



Success with 2009 IECC:
Tech Tips for Builders

INSULATION



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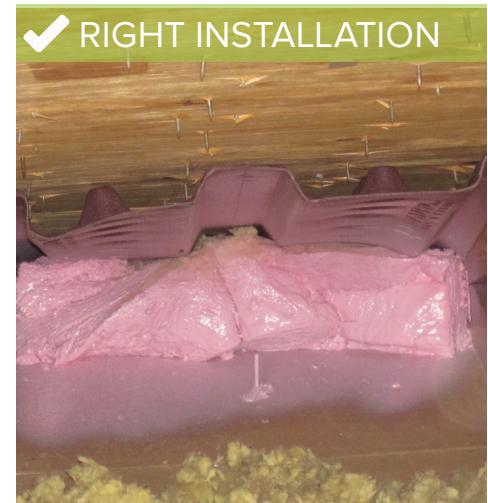


TECH TIPS: INSULATION

1. For vented attics, install wind baffles on top of all exterior walls, leaving room for insulation over top plates and ventilation above.



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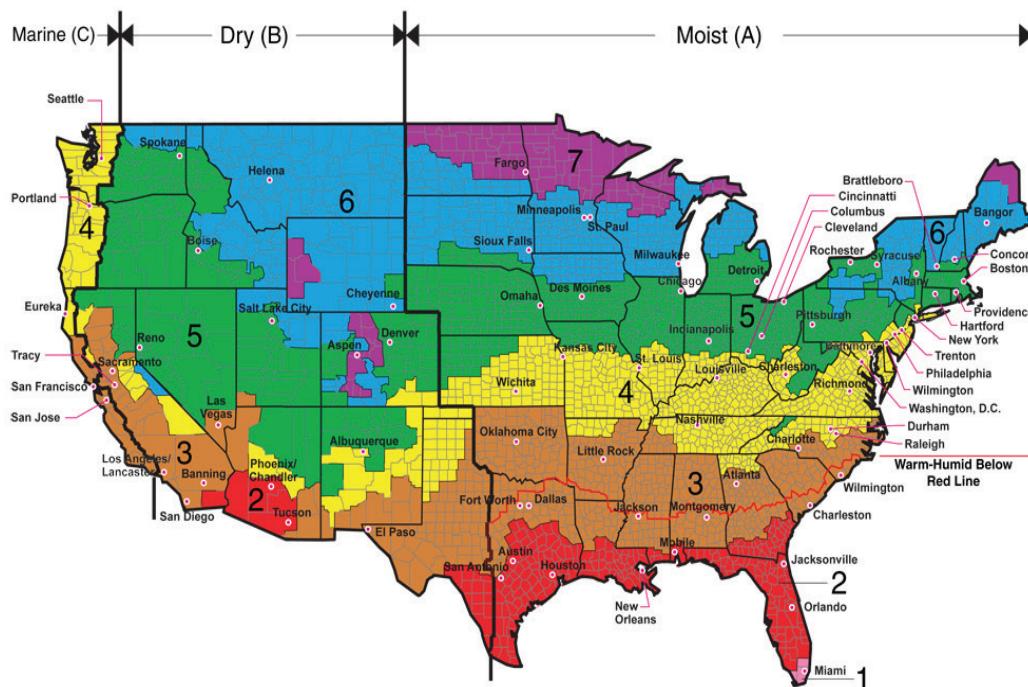
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2. Install insulation to meet the 2009 IECC R-value requirements.^a

CLIMATE ZONE	CEILING	FRAME WALL	MASS WALL ^c	FLOOR	BASEMENT WALL ^e	CRAWL SPACE WALL ^e	SLAB ^{g,h}
Zone 1	R-30	R-13	R-3/4	R-13	R-0	R-0	0
Zone 2	R-30	R-13	R-4/6	R-13	R-0	R-0	0
Zone 3	R-30	R-13	R-5/8	R-19	R-5/13 ^f	R-5/13	0
Zone 4	R-38	R-13	R-5/10	R-19	R-10/13	R-10/13	10, 2 ft.
Zone 5	R-38	R-20 or R-13+R-5 ^h	R-13/17	R-30 ^g	R-10/13	R-10/13	10, 2 ft.
Zone 6	R-49	R-20 or R-13+R-5 ^h	R-15/19	R-30 ^g	R-15/19	R-10/13	10, 4 ft.
Zone 7	R-49	R-21	R-19/21	R-38 ^g	R-15/19	R-10/13	10, 4 ft.



All of Alaska in Zone 7 except for the following Boroughs in Zone 8: Bethel, Dillingham, 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

- a. R-values are minimums. U-factors and SHGC are maximums. R-19 batts compressed into a nominal 2x6 framing cavity such that the R-value is reduced by R-1 or more shall be marked with the compressed batt R-value in addition to the full thickness R-value.
- b. The fenestration U-factor column excludes skylights. The SHGC column applies to all glazed fenestration.
- c. "15/19" means R-15 continuous insulated sheathing 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 insulated sheathing on the interior or exterior of the home or R-13 cavity insulation at the interior of the basement wall.
- d. R-5 shall be added to the required slab edge R-values for heated slabs. Insulation depth shall be the depth of the footing or 2 feet, whichever is less in zones 1 through 3 for heated slabs.
- e. There are no SHGC requirements in the Marine zone.
- f. Basement Wall Insulation is not required in warm-humid locations.
- g. Or insulation sufficient to fill the framing cavity. R-19 is minimum.
- h. "13+5" means R-13 cavity insulation plus R-5 insulated sheathing. If structural sheathing covers 25 percent or less of the exterior, insulating sheathing is not required where structural sheathing is used. If structural sheathing covers more than 25 percent of exterior, structural sheathing shall be supplemented with insulated sheathing of at least R-2.
- i. The second R-value applies when more than half the insulation is on the interior of the wall.

Interactive Map:

<http://energycode.pnl.gov/EnergyCodeReqs/>



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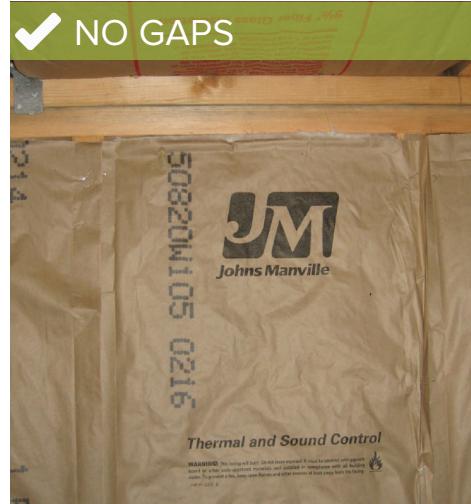
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3. Install insulation to fill the cavity between conditioned and unconditioned space without gaps, voids, misalignments or compression.

X GAPS



✓ NO GAPS



3. Install insulation to fill the cavity between conditioned and unconditioned space without gaps, voids, misalignments or compression.

X MISALIGNMENT

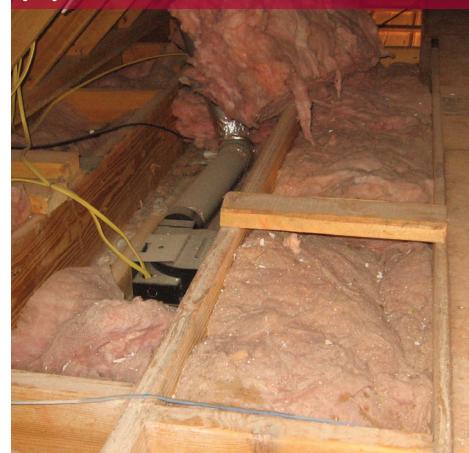


✓ NO MISALIGNMENT



3. Install insulation to fill the cavity between conditioned and unconditioned space without gaps, voids, misalignments or compression.

X VOIDS



✓ NO VOIDS



3. Install insulation to fill the cavity between conditioned and unconditioned space without gaps, voids, misalignments or compression.

X COMPRESSION



✓ NO COMPRESSION

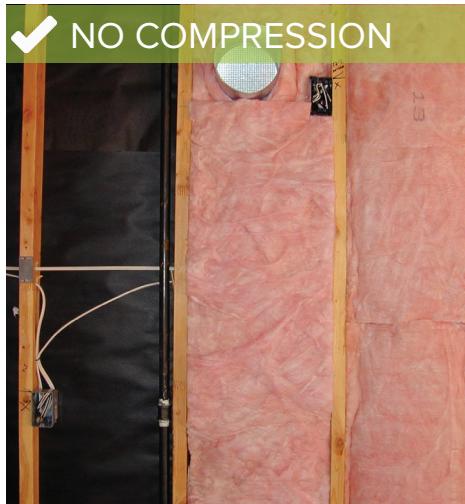




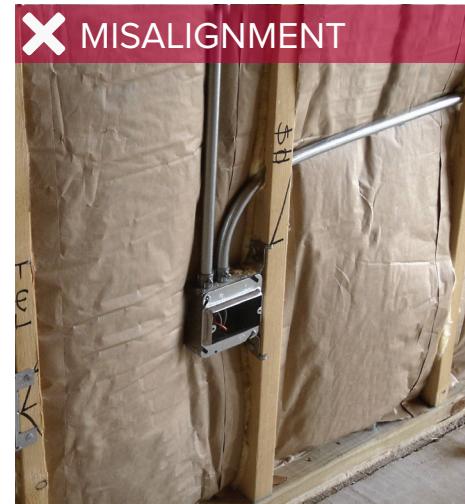
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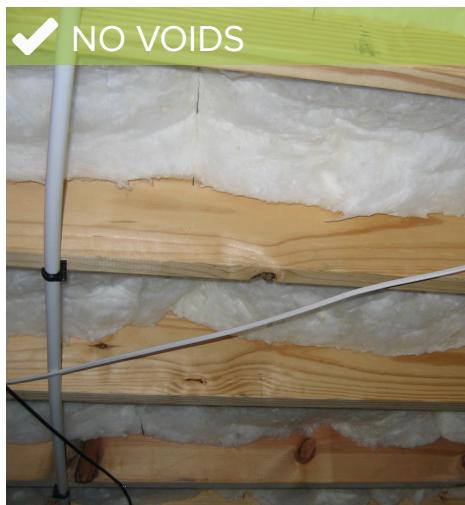
4. Cut and split insulation around blocking, plumbing, HVAC and electrical components.



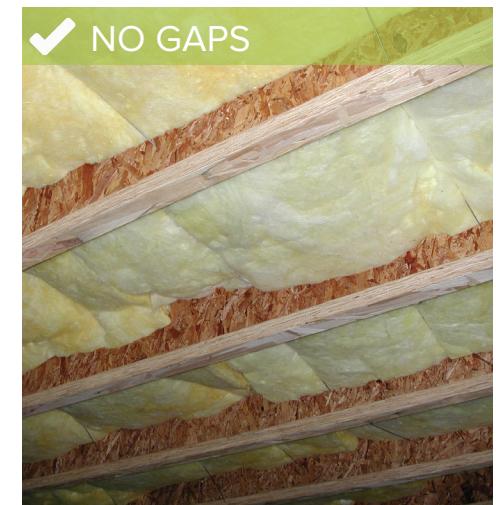
4. Cut and split insulation around blocking, plumbing, HVAC and electrical components.



5. Install insulation to completely fill floor and/or cantilever framing or to maintain permanent contact with the subfloor.



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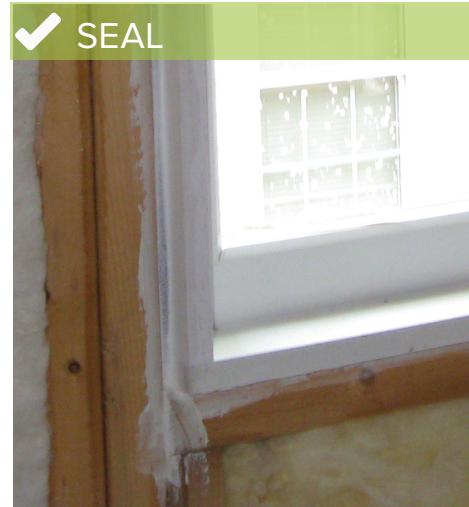
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6. Air seal around windows and doors using backer rod, caulk or low expansion foam.

X INSULATION



✓ SEAL



7. Insulate the attic access and install weather stripping around the perimeter.

X NO INSULATION

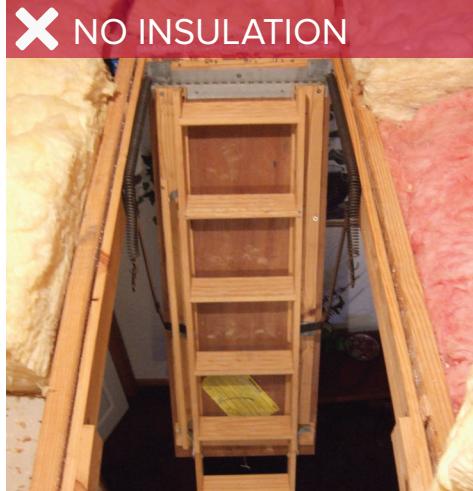


✓ INSULATION



7. Insulate the attic access to the same level as surroundings and install weather stripping around the perimeter.

X NO INSULATION



✓ INSULATION



8. For attics with loose fill insulation, install baffles around the attic access opening.

X NO BAFFLES



✓ RIGHT INSTALLATION

