

**NC Department of Insurance
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**House Wrap Requirements for Energy Efficiency Provisions for Residential Building
Thermal Envelope**

Code: 2018 NC Energy Conservation Code

Date: August 24, 2018

Section: R402.4.1

Code: 2018 NC Residential Code

Section: N1102.4.1

Question:

For Residential Buildings, does the 2018 North Carolina Energy Conservation Code, section R402.4.1, item 5 and the 2018 NC Residential Code, section N1102.4.1, item 5 require that the house wrap material be rated as an air barrier material?

Answer:

No, the 2018 NC Energy Conservation Code, section R402.4.1 “Building thermal envelope” and the 2018 NC Residential Code, section N1102.4.1 “Building thermal envelope” do not require that the house wrap material be rated as an air barrier material. The house wrap material can be any material as allowed by the Residential Code or the NC Building Code, as applicable. The subject code section is shown below for your convenience.

The first four items in the code section address generally large holes that the ad hoc committee intended to be sealed with an air barrier material or solid material and was carried forward from the 2012 NC codes. Item 5 is a new addition to this section for the 2018 North Carolina codes added by the ad hoc committee.

Per item 5, the ad hoc committee directs that either exterior house wrap joints and seams shall be sealed per manufacturer’s instructions or seal exterior sheathing and exposed band joist joints including perimeter joints and edges of these materials.

In instance that the exterior sheathing and exposed band joist joints including perimeter joints and edges of these materials are not sealed, exterior house wrap joints and seams shall be sealed per manufacturer’s instructions. The section does not state that a house wrap must be an air barrier material. The section only requires that house wraps joints and seams shall be sealed per manufacturer’s instructions. In their wording, the committee was mindful to not require that the house wrap be an air barrier material, but only to require that house wraps joints and seams shall be sealed per manufacturer’s instructions. Figures are included in Appendix R1.2.4 and Appendix E-2.4 for illustration of recommended taping details. The figures included in the Appendix for the example for house wrap notes use of an air barrier rated house wrap in the

detail, but the use of an air barrier house wrap is shown only for the example indicated and not intended as a minimum requirement by the ad hoc committee.

R402.4.1 (N1102.4.1) Building thermal envelope. The *building thermal envelope* shall be durably sealed to limit infiltration. The sealing methods between dissimilar materials shall allow for differential expansion and contraction. For all homes, where present, the following shall be caulked, gasketed, weatherstripped or otherwise sealed with an air barrier material, or solid material consistent with Appendix 1.2.4 (Appendix E-2.4 for the NC Residential Code) of this code:

1. Blocking and sealing floor/ceiling systems and under knee walls open to unconditioned or exterior space.
2. Capping and sealing shafts or chases, including flue shafts.
3. Capping and sealing soffit or dropped ceiling areas.
4. Sealing HVAC register boots and return boxes to subfloor or drywall.
5. Seal exterior house wrap material joints and seams per manufacturer's instructions or, if house wrap joints are not sealed, seal exterior sheathing and exposed band joist joints including perimeter joints and edges of these materials.

Exception to item 5:

1. Spray foam in building thermal envelope wall systems.
2. Wall sheathing joints where wall sheathing is fully glued to framing.

Keywords: