

## ADVISORY COMMITTEE COMMENT FORM FOR PROPOSED CODE CHANGES

(This form must be submitted electronically)

Author/requestor: Karen Linner

Email address: [karenl@bamn.org](mailto:karenl@bamn.org)

IECC RE-10

Telephone number: 651-646-7959 x166

Firm/Association affiliation, if any: Builders Association of Minnesota

### Proposed Code Change - Language

Please provide your proposed code change in strikeout/underline format. Provide the *specific* language you would like to see changed, with new words underlined and words to be deleted should be ~~stricken~~. Also, state whether the language contained in your proposal is from a code book or from an amendment currently found in Minnesota Rule. (You may provide the language (electronically) on a separate, attached sheet).

Delete the entire MN Department of Labor and Industry draft of **MINNESOTA RULES, CHAPTER 1322 ADOPTION OF THE 2012 INTERNATIONAL ENERGY CONSERVATION CODE (IECC) (RESIDENTIAL PROVISIONS)**.

Replace with existing Chapter 1322 Minnesota Residential Energy Code with the following two deletions and changes

Subp. 5.

### **IRC Table N1102.1.**

IRC Table N1102.1 is deleted in its entirety and replaced with the following changes:

Table N1102.1

Insulation and Fenestration Requirements by Component<sup>(a)</sup>

Climate Zone	Fenestration <sup>(b)</sup> U-Factor	Skylight U-Factor	Ceiling R-Value	Wood Frame Wall R-Value
<del>Southern 6</del>	0.35 <u>0.32</u>	0.60 <u>0.55</u>	<del>38</del> <u>49</u>	<del>19 21 or 20+5 or 13+10</del> <del>13 + 5<sup>(e)</sup></del>
<del>Northern 7</del>	0.35 <u>0.32</u>	0.60 <u>0.55</u>	44 <u>49</u>	<del>19 21 or 20+5 or 13+10</del> <del>13 + 5<sup>(e)</sup>(e)</del>

Climate Zone	Mass Wall R-Value <sup>(f)</sup>	Floor R-Value	Foundation Wall and Rim Joist R-Value	Slab <sup>(c)</sup> R-Value & Depth	Crawl Space Wall R-Value
<del>Southern-6</del>	<del>15/20</del>	30 <sup>(d)</sup>	10	10, 3.5 ft	10
<del>Northern-7</del>	<del>15-19/21</del>	<del>30</del> 38 <sup>(d)</sup>	10	10, 5 ft	10

- (a) R-values are minimums. U-factors and SHGC are maximums. R-19 shall be permitted to be compressed into a 2x6 cavity.
- (b) The fenestration U-factor column excludes skylights.
- (c) R-5 shall be added to the required slab edge R-values for heated slabs.
- (d) Or insulation sufficient to fill the framing cavity, R-19 minimum.
- (e) "13 + 5 10" means R-13 cavity insulation plus R-~~10~~5 insulated sheathing. "20 + 5" means R-20 cavity insulation plus R-5 insulated sheathing. If structural sheathing covers 25 percent or less of the exterior, R-~~10~~5 or R-5 sheathing is not required where structural sheathing is used. If structural sheathing covers more than 25 percent of exterior, structural sheathing shall be supplemented with insulated sheathing of at least R-2.
- (f) When using log type construction for thermal mass walls the following shall apply:
  - (1) A minimum of a 7-inch-diameter log shall be used; and
  - (2) The u-value of fenestration products shall be 0.31 overall on average or better.

:

**N1102.2.6 Foundation wall insulation prescriptive option.**

**N1102.2.6.1 Foundation insulation.** Foundation insulation of basement and crawl space walls and the perimeter of slab-on-grade floors must comply with this section. Insulation materials shall be installed according to manufacturer's installation specifications and any additional requirements of Sections N1102.2.6.1 to N1102.2.6.11. ~~Adding additional insulation to increase R-values or adding an additional vapor retarder to foundation wall assemblies, other than those required in this section, is prohibited.~~

**Exceptions:**

1. Foundation walls enclosing unconditioned spaces shall meet this requirement unless the floor overhead is insulated in accordance with Section N1102.1.
2. Permanent wood foundations shall meet the requirements of Section R401.1.
3. Frost-protected shallow foundations shall meet the requirements of Section R403.3.
4. Insulating concrete form materials shall meet the requirements of Section R611.

**N1102.2.6.2 Basement foundation and crawl space walls.** Basement foundation and crawl space walls shall be insulated from the top of the foundation wall down to the top of the footing or from the top edge of the interior wall to the top of the slab if insulation is on the interior.

