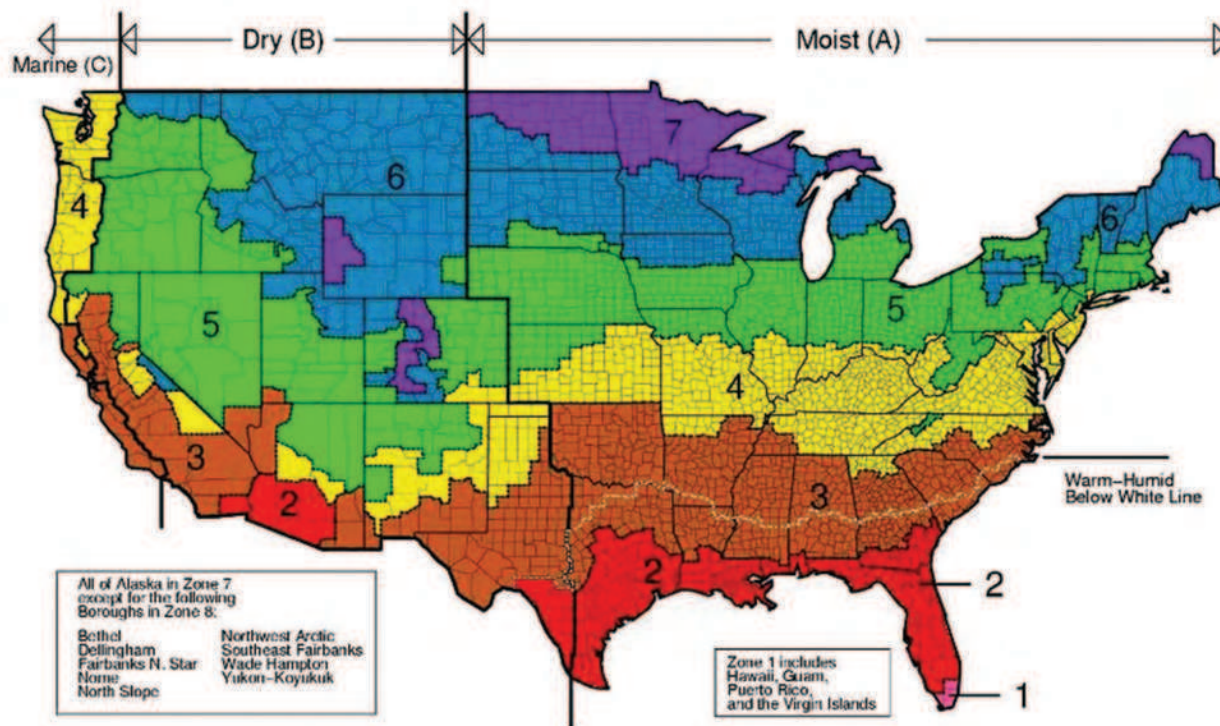


Quick Reference Guide for 2009 IECC Residential Energy Efficiency Climate Zone 5 and Marine 4

The International Energy Conservation Code (IECC) contains energy-efficiency criteria for new construction, but keeping up with changes to the Code can be challenging. This document highlights the 2009 changes for Zone 5 and Marine 4 and offers information about how Dow products help to build better homes. The following figure shows the climate zone map, which will be referenced later in this document.

Figure 1: Climate Zones



Introduction

There are two types of major codes governing residential construction: The International Residential Code (IRC) and The International Energy Conservation Code (IECC). IRC addresses all codes such as structural, plumbing, etc. Within IRC, Chapter 11 has energy efficiency requirements. IRC addresses detached one- and two-family dwellings and townhouses. IRC allows compliance with IECC as an alternative to Chapter 11.

IECC addresses both residential and commercial applications and addresses only energy efficiency requirements. Chapter 4 of IECC addresses only *residential* energy efficiency requirements, including low-rise (1-3 stories) houses, condos and apartments (R-2, R-3 and R-4), but not hotels/motels (R-1). All other buildings are considered “commercial,” which is covered by Chapter 5 of IECC.

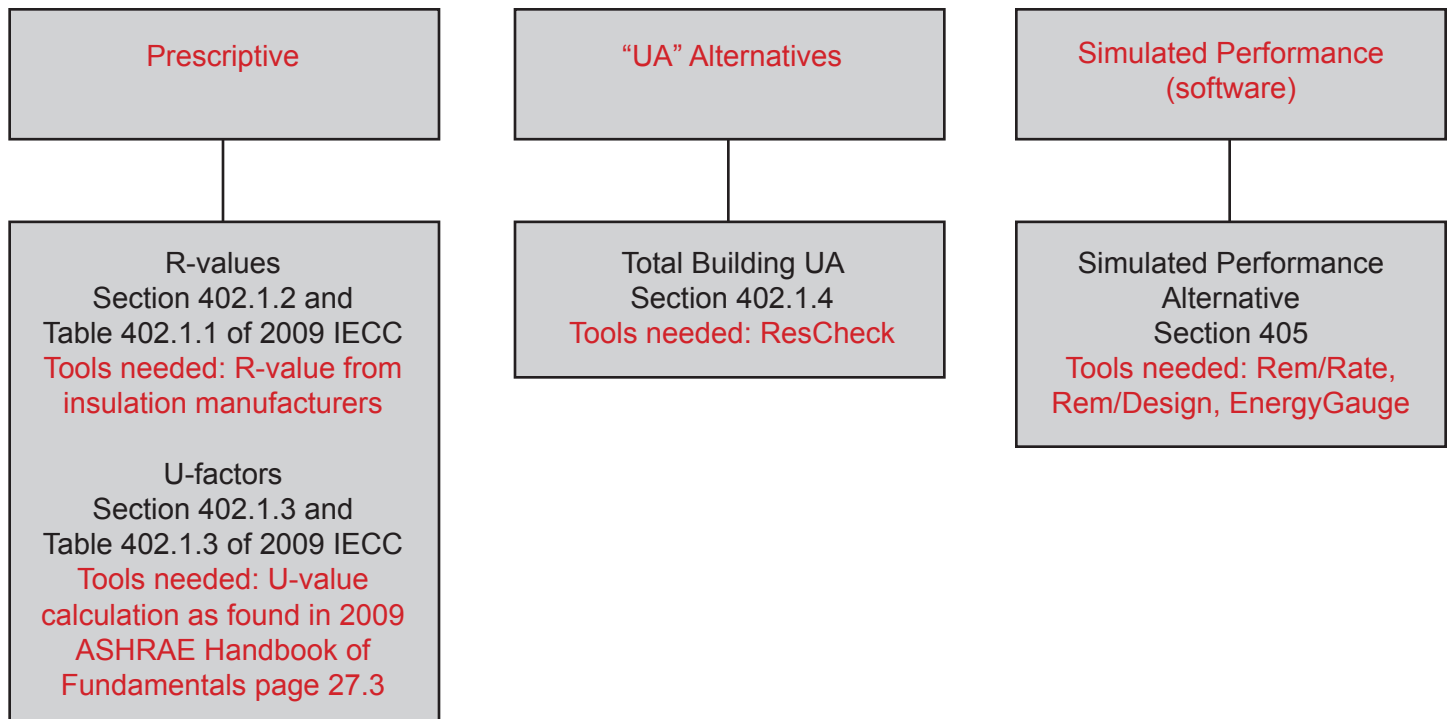
There are three ways to comply with IECC requirements:

Prescriptive Approach – The prescriptive approach includes two alternatives: prescriptive R-value of insulating materials for each component (Table 402.1.1) and prescriptive U-factors for each component (Table 402.1.3). The focus of this document is prescriptive R-values as found in 2009 IECC Table 402.1.1. The prescriptive approach is straightforward and easy for building code officials to verify.

UA Compliance Approach – An alternative approach to the prescriptive method is “UA.” The “U” factor measures the thermal conductance of an assembly and “A” is the surface area of the building envelope. The “UA” compliance approach requires the total building thermal envelope “U*A” (product of U factor times assembly area) of the proposed design to be less than or equal to the total “U*A” resulting from using the U factor in the IECC (Table 402.1.3 in 2009 IECC). In this approach, architects and designers can trade enhanced energy efficiency in one area against reduced energy efficiency elsewhere. For example, an architect may compensate for poorly insulated windows by using higher than code-required insulation levels on the wall. The most popular tool to show compliance using this approach is ResCheck.

Simulated Performance Approach – Another alternative to the prescriptive approach is the simulated performance approach. This approach requires the proposed building be shown to have an annual energy cost that is less than or equal to the annual energy cost of the standard reference design. To support the simulated performance approach, tools like REM/Rate can be used to run a comprehensive analysis of a home’s energy performance. See Figure 2 for the summary of these three energy compliance approaches.

Figure 2: Three Energy Code Compliance Approaches



I. Overview of Changes to the 2009 IECC Code

There are significant changes in 2009 IECC compared to previous IECC requirements for residential construction. These changes are reflected in three major categories that have the most impact on products from Dow Building Solutions. Other changes that are not impacting Dow Building Solution products, such as pool controls and covers, snow melts, lighting, etc., are not covered in this document.

A. Increased insulation levels based on climate (2009 IECC Section 402) as shown in Table 1 below

Compared to 2006 IECC for Zone 5 and Marine 4, the following significant changes occurred:

1. Increase above-grade wood-frame wall insulation level from R19 to R20. The R13+R5 option remains the same.
2. Change mass wall R-value requirements from R13 to R13/R17 (R13 when insulation is placed on the exterior of the wall; R17 when insulation is placed on the interior of the wall).
3. Footnote "a" specifies that batts installed in a 2 x 6 framing must be labeled with compressed R-value.

Table 1: 2009 IECC Table 402.1.1 "Insulation and Fenestration Requirements by Components"^a
(numbers in parenthesis are for 2006 IECC requirements)

Climate Zone	Fenestration U-Factor ^b	Skylight ^b U-Factor	Glazed Fenestration SHGC ^{b, e}	Ceiling Value	Wood Frame Wall R-Value	Mass Wall R-Value ⁱ	Floor R-Value	Basement ^c Wall R-Value	Slab ^d R-Value & Depth	Crawl Space ^e Wall R-Value
1	1.2	0.75	0.30 (0.40)	30	13	3/4 (3)	13	0	0	0
2	0.65 ^j (0.75)	0.75	0.30 (0.40)	30	13	4/6 (4)	13	0	0	0
3	0.50 ^j (0.65)	0.65	0.30 (0.40)	30	13	5/8 (5)	19	5/13 ^f (0)	0	5/13
4 except Marine	0.35 (0.40)	0.60	NR	38	13	5/10 (5)	19	10/13	10, 2 ft	10/13
5 & Marine 4	0.35	0.60	NR	38	20 (19) or 13+5 ^h	13/17 (13)	30 ^g	10/13	10, 2 ft	10/13
6	.035	0.60	NR	49	20 (19) or 13+5 ^h	15/19 (15)	30 ^g	15/19 (10/13)	10, 4 ft	10/13
7 & 8	0.35	0.60	NR	49	21	19/21 (19)	38 (30) ^g	15/19 (10/13)	10, 4 ft	10/13

For SI: 1 foot = 304.8 mm.

- R-values are minimums. U-factors and SHGC are maximums. R-19 batts compressed into a nominal 2 x 6 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.
- The fenestration U-factor column excludes skylights. The SHGC column applies to all glazed fenestrations.
- "15/19" means R-15 continuous insulated sheathing on the interior or exterior of the home or R-19 cavity insulation on the interior of the basement wall. "15/19" shall be permitted to be met with R-13 cavity insulation on the interior of the basement wall plus R-5 continuous insulated sheathing on the interior or exterior of the home. "10/13" means R-10 continuous insulated sheathing on the interior or exterior of the home or R-13 cavity insulation on the interior of the basement wall.
- 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.
- There are no SHGC requirements in the Marine Zone.
- Basement wall insulation is not required in warm-humid locations as defined by Figure 301.1 and Table 301.1.
- Or insulation sufficient to fill the framing cavity, R-19 minimum.
- "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.
- The second R-value applies when more than half the insulation is on the interior of the mass wall.
- For impact rated fenestration complying with Section R301.2.1.2 of the *International Residential Code* or Section 1608.1.2 of the *International Building Code*, the maximum U-factor shall be 0.75 in Zone 2 and 0.65 in Zone 3.

B. Duct insulation, duct tightness testing and whole-house air sealing and insulation; requirements for all climate zones

1. Duct insulation and sealing

The following requirements are summarized from 2009 IECC Section 402.4.2 and 403.2.

a. Insulation (prescriptive)

- Supply ducts in attics outside the building envelope: R-8
- All other ducts: R-6

Exception: Ducts or portions of ducts located completely inside the building thermal envelope/conditioned space do not require insulation.

b. Sealing (mandatory): Sealing is required, whether the ducts are in conditioned space or not.

- Joints and seams shall comply with IRC, Section M1601.4.1

2. Duct tightness testing

Duct tightness shall be verified by *either* post-construction test or rough-in test:

a. Post-construction test

- Leakage to outdoors: ≤ 8 cfm/per 100 ft² of conditioned floor area
- Total leakage: ≤ 12 cfm/per 100 ft² of conditioned floor area
- The test is performed at a pressure differential of 0.1 in w.g. (25Pa) across the entire system, including the manufacturer's air handler enclosure.
- All register boots should be taped or otherwise sealed

b. Rough-in test

- Total leakage ≤ 6 cfm/per 100 ft² of conditioned floor area tested at a pressure differential of 0.1 in w.g. (25Pa) across roughed-in system, including manufacturer's air handler enclosure
- All register boots taped or otherwise sealed
- If air handler is not installed at time of test, total air leakage ≤ 4 cfm/per 100 ft²

Exceptions: Duct tightness test is not required if the air handler and all ducts are located within conditioned space.

