



Docket # 639

**THE COMMONWEALTH OF MASSACHUSETTS**

William Francis Galvin  
Secretary of the Commonwealth

**Regulation Filing** *To be completed by filing agency*

CHAPTER NUMBER: 527 CMR 12.00

CHAPTER TITLE: Massachusetts Electrical Code Amendments

AGENCY: Board of Fire Prevention Regulations

SUMMARY OF REGULATION: *State the general requirements and purposes of this regulation.*

This regulation contains the Massachusetts Electrical Code. The particular amendments reflect, in large part, technical modifications made to several provisions of the base code, NFPA 70 (National Electrical Code), since the original effective date of January 1, 2017.

REGULATORY AUTHORITY: M.G.L. c. 143, s. 3L

AGENCY CONTACT: Peter A. Senopoulos, Legal Counsel, Dept. of Fire Services PHONE: 978-567-3181

ADDRESS: Board of Fire Prevention Regulations, P.O. Box 1025 - State Road, Stow, MA 01775

Compliance with M.G.L. c. 30A

EMERGENCY ADOPTION - *if this regulation is adopted as an emergency, state the nature of the emergency.*

PRIOR NOTIFICATION AND/OR APPROVAL - *If prior notification to and/or approval of the Governor, Legislature or others was required, list each notification, and/or approval and date, including notice to the Local Government Advisory Commission.*

Building Code Coordinating Council Notification (Information Only: 3-5-18)  
Executive Order 562 Approval: 6-25-18

PUBLIC REVIEW - *M.G.L. c. 30A sections 2 and/or 3 requires notice of the hearing or comment period, including a small business impact statement, be filed with the Secretary of the Commonwealth, published in appropriate newspapers, and sent to persons to whom specific notice must be given at least 21 days prior to such hearing or comment period.*

Date of public hearing or comment period: August 3, 2018

**FISCAL EFFECT -** *Estimate the fiscal effect of the public and private sectors.*

For the first and second year: No fiscal effect of significance anticipated

For the first five years: No fiscal effect of significance anticipated

No fiscal effect: See above.

**SMALL BUSINESS IMPACT -** *M.G.L. c. 30A section 5 requires each agency to file an amended small business impact statement with the Secretary of the Commonwealth prior to the adoption of a proposed regulation. If the purpose of this regulation is to set rates for the state, this section does not apply.*

Date amended small business impact statement was filed: August 8, 2018

**CODE OF MASSACHUSETTS REGULATIONS INDEX -**

*List key subjects that are relevant to this regulation:*

Electrical Code

Electrical Installations

**PROMULGATION -** *State the action taken by this regulation and its effect on existing provisions of the Code of Massachusetts Regulations (CMR) or repeal, replace or amend. List by CMR number.*

Makes technical amendments to 527 CMR 12.00.

**ATTESTATION -** *The regulation described herein and attached hereto is a true copy of the regulation adopted by this agency.* ATTEST:

SIGNATURE: *John A. Sargent*

DATE: 8-10-18

Publication - *To be completed by the Regulations Division*

MASSACHUSETTS REGISTER NUMBER: 1372

DATE: 8/24/18

EFFECTIVE DATE: 8/24/18

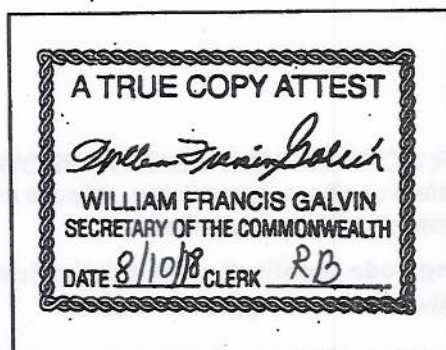
**CODE OF MASSACHUSETTS REGULATIONS**

Remove these pages:

139 - 146

Insert these pages:

139 - 148





12.00: continued

210.25(B). Add an exception as follows:

Exception: Branch circuits supplying lighting outlets in common areas on the same floor as a dwelling unit in a new or existing two-family or an existing three-family building shall be permitted to be supplied from equipment that supplies one or more of those dwelling units.

210.52(A)(2)(1). Revise to read as follows:

Any space 600 mm (2 ft) or more in width (including space measured around corners) and unbroken along the floor line by doorways, fireplaces, and similar openings.

