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BOARD OF BUILDING REGULATIONS AND STANDARDS

NOTICE OF MEETING

In accordance with the provisions of G.L. c. 30A § 20, notice is hereby given that the Board of Building Regulations and Standards will convene a public hearing to address proposed changes to 780 CMR (The State Building Code), ninth edition as well as a regular meeting on:

November 14, 2017 @ 1:00 p.m.

Division of Professional Licensure (DPL) Office
1000 Washington Street - Room 1E
Boston, MA 02118

Please allow time to be checked-in at the front desk.

Posted on November 7, 2017 @ 5:00 p.m.

It is anticipated that the topics shown below will be discussed at the aforementioned meeting:

AGENDA

Roll Call, by BBRS Chair:

Introduce new member *Susan Gleason* representing *general contractors of commercial or industrial buildings*.

Richard Crowley Chair (RC)	<input type="checkbox"/> present	<input type="checkbox"/> absent
John Couture, Vice Chair (JC)	<input type="checkbox"/> present	<input type="checkbox"/> absent
Robert Anderson (RA), or designee	<input type="checkbox"/> present	<input type="checkbox"/> absent
Steve Frederickson (SF)	<input type="checkbox"/> present	<input type="checkbox"/> absent
Kevin Gallagher (KG)	<input type="checkbox"/> present	<input type="checkbox"/> absent
Cheryl Lavalley (CL)	<input type="checkbox"/> present	<input type="checkbox"/> absent

Kerry Dietz (KD)	<input type="checkbox"/> present	<input type="checkbox"/> absent
Peter Ostroskey (PO), or designee	<input type="checkbox"/> present	<input type="checkbox"/> absent
Michael McDowell (MM)	<input type="checkbox"/> present	<input type="checkbox"/> absent
Susan Gleason (SG)	<input type="checkbox"/> present	<input type="checkbox"/> absent
<i>Structural Engineer, open</i>	<input type="checkbox"/> present	<input type="checkbox"/> absent

Public Hearing Portion

In accordance with Massachusetts General Law Chapter 30A, Section 2, the Board will convene this hearing to permit the public to appear and be heard on the proposed changes to the Ninth Edition Building Code (780 CMR). Additionally, Board members will convene a regular meeting following the public hearing portion. Anticipated regular meeting agenda items are identified following the public hearing portion description below.



The new, ninth edition code is based on modified versions of the following 2015 codes as published by the International Code Council (ICC).

- International Building Code (IBC);
- International Residential Code (IRC);
- International Existing Building Code (IEBC);
- International Energy Conservation Code (IECC);
- International Mechanical Code (IMC);
- International Swimming Pool and Spa Code (ISPSC); and
- Portions of the International Fire Code (IFC).

BBSR will allow testimony on code change proposals that have been submitted for consideration prior to today's meeting as well as any portion of the referenced codes and/or amendments that comprise the ninth edition code. The chair does reserve the right to limit testimony time on any given topic.

Those who wish to testify must sign-in and indicate that they will provide testimony. Those who sign-up to testify will be called to the podium from the sign-in sheet. Any legislator or representative of an interested public agency may be called first.

Interested parties may also submit written comment on code contents up until the close of business on December 8, 2017. Written comments may be forwarded to Robert.Anderson@state.ma.us.

The ninth edition code may be viewed @ the following web addresses:

International Codes

<https://codes.iccsafe.org/public/collections/I-Codes>

The **UNOFFICIAL** Massachusetts amendments:

Commercial Codes (IBC, IECC, IEBC, IMC, IFC, ISPSC)

https://www.mass.gov/files/documents/2017/10/13/780%20CMR%20ninth%20edition%2C%20base%20code%20amendments_0.pdf

Residential Code (IRC)

https://www.mass.gov/files/documents/2017/10/13/780%20CMR%20ninth%20edition%2C%20residential%20code%20amendments_0.pdf

Proposals Received Prior to Meeting Date:

1. **Proposed Coastal A Zone Amendments** - The proposal intends to re-insert *Coastal A Zone Provisions* into varied sections of the International Building Code (IBC) and International Residential Code (IRC). Proposals are attached to this agenda.
2. **Proposed House Keeping Amendments Associated with Flood Hazard Provisions** - The proposal intends clarify certain flood hazard requirements of the International Existing Buildings Code (IEBC) and International Residential Code (IRC). Proposals are attached to this agenda.
3. **Proposed Amendment to Concrete Testing Lab Personnel Certifications** - The proposal intends to revise certification classifications for certain concrete testing lab personnel as established by Chapter 110.R1. Proposal attached to agenda.
4. **Proposed Amendment to Section 1203.2** - The proposal intends to revise certain energy conservation\insulation requirements of the International Building Code (IBC), International Residential Code (IRC) and International Existing Building Code (IEBC). Proposals are attached to this agenda.
5. **Proposed Amendment to Section 110.R3.6.2** - The proposal intends to revise the referenced sections of the manufactured buildings regulations concerning certain plan submittals. Proposal attached to agenda.

6. **Proposed Amendment to Chapter 110.R3** – The proposal intends to revise certain sections of Chapter 110.R3 concerning construction trailer requirements. Proposal attached to agenda.
7. **Proposed Amendment to Construction Supervisor License Requirements** – The proposal intends to revise certain sections of Chapters 1 and Chapter 110.R5 concerning the new for construction supervisor license supervision. Proposal attached to agenda.
8. **Proposed Amendment to Section AJ102.3.2 and AJ102.3.3** – The proposal intends to revise the referenced sections of the International Residential Code concerning certain smoke and c\o detection requirements. Proposal attached to agenda.
9. **Proposed Amendment to Reconsider EV Charging Stations** – The proposal intends to revise certain sections of the International Energy Conservation Code to require fit-up for EV. Proposal attached to agenda.