3. Whole-house air sealing and insulation

There are two options to demonstrate compliance: the blower door test option or the visual inspection option. It is recommended that the builder work with the building code official to decide a compliance path before the construction begins.

a. Blower door test

- Air leakage should be < 7 ACH when tested with a blower door at pressure of 50 Pascals (Section 402.4.2.1).
- Testing shall occur after rough-in and installation of building envelope, including penetrations for utilities, plumbing, electrical, ventilation and combustion appliances.

b. Visual inspection option

- Items listed in Table 402.4.2 in 2009 IECC, (Table 2, below) applicable to the method of construction, should be field-verified (2009 IECC Section 402.4.2.2).

Table 2: 2009 IECC 402.4.2 “Visual Inspection List for Air Sealing and Insulation Compliance”

Component	Criteria
Air barrier and thermal barrier	Exterior thermal envelope insulation for framed walls is installed in substantial contact and continuous alignment with building envelope air barrier. Breaks or joints in the air barrier are filled or repaired. Air permeable insulation is not used as a sealing material. Air permeable insulation is inside of an air barrier.
Ceiling/attic	Air barrier in any dropped ceiling/soffit is substantially aligned with insulation and any gaps are sealed. Attic access (except unvented attic), knee wall door, or drop down stair is sealed.
Walls	Corners and headers are insulated. Junction of foundation and sill plate is sealed.
Windows and doors	Space between window/door jams and framing is sealed.
Rim joists	Rim joists are insulated and include air barrier.
Floors (including above garage and cantilevered floors)	Insulation is installed to maintain permanent contact with underside of subfloor decking. Air barrier is installed at any exposed edge of insulation.
Crawl space walls	Insulation is permanently attached to walls. Exposed earth in unvented crawl space is covered with class I vapor retarder with overlapping joints taped.
Shafts, penetrations	Duct shafts, utility penetrations, knee walls, and flue shafts opening to exterior or unconditioned space are sealed.
Narrow cavities	Batts in narrow cavities are cut to fit, or narrow cavities are filled by sprayed/blown insulation.
Garage separation	Air sealing is provided between the garage and conditioned spaces.
Recessed lighting	Recessed light fixtures are airtight, IC rated, and sealed to drywall. Exception – fixtures in conditioned space.
Plumbing and wiring	Insulation is placed between outside and pipes. Batt insulation is cut to fit around wiring and plumbing, or sprayed/blown insulation extends behind piping and wiring.
Shower/tub on exterior wall	Showers and tubs on exterior walls have insulation and air barrier separating them from the exterior wall.
Electrical/phone box on exterior walls	Air barrier extends behind boxes or air sealed-type boxes are installed.
Common wall	Air barrier is installed in common wall between dwelling units.
HVAC register boots	HVAC register boots that penetrate building envelope are sealed to subfloor or drywall.
Fireplace	Fireplace walls include an air barrier.

C. No mechanical equipment efficiency tradeoff is allowed

1. Federal law sets most equipment efficiency requirements, not the IECC code
2. There is no tradeoff between mechanical equipment efficiency and building envelope
3. Tradeoffs between building envelope components, such as windows, walls and ceilings, are still allowed.
4. A 2009 version of RESCheck, a code compliance tool maintained by the Department of Energy, reflects this change. A copy of ResCheck tool can be downloaded from www.energycodes.gov/rescheck/.

II. Dow Building Solutions' Products and Systems That Can Help Meet the New Requirements

A. Based on the new 2009 IECC requirements for Zone 5 and Marine 4, Table 3 shows the potential Dow products that can help meet the requirements.

Table 3: Dow Products That Meet 2009 IECC in Zone 5 and Marine 4

Climate Zone 5 & Marine 4	Wood Frame Wall R-Value	Mass Wall R-Value	Ceiling R-Value	Floor R-Value	Basement Wall R-Value	Slab R-Value & Depth	Crawl Space Wall R-Value
2009 IECC	20 or 13+5	13/17	38	30	10/13	10, 2 ft	10/13
Dow Products	R13+ • 1" STYROFOAM SIS™ Brand Structural Insulated Sheathing or • 1" STYROFOAM™ Brand Extruded Polystyrene Residential Sheathing or Tongue & Groove Insulation or • 3/4" TUFF-R™ Insulation, Super TUFF-R™ Insulation or • 3/4" THERMAX™ Sheathing or • STYROFOAM™ Brand Spray Polyurethane Foam Insulation with code approved thermal barrier to achieve R-20 or R-13 in stud cavity	• 2" THERMAX™ Insulation, TUFF-R™ Insulation, Super TUFF-R™ Insulation at exterior (meet R-13) or • 3" THERMAX™ Insulation, TUFF-R™ Insulation, Super TUFF-R™ Insulation at interior (meet R17) or • 3" STYROFOAM™ Brand Extruded Polystyrene Foam Insulation at exterior (meet R13) or • 3.5" STYROFOAM™ Brand Extruded Polystyrene Foam Insulation at interior (meet R-17)	• STYROFOAM™ Brand Spray Polyurethane Foam Insulation up to 10" thickness or • STYROFOAM™ Square Edge, STYROFOAM™ Scoreboard, or STYROFOAM™ Tongue & Groove Insulation (unvented attic up to 2" thick on knee walls and gable ends, vented attic up to 2" thick on floor, knee walls and gable ends) or • THERMAX™ Insulation (unvented attic up to 4" thick on walls and underside of roof deck or rafters, vented attic up to 4" thick on floor and knee walls)	• STYROFOAM™ Brand Spray Polyurethane Foam Insulation or • FROTH-PAK™ Foam Insulation kit in framing cavity with/without rigid foam, depending on the location in the house or • STYROFOAM™ Brand Extruded Polystyrene Foam Insulation (Type X or Type IV) or • Dow Polyisocyanurate Insulation <i>Note: Floors could include cantilevered floors, ceilings of vented crawl spaces, floors of rooms over garages. Use of products listed above will depend on which floor application is involved.</i>	• 2" STYROFOAM™ Brand Extruded Polystyrene ¹ Foam Insulation at interior or exterior (meet R10) or • 1.55" THERMAX™ Sheathing or White Finish at interior (meet R10) or • STYROFOAM™ Brand Spray Polyurethane Foam Insulation up to 12" on interior with a code approved thermal barrier	2" STYROFOAM™ Brand Extruded Polystyrene Foam Insulation (meet R10)	• 2" STYROFOAM™ Brand Extruded Polystyrene ¹ Foam Insulation at exterior or interior (meet R10) or • 1.55" THERMAX™ Insulation at interior (meet R10)

¹Exterior Extruded Polystyrene = STYROFOAM™ PERIMATE™, STYROFOAM™ Square Edge, STYROFOAM™ Tongue & Groove, STYROFOAM™ Scoreboard

²Interior Extruded Polystyrene = STYROFOAM™ WALLMATE™, STYROFOAM™ Square Edge, STYROFOAM™ Tongue & Groove, STYROFOAM™ Scoreboard

B. Requirements for duct insulation, duct tightness testing and whole house sealing and insulation – applicable to all climate zones

1. Duct insulation and sealing
 - a. Insulation (prescriptive)
 - Insulation for ducts in vented crawl space and attics:
 - 2" FROTH-PAK™ Foam Insulation kit or 1.5" STYROFOAM™ Brand Spray Polyurethane Foam (SPF) Insulation can meet R6/R8 insulation requirements. An ignition barrier, such as 1.5" thick mineral fiber insulation, must cover the FROTH-PAK™ Foam Insulation kit or STYROFOAM™ SPF. Please check with a local code official for final approval.
 - Ducts in conditioned spaces:
 - See Table 3 for options to achieve conditioned attics, crawl spaces and basements.
 - b. Sealing (mandatory)
 - Joints and seams can be sealed on the exterior with GREAT STUFF PRO™ and GREAT STUFF™ Insulating Foam Sealants (3/4" diameter beads), or FROTH-PAK™ Foam Sealant kit (4" wide, 2" thick) in attics and crawl spaces. Please check with your local code official for final approval.
2. Duct tightness testing
 - a. When the ducts in unconditioned space are insulated and air sealed using Dow products as stated above, there is a high possibility that the duct tightness testing will pass the requirements.
 - b. Duct tightness test is not required if the air handler and all ducts are located within conditioned space using Dow insulations.
3. Air Sealing and Insulation
 - a. Insulating and air sealing with Dow rigid board insulation, GREAT STUFF PRO™ and GREAT STUFF™ Insulating Foam Sealants or FROTH-PAK™ Foam Sealant kit increase the probability that the house will pass the blower door test.
 - b. When the visual inspection option is chosen for compliance, Dow products can help in the following categories as shown in Table 4.

Table 4: Dow Products That Help Meet 2009 IECC Air Sealing and Insulation

Component	Criteria	Dow Products Contribution
Air barrier and thermal barrier	Exterior thermal envelope insulation for framed walls is installed in substantial contact and in continuous alignment with a building envelope air barrier. Breaks or joints in the air barrier are filled or repaired. Air permeable insulation is not used as a sealing material. Air permeable insulation is installed inside an air barrier.	STYROFOAM™ Brand Extruded Polystyrene Residential Sheathing, STYROFOAM™ Brand DURAMATE™ Plus Insulation, STYROFOAM SIS™ Brand Structural Insulated Sheathing, and STYROFOAM™ Brand Spray Polyurethane Foam Insulation qualify as air impermeable insulations and air barriers. GREAT STUFF™ and GREAT STUFF PRO™ Insulating Foam Sealants and FROTH-PAK™ Foam Sealant kit qualify as air-impermeable sealing materials. WEATHERMATE™ Plus Housewrap, when properly installed, is an air barrier.
Ceiling/attic	Air barrier in any dropped ceiling/soffit is substantially aligned with insulation and any gaps are sealed. Attic access (except unvented attic), knee wall door, or drop down stair is sealed.	GREAT STUFF™ and GREAT STUFF PRO™ Insulating Foam Sealants and FROTH-PAK™ Foam Sealant kit can be used to seal gaps. Rigid foam can be used to create an air barrier between floor joists to separate attic areas from conditioned space.
Walls	Corners and headers are insulated. Junction of foundation and sill plate is sealed.	STYROFOAM™ Brand Extruded Polystyrene Foam Insulation or Dow Polyisocyanurate Insulation covers corners and headers. STYROFOAM™ SILL SEAL Foam Gasket in conjunction with GREAT STUFF™ and GREAT STUFF PRO™ Insulating Foam Sealants can be used to make sure the sill plate is sealed.
Windows and doors	Space between window/door jams and framing is sealed.	GREAT STUFF™ and GREAT STUFF PRO™ Insulating Foam Sealants are specially formulated for this application.
Rim joists	Rim joists are insulated and include air barrier.	STYROFOAM™ Brand Spray Polyurethane Foam Insulation up to 3-1/4" in thickness, FROTH-PAK™ Foam Insulation kit up to 2" in thickness or THERMAX™ Insulation up to 4" in thickness and STYROFOAM™ Brand Extruded Polystyrene Foam Insulation up to 2" in thickness can be used as insulation and air barrier at rim joist. GREAT STUFF™ and GREAT STUFF PRO™ Insulating Foam Sealants can be used to air seal the rim joists perimeter with 3/4" beads.

Component	Criteria	Dow Products Contribution
Floors (including above-garage and cantilevered floors)	Insulation is installed to maintain permanent contact with the underside of the subfloor decking. Air barrier is installed at any exposed edge of insulation.	STYROFOAM™ Brand Extruded Polystyrene Residential Sheathing and STYROFOAM™ Brand DURAMATE™ Plus Insulation qualify as air impermeable insulations and air barriers in addition to insulation. STYROFOAM™ Brand Spray Polyurethane Foam Insulation or FROTH-PAK™ Foam Insulation kit can be sprayed on the underside of the subfloor decking to provide cavity insulation.
Crawl space walls	Insulation is permanently attached to walls. Exposed earth in unvented crawl space is covered with class I vapor retarder with overlapping joints taped.	STYROFOAM™ Brand Extruded Polystyrene Foam Insulation up to 2” in thickness, and THERMAX™ Insulation up to 4” in thickness can be used on the interior of crawl space wall in unvented crawl space.
Shafts, penetrations	Duct shafts, utility penetrations, knee walls, and flue shafts opening to exterior or unconditioned space are sealed.	GREAT STUFF™ and GREAT STUFF PRO™ Insulating Foam Sealants and FROTH-PAK™ Foam Sealant kit can be used to seal shafts and penetrations. Use GREAT STUFF™ Fireblock Insulating Foam Sealant and GREAT STUFF PRO™ Gaps & Cracks Insulating Foam Sealant when fire-blocking is required.
Narrow cavities	Batts in narrow cavities are cut to fit, or narrow cavities are filled by sprayed/blown insulation.	STYROFOAM™ Brand Spray Polyurethane Foam Insulation or FROTH-PAK™ Foam Insulation kit can be used to fill narrow cavities.
Garage separation	Air sealing is provided between the garage and conditioned spaces.	GREAT STUFF™ and GREAT STUFF PRO™ Insulating Foam Sealants and FROTH-PAK™ Foam Sealant kit can be used to provide the air sealing.
Plumbing and wiring	Insulation is placed between outside and pipes. Batt insulation is cut to fit around wiring and plumbing, or sprayed/blown insulation extends behind piping and wiring.	STYROFOAM™ Brand Spray Polyurethane Foam Insulation and FROTH-PAK™ Insulation kit with a code approved thermal barrier can be used to provide complete insulation to wall cavities. GREAT STUFF™ and GREAT STUFF PRO™ Gaps & Cracks Insulating Foam Sealant can be used for air sealing.
HVAC register boots	HVAC register boots that penetrate the building envelope are sealed to subfloor or drywall.	GREAT STUFF™ and GREAT STUFF PRO™ Insulating Foam Sealants and FROTH-PAK™ Foam Sealant kit can be used to provide the seal.

Table 4: Continued

Component	Criteria	Dow Products Contribution
Electrical/phone box on exterior walls	Air barrier extends behind boxes or air sealed type boxes are installed.	STYROFOAM™ Brand Spray Polyurethane Foam Insulation (up to 12”) with a code approved thermal barrier and FROTH-PAK™ Foam Insulation kit (up to 2”) can be used in the wall cavity to provide insulation and air barrier. GREAT STUFF™ and GREAT STUFF PRO™ Gaps & Cracks Insulating Foam Sealant can be used for air sealing.
Common wall	Air barrier is installed in common wall between dwelling units.	GREAT STUFF™ and GREAT STUFF PRO™ Insulating Foam Sealants can help seal gaps, cracks and penetration to assure the continuity of the air barrier.

Additional Resources

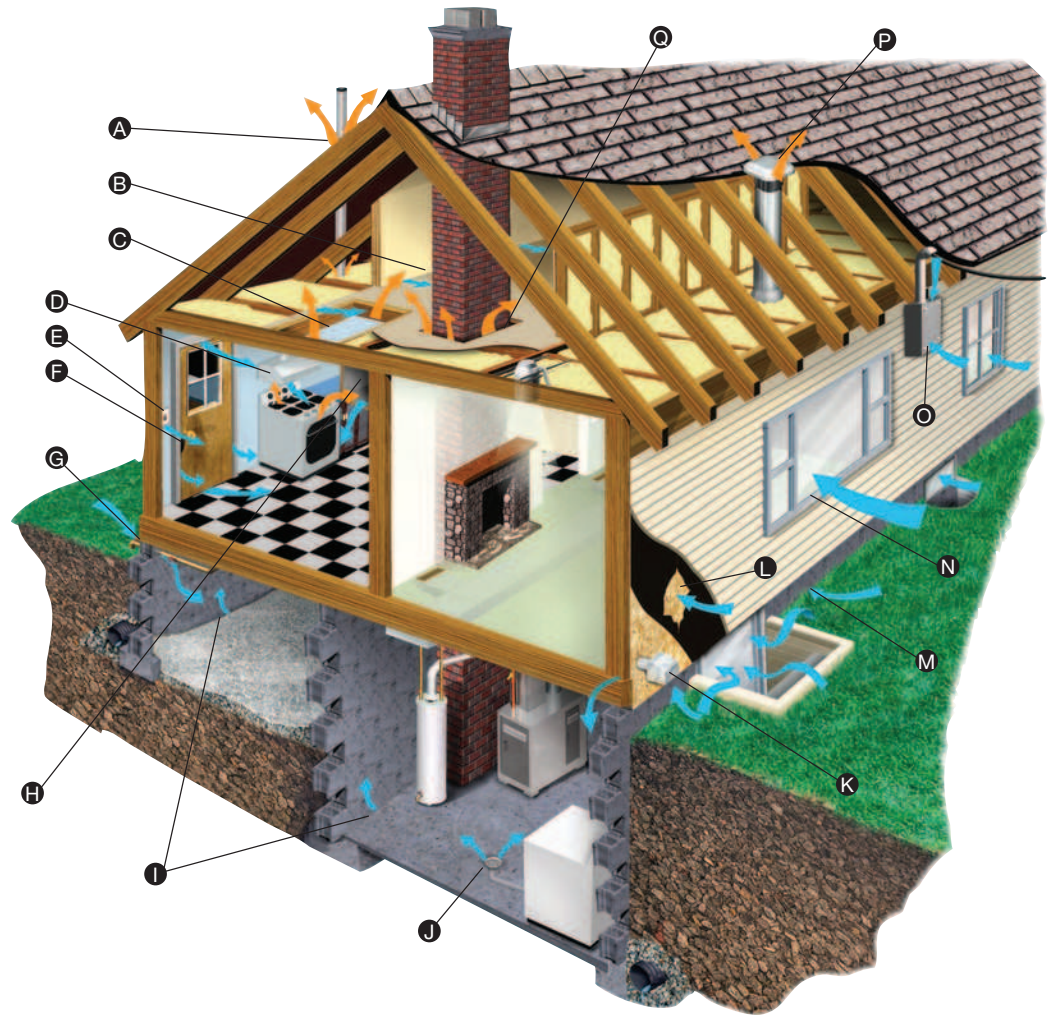
These recommendations are based on 2009 IECC requirements. Your code official has final authority to decide whether a particular home meets the code. Please work with your local code official closely.

More and more states are adopting 2009 IECC as part of the requirements for states to accept state energy funds as a part of the package included in the recently passed American Recovery and Reinvestment Act 2009.

Homes, offices and other buildings account for nearly 40 percent of all the energy used in the U.S. Adding energy efficient solutions to existing buildings can reduce that percentage, but including it in new construction projects is an even more economical and effective way to make a positive impact. Energy codes like those of the IECC offer a way to make energy efficiency a fundamental part of building design and construction.

Dow Building Solutions is well versed in code requirements in your climate zone, and can help you select the right solutions to meet your building needs.

Figure 3: Examples of air infiltration/exfiltration in a house



- A** Plumbing stack vent
- B** Interior partitions
- C** Attic hatches
- D** Kitchen fan vent
- E** Light fixtures/electrical outlets
- F** Gaps/cracks around doors
- G** Outdoor faucet
- H** Chases/soffits/drop ceilings
- I** Cracks/separation in foundation wall/basement floor
- J** Floor drain/weeping tile
- K** Dryer vent
- L** Holes and tears in housewrap/vapor barrier
- M** Sill plate
- N** Gaps/cracks around windows
- O** Entry points for electrical service, TV cable and telephone
- P** Bathroom fan vent
- Q** Chimney penetrations

Air infiltration
Air exfiltration

Quick Reference Guide for 2009 IECC Residential Energy Efficiency Climate Zone 5 and Marine 4

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Building and/or construction practices unrelated to building materials could greatly affect moisture and the potential for mold formation. No material supplier including Dow can give assurance that mold will not develop in any specific system.

CAUTION: GREAT STUFF™ Insulating Foam Sealants contain isocyanate and a flammable blowing agent. Read the label and Material Safety Data Sheet carefully before use. Eliminate all sources of ignition before use. Wear gloves, and safety glasses or goggles. Provide adequate ventilation or wear proper respiratory protection. Contents under pressure.

CAUTION: GREAT STUFF PRO™ Insulating Foam Sealants are very sticky and will adhere to most surfaces and skin. Do not get foam on skin. Wear gloves, and goggles or safety glasses. Cured foam must be mechanically removed or allowed to wear off in time. The contents are under pressure. The can may burst if left in areas susceptible to high temperatures, such as motor vehicles, or near radiators, stoves or other sources of heat. Do not place can in hot water. Do not puncture, incinerate or store at temperatures above 120°F (49°C).

CAUTION: FROTH-PAK™ Polyurethane Spray Foam contains isocyanate, hydrofluorocarbon blowing agent and polyol. Read the instructions and Material Safety Data Sheets carefully before use. Wear protective clothing, gloves, goggles or safety glasses, and proper respiratory protection. Supplied air or an approved air purifying respirator equipped with an organic vapor sorbent and a particle filter may be required to maintain exposure levels below ACGIH, OSHA, WEEL or other applicable limits. Provide adequate ventilation. Contents under pressure.

CAUTION: STYROFOAM™ Brand Spray Polyurethane Foam contains isocyanate, hydrofluorocarbon blowing agent and polyol. Read the instructions and Material Safety Data Sheets carefully before use. Wear protective clothing, gloves, goggles and proper respiratory protection. Supplied air or an approved air-purifying respirator equipped with an organic vapor sorbent and a particle filter is required to maintain exposure levels below ACGIH, OSHA, WEEL or other applicable limits. Provide adequate ventilation. Contents under pressure. STYROFOAM™ Brand SPF should be installed by a trained SPF applicator.

CAUTION: STYROFOAM™ Brand Extruded Polystyrene Foam Insulation is combustible. Protect from high heat sources. A protective barrier or thermal barrier may be required as specified in the appropriate building code. For more information, consult MSDS, call Dow at 1-866-583-BLUE (2583) or contact your local building inspector. In an emergency, call 1-989-636-4400 in the U.S. or 1-519-339-3711 in Canada.

CAUTION: THERMAX™ Insulation is combustible and shall only be used as specified by the local building code with respect to flame spread classification and to the use of a suitable barrier.

CAUTION: Dow Polyisocyanurate Insulation is combustible and shall only be used as specified by the local building code with respect to flame spread classification and to the use of a suitable thermal barrier. For more information, consult MSDS, call Dow at 1-866-583-BLUE (2583) or contact your local building inspector. In an emergency, call 1-989-636-4400.

CAUTION: GREAT STUFF PRO™ Sealants, FROTH-PAK™ Polyurethane Foam Sealant Products and STYROFOAM™ Brand Spray Polyurethane Foam Insulation should not be used around heaters.

www.insulateyourhome.com • www.dow.com

IN THE U.S.:

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