527 CMR 12.00: 2008 MASSACHUSETTS ELECTRICAL CODE
(AMENDMENTS)

The 2008 Massachusetts Electrical Code (527 CMR 12.00) of the Board of Fire Prevention Regulations shall be the 2008 National Electrical Code modified as follows:

Insert the following provisions ahead of the body of the Code:

Rule 1**.** All installations, repairs and maintenance of electrical wiring and electrical fixtures used for light, heat, power, signaling and communications purposes in buildings and structures subject to the provisions of M.G.L. c. 143 shall be reasonably safe to persons and property.

Rule 2. Conformity of installations, repairs, and maintenance of electrical wiring and electrical fixtures used for light, heat, power, signaling and communications with applicable regulations set forth in the Code, which is hereby filed with the Secretary of the Commonwealth shall be considered as complying with these requirements.

Rule 3. Additions or modifications to an existing installation shall be made in accordance with this Code without bringing the remaining part of the installation into compliance with the requirements of this Code. The installation shall not create a violation of this Code, nor shall it increase the magnitude of an existing violation.

Rule 4. Where an actual hazard exists, the owner of the property shall be notified in writing by the authority enforcing this Code. The notification shall contain specifications of the actual hazard that exists, together with a reference to the rule of this Code that is now in violation. (See M.G.L. c. 166, §§ 32 and 33, for enforcement authority.)

Rule 5. References are made in this code to other standards. Those standards, where duly adopted by law or regulation, may be enforced by the appropriate official. They are not considered part of this Code and they are not enforceable under M.G.L. c. 143 § 3L.

Rule 6. The approving authority may be guided in his approval of specific items of equipment and materials contemplated by the Code, by proof that such equipment and materials have been tested and conform to suitable recognized industry standards.

Rule 7. 527 CMR 12.00 shall be effective on all installations for which a permit has been granted subsequent to December 31, 2007.

Rule 8. In accordance with the provisions of M.G.L. c. 143 § 3L, the permit application form to provide notice of installation of wiring shall be uniform throughout the Commonwealth, and applications shall be filed on the prescribed form. After a permit application has been accepted by an Inspector of Wires appointed pursuant to M.G.L c. 166 §32, an electrical permit shall be issued to the person, firm or corporation stated on the permit application. Such entity shall be responsible for the notification of completion of the work as required in MGL 143 §3L.

Permits shall be limited as to the time of ongoing construction activity, and may be deemed by the Inspector of Wires abandoned and invalid if he or she has determined that the authorized work has not commenced or has not progressed during the preceding 12-month period. Upon written application, an extension of time for completion of work shall be permitted for reasonable cause. A permit shall be terminated upon the written request of either the owner or the installing entity stated on the permit application.

Rule 9. Installations covered by 527 CMR 12.00 shall also comply with M.G.L. c. 141.

Rule 10. Electrical installations shall not be concealed or covered from view until inspected by the inspector of wires within and not more than 24 hours for exterior excavations nor more than 72 hours for interior installations after proper notice to the inspector, Saturdays, Sundays, and holidays excluded.

90.2(B)(B)(b). Revise to read as follows:

(b) Are located in legally established easements, rights-of-way, or by other agreements either designated by or recognized by the public service commissions, utility commissions, or other regulatory agencies having jurisdiction for such installations.

90.4. Revise the first paragraph to read as follows:

90.4 Enforcement. This Code shall be used by the authority enforcing the Code and exercising legal jurisdiction over electrical installations. The authority having jurisdiction of enforcement of the Code shall accept listed and labeled equipment or materials where used or installed in accordance with instructions included with the listing or labeling. The authority shall have the responsibility for deciding upon the approval of unlisted or unlabeled equipment and materials, and for granting the special permission contemplated in a number of the rules.

