



# Building Guide ILLOWA Chapter of ICC



## International Energy Conservation Code Prescriptive method– Residential

The International Energy Conservation Code is in effect for ALL new structures, additions, renovations or repairs with the following exceptions: (2009 IECC, 101.4.3)

1. Storm windows over existing fenestration. (Glass)
2. Replacing the glass only in existing sash and frames.
3. Existing ceiling, wall or floor cavities that are exposed during construction that are already insulated.
4. Construction where the existing roof, wall or floor cavities are not exposed.
5. Reroofs where the sheathing is not removed and the insulation is not exposed.
6. Replacing existing doors does not require installation of a vestibule, existing vestibules cannot be removed.
7. Alterations replacing less than 50% of the lights in a space provided installed interior power is not increased.
8. Alterations that replace existing bulbs and ballasts provided installed interior power is not increased.

\* For all other construction projects that involve conditioned space, the requirements of the Energy Code apply.

There are 3 main ways to show compliance with the Energy Code:

1. U-Factor and "UA" Alternatives (See RESCheck handout)
2. Simulated Performance Method. Hire a licensed design professional to fully engineer and certify the project.
3. Prescriptive Method. Build to the specific prescriptive requirements from Chapter 4 of IECC.



Requirements for option 3 are outlined here. For further information, see Chapter 4 of the 2009 International Energy Code.


**FENESTRATION** – This means Windows or doors. The MAXIMUM U-factor for fenestrations is 0.35. The U-factor for a window can be found on the window sticker. This sticker must NOT BE REMOVED from the window until after the inspector has approved removal. Skylights are allowed a maximum U-factor of .60.

**CEILINGS** – Ceilings must be insulated with a minimum of R-38. If done with fiberglass or other rolled bats, manufactures installation instructions apply. If done with cellulose (blown) insulation, rulers must be placed every 300 square feet with the depth of the insulation shown and facing the scuttle hole so the inspector can view the depth since the insulation will cover the ceiling joists and make normal methods of judging depth ineffective. Spray foam insulation installers must place a sticker showing compliance with the required R value inside the electrical panel.

**WALLS** – There are 3 types: Above Grade, Below Grade & Mass Walls

**Above Grade Wall** - The code requirements for wood frame walls are R-20, or R-13/5. If using 2X6 walls, R-19 insulation with interior drywall, exterior sheathing and siding make a wall assembly that meets the R-20 requirement. If using 2X4 walls, R-13 cavity insulation can be used PLUS R-5 exterior sheathing. If more than 25% of the exterior is covered by structural sheathing, the structural sheathing must be supplemented with insulated sheathing of at least R-2. If the structural sheathing covers less then 25% of the exterior area, no supplemental sheathing is required.

Window sticker showing U-factor

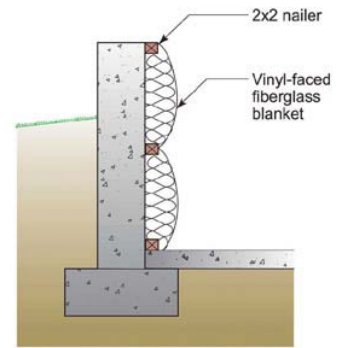
 World's Best Window Co. Millennium 2000+ Vinyl-Clad Wood Frame Double Glazing - Argon Fill - Low E Product Type: Vertical Slider	
ENERGY PERFORMANCE RATINGS	
U-Factor (U.S./F-P)	Solar Heat Gain Coefficient
<b>0.35</b>	<b>0.32</b>
ADDITIONAL PERFORMANCE RATINGS	
Visible Transmittance	Air Leakage (U.S./F-P)
<b>0.51</b>	<b>0.2</b>
Condensation Resistance	
<b>51</b>	<b>-</b>
<small>Manufacturer declares that these ratings conform to applicable NFRC procedures for determining whole window performance. NFRC ratings are determined on a basis of an unobstructed window and a specific product size. NFRC does not warrant any product and does not warrant the suitability of any product for any specific use. Consult manufacturer's literature for other product performance information. www.nfrc.org</small>	

Insulation depth gauge– required every 300 square feet in attic



DISCLAIMER: ILLOWA Chapter of the ICC has created this handout to assist with plans submittal under the 2009 International Energy Conservation Code, and it is not intended to cover all circumstances. Please check with the Department of Building Safety for additional requirements.

