# CHAPTER 5 – FLOORS - AMENDMENTS

The ninth edition building code became first effective on October 20, 2017 and, with a shortened concurrency period, the new code came into full force and effect on January 1, 2018.

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

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

Massachusetts amends these code fairly significantly to accommodate for unique issues in the commonwealth. This package of amendments revises the IRC only. Please see base code amendments for changes to other listed codes that comprise the ninth edition.

Please remember that the Massachusetts amendments posted on-line are ***unofficial versions*** and are meant for convenience only. Official versions of the Massachusetts amendments may be purchased from the State House Bookstore @ **Shop the Bookstore** and any of the I-Codes may be purchased from the International Code Council (ICC) @ **iccsafe.org**.

Additionally, the ICC publishes transition documents that identify changes from the 2009 to the 2015 I-Codes for those who may have interest.

- **International Building Code (IBC) Transition**
- **International Residential Code (IRC) Transition.**

***Note:*** *The residential code is part of the overall building code, which is referred to as 780 CMR. It is considered to be Chapter 51 in the overall code, which is why you will see reference to 780 CMR Chapter 51 in the amendments. The residential code is applicable to detached one- and two-family dwellings, multiple-family dwellings (townhouses) not more than three stories in height above the grade plane an\or their accessory structures not more than three stories in height above grade. See the base code for other building types.*

51.00: continued

**R403.1.6** Revise the subsection as follows:

**R403.1.6 Foundation Anchorage.** Wood sill plates and wood walls supported directly on continuous foundations shall be anchored to the foundation in accordance with this section Cold-formed steel framing shall be anchored directly to the foundation or fastened to wood sill plates anchored to the foundation. Anchorage of cold-formed steel framing and sill plates supporting cold-formed steel framing shall be in accordance with this section and section R505.3.1 or R603.3.1. Wood sole plates at all exterior walls on monolithic slabs, wood sole plates of braced wall panels at building interiors on monolithic slabs and all wood sill plates shall be anchored to the foundation with minimum ½-inch diameter (12.7 mm) A 307 or other applicable steel anchor bolts spaced a maximum of six feet (1,829 mm) on center or approved anchors or anchor straps spaced as required to provide equivalent anchorage to ½-inch diameter (12.7 mm) anchor bolts, installed in accordance with the manufacturer's instructions. Bolts shall extend a minimum of seven inches (178 mm) into concrete or grouted cells of concrete masonry units. The bolts shall be located in the middle third of the width of the plate. A nut and washer shall be tightened on each anchor bolt. There shall be a minimum of two bolts per plate section with one bolt located not more than 12 inches (305 mm) or less than seven bolt diameters from each end of the plate section. Interior bearing wall sole plates on monolithic slab foundation that are not part of a braced wall panel shall be positively anchored with approved fasteners. Sill plates and sole plates shall be protected against decay and termites where required by sections R317 and R318.

**R404.1.7** Revise the subsection as follows:

**R404.1.7 Backfill Placement.** Backfill shall not be placed against the wall until the wall has sufficient strength and has been anchored to the floor above, or has been sufficiently braced to prevent damage by the backfill. Backfill material shall be free draining and free of organic materials, construction debris, cobbles and boulders, shall be placed in lifts not exceeding 12 inches and shall be mechanically compacted. Foundation walls shall be properly braced prior to the setting of a manufactured building.

**R406.2.1** Add subsection as follows:

**R406.2.1 Through-wall Formwork Ties.** Through-wall formwork ties shall be removed from both faces of the foundation walls which enclose basements, cellars, below-grade garages or any space having the potential to be converted to useable or occupied space. Remaining holes shall be patched with hydraulic cement.

**R408.7** Delete the exception.

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**R502.3** Revise the section as follows:

**R502.3 Allowable Joist Spans.** Spans for floor joists shall be in accordance with Tables R502.3.1(1) and R502.3.1(2). For other grades and species and for other loading conditions, refer to the AWC STJR or the American Wood Council ("AWC") Maximum Span Calculator for Wood Joists & Rafters found at:
http://www.awc.org/calculators/span/calc/timbercalcstyle.asp

**R502.11.1** Revise the subsection as follows:

**R502.11.1 Design.** Wood trusses shall be designed in accordance with approved engineering practice. The design and manufacture of metal-plate-connected wood trusses shall comply with ANSI/TPI 1. The truss design drawings shall be prepared by a registered design professional.

