

MPS No. 1021

Subject: 2012 IECC Insulation Requirements

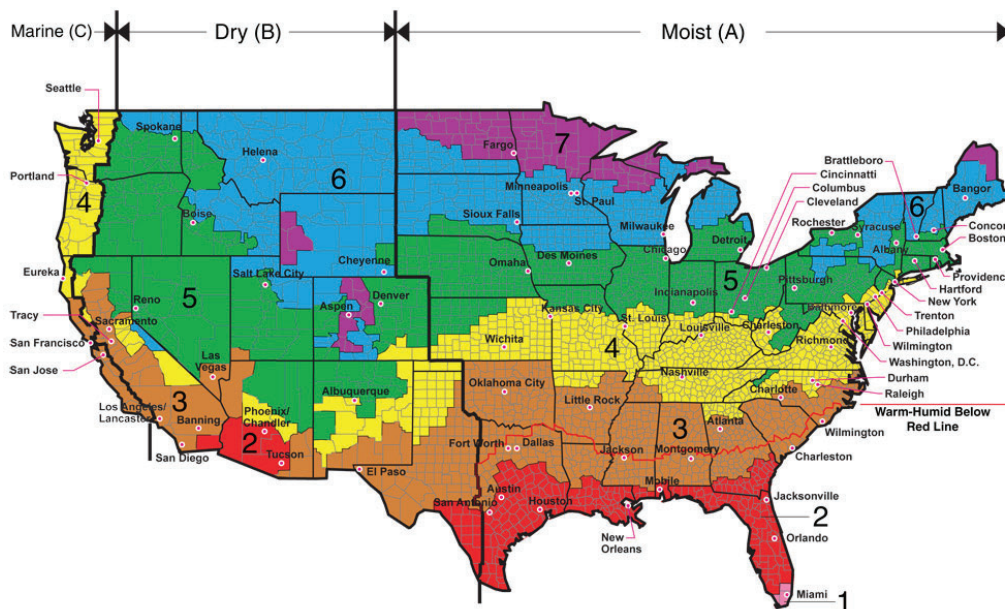
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Foam-Control® insulation is a versatile insulation material which is suitable for installation in all areas of buildings. Foam-Control insulation is available in a wide range of types and sizes to ensure that building owners are able to meet the most advanced energy code requirements, such as those published by the International Code Council (ICC). This bulletin provides a summary of the prescriptive insulation requirements of the 2012 edition of International Energy Conservation Code (IECC) published by ICC. Please refer to the 2012 IECC for detailed information.

The IECC is a leading energy code that is applicable to both commercial and residential buildings and is often adopted as a code requirement at the State level. State adoption of IECC may also be to the prior versions of the IECC issued in 2006 and 2009.

The tables included with this bulletin provide the minimum prescriptive insulation requirements of IECC-2012. Alternative paths for conformance through detailed analysis are also available within the standard. Insulation requirements vary according to Climate Zone.

Climate Zones



All of Alaska in Zone 7 except for the following Boroughs in Zone 8: Bethel, Dellingham, Fairbanks, N. Star, Nome North Slope, Northwest Arctic, Southeast Fairbanks, Wade Hampton, and Yukon-Koyukuk

Zone 1 includes: Hawaii, Guam, Puerto Rico, and the Virgin Islands

Residential

The IECC provides prescriptive insulation requirements for residential buildings. The first number in the table below is the requirement for cavity insulation and the second number is for continuous insulation (ci).

| IECC-2012 Prescriptive R-value Residential | | | | | | | |
|--|-------------------------------|------------------------|----------------------------|------------------------|-------|-------------|---------|
| Zone | Wood-Framed ¹ Wall | Mass ² Wall | Basement Wall ³ | Slab ⁴ Wall | Floor | Crawl Space | Ceiling |
| 1 | R-13 | R-3/4 | 0 | 0 | R-13 | 0 | R-30 |
| 2 | R-13 | R-4/6 | 0 | 0 | R-13 | 0 | R-38 |
| 3 | R-13+5ci or R-20 | R-8/13 | R-5/13 | 0 | R-19 | R-5/13 | R-38 |
| 4 except Marine | R-13+5ci or R-20 | R-8/13 | R-10/13 | R-10 | R-19 | R-10/13 | R-49 |
| 5 and 4 Marine | R-13+5ci or R-20 | R-13/17 | R-15/19 | R-10 | R-30 | R-15/19 | R-49 |
| 6 | R-13+10ci R-20+5ci | R-15/20 | R-15/19 | R-10 | R-30 | R-15/19 | R-49 |
| 7 | R-13+10ci R-20+5ci | R-19/21 | R-15/19 | R-10 | R-38 | R-15/19 | R-49 |
| 8 | R-13+10ci R-20+5ci | R-19/21 | R-15/19 | R-10 | R-38 | R-15/19 | R-49 |

ci = continuous insulation

1 = First value is cavity insulation, second is continuous insulation, so "13+5" means R-13 cavity insulation plus R-5 continuous insulation.

2 = The second R-value applies when more than half the insulation is on the interior of the mass wall.

3 = "15/19" means R-15 continuous insulation on the interior or exterior of the home or R-19 cavity insulation at the interior of the basement wall. "10/13" means R-10 continuous insulation on the interior or exterior of the home or R-13 cavity insulation at the interior of the basement wall.

4 = Depth of the slab insulation is 2 ft in zone 4/5 and 4 ft in zones 6/7/8.

