [Section No. 110.33(A)(3)]

(3) Personnel Doors.

Where there ~~is a personnel door(s)~~ are personnel doors intended for entrance to and egress from the working space less than 7.6 m (25 ft) from the nearest edge of the working space, the ~~door(s)~~ doors shall open in the direction of egress and be equipped with listed panic hardware or fire exit hardware .

Submitter Information Verification

Submitter Full Name: NEC-CMP Panel 01
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City:
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Submittal Date: Thu Jan 18 11:44:36 EST 2018

Make Editorial Changes Based on Committee Text

Committee Statement and Meeting Notes

Committee Statement: This revision will add clarity regarding appropriate hardware. Parentheses were removed to comply with the NEC Style Manual

Response Message:

Public Input No. 694-NFPA 70-2017 [Section No. 110.33(A)(3)]

First Revision No. 8767-NFPA 70-2018 [Section No. 110.51(A)]

(A) Covered.

~~The provisions of this~~ This part shall apply to the installation and use of high-voltage power distribution and utilization equipment that is portable, mobile, or both, such as substations, trailers, cars, mobile shovels, draglines, hoists, drills, dredges, compressors, pumps, conveyors, underground excavators, and the like.

Submitter Information Verification

Submitter Full Name: NEC-CMP Panel 01
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City:
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Submittal Date: Thu Jan 18 22:38:06 EST 2018

Make Editorial Changes Based on Committee Text

Committee Statement and Meeting Notes

Committee Statement: The phrase “the provisions of” is overused and redundant and may be deleted (with proper editorial revision of remaining text) without affecting the Code technical requirements.

Response Message:

First Revision No. 8768-NFPA 70-2018 [Section No. 110.70]

110.70 General.

Electrical enclosures intended for personnel entry and specifically fabricated for this purpose shall be of sufficient size to provide safe work space about electrical equipment with live parts that is likely to require examination, adjustment, servicing, or maintenance while energized. Such enclosures shall have sufficient size to permit ready installation or withdrawal of the conductors employed without damage to the conductors or to their insulation. They shall comply with ~~the provisions of~~ this part.

Exception: Where electrical enclosures covered by Part V of this article are part of an industrial wiring system operating under conditions of maintenance and supervision that ensure that only qualified persons monitor and supervise the system, they shall be permitted to be designed and installed in accordance with appropriate engineering practice. If required by the authority having jurisdiction, design documentation shall be provided.

Submitter Information Verification

Submitter Full Name: NEC-CMP Panel 01
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Thu Jan 18 22:39:23 EST 2018

Make Editorial Changes Based on Committee Text

Committee Statement and Meeting Notes

Committee Statement: The phrase “the provisions of” is overused and redundant and may be deleted (with proper editorial revision of remaining text) without affecting the Code technical requirements.

Response Message:

First Revision No. 8761-NFPA 70-2018 [Section No. 80.2]

Annex H, 80.2 Definitions.

Authority Having Jurisdiction. The organization, office, or individual responsible for enforcing the requirements of a code or standard, or for approving equipment, materials, an installation, or a procedure.

Chief Electrical Inspector. An electrical inspector who either is the authority having jurisdiction or is designated by the authority having jurisdiction and is responsible for administering the requirements of this *Code*.

Electrical Inspector. An individual meeting the requirements of 80.27 and authorized to perform electrical inspections.

Submitter Information Verification

Submitter Full Name: NEC-CMP Panel 01
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Thu Jan 18 22:10:37 EST 2018

Make Editorial Changes Based on Committee Text

Committee Statement and Meeting Notes

Committee Statement: This definition is revised to match the official NFPA definition and to be consistent with the definition in Article 100.

Response Message:

Public Input No. 880-NFPA 70-2017 [Section No. 80.2]

First Revision No. 8206-NFPA 70-2018 [Section No. 90.2(A)]

(A) Covered.