90.6. Revise to read as follows:

90.6 Interpretations and Appeals. To promote uniformity of interpretation and application of the provisions of this Code, interpretations may be requested from the Board of Fire Prevention Regulations. Requests for interpretation shall be in the form of a question that can receive a "Yes" or "No" answer. This in no way supersedes the right of any individual who is aggrieved by the decision of an Inspector of Wires to appeal from that decision to the Board of Electricians' Appeals in accordance with M.G.L. c. 143 §3P. The Board of Fire Prevention Regulations shall, upon the request of the Board of Electricians' Appeals, render interpretations to the Board of Electricians' Appeals.

It is customary to revise this Code periodically to conform with developments in the art and the result of experience, and the current edition of the Code shall always be used.

90.10. Add new section numbered 90.10 to read:

90.10. References to Commonwealth of Massachusetts Codes, Regulations, and Laws. References are included in Appendix A for Building Codes, Elevator Regulations, Plumbing and Fuel Gas Code, Board of Fire Prevention Regulations, Division of Industrial Safety, State Sanitary Code, Architectural Barriers Regulations, Permit Applications, and Chapters of the General Laws. See Appendix A.

Article 100, Structure. Revise the definition to read as follows:

A combination of materials assembled or located at a fixed location to give support or shelter.

110.14(A). Delete the last sentence of the first paragraph and insert the following two sentences in its place:

Connection by means of wire binding screws or studs and nuts having upturned lugs or equivalent shall be permitted for 10 AWG or smaller solid conductors. Where stranded conductors are terminated on and not looped through such terminals, the terminals shall be identified for such use, or the strands at the terminals shall be made solid.

110.26(A)(1). Add a fourth paragraph (d) as follows:

(d) Adequate Accessibility. By special permission, smaller spaces may be permitted where it is judged that the particular arrangement of the installation will provide adequate accessibility.

200.7(C)(2). Revise the last sentence to read as follows:

In these applications reidentification of the conductor with white or gray insulation or with three continuous white stripes shall not be required.

210.25. 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(E). Revise this material to read as follows:

(E) Outdoor Outlets. Outdoor receptacle outlets shall be installed in accordance with (E)(1) through (E)(3).

(1) One-Family and Two-Family Dwellings. For a one-family dwelling and each unit of a two-family dwelling that is at grade level, at least one receptacle outlet readily accessible from grade and not more than 2.0 m (6 1/2 ft) above grade level shall be installed at the front and back of the dwelling.

(2) Multifamily Dwellings. For each dwelling unit of a multifamily dwelling where the dwelling unit is located at grade level and provided with individual exterior entrance/egress, at least one receptacle outlet readily accessible from grade and not more than 2.0 m (6 1/2 ft) above grade level shall be installed.

(3) Balconies, Decks and Porches. Balconies, decks and porches that are attached to the dwelling unit and are accessible from inside the dwelling shall have at least one receptacle outlet installed accessible from the balcony, deck or porch.

210.70(D). Insert an additional lettered subsection (D) to 210.70 as follows:

(D) GFCI Protection of Lighting Outlets in All Occupancies. The operation of a single GFCI device shall not deenergize all lighting outlets in a given area.

220.12. Revise the listed items in Table 220.12 as follows:

Type of Occupancy	Unit Load Volt-Amperes per Square Meter	Unit Load Volt-Amperes per Square Foot
Banks	28[b] (reduced from 39)	2½[b] (reduced from 3½)
Garages—commercial (storage)	3 (reduced from 6)	¼ (reduced from ½)
Office Buildings	33[b] (reduced from 39)	3[b] (reduced from 3½)
Warehouses (storage)	6 (increased from 3)	½ (increased from ¼)

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.

230.40. Amend Exception No. 1 to read:

Exception No. 1: By special permission, where there is no available space for service equipment accessible to all the occupants, buildings with more than one occupancy shall be permitted to have one set of service entrance conductors run to each occupancy or to a group of occupancies.

230.70(A)(1). Add the following sentence at the end of this paragraph:

Where the location of the service disconnecting means is outside of and not attached or adjacent to the building or structure served, a feeder disconnect shall be installed either inside or outside of the building or structure in compliance with the provisions of 225.32.