Regular Meeting:

1. **Introduce** Mike Turns of Performance Systems Development (PSD). PSD has been selected by the MA utilities/energy efficiency program administrators to provide energy code outreach and education services across the state.
2. **Review\Vote** approval of October 10, 2017 BBRS draft meeting minutes.
3. **Review\Vote** approval of October 3, 2017 BOCC draft meeting minutes.
4. **Review\Respond** to certain questions pertaining to the use and intent of the ninth edition code.
 - Section R905.16, Sections R907.1 through R907.5 and R909.1 and 909.9 concerning solar requirements are all labeled as reserved.
 - Section 402.3 and other sections pertaining to rooftop solar readiness.
 - Others
5. **Consider\Vote** request for interpretation of Section 1203.1 general ventilation requirements.
6. **Consider\Vote** on-line building official certification exam requirements.
7. **Consider\Vote** David Lenzie to serve as member of academia on the Building Official Certification Committee (BOCC).
8. **Review\Vote** building contractor, construction control letter of certification.
9. **Discuss\Interpret** sprinkler requirements for new transient lodging facilities, including bed and breakfast facilities, and newly created rooms that would be leased to transient lodgers.
10. **Review\Vote** request for interpretation of sprinklers in large, renovated (*enlarged*) single- or two-family homes, exceeding 14,400 square feet.
11. **Consider\Vote** approval of 160 new CSLs issued in the month of September, 2017.
12. **Discuss\Vote** CSL Average Passing Score/Medical/Military/Continuing Education Requirements.
 - Walter R. Hatfield CS-003669 (*Continuing Education Requirements*)
 - Kenneth Rocke CS-031280 (*Medical*)
13. **Discuss** Andersen v. State Building Code Appeals Board case.
14. **Discuss\Vote** in accordance with 780 CMR 110.R.5.2.10 whether or not to reconsider CSL disciplinary decision for Docket C17-00011.
15. **Review** schedule for 2018 meetings.
16. **Discuss** other matters not reasonably anticipated 2 business days in advance of meeting.

Insert (or delete) the following language:

R107.1.4 Information for construction in flood hazard areas. For buildings and structures located in whole or in part in flood hazard areas as established by Table R301.2(1), construction documents shall include:

1. Delineation of flood hazard areas, floodway boundaries and flood zones and the design flood elevation, as appropriate.
2. The elevation of the proposed lowest floor, including basement; in areas of shallow flooding (AO Zones), the height of the proposed lowest floor, including basement, above the highest adjacent grade.
3. The elevation of the bottom of the lowest horizontal structural member in coastal high hazard areas (V Zones) and in Coastal A Zones where such zones are delineated on flood hazard maps identified in Section 322.1.1.
4. If design flood elevations are not included on the community's Flood Insurance Rate Map (FIRM), the building official and the applicant shall obtain and reasonably utilize any design flood elevation and floodway data available from other sources.

R301.2.4 Revise subsection as follows:

R301.2.4 Floodplain construction. Buildings and structures constructed in whole or in part in flood hazard areas (including AO, A, Coastal A or V Zones) or *coastal dunes* as established in Section R322.1.1, and substantial improvement and restoration of substantial damage of buildings and structures in flood hazard areas or *coastal dunes*, shall be designed and constructed in accordance with Section R322. Buildings and structures that are located in more than one flood hazard area or *coastal dune* shall comply with the most restrictive provisions of all those flood hazard areas and *coastal dunes*. Buildings and structures located in whole or in part in identified floodways shall be designed and constructed in accordance with ASCE 24.

R322.1 Replace the section as follows:

R322.1 General. Buildings and structures constructed in whole or in part in flood hazard areas and *coastal dunes*, and substantial improvement and restoration of substantial damage of buildings and structures in those areas shall be designed and constructed in accordance with the provisions contained in this section. Buildings and structures located in more than one flood hazard area and *coastal dunes* shall comply with the most restrictive provisions. Buildings and structures located in whole or in part in identified floodways shall be designed and constructed in accordance with ASCE 24. See Section R105.3.1.1 for substantial improvements and damage and see Section R309 for garage requirements. Flood hazard areas include the following:

1. AO zones, where shallow flooding exists without waves,
2. A zones, *and*
3. Coastal A zones, where wave heights are greater than or equal to 1 1/2 feet but less than 3 feet, and
4. ~~3.~~ V zones, where high velocity wave action exists and wave heights are greater than or equal to 3-feet.

R322.1.1 Replace the subsection as follows:

R322.1.1 Base flood elevation, flood maps, delineations and definitions. For base flood elevation and mapping resources see the following:

1. Flood hazard areas and base flood elevations are identified on a community's current effective Flood Insurance Rate Map (FIRM) or Flood Hazard Boundary Map (FHBM), whichever is applicable, and further defined in the current effective Flood Insurance Study (FIS) where applicable.
2. Floodways are delineated on a community's current effective FIRM or Flood Boundary & Floodway Map, whichever is applicable, and further defined in the current effective FIS.
3. If a community has received a preliminary FIRM and FIS from FEMA, and has been issued a Letter of Final Determination (LFD) from FEMA, the community shall use the preliminary FIRM and FIS to determine applicable flood zones, base flood elevations and floodways as of the date of the LFD.
4. Coastal A zones are delineated on the National Flood Hazard Layer (available on FEMA's Map Service Center).
5. ~~4.~~ *Coastal wetlands resource areas* are defined on the "Map of Coastal Wetland Resources for Building Officials."

R322.1.4 Revise the subsection as follows:

R322.1.4 Establishing the design flood elevation. The design flood elevation in Massachusetts shall be as follows:

1. For AO Zones the design flood elevation shall be the elevation of the highest adjacent grade plus the flood depth specified on the FIRM plus one (1) foot or the elevation of the highest adjacent grade plus three (3) feet if no flood depth is specified. See Section R322.2 for requirements.
2. For A Zones the design flood elevation shall be the base flood elevation plus one (1) foot. See Section R322.2 for requirements.
3. For **Coastal A Zones and** V Zones the design flood elevation shall be the base flood elevation plus two (2) feet. See Section R322.3 for requirements.
4. For coastal dunes see Section R322.4 for requirements.

R322.1.9 Revise the subsection as follows:

R322.1.9 Manufactured homes. The bottom of the frame of new and replacement *manufactured homes* on foundations that conform to the requirements of Section R322.2 or R322.3 and R322.4, as applicable, shall be elevated to or above the elevations specified in Section R322.2 (*flood hazard areas* including AO and A Zones) or R322.3 in coastal high-hazard areas (V Zones **and Coastal A Zones**) and R322.4 in *coastal dunes*. The anchor and tie-down requirements of the applicable state or federal requirements shall apply. The foundation and anchorage of *manufactured homes* to be located in identified floodways shall be designed and constructed in accordance with ASCE 24.

R322.3 through R322.3.7 Revise the section and subsections as follows:

R322.3 Coastal high-hazard areas (including V Zones **and Coastal A Zones).** Buildings and structures constructed in whole or in part in V **and Coastal A** Zones shall be designed and constructed in accordance with Sections R322.3.1 through R322.3.6.

R322.3.1 Location and site preparation. New buildings and buildings that are determined to be substantially improved pursuant to Section R105.3.1.1 shall be located landward of the reach of mean high tide.

R322.3.2 Elevation requirements.

