



I. State Adopts 2012 International Energy Conservation Code

In July, 2013, the Board of Building Regulations and Standards (BBRS) adopted the 2012 IECC with Massachusetts amendments, having an effective date of August 16, 2013. The new regulations will run concurrently with the amended 2009 IECC until July 1, 2014, at which time the new regulations will be exclusively enforced. **Any building permit application received on or after July 1, 2014, must comply with the new regulations.** These regulations do not apply to towns that have adopted the Stretch Energy Code. Until further notice, the current Stretch Energy Code regulations will remain in effect for these communities. The following highlights include often-missed items that may not be new as well as new 2012 requirements:

- A designer/builder may choose to show compliance by using the Rescheck software program, other performance-based methods or the prescriptive requirements set forth in Table R402.1.1
- Prescriptive requirements for insulation and fenestration for Massachusetts (Climate Zone 5):
 - Fenestration: maximum u value: .32
 - Ceiling insulation: R-49 minimum (see exceptions below)
 - Wood-framed walls: R-20 min. or R-13 min. cavity with an R-5 min. continuous.
 - Mass walls (Min. R-13, or R-17 when more than ½ insulation is on interior.
 - Floor-R-30 min. or fill cavity (R-19 min)
 - Basement walls and crawl spaces: Min. R-15 continuous or R-19 cavity
 - Unheated slabs: Min. R-10 for 2ft.
 - Heated slabs: Min R-15 for 2ft.
- Exceptions to the required R-49 ceiling insulation:
 - When raised-healed trusses or similar designs are used to allow uncompressed insulation to be installed above the top plate of the exterior wall with a min. R-38 value, R-38 may be used for the entire ceiling.
 - Sloped ceilings if less than 500 sq.ft. and less than 20% of ceiling area may be an R-30.
- Eave baffles (the former wind baffle) must be installed at eaves to prevent cold air from degrading the insulation value of air permeable insulations.
- Floor insulation must be installed to maintain permanent contact with the underside of the subfloor.
- Sunrooms with thermal isolation and enclosing conditioned space: Ceiling insulation: R-24 min. Wall insulation: R-13 min.
- Glazed fenestration exemption: Up to 15 sq. ft. exempt from U-value requirement.
- Opaque door exemption: One side-hinged door up to 24 sq. ft. is exempt from U-value requirement.
- Replacement windows and doors: Maximum u-value of .32
- Fireplaces must have gasketed doors and outdoor combustion air, which would prevent the installation of a fireplace with firebox floor below finished grade.
- **An air leakage test (Blower door test) must be performed for additions and new dwelling units. A report must be provided to the building official showing a maximum air leakage of 3 air changes per hour.**
- All ductwork must be sealed. Ducts outside conditioned space must be insulated (R-8 min. for supply, R-6 min. other) and tested.
- Hot water and air-conditioning piping must be insulated with min. R-3.
- A minimum of 75% of lamps in permanently installed lighting fixtures must be high-efficiency lamps.
- A permanent certificate shall be completed and posted on or in the electrical distribution panel that lists all R-values of insulation (including ductwork), U factors for windows and doors, and efficiency ratings for heating and cooling.

To purchase or view International Codes and Massachusetts amendments visit the BBRS website at <http://www.mass.gov/eopss/consumer-prot-and-bus-lic/license-type/csl/building-codebbrs.html>

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II. Some Interpretations

Unfortunately, the code isn't always clear and must be interpreted by the Building Official. We lean heavily on the IRC and IBC code commentaries and official interpretations from the BBRS when available. Below are a few interpretations that this office has adopted until instructed otherwise:

- A person cutting and using native lumber for their own use does not have to be registered and can use the lumber for one and two family dwellings and accessory structures provided it meets the increased design values of certain structural elements Chapter 23.
- Smoke and CO detectors will have to be brought to current code in existing 1-2 family dwellings only when a bedroom is created, a garage is attached, or there is a complete gut.
- Horizontal reinforcement for foundations for 1-2 family buildings and accessory structures is required only when the foundation wall is not supported by either a slab at its base or the floor diaphragm at the top. Such foundation walls would require a #4 rebar within 1ft of top of wall and at midpoint in height.
- If there is a conflict between the manufacturer's requirements and the building code, the manufacturer's requirements must be followed. For example: The Energy code requires sealed doors for fireplaces. A manufactured fireplace may prohibit the use of sealed doors. The doors should not be installed.

III. Masonry Fireplaces and Chimneys

In most cases the general contractor has the responsibility to ensure that work performed by sub contractors meets the code. This can be challenging at time because of code changes and a sometimes wrongful assumption that the sub is keeping up with the code. We have found the following code violations in masonry construction that general contractors and masons should avoid:

- **Fireplace hearth extensions built on a wooden floor.** All wood must be removed from the underside of hearths and hearth extensions per Sect. R10001.9.
- **Exterior chimneys tight to plywood.** There must be a min. 1" air space per Sect. R1003.18
- **Improper mortar.** The firebox walls,, smoke chamber parging, and clay flue liners must be installed with medium-duty refractory cement. For the flue liners, the cement must be water insoluble.
- **Improper mortar joints.** Flue liner joints must be tight and smooth on the inside. Firebrick joints must be ¼" maximum.
- **No exterior air for fireplace.** Sect. 1006 requires all fireplaces to have an exterior air supply. The source must be at or above the firebox wall.
- **No fireplace doors.** Although not usually the mason's responsibility, masonry fireplace doors must be equipped with gasketed doors.
- **No call for inspections.** General contractors should remind masons of their responsibility to call for inspections at throat or midway for chimneys.



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