TECHNICAL BULLETIN NO. M-3

PREMIER SIPS
STRUCTURAL INSULATED PANELS

SUBJECT: VAPOR RETARDERS WITH PREMIER SIPS

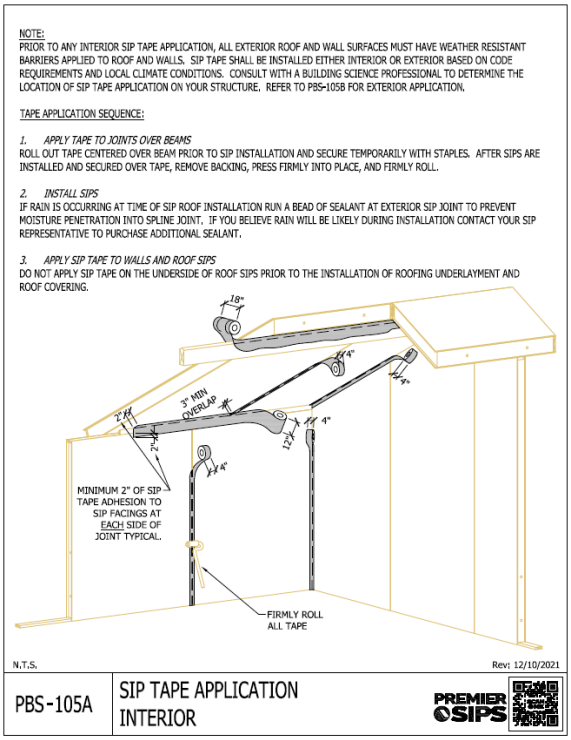
Questions about using vapor retarders in conjunction with Premier SIPS are frequently asked. Premier SIPS installation requires the proper application of Premier SIPS Sealant and Tape over SIP Joints. The function of the SIP Sealant and SIP Tape is to provide a seal against water vapor transmission and air passing through the SIP joint.

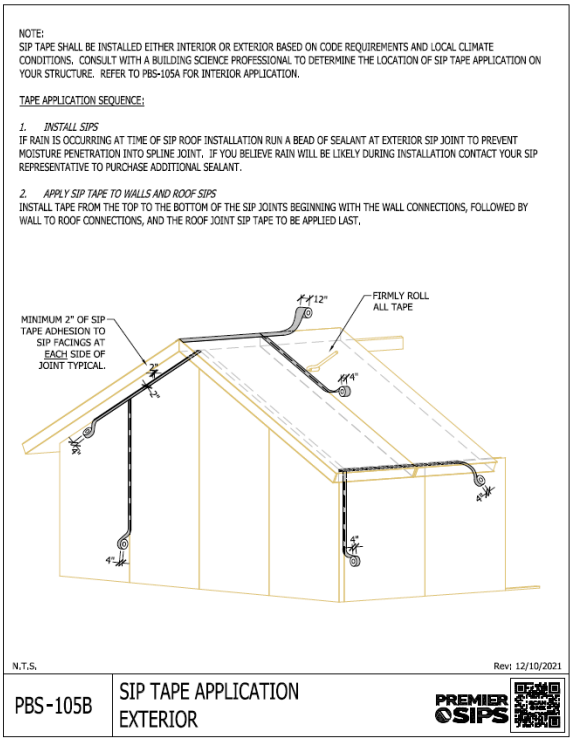
The purpose of this Technical Bulletin is to provide guidelines for the use of vapor retarders with Premier SIPS in residential and light commercial applications.

Sections R 702.7 in the 2024 International Residential Code (IRC) and 1404.3 of the 2024 International Building Code (IBC), address the use of Vapor Retarders when and where required by these building codes. Both the 2024 IRC and IBC now recognize “smart” or responsive vapor retarders for use in any climate zone. The codes define a responsive vapor retarder as any Class I or II vapor retarder (OSB’s per rating of 1 and is equivalent to a class II), that also has a water vapor permeance of greater than 1 perm (based on wet-cup water vapor permeance). OSB is regarded as a responsive vapor retarder material*. OSB, when used on the interior side as a vapor retarder, promotes inward drying by “opening up” in periods or seasons where inward vapor drives occur. This happens most prominently during spring and summer months. In the winter, OSB at 40% interior RH or less “closes-up” to restrict water vapor from moving into the assembly when outward vapor drives are the strongest and most persistent.

1. The APA has determined that OSB has a perm rating of less than 1 when relative humidity is under 40%. With the OSB skins of SIPs having a water vapor permeance rating of less than 1, the panel joint and boundaries become the primary areas of concern for water vapor transfer.

2. As mentioned earlier, Premier Building Systems requires that SIP Sealant be used in all SIP joints. After the SIP Sealant step is completed, (see Premier De-tails #PBS -103 & PBS-104) Premier recommends the use of Premier SIPS Tape over SIP joints (see Premier Details #PBS-105, 105A, and 105B at www.premiersips.com/details). Premier SIP Tape has a water vapor permeance of less than 1. Therefore, the combination of the field coverage of OSB skins that SIPs provide and the addition of Premier SIP Tape over the SIP joints meets the building code requirements for a vapor retarder.





3. SIP roofs that have joints occurring on support beams require 18” wide SIP tape draped over the support beam and tacked in-place. A ridge beam is an example of this condition. See Premier Detail #PBS 105A at www.premiersips.com/details.

The use of a complete wall and or roof surface coverage vapor retarder, such as polyethylene sheeting, may be warranted based on the structure’s exposure to interior high humidity, local building code or climatic conditions. It is up to the design professional to make this determination. If an additional vapor retarder is utilized, it must be installed in compliance with the appropriate local building code. Refer to the Premier SIPS Resource Manual, Details and Instructional Videos demonstrating Premier SIPS Sealant and SIP Tape installation. These can be found at www.premiersips.com.

* Technical Note: APA Number J450, Feb. 2009, Water Vapor Permeance of Wood Structural Panels and Wood Wall Construction.