



**ADVANCED  
FIBER TECHNOLOGY**

100 Crossroads Blvd., Bucyrus, OH 44820  
Ph. 419-562-1337 Fax 419-562-9062  
[www.advancedfiber.com](http://www.advancedfiber.com)

# Vapor Retarder

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*The following is contained in the 2004 SUPPLEMENT to the INTERNATIONAL RESIDENTIAL CODE (IRC) pertaining to moisture control and vapor retarders.*

## **SECTION R318.1 MOISTURE CONTROL**

### **R3181. 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

North and South Carolina are included in zones 3 and 4.

Kentucky and Virginia are included in zone 4.

Southern portions of Indiana, Ohio, West Virginia, and Pennsylvania are included in zone 4 while the northern portions are included in zone 5.

New York is a mixture of zone 4, 5, and 6.

*See the attached revised Climate Zone map.*

### **Summary**

While this has provided vapor retarder relief through code changes for our customers in zones 1 through 4, other customers remain in zone 5. Advanced Fiber Technology does not recommend the use of vapor retarders in zone 5 except in specific high moisture applications in special use enclosures such as spas, pool buildings, museums, hospitals, data processing centers, etc.

It is a complicated topic however a couple of key points need to be kept in mind. Wall cavities can get wet. If they can get wet, can the wall assembly allow them to dry? Vapor semi-permeable and vapor permeable materials provide the best combination for wall cavity assemblies to allow them to dry in both an exterior and interior direction depending upon the season of the year. Will polyethylene film cause a wall assembly to fail, probably not if moisture can be kept out of the wall cavity. The difficulty is keeping moisture out of wall cavities. Since this is a difficult challenge, why not use permeable building materials utilizing a "flow-through" wall assembly that give the wall assembly the best chance to dry after getting wet.