1. Buildings and structures, shall be elevated so that the bottom of the lowest portion of horizontal structural members supporting the lowest floor, with the exception of pilings, pile caps, columns, grade beams and bracing, is elevated to the design flood elevation.
2. Basement floors that are below *grade* on all sides are prohibited.
3. The use of fill for structural support is prohibited.
4. Minor grading, and the placement of minor quantities of fill, shall be permitted for landscaping and for drainage purposes under and around buildings and for support of parking slabs, pool decks, patios and walkways. Fill is prohibited unless such fill is constructed and/or placed to avoid diversion of water and waves toward any building or structure.
5. Walls and partitions enclosing areas below the design flood elevation shall meet the requirements of Sections R322.3.4 and R322.3.5.
6. For lateral additions in V Zones that are not a substantial improvement, only the addition shall be elevated so that the bottom of the lowest horizontal structural member of the lowest floor with the exception of pilings, pile caps, columns, grade beams and bracing, is located at an elevation that is at least the design flood elevation.

R322.3.3 Foundations. Buildings and structures erected in coastal high-hazard areas and Coastal A Zones shall be supported on pilings or columns and shall be adequately anchored to such pilings or columns. The space below the elevated building shall be either free of obstruction or, if enclosed with walls, the walls shall meet the requirements of Section R322.3.4. Pilings shall have adequate soil penetrations to resist the combined wave and wind loads (lateral and uplift). Water-loading values used shall be those associated with the design flood. Windloading values shall be those required by this code. Pile embedment shall include consideration of decreased resistance capacity caused by scour of soil strata surrounding the piling. Pile systems design and installation shall be certified in accordance with Section R322.3.6. Spread footing, mat, raft or other foundations that support columns shall not be permitted where soil investigations that are required in accordance with Section R401.4 indicate that soil material under the spread footing, mat, raft or other foundation is subject to scour or erosion from wave-velocity flow conditions. If permitted, spread footing, mat, raft or other foundations that support columns shall be designed in accordance with ASCE 24. Slabs, pools, pool decks and walkways shall be located and constructed to be structurally independent of buildings and structures and their foundations to prevent transfer of flood loads to the buildings and structures during conditions of flooding, scour or erosion from wave-velocity flow conditions, unless the buildings and structures and their foundations are designed to resist the additional flood load.

Exception: In Coastal A Zones, stem wall foundations supporting a floor system above and backfilled with soil or gravel to the underside of the floor system shall be permitted provided the foundations are designed to account for wave action, debris impact, erosion and local scour. Where soils are susceptible to erosion and local scour, stem wall foundations shall have deep footings to account for the loss of soil.

Insert the following definitions in Chapter 2.

COASTAL A ZONE. Area within a *special flood hazard area*, landward of a V zone or landward of an open coast without mapped *coastal high hazard areas*. In a coastal A zone, the principal source of flooding must be astronomical tides, storm surges, seiches or tsunamis, not riverine flooding. During the base flood conditions, the potential for breaking wave height shall be greater than or equal to 1 ½ feet (457 mm). The inland limit of the coastal A zone is the Limit of Moderate Wave Action on the National Flood Hazard Layer (available on FEMA's Map Service Center).

LIMIT OF MODERATE WAVE ACTION. Line shown on the National Flood Hazard Layer to indicate the inland limit of the 1 ½ - foot (457 mm) breaking wave height during the base flood.

1603.1.7 Revise subsection as follows:

1603.1.7 Flood design data. For buildings located in whole or in part in *flood hazard areas* as established in Section 1612.3, the documentation pertaining to design, if required in Section 1612.5, shall be included and the following information, referenced to the datum of the *base flood elevation*, shall be shown, regardless of whether flood loads govern the design of the building:

1. Flood design class assigned according to ASCE 24.
2. In *flood hazard areas* other than *coastal high hazard areas* or *coastal A zones*, the elevation of the proposed lowest floor, including the basement.
3. In *flood hazard areas* other than *coastal high hazard areas* or *coastal A zones*, the elevation to which any nonresidential building will be dry floodproofed.
4. In *coastal high hazard areas* and *coastal A zones*, the proposed elevation of the bottom of the lowest horizontal structural member of the lowest floor, including the basement.

1612.4 Revise section as follows:

1612.4 Design and construction. The design and construction of buildings and structures located in flood hazard areas, including coastal high hazard areas and coastal A zones, shall be in accordance with Chapter 5 of ASCE 7 and ASCE 24. ~~In using ASCE 24-14, delete all references to coastal A zone standards.~~ For minimum elevation requirements for lowest floor, bottom of lowest horizontal structural member, utilities, flood-resistant materials and wet and dry floodproofing refer to tables in ASCE 24 which are to be amended as shown below. The design and construction of buildings and structures located in coastal dunes shall be in accordance with Appendix G.

DRAFT 9TH ED. BASE CODE PROPOSED AMENDMENTS **REINSERTING** COASTAL A ZONE
REFERENCES

		Flood Design Class 1	Flood Design Class 2	Flood Design Class 3	Flood Design Class 4
Minimum Elevation* of Lowest Floor (Zone A: ASCE 24-14 Table 2-1)	Zone A	BFE + 1 ft	BFE + 1 ft	BFE + 1 ft	BFE + 2 ft or 500-year flood elevation, whichever is higher
Minimum Elevation of Bottom of Lowest Horizontal Structural Member (ASCE 24-14 Table 4-1)	Zone V/ Coastal A	BFE + 2 ft	BFE + 2 ft	BFE + 2 ft	BFE + 2 ft or 500-year flood elevation, whichever is higher
Minimum Elevation Below Which Flood-Damage-Resistant Materials Shall be Used (Table ASCE 24-14 5-1)	Zone A	BFE + 1 ft	BFE + 1 ft	BFE + 1 ft	BFE + 2 ft or 500-year flood elevation, whichever is higher
	Zone V/ Coastal A	BFE + 2 ft	BFE + 2 ft	BFE + 2 ft	BFE + 2 ft or 500-year flood elevation, whichever is higher
Minimum Elevation** of Utilities and Equipment (ASCE 24-14 Table 7-1)	Zone A	BFE + 1 ft	BFE + 1 ft	BFE + 1 ft	BFE + 2 ft or 500-year flood elevation, whichever is higher
	Zone V/ Coastal A	BFE + 2 ft	BFE + 2 ft	BFE + 2 ft	BFE + 2 ft or 500-year flood elevation, whichever is higher
Minimum Elevation of Dry Floodproofing of non-residential structures and non-residential portions of mixed-use buildings (ASCE 24-14 Table 6-1)	Zone A	BFE + 1 ft	BFE + 1 ft	BFE + 1 ft	BFE + 2 ft or 500-year flood elevation, whichever is higher
	Zone V/ Coastal A	Not Permitted	Not Permitted	Not Permitted	Not Permitted
Minimum Elevation of Wet Floodproofing*** (ASCE 24-14 Table 6-1)	Zone A	BFE + 1 ft	BFE + 1 ft	BFE + 1 ft	BFE + 2 ft or 500-year flood elevation, whichever is higher
	Zone V/ Coastal A	Not Permitted	Not Permitted	Not Permitted	Not Permitted
<p>*Flood Design Class 1 structures shall be allowed below the minimum elevation if the structure meets the wet floodproofing requirements of ASCE 24-14 Section 6.3.</p> <p>**Unless otherwise permitted by ASCE 24-14 Chapter 7.</p> <p>***Only if permitted by ASCE 24-14 Section 6.3.1.</p>					

Note: In V zones location of utilities and equipment to the indicated level is required. Protection of utilities and equipment below the indicated level is not accepted.

Proposed amendment to the Existing Building Code

MA Amendment 9th Edition:

CHAPTER 34: EXISTING BUILDING CODE

780 CMR 34.00 adopts the *International Existing Building Code-2015* with sections or text modified or added as follows:

[A] 101.2 Scope. The provisions of the *International Existing Building Code-2015* shall apply to the repair, alteration, change of occupancy, addition to and relocation of existing buildings.

NOTES:

1. If requirements in 780 CMR 34.00 conflict with similar requirements in 780 CMR 1.00, then 780 CMR 1.00 controls.
2. When 780 CMR 34.00 references requirements in other I-Codes, see 780 CMR 1.00 for guidance on how to use those I-Codes.
3. Requirements in 780 CMR 34.00 for plumbing, fuel gas, electrical, elevators, fire, or accessibility shall be replaced by the requirements of the Massachusetts specialty codes, as indicated in 780 CMR 1.00.

We propose adding the following # 4:

101.2 Revise section as follows:

[A] 101.2 Scope. The provisions of the *International Existing Building Code-2015* shall apply to the repair, alteration, change of occupancy, addition to and relocation of existing buildings.

NOTES:

1. If requirements in 780 CMR 34.00 conflict with similar requirements in 780 CMR 1.00, then 780 CMR 1.00 controls.
2. When 780 CMR 34.00 references requirements in other I-Codes, see 780 CMR 1.00 for guidance on how to use those I-Codes.
3. Requirements in 780 CMR 34.00 for plumbing, fuel gas, electrical, elevators, fire, or accessibility shall be replaced by the requirements of the Massachusetts specialty codes, as indicated in 780 CMR 1.00.
4. The requirements in this code for construction of existing buildings in flood hazard areas and/or coastal dunes shall not apply and instead applicable sections of the Massachusetts Base Code or Massachusetts Residential Code shall apply.

The reason for this is because the Existing Building Code standards, as written, only require compliance with flood standards when additions, alterations, etc. are considered to be substantial improvements. The MA Residential Code and Base Code have standards that are required for some additions that are not substantial improvements; i.e., lateral additions in V zones and in coastal dunes. These standards and this proposed amendment are consistent with standards in the 8th Edition.

Proposed amendment to Residential Code

MA amendment 9th Edition:

CHAPTER 24: FUEL GAS

For the fuel gas provisions of Chapter 24 see 248 CMR: *The Board of State Examiners of Plumbers and Gas Fitters*. Provisions related to work otherwise governed by this code (780CMR) shall be retained if not in conflict with other sections of this code.

We propose the following change:

CHAPTER 24: FUEL GAS

For the fuel gas provisions of Chapter 24 see 248 CMR: *The Board of State Examiners of Plumbers and Gas Fitters*. Provisions related to work otherwise governed by this code (780CMR) shall be retained if not in conflict with other sections of this code.

Retain this Section:

G2404.7 (301.11) Flood hazard. For structures located in flood hazard areas and coastal dunes, the appliance, equipment and system installations regulated by this code shall be located at or above the elevation required by Section R322 for utilities and attendant equipment.

Exception: The appliance, equipment and system installations regulated by this code are permitted to be located below the elevation required by Section R322 only within flood hazard areas including A and AO Zones for utilities and attendant equipment provided that they are designed and installed to prevent water from entering or accumulating within the components and to resist hydrostatic and hydrodynamic loads and stresses, including the effects of buoyancy, during the occurrence of flooding to such elevation.

This one section (G2404.7) relating to flood hazards needs to be retained. This standard is consistent with similar standards in the Base Code and with minimum National Flood Insurance Program standards. This is directly from the 2015 IRC with the added words “and coastal dunes.”

Proposed amendment to Residential Code

MA amendment 9th Edition:

CHAPTER 22: SPECIAL PIPING AND STORAGE SYSTEMS

Delete all of chapter 22 and replace with the following:

M2201 Special Piping and Storage Systems. Special laws and/or regulations impact requirements for oil tanks, piping, fittings, connections, installation, and oil pumps and valves. Refer to M.G.L. c. 148, § 13, M.G.L. c. 148, § 37, the Board of Fire Prevention Regulations at 527 CMR, the Board of Boiler Rules at 522 CMR and EPA regulations (as well as this code for tank structural design).

We propose the following change:

CHAPTER 22: SPECIAL PIPING AND STORAGE SYSTEMS

Delete all of chapter 22 and replace with the following:

M2201 Special Piping and Storage Systems. Special laws and/or regulations impact requirements for oil tanks, piping, fittings, connections, installation, and oil pumps and valves. Refer to M.G.L. c. 148, § 13, M.G.L. c. 148, § 37, the Board of Fire Prevention Regulations at 527 CMR, the Board of Boiler Rules at 522 CMR and EPA regulations (as well as this code for tank structural design).

Retain this Section:

M2201.6 Flood-resistant installation. In flood hazard areas and coastal dunes as established by Table R301.2(1), tanks shall be installed at or above the elevation required in Section R322.2.1 or R322.3.2 or shall be anchored to prevent flotation, collapse and lateral movement under conditions of the design flood.

This one section (M2201.6) relating to flood hazards needs to be retained. This standard is consistent with similar standards in the Base Code and with minimum National Flood Insurance Program standards. This is directly from the 2015 IRC with the added words “and coastal dunes.”

Chapter 110.R1, Section 110.R1.5.3 – Personnel – Ninth Edition

1. A professional engineer registered in the Commonwealth with at least five years of experience in responsible charge of work related to structural engineering, construction engineering or construction materials testing;
2. A bachelor's degree in engineering from an accredited institution and an additional total of three years' experience performing tests on concrete and concrete materials which shall include two years as a laboratory technician or supervisor; or
3. At least eight years' experience including five years as a lab technician or supervisor.