**N1102.2.6.3 Slab-on-grade and basement walkout foundation walls.** Slab-on-grade and basement walkout foundation wall insulation shall extend to the design frost line

or top of footing, whichever is less. The top edge of the insulation installed between the exterior wall and the edge of the interior slab shall be permitted to be cut at a 45-degree angle away from the exterior wall. Slab-edge insulation is not required in jurisdictions designated by the code official as having termite infestation.

**N1102.2.6.4 Foundation wall and rim joist area thermal insulation requirements.**

The foundation wall system and rim joist area shall have an insulating layer with minimum thermal properties as required in this section. The insulation layer must be a minimum R-10 in accordance with Table N1102.1.

~~**Exception:** In the Southern Zone, the foundation and rim joist area insulation may be reduced to a minimum of an R-5 if:~~

- ~~1. The insulation is located on the exterior or is integral to the foundation wall; and~~
- ~~2. An additional R-5 insulation is added to the minimum attic R-value level; and~~
- ~~3. The heating system meets the minimum efficiency ratings in Table N1102.2.6.4; and~~
- ~~4. A minimum of a six-inch energy heel is used for the roof framing and/or truss system.~~

Table N1102.2.6.4

HVAC System Minimum Efficiency Requirement to Qualify for R-5 Exterior Insulation in the Southern Zone

Heating System Type	Minimum Efficiency Rating	
	AFUE	HSPF
Furnace, Gas or Oil Fired	90%	N/A
Boiler, Gas or Oil Fired	85%	N/A
Heat Pump, Split Systems	N/A	8.0
Heat Pump, Single Package or Equipment (including gas/electric package units)		

**Proposed Code Change – Need and Reason**

Please provide a thorough explanation of the need for this change and why this proposed code change is a reasonable change. During the rulemaking process, the Agency must defend the need and reasonableness of all its proposed changes. The Agency must submit evidence that it has considered all aspects of the proposal. (You may provide the need and reason (electronically) on a separate attached sheet).

The U.S. Department of Energy’s code proposals for the 2012 and the final IECC adopted by the International Code Council do not meet Minnesota’s standard of a needed and reasonable change. The increased minimum energy requirements in the 2012 IECC were not developed in a scientific manor. In fact, none of the energy requirements in this or the 2009 IECC were subjected to public scrutiny of any type cost/benefit analysis ~ or even an energy analysis. The driving force of the 2012 IECC requirements seems to be “more is better” when it comes to R-values. The 2012 IECC also allows a construction method (cavity insulation in a stud wall directly against a foundation wall) that is known to cause catastrophic moisture and subsequent durability problems.

The 2012 IECC also proposes a requirement that all above grade wood frame walls include a layer of exterior rigid insulation. This type of construction has been an option in the existing Minnesota Residential Energy Code (Chapter 1322) yet only a handful of builders have adopted this building technique which requires significant changes in framing, attachment of exterior cladding, window and door configurations,

flashing techniques, etc. Requiring this building technique will undoubtedly save more energy than existing construction methods; however, the cost/benefit to homeowners and society of having the entire industry change to this method has not been proven.

**Proposed Code Change – Cost/Benefit Analysis**

Please consider whether this proposed code change will increase/decrease costs or indicate that it will not have any cost implications and explain how it will not. If there is an increased cost, will this cost be offset somehow by a life safety or other benefit? If so, please explain. Are there any cost increases/decreases to enforce or comply with this proposed code change? If so, please explain. (You may provide the cost/benefit analysis (electronically) on a separate, attached sheet).

BAM is still running a REMRate analysis comparing different housing types of potential savings from different R-value requirements.

**Other Factors to Consider Related to Proposed Code Change**

1. Is this proposed code change meant to:
  - change language contained in a published code book? If so, list section(s).
  - change language contained in an existing amendment in Minnesota Rule? If so, list Rule part(s).
  - delete language contained in a published code book? If so, list section(s).
  - delete language contained in an existing amendment in Minnesota Rule? If so, list Rule part(s).
  - neither; this language will be new language, not found in the code book or in Minnesota Rule.
2. Is this proposed code change required by a Minnesota Statute or new legislation? If so, please provide the citation to the Statute or legislation.
3. Will this proposed code change impact other sections of a published code book or of an amendment in Minnesota Rule? If so, please list the affected sections or rule parts.
4. Will this proposed code change impact other parts of the Minnesota State Building Code? If so, please list the affected parts of the Minnesota State Building Code.
5. Who are the parties affected or segments of industry affected by this proposed code change?
6. Can you think of other means or methods to achieve the purpose of the proposed code change? If so, please explain what they are and why your proposed change is the preferred method or means to achieve the desired result.
7. Are you aware of any federal requirement or regulation related to this proposed code change? If so, please list the regulation or requirement.