

REQUEST FOR TECHNICAL CHANGE

AGENCY: NC Building Code Council

RULE CITATION: All Amendments and Adoptions Submitted

DEADLINE FOR RECEIPT: Friday, February 9, 2018

NOTE: This request when viewed on computer extends several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this rule prior to the Commission's next meeting. The Commission has not yet reviewed this rule and therefore there has not been a determination as to whether the rule will be approved. You may call this office to inquire concerning the staff recommendation.

In reviewing these rules, the staff determined that the following technical changes need to be made:

Please confirm compliance with G.S. 143-136(c) and (d) where applicable.

Confirmed. The Ad Hoc Committee reviewed the provisions applicable to residential construction. Both the Residential and Building Committees recommended approval by the BCC.

Wherever terms are italicized in text of the Rule, please confirm that means it is a term defined elsewhere within the Code.

The ICC uses italics for definitions. The NEC uses italics for both definitions and exceptions.

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

**Barry Gupton, PE
Chief Code Consultant**

Amanda J. Reeder
Commission Counsel
Date submitted to agency: January 31, 2018

REQUEST FOR TECHNICAL CHANGE

AGENCY: NC Building Code Council

RULE CITATION: 2014 and 2017 NC Electrical Code, 680.21(C)(2)

DEADLINE FOR RECEIPT: Friday, February 9, 2018

The Rules Review Commission staff has completed its review of this rule prior to the Commission's next meeting. The Commission has not yet reviewed this rule and therefore there has not been a determination as to whether the rule will be approved. You may call this office to inquire concerning the staff recommendation.

In reviewing these rules, the staff determined that the following technical changes need to be made:

So that I am clear – this is a verbatim restatement of the change you are making to the 2017 Electrical Code. Why are you adopting it twice? I note that they both have the same effective date of April 1, 2018.

It was proposed as an amendment to both editions. The 4/1/2018 delayed effective date will apply to the 2014 edition.

And do you need this in the 2014 Code, given the adoption of the 2017 Code?

Yes. This is more important given the mandatory 6/12/2018 delayed effective date for the 2017 edition.

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

**Barry Gupton, PE
Chief Code Consultant**

Amanda J. Reeder
Commission Counsel
Date submitted to agency: January 31, 2018

2017 (and 2014) NC Electrical Code
680.21(C)(2) Motors GFCI Protection. (170613 Item B-16)

680.21(C)(2) Motors GFCI Protection

(C) GFCI Protection. Outlets supplying pool pump motors connected to single-phase, 120-volt through 240-volt branch circuits, whether by receptacle or by direct connection, shall be provided with ground-fault circuit-interrupter protection for personnel.

(2) Existing Pool Pump Motor Branch Circuit and Overcurrent Protection. All existing single-phase, 120-volt through 240-volt branch circuits and overcurrent devices that supply power to a pool pump motor by direct connection or outlet shall comply with the provisions of 680.21(C) when the branch circuits or overcurrent devices are altered, installed, modified, relocated, repaired, or replaced.

The delayed effective date of this Rule is April 1, 2018 for the 2014 edition.

The delayed effective date of this Rule is June 12, 2018 for the 2017 edition.

The Statutory authority for Rule-making is G. S. 143-136; 143-138.

Amanda J. Reeder
Commission Counsel
Date submitted to agency: January 31, 2018

REQUEST FOR TECHNICAL CHANGE

AGENCY: NC Building Code Council

RULE CITATION: 2012 NC Building Code, 1301.1.1

DEADLINE FOR RECEIPT: Friday, February 9, 2018

The Rules Review Commission staff has completed its review of this rule prior to the Commission's next meeting. The Commission has not yet reviewed this rule and therefore there has not been a determination as to whether the rule will be approved. You may call this office to inquire concerning the staff recommendation.

In reviewing these rules, the staff determined that the following technical changes need to be made:

In the Exception, so that I'm clear – the term “energy conservation code” will not be capitalized?

Yes. It is lower case in this context.