A lab supervisor shall have at least five years of experience performing tests on construction materials including concrete and concrete aggregates and be ACI-certified as a Concrete Laboratory Testing Technician-Level 2 and ACI-certified Aggregate Testing Technician – Level 2, and shall maintain such certification.

A field supervisor shall have at least five years of experience performing tests on construction materials including concrete and be ACI-certified as a Concrete Field Testing Technician-Grade 1 and shall maintain such certification.

Chapter 110.R1, Section 110.R1.4.3 – Personnel – Eighth Edition

1. A professional engineer registered in the Commonwealth of Massachusetts with at least five years of experience in responsible charge of work related to structural engineering, construction engineering or construction materials testing; or
2. A bachelor's degree in engineering from an accredited institution and an additional total of three years experience performing tests on concrete and concrete materials which shall include two years as a *laboratory* technician or supervisor; or
3. At least eight years experience including five years of experience as a lab technician or supervisor.

A lab supervisor shall have at least five years of experience performing tests on construction materials including concrete and concrete aggregates and be licensed as an **ACI** Class 1 Concrete Field Testing Technician.

A field supervisor shall have at least five years of experience performing tests on construction materials including concrete and be licensed as an ACI Class 1 Concrete Field Testing Technician.

All personnel shall be able to demonstrate their ability by oral or written exam to perform the tests and duties normally required in the manner stipulated by ASTM E 329 07.



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MASSACHUSETTS STATE BUILDING CODE – CODE AMENDMENT FORM

Dolphin Insulation is applying for modification to the MA Building Code.



Charles D. Baker
Governor

Karyn E. Polito
Lieutenant Governor

Daniel Bennett
Secretary

The Commonwealth of Massachusetts
Department of Public Safety
Board of Building Regulations and Standards
One Ashburton Place, Room 1301
Boston, Massachusetts 02108-1618

Phone (617) 727-3200

Fax (617) 727-5732

www.mass.gov/dps

Matthew Moran
Commissioner

Richard Crowley
Chairman

Robert Anderson
Administrator

MASSACHUSETTS STATE BUILDING CODE – CODE AMENDMENT FORM

Impacted code:	<input checked="" type="checkbox"/> 9 th Edition Base Code <input checked="" type="checkbox"/> 9 th Edition Residential Code	State Use Only	
Date Submitted:	September 12, 2017	Date Received:	
Code Section:	780 CMR 1203.2	Code Change Number:	
Name of proponent:	Christopher Alphen		
Company / Organization represented, if any:	Dolphin Insulation, Inc. Check <input checked="" type="checkbox"/> if representing self		
Address (number, street, city, state, ZIP):	410 Great Road, Littleton MA 01460		
Telephone number:	978-266-1122		
Email address:	chris@dolphin-insulation.com		

PLEASE CHECK OFF THE TYPE OF AMENDMENT PROPOSED

- ☐ Change existing section language ☒ Add new section ☐ Delete existing section and substitute
☐ Delete existing section, no substitute ☐ Other, Explain: _____

PLEASE TYPE THE PROPOSED AMENDMENT BELOW. If you propose to change a section, please copy the original text from either the relevant model code and/or MA amendment. Indicate, with a strikethrough, the text that you propose to delete. Please also indicate any new text in both *italic* and *red* font. Finally, for each proposal submitted, please provide the justification items requested below. Completed code amendment forms may be emailed to Felix Zemel, Director of Code Development and Manufactured Buildings at felix.zemel@state.ma.us. Please attach additional pages as necessary.

Existing language: See attached documents with details for each section.

Proposed changes:

Background and rationale:

Pros of the proposed change:

Cons of the proposed change:

Estimated impact on life safety:

EXISTING LANGUAGE: 1203.1.2.3

Exceptions:

1. The minimum required net free ventilating area shall be 1/300 of the area of the space ventilated, provided a vapor retarder having a transmission rate not exceeding one perm in accordance with ASTM E 96 is installed on the warm side of the attic insulation and provided 50% of the required ventilating area provided by ventilators located in the upper portion of the space to be ventilated at least three feet (914 mm) above eave or cornice vents, with the balance of the required ventilation provided by eave or cornice vents.
2. Roof assemblies where an expanding spray foam insulation material, providing at least 40% of the total R-value of the required insulation, is in direct contact with the underside of the roof deck and adjacent framing members. If the permeability of the foam material is less than two perm-inch, no vapor barrier is necessary.
3. Roof assemblies where a board foam plastic insulation material, providing at least 40% of the total R-value of the required insulation, is placed on top of the roof deck. If the permeability of the foam material is less than two perm-inch, no vapor barrier is necessary.

PROPOSED CHANGES: To be added to existing language as number 4

4. *Roof assemblies where cellulose and a vapor smart retarder membrane, providing 100% of the total R-value of the required insulation, is placed in direct contact with the underside of the roof deck and adjacent framing members. When using a vapor smart retarder membrane, whose air permeability at minimum is 0.02L/s-m², in combination with densely packed cellulose the configuration is air impermeable and exceeds the air flow standards set forth in ASTM E 2178 or E283. CMR R202*

BACKGROUND AND RATIONALE: To offer an additional solution to the application and requirement of closed cell foam on the underside of the sheathing.

PROS OF THE PROPOSED CHANGES: The proposed changes meet all of the moisture management standards and requirements and has no significant combustible potential nor does it have any significant off gassing potential.

CONS OF THE PROPOSED CHANGES: There are none.

ESTIMATED IMPACT ON LIFE SAFETY: Significant positive impact on life safety are achieved. Examples being a significant reduction of highly combustible material and also a significant reduction in off gassing and dangerous smoke development

ESTIMATED IMPACT ON COST: The elimination of several inches of closed cell foam has a significant impact on cost reduction in non-vented roof assemblies.

Proposals to Amend Chapter 110, Section 110.R3.6.2
From April 11, 2017 Meeting Minutes

EXHIBIT I – Message from Modular Home Builders Association, Tom Hardiman.

Board Action: Hold proposal for possible 1st iteration amendment.

Existing language: **110.R3.6.2 Construction documents.** All documents submitted with the application shall be identified to indicate the *manufacturer's* name, office address and address of the manufacturing facility and shall contain as a minimum the following information:

7. *Plans for product* shall provide or show, but not be limited to, the details listed below including the method of their testing or evaluation, or both. These requirements shall apply to the *plans* for building components only to the extent deemed necessary to permit a proper evaluation of the building component.

- **EXHIBIT AA** – Message from Executive Director Modular Building Institute, Tom Hardiman.

Board Action: Hold for possible 1st iteration amendment.

