Northeast Roofing Insurance

Fall 2012 Owners Meeting
Grand Pequot at Foxwoods – Thursday, January 10, 2013

Building Codes – “The Nitty Gritty”

presented by

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Associate Executive Director, Technical Services
National Roofing Contractors Association

NRCA

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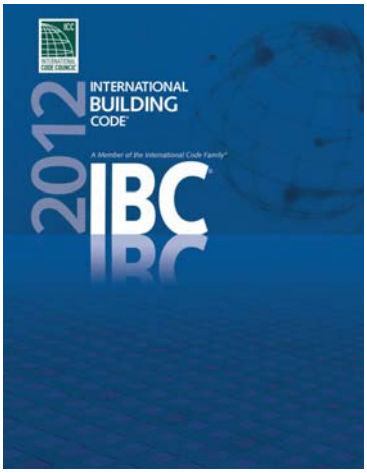
International Building Code, 2012 Edition (IBC 2012)



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International Building Code, 2012 Edition

101.2 Scope. The provisions of this code shall apply to the construction, *alteration,* relocation, enlargement, replacement*, repair,* equipment, use and occupancy, location, maintenance, removal and demolition of every building or structure or any appurtenances connected or attached to such buildings or structures.

Exception: Detached one- and two-family *dwellings* and multiple single-family *dwellings* (townhouses) not more than three *stories* above *grade plane* in height with a separate *means of egress* and their accessory structures shall comply with the *International Residential Code.*

International Building Code, 2012 Edition

Specific roofing-related requirements

- Ch. 12-Interior Environment (attic ventilation)
- Ch. 13-Energy Efficiency (thermal insulation)
- Ch. 15-Roof Assemblies and Rooftop Structures
- Ch. 16-Structural Design (design loads)
- Ch. 22-Steel (structural metal panel roofing)
- Ch. 24-Glass and Glazing (skylights)
- Ch. 35-Referenced Standards

Ch. 15-Roof Assemblies and Rooftop Structures

International Building Code, 2012 Edition

SECTION 1501

GENERAL

1501.1 Scope. The provisions of this chapter shall govern the design, materials, construction and quality of roof assemblies and rooftop structures.

Ch. 15-Roof Assemblies and Rooftop Structures

International Building Code, 2012 Edition

- Sec. 1501-Scope
- Sec. 1502-Defintions
- Sec. 1503-Weather Protection
- Sec. 1504-Performance Requirements (wind)
- Sec. 1505-Fire Classification
- Sec. 1506-Materials
- Sec. 1507-Requirements for Roof Coverings
- Sec. 1508-Roof Insulation
- Sec. 1509-Rooftop Structures
- Sec. 1510-Reroofing

Sec. 1504-Performance Requirements

International Building Code, 2012 Edition

1504.3 Wind resistance of nonballasted roofs. Roof coverings installed on roofs in accordance with Section 1507 that are mechanically attached or adhered to the roof deck shall be designed to resist the design wind load pressures for components and cladding in accordance with Section 1609.

1504.3.1 Other roof systems. Roof systems with built-up, modified bitumen, fully adhered or mechanically attached single-ply through fastened metal panel roof systems, and other types of membrane roof coverings shall also be tested in accordance with FM 4474, UL 580 or UL 1897.

Sec. 1504-Performance Requirements

International Building Code, 2012 Edition

1504.3.2 Metal panel roof systems. Metal panel roof systems through fastened or standing seam shall be tested in accordance with UL 580 or ASTM E 1592.

Exception: Metal roofs constructed of cold-formed steel, where the roof deck acts as the roof covering and provides both weather protection and support for structural loads, shall be permitted to be designed and tested in accordance with the applicable referenced structural design standard in Section 2210.1.

Sec. 1504-Performance Requirements

International Building Code, 2012 Edition

1504.4 Ballasted low-slope roof systems. Ballasted lowslope (roof slope < 2:12) single-ply roof system coverings installed in accordance with Sections 1507.12 and 1507.13 shall be designed in accordance with Section 1504.8 and ANSI/SPRI RP-4.

Sec. 1505-Fire Classification

International Building Code, 2012 Edition

1505.1 General. Roof assemblies shall be divided into the classes defined below. Class A, B and C roof assemblies and roof coverings required to be listed by this section shall be tested in accordance with ASTM E 108 or UL 790. In addition, fire-retardant-treated wood roof coverings shall be tested in accordance with ASTM D 2898. The minimum roof coverings installed on buildings shall comply with Table 1505.1 based on the type of construction of the building.

Exception: Skylights and sloped glazing that comply with Chapter 24 or Section 2610.

Sec. 1505-Fire Classification

International Building Code, 2012 Edition

TABLE 1505.1[a,b]
MINIMUM ROOF COVERING CLASSIFICATION FOR TYPES OF CONSTRUCTION

IA	IB	IIA	IIB	IIIA	IIIB	IV	VA	VB
B	B	B	C[c]	B	C[c]	B	B	C[c]

For SI: 1 foot = 304.8 mm, 1 square foot = 0.0929 m^2.

a. Unless otherwise required in accordance with the *International Wildland-Urban Interface Code* or due to the location of the building within a fire district in accordance with Appendix D.

b. Nonclassified roof coverings shall be permitted on buildings of Group R-3 and Group U occupancies, where there is a minimum fire-separation distance of 6 feet measured from the leading edge of the roof.

c. Buildings that are not more than two stories in height and having not more than 6,000 square feet of projected roof area and where there is a minimum 10-foot fire-separation distance from the leading edge of the roof to a lot line on all sides of the building, except for street fronts or public ways, shall be permitted to have roofs of No. 1 cedar or redwood shakes and No. 1 shingles.

Sec. 1505-Fire Classification

International Building Code, 2012 Edition

1505.2 Class A roof assemblies. Class A roof assemblies are those that are effective against severe fire test exposure. Class A roof assemblies and roof coverings shall be *listed* and identified as Class A by an *approved* testing agency. Class A roof assemblies shall be permitted for use in buildings or structures of all types of construction.

Exceptions:

1. Class A roof assemblies include those with coverings of brick, masonry or an exposed concrete roof deck.
2. Class A roof assemblies also include ferrous or copper shingles or sheets, metal sheets and shingles, clay or concrete roof tile or slate installed on noncombustible decks or ferrous, copper or metal sheets installed without a roof deck on noncombustible framing.
3. Class A roof assemblies include 16 oz/sq. ft. (0.0416 $kg.m^2$) copper sheets installed over combustible decks.

Sec. 1506-Materials

International Building Code, 2012 Edition

1506.1 Scope. The requirements set forth in this section shall apply to the application of roof-covering materials specified herein. Roof coverings shall be applied in accordance with this chapter and the manufacturer's installation instructions. Installation of roof coverings shall comply with the applicable provisions of Section 1507.

Sec. 1507-Requirements for Roof Coverings

International Building Code, 2012 Edition

- Asphalt shingles
- Clay & concrete tile
- Metal roof panels
- Metal roof shingles
- Roll roofing
- Slate shingles
- Wood shingles
- Wood shakes
- Built-up roofs
- Modified bitumen roofs
- Thermoset single-ply roofs
- Thermosplastic single-ply roofs
- SPF roofs
- Liquid-applied roofing
- Roof gardens/landscaped roofs
- Photovoltaic modules/shingles

Sec. 1510-Reroofing

International Building code, 2012 Edition

1510.1 General. Materials and methods of application used for recovering or replacing an existing roof covering shall comply with the requirements of Chapter 15.

Exception: Reroofing shall not be required to meet the minimum design slope requirement of one-quarter unit vertical in 12 units horizontal (2-percent slope) in Section 1507 for roofs that provide positive roof drainage.

