

Vapor retarders are intended to limit the amount of water vapor that passes through a construction assembly. Up through 2006 the ICC International Residential Code (IRC) defined a vapor retarder as, “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 E 96”.

Section R318 of the 2006 IRC covers moisture control in residential buildings through the use of vapor retarders. R318.1 states, “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”. That statement is immediately followed by 3 “Exceptions” – provisions by which the requirement for a vapor retarder does not apply. Those exceptions are:

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 (e.g., a vented attic or vented crawl space).
3. In counties identified as in climate zones 1 through 4 in Table N1101.2.

In the 2009 IRC, two significant changes were made regarding vapor retarders. First, the definition in Chapter 2 was replaced with: **Vapor Retarder Class:** *A measure of the ability of a material or assembly to limit the amount of moisture that passes through that material or assembly. Vapor retarder class shall be defined using the desiccant method with Procedure A of ASTM E96 as follows:*

*Class I: 0.1 perm or less  
Class II: 0.1 < perm < 1.0 perm  
Class III: 1.0 < perm < 10 perm*

Second, the section on moisture vapor retarders (formerly R318) was deleted from the Building Planning chapter. Vapor retarders are now referenced in the following locations:

- Chapter 5 Floors – Section R506 ('09 & '12), “Concrete Floors”
- Chapter 6 Wall Construction – Section R601.3 ('09), “Vapor Retarders”
- Chapter 7 Wall Covering – Section R702.7 ('12), “Vapor Retarders”
- Chapter 8 Roof-Ceiling Construction – Section R806 ('09 & '12), “Roof Ventilation” [NOTE: a vapor retarder is not required for a vented attic space. It is referenced here for the determination of net free ventilation area (see R806.2). A vapor retarder is required for an unvented attic assembly in climate zones 5, 6, 7 & 8 (see R806.4 ('09) or R806.5 ('12))]
- Chapter 11 Energy Efficiency – Section R1102.2.9 ('09) & R1102.2.10 ('12), Crawl Space Walls.

Always check with the local building official for other requirements. States and local jurisdictions may adopt the ICC codes with amendments that change the information listed above.

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