Make sure that the correct amount of insulation is properly installed per Table to the right. See IRC Table N1102.1.

Supply and return ducts outside the building thermal envelope must be insulated to R-6. Ducts in floor trusses must be insulated to R-6, if outside the conditioned space. Air handlers and supply return ducts must be sealed, and building framing cavities may not be used as supply ducts. See IRC N1103.2.

HVAC equipment (furnaces, boilers, and air conditioners) must be properly sized. Oversized equipment runs inefficiently and is more costly. See IMC.

Materials, equipment and systems shall be identified in a manner that will allow a determination of their compliance with the applicable provisions of this code. Building envelope insulation R-values, duct system insulation R-values and window U-factor & SHGC shall be listed on all product labeling. See IRC Section 102.5.3.

Air sealing is essential throughout the building thermal envelope.

Check for a National Fenestration Rating Council (NFRC) label on all windows. Label shows rated U-factor and Solar Heat Gain Coefficient (SHGC). See IRC Section 102.3.

Check for weatherstripping, gasketing, caulking and sealing or barrier material. See IRC Section 102.4.1.

Check for a National Fenestration Rating Council (NFRC) label on all windows. Label shows rated U-factor and Solar Heat Gain Coefficient (SHGC). See IRC Section 102.4.3.

Insulate all circulating hot water piping. See IRC M2005.

Installed recessed lighting fixtures in the building thermal envelope must be Type IC rated and sealed or gasketed to prevent air leakage, or Type IC rated or non-IC rated but installed inside a sealed box. See IRC N1102.4.3.

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### TABLE OF BUILDING ENVELOPE REQUIREMENTS

<table>
<thead>
<tr>
<th>Package</th>
<th>WINDOWS AND INSULATION</th>
<th>FOUNDATION TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Window Insulation</td>
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<td>13.00</td>
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</tbody>
</table>

NOTES:

1. This table applies to new construction, as well as all additions, alterations and replacement windows and is based upon the envelope performance requirements for Climate Zones 2-3, IRC Table N1102.1 in the 2006 IRC, and does not reflect any state specific amendments to the IRC. This table applies to residential buildings, as defined in the IRC, with wood framing and/or mass walls. For steel-framed buildings, refer to IRC Table N1102.4 of the IRC.

2. Window refers to any translucent or transparent material (i.e., glazing) in exterior openings of buildings, including skylights, sliding glass doors and glass block, along with the accompanying sashes, frames, etc.

3. Window and skylight U-factor and SHGC values are maximum acceptable levels. An area-weighted average of fenestration products shall be permitted to satisfy the U-factor and SHGC requirements. Window U-factor and SHGC must be determined from a National Fenestration Rating Council (NFRC) label on the product or from a limited table of product default values in the IRC. Up to 15 square feet of glazed fenestration is permitted to be exempt from the U-factor and SHGC requirements.

4. The code requires that windows be labeled in a manner to determine that they meet the IRC’s air infiltration requirements, specifically equal to or better than 0.30 cfm per square foot of window area (swinging doors below 0.50 cfm) as determined in accordance with NFRC 400 or AAMA/WDMA/CSA 1015.1/20A by an accredited, independent laboratory.

5. Opaque exterior doors must meet the window U-factor requirements. One exempt door is allowed.

6. Insulation R-values are minimum acceptable levels; R-19 shall be permitted to be compressed into a 2x6 cavity. R-values for walls represent the sum of cavity insulation plus insulated sheathing, if any.

7. If structural sheathing covers 25% or less of the exterior, insulated sheathing is not required where structural sheathing is used. If structural sheathing covers more than 25% of the exterior, structural sheathing shall be supplemented with insulated sheathing of at least R-2.

8. Supply and return ducts shall be insulated to a minimum of R-6. Ducts in floor trusses shall be insulated to a minimum of R-6. Exception: Ducts or portions thereof located completely inside the thermal building envelope.

9. Where there are two different values for basement and crawl space insulation requirements, the first R-value applies to continuous insulation; the second to framing cavity insulation. Crawl space wall R-value shall only apply to unventilated crawl spaces; R-5 shall be added to the required slab edge R-values for heated slabs, and floors over outside air must meet ceiling requirements.

10. Prescriptive packages are based upon normal HVAC equipment efficiencies (NAECA minimums). The code also requires the HVAC system to be properly sized using a computational procedure like the ASHRAE Handbook of Fundamentals.