

VAPOR RETARDERS WITH PREMIER BUILDING SYSTEMS RESIDENTIAL PANELS

Questions about using vapor retarders in conjunction with Premier Building Systems (PBS) structural insulated floor, wall and roof panels come up often. When installing Premier's panels, PBS requires the proper application (as shown in the PBS Details Book) of panel mastic at all panel joints. The function of the mastic is to provide a seal against water vapor transmission and air infiltration.

The purpose of this technical bulletin is to provide guidelines for the use of vapor retarders with PBS panels in residential applications.

The International Residential Code (IRC) requires the following:

SECTION R318 - MOISTURE VAPOR RETARDERS

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.

Exceptions:

1. In construction where moisture or freezing will not damage the materials.
2. Where the framed cavity or space is ventilated to allow moisture to escape.
3. In counties identified as in climate zones 1 through 4 in Table N1101.2.

The definition of a vapor retarder, from the IRC is:

VAPOR RETARDER: *A vapor resistant material, membrane or covering such as foil, plastic sheeting, or insulation facing having a permeance rating of 1 perm or less, when tested in accordance with the desiccant method using Procedure A of ASTM E96. Vapor retarders limit the amount of moisture vapor that passes through a material or wall assembly.*

The APA has determined that OSB has a perm rating of less than 1. Since the OSB skins, of the panels that PBS produces, have a permeance rating of less than 1, the panel joint is the primary area of concern with a SIP system when considering vapor retarder application. PBS requires that panel mastic be used when joining panels. PBS also recommends the use of SIP Tape over the panel joints. The SIP Tape is formulated with a permeance of less than 1. The combination of the OSB skins and the SIP Tape meets the building code requirements for vapor retarders.

Typically, 6" wide SIP Tape is used at all wall and roof panel joints as well as at wall panel corners. The connection of roof panels to exterior wall panels requires the use of 12" wide SIP Tape.

Roof panels that have joints on supporting beams require 18" wide SIP Tape. A ridge beam is an example of this condition.

The use of an additional vapor retarder, such as polyethylene sheeting, maybe warranted based on the local building code and 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 properly.

Please refer to the PBS Construction Details Book for illustrations of these conditions. The Details Book can be requested by calling the number below, or it can be viewed online at www.pbssips.com.