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Setting the **Standards** for
Home Energy Efficiency

Interpretation: Hybrid Insulation Assemblies

Designation: IR 301-2019-044, IR 301-2022-032, IR 301-2025-007

Approved: August 28, 2026, by RESNET® SDC 300

Effective Date: September 28, 2026

Request from:

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Reference: This request for interpretation refers to the requirements in:

Standard: ANSI/RESNET/ICC 301-2019
ANSI/RESNET/ICC 301-2022
ANSI/RESNET/ICC 301-2025

Section(s): Appendix A

Table(s):

Relating to: Hybrid Spray-Foam + Fibrous insulation Assemblies

Excerpt of text: See excerpts of the referenced sections at the end of this interpretation.

Background:

The standard does not explicitly address grading of assemblies where fibrous insulation is combined with an air-impermeable spray foam (SPF) insulation layer or "hybrid" insulation assembly comprising:

- An **air impermeable spray polyurethane foam** or other "closed" insulation layer on the *exterior* side of the thermal envelope; and
- A **fibrous (e.g. fiberglass batt or loose fill)** layer on the *interior* side (towards conditioned space), without a dedicated interior air barrier.

In more general language, the detail is as follows:

1. The exterior spray foam layer is installed in an exterior wall or ceiling and acts as an air barrier
2. The fibrous insulation is installed directly against the spray foam layer and is air permeable
3. There is **no separate interior air barrier** on the inner side of the fibrous insulation.
4. This scenario is most often seen in unvented roof assemblies where the attic is within the thermal boundary of the home.
5. The installation of the fiberglass in the framing cavities would conform to Grade I or Grade II installation practices (voids, gaps, compression) but would not satisfy all six-sided encapsulation or air barrier enclosure requirements.

Interpretation:

1) The requirements in Sections A-1.3.2 and A-1.3.3 mandate that fibrous batt insulation and blown or sprayed fibrous loose fill insulation shall be enclosed on all six sides with durable materials unless one of the explicitly listed exceptions applies.

2) The lack of an interior enclosure material directly against interior face of the fibrous insulation layer would result in a Grade III determination of the fibrous insulation layer.

Question: Is this Interpretation correct?

SDC Answer:

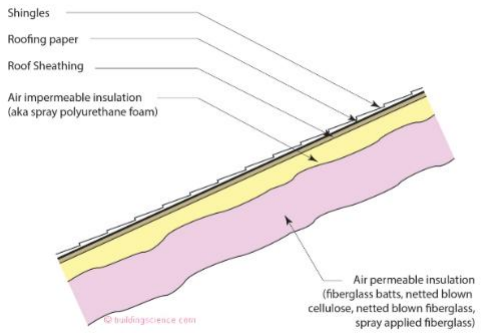
1) Yes to Interpretation 1 above
2) No to Interpretation 2 above

SDC Comments: The Committee recognizes that the Standard should be revised to address the following:

1. How to grade wall and roof assemblies with multiple types of insulation
2. Clarify the "enclosed on all six sides" requirement
3. Add an explicit exception for "unvented" roof assemblies

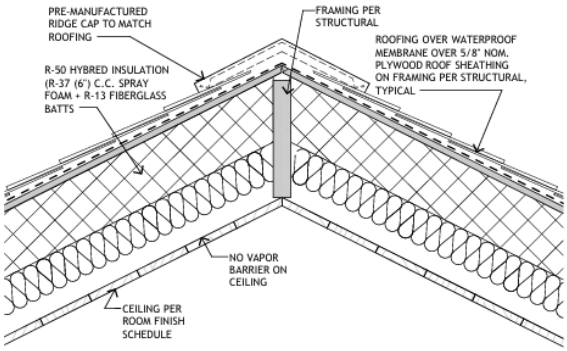
However, the Committee cannot change the Standard through an interpretation and therefore agrees with the first submitted interpretation of Appendix A, but not the second.

For the 1st interpretation, to attain Grade I, Appendix A does require fibrous batt and loose-fill insulation to be "enclosed on all six sides with durable materials," unless an exception applies. Since an exception is not currently listed in the Standard to explicitly address the unvented roof assembly described (shown below), it would not be eligible for Grade I or II unless a "durable material" is present on all six sides. The Standard does not stipulate that the "durable material" be "air-impermeable" or an "air barrier". The Committee understands this assembly is similar to others that have exceptions and will revise this section or add an exception in the next edition of Standard 301.



For the 2nd interpretation, however, the Committee disagrees. The Standard does not explicitly require the "interior enclosure material" to be "directly against" or in contact with the interior face of the fibrous batt (or loose fill) insulation. The image below would not be precluded from a Grade I or

Grade II assessment solely based on the gap between the fiberglass batt and the interior enclosure.



5 RIDGE DETAIL
SCALE: 1 1/2" = 1'-0"

While not precluded from Grade I, for this hybrid assembly to be modeled as Grade I, each insulation product (e.g., foam and fiberglass) would need to meet the respective criteria in Appendix A for Grade I. The Standard also allows each insulation product to have a unique grade, as long as the rating software allows multiple insulation products to have different grades within one assembly.

Note: This interpretation applies to ANSI/RESNET/ICC 301-2019, ANSI/RESNET/ICC 301-2022, AND ANSI/RESNET/ICC 301-2025.

Excerpt of text (yellow highlights identify where text differs between editions):

301-2019

A-1.3.2 Fibrous Batt Insulation

1. Insulation shall fill the cavity being insulated side to side, top to bottom.
2. Insulation shall be enclosed on all six sides with durable materials.

Exceptions:

a. Insulation installed in attics above ceilings shall not require an air barrier on the exterior side.

b. Insulation installed under floors directly above an unvented crawl space shall

not require an air barrier on the exterior side.
c. Insulation installed in rim or band joists located in conditioned space shall not require an air barrier on the interior side.
d. Insulation installed on conditioned basement and crawlspace walls where an air barrier material meeting code requirements for exposed applications and tested in accordance with ASTM E2178 is installed on the interior side.

3. Faced batts shall be stapled to the face of the studs or side stapled to the studs with no buckling of the stapling tabs or the tabs shall be permitted to be left unstapled. Faced batt products without tabs and friction fit products shall not be required to be stapled when installed in walls. Compression of face stapled batts shall be graded in accordance with the criteria outlined in Sections A-2.1.1.1, A-2.1.2.1, or A-2.1.3.
4. When side stapled, compression is permitted only along edges to the depth of the stapling tab.
5. Insulation shall be closely fitted around obstructions including, but not limited to, framing, blocking, wiring, pipes, etc. to avoid substantial gaps, voids or compression.

A-1.3.3 Blown or Sprayed Fibrous Loose Fill Insulation

1. Insulation containment fabric or system that is side stapled shall not be stapled more than ½ inch back from the face of the stud.
2. Insulation shall be rolled or trimmed flat to allow installation and contact with interior sheathing or finish material.
3. Insulation shall fill the cavity being insulated side to side and top to bottom.
4. Blown insulation shall meet the manufacturer's stated recommendations for density and coverage in order to meet the required R-Value and to minimize or prevent settling.
5. Insulation shall be enclosed on all six sides with durable materials.

   Exceptions:

   a. Air permeable insulation installed on the top side of the ceiling in unconditioned attics shall not require an air barrier on the exterior.
   b. Insulation installed under floors that are directly above an unvented crawl space shall not require an air barrier on the exterior side.
   c. Insulation installed in rim or band joists located in conditioned space shall not require an air barrier on the interior side.
6. Insulation shall be installed around obstructions including, but not limited to, framing, blocking, wiring, pipes, etc. as to avoid substantial gaps, voids or compression.

301-2022 & 301-2025

A-1.3.2 Fibrous Batt Insulation

2. Insulation shall fill the entire cross-section of the cavity being insulated.

For floor cavities, where insulation is not required to maintain permanent contact with the subfloor, insulation shall also extend from the bottom to the top of all perimeter floor framing members and the framing members shall be air sealed.

3. Insulation shall be enclosed on all six sides with durable materials.

   Exceptions:

   a. Insulation installed in attics above ceilings shall not require an air barrier on the exterior side.

   b. Insulation installed under floors directly above an unvented crawl space shall not require an air barrier on the exterior side.

   c. Insulation installed in rim or band joists located in conditioned space shall not require an air barrier on the interior side.

   d. Insulation installed on conditioned basement and conditioned crawlspace walls where an air barrier material meeting code requirements for exposed applications and tested in accordance with ASTM E2178 (air permeance less than 0.004 cfm/ft²) is installed on the interior side.

6. Faced batts shall be stapled to the face of the studs or side stapled to the studs with no buckling of the stapling tabs or the tabs shall be permitted to be left unstapled. Faced batt products without tabs and friction fit products shall not be required to be stapled when installed in walls. Compression of face stapled batts shall be graded in accordance with the criteria outlined in Sections A-2.1.1.1, A-2.1.2.1, or A-2.1.3.
7. When side stapled, compression is permitted only along edges to the depth of the stapling tab.
8. Insulation shall be closely fitted around obstructions including, but not limited to, framing, blocking, wiring, pipes, etc. to avoid substantial gaps, voids or compression.

A-1.3.3 Blown or Sprayed Fibrous Loose Fill Insulation

6. Insulation containment fabric or system that is side stapled shall not be stapled more than ½ inch back from the face of the stud.
7. Insulation shall be rolled or trimmed flat to allow installation and contact with interior sheathing or finish material.
8. Insulation shall fill the entire cross-section of the cavity being insulated.
9. Blown insulation shall meet the manufacturer's stated recommendations for density and coverage in order to meet the required R-Value and to minimize or prevent settling.
10. Insulation shall be enclosed on all six sides with durable materials.

    Exceptions:

    a. Air permeable insulation installed on the top side of the ceiling in unconditioned attics shall not require an air barrier on the exterior.

    b. Insulation installed under floors that are directly above an unvented crawl space shall not require an air barrier on the exterior side.

c. Insulation installed in rim or band joists located in conditioned space shall not require an air barrier on the interior side.

7. Insulation shall be installed around obstructions including, but not limited to, framing, blocking, wiring, pipes, etc. as to avoid substantial gaps, voids or compression.