

Product Information Bulletin

Insulspan SIP System Vapour Permeance Characteristics

This bulletin discusses vapour permeance characteristics of the Insulspan SIP System in relation to vapor retarder requirements in the International Residential Code 2006 (IRC 2006) and vapour barrier requirements in the National Building Code of Canada 2005 (NBC 2005).

IRC 2006 VAPOR RETARDER

The IRC) 2006 contains the following provisions with regard to moisture control in residential buildings.

R318.1 Moisture control.

In all framed walls, floors and roof/ceilings comprising elements of the building thermal envelope, a vapor retarder shall be installed on the warm-in-winter side of the insulation.

The IRC 2006 defines a vapour retarder as a material, membrane or covering such as foil, plastic sheeting, or insulation facing having a permeance rating of 1 perm (5.7×10^{-11} kg/Pa·s·m²) or less, when tested in accordance with the desiccant method using Procedure A of ASTM E 96. Vapor retarders limit the amount of moisture vapor that passes through a material or wall assembly.

NBC 2005 VAPOR BARRIER

The NBC 2005 contains the following provisions vapour barriers in Article 9.25.4.1.:

9.25.4.1. Required Barrier to Vapour Diffusion

1) Thermally insulated wall, ceiling and floor assemblies shall be constructed with a vapour barrier so as to provide a barrier to diffusion of water vapour from the interior into wall spaces, floor spaces or attic or roof spaces.

A vapour barrier is defined in the NBC 2005 as the elements installed to control the diffusion of vapour. Vapour barrier requirements in Clause 9.25.1.2.(1)(b) are that the vapour barrier must have a vapour permeance less than 60 ng/Pa·s·m² when tested in accordance ASTM E96 dry cup method.

INSULSPAN SIP SYSTEM

Insulspan has conducted ASTM E96 tests on sections cut from a 4 ½" thick Insulspan SIP consisting of one layer of 7/16" oriented strand board (OSB) laminated to each face of a 3 5/8" thick expanded polystyrene (EPS) core material. The composite vapour permeance for this 4 ½" SIP test section was 28 ng/Pa·s·m² (0.5 perm) which is less than the maximum permitted by Code for vapor retarders/vapour barriers. The vapour permeance for the composite was measured for the minimum SIP thickness since the vapour permeance property of the EPS insulation core will decrease as the EPS thickness increases resulting in a lower composite property.

Individual panels in the Insulspan SIP System are connected together and sealed using either two part polyurethane foam or mastic applied to connection material. One method of ensuring continuity of the vapor retarder/vapour barrier for roof applications is application of panel seal tape over each joint. One method of ensuring continuity for wall applications would be gypsum board interior finish with low permeance paint applied. Refer to the Insulspan SIP System installation Guide and typical details for additional information. **In all cases, before you start work, you are required to check with your local building inspector or development officer to ensure compliance with applicable building code requirements.**

Contact:

East: 1-800-726-3510

West: 1-866-848-8855

www.insulspan.com