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Setting the **Standards** for
Home Energy Efficiency

Interpretation: Insulation is not required to fill floor cavity to achieve Grade I

Designation: IR 301-2019-023

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Reference:

Standard	ANSI/RESNET/ICC 301-2019
Page Number(s):	A-2
Sections(s):	A-1.3.2
Table(s):	n/a
Relating to:	Insulation installation criteria

Request from:

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Background Statement: *Provided by person requesting the interpretation.*

Section A-1 states, in part, that in order to meet the requirements of a Grade I or Grade II insulation rating, insulation material must be installed in accordance with the minimum installation requirements of Appendix A.

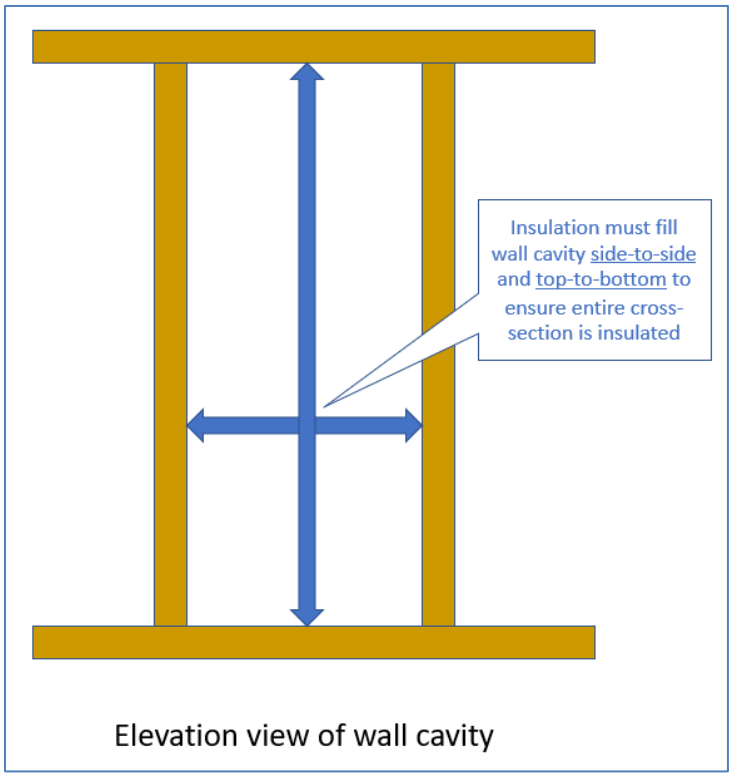
Section A-1.2, Minimum Specific Application Requirements, further states that insulation installed in framed floor assemblies shall be in substantial and permanent contact with the subfloor, unless it otherwise meets the defined exception.

By stating that the insulation must be in contact with the subfloor, and by not including any requirement that the insulation must also be in contact with the bottom side of the floor framing, it is implied that the insulation is not required to fill the entire floor cavity from top to bottom in order to achieve Grade I or II. This is as expected.

However, in Section A-1.3.2, which defines the minimum specific material requirements for fibrous batt insulation, it is stated that insulation must fill the cavity being insulated side to side, top to bottom.

Section A-1.3.3, which defines the minimum specific material requirements for blown or sprayed fibrous loose fill insulation, contains the same requirement.