Commercial Walls, Above Grade

The IECC provides prescriptive insulation requirements for above grade walls of heated buildings constructed with wood framing, steel framing, metal buildings, and mass (concrete, CMU, or stone) systems. The first number in the table below is the requirement for cavity insulation and the second number is for continuous insulation (ci). Continuous insulation minimizes heat loss since the insulation is installed continuously across the wall without thermal bridges other than fasteners and service openings.

| IECC-2012 Prescriptive R-value Commercial | | | | | | | | |
|---|-----------------------------|--------------------------|--------------|-------------|----------------|-------------|-----------|----------|
| Walls, above grade | | | | | | | | |
| | Wood-Framed | | Metal-Framed | | Metal-Building | | Mass | |
| Zone | All other | Group R | All other | Group R | All other | Group R | All other | Group R |
| 1 | R-13+3.8ci or R-20 | R-13+3.8ci R-20 | R-13+5ci | R-13+5ci | R-13+6.5ci | R-13+6.5ci | R-5.7ci | R-5.7ci |
| 2 | R-13+3.8ci or R-20 | R-13+3.8ci R-20 | R-13+5ci | R-13+7.5ci | R-13+6.5ci | R-13+13ci | R-5.7ci | R-7.6ci |
| 3 | R-13+3.8ci or R-20 | R-13+3.8ci R-20 | R-13+7.5ci | R-13+7.5ci | R-13+6.5ci | R-13+13ci | R-7.6ci | R-9.5ci |
| 4 except Marine | R-13+3.8ci or R-20 | R-13+3.8ci R-20 | R-13+7.5ci | R-13+7.5ci | R-13+13ci | R-13+13ci | R-9.5ci | R-11.4ci |
| 5 and 4 Marine | R-13+3.8ci or R-20 | R-13+7.5ci R-20+3.8ci | R-13+7.5ci | R-13+7.5ci | R-13+13ci | R-13+13ci | R-11.4ci | R-13.3ci |
| 6 | R-13+7.5ci or R-20+3.8ci | R-13+7.5ci R-20+3.8ci | R-13+7.5ci | R-13+7.5ci | R-13+13ci | R-13+13ci | R-13.3ci | R-15.2ci |
| 7 | R-13+7.5ci or R-20+3.8ci | R-13+7.5ci R-20+3.8ci | R-13+7.5ci | R-13+15.6ci | R-13+13ci | R-13+19.5ci | R-15.2ci | R-15.2ci |
| 8 | R-13+15.6ci or R-20+10ci | R-13+15.6ci R-20+10ci | R-13+7.5ci | R-13+17.5ci | R-13+13ci | R-13+19.5ci | R-25.0ci | R-25.0ci |

ci = continuous insulation

Commercial Walls, Below Grade

The IECC provides prescriptive insulation requirements for below grade walls of heated buildings. Continuous insulation minimizes heat loss since the insulation is installed continuously across the wall without thermal bridges other than fasteners and service openings.

| IECC-2012 Prescriptive R-value Commercial | | |
|---|-----------|----------|
| Walls, below grade | | |
| Zone | All other | Group R |
| 1 | NR | NR |
| 2 | NR | NR |
| 3 | NR | NR |
| 4 except Marine | R-7.5ci | R-7.5ci |
| 5 and 4 Marine | R-7.5ci | R-7.5ci |
| 6 | R-7.5ci | R-7.5ci |
| 7 | R-10.0ci | R-10.0ci |
| 8 | R-10.0ci | R-12.5ci |

ci = continuous insulation

Commercial Floors and Slabs

The IECC provides the prescriptive insulation requirements for mass floors and slab on grade floors of heated and unheated building.

| IECC-2012 Prescriptive R-value Commercial | | | | | | |
|---|-----------|----------|----------------------|------------------|------------------------|-----------------|
| Floors | | | | | | |
| | Mass | | Slab-On-Grade Heated | | Slab-On-Grade UnHeated | |
| Zone | All other | Group R | All other | Group R | All other | Group R |
| 1 | NR | NR | R-7.5 for 12 in. | R-7.5 for 12 in. | NR | NR |
| 2 | R-6.3ci | R-8.3ci | R-7.5 for 12 in. | R-7.5 for 12 in. | NR | NR |
| 3 | R-10ci | R-10ci | R-10 for 24 in. | R-10 for 24 in. | NR | NR |
| 4 except Marine | R-10ci | R-10.4ci | R-15 for 24 in. | R-15 for 24 in. | R-10 for 24 in. | R-10 for 24 in. |
| 5 and 4 Marine | R-10ci | R-12.5ci | R-15 for 36 in. | R-15 for 36 in. | R-10 for 24 in. | R-10 for 24 in. |
| 6 | R-12.5ci | R-12.5ci | R-15 for 36 in. | R-20 for 48 in. | R-10 for 24 in. | R-15 for 24 in. |
| 7 | R-15ci | R-16.7ci | R-20 for 24 in. | R-20 for 48 in. | R-15 for 24 in. | R-15 for 24 in. |
| 8 | R-15ci | R-16.7ci | R-20 for 48 in. | R-20 for 48 in. | R-15 for 24 in. | R-20 for 24 in. |

ci = continuous insulation

Commercial Roof Insulation

The IECC provides the prescriptive insulation requirements for continuous roof insulation above roof decks.

| IECC-2012 Prescriptive R-value Commercial | | |
|---|-----------|---------|
| Roof | | |
| Above Deck | | |
| Zone | All other | Group R |
| 1 | R-20ci | R-20ci |
| 2 | R-20ci | R-20ci |
| 3 | R-20ci | R-20ci |
| 4 except Marine | R-25ci | R-25ci |
| 5 and 4 Marine | R-25ci | R-25ci |
| 6 | R-30ci | R-30ci |
| 7 | R-35ci | R-35ci |
| 8 | R-35ci | R-35ci |

ci = continuous insulation



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