Sec. 1510-Reroofing

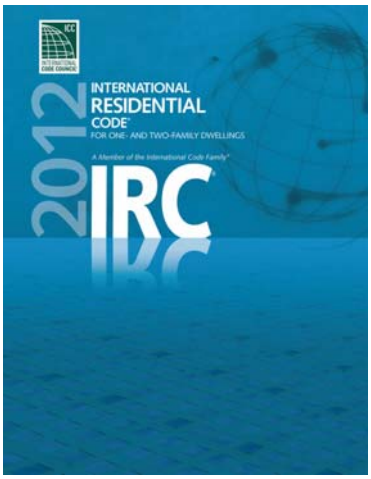
International Building Code, 2012 Edition

1510.3 Recovering versus replacement. New roof coverings shall not be installed without first removing all existing layers of roof coverings down to the roof deck where any of the following conditions occur:

1. Where the existing roof or roof covering is water soaked or has deteriorated to the point that the existing roof or roof covering is not adequate as a base for additional roofing.
2. Where the existing roof covering is wood shake, slate, clay, cement or asbestos-cement tile.
3. Where the existing roof has two or more applications of any type of roof covering.

Exceptions:…

International Residential Code, 2012 Edition (IRC 2012)



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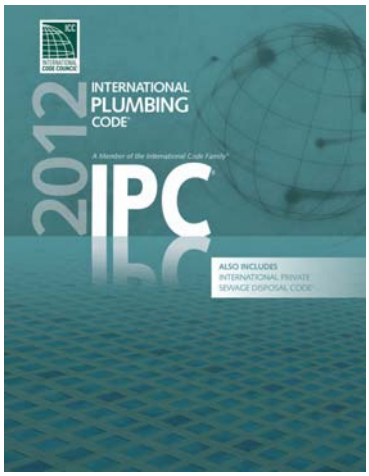
International Residential Code, 2012 Edition

- Chapter 9-Roof Assemblies
- Similar to IBC 2009, Chapter 15
- More prescriptive-based language

International Plumbing Code, 2012 Edition (IPC 2012)



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International Plumbing Code, 2012 Edition

Roof drain, drain piping, scupper, gutter and downspout sizing is dictated by the *International Plumbing Code.*

IPC Chapter 11-Storm Drainage

International Fire Code, 2012 Edition (IFC 2012)

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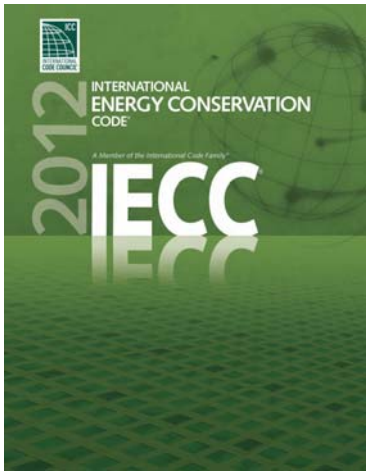
International Fire Code, 2012 Edition

Fire safety during roofing operations and rooftop PV and vegetative roof systems are dictated by the *International Fire Code.*

IFC Sec. 303-Kettles (e.g., ≥ 20 ft.)
IFC Sec. 3317-Safegauarding Roofing Operations
IFC Sec. 605.11-Solar Photovoltaic Power Systems
IFC Sec. 317-Rooftop Gardens and Landscaped Roofs

International Energy Conservation Code, 2012 Edition (IECC 2012)



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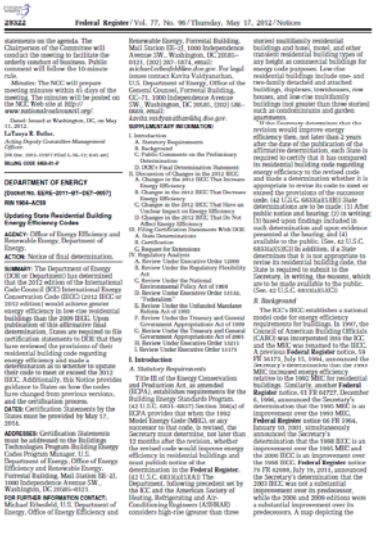
Federal Register, May 17, 2012



29322 Federal Register / Vol. 77, No. 96 / Thursday, May 17, 2012 / Notices

DEPARTMENT OF ENERGY

[DOCKET NO. EERE–2011–BT–DET–0057]

RIN 1904–AC59

Updating State Residential Building Energy Efficiency Codes

AGENCY: Office of Energy Efficiency and Renewable Energy, Department of Energy.

ACTION: Notice of final determination.

SUMMARY: The Department of Energy (DOE or Department) has determined that the 2012 edition of the International Code Council (ICC) International Energy Conservation Code (IECC) (2012 IECC or 2012 edition) would achieve greater energy efficiency in low-rise residential buildings than the 2009 IECC. Upon publication of this affirmative final determination, States are required to file certification statements to DOE that they have reviewed the provisions of their residential building code regarding energy efficiency and made a determination as to whether to update their code to meet or exceed the 2012 IECC. Additionally, this Notice provides guidance to States on how the codes have changed from previous versions, and the certification process.

DATES: Certification Statements by the States must be provided by May 17, 2014.

ADDRESSES: Certification Statements must be addressed to the Buildings Technologies Program Building Energy Codes Program Manager, U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, Forrestal Building, Mail Station EE–2J, 1000 Independence Avenue SW., Washington, DC 20585–0121. [202] 287–1874, email: michael.erbesfeld@hq.doe.gov. For legal issues contact Kavita Vaidyanathan, U.S. Department of Energy, Office of the General Counsel, Forrestal Building, GC–71, 1000 Independence Avenue SW., Washington, DC 20585, [202] 586–0669, email: kavita.vaidyanathan@hq.doe.gov.

SUPPLEMENTARY INFORMATION:

I. Introduction
A. Statutory Requirements
B. Background
C. Public Comments on the Preliminary Determination
D. DOE's Final Determination Statement
II. Discussion of Changes in the 2012 IECC
A. Changes in the 2012 IECC That Increase Energy Efficiency
B. Changes in the 2012 IECC That Decrease Energy Efficiency
C. Changes in the 2012 IECC That Have an Unclear Impact on Energy Efficiency
D. Changes in the 2012 IECC That Do Not Affect Energy Efficiency
III. Filing Certification Statements With DOE
A. State Determinations
B. Certification
C. Request for Extensions
IV. Regulatory Analyses
A. Review Under Executive Order 12866
B. Review Under the Regulatory Flexibility Act
C. Review Under the National Environmental Policy Act of 1969
D. Review Under Executive Order 13132, "Federalism"
E. Review Under the Unfunded Mandates Reform Act of 1995
F. Review Under the Treasury and General Government Appropriations Act of 1999
G. Review Under the Treasury and General Government Appropriations Act of 2001
H. Review Under Executive Order 13211
I. Review Under Executive Order 13175

I. Introduction

A. Statutory Requirements

Title III of the Energy Conservation and Production Act, as amended (ECPA), establishes requirements for the Building Energy Standards Program. (42 U.S.C. 6831–6837) Section 304(a) of ECPA provides that when the 1992 Model Energy Code (MEC), or any successor to that code, is revised, the Secretary must determine, not later than 12 months after the revision, whether the revised code would improve energy efficiency in residential buildings and must publish notice of the determination in the Federal Register. (42 U.S.C. 6833(a)(5)(A)) The Department, following precedent set by the ICC and the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) considers high-rise (greater than three stories) multifamily residential buildings and hotel, motel, and other transient residential building types of any height as commercial buildings for energy code purposes. Low-rise residential buildings include one- and two-family detached and attached buildings, duplexes, townhouses, row houses, and low-rise multifamily buildings (not greater than three stories) such as condominiums and garden apartments.

