

51.00: continued

R403.1.6 Add the designation "A 307 or other applicable steel" before the word "anchor bolt" in the first sentence of the second paragraph. Also, after the words "anchor bolts" insert the text "installed in accordance with the manufacturer's printed instructions."

R404.1.7 Add a last sentence as follows:

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.

R406.2 After the last paragraph (on membranes) add this paragraph:

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.

R501.3 Add new subsection.

R501.3 Fire Protection of Floors. Floor assemblies not using dimension lumber or structural composite lumber equal to or greater than 2-inch nominal dimension, shall be provided with a ½ inch gypsum wallboard membrane, 5/8 inch wood structural panel membrane, or equivalent on the underside of the floor framing member unless required elsewhere in this code to be fire resistance rated.

Exceptions:

1. Other approved floor assemblies demonstrating equivalent fire performance.
2. Floor assemblies located directly over a space protected by an automatic sprinkler system in accordance with Section P2904, NFPA13D, or other approved equivalent sprinkler system.
3. Floor assemblies located directly over a crawl space not intended for storage or fuel-fired appliances.
4. One room or alcove per story not exceeding 80 square feet, when supported between structural walls.

R502.2.2 At the end of this paragraph add this text "and no live load acting on the interior span."

R502.3 At the end of the second sentence add this text:

"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 Replace "registered professional" with "registered design professional".

R506.1.1 Add subsection, exception, and associated table:

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 (9144 mm) in each direction. Control joints shall be placed at locations where the slab width or length changes.

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	4.5	5.0	5.5	6		
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

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R602.10 Add a second exception as follows:

Exception 2. Unconditioned single story rooms, of areas less than 600 sq. ft., where the main dwelling is connected to the room via an exterior door or slider and no other openings between the main dwelling and room exist (*i.e.* thermally isolated).

702.3.5.1 Add subsection:

702.3.5.1 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 this code including manufactured buildings. Alternative designs, such as using adhesive only, are not permitted.

R802.4 Add this text to the end of the second sentence:

'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 Add this text to the end of the second sentence:

'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>

R901.1 Add a final sentence as follows:

In roofing and reroofing, the energy conservation requirements of Chapter 11 must also be satisfied.

R905.1 Add a final sentence as follows:

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.

R906.1 Add a final sentence as follows:

In roofing and reroofing, the energy conservation requirements of Chapter 11 must also be satisfied.

R1001.1 Add a second sentence that reads:

Chimneys shall be structurally sound, durable, smoke tight and capable of conveying flue gases to the exterior safely.

R1003.11 Add a second sentence that reads:

Liner size, length and installation shall be in accordance with this code or the appliance manufacturer's requirements as applicable.

N1101.2 Replace as follows:

N1101.2 Compliance. Compliance shall be demonstrated by meeting the requirements of the *International Energy Conservation Code 2012* with these Massachusetts amendments:

R402.4.1.2 Replace the third sentence as follows:

Testing and verification shall be done by a HERS Rater, HERS Rating Field Inspector, an applicable BPI Certified Professional, or a BBRS approved third party.

R403.2.2 Add this note at the end of this section:

Note: Postconstruction or rough-in testing and verification shall be done by a HERS Rater, HERS Rating Field Inspector, an applicable BPI Certified Professional, or a BBRS approved third party.

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R403.5 Replace as follows but retain R403.5.1:

R403.5 Mechanical ventilation (Mandatory).

Each *dwelling unit* of a *residential building* shall be provided with continuously operating exhaust or balanced mechanical ventilation that has been site verified to meet a minimum airflow per

1. the Energy Star Homes' Version 3 or
2. ASHRAE 62.2 - 2013 or
3. the following formula for one- and two-family dwellings and townhouses of three or less stories above grade plane:

$$Q = .03 \times \text{CFA} + 7.5 \times (N_{br} + 1) - 0.052 \times Q_{50} \times S \times \text{WSF}$$

Where: CFA is the *conditioned floor area* in sq ft

N_{br} is the number of bedrooms

Q_{50} is the verified blower door air leakage rate in cfm measured at 50 Pascals

S is the building height factor determined by this table:

stories above grade plane	1	2	3
S	1	1.32	1.55

WSF is the shielded weather factor as determined by this table:

County	WSF
Barnstable	0.6
Berkshire	0.52
Bristol	0.54
Dukes	0.59
Essex	0.58
Franklin	0.52
Hampden	0.49
Hampshire	0.59
Middlesex	0.55
Nantucket	0.61
Norfolk	0.52
Plymouth	0.53
Suffolk	0.66
Worcester	0.59

R403.5.2 to R403.5.7 Add sections:

R403.5.2 Verification: Installed performance of the mechanical ventilation system shall be tested and verified by a HERS Rater, HERS Rating Field Inspector, an applicable BPI Certified Professional, or a BBRS *approved* third party and measured using a flow hood, flow grid, or other airflow measuring device in accordance with either RESNET Standard Chapter 8, ACCA Standard 5, or other BBRS *approved* standard for air flow measurement.

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R403.5.3 Air-moving Equipment, Selection and Installation. As referenced in ASHRAE Standard 62.2-2013, Section 7.1, ventilation devices and equipment shall be tested and certified by AMCA (Air Movement and Control Association) or HVI (Home Ventilating Institute) and the certification label shall be found on the product. Installation of systems or equipment shall be carried out in accordance with manufacturers' design requirements and installation instructions. Where multiple duct sizes and/or exterior hoods are standard options, the minimum size shall not be used.

R403.5.4 Sound Rating. Sound ratings for fans used for whole building ventilation shall be rated at a maximum of 1.0 sone.

Exception: HVAC air handlers and remote-mounted fans need not meet sound requirements. There must be at least 4 ft of ductwork between the remote-mounted fan and intake grille.

R403.5.5 Documentation. The owner and the occupant of the *dwelling unit* shall be provided with information on the ventilation design and systems installed, as well as instructions on the proper operation and maintenance of the ventilation systems. Ventilation controls shall be labeled with regard to their function, unless the function is obvious.

R403.5.6 Air Inlets and Exhausts. All ventilation air inlets shall be located a minimum of 10 ft from vent openings for plumbing drainage systems, appliance vent outlets, exhaust hood outlets, vehicle exhaust, or other known contamination sources; and shall not be obstructed by snow, plantings, or any other material. Outdoor forced air inlets shall be covered with rodent screens having mesh openings not greater than ½ inch. A *whole house mechanical ventilation system* shall not extract air from an unconditioned basement unless *approved by a registered design professional*. Where wall inlet or exhaust vents are less than seven (7) feet above finished grade in the area of the venting, including but not limited to decks and porches, a metal or plastic identification plate shall be permanently mounted to the exterior of the building at a minimum height of eight (8) feet above grade directly in line with the vent terminal. The sign shall read, in print size no less than one-half (½) inch in size, "MECH. VENT DIRECTLY BELOW. KEEP CLEAR OF ALL OBSTRUCTIONS".

Exceptions:

1. Ventilation air inlets in the wall \geq 3 ft. from dryer exhausts and contamination sources exiting through the roof.
2. No minimum separation distance shall be required between local exhaust outlets in kitchens/bathrooms and windows.
3. Vent terminations that meet the requirements of the *National Fuel Gas Code* (NFPA 54/ ANSI Z223 .1) or equivalent.