G.S. 143-138(b18) states:

(b18) Exclusion From Energy Efficiency Code Requirements for Certain Use and Occupancy Classifications.--The Council shall provide for an exemption from any requirements in the energy efficiency standards pursuant to Chapter 13 of the 2012 North Carolina Building Code and the 2012 Energy Conservation Code, and any subsequent amendments to the Building Code and Energy Conservation Code, for the following use and occupancy classifications pursuant to Chapter 3 of the 2012 North Carolina Building Code: Section 306, Factory Group F; Section 311, Storage Group S; and Section 312, Utility and Miscellaneous Group U. **This exclusion shall apply to the entire floor area of any structure for which the primary use or occupancy is listed herein.**

Is the “floor area” in the statute the same as the “entire building area” in this Rule?

Yes.

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Barry Gupton, PE
Chief Code Consultant

Amanda J. Reeder
Commission Counsel
Date submitted to agency: January 31, 2018

2012 NC Building Code
1301.1.1 Criteria. (170613 Item B-3)

1301.1.1 Criteria. Buildings shall be designed and constructed in accordance with the *International Energy Conservation Code*.

Exception: Per G.S. 143-138 (b18), no energy conservation code provisions shall apply to any structure for which the primary occupancy classification is Group F, S, or U. This exclusion shall apply to the entire building area.

The effective date of this Rule is March 1, 2018.

The Statutory authority for Rule-making is G. S. 143-136; 143-138.

Amanda J. Reeder
Commission Counsel
Date submitted to agency: January 31, 2018

REQUEST FOR TECHNICAL CHANGE

AGENCY: NC Building Code Council

RULE CITATION: 2018 NC Building Code, 1301.1.1

DEADLINE FOR RECEIPT: Friday, February 9, 2018

The Rules Review Commission staff has completed its review of this rule prior to the Commission's next meeting. The Commission has not yet reviewed this rule and therefore there has not been a determination as to whether the rule will be approved. You may call this office to inquire concerning the staff recommendation.

In reviewing these rules, the staff determined that the following technical changes need to be made:

In the Exception, so that I'm clear – the term “energy conservation code” will not be capitalized?

Yes. It is lower case in this context.

G.S. 143-138(b18) states:

(b18) Exclusion From Energy Efficiency Code Requirements for Certain Use and Occupancy Classifications.--The Council shall provide for an exemption from any requirements in the energy efficiency standards pursuant to Chapter 13 of the 2012 North Carolina Building Code and the 2012 Energy Conservation Code, and any subsequent amendments to the Building Code and Energy Conservation Code, for the following use and occupancy classifications pursuant to Chapter 3 of the 2012 North Carolina Building Code: Section 306, Factory Group F; Section 311, Storage Group S; and Section 312, Utility and Miscellaneous Group U. **This exclusion shall apply to the entire floor area of any structure for which the primary use or occupancy is listed herein.**

Is the “floor area” in the statute the same as the “entire building area” in this Rule?

Yes.

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Barry Gupton, PE
Chief Code Consultant

Amanda J. Reeder
Commission Counsel

Date submitted to agency: January 31, 2018

2018 NC Building Code

1301.1.1 Criteria. (170613 Item B-6)

1301.1.1 Criteria. Buildings shall be designed and constructed in accordance with the *International Energy Conservation Code*.

Exception: Per G.S. 143-138 (b18), no energy conservation code provisions shall apply to any structure for which the primary occupancy classification is Group F, S, or U. This exclusion shall apply to the entire building area.

The delayed effective date of this Rule is January 1, 2019.

The Statutory authority for Rule-making is G. S. 143-136; 143-138.

Amanda J. Reeder
Commission Counsel
Date submitted to agency: January 31, 2018

REQUEST FOR TECHNICAL CHANGE

AGENCY: NC Building Code Council

RULE CITATION: 2012 NC Energy Conservation Code, 101.2

DEADLINE FOR RECEIPT: Friday, February 9, 2018

The Rules Review Commission staff has completed its review of this rule prior to the Commission's next meeting. The Commission has not yet reviewed this rule and therefore there has not been a determination as to whether the rule will be approved. You may call this office to inquire concerning the staff recommendation.