This *Code* covers the installation and removal of electrical conductors, equipment, and raceways; signaling and communications conductors, equipment, and raceways; and optical fiber cables ~~and raceways~~ for the following:

(1) Public and private premises, including buildings, structures, mobile homes, recreational vehicles, and floating buildings

(2) Yards, lots, parking lots, carnivals, and industrial substations

(3) Installations of conductors and equipment that connect to the supply of electricity

(4) Installations used by the electric utility, such as office buildings, warehouses, garages, machine shops, and recreational buildings, that are not an integral part of a generating plant, substation, or control center

Submitter Information Verification

Submitter Full Name: NEC-CMP Panel 01
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Mon Jan 15 13:16:25 EST 2018

Make Editorial Changes Based on Committee Text

Committee Statement and Meeting Notes

Committee Statement: Optical fiber raceways were renamed communications raceways in the 2014 NEC. The 2017 NEC changed the title of Article 770 from “Optical Fiber Cables and Raceways” to “Optical Fiber Cables”. Optical fiber raceways are one type of communications raceway still addressed in 90.2(A).

Note that the addition of a new item (5) is being balloted separately as Detail FR #8370 and should not be taken into consideration when voting on FR #8206.

Response Message:

Public Input No. 52-NFPA 70-2017 [Section No. 90.2(A)]

Public Input No. 4-NFPA 70-2017 [Section No. 90.2(A)]

First Revision No. 8211-NFPA 70-2018 [Section No. 90.2(B)]

(B) Not Covered.

This *Code* does not cover the following:

(1) Installations in ships, watercraft ~~other than floating buildings~~ , railway rolling stock, aircraft, or automotive ~~vehicles other than mobile homes and recreational vehicles~~ vehicles

Informational Note: Although the scope of this *Code* indicates that the *Code* does not cover installations in ships, portions of this *Code* are incorporated by reference into Title 46, Code of Federal Regulations, Parts 110–113.

(2) Installations underground in mines and self-propelled mobile surface mining machinery and its attendant electrical trailing cable

(3) Installations of railways for generation, transformation, transmission, energy storage, or distribution of power used exclusively for operation of rolling stock or installations used exclusively for signaling and communications purposes

(4) Installations of communications equipment under the exclusive control of communications utilities located outdoors or in building spaces used exclusively for such installations

(5) Installations under the exclusive control of an electric utility where such installations

(6) Consist of service drops or service laterals, and associated metering, or

(7) Are on property owned or leased by the electric utility for the purpose of communications, metering, generation, control, transformation, transmission, energy storage, or distribution of electric energy, or

(8) Are located in legally established easements or rights-of-way, or

(9) Are located by other written agreements either designated by or recognized by public service commissions, utility commissions, or other regulatory agencies having jurisdiction for such installations. These written agreements shall be limited to installations for the purpose of communications, metering, generation, control, transformation, transmission, energy storage, or distribution of electric energy where legally established easements or rights-of-way cannot be obtained. These installations shall be limited to federal lands, Native American reservations through the U.S. Department of the Interior Bureau of Indian Affairs, military bases, lands controlled by port authorities and state agencies and departments, and lands owned by railroads.

Informational Note to (4) and (5): Examples of utilities may include those entities that are typically designated or recognized by governmental law or regulation by public service/utility commissions and that install, operate, and maintain electric supply (such as generation, transmission, or distribution systems) or communications systems (such as telephone, CATV, Internet, satellite, or data services). Utilities may be subject to compliance with codes and standards covering their regulated activities as adopted under governmental law or regulation. Additional information can be found through consultation with the appropriate governmental bodies, such as state regulatory commissions, the Federal Energy Regulatory Commission, and the Federal Communications Commission.

Submitter Information Verification

Submitter Full Name: NEC-CMP Panel 01
Organization: [Not Specified]
Street Address:
City:
State:
Zip:

Make Editorial Changes Based on Committee Text

Submittal Date: Mon Jan 15 13:33:05 EST 2018

Committee Statement and Meeting Notes

Committee Statement: Restating what is covered in 90.2(A)(1) is redundant and does not help in clarifying the installations "not covered" in 90.2(B)(1).