From: Tom Hardiman [tom@modular.org]
To: Anderson, Robert (DPS)
Cc:
Subject: MA BBRS

Sent: Wed 2/8/2017 12:54

Message: MA BBRS code change form contruction trailer exemption.docx

Mr. Anderson,

Thank you again for the updates the other day. I have reviewed the draft 9th Edition and wanted to submit a proposed comment. I found this form online (attached) which still references Mr. Zemel.

For years, the manufactured buildings program did not require single wide construction site trailers to go through the program. It was specifically mentioned at nearly every meeting we attended with the program staff. As a result, an unknown number of these units are in use in MA today. But that language / exception is not found in the codes. My concern is that with 15 new district reviewers, many won't continue this practice.

I am submitting a code change proposal for 110.R3 which spells this out. I am certainly open to modify or tweak this language if necessary.

Let me know if this email is an acceptable method for submitting this change proposal or if I need to submit it elsewhere.



Charles D. Baker
Governor

Karyn E. Polito
Lieutenant Governor

Daniel Bennett
Secretary

The Commonwealth of Massachusetts
Department of Public Safety
Board of Building Regulations and Standards
One Ashburton Place, Room 1301
Boston, Massachusetts 02108-1618

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www.mass.gov/dps

Matthew Moran
Commissioner

Richard Crowley
Chairman

Robert Anderson
Administrator

MASSACHUSETTS STATE BUILDING CODE – CODE AMENDMENT FORM

Impacted code:	<input checked="" type="checkbox"/> 9 th Edition Base Code <input type="checkbox"/> 9 th Edition Residential Code	State Use Only	
Date Submitted:	2/8/2017	Date Received:	
Code Section:	110.R3.6.2.(7) (e)	Code Change Number:	
Name of proponent:	Tom Hardiman		
Company / Organization represented, if any:	Modular Home Builders Association	Check <input type="checkbox"/> if representing self	
Address (number, street, city, state, ZIP):	944 Glenwood Station Lane Charlottesville, VA 22901		
Telephone number:	888-811-3288 x 158		
Email address:	tom@modular.org		

PLEASE CHECK OFF THE TYPE OF AMENDMENT PROPOSED

☒ Change existing section language ☐ Add new section ☐ Delete existing section and substitute
☐ Delete existing section, no substitute ☐ Other, Explain: _____

PLEASE TYPE THE PROPOSED AMENDMENT BELOW. If you propose to change a section, please copy the original text from either the relevant model code and/or MA amendment. Indicate, with a strikethrough, the text that you propose to delete. Please also indicate any new text in both *italic* and **red** font. Finally, for each proposal submitted, please provide the justification items requested below. Completed code amendment forms may be emailed to Felix Zemel, Director of Code Development and Manufactured Buildings at felix.zemel@state.ma.us. Please attach additional pages as necessary.

Existing language: **110.R3.6.2 Construction documents.** All documents submitted with the application shall be identified to indicate the *manufacturer's* name, office address and address of the manufacturing facility and shall contain as a minimum the following information:

7. *Plans for product* shall provide or show, but not be limited to, the details listed below including the method of their testing or evaluation, or both. These requirements shall apply to the *plans* for building components only to the extent deemed necessary to permit a proper evaluation of the building component.

- e. Mechanical Detail Requirements.
 - i Location of all equipment and appliances. Indicate equipment and appliances listed or *labeled* by approved agencies.
 - ii Heat loss and heat gain calculations or approved prescriptive method.
 - iii *Manufacturer's* name, make, model, number, BTU, input and output rating of all equipment and appliances, as appropriate, or the equal thereof.
 - iv Duct and register locations, sizes, and materials.
 - v Clearances from combustible material or surfaces for all ducts, flues and chimneys.
 - vi Method of providing required combustion air and return air.
 - vii Location of flues, vents and chimneys and clearances from air intakes and other vents and flues.
 - viii Details regarding dampers in ducts penetrating fire separations.
 - ix Complete drawings of fire sprinkler system, standpipe system or smoke/fire alarm system as required.
 - x Detail of elevator or escalator system, including method of emergency operation.
 - xi Duct and piping insulation thickness.
 - xii Ventilation air calculations.

Proposed changes:

- 7. *Plans* for *product* shall provide or show, but not be limited to, the details listed below including the method of their testing or evaluation, or both. These requirements shall apply to the *plans* for building components only to the extent deemed necessary to permit a proper evaluation of the building component.
 - e. Mechanical Detail Requirements *when factory installed*.
 - i. Location of all equipment and appliances. Indicate equipment and appliances listed or *labeled* by approved agencies.
 - ~~ii. Heat loss and heat gain calculations or approved prescriptive method.~~
 - iii. *Manufacturer's* name, make, model, number, BTU, input and output rating of all equipment and appliances, as appropriate, or the equal thereof.
 - iv. Duct and register locations, sizes, and materials.
 - v. Clearances from combustible material or surfaces for all ducts, flues and chimneys.
 - vi. Method of providing required combustion air and return air.
 - vii. Location of flues, vents and chimneys and clearances from air intakes and other vents and flues.

- viii. Details regarding dampers in ducts penetrating fire separations.
- ix. Complete drawings of fire sprinkler system, standpipe system or smoke/fire alarm system as required.
- x. Detail of elevator or escalator system, including method of emergency operation.
- xi. Duct and piping insulation thickness.
- xii. Ventilation air calculations.

Background and rationale:

Some of these requirements are out of the control of the manufacturer as related site work and installation has not yet occurred. Deletion of the heat loss and heat gain calcs is due to the fact that the hvac system is most often installed after the home is on site

Pros of the proposed change:

Cons of the proposed change:

Estimated impact on life safety

Estimated impact on cost: N/A



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MASSACHUSETTS STATE BUILDING CODE – CODE AMENDMENT FORM

Impacted code:	<input checked="" type="checkbox"/> 9 th Edition Base Code <input type="checkbox"/> 9 th Edition Residential Code	State Use Only	
Date Submitted:	2/8/2017	Date Received:	
Code Section:	110.R3.1.2	Code Change Number:	
Name of proponent:	Tom Hardiman		
Company / Organization represented, if any:	Modular Building Institute		
		Check <input type="checkbox"/> if representing self	
Address (number, street, city, state, ZIP):	944 Glenwood Station Lane Charlottesville, VA 22901		
Telephone number:	888-811-3288 x 158		
Email address:	tom@modular.org		

PLEASE CHECK OFF THE TYPE OF AMENDMENT PROPOSED

☒ Change existing section language ☐ Add new section ☐ Delete existing section and substitute
☐ Delete existing section, no substitute ☐ Other, Explain: _____

PLEASE TYPE THE PROPOSED AMENDMENT BELOW. If you propose to change a section, please copy the original text from either the relevant model code and/or MA amendment. Indicate, with a strikethrough, the text that you propose to delete. Please also indicate any new text in both *italic* and **red** font. Finally, for each proposal submitted, please provide the justification items requested below. Completed code amendment forms may be emailed to Felix Zemel, Director of Code Development and Manufactured Buildings at felix.zemel@state.ma.us. Please attach additional pages as necessary.