In reviewing these rules, the staff determined that the following technical changes need to be made:

In the Exception, so that I'm clear – the term “energy conservation code” will not be capitalized?

Yes. It is lower case in this context.

G.S. 143-138(b18) states:

(b18) Exclusion From Energy Efficiency Code Requirements for Certain Use and Occupancy Classifications.--The Council shall provide for an exemption from any requirements in the energy efficiency standards pursuant to Chapter 13 of the 2012 North Carolina Building Code and the 2012 Energy Conservation Code, and any subsequent amendments to the Building Code and Energy Conservation Code, for the following use and occupancy classifications pursuant to Chapter 3 of the 2012 North Carolina Building Code: Section 306, Factory Group F; Section 311, Storage Group S; and Section 312, Utility and Miscellaneous Group U. **This exclusion shall apply to the entire floor area of any structure for which the primary use or occupancy is listed herein.**

Is the “floor area” in the statute the same as the “entire building area” in this Rule?

Yes.

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

**Barry Gupton, PE
Chief Code Consultant**

Amanda J. Reeder
Commission Counsel
Date submitted to agency: January 31, 2018

2012 NC Energy Conservation Code
101.2 Scope. (170613 Item B-4)

101.2 Scope. This code applies to *residential* and *commercial* buildings.

Exception: Per G.S. 143-138 (b18), no energy conservation code provisions shall apply to any structure for which the primary occupancy classification is Group F, S, or U pursuant to Chapter 3 of the 2012 *North Carolina Building Code*. This exclusion shall apply to the entire building area.

The effective date of this Rule is March 1, 2018.

The Statutory authority for Rule-making is G. S. 143-136; 143-138.

Amanda J. Reeder
Commission Counsel
Date submitted to agency: January 31, 2018

REQUEST FOR TECHNICAL CHANGE

AGENCY: NC Building Code Council

RULE CITATION: 2018 NC Energy Conservation Code, C101.2

DEADLINE FOR RECEIPT: Friday, February 9, 2018

The Rules Review Commission staff has completed its review of this rule prior to the Commission's next meeting. The Commission has not yet reviewed this rule and therefore there has not been a determination as to whether the rule will be approved. You may call this office to inquire concerning the staff recommendation.

In reviewing these rules, the staff determined that the following technical changes need to be made:

In the Exceptions, so that I'm clear – the term “energy conservation code” will not be capitalized?

Yes. It is lower case in this context.

In Exception 2, please state “G.S. 143-138(b18)” replacing the “0” with a dash.

Typo. Corrected as noted.

G.S. 143-138(b18) states:

(b18) Exclusion From Energy Efficiency Code Requirements for Certain Use and Occupancy Classifications.--The Council shall provide for an exemption from any requirements in the energy efficiency standards pursuant to Chapter 13 of the 2012 North Carolina Building Code and the 2012 Energy Conservation Code, and any subsequent amendments to the Building Code and Energy Conservation Code, for the following use and occupancy classifications pursuant to Chapter 3 of the 2012 North Carolina Building Code: Section 306, Factory Group F; Section 311, Storage Group S; and Section 312, Utility and Miscellaneous Group U. **This exclusion shall apply to the entire floor area of any structure for which the primary use or occupancy is listed herein.**

Is the “floor area” in the statute the same as the “entire building area” in this Rule?

Yes.

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

**Barry Gupton, PE
Chief Code Consultant**

Amanda J. Reeder
Commission Counsel
Date submitted to agency: January 31, 2018

2018 NC Energy Conservation Code
C101.2 Scope. (170613 Item B-8)

C101.2 Scope.

This code applies to commercial buildings and the buildings' sites and associated systems and equipment.

Exceptions:

1. Energy expended in support of process energy applications does not invoke energy conservation code requirements or building thermal envelope requirements unless otherwise required in specific sections of this code.
2. Per G.S. 143-138 (b18), no energy conservation code provisions shall apply to any structure for which the primary occupancy classification is Group F, S, or U pursuant to Chapter 3 of the 2018 *North Carolina Building Code*. This exclusion shall apply to the entire building area.