**R506.1.1** Add the subsection as follows:

**R506.1.1 Control Joints.** Slabs shall be constructed with control joints having a depth of at least one quarter of the slab thickness but not less than one inch (25 mm). Joints shall be spaced at intervals not greater than 30 feet (9,144 mm) in each direction. Control joints shall be placed at locations where the slab width or length changes.

51.00: continued

**Exception:** Control joints may be omitted when the slab is reinforced in accordance with Table R506.1.1. Reinforcement shall be placed at the mid-depth of the slab or two inches (51 mm) from the top of slabs greater than four inches (102 mm) in thickness.

**Table R506.1.1**

| MAXIMUM DIMENSION OF SLAB OR DISTANCE BETWEEN CONTROL JOINTS (ft) | | | | | | WWF WIRE SPACING (in.) | WWF WIRE SIZE DESIGNATION (in.) |
|---|---|---|---|---|---|---|---|
| Slab Thickness (in.) | | | | | | | |
| 3.5 | 4.0 | 4.5 | 5.0 | 5.5 | 6.0 | | |
| 42 | 36 | 32 | 29 | 26 | 24 | 6 x 6 | W1.4 x W1.4 |
| 59 | 52 | 46 | 42 | 38 | 35 | 6 x 6 | W2.0 x W2.0 |
| 86 | 75 | 67 | 60 | 55 | 50 | 6 x 6 | W2.9 x W2.9 |

**Chapter 6: WALL CONSTRUCTION**

**R602.10** Add an exception as follows:

**Exception:** Unconditioned single story rooms of areas less than 600 ft$^2$ thermally isolated from conditioned space.

**Chapter 7: WALL COVERING**

**R702.3.5.2** Add subsection as follows:

**702.3.5.2 Ceiling Attachment.** Only designs or methods that use mechanical fasteners in accordance with Table R702.3.5 shall be used for attaching gypsum board to ceilings in buildings governed by 780 CMR 51.00 including manufactured buildings. Alternative designs, such as using adhesive only, are not permitted.

**Chapter 8: ROOF-CEILING CONSTRUCTION**

**R802.5 and R802.5** Revise the sections as follows:

**R802.4 Allowable Ceiling Joist Spans.** Spans for ceiling joists shall be in accordance with Tables R802.4(1) and R802.4(2). For other grades and species and for other loading conditions, refer to the AWC STJR or utilize the American Wood Council ("AWC") Maximum Span Calculator for Wood Joists & Rafters found at: http://www.awc.org/calculators/span/calc/timbercalcstyle.asp.

**R802.5 Allowable Rafter Spans.** Spans for rafters shall be in accordance with Tables R802.5.1(1) through R802.5.1(8). For other grades and species and for other loading conditions, refer to the AWC STJR. The span of each rafter shall be measured along the horizontal projection of the rafter or utilize the AWC Maximum Span Calculator for Wood Joists & Rafters at: http://www.awc.org/calculators/span/calc/timbercalcstyle.asp.

**Chapter 9: ROOF ASSEMBLIES**

**R901.1** Revise the section as follows:

**R901.1 Scope.** The provisions of this chapter shall govern the design, materials, construction and quality of roof assemblies. In roofing and reroofing, the energy conservation requirements of Chapter 11 of 780 CMR 51.00 shall also be satisfied.

**R905.1** Revise the section as follows:

**R905.1 Roof Covering Application.** Roof coverings shall be applied in accordance with the applicable provisions of this section and the manufacturer's installation instructions. Unless otherwise specified in this section, roof coverings shall be installed to resist the component and cladding loads specified in Table R301.2(2), adjusted for height and exposure in accordance with Table R301.2(3). Where there is a discrepancy between the requirements of this section and the manufacturer's printed instructions or code evaluation report, the manufacturer's printed instructions or code evaluation report shall govern.