230.82. Revise this section to read as follows:

230.82. Equipment Connected to the Supply Side of Service Disconnect. Only equipment included in this section shall be permitted to be connected to the supply side of the service disconnecting means.

(A) Unswitched Equipment.

(1) Cable limiters or other current limiting devices

(2) Meters or meter sockets nominally rated not in excess of 600 volts, provided all metal housings and service enclosures are grounded

(3) Instrument transformers (current and voltage), high-impedance shunts, load management devices, and surge arresters

(4) Taps used only to supply load management devices, circuits for standby power systems, fire pump equipment, and fire and sprinkler alarms, if provided with service equipment and installed in accordance with requirements for service-entrance conductors

(5) Solar photovoltaic systems, fuel cell systems, or interconnected electric power production sources

(6) Control circuits for power-operable service disconnecting means, if suitable overcurrent protection and disconnecting means are provided

(7) Ground-fault protection systems or transient voltage surge suppressors, where installed as part of listed equipment, if suitable overcurrent protection and disconnecting means are provided

(B) Meter Disconnect Switches. A disconnecting means shall be permitted to be located ahead of the service equipment provided the installation complies with 230.82(B)(1) through 230.82(B)(3). A separate service disconnecting means that complies with Part V of Article 230 shall be installed, and shall be located as provided in 230.70(A)(1).

(1) Rating. A meter disconnect shall be capable of interrupting the load served. It shall have a short-circuit current rating not less than the available short-circuit current.

(2) Marking. A meter disconnect shall be legibly field marked on its exterior in a manner suitable for the environment substantially as follows:

METER DISCONNECT
NOT SERVICE EQUIPMENT

(3) Grounding. A meter disconnect shall be grounded. The grounding connections shall be permitted to be in accordance with 250.142(A)(1).

250.32(A). Revise the Exception to read as follows:

Exception: A grounding electrode at a separate building or structure shall not be required where no branch circuits originate at that building or structure. The branch circuit(s) shall include an equipment grounding conductor for grounding the noncurrent-carrying parts of all equipment.

250.52(A)(3). Add a fine print note as follows:

FPN: These electrodes, where available due to the footings not yet having been poured, are usually far lower in impedance than rod, pipe, or plate electrodes.

250.119 Exception. Revise to read as follows:

Exception: Where equipment is connected by a multiconductor cable and is not required to be grounded in accordance with 250.112(1), the color green shall be permitted to be used for other than grounding conductors

250.130(C). Delete this subsection.

300.4(D). Delete this subsection.

300.4(E). Delete the exception and revise the rule and fine print note to read as follows:

(E) Cables and Raceways Installed Under Roof Decking. A cable- or raceway-type wiring method, installed in exposed or concealed locations below metal-corrugated sheet roof decking, shall be installed and supported so the upper outside surface of the cable or raceway is not less than 38 mm (1½ in.) below the lowest surface of the roof decking.

FPN: Roof decking material is often repaired or replaced after the initial raceway or cabling and roofing installation and may be penetrated by the screws or other mechanical devices designed to provide "hold down" strength of the water-proof membrane or roof insulating material. Where the deck is of corrugated construction, the length of the holding screws is usually chosen to penetrate the lowest level of any corrugation as measured from the upper roof surface.

300.5(A). Add a fine print note to this subsection as follows:

FPN: 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).

300.11(A). Revise this subsection as follows:

I. Delete the third sentence in 300.11(A) 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(A)(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(A)(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 degrees total) between pull points, e.g., conduit bodies and boxes.

300.37. Insert the following sentence following the first sentence:

Where rigid nonmetallic conduit is used, it shall be Schedule 80 or it shall be suitably encased in not less than 50 mm (2 in.) of concrete.