The delayed effective date of this Rule is January 1, 2019.

The Statutory authority for Rule-making is G. S. 143-136; 143-138.

Amanda J. Reeder
Commission Counsel
Date submitted to agency: January 31, 2018

REQUEST FOR TECHNICAL CHANGE

AGENCY: NC Building Code Council

RULE CITATION: 2015 Existing Building Code, 101.12

DEADLINE FOR RECEIPT: Friday, February 9, 2018

The Rules Review Commission staff has completed its review of this rule prior to the Commission's next meeting. The Commission has not yet reviewed this rule and therefore there has not been a determination as to whether the rule will be approved. You may call this office to inquire concerning the staff recommendation.

In reviewing these rules, the staff determined that the following technical changes need to be made:

Is this an amendment or an adoption of a new section of the 2015 Existing Building Code? It appears to be an adoption. If so, please update the Submission for Permanent Rule form.

The BCC considers a new edition as an adoption. Changes to the adopted edition are treated as amendments.

In the Exception, so that I'm clear – the term “energy conservation code” will not be capitalized?

Yes. It is lower case in this context.

G.S. 143-138(b18) states:

(b18) Exclusion From Energy Efficiency Code Requirements for Certain Use and Occupancy Classifications.--The Council shall provide for an exemption from any requirements in the energy efficiency standards pursuant to Chapter 13 of the 2012 North Carolina Building Code and the 2012 Energy Conservation Code, and any subsequent amendments to the Building Code and Energy Conservation Code, for the following use and occupancy classifications pursuant to Chapter 3 of the 2012 North Carolina Building Code: Section 306, Factory Group F; Section 311, Storage Group S; and Section 312, Utility and Miscellaneous Group U. **This exclusion shall apply to the entire floor area of any structure for which the primary use or occupancy is listed herein.**

Is the “floor area” in the statute the same as the “entire building area” in this Rule?

Yes.

I take it you are adding this to the Existing Building Code, even though not expressly required to do so by G.S. 143-138(b18) because that Code requires following the Energy Conservation and Building Codes?

Yes.

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amanda J. Reeder
Commission Counsel

Date submitted to agency: January 31, 2018

Barry Gupton, PE
Chief Code Consultant

Amanda J. Reeder
Commission Counsel
Date submitted to agency: January 31, 2018

2015 NC Existing Building Code
101.12 Energy conservation. (170613 Item B-5)

101.12 Energy conservation.

Per G.S. 143-138 (b18), no energy conservation code provisions shall apply to any structure for which the primary occupancy classification is Group F, S, or U. This exclusion shall apply to the entire building area.

The effective date of this Rule is March 1, 2018.

The Statutory authority for Rule-making is G. S. 143-136; 143-138.

Amanda J. Reeder
Commission Counsel
Date submitted to agency: January 31, 2018

REQUEST FOR TECHNICAL CHANGE

AGENCY: NC Building Code Council

RULE CITATION: 2018 Existing Building Code, 101.12

DEADLINE FOR RECEIPT: Friday, February 9, 2018

The Rules Review Commission staff has completed its review of this rule prior to the Commission's next meeting. The Commission has not yet reviewed this rule and therefore there has not been a determination as to whether the rule will be approved. You may call this office to inquire concerning the staff recommendation.

In reviewing these rules, the staff determined that the following technical changes need to be made:

This appears to be an adoption adding a new section to the 2018 Existing Building Code. Please update the Submission for Permanent Rule form to reflect this.

The BCC considers a new edition as an adoption. Changes to the adopted edition are treated as amendments.

In the Exception, so that I'm clear – the term “energy conservation code” will not be capitalized?

Yes. It is lower case in this context.

G.S. 143-138(b18) states:

(b18) Exclusion From Energy Efficiency Code Requirements for Certain Use and Occupancy Classifications.--The Council shall provide for an exemption from any requirements in the energy efficiency standards pursuant to Chapter 13 of the 2012 North Carolina Building Code and the 2012 Energy Conservation Code, and any subsequent amendments to the Building Code and Energy Conservation Code, for the following use and occupancy classifications pursuant to Chapter 3 of the 2012 North Carolina Building Code: Section 306, Factory Group F; Section 311, Storage Group S; and Section 312, Utility and Miscellaneous Group U. **This exclusion shall apply to the entire floor area of any structure for which the primary use or occupancy is listed herein.**

Is the “floor area” in the statute the same as the “entire building area” in this Rule?

Yes.

I take it you are adding this to the Existing Building Code, even though not expressly required to do so by G.S. 143-138(b18) because that Code requires following the Energy Conservation and Building Codes?

Yes.

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amanda J. Reeder
Commission Counsel

Date submitted to agency: January 31, 2018

Barry Gupton, PE
Chief Code Consultant

Amanda J. Reeder
Commission Counsel
Date submitted to agency: January 31, 2018

2018 NC Existing Building Code
101.12 Energy conservation. (170613 Item B-7)

101.12 Energy conservation

Per G.S. 143-138 (b18), no energy conservation code provisions shall apply to any structure for which the primary occupancy classification is Group F, S, or U. This exclusion shall apply to the entire building area.

The delayed effective date of this Rule is January 1, 2019.
The Statutory authority for Rule-making is G. S. 143-136; 143-138.

Amanda J. Reeder
Commission Counsel
Date submitted to agency: January 31, 2018

REQUEST FOR TECHNICAL CHANGE

AGENCY: NC Building Code Council

RULE CITATION: 2018 NC Residential Code, Tables N1102.1.2 and N1102.1.4

DEADLINE FOR RECEIPT: Friday, February 9, 2018

The Rules Review Commission staff has completed its review of this rule prior to the Commission's next meeting. The Commission has not yet reviewed this rule and therefore there has not been a determination as to whether the rule will be approved. You may call this office to inquire concerning the staff recommendation.

In reviewing these rules, the staff determined that the following technical changes need to be made:

On the Submission for Permanent Filing Form and Rule, please change the Code to the Residential Code.

Changed as required.

Table N1102.1.2: You did not make the changes proposed to the Ceiling R-Value in Climate Zones 4 and 5, nor the one in Wood Frame Wall R-Value. Was this in response to public comment?

Yes.

You are changing the existing language and adding entirely new language in the Footnotes. Please show all changes made after publication. Was this due to the approval of the Code by the RRC in September while this was still pending publication?

Yes. The proponent used the prior edition footnotes.

Table N1102.1.4: I do not see that you published this table in the August 1, 2017 Register. Did you publish it on a different date?

No. Tables N1102.1.2 and R402.1.2 were submitted as amendments to R-values. Tables N1102.1.4 and R402.1.4 are the corresponding changes to U-values. U-values are the inverse of R-values used for calculations.

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

**Barry Gupton, PE
Chief Code Consultant**

Amanda J. Reeder
Commission Counsel
Date submitted to agency: January 31, 2018

N1102.1.2 Insulation and fenestration criteria.

The *building thermal envelope* shall meet the requirements of Table N1102.1.2, based on the climate zone specified in N1101.7.

**TABLE N1102.1.2
 INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT^a**

CLIMATE ZONE	FENESTRATION U-FACTOR ^{b, j}	SKYLIGHT U-FACTOR ^b	GLAZED FENESTRATION SHGC ^{b, k}	CEILING R-VALUE ^m	WOOD FRAME WALL R-VALUE	MASS WALL R-VALUE ⁱ	FLOOR R-VALUE	BASEMENT WALL R-VALUE ^{c, o}	SLAB R-VALUE & DEPTH ^d	CRAWL SPACE WALL R-VALUE ^c
3	0.35	0.55 0.65	0.30	30 38 or 30ci ^l	13 45 or 13+2.5 ^h	5/13 or 5/10ci 5/10	19	10 5/13 ^f	0	5/13
4	0.35	0.55 0.60	0.30	38 or 30ci ^l	15 or ^h 13+2.5	5/13 or 5/10ci 5/10	19	10 / 13 45	10 ^d	10 / 13 45
5	0.35	0.55 0.60	NR	38 or 30ci ^l	19 ⁿ or ^h 13+5 Or ^h 15+3	13/17 or 13/12.5ci	^g 30	10 / 13 45	10 ^d	10 / 13 49

For SI: 1 foot = 304.8 mm.

- R-values are minimums. U-factors and SHGC are maximums. When insulation is installed in a cavity which is less than the label or design thickness of the insulation, the installed R-value of the insulation shall not be less than the R-value specified in the table.
- The fenestration U-factor column excludes skylights. The SHGC column applies to all glazed fenestration.
- "10/45 13" means R-10 continuous insulated sheathing on the interior or exterior of the home or R-45 13 cavity insulation at the interior of the basement wall or crawl space wall. "
- For monolithic slabs, insulation shall be applied from the inspection gap downward to the bottom of the footing or a maximum of 24 inches below grade whichever is less. For floating slabs, insulation shall extend to the bottom of the foundation wall or 24 inches, whichever is less. (See Appendix O) R-5 shall be added to the required slab edge R-values for heated slabs
- Deleted.
- Basement wall insulation is not required in warm-humid locations as defined by Figure N1101.7 and Table N1101.7.
- Or insulation sufficient to fill the framing cavity, R-19 minimum.
- The first value is cavity insulation, the second value is continuous insulation, so "13+5" means R-13 cavity insulation plus R-5 continuous insulation. If structural sheathing covers 25 percent or less of the exterior, insulating 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.
- The second R-value applies when more than half the insulation is on the interior of the mass wall.
- In addition to the exemption in Section N1102.3.3, a maximum of two glazed fenestration product assemblies having a U-factor no greater than 0.55 shall be permitted to be substituted for minimum code compliant fenestration product assemblies without penalty.

Amanda J. Reeder
 Commission Counsel
 Date submitted to agency: January 31, 2018

- k. In addition to the exemption in Section N1102.3.3, a maximum of two glazed fenestration product assemblies having a SHGC no greater than 0.70 shall be permitted to be substituted for minimum code compliant fenestration product assemblies without penalty.
- l. R-30 shall be deemed to satisfy the ceiling insulation requirement wherever the full height of uncompressed R-30 insulation extends over the wall top plate at the eaves. Otherwise R-38 insulation is required where adequate clearance exists or insulation must extend to either the insulation baffle or within 1" of the attic roof deck.
- m. Table value required except for roof edge where the space is limited by the pitch of the roof, there the insulation must fill the space up to the air baffle.
- n. R -19 fiberglass batts compressed and installed in a nominal 2 × 6 framing cavity is deemed to comply. Fiberglass batts rated R-19 or higher compressed and installed in a 2x4 wall is not deemed to comply.
- o. Basement wall meeting the minimum mass wall specific heat content requirement may use the mass wall R-value as the minimum requirement.

N1102.1.4 U-factor alternative.

An assembly with a *U*-factor equal to or less than that specified in Table N1102.1.4 shall be permitted as an alternative to the *R*-value in Table N1102.1.2.

**TABLE N1102.1.4
EQUIVALENT U-FACTORS^a**

CLIMATE ZONE	FENESTRATION U-FACTOR ^d	SKYLIGHT U-FACTOR	CEILING U-FACTOR	FRAME WALL U-FACTOR	MASS WALL U-FACTOR ^b	FLOOR U-FACTOR	BASEMENT WALL U-FACTOR	CRAWL SPACE WALL U-FACTOR
3	0.35	0.55 0.65	0.030 0.035	0.077 0.082	0.141	0.047	0.059 ^c 0.091 ^e	0.136
4	0.35	0.55 0.60	0.030	0.077	0.141	0.047	0.059	0.065
5	0.35	0.55 0.60	0.030	0.061	0.082	0.033	0.059	0.065