Existing language: **110.R3.1.2 Scope.** R3 shall govern the design, manufacture, handling, storage, transportation, relocation, and installation of *manufactured buildings, manufactured building components, and modular homes*, and hereinafter referred to as *product*, intended for installation in Massachusetts and/or manufactured in Massachusetts for shipment to any other state in which such *product* and the *labels* thereon are accepted. Subject to local zoning ordinances and by-laws, *product* may be sold for, delivered to, or installed on, building sites located in any jurisdiction of Massachusetts if such *products* have been approved and certified pursuant to R3.

Proposed changes:

110.R3.1.2 Scope. R3 shall govern the design, manufacture, handling, storage, transportation, relocation, and installation of *manufactured buildings, manufactured building components, and modular homes*, and hereinafter referred to as *product*, intended for installation in Massachusetts and/or manufactured in Massachusetts for shipment to any other state in which such *product* and the *labels* thereon are accepted. Subject to local zoning ordinances and by-laws, *product* may be sold for, delivered to, or installed on, building sites located in any jurisdiction of Massachusetts if such *products* have been approved and certified pursuant to R3.

Exception: buildings 720 sf or less used on construction or industrial sites not open to the general public.

Background and rationale:

These type of units are a necessary part of the overall construction and manufacturing industries, but confusion among local code officials persists as to whether these units are subject to the building codes. Many owners of these products classify them as equipment, as they are also used as security/storage. It has been the past practice of the Manufactured Buildings Program to exclude these single-wide products from inspection for the past decade. However, that per se exception is not specifically included in the building code. The most common size of these single-wide construction offices is 12ft x 60 ft = 720 sf.

Pros of the proposed change:

Cons of the proposed change:

Estimated impact on life safety Limiting this exception to small units not accessible to the general public minimizes any safety concerns while allowing code officials to focus on more significant matters.

Estimated impact on cost: N/A

Proposal to Amend Chapter 110, Section 110.R5.1.3.1
From April 11, 2017 Meeting Minutes

EXHIBIT X - Message from Code Consultant, Paul Moriarty.

Board Action: Hold for possible 1st iteration amendment.

PROPOSED CODE AMENDMENT: Under "Exception", after the word "supervisor" in the 3rd line, add the following: "Anyone who contracts to perform work for a Home Owner under this section, on or after January 1, 2018, shall be licensed as a Construction Supervisor and shall notify in writing the appropriate Building Department of such role".

Paul Moriarty

MASSACHUSETTS STATE BUILDING CODE REVISIONS PROPOSAL FORM (9TH EDITION)
(PLEASE TYPE OR PRINT)

Date: February 21, 2017

Building Code Section No. 110.R5.1.3.1

Code Change No. _____
(State Use Only)

Proponent: (Name) Metro West Building Officials Association, Inc.

Address: 45 West Main Street, Westborough, Massachusetts (Room 24) 01581
(Please check type of amendment proposed)

☒ X Change Section as follows: _____ Delete Section and substitute:

_____ Add new Section as follows: _____ Delete Section-no substitute:

PROPOSED CODE AMENDMENT: Under "Exception", after the word "supervisor" in the 3rd line, add the following: "Anyone who contracts to perform work for a Home Owner under this section, on or after January 1, 2018, shall be licensed as a Construction Supervisor and shall notify in writing the appropriate Building Department of such role".

SUPPORTING STATEMENT(S): There are too many instances whereby persons with no knowledge of the Building Code are applying for Building Permits under the Home Owner exemption but are having licensed/unlicensed persons performing the work. If a Home Owner performing work under this section "hires", a plumber and/or an electrician, that plumber and/or electrician must be licensed under the rules and regulations set up by the Massachusetts Division of Professional Licensure (M.G.L. chapter 141 §1A and chapter 142 §3), however, tradespeople performing work requiring a Building Permit are seemingly exempt from the Licensure requirements. The Home Owner should be protected from persons holding themselves as competent to perform work requiring a Building Permit. This proposal is needed in order to prevent misuse by contractors. If a "Home Owner" is actually performing the work, such work should be exempt, otherwise the work should be performed by a Licensed individual. This amendment also gives jurisdiction to BBRS over these "hired" tradespeople performing non-compliant work.

Home Owner Hiring Exemption-16296

HOMEOWNER Person(s) who owns a parcel of land on which he/she resides or intends to reside, on which there is, or is intended to be, a one- or two-family dwelling, attached or detached structures accessory to such use and/or farm structures. A person who constructs more than one home in a two-year period shall not be considered a homeowner.

8/6/10

780 CMR - Eighth Edition - 273

110.R5.1.3.1. Individuals supervising persons engaged in construction, reconstruction, alteration, repair, removal or demolition involving any activity regulated by any provision of 780 CMR, shall be licensed in accordance with 780 CMR 110.R5. Individuals engaged in the supervision of the field erection of manufactured buildings in accordance with 780 CMR 110.R3, shall be licensed as construction supervisors.

Exception. Any homeowner performing work for which a building permit is required shall be exempt from the licensing provisions of 780 CMR 110.R5, provided that if a homeowner engages a person(s) for hire to do such work, then such homeowner shall act as supervisor. This exception shall not apply to the field erection of a manufactured buildings constructed pursuant to 780 CMR 110.R3.

Note. Any Licensed Construction Supervisor who contracts to do work for a homeowner shall be responsible for performing said work in accordance with 780 CMR and manufacture's recommendations, as applicable, whether or not the licensed contractor secured the permit for said work.

780 CMR - Eighth Edition - 274

Proposal to Amend Appendix J of IRC
From May 16, 2017 Meeting Minutes

Board members also discussed revisions to Appendix J as identified below, but also determined that the suggested changes should be examined more closely and perhaps proposed as a first iteration revision to the ninth edition later in the year.

AJ102.3.1 through AJ102.3.3 Add the subsections as follows:

AJ102.3.1 Adding or creating one or more sleeping rooms.

1. **Single family dwelling.** When one or more sleeping rooms are added or created to an existing dwelling, the entire dwelling shall be provided with smoke, heat and carbon monoxide protection.
2. **Two-family dwelling.** When one or more sleeping rooms are added or created to one *dwelling unit* that unit shall be provided with smoke, heat and carbon monoxide protection detectors. When sleeping rooms are added or created to both units the entire building shall be provided with smoke, heat and carbon monoxide protection.
3. **Townhouses dwelling unit.** When one or more sleeping rooms are added or created to an existing *dwelling unit*, the entire unit shall be provided with smoke, heat and carbon monoxide protection.