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

310.8(D). Add an exception as follows:

> Exception: For drip loops installed to comply with 230.54(F), or for similar drip loops formed in branch-circuit or feeder conductors, conductors extending not more than 900 mm (3 ft) from a cable sheath or from a raceway shall not be required to be sunlight resistant.

310.15(B)(2)(a). Revise Table 310.15(B)(2)(a) to read as follows:

Number of Current-Carrying Conductors	Percent of Values in Tables 310.16 through 310.19, as Adjusted for Ambient Temperature if Necessary
4 through 6	80
7 through 24	70
25 through 42	60
43 and above	50

FPN: Overheating may occur where continuous, fully loaded conductor diversity is less than 50 percent and the number of current-carrying conductors exceeds nine. See 310.10.

310.15(B)(2)(a). Delete Exception No. 5 and insert the following Exception No. 5 in its place:

Exception No. 5: Derating factors shall not apply where 30 or fewer current-carrying conductors occupy no more than 20 percent of the interior cross sectional area of Cellular Concrete Floor Raceways, Article 372; Cellular Metal Floor Raceways, Article 374; and Underfloor Raceways, Article 390.

320.80(A). Delete the last sentence, which reads: "The 90°C (194°F) rating shall be permitted to be used for ampacity derating purposes, provided the final derated ampacity does not exceed that for a 60°C (140°F) rated conductor."

334.10. Insert an exception after (3) to read as follows:

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 (lighting fixtures) 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. 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.

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.

338.10(B)(4)(a). Delete the phrase “excluding 334.80”, identify the existing fine print note as FPN No. 1, and add a second fine print note as follows:

FPN No. 2: 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.

348.12(1). Revise to read as follows:

(1) In wet locations

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

(G) 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.

352.44. Revise to read as follows:

352.44 Expansion Fittings. Expansion fittings for rigid nonmetallic conduit shall be provided to compensate for thermal expansion and contraction where the length change will exceed, in accordance with Tables 352.44(A) and (B), 3 mm ($^1/_8$ in) at securely mounted items such as boxes, cabinets, elbows, or other conduit terminations.

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 and joint resistance, phasing, and insulation resistance shall be verified by test prior to energizing the system for the first time. 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.

(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.

396.60. Insert the following sentence at the end:

The messenger shall not be used as a current-carrying conductor unless used as a grounded conductor in accordance with 250.32(B)(2).

400.5. Revise the table following the first paragraph to read as follows:

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

FPN: Overheating may occur where continuous, fully loaded conductor diversity is less than 50 percent and the number of current-carrying conductors exceeds nine. See 310.10.

400.8(4). Revise the existing exception as follows:

Exception to (4): Flexible cord and cable shall be permitted to be installed in accordance with 368.8(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.

400.14. 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 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.

410.16(C). Add a second paragraph as follows:

In addition to, or in lieu of, the mechanical fastening means, electric luminaires (fixtures) 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 (fixture). Fluorescent luminaires (fixtures) shall be supported at each end of a diagonal axis of the luminaire (fixture).

511.12. Revise and add an exception as follows:

511.12. Ground-Fault Circuit-Interrupter for Personnel. All 125-volt single-phase 15- and 20-ampere receptacles installed in areas where electrical diagnostic equipment, electrical hand tools, portable lighting equipment, or portable appliances are to be used shall have ground-fault circuit-interrupter protection for personnel.

Exception: Where an individual branch circuit supplies a single receptacle that is located and identified for the specific use of computerized diagnostic equipment, it shall be permitted to omit the ground-fault circuit-interrupter protection for personnel.

517.13(B). Delete Exception No. 2.

550.2 Manufactured Home, FPN 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.

550.25(B). Add the following exception:

Exception: AFCI protection shall not be required for branch circuits within the scope of this article supplying permanently installed equipment used to detect one or more of a through c. No circuit wired under the terms of this exception shall supply other outlets for which AFCI protection is required by this Code:

a. Fire;
b. Intrusion; or
c. Carbon monoxide

680.7. Insert a fine print note ahead of 680.7(A) as follows:

FPN: Unlisted swimming pool pump motors for permanently installed pools may be supplied 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.