210.52(A)(4). Delete 210.52(A)(4) in its entirety.

210.52(C)(3). Revise to read as follows:

(3) Peninsular Countertop Spaces. At least one receptacle outlet shall be installed at each peninsular countertop long dimension space with a long dimension of 600 mm (24 in.) or greater and a short dimension of 300 mm (12 in.) or greater. A receptacle in a wall countertop space that directly faces a peninsular countertop shall be permitted to serve as the receptacle for the peninsular space where the spaces are contiguous and the receptacle is located within 1.8 m (6 ft) of its most distant edge.

220.12. Revise the second exception to read as follows:

Exception No. 2: Where a building is designed and constructed to comply with an energy code adopted by the local authority and specifying an overall lighting density of less than 13.5 volt-amperes/m<sup>2</sup> (1.2 volt-amperes/ft<sup>2</sup>), the unit lighting loads in Table 220.12 for office and bank areas within the building shall be permitted to be reduced by 11 volt-amperes/m<sup>2</sup> (1 volt-amperes/ft<sup>2</sup>).

225.30(E). Revise to read as follows:

(E) Documented Switching Procedures. Additional feeders or branch circuits shall be permitted to supply large capacity multibuilding industrial or institutional installations under single management where documented safe switching procedures are established and maintained for disconnection.

225.32 Exception No. 1. Revise to read as follows:

Exception No. 1: For large capacity multibuilding industrial or institutional installations under single management where documented safe switching procedures are established and maintained for disconnection, and where the disconnection is monitored by qualified individuals, the disconnecting means shall be permitted to be located elsewhere on the premises.

240.24(A). Revise the exception to read as follows:

Exception: The use of a tool shall be permitted to access overcurrent devices located within listed industrial control panels, or within enclosures designed for hazardous (classified) locations or adverse environmental conditions. An enclosure within the scope of this exception, and all overcurrent device(s) within such enclosures as judged with the enclosure open, shall comply with the accessibility provisions of 240.24(A).

250.130(C). Delete this subsection.

300.4(D). Delete this subsection.

12.00: continued

300.5(A). Add an informational note to this subsection as follows:

**Informational Note:** Cables suitable for direct burial are often sleeved in various raceways for design reasons. If such cable is installed with sufficient cover for direct burial, then the characteristics of that raceway need not be evaluated. Other rules of this Code that apply to raceways generally may apply. See 300.5(H).

300.5(D). Revise to read as follows:

(D) **Protection from Damage.** Direct-buried conductors and cables shall be protected from damage in accordance with 300.5(D)(1) through 300.5(D)(4). Buried raceways enclosing service conductors shall additionally meet the requirement in 300.5(D)(3).

300.11(B). Revise this subsection as follows:

I. Delete the second sentence in 300.11(B) which reads: "Support wires and associated fittings that provide secure support and that are installed in addition to the ceiling grid support wires shall be permitted as the sole support."

II. Revise 300.11(B)(2) to read as follows:

(2) **Nonfire-rated Assemblies.** Branch-circuit wiring associated with equipment that is located within, supported by, or secured to a suspended ceiling that is not an integral portion of a fire-rated floor/ceiling or roof/ceiling assembly shall be permitted to be supported by the ceiling support wires.

III. Delete 300.11(B)(2) Exception.

300.17. Add a second paragraph as follows:

Where different raceway wiring methods are joined together without a pull point at the transition, there shall not be more than the equivalent of four quarter bends (360° total) between pull points, e.g., conduit bodies and boxes.

300.50. In Note 3 to Table 300.50, insert the words "or institutional" after the word "industrial".

310.15(B)(3)(a). Delete the fourth itemized adjustment provision.

310.15(B)(3)(a). Revise Table 310.15(B)(3)(a) to read as follows:

Number of Number of Conductors <sup>1</sup>	Percent of Values in Tables 310.15(B)(16) through 310.15(B)(19), as Adjusted for Ambient Temperature if Necessary
4 through 6	80
7 through 24	70
25 through 42	60
43 and above	50

<sup>1</sup> Number of Conductors is the total number of conductors in the raceway or cable, including spare conductors. The count shall be adjusted adjusted in accordance with 310.15(B)(5) and (6), and shall not include conductors that are connected to electrical components but that cannot be simultaneously energized.

**Informational Note:** Overheating may occur where continuous, fully loaded conductor diversity is less than 50% and the number of current-carrying conductors exceeds nine. See 310.15(A)(3).