If the Secretary determines that the revision would improve energy efficiency then, not later than 2 years after the date of the publication of the affirmative determination, each State is required to certify that it has compared its residential building code regarding energy efficiency to the revised code and made a determination whether it is appropriate to revise its code to meet or exceed the provisions of the successor code. (42 U.S.C. 6833(a)(5)(B)) State determinations are to be made: (1) After public notice and hearing; (2) in writing; (3) based upon findings included in such determination and upon evidence presented at the hearing; and (4) available to the public. (Sec. 42 U.S.C. 6833(a)(5)(C)) In addition, if a State determines that it is not appropriate to revise its residential building code, the State is required to submit to the Secretary, in writing, the reasons, which are to be made available to the public. (Sec. 42 U.S.C. 6833(a)(5)(C))

B. Background

The ICC's IECC establishes a national model code for energy efficiency requirements for buildings. In 1997, the Council of American Building Officials (CABO) was incorporated into the ICC and the MEC was renamed to the IECC. A previous Federal Register notice, 59 FR 34173, July 15, 1994, announced the Secretary's determination that the 1993 MEC increased energy efficiency relative to the 1992 MEC for residential buildings. Similarly, another Federal Register notice, 61 FR 64727, December 6, 1996, announced the Secretary's determination that the 1995 MEC is an improvement over the 1993 MEC. Federal Register notice 66 FR 1964, January 10, 2001, simultaneously announced the Secretary's determination that the 1998 IECC is an improvement over the 1995 MEC and the 2000 IECC is an improvement over the 1998 IECC. Federal Register notice 71 FR 42005, July 24, 2006, announced the Secretary's determination that the 2003 IECC was not a substantial improvement over its predecessor, while the 2006 and 2009 editions were a substantial improvement over its predecessors. A map depicting the

Key points:

- US DOE has determined IECC 2012 will achieve greater energy efficiency in low-rise residential buildings than IECC 2009
- States must certify by May 17, 2014 their energy code meets or exceeds the levels of IECC 2012

This triggers most states to update their state energy code

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Format

International Energy Conservation Code, 2012 Edition

Ch. 1: Administration

Part 1: Scope and Application

Part 2: Administration and Enforcement

Ch. 2: Definitions

Ch. 3: General Requirements

Ch. 4: Commercial Energy Efficiency

Ch. 5: Reference Standards

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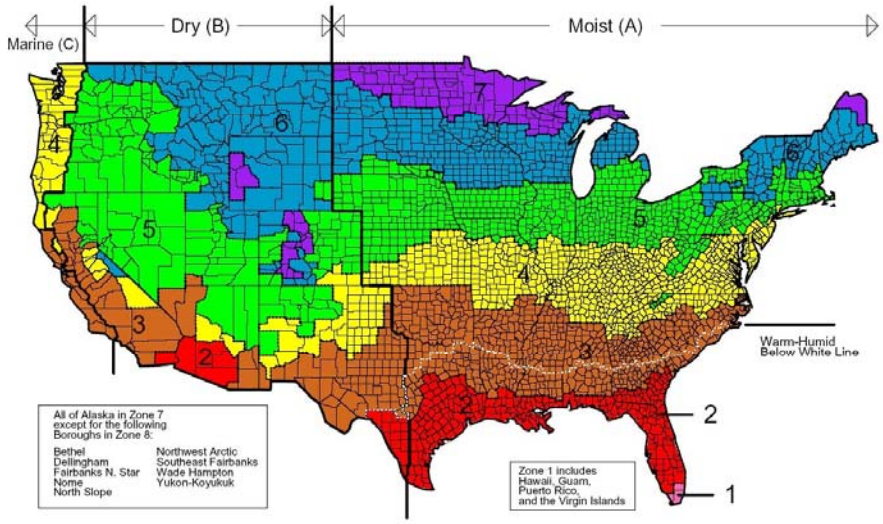
Climate Zone Map



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International Energy Conservation Code, 2012 Edition

- Ch. 4[CE]-Commercial Energy Efficiency
- Ch. 4[RE]-Residential Energy Efficiency
- ASHRAE 90.1-2010 alternative

Ch. 4—Commercial Energy Efficiency

International Energy conservation Code, 2012 Edition

- Sec. C402—Building Envelope Requirements
- Sec. C403—Building Mechanical Systems
- Sec. C404—Service Water Heating
- Sec. C405—Electrical Power and Lighting Systems
- Sec. C406—Additional Efficiency Package Options
- Sec. C407—Total Building Performance

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Minimum thermal insulation requirements

IECC 2012, Section C402.2—Specific insulation Requirements (Prescriptive)

C402.2 Specific insulation requirements (Prescriptive). Opaque assemblies shall comply with Table C402.2. Where two or more layers of continuous insulation board are used in a construction assembly, the continuous insulation boards shall be installed in accordance with Section C303.2. If the continuous insulation board manufacturer's installation instructions do not address installation of two or more layers, the edge joints between each layer of continuous insulation boards shall be staggered.

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Ch. 4[CE]-Commercial Energy Efficiency

International Energy Conservation Code, 2012 Edition

C402.2.1 Roof assembly. The minimum thermal resistance (R-value) of the insulating material installed either between the roof framing or continuously on the roof assembly shall be as specified in Table C402.2, based on construction materials used in the roof assembly. Skylight curbs shall be insulated to the level of roofs with insulation entirely above deck or R-5, whichever is less.

Exceptions:

1. Continuously insulated roof assemblies where the thickness of insulation varies 1 inch (25 mm) or less and where the area-weighted *U-factor is* equivalent to the same assembly with the *R-value* specified in Table C402.2.
2. …

Ch. 4[CE]-Commercial Energy Efficiency

International Energy Conservation Code, 2012 Edition

Minimum thermal insulation requirements for commercial buildings			
Climate zone	Roof assembly configuration		
	Insulation entirely above deck	Metal buildings (with R-5 thermal blocks)	Attic and other
1	R-20ci	R-19 + R-11 LS	R-38
2			
3			
4	R-25 ci		
5			
6	R-30ci	R-25 + R-11 LS	R-49
7	R-35ci	R-30 + R-11 LS	
8			

ci = Continuous insulation
LS = Liner system (a continuous membrane installed below the purlins and uninterrupted by framing members; uncompressed, faced insulation rests on top of the membrane between the purlins)

R-value determination

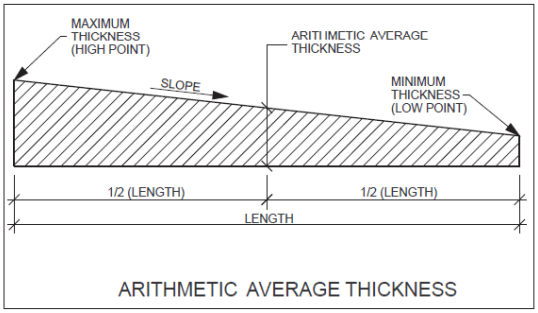
IECC 2012, Section C303.1.4-Insulation Product Rating

C303.14 Insulation product rating. The thermal resistance (R-value) of insulation shall be determined in accordance with the U.S. Federal Trade commission R-value rule (CFR Title 16, Part 460) in units of h x ft^2 x °F/Btu at a mean temperature of 75°F (24°C).

What about tapered insulation?