695.3. Insert a fine print note ahead of 695.3(A) as follows:

FPN: NFPA 20, Standard for the Installation of Stationary Pumps for Fire Protection, provides information on the characteristics of reliable power sources in Appendix A, item A-6.2.3.

700-9(D). Revise to read as follows:

(D) Fire Separation: Emergency system feeders, wiring to elevator machine rooms including the cab lighting disconnecting means, and wiring to fire pumps shall comply with 700.9(D)(1) and (2).

(1) Equipment. All required emergency systems generation and distribution equipment shall be located in 2-hour fire resistive rated rooms, closets or shafts. Equipment, conduit, piping, or ductwork alien to the emergency system shall not be located within these rooms, closets, or shafts.

Exception No. 1: Equipment for feeder circuits (including transfer switches, transformers, panelboards, etc.) for legally required standby purposes in compliance with the provisions of Article 701, or for the equipment system of a hospital as covered in 517.30(B)(3) and 517.34, or for the critical branch of a nursing home as covered in 517.43, shall be permitted in the same room. Nonemergency equipment shall be installed sufficiently remote from emergency equipment that a failure within one will be unlikely to damage the other.

Exception No. 2: Distribution equipment supplying only branch circuits covered by the provisions of Part VII of Article 517 shall be permitted in other spaces.

(2) Wiring. All portions of emergency system feeders located outside of rooms, closets, or shafts required by 700.9(D)(1) shall be enclosed within 2-hour fire resistive rated enclosures or be part of an assembly that has a 2-hour fire resistive rating.

FPN: Available methods for achieving the required fire resistance rating may include electric circuit protective systems, thermal barrier systems for electrical system components, listed fire-rated assemblies, and cables listed to maintain circuit integrity where installed in accordance with applicable listing requirements. Further details may be found in directories of fire resistance published by qualified testing laboratories.

Exception to 700.9(D)(1) and (2): In buildings or structures less than 21 m (70 ft) in height, or for new emergency feeders or equipment in existing buildings, alternative methods of protection may be accepted by the authority having jurisdiction where it is assured that equivalent objectives can be achieved.

FPN: Many techniques intended to prevent the deflection of steel members at high temperatures will not materially increase the survival time of circuits in electric raceways.

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. Revise the fourth paragraph to read as follows:

Equipment for sources of power as described in 700.12(A) through 700.12(E) shall comply with 700.9(D)(1) of this Code where circuit(s) covered in 700.9(D) are supplied.

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

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

701.11(G). Delete the second sentence of the final paragraph that reads:

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

725.26(B)(4). Revise to read as follows:

(4) In Cable Trays. In cable trays, where (1) the power-supply conductors are run in wiring methods listed in Table 392.3(A), or where (2) the power supply conductors are run as single conductors as covered in 392.3(B)(1) and all Class 1 circuit conductors not functionally associated with them are separated by a solid fixed barrier of a material compatible with the cable tray, or where the Class 1 circuit conductors are in a metal-enclosed cable.