- a. Nonfenestration *U*-factors shall be obtained from measurement, calculation or an approved source.
- b. When more than half the insulation is on the interior, the mass wall *U*-factors shall be a maximum of 0.07 in Climate Zone 3, 0.07 in Climate Zone 4, and 0.054 in Climate Zone 5.
- c. Basement wall *U*-factor of 0.360 in warm-humid locations as defined by Figure N1101.7 and Table N1101.7.
- d. A maximum of two glazed fenestration product assemblies having a *U*-factor no greater than 0.55 and a SHGC no greater than 0.70 shall be permitted to be substituted for minimum code compliant fenestration product assemblies without penalty. When applying this note and using the REScheck "UA Trade-off" compliance method to allow continued use of the software, the applicable fenestration products shall be modeled as meeting the *U*-factor of 0.35 and the SHGC of 0.30, as applicable, but the fenestration products actual *U*-factor and actual SHGC shall be noted in the comments section of the software for documentation of application of this note to the applicable products. Compliance for these substitute products shall be verified compared to the allowed substituted maximum *U*-value requirement and maximum SHGC requirement, as applicable.

The delayed effective date of this Rule is January 1, 2019.

Amanda J. Reeder
Commission Counsel
Date submitted to agency: January 31, 2018

The Statutory authority for Rule-making is G. S. 143-136; 143-138.

Amanda J. Reeder
Commission Counsel
Date submitted to agency: January 31, 2018

REQUEST FOR TECHNICAL CHANGE

AGENCY: NC Building Code Council

RULE CITATION: 2018 NC Energy Conservation Code, Tables R402.1.2 and R402.1.4

DEADLINE FOR RECEIPT: Friday, February 9, 2018

The Rules Review Commission staff has completed its review of this rule prior to the Commission's next meeting. The Commission has not yet reviewed this rule and therefore there has not been a determination as to whether the rule will be approved. You may call this office to inquire concerning the staff recommendation.

In reviewing these rules, the staff determined that the following technical changes need to be made:

On the Submission for Permanent Filing Form and Rule, please change the Code to the Energy Conservation Code.

Changed as required.

Table R402.1.2: You did not make the changes proposed to the Ceiling R-Value in Climate Zones 4 and 5, nor the one in Wood Frame Wall R-Value. Was this in response to public comment?

Yes.

You are changing the existing language and adding entirely new language in the Footnotes. Please show all changes made after publication. Was this due to the approval of the Code by the RRC in September while this was still pending publication?

Yes. The proponent used the prior edition footnotes.

Table R402.1.4: I do not see that you published this table in the August 1, 2017 Register. Did you publish it on a different date?

No. Tables N1102.1.2 and R402.1.2 were submitted as amendments to R-values. Tables N1102.1.4 and R402.1.4 are the corresponding changes to U-values. U-values are the inverse of R-values used for calculations.

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

**Barry Gupton, PE
Chief Code Consultant**

Amanda J. Reeder
Commission Counsel
Date submitted to agency: January 31, 2018

R402.1.2 Insulation and fenestration criteria.

The *building thermal envelope* shall meet the requirements of Table R402.1.2, based on the climate zone specified in Chapter 3.

**TABLE R402.1.2
INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT^a**

CLIMATE ZONE	FENESTRATION U-FACTOR ^{b, j}	SKYLIGHT U-FACTOR ^b	GLAZED FENESTRATION SHGC ^{b, k}	CEILING R-VALUE ^m	WOOD FRAME WALL R-VALUE	MASS WALL R-VALUE ⁱ	FLOOR R-VALUE	BASEMENT WALL R-VALUE ^{c, o}	SLAB R-VALUE & DEPTH ^d	CRAWL SPACE WALL R-VALUE ^c
3	0.35	0.55 0.65	0.30	30 38 or 30ci ^l	13 45 or 13+2.5 ^h	5/13 or 5/10ci 5/10	19	10 5/13 ^f	0	5/13
4	0.35	0.55 0.60	0.30	38 or 30ci ^l	15 or ^h 13+2.5	5/13 or 5/10ci 5/10	19	10 / 13 45	10 ^d	10 / 13 45
5	0.35	0.55 0.60	NR	38 or 30ci ^l	19 ⁿ or ^h 13+5 Or ^h 15+3	13/17 or 13/12.5ci	^g 30	10 / 13 45	10 ^d	10 / 13 49

For SI: 1 foot = 304.8 mm.