Average R-value

Arithmetic average thickness method



Arithmetic average thickness = LP + [1⁄2 (HP - LP)]

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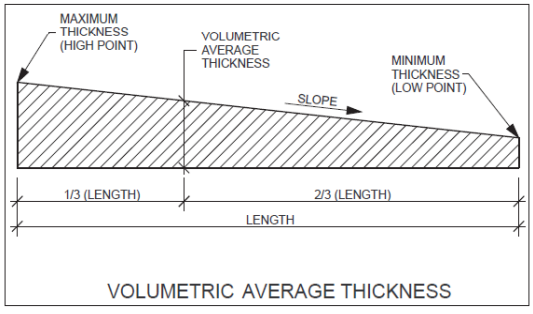
Average R-value

Volumetric average thickness method



Volumetric average thickness = LP +[2⁄3 (HP - LP)]

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Average R-value

Volumetric average thickness method – Alternative method

Volumetric average thickness = $\frac{\text{Total board footage - Anticipated waste}}{\text{Roof surface area}}$

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Average R-value

Volumetric average thickness method – Another alternative method

Volumetric average thickness = $\frac{\text{Volume of insulation}}{\text{Roof surface area}}$

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These methods do not comply with the Energy Code's intent.

Codes provide minimum requirements

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Ch. 4[CE]-Commercial Energy Efficiency

International Energy Conservation Code, 2012 Edition

C402.2.1 Roof assembly. The minimum thermal resistance (R-value) of the insulating material installed either between the roof framing or continuously on the roof assembly shall be as specified in Table C402.2, based on construction materials used in the roof assembly. Skylight curbs shall be insulated to the level of roofs with insulation entirely above deck or R-5, whichever is less.

Exceptions:

1. Continuously insulated roof assemblies where the thickness of insulation varies 1 inch (25 mm) or less and where the area-weighted *U-factor is* equivalent to the same assembly with the *R-value* specified in Table C402.2.
2. …

IECC Commentary indicates Exception 1 applies to tapered insulation systems.

2012 IECC Code and Commentary

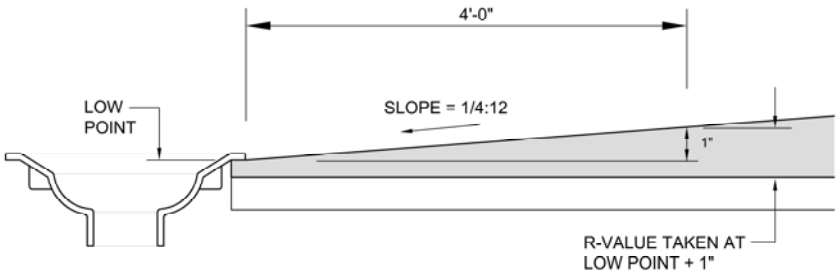
"…The exception to this section permits a roof that is "continuously insulated" to have areas that do not meet the required *R*-values, provided that the area-weighted values are equivalent to the specified insulation values. This type of insulation referred to as tapered insulation is where the roof insulation varies to provide slope for drainage…."

[continued…]

2012 IECC Code and Commentary

"…This 1-inch (25 mm) limitation does not prevent the provisions from being applied to roofs that have a greater variation; it simply does not allow the additional thickness to be factored into the average insulation values. Where the variation exceeds 1 inch (25 mm), it would be permissible to go to the thinnest spot and measure the *R*-value at that point (for the example call this Point "a"). Then go to a point that is 1 inch (25 mm) thicker than Point "a" and measure the *R*-value there (for the example, call this Point "b"). The remaining portions of the roof that are thicker than the additional 1-inch (25 mm) portion (Point "b") would simply be assumed to have the same *R*-value that Point "b" had. All portions of the roof that meet or exceed the Point "b" *R*-value would simply use the Point "b" *R*-value when determining the area weighted *U*-factor for the roof. "

Graphically depicted…



Solar reflectance and thermal emittance

IECC 2012, Section C402.2.1.1

C402.2.1.1 Roof solar reflectance and thermal emittance. Low-sloped roofs, with a slope less than 2 units vertical in 12 horizontal, directly above cooled *conditioned spaces* in Climate Zones 1, 2, and 3 shall comply with one or more of the options in Table C402.2.1.1.

Exceptions: The following roofs and portions of roofs are exempt from the requirements in Table C402.2.1.1:

1. Portions of roofs that include or are covered by:

1.1 Photovoltaic systems or components.

1.2 Solar air or water heating systems or components.

1.3 Roof gardens or landscaped roofs.

1.4 Above-roof decks or walkways.

1.5 Skylights.

1.6 HVAC systems, components, and other opaque objects mounted above…

[Continued…]

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TABLE C402.2.1.1

MINIMUM ROOF REFLECTANCE AND EMITTANCE OPTIONS[a]

Three-year aged solar reflectance[b] of 0.55 and three-year aged thermal emittancec of 0.75
Initial solar reflectance[b] of 0.70 and initial thermal emittance[c] of 0.75
Three-year-aged solar reflectance index[d] of 64
Initial solar reflectance index[d] of 82

[Footnotes omitted for clarity]

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Air retarders

IECC 2012, Section C402.4-Air Leakage (Mandatory)

C402.4 Air leakage (Mandatory). The thermal envelope of buildings shall comply with Sections C402.4.1 through C402.4.8.

C402.4.1 Air barriers. A continuous air barrier shall be provided throughout the building thermal envelope. The air barriers shall be permitted to be located on the inside or outside of the building envelope, located within the assemblies composing the envelope, or any combination thereof. The air barrier shall comply with Sections C402.4.1.1 and C402.4.1.2.

Exception: Air barriers are not required in buildings located in Climate Zones 1, 2 and 3.

[Continued…]

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C402.4.1.1 Air barrier construction. The *continuous air barrier* shall be constructed to comply with the following:

1. The air barrier shall be continuous for all assemblies that are the thermal envelope of the building and across the joints and assemblies.
2. Air barrier joints and seams shall be sealed, including sealing transitions in places and changes in materials. Air barrier penetrations shall be sealed in accordance with Section C402.4.2. The joints and seals shall be securely installed in or on the joint for its entire length so as not to dislodge, loosen or otherwise impair its ability to resist positive and negative pressure from wind, stack effect and mechanical ventilation.
3. Recessed lighting fixtures shall comply with Section C404.2.8. Where similar objects are installed which penetrate the air barrier, provisions shall be made to maintain the integrity of the air barrier.

Exception: Buildings that comply with Section C402.4.1.2.3 are not required to comply with Items 1 and 3.

[Continued…]

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C402.4.1.2 Air barrier compliance options. A continuous air barrier for the opaque building envelope shall comply with Section C402.4.1.2.1, C402.4.1.2.2, or C402.4.1.2.3.

C402.4.1.2.1 Materials. Materials with an air permeability no greater than 0.004 cfm/ft^2 (0.02 L/s · m^2) under a pressure differential of 0.3 inches water gauge (w.g.) (75 Pa) when tested in accordance with ASTM E 2178 shall comply with this section. Materials in Items 1 through 15 shall be deemed to comply with this section provided joints are sealed and materials are installed as air barriers in accordance with the manufacturer's instructions.

1. Plywood with a thickness of not less than 3/8 inch (10 mm).
2. Oriented strand board having a thickness of not less than 3/8 inch (10 mm).
3. Extruded polystyrene insulation board having a thickness of not less than 1/2 inch (12 mm).
4. Foil-back polyisocyanurate insulation board having a thickness of not less than 1/2 inch (12 mm).
5. Closed cell spray foam a minimum density of 1.5 pcf (2.4 kg/m^3) having a thickness of not less than 1-1/2 inches (36 mm).

[Continued….]

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6. Open cell spray foam with a density between 0.4 and 1.5 pcf (0.6 and 2.4 kg/m^3) and having a thickness of not less than 4.5 inches (113 mm).
7. Exterior or interior gypsum board having a thickness of not less than ½ inch (12 mm).
8. Cement board having a thickness of not less than 1/2 inch (12 mm).
9. Built up roofing membrane.
10. Modified bituminous roof membrane.
11. Fully adhered single-ply roof membrane.
12. A Portland cement/sand parge, or gypsum plaster having a thickness of not less than 5/8 inch (16 mm).
13. Cast-in-place and precast concrete.
14. Fully grouted concrete block masonry.
15. Sheet steel or aluminum.