APPENDIX A†

780 CMR: MASSACHUSETTS STATE BUILDING CODE

6th Edition with changes and corrections up to 11/27/98

High rise buildings ..... 403.0 complete
Smoke Control (atrium) 404.4
Fire Alarm (in all buildings with atrium) 404.6
Underground structures ..... 405.0 complete
Use Group I-2 Smoke/heat detection 409.5.1
Use group I-3 Remote release of locks on doors – egress ..... 410.4.1 through 410.4.5
Lighting control (theaters) 411.4
Footlights and stage electrical equipment 412.3.3
Automatic fire detection systems (airport traffic control towers) 414.4
Standby power, light, and emergency systems (airport traffic control towers) 414.5
HPM Use facilities (Hazardous Production Materials) ..... 416.0 complete
Hazardous Materials ..... 417 complete
Swimming pools, alarmed access, where required 421.10.1.9
Group residence (fire warning system) 423.7.2
Child day care centers ..... 424.0 complete
Limited group residence (Fire Alarm) ..... 427.3.6 – 427.3.7
Detoxification facilities (Fire Alarm) 428.12
Penetrations (Egress Lighting) 428.13
Penetrations (documentation) 703.2
Penetrations (cables and wires) ..... 709.6.1 – 709.6.2
Penetrations (electrical outlet boxes) 709.6.3
Penetrations (protection) 713.4
Automatic Fire Doors (smoke closing) 716.5
Fire protection systems ..... 901.0 complete
Fire protection system approval/acceptance ..... 903.0 complete
Fire protective signaling systems ..... 917.0 complete
Automatic fire detection systems ..... 918.0 complete
Single and multiple-station smoke detectors ..... 919.0 complete
Smoke control systems ..... 921.0 complete
Supervision (fire suppression systems) 923.1
Fire protective signaling systems 923.2
Fire Pumps Emergency Power 924.3
Penetrations of interior stairway enclosures 1014.11.2
Exit signs and lights ..... 1023.0 complete
Means of egress lighting ..... 1024.0 complete
Light and ventilation required (bathroom, toilet room, and general) ..... 1205.0 through 1209.0
Cutting, notching, and boring in wood framing members 2305.3
Electrical lighting fixtures 2604.5.4
Plenums ..... 2805.0 complete
Power venters (power exhausters) ..... 2812.0 complete
Elevator, dumbwaiter, and conveyor equipment installation requirements ..... Chapter 30 complete
Illuminated signs 3102.13
Portable signs 3102.14
Membrane Structures Standby Power 3103.4.2
Electrical system protection with reference to base flood elevation 3107.7
Precautions during building operations (lighting) ..... 3315.0 complete
Historic buildings ..... 3409.0 complete

†See note at the end of Appendix A.

780 CMR: CHAPTER 13 ENERGY CONSERVATION*

Recessed light fixtures (IC labeled) ..... 1304.3.8; 1304.4.3; Appendix J, 4.3.4
Air leakage for all buildings (openings around wiring; outlet plate gaskets)..... 1304.3.1
Zoning for temperature control 1305.3.4
Heating, ventilating, and air-conditioning equipment..... 1305.0 complete
Electrical power distribution ..... 1307.0 complete
Lighting systems..... 1308.0 complete
Building design by systems analysis ..... 1315.0 complete
Energy provisions for existing buildings..... 3407.0 complete

*Note: For energy conservation provisions for low-rise residential occupancies, see Building Code Appendix J complete.

780 CMR: CHAPTER 36 ONE AND TWO FAMILY DWELLINGS

Required lighting, including control locations 3603.6.1
Mechanical ventilation 3603.6.2
Artificial light (illumination levels)..... 3603.6.5.1
Fire protection (smoke detection)..... 3603.16 complete
Energy Conservation Requirements - One and Two Family Detached Buildings..... 3603.21
Drilling and notching – studs 3606.2.5
Cutting and notching – beams, joists, and rafters..... 3608.2.6
Holes – beams, joists, and rafters 3608.2.7
Mechanical equipment, general..... 3611, 3612, and 3613 generally
Heating and cooling equipment..... 3614 generally
Electric resistance heating ..... 3615 generally
Clothes Dryer Exhaust..... 3618.1
Range Hoods 3618.2
Microwave Ovens (oven cooking appliance)..... 3618.3
Overhead Ventilating Hoods 3618.4

DIVISION OF INDUSTRIAL SAFETY

454 CMR 10.00 Construction Industry Rules and Regulations
Part 17
Tunnels and Shafts, Caissons, Cofferdams, and Compressed Air

10.175 Tunnels and Shafts
Section 12 Electrical Equipment
10.178 Compressed Air
Section 11 Electricity

ELEVATOR REGULATIONS

524 CMR 15.00 through 35.00

BOARD OF STATE EXAMINERS OF PLUMBERS AND GAS FITTERS

248 CMR 6.00: NATIONAL FUEL GAS CODE (NFPA 54)

5.4.3(d): Proper permanent lighting shall be provided at the roof access. The switch for such lighting shall be located inside the building near the access means leading to the roof.

BOARD OF FIRE PREVENTION REGULATIONS

527 CMR 4.00: Oil Burning Equipment
- 4.04: Oil Burners, Light Fuel Oil Type
  - (3) Oil Burner Controls
  - (4) Electric Wiring and Equipment

527 CMR 5.00: Operation and maintenance of buildings or other structures used as garages, service stations and the related storage, keeping and use of gasoline or other motor fuel.
- 5.07 Dispensing Equipment
  - (2) Heat activated shutoff switch
  - (5) Emergency pump shutoff switches/circuit breakers

527 CMR 15.00: Keeping, handling and transportation of flammable and combustible liquids, and the disposition of crude petroleum or any of its products in harbors or other waters of the Commonwealth.
- 15.09 General Provisions [Marinas]
  - (1) a, b, c. Equipment ratings, emergency shutoffs, permitted wiring locations

105 CMR 410: MINIMUM STANDARDS OF FITNESS FOR HUMAN HABITATION (STATE SANITARY CODE, CHAPTER II)

410.250: Habitable Rooms Other than Kitchen—Natural Light and Electrical Outlets
410.251: Kitchen Lighting and Electrical Outlets
410.252: Bathroom Lighting and Electrical Outlets
410.253: Light Fixtures Other than in Habitable Rooms or Kitchens
410.254: Light in Passageways, Hallways, and Stairways
410.255: Amperage
410.256: Temporary Wiring
410.258: Exemption of Dwellings More than 600 Feet from Electrical Service
410.280: Natural and Mechanical Ventilation
410.281: Ventilation Shut-off
410.354: Metering of Electricity and Gas
410.483: Auxiliary Emergency Lighting Systems and Exit Signs

521 CMR: ARCHITECTURAL ACCESS BOARD

39.3 HEIGHT

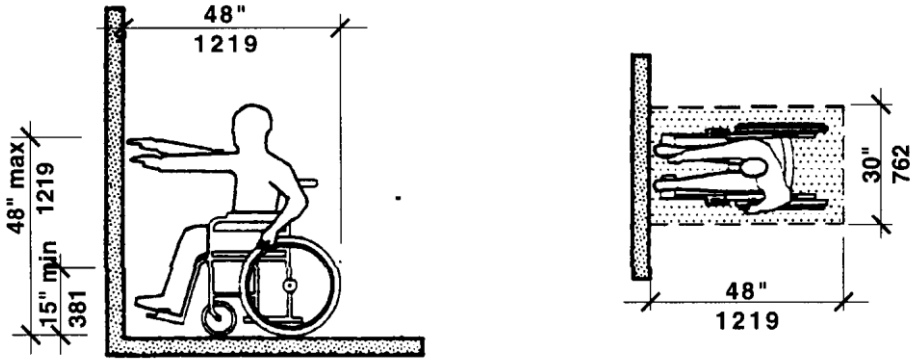
The highest operable part of controls, dispensers, receptacles, and other operable equipment shall be placed within at least one of the reach ranges specified in 521 CMR 6.5, Forward Reach and 521 CMR 6.6, Side Reach.

39.3.1 Electrical and communications system receptacles on walls shall be mounted between 15 inches (15" = 381mm) and 48 inches (48" = 1219mm) above the floor, measured at the centerline of the lowest receptacle.

Exception: These requirements do not apply where the use of special equipment dictates otherwise or where electrical and communications systems receptacles are not normally intended for use by building occupants.

