

**Agenda
Item
VII.C.**

State of Oregon

Board memo

Building Codes Division

February 3, 2010

To: Building Codes Structures Board

From: Patrick Allen
Administrator, Oregon Building Codes Division

Subject: Board Concurrence – Oregon amendment relative to Vapor Barriers [IBC 1405.2]

Action requested:

A board motion noting concurrence with the hearings officer's findings regarding adoption of code requirements specific to Vapor Barriers [IBC 1405.2]. This issue was vetted through the *Commercial Energy Code Committee* but was inadvertently excluded in the review before the *Structural Code Change Committee* and the subsequent view by the *Building Codes Structures Board*. The hearings officer is recommending adoption of the same. Accordingly, I am requesting that the Building Codes Structures Board consider for adoption the Oregon amendments noted below.

Background:

In testimony before the public hearings officer, *Mr. Denno* of the Oregon Office of Energy, spoke to the emerging technology of moving all or a portion of the insulation to the exterior of the building and the subsequent tightening of the exterior envelope. Mr. Denno expressed concern that the installation of the vapor barrier can easily be installed in the wrong location as current code language does not properly address this condition. Installing the vapor barrier in the wrong plane may contribute to compromises in the exterior wall assembly by moving the dew-point to an improper location.

Mr. Denno has submitted a code amendment to OSSC 1402.2 as noted below.

PROPOSED OREGON AMENDMENTS TO THE 2010 OSSC

The following vapor retarder requirements have traditionally been located in chapter 13 but are proposed for inclusion in chapter 14. The Commercial Energy Code Committee made the following recommendations to the model code language.

~~Strike out~~ denotes text deletion. Underline denotes new language.

1405.3 Vapor retarders. Class I or II vapor retarders shall be provided on the interior side of frame walls in Zones 5, 6, 7, 8 and Marine 4.

Exceptions:

1. Basement walls.
2. Below-grade portion of any wall.
3. **Masonry walls with exposed interior surfaces.**
4. **Where exterior continuous rigid insulation is at least 50 percent of required R-value for that wall assembly, a Class I or Class II vapor retarder may be installed on the interior surface of rigid insulation.**
5. Construction where moisture or its freezing will not damage the materials

1405.3.1 Class III vapor retarders. Class III vapor retarders shall be permitted where any one of the conditions in Table 1405.3.1 is met.

**TABLE 1405.3.1
CLASS III VAPOR RETARDERS**

ZONE	CLASS III VAPOR RETARDERS PERMITTED FOR ^a
Marine 4	Vented cladding over OSB Vented cladding over plywood Vented cladding over fiberboard Vented cladding over gypsum Insulated sheathing with R -value $\geq R2.5$ over 2x4 wall Insulated sheathing with R -value $\geq R3.75$ over 2x6 wall
5	Vented cladding over OSB Vented cladding over plywood Vented cladding over fiberboard Vented cladding over gypsum Insulated sheathing with R -value $\geq R5$ over 2x4 wall Insulated sheathing with R -value $\geq R7.5$ over 2x6 wall
6	Vented cladding over fiberboard Vented cladding over gypsum Insulated sheathing with R value $\geq R7.5$ over 2x4 wall Insulated sheathing with R value $\geq R11.25$ over 2x6 wall
7 and 8	Insulated sheathing with R value $\geq R10$ over 2x4 wall Insulated sheathing with R value $\geq R15$ over 2x6 wall

For SU: 1 pound per cubic foot = 16 kg/m³.

^a Spray foam with a minimum density of 2 lbs/ft³ applied to the interior cavity side of OSB, plywood, fiberboard, insulating sheathing or gypsum is deemed to meet the insulating sheathing requirement where the spray foam R -value meets or exceeds the specified insulating sheathing R -value.

1405.3.2 Material vapor retarder class. The *vapor retarder class* shall be based on the manufacturer's certified testing or a tested assembly.

The following shall be deemed to meet the class specified:

Class I: Sheet polyethylene, nonperforated aluminum foil

Class II: Kraft-faced fiberglass batts or paint with a perm rating greater than 0.1 and less than or equal to 1.0.

Class III: Latex or enamel paint.

1405.3.3 Minimum clear airspaces and vented openings for vented cladding. For the purposes of this section, vented cladding shall include the following minimum clear airspaces.

1. Vinyl lap or horizontal aluminum siding applied over a weather-resistive barrier as specified in this chapter.
2. Brick veneer with a clear airspace as specified in this code.
3. Other *approved* vented claddings.

Options:

- Pass a motion concurring with the Hearings Officer's recommendations, with the findings that the added cost, if any, is necessary to the health and safety of the occupants or the public or necessary to conserve scarce resources.
- Suggest additional code language and pass a motion with the finding that the added cost, if any, is necessary to the health and safety of the occupants or the public or necessary to conserve scarce resources.

Recommendation:

Pass a motion concurring with the Hearings Officer's recommendations, with the finding that the added cost, if any, is necessary to the health and safety of the occupants or the public or necessary to conserve scarce resources.