**Below Grade Walls** – Basement walls may have either R-10 continuous insulated sheathing on the interior or exterior of the basement walls installed per the manu-  
facturers instructions for the application, or R-13 cavity insulation on the interior walls– as in a normally finished basement.

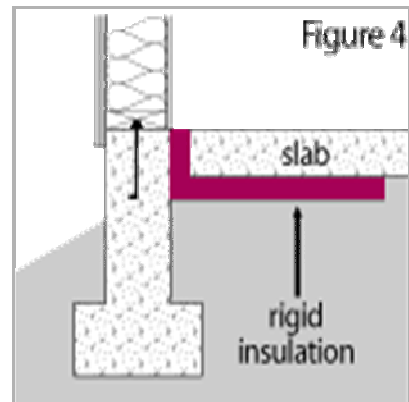
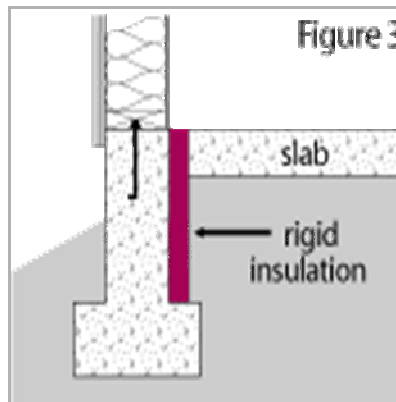
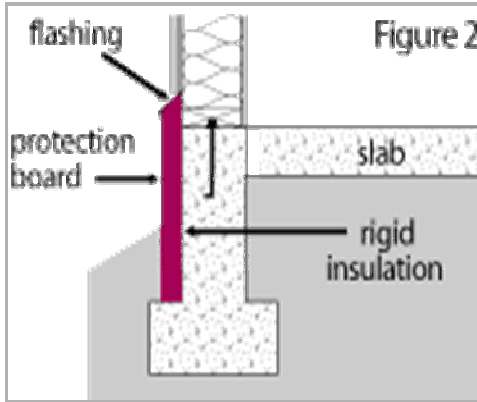


**Mass Walls** - Concrete block, concrete, insulated concrete form (ICF), masonry cavity, brick (other than brick veneer), earth, and solid timber/logs.

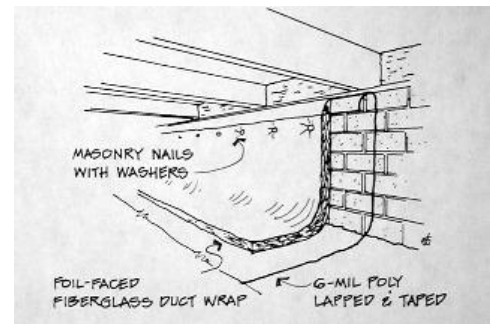
**FLOORS:** Where a floor covers an unconditioned space, such as over a crawl space or any unheated area, the floor above must have R30 or insulation sufficient to fill the framing cavity, R19 minimum.

**SLAB** - Slab Edge Insulation. The most common area for required slab insulation is on walkout basements where the concrete floor is at or near grade. The slab is required to have R-10 on the outside to the top of the concrete, and down 2 ft below finished grade. Heated slabs are required to have R-15.

\*\*\* Exterior wall & slab insulation must have a rigid, opaque and weather resistant covering to protect it from degradation of the thermal performance and it must extend down 6 inches below finished grade.



**CRAWLSPACES**– as an alternative to insulating the floor an unvented crawl space may have the same application as basement walls provided the insulation shall be permanently attached to the wall and extend downward from the floor above to grade and then vertically or horizontally for at least 24inches. The International Residential Code requires exposed earth to have a class 1 vapor retarder.



**Interior Crawl Space Insulation**

This page needs to be all the little stuff that is on the inspection sheet from RESCheck.