12.00: continued

310.15(B)(7). Delete the second paragraph.

320.80(A). Delete the last sentence, which reads: "The 90°C (194°F) rating shall be permitted to be used for ampacity adjustment and correction calculations; however, the ampacity shall not exceed that for a 60°C (140°F) rated conductor."

334.10. Amend (3) and insert an exception to read as follows:

(3) Other structures permitted to be of Types III, IV, and V construction. Cables shall be installed within walls, floors, or ceilings that provide a thermal barrier of material that has at least a 15-minute finish rating as identified in listings of fire-rated assemblies.

Exception to (2) and (3): For buildings or structures required to be of Type I or Type II construction, Type NM, Type NMC, and Type NMS cables shall be permitted to be used, provided that where so applied in buildings or structures exceeding three stories above grade, circuits run in Type NM, NMC, or NMS cable shall not leave the floor or dwelling unit from which the circuits originate.

334.12(A)(2). Revise to read as follows:

(2) In dropped or suspended ceilings in other than one- and two-family and multifamily dwellings, unless run so as to closely follow the surface of framing members, running boards, or the equivalent, or unless connected to luminaires or other pieces of electrical equipment in accordance with 334.30(B)(2).

334.17. Revise to read as follows:

334.17 Through or Parallel to Framing Members and Furring Strips. Types NM, NMC, or NMS cable shall comply with 300.4 where installed through studs, joists, rafters, and similar members. Grommets or bushings shall be used in metal studs as required in 300.4(B)(1), shall remain in place during the wall finishing process, shall cover the complete opening, and shall be listed for the purpose of cable protection.

In both exposed and concealed locations, where the cable is installed parallel to framing members, such as joists, rafters, or studs, or is installed parallel to furring strips, the cable shall be secured so that the nearest outside surface of the cable is not less than 19 mm (¾ in.) from the nearest edge of the framing member or furring strip where nails or screws are likely to penetrate. Where this distance cannot be maintained, the cable shall be protected from penetration by nails or screws by a steel plate, sleeve, or equivalent at least 1.6 mm (1/16 in.) thick. A listed and marked steel plate less than 1.6 mm (1/16 in.) thick that provides equal or better protection against nail or screw penetration shall be permitted for this purpose.

Exception: For concealed work in finished buildings, or finished panels for prefabricated buildings where such supporting is impracticable, it shall be permitted to fish the cable between access points.

334.30. Revise 334.30 as follows [(A), (B), and (C) unchanged from the NEC]:

334.30 Securing and Supporting. Nonmetallic-sheathed cable shall be secured by staples, cable ties, straps, or similar fittings so designed and installed as to not damage the cable. Where staples are used for cable sizes smaller than three 8 AWG conductors, they shall be of the insulated type, or listed noninsulated staples driven by staple guns shall be permitted. Cable shall be secured in place at intervals not exceeding 1.4 m (4½ ft) and within 300 mm (12 in.) from every cabinet, box, or fitting. Where the cable is run diagonally behind strapping of a nominal 19 mm (¾-in.) thickness it shall be considered supported, secured, and in compliance with 334.17 where it is not pulled taut. For other than within 300 mm (12 in.) of a cable termination at a cabinet, box, or fitting, cables passing through successive holes in adjacent framing members no more than 600 mm (24 in.) apart shall be considered to be secured.

Sections of cable protected from physical damage by raceway shall not be required to be secured within the raceway.



12.00: continued

334.80. Delete the second paragraph and revise the first paragraph to read as follows:

334.80 Ampacity. Type NM, NMC, and NMS cable shall have conductors rated at 90°C (194°F). Where installed in thermal insulation, the ampacity of conductors shall be that of 60°C (140°F) conductors. The ampacity of Types NM, NMC, and NMS cable installed in cable tray shall be determined in accordance with 392.11.

336.10(9). Revise to read as follows (exception unchanged):

(9) In one- and two-family dwelling units, Type TC-ER cable containing both power and control conductors that is identified for pulling through structural members shall be permitted. Type TC-ER cable used as interior wiring shall be installed in accordance with the requirements of Part II of Article 334 and Article 725, and where installed as exterior wiring, shall be installed in accordance with the requirements of Part II of Article 340.

