8/25/10 Submitted by Alan Seymour and Johnathan Balkema
With BCD input

REVIEW AND RECOMMENDATION FOR UNDER-FLOOR VAPOR RETARDER/BARRIER & VENTILATION ISSUES- SECTIONS R408.1 & R408.2:

The following are amendments and a reformat cleanup that is being proposed to the (Most of the text is shown without cross-outs and underlined for clarity – red text is existing Oregon language, the green text is new to this location & purple text is new model code language.) 2011 ORSC, Sections R408.1 and R408.2 (Oregon deletes R408.3 entirely) – explanation/discussion is below the code:

Proposed revisions and reformatting

R408.1 Ventilation. The under-floor space between the bottom of the floor joists and the earth under the building (except space occupied by a *basement*) shall have ventilation openings through foundation walls or exterior walls. The minimum net area of ventilation openings shall not be less than 1 square foot (0.0929 m^2) for each 150 square feet (14 m^2) of under-floor space area.

The minimum net area of ventilation openings may be reduced to 1 square foot (0.0929 m^2) for each 1,500 square feet (140 m^2) of under-floor space area when the ground surface is covered by a 6-mil (0.006 inch; 0.15 mm), black polyethylene sheeting or other approved materials, with joints lapped 12 inches (305 mm) at seams and extending up the foundation walls 12 inches (305 mm).

The required ventilation openings shall be placed so as to provide cross-ventilation of the space with one such opening within 3 feet (914 mm) of each corner of the building.

Exceptions:

1. Ventilation openings shall be permitted to be omitted on one side.
2. Ventilation openings are not required in the foundation when a continuously operated mechanical ventilation system is installed. The system shall be designed to have the capacity to exhaust a minimum of 1.0 CFM (0.5 L/s) for each 50 square feet (4.6 L/s) of under-floor area. The ground surface shall be covered with an approved ground cover material.
3. Ventilation openings in townhouses shall be permitted to be omitted on two sides when adjoining adjacent dwellings.

R408.2 Openings for under-floor ventilation. Ventilation openings shall be covered for their height and width with any of the following materials provided that the least dimension of the covering shall not exceed ¼ inch (6.4 mm):

1. Perforated sheet metal plates not less than 0.070 in (1.8 mm) thick.
2. Expanded sheet metal plates not less than 0.047 inch (1.2 mm) thick.
3. Cast-iron grill or grating.
4. Extruded load-bearing brick vents.
5. Hardware cloth of 0.035 inch (0.89 mm) wire or heavier.
6. Corrosion-resistant wire mesh, with the least dimension being 1/8 inch (3.2 mm) thick.

The installation of operable louvers shall not be prohibited.

Discussion: Most of the current Oregon amendment and model code language is retained, but put into a more user-friendly format.

The term "Class 1 vapor retarder" is not a good term and has been removed. It does not address durability of material and only has product defined (examples of what complies) in R601.3, which are not acceptable on the ground, in a crawl space. A description of what's typically installed to comply (6-mil, black poly, …) or an approved alternate is inserted in place of Class 1.

R408.1, Exception 2 is a current Oregon amendment, which was "code language" at one time. Within the deleted R408.3.2.1 there is similar language, but based on a scientific basis or conditions in Oregon, it is not applicable and would lead to confusion as to how it should be applied. The Interpretive Ruling that addresses a mechanically ventilated, unconditioned, unvented crawlspace describes in great detail how to apply R408.1, Exception 2. R408.1, Exception 3 is proposed by Jonathan Balkema as this has been a major concern with townhouse construction.

I believe the remainder of the amendments/clarifications are self-explanatory, but please contact me (Alan S.), Jonathan or Mike E. if you have question.