39.4 LOCATION

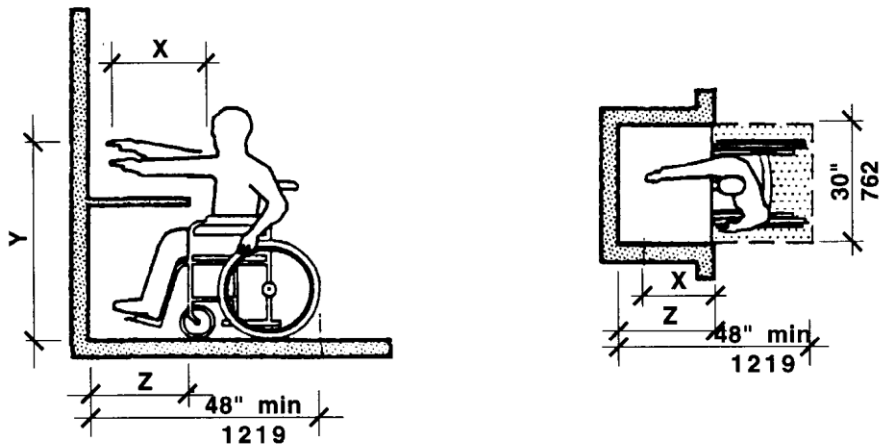
All such controls shall be located at least 18 inches (18" = 457mm) from an interior corner.



High Forward Reach Limit
Figure 6k

6.5 FORWARD REACH

If the *clear floor space* only allows forward approach to an object, the maximum high forward reach allowed shall be 48 inches (48" = 1219mm) (See Fig. 6k). The minimum low forward reach is 15 inches (15" = 381mm). If the high forward reach is over an obstruction, reach and clearances shall be as shown in Fig. 6l.

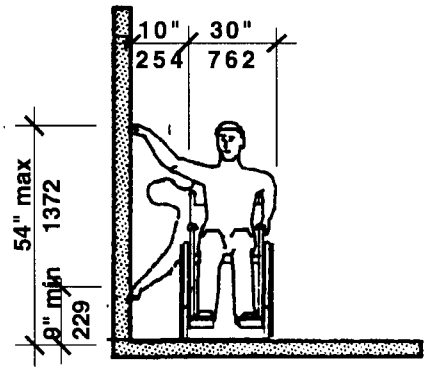


NOTE: X shall be less than or equal to 25" (635 mm). Z shall be greater than X. When X is less than 20" (508 mm), then Y shall be 48" (1219 mm) max. When X is 20" to 25" (508 to 635 mm), then Y shall be 44" (1118 mm) max.

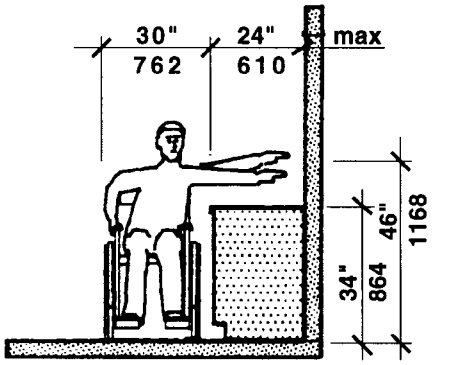
Maximum Forward Reach over an Obstruction
Figure 6l

6.6 SIDE REACH

If the *clear floor space* allows parallel approach by a person in a wheelchair, the maximum high side reach allowed shall be 54 inches (54" = 1372mm) and the low side reach shall be no less than nine inches (9" = 229mm) above the floor (See Fig. 6m). If the side reach is over an obstruction, reach and clearances shall be as shown in Fig. 6n.



High and Low Side Reach
Figure 6m



Maximum Side Reach over Obstruction
Figure 6n

†General Footnote to Appendix A: The provisions of the regulations cited in this appendix are noted to assist the users of this Code in properly considering various electrical design constraints of other building systems. They are generally unenforceable by an Inspector of Wires. See Rule 5 of this Code.

REGULATORY AUTHORITY

527 CMR 12.00: M.G.L. c. 22D, § 4; c. 143, § 3L; c. 148, § 10