338.10(B)(4)(a). Revise the second paragraph to read, and add a third informational note as follows:

Where installed in thermal insulation, the ampacity shall be in accordance with the 60°C (140°F) conductor temperature rating. The maximum conductor temperature rating shall be permitted to be used for ampacity adjustment and correction purposes, if the final derated ampacity does not exceed that for a 60°C (140°F) rated conductor.

Informational Note No. 3: This section includes service entrance cables with a round configuration commonly known as SER cable. The interior installation of this cable is governed by the same rules as apply to nonmetallic sheathed cable.

344.6. Add an exception as follows:

Exception: Rigid metal conduit made from stainless steel or from nonferrous metals other than aluminum shall be permitted to be approved.

352.12. Add a new (F) to read as follows:

(F) High-rise Buildings. Where used in buildings more than 21 m (70 ft) above mean grade, rigid nonmetallic conduit shall not be used unless the building is protected by an approved fire sprinkler system(s) installed on all floors as a complete system, or the conduit is concealed behind a thermal barrier as described in 362.10(2) or 362.10(5), or the conduit is encased in not less than 50 mm (2 in.) of concrete.

368.8. Insert a new Section 368.8 in Part I of Article 368 as follows:

368.8 Tests Prior to Energizing. Busway system joint tightness, phasing, and insulation resistance shall be verified by test prior to energizing the system for the first time. Joint resistance shall be evaluated by a qualified person using equipment identified for the specific function. A written record of these tests shall be made available to the authority having jurisdiction.

368.14. Insert a new Section 368.14 in Part II of Article 368 as follows:

368.14 Protection from Liquids, Moisture and Other Contaminants. Busway shall be protected from liquids, moisture, and other contaminants or corrosion that may result in electrical failure.

(A) During Construction. Indoor busways shall be protected from moisture during storage as well as during or after installation. Special consideration shall be given to riser busways to protect them from moisture from uncompleted roofs, walls, etc.

Outdoor busways shall be treated the same as indoor busways until after busway is properly installed, as it is not weather resistant until completely and properly installed.

Busway shall have the exposed ends of uncompleted runs protected to prevent accidental contamination during the construction period.



12.00: continued

(B) Protection from Snow Buildup. Outdoor busway shall be mounted in such a manner as to prevent snow or ice buildup forcing water into the busway through weep holes. This may require that consideration be given to horizontal snow or ice buildup or drifting of snow.

(C) Protection from Falling Liquids. Slant shields, drip pans, or other approved protective shields shall be installed to protect indoor busway in locations where there is a possibility of water spillage or dripping condensate from roof drains, water pipes, and the like.

368.56(B). Revise the rule in list item (2) and the exception to (B)(2) to read as follows:

(2) The length of the cord or cable from a busway plug-in device to a suitable tension take-up support device shall not exceed 2.5 m (8 ft).

Exception to (B)(2): By special permission in industrial establishments only, where the conditions of maintenance and supervision ensure that only qualified persons will service the installation, flexible cord suitable for hard usage or extra hard usage or bus drop cable shall be permitted to extend horizontally greater lengths than 2.5 m (8 ft) where the longer length is essential for periodic repositioning of equipment. The flexible cord or bus drop cable shall be supported at intervals not to exceed 2.5 m (8 ft), and suitable tension take-up device(s) shall be installed at the end of the horizontal run to relieve strain in both the horizontal and vertical directions.

372.23. Revise this section to read as follows:

372.23 Ampacity of Conductors. The ampacity adjustment factors in 310.15(B)(3)(a) shall not apply where 30 or fewer current-carrying conductors occupy no more than 20% of the interior cross-sectional area of cellular concrete floor raceways.

374.23. Revise this section to read as follows:

374.23 Ampacity of Conductors. The ampacity adjustment factors in 310.15(B)(3)(a) shall not apply where 30 or fewer current-carrying conductors occupy no more than 20% of the interior cross-sectional area of cellular metal floor raceways.

390.17. Revise this section to read as follows:

390.17 Ampacity of Conductors. The ampacity adjustment factors in 310.15(B)(3)(a) shall not apply where 30 or fewer current-carrying conductors occupy no more than 20% of the interior cross-sectional area of underfloor raceways.

400.5. Revise Table 400.5(A)(3) to read as follows:

Number of Conductors	Percent of Values in Tables 400-5(A) and 400-5(B)
4 through 6	80
7 through 24	70
25 through 42	60
43 and above	50

Informational Note: Overheating may occur where continuous, fully loaded conductor diversity is less than 50% and the number of current-carrying conductors exceeds nine. See 310.15(A)(3).

400.12(4). Revise the existing exception as follows:

Exception to (4): Flexible cord and cable shall be permitted to be installed in accordance with 368.56(B). For other applications, where the length of the cord from the supply termination to a suitable tension take-up device is limited to 2.5 m (8 ft), flexible cord shall be permitted to have one connection to the building surface.

12.00: continued

400.17. Revise the second paragraph to read as follows:

Flexible cords and cables shall be permitted to be installed in raceways not longer than 15 m (50 ft) in length where required to protect the flexible cord or cable from physical damage. The ampacity of the conductors within a raceway shall be adjusted in accordance with Table 400.5(A)(3) based on the total number of current-carrying conductors within the raceway, and then further derated by a factor of 0.8, or the ampacity shall be calculated in accordance with 310.15(C). The raceway shall be exposed over its entire length.

406.4(D)(3). Delete the exception.

406.4(D)(4). In Exception No. 2, correct the reference to read "210.12(D)."

410.36(B). Add a second paragraph as follows:

In addition to, or in lieu of, the mechanical fastening means, electric luminaires containing ballasts, other than simple fluorescent reactance ballasts, shall be supported directly to the building structure by wire, chain, or threaded rod of sufficient strength to carry the luminaire. Fluorescent luminaires shall be supported at each end of a diagonal axis of the luminaire.

440.14. Insert a third informational note as follows:

Informational Note No. 3: See 440.3(B) for general provisions regarding the inapplicability of Article 440 to equipment that does not incorporate hermetic refrigerant motor-compressors. See also 430.109(B) for specific provisions governing the disconnecting requirements for such equipment, wherever located, that uses a motor that is 1/2 hp or less.

505.9(E)(2). Revise the second paragraph to read as follows:

Metric threaded fittings installed into explosionproof or flameproof equipment entries shall have a class of fit of at least 6g/6H and be made up with at least five threads fully engaged.

517.13(B)(1). Delete Exception No. 3.

550.2 Manufactured Home, Informational Note No. 2. Add the following sentence:

Manufactured housing that is not designed to be transportable on running gear, and that is not produced under regulations that expressly cover such housing, is classified under Article 545.

555.2. Insert two new definitions as follows:

Docking Facility. A covered or open, fixed or floating structure that provides access to the water and to which boats are secured.

Marina. A facility, generally on the waterfront, that stores and services boats in berths, on moorings, and in dry storage or stack storage.

555.3. Revise this section to read as follows:

555.3 Ground-fault Protection. For other than floating buildings covered by 553.4, ground-fault protection for docking facilities shall be provided in accordance with (A) and (B).

(A) Feeder and Branch Circuit Conductors. Feeder and branch circuit conductors that are installed on docking facilities shall be provided with ground-fault protection set to open at currents not exceeding 30 mA. Coordination with downstream ground-fault protection shall be permitted at the feeder overcurrent protective device.



12.00: continued

Exception: Transformer secondary conductors of a separately derived system that do not exceed 3 m (10 ft) and are installed in a raceway shall be permitted to be installed without ground-fault protection. This exception shall also apply to the supply terminals of the equipment supplied by the transformer secondary conductors.

(B) Receptacles Providing Shore Power. In lieu of the requirement of 210.8, receptacles installed in accordance with 555.19(A) shall be permitted to have ground-fault protection set to open at currents not exceeding 30 mA.

590.4(G). Revise to read as follows:

590.4(G) Splices. A box, conduit body, or other enclosure, with a cover installed, shall be required for all splices.

Exception: On construction sites, a box, conduit body, or other enclosure shall not be required for either of the following conditions:

- (1) The circuit conductors being spliced are all from nonmetallic multiconductor cord or cable assemblies, provided further that the equipment grounding continuity is maintained with or without the box.
- (2) The circuit conductors being spliced are all from metal sheathed cable assemblies terminated in listed fittings that mechanically secure the cable sheath to maintain effective electrical continuity.

620.51(D)(2). Delete this requirement.