[Continued…]

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C402.4.1.2.2 Assemblies. Assemblies of materials and components with an average air leakage not to exceed 0.04 cfm/ft^2 (0.2 L/s · m^2) under a pressure differential of 0.3 inches of water gauge (w.g.)(75 Pa) when tested in accordance with ASTM E 2357, ASTM E 1677 or ASTM E 283 shall comply with this section. Assemblies listed in Items 1 and 2 shall be deemed to comply provided joints are sealed and requirements of Section C402.4.1.1 are met.

1. Concrete masonry walls coated with one application either of block filler and two applications of a paint or sealer coating;

2. A Portland cement/sand parge, stucco or plaster minimum 1/2 inch (12 mm) in thickness.

C402.4.1.2.3 Building test. The completed building shall be tested and the air leakage rate of the *building envelope* shall not exceed 0.40 cfm/ft^2 at a pressure differential of 0.3 inches water gauge (2.0 L/s · m^2 at 75 Pa) in accordance with ASTM E 779 or an equivalent method approved by the code official.

[Continued…]

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C402.4.2 Air barrier penetrations. Penetrations of the air barrier and paths of air leakage shall be caulked, gasketed or otherwise sealed in a manner compatible with the construction materials and location. Joints and seals shall be sealed in the same manner or taped or covered with a moisture vapor-permeable wrapping material. Sealing materials shall be appropriate to the construction materials being sealed. The joints and seals shall be securely installed in or on the joint for its entire length so as not to dislodge, loosen or otherwise impair its ability to resist positive and negative pressure from wind, stack effect and mechanical ventilation.

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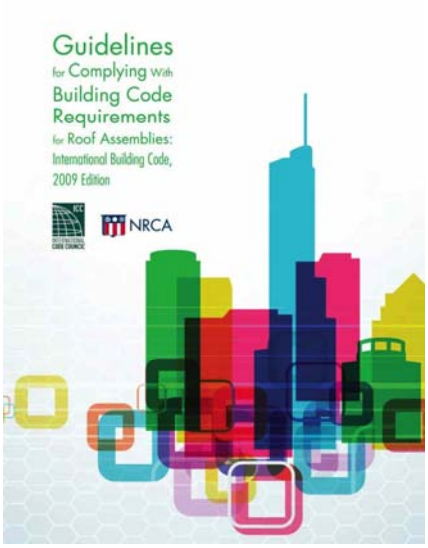
Summary – IECC 2012

- R-value increases
- Mandatory reflectivity requirements in Climate Zones 1-3
- Air barriers in Climate Zone 4-8

In summary

- Be knowledgeable of applicable codes
- Watch for state/local modifications
- Comply with the applicable codes
- Building/Residential Code
- Plumbing Code
- Fire Code
- Energy Code

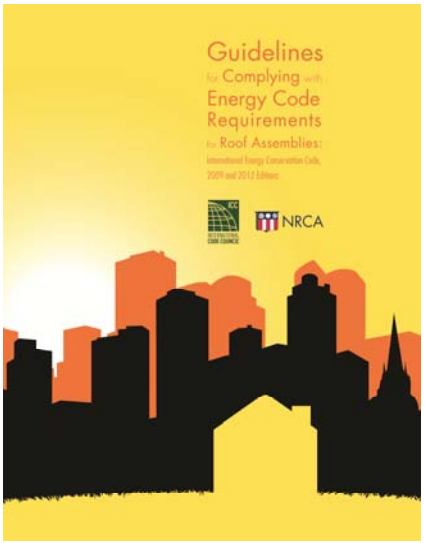
Additional information



Guidelines for Complying with Building Code Requirements:

- Co-published with ICC
- Based on 2009 I-codes:
  - IBC 2009
  - IRC 2009
  - IECC 2009
  - IPC 2009
  - IFC 2009
- Other applicable codes:
  - NFPA 1
  - NFPA 241
- Code text and descriptions

More additional information



Guidelines for Complying with Energy Code Requirements for Roof Assemblies: International Energy Efficiency Code, 2009 and 2012 Editions:

- Co-published with ICC
- Based on:
  - IECC 2009
    - ASHRAE 90.1-07
  - IECC 2012
    - ASHRAE 90.1-10
- Code text and descriptions

Questions?

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New York State		
Responsible Agency	**Website**	
NY State Department of State, Division of ode Enforcement & Administration	http://www.dos.ny.gov/dcea/	
Adopted Codes	**Modified Section**	**Modification(s)**
2010 Building Code of New York State, Based on 2006 International Building Code, Supersedes 2007 Building Code of New York State http://publicecodes.cyberregs.com/st/ny/st/b200v10/index.htm	Section 1505 Fire Classification, Table 1505.1 Minimum Roof Covering Classification for Types of Construction	[deleted] Subscript note referencing International Wildland-Urban Interface Code and Appendix D for additional requirements
	Section 1503 Weather Protection, 1503.4 Roof Drainage	[amended] References Plumbing Code of New York State for requirements (Chapter 11--Storm Drainage provides similar requirements as 2006 IPC).
	Section 1510 Reroofing	[amended] References Existing Building Code of New York State Section 608 Reroofing for requirements (same as 2006 IBC, 1510 Reroofing with the exception of the reroofing over wood shake roofs exception).
2010 Residential Code of New York State, Based on 2006 International Residential Code for One- and Two-Family Dwellings and "Part VIII of the 2009 [IRC]" (Chapter 8?), Supersedes 2007 Residential Code of New York State http://publicecodes.cyberregs.com/st/ny/st/b400v10/index.htm	Section R801 General	[added] R801.4 Loads. Refer to Figure R301.2(5) for ground snow loads and Figure R301.2(4) for wind loads.
	Section R802 Wood Roof Framing, R802.1 Identification	[added] Two conditions for under which dimensional lumber for load bearing purposes may be excepted from the requirement for a grading mark or certification.
	Section R802 Wood Roof Framing, R802.1.3 Fire-retardant-treated wood	[deleted] R801.1.3.1 Pressure process, R802.1.3.2 Other means during manufacture, R801.3.3 Testing
	Section R802 Wood Roof Framing, R802.4 Allowable ceiling joist spans	[added] R802.4.1 Attics without storage, R802.4.2 Attics with storage

New York State		
Responsible Agency	**Website**	
	Table R802.4(1) and Table R802.4(2)	[added note for Spruce-Pine-Fir] b. North American Spruce-Pine-Fir species only
	Table R802.5.1(1) through Table R802.5.1(8)	[added note for Spruce-Pine-Fir] c. North American Spruce-Pine-Fir species only
	Section R802 Wood Roof Framing, R802.10 Wood Trusses	[added] R802.10.6 Truss live loads for attics with limited storage, R802.10.7 Truss live loads for attics without storage
	Section R806 Roof Ventilation	[amended] Uses 2009 IRC language. Table R806.4 Insulation for Condensation Control only addresses Climate Zones 4,5,6.
	Section R907 Reroofing	[amended] References 2010 Residential Code of New York State Appendix J, Section AJ502.4 for requirements (same as IRC 2006 R907 Reroofing).
2010 Plumbing Code of New York State, Based on 2006 International Plumbing Code, Supersedes 2007 Plumbing Code of New York State http://publicecodes.cyberregs.com/st/ny/st/b900v10/index.htm	Chapter 11--Storm Drainage, Section 1110 Controlled Flow Roof Drain Systems, 1110.1 General	[deleted] Administrative requirement regarding the design, submittal, approval, inspection and testing requirements of Section 105.4
2010 Energy Conservation Construction Code of New York State, Based on 2009 International Energy Conservation Code, Supersedes 2007 Energy Conservation Construction Code of New York State http://publicecodes.cyberregs.com/icod/iecc/2009/index.htm	Chapter 4--Residential Energy Efficiency, 402.2 Specific Insulation requirements (Prescriptive), 402.2.1.1 Unvented attic assemblies	[added] 2009 IRC language. Table R806.4 Insulation for Condensation Control only addresses Climate Zones 4,5,6.
	Chapter 5--Commercial Energy Efficiency, 502.4.3 Continuous air barrier, 502.4.3.1 Compliance	[added] Same compliance requirements as in 2012 IECC: materials or assemblies air leakage limits, or building air leakage testing option
2010 Fire Code of New York State, Based on 2006 International Fire Code, Supersedes 2007 Fire Code of New York State http://publicecodes.cyberregs.com/st/ny/st/b300v10/index.htm	-	-