Response Message:

Committee Notes:

Date	Submitted By	
Jan 15, 2018	NEC-CMP Panel 01	Only changes are to item 1

Public Input No. 1010-NFPA 70-2017 [Section No. 90.2(B)]

First Revision No. 8757-NFPA 70-2018 [Section No. 90.3]

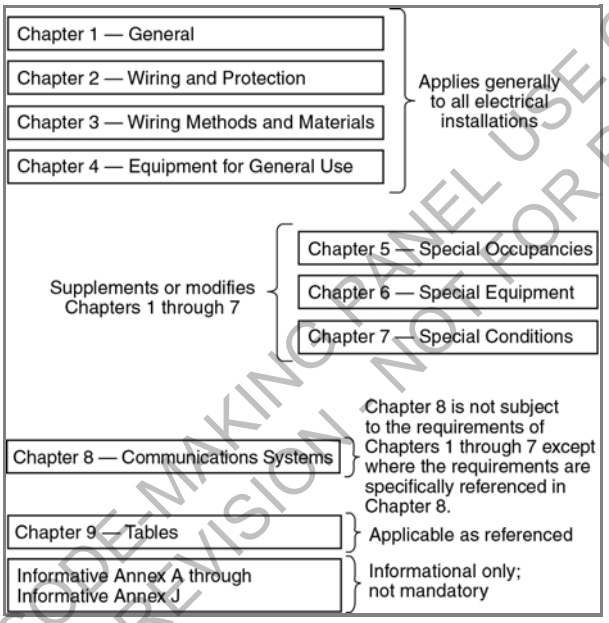
90.3 Code Arrangement.

This *Code* is divided into the introduction and nine chapters, as shown in Figure 90.3. Chapters 1, 2, 3, and 4 apply generally. Chapters 5, 6, 7, and ~~7~~ 8 apply to special occupancies, special equipment, ~~or~~ other special conditions, or communications systems and may supplement or modify the requirements in Chapters ~~1~~ 1 through ~~7~~ .~~Chapter~~ 8 ~~covers communications systems and is not subject to the requirements of Chapters 1 through 7 except where the requirements are specifically referenced in Chapter~~ 8 .

Chapter 9 consists of tables that are applicable as referenced.

Informative annexes are not part of the requirements of this *Code* but are included for informational purposes only.

Figure 90.3 Code Arrangement.



Supplemental Information

File Name	Description	Approved
FIGURE_90.3_Revisions.docx	Revisions to Figure 90.3	✓

Submitter Information Verification

Submitter Full Name: NEC-CMP Panel 01
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Thu Jan 18 21:03:54 EST 2018

Make Editorial Changes Based on Committee Text

Committee Statement and Meeting Notes

Committee To better serve the purpose of the Code as stated in 90.1, chapter 8 is subject to the requirements

Statement: of chapters 1 through 8.

CMP-1 requests that the Correlating Committee review this action in the first draft and second draft stage to determine the impact on telecommunications installations.

Response Message:

Committee Notes:

Date	Submitted By	
Jan 18, 2018	NEC-CMP Panel 01	Revisions to figure shown in attachment

Public Input No. 2818-NFPA 70-2017 [Section No. 90.3]

FIGURE 90.3 Code Arrangement.

Chapter 1 — General Chapter 2 — Wiring and Protection Chapter 3 — Wiring Methods and Materials Chapter 4 — Equipment for General Use	Applies generally to all electrical installations
Chapter 5 — Special Occupancies Chapter 6 — Special Equipment Chapter 7 — Special Conditions Chapter 8 — Communications Systems	Supplements or modifies Chapters 1 through ~~7~~ 8
~~Chapter 8 — Communications Systems~~	~~Chapter 8 is not subject to the requirements of Chapters 1 through 7 except where the requirements are specifically referenced in Chapter 8.~~
Chapter 9 — Tables	Applicable as referenced
Informative Annex A through Informative Annex J	Informational only; not mandatory

First Revision No. 8764-NFPA 70-2018 [Section No. 90.6]

90.6 Formal Interpretations.

To promote uniformity of interpretation and application of ~~the provisions of~~ this *Code*, formal interpretation procedures have been established and are found in the NFPA Regulations Governing Committee Projects.

Submitter Information Verification

Submitter Full Name: NEC-CMP Panel 01
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Street Address:
City:
State:
Zip:
Submittal Date: Thu Jan 18 22:35:41 EST 2018

Make Editorial Changes Based on Committee Text

Committee Statement and Meeting Notes

Committee Statement: The phrase “the provisions of” is overused and redundant and may be deleted (with proper editorial revision of remaining text) without affecting the Code technical requirements.

Response Message: