

**Oregon
Interpretive Ruling No. 99-3**

**METAL AND WOOD FRAME WALL CAVITY DEFINITIONS AND
APPLICABILITY FOR TABLES 13-D AND 13-E, FOOTNOTE 10,
NON-RESIDENTIAL BUILDINGS**

REQUESTED BY: Building Codes Structures Board Energy Committee

REQUEST FOR RULING: An interpretive ruling is requested to define the parameters for "full depth of cavity." Full depth requirement is specified in footnote 10 of Tables 13-D and 13-E of the 1998 Oregon Structural Specialty Code. Should we apply the insulation to the full depth of the framing cavity or the full depth of the wall cavity?

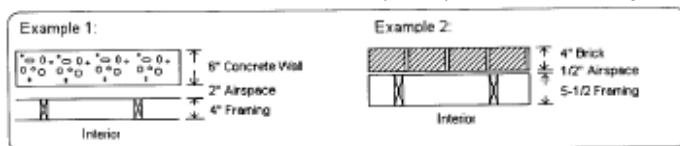
CODE SECTIONS: The 1998 Oregon Structural Specialty Code, Tables 13-D and 13-E, Footnote 10 (identical footnote on both tables).

BACKGROUND: Footnote 10 of the Tables 13-D and 13-E states:

"Batt insulation installed in metal or wood frame walls shall be insulated to the full depth of the cavity, up to 6 inches (152 mm) in depth."

This requirement applies to non-residential buildings that are eligible and use either Table 13-D or 13-E to demonstrate compliance with code.

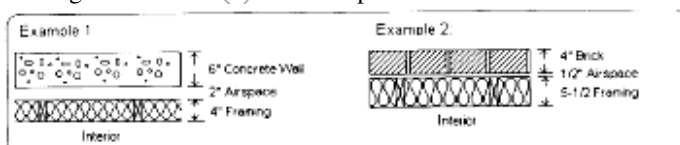
DISCUSSION: Oftentimes the "cavity" is much deeper than actual framing depth. Footnote 10 has been applied whenever batt insulation is installed in any metal or wood framing assemblies. There are situations when we have a metal or wood framed wall constructed inside of a masonry, concrete or some other wall in order to provide wall insulation. In such situations the wall cavity could be construed to be inclusive of the air gap between the wall framing and the outer wall component. The following two examples will be used for reference:



Is the "full depth of cavity" in both examples described above the space between the interior surface and the interior surface of concrete or brick surface or the space contained "between" the framing?

It is important that batt insulation is installed flush against the interior (heated side) of cavity. If it is not installed in this manner, a "convective loop" is created that can reduce effectiveness of insulation during heating season. Oregon Structural Specialty Code, Section 1312.1.2.3 has language that specifically addresses this issue (flush against heated side of cavity).

FINDINGS: Footnote 10 of Tables 13-D and 13-E shall be applicable whenever metal or wood frame walls are insulated to demonstrate compliance with the code. The "full depth of cavity" shall be the space contained between metal or wood framing. The intent of the term "cavity" is to be applied to the space between metal and wood framing as shown in the two examples below.



- 1998 Oregon Structural Specialty Code Section 108, Alternate materials and methods, allows acceptance of an alternate that achieves the intent of the code and provides equivalent effectiveness and safety for occupants and property.
- This interpretation is authorized by ORS 455.060, Ruling on Acceptability of Materials, Designs or Methods of Construction.
- This interpretative ruling provides equivalent safety for occupants and property as required in the 1998 Oregon Structural Specialty Code.

CONCLUSION: The Building Codes Structures Board accepts the recommendation of the Energy Committee and the findings listed.

(signed 5/5/99)

Theodore F. Argo III for;
John A. Talbott, P.E., Chairman
Building Codes Structures Board

RULING: The recommendations and findings of the Building Codes Structures Board are accepted and the interpretive ruling that establishes an alternate method for the 1998 Oregon Structural Specialty Code, Tables 13-0 and 13-E is adopted.

(signed 5/6/99)

Joseph A. Brewer III, Administrator
Building Codes Division