Pennsylvania		
Responsible Agency	**State-mandated code**	**Website**
Bureau of Occupational and Industrial Safety Department of Labor and Industry	Uniform Construction Code (2009 I-Codes with amendments)	http://www.portal.state.pa.us/portal/server.pt/community/uniform_construction_code/10524/ucc_codes/553803
Adopted Codes	**Website**	
2009 International Building Code, supercedes 2006 International Building Code	http://publicecodes.cyberregs.com/icod/ibc/2009/index.htm	
2009 International Residential Code, supercedes 2006 International Residential Code	http://publicecodes.cyberregs.com/icod/irc/2009/index.htm	
2009 International Plumbing Code, supercedes 2006 International Plumbing Code	http://publicecodes.cyberregs.com/icod/ipc/2009/index.htm	No appendices adopted.
2009 International Energy Conservation Code, supercedes 2006 International Energy Conservation Code	http://publicecodes.cyberregs.com/icod/iecc/2009/index.htm	
2009 International Fire Code, supercedes 2006 International Fire Code	http://publicecodes.cyberregs.com/icod/ifc/2009/index.htm	Adopted only to the extent referenced in 2009 International Building Code.

Connecticut		
Responsible Agency	**State-mandated code**	**Website**
Department of Construction Services, Office of the State Building Inspector	2005 State Building Code with 2009 and 2011 amendments	http://www.ct.gov/dcs/cwp/view.asp?a=4218&q=294226&dcsNav=|
Adopted Codes	**Modified Section**	**Modification(s)**
2003 International Building Code	Section 1505 Fire Classification, Table 1505.1 Minimum Roof Covering Classification for Types of Construction	[deleted] Subscript note referencing International Wildland-Urban Interface Code and Appendix D for additional requirements
http://publicecodes.cyberregs.com/icod/ibc/2003/index.htm	1507.2.7 Attachment [asphalt shingles]	[amended] References Appendix K (tabulated values) for basic wind speed. Requires attachment in accordance with the manufacturer's special installation instructions or with minimum 6 nails per strip shingle/3 nails per individual shingle (in the absence of manufactuer instructions) where roof slope exceeds 20/12 or where basic wind speed is 110 mph or greater. ASTM D3161 Class F shingles are acceptable where the basic wind speed is 110 mph or greater and in all cases where special fastening is required.
	1507.11.1, 1507.12.1, 1507.13.1 Slope [modified bitumen, thermoset single-ply, thermoplastic single-ply]	[amended] An exception allows a minimum design slope of 1/8 in 12 when two conditions are met: 1. The roofing material is warranted/guaranteed by both the roofing material manufacturer and the roofing installed for the proposed slope. 2. The registered design professional responsible for the design if the roof structure certifies that the roof structure is designed to support all loads including any additional loads resultant to the reduced slope.

Connecticut		
Responsible Agency	**State-mandated code**	**Website**
	Chapter 16, 1608.2 Ground snow loads	[amended] References Appendix K (tabulated values) instead of ASCE 7-sourced maps.
	1608.3 Flat roof snow loads	[amended] References ASCE 7-02 for snow load calculation. The minimum calculated snow load value shall not be less than 30 psf.
	1608.4 Sloped roof snow loads	[amended] References ASCE 7-02 for snow load calculation. The minimum calculated snow load value shall not be less than 30 psf.
	1609.3 Basic wind speed	[amended] References Appendix K (tabulated values) instead of ASCE 7-sourced maps. References ASCE 7-02 for the special wind regions indicated.
2003 International Residential Code for One- and Two-Family Dwellings http://publicecodes.cyberregs.com/icod/irc/2003/index.htm	Section R202 Definitions	[amended] **Wind Borne Debris Region.** Areas where the basic wind speed in accordance with Appendix M is equal to or greater than 120 miles per hour.
	Table R301.2 Climatic and geographic design criteria	[amended] Provides specific values and criteria.
	R301.6 Roof Load	[amended] Roofs shall be designed for the 30 pound snow load indicated in Table R301.2(1).
	Table R301.6 Minimum Roof Live Loads in Pounds-force per Square Foot of Horizontal Projection	[deleted]
	R301.9 Ungraded lumber.	[added] Pursuant to section 29-256b of the Connecticut General Statutes, the use of ungraded lumber is allowed in accessory structures.

Connecticut		
Responsible Agency	**State-mandated code**	**Website**
	Chapter 8--Roof-Ceiling Construction, R806.1 Ventilation required	[amended] Exception from ventilation requirements for rafter spaces filled completely with sprayed-in foam insulation complying with Section N1101.3.1.1 of this code (urea-formaldehyde foamed-in-place insulation not permitted on or after June 1, 1981).
	Chapter 9--Roof Assemblies, R905.6 Attachment [asphalt shingles]	[amended] References Appendix K (tabulated values) for basic wind speed. Requires attachment in accordance with the manufacturer's special installation instructions or with minimum 6 nails per strip shingle/3 nails per individual shingle (in the absence of such instructions) where roof slope exceeds 20/12 or where basic wind speed is 110 mph or greater. ASTM D3161 Class F shingles are acceptable where the basic wind speed is 110 mph or greater and in all cases where special fastening is required.
	Chapter 31--Vents, P3103.2 Roof Extension	[amended] All open vent pipes that extend through a roof shall be terminated at least 12 inches above the roof, except that where a roof is to be used for any purpose other than weather protection, the vent extension shall be at least 7 feet above the roof.
2009 Amendment to 2005 Connecticut State Fire Safety Code	http://www.ct.gov/dcs/lib/dcs/office_of_state_building_inspector_files/2009_amendment_csfsc_final_unformatted.pdf	
2003 International Plumbing Code	http://publicecodes.cyberregs.com/icod/ipc/2003/index.htm	
2009 International Energy Conservation Code	http://publicecodes.cyberregs.com/icod/iecc/2009/index.htm	
2011 Amendment to Adopt the 2009 International Energy Conservation Code	http://www.ct.gov/dcs/lib/dcs/office_of_state_building_inspector_files/iecc_amendment_9-27-11.pdf	
2005 Connecticut State Fire Safety Code	http://www.ct.gov/dcs/lib/dcs/office_of_state_building_inspector_files/csfsc_2009_amendment_5-5-09.pdf	

