

RESIDENTIAL MEETING MINUTES
Energy Code Advisory Committee (ECAC)
Wednesday, January 28, 2004

Members present: Don Sivigny, Paul Ellringer, Joe Fischer, Dwight Kimber, Karen Linner, Michael Paradise, Tim Mathison, and Phil Smith

Members absent: Bob Baumann, Todd Bjerstedt, Dale Dorschner, Patrick Huelman, Ron Glubka, Jim Greenlund, John Griebler, Steve Hernick, Mark LaLiberte, Jim Larsen, Paul Majka, Bill Mathews, Bruce Nelson, Rep. Mark Olson, MacGregor Pierce, Richard Quandt, Barry Stranz, Mike Swanson, Ed Von Thoma, Matt Wilber

Others present: Nirmal Jain, Gary Thaden,

1. Meeting called to order by Don Sivigny the Chair at 9:04 a.m. Minutes for the last meeting were not available. Phil Smith promised to have them put together soon and distributed to the committee. Don passed out a new calendar for next year. The next meeting will be February 11, 2004.
2. Karen Linner of BAM presented two proposed changes, which were numbered R-4 and R-5.
3. R-4 affected Section N1102 and had several additions and deletions from this section. This change is being reviewed and was not voted on by the committee.
4. R-5 affected Section N1102.5 and involved two deletions and one addition to this section on moisture control. This proposal would allow no vapor retarder requirement for rim joists, crawl spaces and basement walls, which are insulated (the amount of insulation on the exterior is not specified) on the exterior.
5. Paul Ellringer has been working on a definition of a vapor retarder to be added to the energy code. Anyone wishing to get involved in this project should let Paul know at paul@airtamarack.com. Attached to these minutes is the latest proposal on this. This is being put into code language for your review and comment.

Next meeting will be on Wednesday, February 11, 2004 from 9 a.m.-12:00 noon at the State Building Code Division. Meeting adjourns at 12:00 p.m.

Meeting location
Building Codes & Standards Division
408 Metro Square Building
121 7th Place East
St. Paul, MN 55101-2181

Outlined below is the latest proposals from Paul’s group.

Vapor retarder. “Vapor retarder” is a material that retards water vapor passage.

Table 1 – Classes of Vapor Retarder		
Class	Perm Rating¹	Examples
I	0.1 or less	polyethylene film 4 and 6 mil, aluminum foil, sheet metal, rubber membranes, vinyl wallcoverings
II	0.1 to 1.0	kraft paper, vapor retarder latex and oil-based paints, polyamide film, extruded polystyrene and polyurethane >1 inch thick
III	>1.0 to 10	plywood, OSB, unfaced extruded polystyrene and polyurethane <1 inch thick, asphalt building papers
IV	Greater than 10	fiberboard sheathing, housewraps, unpainted gypsum board and plaster, fibrous glass and cellulose insulation

- 1 Perm rating as established in accordance with the desiccant method Procedure A of ASTM E96.

N1102.5 Moisture control. The building design shall not create conditions of accelerated deterioration from moisture condensation. Frame walls, floors and ceilings not ventilated to allow moisture to escape shall be provided with *an approved vapor retarder as outlined in Table 1*. The vapor retarder shall be installed on the warm-in-winter side of the thermal insulation. *Vapor retarders do not need to be continuous unless the vapor retarder is the air barrier.*

Table 1 -Vapor Retarder Minimum Requirements		
Location	Minimum Vapor Retarder Required	Exterior Sheathing¹
Slab at or below grade ²	Class I	n.a.
Wall below grade ^{3,4}	Class I, II, III	n.a.
Wall above grade	Class I, II	Perm rating 1 or more
Wall above grade ⁵	Class I, II, III	Perm rating less than 1

1. Perm rating of exterior sheathings as established in accordance with the wet cup Procedure B of ASTM E96
2. All concrete slab floors in all Minnesota climates on grade or below grade, vapor retarder must be in direct contact with the slab on the ground contact side. Concrete slab floors that are insulated below the slab with a minimum of R-5 insulation, no vapor retarder is required.
3. Below grade walls in all Minnesota climates that are constructed from masonry or concrete that are insulated on the exterior or that have insulation sandwiched between the masonry or concrete require no additional vapor retarder.

4. Below grade walls in all Minnesota climates that are constructed from masonry or concrete that are insulated internally with spray foam insulation or rigid foam insulation in direct contact with the masonry or concrete, no vapor retarder is required.
5. The interior surface of the exterior sheathing shall be maintained above the dew point temperature of the interior air. Under this design approach assume steady state heat transfer, interior air at a temperature of 70 degrees (21 degrees C), 30 percent relative humidity and exterior air at a temperature that is equal to the average outdoor temperature for either Southern or Northern Minnesota during the coldest three months of the year (e.g. December, January and February).

Exceptions:

1. In construction where moisture or its freezing will not damage the material.
2. ~~Frame walls, floors and ceilings in jurisdictions in Zones 1 through 5. (Crawl space floor vapor retarders are not exempted.)~~
3. 2. Where other approved means to avoid condensation are provided.
3. 3. *The basic design in this section assumes that the building does not have excessive interior moisture sources like a swimming pool or other major interior moisture sources.*