625.17(B). Revise to read as follows:

(B) Output Cable to the Electric Vehicle. The output cable to the electric vehicle shall be one of the following:

- (1) Listed Type EV, EVJ, EVE, EVJE, EVT, or EVJT flexible cable as specified in Table 400.4
- (2) An integral part of listed electric vehicle supply equipment

Informational Note: For information and listing requirements for electric vehicle supply equipment, see UL Standards 2594-2016, Standard for Electric Vehicle Supply Equipment, and UL 2202-2009, Standard for Electric Vehicle (EV) Charging System Equipment.

625.44(A). Revise to read as follows:

625.44(A) Portable Equipment. Portable equipment shall be connected to the premises wiring systems by one or more of the following methods:

- (1) A nonlocking, 2-pole, 3-wire grounding-type receptacle outlet rated 125-volts, single-phase, 15- or 20-amperes.
- (2) A nonlocking, 2-pole, 3-wire grounding-type receptacle outlet rated 250-volts, single-phase, 15- or 20-amperes.
- (3) A nonlocking, 2-pole, 3-wire or 3-pole, 4 wire grounding-type receptacle outlet rated at 250-volts, single-phase, 30- or 50-amperes.
- (4) A nonlocking, 2-pole, 3-wire grounding-type receptacle outlet rated 60-volts dc maximum, 15- or 20-amperes

The length of the power supply cord, if provided, between the receptacle outlet and the equipment shall be in accordance with 625.17(A) (3).

625.54. Insert a new section as follows:

625.54 Ground-fault Circuit-interrupter Protection for Personnel. All single-phase receptacles installed for the connection of electric vehicle charging that are rated 150 volts to ground or less, and 50 amperes or less shall have ground-fault circuit-interrupter protection for personnel.

12.00: continued

625.56. Insert a new section as follows:

625.56 Receptacle Enclosures. All receptacles installed in a wet location for electric vehicle charging shall have an enclosure that is weatherproof with the attachment plug cap inserted or removed.

680.8. Insert an informational note ahead of 680.8(A) as follows:

Informational Note: Unlisted swimming pool pump motors have been observed in the field as having been supplied by their manufacturer with undersized cords, cords of excessive length, cord connectors on outdoor applications that are unsuitable for wet locations, and other violations of this Code. The fact that a manufacturer may supply them in this form does not excuse compliance with the rules of this Code.

Listed storable swimming pool pump motors with long factory-supplied cords are prominently marked as such and are not covered in Part II of Article 680. They are not manufactured for use with permanently installed pools and they need not be bonded where used as intended. See 680.31.

680.21(A)(1). Revise the second paragraph to read as follows:

Where installed in dry, noncorrosive environments, branch circuits shall comply with the general requirements in Chapter 3. Any wiring method employed shall contain an insulated or covered equipment grounding conductor of a wire type, sized in accordance with 250.122 but not smaller than 12 AWG

680.74(A). Delete numbered paragraphs (3), (4), and (5). Delete Exception No. 1 and designate Exception No. 2 as Exception No. 1.

682.2. Insert a new definition as follows:

Pier. A structure extending over the water and supported on a fixed foundation, or on flotation, that provides access to the water.

682.15. Revise to read as follows:

682.15 Ground-Fault Protection. Ground-fault protection shall be provided in accordance with (A) and (B).

(A) Receptacles. Fifteen- and 20-ampere single-phase, 125-volt through 250-volt receptacles installed outdoors and in or on floating buildings or structures within the electrical datum plane area shall be provided with GFCI protection for personnel. The GFCI protection device shall be located not less than 300 mm (12 in.) above the established electrical datum plane.

(B) Feeder and Branch Circuit Conductors. Feeder and branch circuit conductors that are installed on piers shall be provided with ground-fault protection set to open at currents exceeding 30 mA. Coordination with downstream ground-fault protection shall be permitted at the feeder overcurrent protective device.

Exception: Transformer secondary conductors of a separately derived system that do not exceed 3 m (10 ft) and are installed in a raceway shall be permitted to be installed without ground-fault protection. This exception shall also apply to the supply terminals of the equipment supplied by the transformer secondary conductors.

Article 691. Delete this article.

700.10. Make the following three revisions:"

I. Revise (D) to read as follows: "Emergency systems shall meet the additional requirements in (D)(1) through (D)(3)."



12.00: continued

II. Revise (D)(1) by deleting (1) and renumbering the remaining numbered items accordingly.

III. Revise the resulting (D)(1)(2) to read as follows: "The cable or raceway is a listed fire-resistive cable system with a minimum two-hour fire rating."

700.12. Add an exception after the first paragraph as follows:

Exception: A fire pump shall be permitted to use a connection ahead of the service disconnecting means in accordance with 695.3(A)(1).

700.12(F)(2)(2). Delete the second sentence that reads:

Flexible cord- and plug-connection shall be permitted provided that the cord does not exceed 900 mm (3 ft) in length.

701.12(G). Delete the second sentence of the second paragraph which reads:

Flexible cord- and plug-connection shall be permitted provided that the cord does not exceed 900 mm (3 ft) in length.

725.2. Insert a new definition and informational note as follows:

Nominal Current. The designated current per conductor as specified by equipment design.

Informational Note: One example of nominal current is 4-pair Power over Ethernet (PoE) applications based on IEEE 802.3-2015, IEEE Standard for Ethernet, that supplies current over 2 or 4 twisted pairs. The nominal current for 60-watt PoE power-sourcing equipment is 0.3 amperes per conductor, where the current in one conductor can be 0.36 amperes and another conductor can be 0.24 amperes.

725.121(C). Revise to read as follows:

725.121(C) Marking. The power sources for limited power circuits in 725.121(A)(3) and limited power circuits for listed audio/video, information, and communications technology (equipment), and listed industrial equipment in 725.121(A)(4) shall have a label indicating the maximum voltage and maximum current or maximum voltage and nominal current output for each connection point. Where multiple connection points have the same rating, a single label shall be permitted to be used. The effective date shall be January 1, 2018.

Exception: Marking shall not be required for power sources providing 0.3 amperes nominal current or less per conductor.

725.144(A). Revise to read as follows:

725.144(A) Use of Class 2 or Class 3 Cables to Transmit Power and Data. Where Types CL3P, CL2P, CL3R, CL2R, CL3, or CL2 transmit power and data, the ampacity ratings in Table 725.144 shall apply to the nominal current at an ambient temperature of 30°C (86°F). For ambient temperatures above 30°C (86°F), the correction factors of 310.15(B)(2) shall apply.

Exception: Compliance with Table 725.144 shall not be required for installations where the nominal current does not exceed 0.3 amperes in any conductor.

725.144(B). Revise the first paragraph to read as follows:

725.144(B) Use of Class 2-LP or Class 3-LP Cables to Transmit Power and Data. Types CL3P-LP, CL2P-LP, CL3R-LP, CL2R-LP, CL3-LP, or CL2-LP shall be permitted to supply power to equipment at a current level up to the marked ampere limit located immediately following the suffix LP and shall be permitted to transmit data to the equipment. For ambient temperatures above 30°C (86°F), the correction factors of 310.15(B)(2) shall apply. The Class 2-LP and Class 3-LP cables shall comply with the following, as applicable:

12.00: continued

770.110(A)(2). Revise to read as follows:

770.110(A)(2) Communications Raceways. Optical fiber cables shall be permitted to be installed in plenum communications raceways, riser communications raceways, and general-purpose communications raceways selected in accordance with Table 800.154(b), listed in accordance with 800.182, and installed in accordance with 800.113 and 362.24 through 362.56, where the requirements applicable to electrical nonmetallic tubing (ENT) apply.

840.2. Insert a new definition and informational note as follows:

Nominal Current. The designated current per conductor as specified by equipment design.

Informational Note: One example of nominal current is 4-pair Power over Ethernet (PoE) applications based on IEEE 802.3-2015, IEEE Standard for Ethernet, that supplies current over 2 or 4 twisted pairs. The nominal current for 60-watt PoE power-sourcing equipment is 0.3 amperes per conductor, where the current in one conductor can be 0.36 amperes and another conductor can be 0.24 amperes.

840.160. Revise to read as follows:

840.160 Powering Circuits. Communications cables, in addition to carrying the communications circuit, shall also be permitted to carry circuits for powering communications equipment. Installations of listed communications cables shall comply with 725.144 where listed communications cables are used in place of Class 2 and Class 3 cables.

Exception: Compliance with 725.144 shall not be required for installations of listed 4-pair communications cables where the nominal current does not exceed 0.3 amperes in any conductor.

## REGULATORY AUTHORITY

527 CMR 12.00: M.G.L. c. 143, § 3L.