Rhode Island		
Responsible Agency	**State-mandated code**	**Website**
State of Rhode Island Building Code Commission	Rhode Island State Codes	http://www.ribcc.ri.gov/
Adopted Codes	**Modified Section**	**Modification(s)**
SBC-1-2010 State of Rhode Island Building Code (Incorporates International Building Code, 2009 Edition by reference)	Chapter 13--Energy Efficiency	[amended] Buildings shall be designed in accordance with the Rhode Island Energy Code SBC-8-2010.
http://sos.ri.gov/documents/archives/regdocs/released/pdf/BCSC/5976.pdf	1507.2.7 Attachment [asphalt shingles]	Asphalt strip shingles shall have a minimum of six fasteners per shingle strip. Exceptions: 1. Where the roof slope exceeds 20/12, special fastening details may be required by the manufacturer. 2. Fastening systems tested by the manufacturer to 110 mph shall be permitted to be installed in any wind zone.
http://publicecodes.cyberregs.com/icod/ibc/2009/index.htm	Section 1608 Snow Loads, 1608.1 General	Design snow loads shall be determined in accordance with Section 7 of ASCE 7 using the ground snow load values determined by Table 1608.1, but the minimum flat roof snow load shall be not less than that determined by Table 1608.1. The design roof load shall not be less than that determined by Section 1607.
	1608.2 Ground snow load	[deleted]
	Section 1609--Wind Loads, 1609.3 Basic Wind Speed	[amended] The basic wind speed, in mph, shall be determined by Rhode Island Wind Speed Map Figure 1609 and Table 1608.1. [IBC Figure 1609 deleted and a new map and table substituted]

Rhode Island		
Responsible Agency	**State-mandated code**	**Website**
SBC-2-2010 State of Rhode Island Residential Code One- and Two-Family Dwelling (Incorporates International Residential Code, 2009 Edition by reference) http://sos.ri.gov/documents/archives/regdocs/released/pdf/BCSC/6050.pdf http://publicecodes.cyberregs.com/icod/irc/2009/index.htm	R301.2 Climatic and geographic design criteria	[amended] Buildings shall be constructed in accordance with the provisions of this code. Additional criteria is established and set forth in Table R301.2(1).
	Table R301.2(1) with notes	[amended] Provides specific values and criteria.
	R905.2.6 Attachment [asphalt shingles]	Asphalt strip shingles shall have a minimum of six fasteners per shingle strip. Exceptions: 1. Where the roof slope exceeds 20/12, special fastening details may be required by the manufacturer. 2. Fastening systems tested by the manufacturer to 110 mph shall be permitted to be installed in any wind zone.
	R905.2.8.2 Valleys [#3 option for valley lining]	[amended] For closed valleys (valley covered with shingles), valley lining of one ply of smooth roll roofing complynig with ASTM D224 Type II or Type III and at least 36 inches (914 mm) wide or valley lining as described in Items 1 and 2 above shall be permitted. Specialty underlayment complying with ASTM D1970 may be used in lieu of the lining material. Other valley lining systems and techniques acceptable to the shingle manufacturer shall be approved by the Building Official. [ASTM D224 was withdrawn in 2002 and replaced with ASTM D6380 which is referenced in 2009 IRC for this item.]

Rhode Island		
Responsible Agency	**State-mandated code**	**Website**
SBC-3-2010 State of Rhode Island Plumbing Code (incorporates 2009 International Plumbing Code by reference)	Figure 1106.1 100-year, 1-hour rainfall (inches) Eastern United States	[deleted] Utilize rainfall rate of 2.6 inches per hour for all the Rhode Island except for Block Island which shall use a rainfall rate of 2.7 inches per hour.
http://sos.ri.gov/documents/archives/regdocs/released/pdf/BCSC/5978.pdf http://publicecodes.cyberregs.com/icod/ipc/2009/index.htm	1108.2 Approvals	[added] All combined drains and sewer systems must have the approval of the local or regional sewer authority having jurisdiction.
SBC-8-2010 State of Rhode Island Energy Conservation Code (incorporates 2009 International Energy Conservation Code by reference)	Chapter 5--Commercial Energy Efficiency, 502.4.9 Air Barrier, 502.4.9.1 Air Barriers [prescriptive requirements for air barrier component of building envelope]	[added] This section prescribes specific requirements. It requires an impractical level of air tightness for the whole-building air barrier. It specifies a maximum air leakage rate for the building that is the same as specified for air barrier materials in 2012 IECC (0.004 cfm/sq.ft under a pressure differential of 0.3 inches water gauge). 2012 IECC specifies a maximum air leakage rate of 0.4 cfm/sq. ft (0.3 in water gauge) for a whole-building air barrier test.
http://sos.ri.gov/documents/archives/regdocs/released/pdf/BCSC/5981.pdf http://publicecodes.cyberregs.com/icod/iecc/2009/index.htm	502.4.9.2 Air barrier penetrations	[added] All penetrations of the air barrier and paths of air infiltration/exfiltration shall be made air-tight.
Fire Safety Code Section 7--Rhode Island Uniform Fire Code of the Rhode Island Fire Code http://sos.ri.gov/documents/archives/regdocs/released/pdf/FSCBR/5103.pdf	The Uniform Fire Code of the National Fire Protection Association, Inc. Standard 1 (NFPA 1), 2003 Edition, with appendices with amendments is adopted as the	Rhode Island State Fire Marshal has the jurisdiction for the enforcement of Rhode Island Uniform Fire Code.

Massachusetts		
Responsible Agency	**State-mandated code**	**Website**
Board of Building Regulations and Standards	8th Edition Base Code--2009 I-Codes (IBC, IRC, IEBC, IECC, IMC, IFC) with MA amendments; Code of Massachusetts Regulation (CMR)	http://www.mass.gov/eopss/agencies/dps/building-codebbrs.html
Adopted Codes	**Modified Section**	**Modification(s)**
2009 International Building Code & 780 CMR: MA Amendments to the IBC http://www.mass.gov/eopss/consumer-prot-and-bus-lic/license-type/csl/8th-edition-base-code.html	Chapter 12--Interior Environment, 1203.2 Attic Spaces	[added] Exceptions: 1. 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. 2. 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. When either exception 1 or 2 is taken, the following conditions must also be satisfied: a. The roof assembly, including the wall-to-eave- to-roof deck connection must be made air-tight, per Chapter 13 as applicable and, b. Thermal barrier requirements, if any, shall be per Chapter 26 as applicable and, c. The roof assembly must meet the fireresistance rating requirements of this code, when and as applicable and, d. Roofing material must be listed/warranted by its manufacturer for use in an unvented roof system.
	Chapter 16--Structural Design, 1604.11 Snow, Wind and Earthquake Design Facotrs	[added] This section provides basic wind speed values for wind load design in a Table 1604.11.
	1609.1.1 Determination of wind loads	[amended] References 1609.3 for basic wind speed values.
	1609.3 Basic wind speed	[amended] The basic wind speed, V in mph, shall be determined in accordance with Table 1604.11.

Massachusetts		
Responsible Agency	**State-mandated code**	**Website**
2009 International Residential Code for One- and Two-Family Dwellings & 780 CMR 51.00: Massachusetts Residential Code http://www.mass.gov/eopss/docs/dps/inf/780-8th-51.pdf	Table R301.2(1) Climatic and Geographic Design Criteria	[amended] References to sections within code populate the table.
	Figure R301.2(4) Basic Wind Speeds for 50-year Mean Recurrence Interval	[amended] Replaced with Table R301.2(4) Massachusetts Basic Wind Speeds
	Figure R301.2(5) Ground Snow Loads, Pg, for the United States (lb/ft2)	[amended] Replaced with Table R301.2(5) Massachusetts Ground Now Loads, Pg
	Chapter 9--Roof Assemblies, R901 General, R901.1 Scope	[added] In roofing and reroofing, the energy conservation requirements of Chapter 11 must also be satisfied.
	R905 Requirements for Roof Coverings, R905.1 Roof covering application	[added] 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 Roof Insulation, R906.1 General	[added] In roofing and reroofing, the energy conservation requirements of Chapter 11 must also be satisfied.
	Chapter 11--Energy Efficiency, N1101.2 Compliance	[amended] Climate zone 5A is prescribed for MA. Two options for compliance are provided: 1. Compliance with 2009 IECC. 2. Compliance with specific sections of Chapter 11 and amended section 405 of 2009 IECC.
	N1101.2.1 Warm humid counties	[amended] Interior Design Conditions. The interior design temperatures used for heating and cooling load calculations shall be a maximum of 72°F (22°C) for heating and minimum of 74°F (24°C) for cooling.
248 CMR 10.00: Uniform State Plumbing Code	http://www.mass.gov/ocabr/licensee/dpl-boards/pl/regulations/rules-and-regs/	

