



The top 12 Energy Code Changes in the 2012 IECC

This is a handy reference to how the 2012 IRC/IECC Residential Criteria may apply to typical construction practices, your results may vary. We have noted the specific code sections for your reference. We recommend that you buy a copy of the code from the [International Code Council](#) and check your local building codes for amendments.

- 1. More Insulation:** Higher R-value requirements in most climate zones for ceilings, walls, basements and crawl spaces ([Table R402.1.1](#)). In most climate zones, builders will add R-5 to R-10 exterior rigid foam sheathing to the walls, integrated with a [water resistive barrier](#). Exterior rigid foam sheathing also impacts your [vapor retarder](#) strategy, refer to [Table 702.7.1](#) for criteria.
- 2. Better Windows:** Lower U-factors and/or solar heat gain coefficients for windows in most climates ([Table R402.1.1](#)), this typically means, non-metal frames and Low E squared glass as a minimum.
- 3. Tighter Homes:** Comprehensive air barrier and insulation criteria will result in reduced air leakage, improved comfort and energy savings for homeowners ([Table R402.4.1.1](#)). Using the table and the [Energy Star Thermal Enclosure System Checklist](#) for reference, work with your framer, insulation contractor, other key subcontractors and a Home Energy Rater to develop strategies for addressing each criteria and closely monitor progress in the field.
- 4. Air Leakage Testing:** Blower door tests are used to measure home air leakage rates ([R402.4.1.2](#)). Air leakage criteria depend on which climate zone you build in. Find a well respected [Home Energy Rater](#) in your market and benchmark your current construction practices. A quality Home Energy Rater will help you identify problem areas and save you the time and aggravation of future project delays to trouble shoot problems after the fact.
- 5. Duct Sealing:** Seal your ducts, air handlers, and filter box ([R403.2.2](#)). If your HVAC contractor also does commercial work this should be no problem for them. Specify mastic to seal your ducts, contractors we have worked with say mastic saves them time and provides for better sealing.
- 6. Duct Leakage Testing:** Confirm duct tightness with performance testing (*unless the ducts and air handlers are located entirely within the thermal enclosure*). ([R403.2.2](#)). Test one of your current duct installations to benchmark your current leakage, you'll be amazed at how much your ducts leak! A Home Energy Rater can perform your benchmark testing.
- 7. Framing is Not Duct Work:** Building framing cavities are not to be used as supplies, returns or plenums. ([R403.2.3](#)). Take this opportunity to rethink your duct layouts, look to simplify and eliminate conflicts with structural elements. Many builders we work with have actually saved money by framing with the duct work in mind and simplified duct systems.
- 8. Mechanical Ventilation:** A typical home will require about 15 cfm per person of fresh outdoor air to be distributed by continuous mechanical ventilation to meet the requirements of the International Residential Code or International Mechanical Code. ([R403.5](#)) ([M1507.3](#)) This can be accomplished with a centrally located quiet exhaust fan, an interconnected system to the air handler, HRV/ERV or a combination of devices.
- 9. HVAC Sizing:** A quality HVAC contractor should be able to provide the necessary documentation for proper [heat loss and heat gain calculations](#) and [equipment sizing](#) ([R403.6](#)), however make sure the HVAC contractor is provided with the correct information regarding the homes specifications for their inputs (insulation values, window specs, blower door results, etc.). The goal is an HVAC system that that is sized to maximize homeowner satisfaction, however bigger is not better. Have your contractor review the calculations and sizing with you and your Home Energy Rater.
- 10. Hot Water Pipe Insulation:** R-3 pipe insulation on most types of hot water piping (i.e. if the piping is under slabs, to the kitchen, runs over 20', 3/4" in diameter or larger, etc) check the criteria for specifics. ([R403.4.2](#))
- 11. High Efficient Lighting:** 75% percent of lighting must be energy efficient ([R404.1](#)). Stock up on CFL bulbs.



12. Performance alternative: Most items noted above are mandatory, however trade-offs for insulation values, windows, airtightness, ventilation and other enclosure components may be done under the Simulated Performance Alternative ([R405.1](#)). Mechanical system trade-offs (e.g. upgrading the furnace to higher efficiency) are not allowed. Developing your own strategies and modeling performance with a Home Energy Rater can result in cost effective solutions that meet code requirements.

Reference Component Tables:

| Insulation | Ceiling R-value | | Wood Frame R-value | | Basement R-value | | Crawlspace R-value | |
|------------|-----------------|------|--------------------|----------------------|------------------|-------|--------------------|-------|
| | 2009 | 2012 | 2009 | 2012 | 2009 | 2012 | 2009 | 2012 |
| 1 | 30 | | 13 | | 0 | | 0 | |
| 2 | 30 | 38 | 13 | | 0 | | 0 | |
| 3 | 30 | 38 | 13 | 20 or 13 + 5 | 5/13 | 5/13 | 5/13 | 5/13 |
| 4 | 38 | 49 | 13 | 20 or 13 + 5 | 10/13 | 10/13 | 10/13 | 10/13 |
| 5 | 38 | 49 | 20 | 20 or 13 + 5 | 10/13 | 15/19 | 10/13 | 15/19 |
| 6 | 49 | 49 | 20 | 20 + 5 or 13 + 10 | 15/19 | 15/19 | 10/13 | 15/19 |
| 7 | 49 | 49 | 21 | 20 + 5 or 13 + 10 | 15/19 | 15/19 | 10/13 | 15/19 |

| Fenestration | Window U-Factor | | Window SHGC | | Skylight U-Factor | |
|--------------|-----------------|------|-------------|------|-------------------|------|
| | 2009 | 2012 | 2009 | 2012 | 2009 | 2012 |
| 1 | 1.2 | 0.65 | 0.30 | 0.25 | 0.75 | 0.75 |
| 2 | 0.65 | 0.40 | 0.30 | 0.25 | 0.75 | 0.65 |
| 3 | 0.50 | 0.35 | 0.30 | 0.25 | 0.65 | 0.55 |
| 4 | 0.35 | 0.35 | NR | 0.40 | 0.60 | 0.55 |
| 5 | 0.35 | 0.32 | NR | NR | 0.60 | 0.55 |
| 6 | 0.35 | 0.32 | NR | NR | 0.60 | 0.55 |
| 7 | 0.35 | 0.32 | NR | NR | 0.60 | 0.55 |

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