
Energy Savers

Moisture Control in Walls

It is a myth that installing vapor barriers is the most important step for controlling moisture in walls. Vapor barriers only retard moisture due to diffusion, while most moisture enters walls either through fluid capillary action or as water vapor through air leaks.

All climates require these moisture control steps:

- Install a polyethylene ground cover on the earth floor of houses with crawl spaces and slope the ground away from the foundations of all houses.
- Install a continuous vapor barrier, if your climate needs one (see map on this page) that has a perm rating of less than one.
- Place a termite shield, sill gaskets, or other vapor-impermeable membrane on the top of the foundation wall. This action will prevent moisture from wicking into the framed wall from the concrete foundation wall by capillary action.

Vapor Barrier Placement By Geographical Location

In most cold climates, vapor barriers should be placed on the interior (warm-in-winter) side of walls. However, the map shows that in some southern climates, the vapor barrier should be omitted, while in hot and humid climates, such as along the Gulf coast and in Florida, the vapor barrier should be placed on the exterior of the wall.

Perm Ratings of Different Materials

(Rating of 1 or less qualifies as a vapor barrier)

<table>
<thead>
<tr>
<th>Material</th>
<th>Perm Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asphalt-coated paper backing on insulation</td>
<td>0.40</td>
</tr>
<tr>
<td>Polyethylene plastic (6 mil)</td>
<td>0.05</td>
</tr>
<tr>
<td>Plywood with exterior glue</td>
<td>0.70</td>
</tr>
<tr>
<td>Plastic-coated insulated foam sheathing</td>
<td>0.4 to 1.2</td>
</tr>
<tr>
<td>Aluminum foil (.35 mil)</td>
<td>0.05</td>
</tr>
<tr>
<td>Vapor barrier paint or primer</td>
<td>0.45</td>
</tr>
<tr>
<td>Drywall (unpainted)</td>
<td>5.0</td>
</tr>
<tr>
<td>Drywall (painted -latex paint)</td>
<td>2.3</td>
</tr>
</tbody>
</table>

Preventing Rain Penetration

Causes of rain leaks through exterior walls include improper installation of the following:

- Siding materials
- Poor-quality flashing
- Weatherstripping or caulk ing around joints in the building exterior (such as windows, doors, and bottom plates).

Wind-driven rain can also penetrate the exterior finish.

To enhance protection against rain penetration, create a drainage plane within the wall system of the home.
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