Massachusetts		
Responsible Agency	**State-mandated code**	**Website**
2009 International Energy Conservation Code & 780 CMR--MA Amendments to the IBC	Chapter 4--Residential Energy Efficiency, 405 Simulated Performance Alternative (Performance) [amended by 780 CMR 51.00: Massachusetts Residential Code]	[added] 405.6.2.1 Approved Calculation Software Tools; 405.7 Approved Alternative Energy Performance Methods
http://www.mass.gov/eopss/docs/dps/8th-edition/13-energy-efficiency.pdf	Chapter 5--Commercial Energy Efficiency, 502.4.3 Air Barriers [prescriptive requirements for air barrier component of building envelope]	[amended] This section prescribes specific requirements. It provides the same maximum air leakage rate for air barrier materials as specified in 2012 IECC (0.004 cfm/sq.ft at 0.3 in water gauge pressure differential).
	502.4.3.1 Air Barrier Penetrations	[added] All penetrations of the air barrier and paths of air infiltration/exfiltration shall be made air tight.
527 CMR: Massachusetts Comprehensive Fire Safety Code and 2009 International Fire Code (by	State Fire Marshall has the jurisdiction for the enforcement of the code.	
	http://www.mass.gov/eopss/agencies/dfs/dfs2/osfm/fire-prev/527-cmr-index.html	
	http://publicecodes.cyberregs.com/icod/ifc/2009/index.htm	

New Hampshire		
Responsible Agency	**State-mandated code**	**Website**
New Hampshire State Building Code Review Board	New Hampshire State Building Code (2009 IBC, IPC, IMC, IECC, IRC with amendments, NEC, 2008 Edition with amendment, and NFPA 1 and NFPA 101, 2009 Editions)	http://www.nh.gov/safety/boardsandcommissions/bldgcode/nhstatebldgcode.html
Adopted Codes	**Modified Section**	**Modification(s)**
2009 International Building Code with Amendments	Chapter 16--Structural Dessign, 1608.2 Ground Snow Loads, 1608.2.1	[added] Ground snow loads are permitted to be determined in accordance with Table 1 of *Ground Snow Loads for New Hampshire* ERDC/CRREL TR-02-6.
2009 International Residential Code for One- and Two-Family Dwellings with Amendments	http://publicecodes.cyberregs.com/icod/irc/2009/index.htm	
	http://www.nh.gov/safety/boardsandcommissions/bldgcode/documents/IRC2009NHAmendments.pdf	
2009 International Plumbing Code with Amendments	http://publicecodes.cyberregs.com/icod/ipc/2009/index.htm	
	http://www.nh.gov/safety/boardsandcommissions/bldgcode/documents/IPC2009NHAmendments.pdf	
2009 International Energy Conservation Code with Amendments	http://publicecodes.cyberregs.com/icod/iecc/2009/index.htm	
	http://www.nh.gov/safety/boardsandcommissions/bldgcode/documents/IECC2009NHAmendments.pdf	
New Hampshire State Fire Code Saf-C 6000 (NFPA 1 and NFPA 101, 2009 Editions with Amendments)	State Fire Marshal's Office has the jurisdiction for the enforcement of the code.	
	http://www.gencourt.state.nh.us/rules/state_agencies/saf-c6000.html	

Vermont		
Responsible Agency	**State-mandated code**	**Website**
Vermont Department of Public Safety, Division of Fire Safety	2006 Vermont Fire and Building Safety Code (2012 Edition goes into effect November 5, 2012)	http://firesafety.vermont.gov/Standards
Adopted Codes	**Modified Section**	**Modification(s)**
2006 International Building Code with Amendments (2012 International Building Code with Amendments, effective November 5, 2012)	1608.2.1 Local ground snow load [1608.2 in 2012 Edition, possibly a typo, as the section already exists in 2012 IBC]	[add] The Minimum Ground Snow Load Map [provided in Annex VII] shall be used in determining the ground snow load.
http://publicecodes.cyberregs.com/icod/ibc/2006f2/index.htm http://publicecodes.cyberregs.com/icod/ibc/2012/index.htm	1608.2.2 Minimum roof snow load [1608.2.1 in 2012 Edition]	[add] The total roof snow load, including additional loading effect due to drifting snow, sliding snow, unbalanced loading conditions and partial loading conditions, shall not be less than 40 psf for roofs with a slope less than or equal to 5 degrees [~1/12], and shall not be less than the slope factor (Cs) times 40 psf for roofs with a slope greater than 5 degrees. This minimum snow load shall not apply to the windward side for unbalanced loading conditions, or to the partially loaded spans for partial loading conditions. [2012, add] Note: Our Division web page has an "Average Yearly Snowfall Map" provided for informational purposes only.
2009 International Plumbing Code with 2009 Vermont Plumbing Rules amendments	http://publicecodes.cyberregs.com/icod/ipc/2009/index.htm http://firesafety.vermont.gov/sites/firesafety/files/pdf/2009PLUMBINGadopted.pdf	
	Chapter 11--Storm Drainage, 1101.2 Where required	[amended] Storm Drainage Required. Storm drainage for a building roof or courtyard shall be regulated by this section. Storm drainage from paved areas, yards and courts are regulated by the Water Quality Division of the Department of Environmental Conservation/Agency of Natural Resources.
2011 Vermont Commercial Building Energy Standards (CBES) [based on 2009 IECC and ASHRAE 90.1-2007]	Applies to commercial buildings and residential buildings 4 stories or greater above grade. http://publicservice.vermont.gov/energy/ee_commstandards.html	

Vermont		
Responsible Agency	**State-mandated code**	**Website**
2011 Vermont Residential Building Energy Standards (RBES) [based on 2009 IECC]	Applies to residential dwellings three stories or fewer in height.	http://publicservice.vermont.gov/energy/ee_resbuildingstandards.html
NFPA 101: Life Safety Code, 2006 Edition (One- and Two-Family Dwellings)	http://www.nfpa.org/aboutthecodes/AboutTheCodes.asp?DocNum=101	
NFPA 101: Life Safety Code, 2012 Edition (One- and Two-Family Dwellings), effective November 5, 2012		

Maine		
Responsible Agency	**State-mandated code**	**Website**
State of Maine Department of Public Safety, Bureau of Building Codes & Standards	2009 Maine Uniform Building and Energy Code; Maine State Internal Plumbing Code	http://www.maine.gov/dps/bbcs/
Adopted Codes	**Website**	
2009 International Building Code with amendments	http://publicecodes.cyberregs.com/icod/ibc/2009/index.htm	
	http://www.maine.gov/dps/bbcs/Chap%203%20IBC%20Final%20adoption.doc	
2009 International Residential Code for One- and Two-Family Dwellings with amendments	http://publicecodes.cyberregs.com/icod/irc/2009/index.htm	
	http://www.maine.gov/dps/bbcs/Chap%205%20IRC%20Final%20adoption2.doc	
2009 International Energy Conservation Code with amendments and ASHRAE 90.1-2007	http://publicecodes.cyberregs.com/icod/iecc/2009/index.htm	
	http://www.maine.gov/dps/bbcs/Chap%206%20IECC%20Final%20Adoption.doc	
2009 Uniform Plumbing Code with amendments and exclusions	http://www.maine.gov/sos/cec/rules/02/395/395c-all-2010.doc	
NFPA 101: Life Safety Code, 2006 Edition	Office of State Fire Marshall has jurisdiction for the enforcement of the code.	
	http://www.nfpa.org/aboutthecodes/AboutTheCodes.asp?DocNum=101	