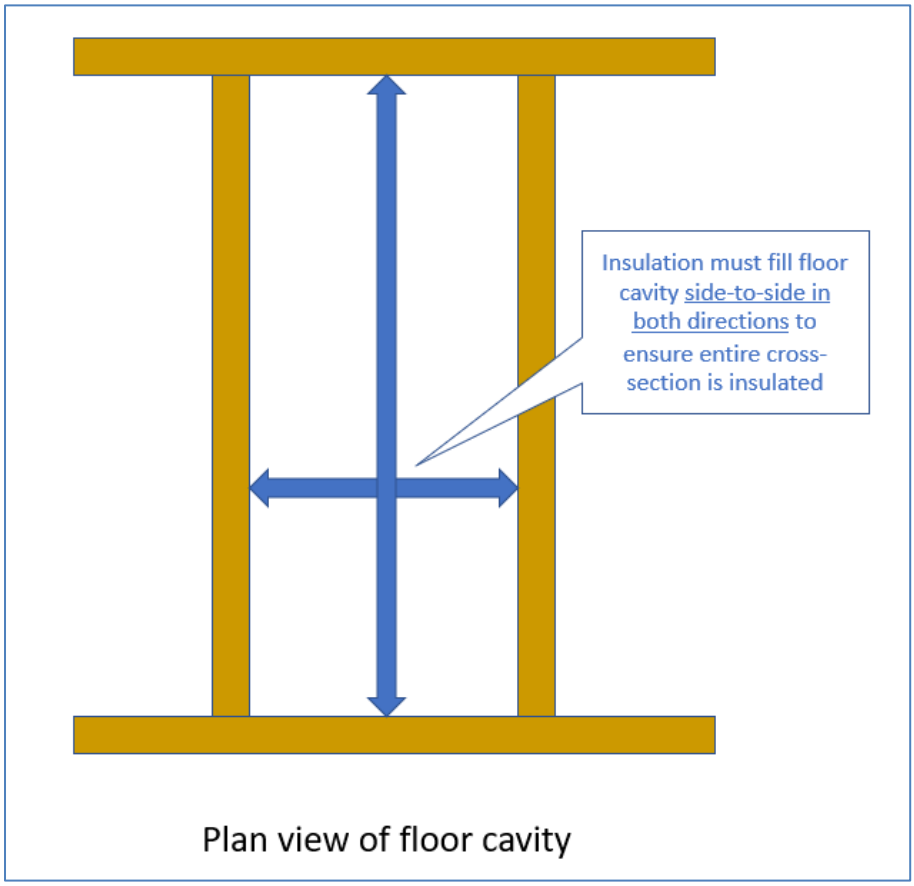
One might interpret that the requirement to fill a cavity side to side and top to bottom is only applicable to wall cavities, where this requirement would ensure that the entire cross-section of the cavity contains insulation, as illustrated below:



Elevation view of wall cavity

Note that the section does not require the wall cavity to be filled front-to-back (i.e., to fill the entire volume of the wall cavity with insulation) to achieve Grade I or II.

To achieve the same intent in a floor cavity (i.e., ensure that the entire cross-section of the cavity contains insulation) the insulation would need to extend side-to-side in both directions:



Plan view of floor cavity

Again, note that the floor cavity would not need to be filled top-to-bottom to achieve this intent (i.e., the entire volume of floor cavity would not need to be filled to ensure that its entire cross-section is insulated).

Finally, it is worth noting that a requirement to completely fill a floor cavity in order to achieve Grade I or II would deviate from standard practice in many markets and would be a very expensive upgrade. This fact also supports the interpretation that the standard did not intend to require floor cavities to be filled with insulation top-to-bottom in order to achieve Grade I or II.

Proposed Interpretation: *Provided by person requesting the interpretation.*

The requirement that insulation must fill the cavity being insulated side-to-side and top-to-bottom is intended to ensure that the entire cross-section of the cavity be insulated. Therefore, the language "top-to-bottom" is only applicable to wall cavities. For floor

cavities, where insulation is installed to maintain permanent contact with the subfloor, such insulation must extend side-to-side in both directions to meet this intent, but is not required to be insulated from the top to the bottom of the floor cavity in order to achieve Grade I or II.

SDC Response:

Is the proposed interpretation correct? ___X__ Yes _____ No

SDC Comments:

This interpretation is correct. The underlined format was added to note that the interpretation request was specific to one specific floor insulation technique, as described in A-1.2. However, for additional clarity, this interpretation also applies to the other floor insulation techniques that are described in the Exception to A-1.2.

The relevant text from that Exception states: "The floor framing cavity insulation shall be permitted to be in contact with the topside of sheathing or continuous insulation installed on the bottom side of floor framing where combined with insulation that meets or exceeds the minimum wood frame wall R-Value in Table 402.1.2 of the International Energy Conservation Code (IECC) and that extends from the bottom to the top of all perimeter floor framing members."

Where following that Exception, this same interpretation applies: the floor framing cavity insulation must extend side-to-side in both horizontal directions to meet A-1.3.2, but is not required to be insulated from the "top to bottom" of the floor cavity in order to achieve Grade I or II.