

## Denver Proposal #P24.6: IRC - Vapor retarders Proposed modification

It appears that the proponent was looking at the wrong base code. The modification is using the correct language from the 2021 IRC.

### 2021 IRC

**R702.7 Vapor retarders** Vapor retarder materials shall be classified in accordance with Table R702.7(1). A vapor retarder shall be provided on the interior side of frame walls of the class indicated in Table R702.7(2), ~~including compliance with Table R702.7(3) or R702.7(4) where applicable.~~ An *approved* design using accepted engineering practice for hygrothermal analysis shall be permitted as an alternative. The climate zone shall be determined in accordance with Section N1101.7.

#### Exceptions:

1. *Basement walls.*
2. Below-grade portion of any wall.
3. Construction where accumulation, condensation or freezing of moisture will not damage the materials.
4. A vapor retarder shall not be required in Climate Zones 1, 2 and 3.

#### **R702.7.1 Spray foam plastic insulation for moisture control with Class II and III vapor retarders.**

For purposes of compliance with Tables R702.7(3) and R702.7(4), spray foam with a maximum permeance of 1.5 perms at the installed thickness applied to the interior side of wood structural panels, fiberboard, *insulating sheathing* or gypsum shall be deemed to meet the continuous insulation moisture control requirement in accordance with one of the following conditions:

1. The spray foam *R*-value is equal to or greater than the specified continuous insulation *R*-value.
2. The combined *R*-value of the spray foam and continuous insulation is equal to or greater than the specified continuous insulation *R*-value.

TABLE R702.7(1)  
VAPOR RETARDER MATERIALS AND CLASSES

Class	ACCEPTABLE MATERIALS
I	I Sheet polyethylene, nonperforated aluminum foil or other approved materials with a perm rating less than or equal to 0.1.

II	II Kraft-faced fiberglass batts, vapor retarder paint or other approved materials applied in accordance with the manufacturer’s installation instructions for a perm rating greater than 0.1 and less than or equal to 1.0.
II	III Latex paint, enamel paint or other approved materials applied in accordance with the manufacturer’s installation instructions for a perm rating greater than 1.0 and less than or equal to 10.0.

**TABLE R702.7(2)**  
**VAPOR RETARDER OPTIONS**

Climate Zone	VAPOR RETARDER CLASS		
	CLASS I <sup>a</sup>	CLASS II <sup>a</sup>	CLASS III
<del>1,2</del>	<del>Not Permitted</del>	<del>Not Permitted</del>	<del>Permitted</del>
<del>3, 4 (except Marine 4)</del>	<del>Not Permitted</del>	<del>Permitted<sup>e</sup></del>	<del>Permitted</del>
<del>Marine 4, 5, 6, 7, 8</del> <a href="#">5b</a>	Permitted <sup>b</sup>	Permitted <sup>c</sup>	<del>See Table R702.7(3)</del> <a href="#">Permitted</a>

a. Class I and II vapor retarders with vapor permeance greater than 1 perm when measured by ASTM E96 water method (Procedure B) shall be allowed on the interior side of any frame wall in all climate zones.

b. Use of a Class I interior vapor retarder in frame walls with a Class I vapor retarder on the exterior side shall require an approved design.

c. Where a Class II vapor retarder is used in combination with foam plastic insulating sheathing installed as continuous insulation on the exterior side of frame walls, the continuous insulation shall comply with Table R702.7(4) and the Class II vapor retarder shall have a vapor permeance greater than 1 perm when measured by ASTM E96 water method (Procedure B).

~~**TABLE R702.7(3)**~~  
~~**CLASS III VAPOR RETARDERS**~~  
~~(Remove table)~~

~~**TABLE R702.7(4)**~~  
~~**CONTINUOUS INSULATION WITH CLASS II VAPOR RETARDER**~~  
~~(Remove table)~~

Reason Statement:

A class III vapor retarder works well in dry climate zone 5 regardless of the exterior cladding that is installed. When our houses are as tight as 3 ACH50 moisture migration into our walls through air leakage is minimal. Moisture migration into our walls through vapor diffusion when a class three vapor retarder is installed in minimal. Dry potential is achieved with lap siding over a WRB or stucco installed on a WRB protected with building paper that acts as the sacrificial layer. Although continuous insulation is an option for the wall assembly if not chosen in climate zone 5b there is not enough moisture migration into the wall and the surface temperature of the first condensing surface as not been an issue. The increasing drying potential of the assembly to the inside and outside in dry climate zones has proven to be the best solution for moisture management via diffusion which this section of code is addressing.