



## SIP No. 2047

**Subject:** Water Vapor Transmission through Splines

**Date:** November 2007 (Revised January 2015)

R-Control SIP connection details rely on the tight fit of all component materials and the specific application of R-Control Low VOC Do-All-Ply sealant as shown in R-Control SIP details.

This bulletin describes the tested performance of these materials with respect to moisture vapor transmission. ASTM E 96, "Standard Test Methods for Water Vapor Transmission of Materials," was used to measure the performance of Do-All-Ply and SIP connection details.

### R-Control Low VOC Do-All-Ply

R-Control Low VOC Do-All-Ply was tested as a thin film. R-Control Low VOC Do-All-Ply had a water vapor transmission rate of less than 0.1 perm.

A material with a perm rating of less than 1.0 perms is considered a vapor retarder.

### R-Control SIPs

R-Control SIP (6-1/2" thick) sections were tested as follows:

- No joint
- w/surface spline joint
- w/block spline joint

R-Control SIP surface spline (detail SIP-102) and block spline (detail SIP-102g) are the most commonly used R-Control SIP connection details.

The results of the testing were as follows:

Sample Type	Perms <sup>1</sup>
No joint	< 1.0
w/surface spline joint	< 1.0
w/block spline joint	< 1.0

<sup>1</sup> Perm = grains/h x ft x ft x in. Hg

These results clearly demonstrate that the use of R-Control surface spline or block spline connection details with proper application of R-Control Low VOC Do-All-Ply maintains suitable control of moisture transmission.

### Following the R-Control details provide for a tight and sealed design.

As point of interest, the R-Control SIP sample with a surface spline connection was also tested without the application of R-Control Low VOC Do-All-Ply. The results from this testing were dramatic.

The moisture transmission through a surface spline joint with no R-Control Low VOC Do-All-Ply was over 100 times that of the joint with R-Control Low VOC Do-All-Ply.

### These results clearly demonstrate the need for proper application of R-Control Low VOC Do-All-Ply as shown in R-Control details.



R-Control SIPs are made exclusively with Foam-Control EPS. R-Control SIPs and Foam-Control EPS are manufactured by AFM Corporation licensees.

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