



## Insulating Suspended Ceilings

[2003 IECC, 2006 IECC, 90.1-1999, 90.1-2001, 90.1-2004]



Insulation installed in a suspended ceiling does not meet the infiltration requirements of the International Energy Conservation Code (IECC). When the insulation is on the suspended ceiling, the ceiling is defined as part of the building envelope. This requires that it be air-sealed like any other envelope component.

To meet the energy code, insulate and seal the exterior roof and show compliance with the roof assembly as part of the building envelope component. The drop-down ceiling can remain as an interior ceiling, but no energy credit will be given for batt insulation draped above the suspended ceiling.

To show compliance for an office space within a warehouse, in which the warehouse is heated only to prevent freezing or is considered an unconditioned space, the office should be treated as a "building within a building." This means the ceiling of the office space would be part of the "building within a building" envelope and should be insulated and sealed as described above. Interior walls (walls separating the office from the warehouse only) and exterior walls of the office space also will require insulation and sealing.

### **IECC 2003, Section 802.3.3 and IECC 2006, Section 502.4.3 Sealing the Building Envelope (Commercial)**

Openings and penetrations in the building envelope shall be sealed with caulking materials or closed with gasketing systems compatible with the construction materials and location. Joints and seams shall be sealed in the same manner or taped or covered with a moisture-vapor-permeable wrapping material. Sealing materials spanning joints between construction materials shall allow for expansion and contraction of the construction material.

ASHRAE 90.1-1999, 90.1-2001, and 90.1-2004 also prohibit the insulated suspended ceiling from being part of the building thermal envelope for compliance.

### **ASHRAE 90.1-1999, Section 5.2.1.4; 90.1-2001, Section 5.5.1.4; 90.1-2004, Section 5.8.1.8 Location of Roof Insulation**

The roof insulation shall not be installed on a suspended ceiling with removable ceiling panels.

\* 2003 IECC Reference and link

\*Copyright, 2003, [International Code Council](http://www.internationalcodecouncil.org), Inc. Falls Church, Virginia. Reproduced with permission. All rights reserved. *2003 International Energy Conservation Code*



2003 *International Residential Code* ; 2006 IECC Reference and link

\*Copyright, 2006, [International Code Council](#) , Inc. Falls Church, Virginia. All rights reserved. 2006 *International Energy Conservation Code* .

2006 *International Energy Conservation Code* ; ASHRAE 90.1-1999 Reference and link Copyright, 1999, [American Society of Heating, Refrigerating and Air-Conditioning Engineers](#) , Atlanta, GA. *ASHRAE Standard 90.1-1999* . Reproduced with permission. All rights reserved. ; ASHRAE 90.1-2001 Reference and link Copyright, 2001, [American Society of Heating, Refrigerating and Air-Conditioning Engineers](#) , Atlanta, GA. *ASHRAE Standard 90.1-2001* . Reproduced with permission. All rights reserved. ; ASHRAE 90.1-2004 Reference and link Copyright, 2004, [American Society of Heating, Refrigerating and Air-Conditioning Engineers](#) , Atlanta, GA. *ASHRAE Standard 90.1-2004* . Reproduced with permission. All rights reserved. .