



SIP No. 2082

Subject: R-Control SIPs as an Air Barrier

Date: April 2014

The 2012 International Energy Conservation Code (IECC) includes specific requirements concerning air barriers to control the air leakage of buildings. Air barriers normally consist of materials assembled and joined together to provide a barrier to air leakage through the building envelope. An air barrier may be a single material or a combination of materials.

The IECC (Section C402.4.1.2.1) requires materials acting as air barriers to have an air permeability no greater than 0.004 cfm/ft² (0.02 L/s • m²) under a pressure differential of 0.3 inches water (75 Pa) when tested in accordance with ASTM E 2178.

A number of materials are deemed to comply with the IECC requirement provided joints are sealed. Two of the products complying with the requirement are oriented strand board (OSB) having a thickness of not less than 3/8 inch (10 mm) and gypsum board having a thickness of not less than 1/2 inch (12 mm).

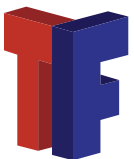
An R-Control SIP which has 7/16 inch OSB facings meets the IECC requirement. In addition, the interior of an R-Control SIP is normally covered with 1/2 inch gypsum board for fire protection reasons. This interior gypsum board also meets the IECC requirement.

The IECC (Section C402.4.1.2.2) provides a requirement for assemblies acting as air barriers. Assemblies of materials are required to have an air leakage not to exceed 0.04 cfm/ft² (0.2 L/s • m²) under a pressure differential of 0.3 inches of water (75Pa).

R-Control SIPs were tested to demonstrate compliance with the IECC requirement for air barriers and to evaluate the air leakage of a SIP spline joint. A test assembly consisting of two R-Control SIPs, R-Control Low VOC Do-All-Ply, and R-Control SIP Tape was tested by a third party accredited laboratory. The two R-Control SIPs were joined in accordance with R-Control SIP detail SIP-102g.

The air leakage of the R-Control SIP assembly was less than 0.001 cfm/ft² (0.005 L/s • m²).

The R-Control assembly demonstrated performance which meets both the IECC requirements for an air barrier material and an air barrier assembly.



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