~~AJ102.3.2~~ **AJ601.5 Complete reconstruction.** If a *dwelling* or townhouse building undergoes ~~reconstruction~~ *reconstruction* such that more than 50% of total walls and ceilings area are is opened *during construction* to framing, then the entire existing building shall be provided with smoke, heat and carbon monoxide protection.

~~AJ102.3.3 Adding an attached garage.~~ If a garage is created under or attached to an existing *dwelling unit*, a heat detector shall be provided in the garage, in accordance with R314.8.

Section AJ102.3.2 is a new MA amendment to the IRC 2015. I understand the intent but I do not believe it is necessary based on my experience for the past 18 months mediating disagreements between parties pertaining to code requirements to repair damaged buildings. Adding smoke detection in areas of these buildings not under construction is generally readily accepted by both parties. For this reason, if the amendment is retained it should be placed in the RECONSTRUCTION section of Appendix J, and modified as shown.

Section AJ102.3.3 is a new MA amendment to the IRC 2015 and is not necessary as it is common knowledge that for a new garage, new construction requirements apply. There is no need to identify that a heat detector is required, and it is not necessary to identify what gypsum board is required, and it is not necessary to identify all other new construction requirements.

Recommendation: Modify AJ102.3.2 as shown above and delete AJ102.3.3

AJ102.12 Energy Efficiency See Section ~~N-1100~~ **N1107 to N1111.**

Recommendation: Modify to improve clarity, section AJ102.12 as shown above.

2017-08-14 draft

Amendments to 2015 International Energy Conservation Code (IECC):

Add the following definitions to N1101.6 (R202) Defined terms:

Electric Vehicle. An automotive-type vehicle for on-road use, such as passenger automobiles, buses, trucks, vans, neighborhood electric vehicles, electric motorcycles, and the like, primarily powered by an electric motor that draws current from a rechargeable storage battery, fuel cell, photovoltaic array, or other source of electric current.

Informational note: defined as in 527 CMR 12 section 625.2.

Electric Vehicle Supply Equipment (EVSE): The conductors, including the ungrounded, grounded, and equipment grounding conductors, and the electric vehicle connectors, attachment plugs, and all other fittings, devices, power outlets, or apparatus installed specifically for the purpose of transferring energy between the premises wiring and the electric vehicle.

Informational note: defined as in 527 CMR 12 section 625.2.

Electric Vehicle Charging Space (“EV Ready Space”): A designated parking space which is provided with one dedicated 50-ampere branch circuit for *EVSE* servicing *Electric Vehicles*.

Amendments to IECC2015/IRC2015 - RESIDENTIAL PROVISIONS

N1101.5 (R103.2) Information on Construction Documents Amend as follows:

(ADD) #9 *EV Ready Space* locations per N1104.2/R404.2

N1104.3 (R404.2) Add a section as follows:

N1104.2 (R404.2) Electric Vehicle Charging Spaces (“EV Ready Spaces”)

(Mandatory). *EV Ready Spaces* shall be provided in accordance with Table N1104.2 (R404.2). The branch circuit shall be identified as “EV READY” in the service panel or subpanel directory, and the termination location shall be marked as “EV READY”. The circuit shall terminate in a NEMA 6-50 or NEMA 14-50 receptacle or a Society of Automotive Engineers (SAE) standard J1772 electrical connector.

Table N1104.2 (R404.2) EV ready space requirements

Type of Building	Number of parking spaces
R-3	At least 50%
R-2	At least 20%

Exceptions:

1. In no case shall the number of required *EV Ready Spaces* be greater than the number of parking spaces otherwise required by local ordinance.
2. This requirement will be considered met if all spaces which are not *EV Ready*:

- a. Are located more than 130 ft from the nearest electrical panel or sub-panel location, or
- b. Are separated from the premises by a public right-of-way.

R502.2 ADDITIONS. Add a section as follows:

R502.1.1.5 Electric Vehicle Charging Spaces (“EV Ready Spaces”). The number of *EV Ready Spaces* for the addition shall comply with the requirements in N1104.2 (R404.2) for new construction.

Exception

Where the existing electric service capacity is not being upgraded and capacity is not available.

Amendments to IECC2015 - COMMERCIAL PROVISIONS

C202 GENERAL DEFINITIONS.

Electric Vehicle. An automotive-type vehicle for on-road use, such as passenger automobiles, buses, trucks, vans, neighborhood electric vehicles, electric motorcycles, and the like, primarily powered by an electric motor that draws current from a rechargeable storage battery, fuel cell, photovoltaic array, or other source of electric current.

Informational note: defined as in 527 CMR 12 section 625.2.

Electric Vehicle Supply Equipment (EVSE): The conductors, including the ungrounded, grounded, and equipment grounding conductors, and the electric vehicle connectors, attachment plugs, and all other fittings, devices, power outlets, or apparatus installed specifically for the purpose of transferring energy between the premises wiring and the electric vehicle.

Informational note: defined as in 527 CMR 12 section 625.2.

Electric Vehicle Charging Space (“EV Ready Space”): A designated parking space which is provided with one dedicated 50-ampere branch circuit for *EVSE* servicing *Electric Vehicles*.

C103.2 Information on Construction Documents Amend as follows:

(ADD) #13 *EV Ready Spaces* locations in accordance with C405.9.3

C405.9.3 Add a section as follows:

C405.9.3 Electric Vehicle Charging Spaces (“EV Ready Spaces”). Group A-1, B, E, I, M and R buildings with four or more passenger vehicle parking spaces on the premises shall provide *EV Ready Spaces* for a percentage of parking spaces not less than:

- a. 5% of first 80 spaces,
- b. 3% of all spaces more than 80.

The branch circuit shall be identified as "EV READY" in the service panel or subpanel directory, and the termination location shall be marked as "EV READY". The circuit shall terminate in a NEMA 6-50 or NEMA 14-50 receptacle or a Society of Automotive Engineers (SAE) standard J1772 electrical connector.

Exceptions:

1. Parking spaces and garage spaces intended exclusively for storage of vehicles for retail sale or vehicle service.
2. This requirement will be considered met if all spaces which are not *EV Ready* are separated from the meter by a public right-of-way.
3. Parking spaces which are limited to parking durations of less than an hour.

C502.2 ADDITIONS. Add a section as follows:

C502.2.7 Electric Vehicle Charging Spaces ("EV Ready Spaces"). The number of *EV Ready Spaces* for the addition shall comply with the requirements for new construction.

Exception

1. Where the existing electric service is not being upgraded and capacity is not available.