- R-values are minimums. U-factors and SHGC are maximums. When insulation is installed in a cavity which is less than the label or design thickness of the insulation, the installed R-value of the insulation shall not be less than the R-value specified in the table.
- The fenestration U-factor column excludes skylights. The SHGC column applies to all glazed fenestration.
- "10/45-13" means R-10 continuous insulated sheathing on the interior or exterior of the home or R-45 13 cavity insulation at the interior of the basement wall or crawl space wall. "
- For monolithic slabs, insulation shall be applied from the inspection gap downward to the bottom of the footing or a maximum of 24 inches below grade whichever is less. For floating slabs, insulation shall extend to the bottom of the foundation wall or 24 inches, whichever is less. (See Appendix 2) R-5 shall be added to the required slab edge R-values for heated slabs
- Deleted.
- Basement wall insulation is not required in warm-humid locations as defined by Figure R301.1 and Table R301.1.
- Or insulation sufficient to fill the framing cavity, R-19 minimum.
- The first value is cavity insulation, the second value is continuous insulation, so "13+5" means R-13 cavity insulation plus R-5 continuous insulation. If structural sheathing covers 25 percent or less of the exterior, insulating 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.
- The second R-value applies when more than half the insulation is on the interior of the mass wall.
- In addition to the exemption in Section R402.3.3, a maximum of two glazed fenestration product assemblies having a U-factor no greater than 0.55 shall be permitted to be substituted for minimum code compliant fenestration product assemblies without penalty.

Amanda J. Reeder
Commission Counsel
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- k. In addition to the exemption in Section R402.3.3, a maximum of two glazed fenestration product assemblies having a SHGC no greater than 0.70 shall be permitted to be substituted for minimum code compliant fenestration product assemblies without penalty.
- l. R-30 shall be deemed to satisfy the ceiling insulation requirement wherever the full height of uncompressed R-30 insulation extends over the wall top plate at the eaves. Otherwise R-38 insulation is required where adequate clearance exists or insulation must extend to either the insulation baffle or within 1" of the attic roof deck.
- m. Table value required except for roof edge where the space is limited by the pitch of the roof, there the insulation must fill the space up to the air baffle.
- n. R -19 fiberglass batts compressed and installed in a nominal 2 × 6 framing cavity is deemed to comply. Fiberglass batts rated R-19 or higher compressed and installed in a 2x4 wall is not deemed to comply.
- o. Basement wall meeting the minimum mass wall specific heat content requirement may use the mass wall R-value as the minimum requirement.

R402.1.4 U-factor alternative.

An assembly with a *U*-factor equal to or less than that specified in Table R402.1.4 shall be permitted as an alternative to the *R*-value in Table R402.1.2.

**TABLE R402.1.4
EQUIVALENT U-FACTORS^a**

CLIMATE ZONE	FENESTRATION U-FACTOR ^d	SKYLIGHT U-FACTOR	CEILING U-FACTOR	FRAME WALL U-FACTOR	MASS WALL U-FACTOR ^b	FLOOR U-FACTOR	BASEMENT WALL U-FACTOR	CRAWL SPACE WALL U-FACTOR
3	0.35	0.55 0.65	0.030 0.035	0.077 0.082	0.141	0.047	0.059 ^c 0.091 ^e	0.136
4	0.35	0.55 0.60	0.030	0.077	0.141	0.047	0.059	0.065
5	0.35	0.55 0.60	0.030	0.061	0.082	0.033	0.059	0.065

- a. Nonfenestration *U*-factors shall be obtained from measurement, calculation or an approved source.
- b. When more than half the insulation is on the interior, the mass wall *U*-factors shall be a maximum of 0.07 in Climate Zone 3, 0.07 in Climate Zone 4, and 0.054 in Climate Zone 5.
- c. Basement wall *U*-factor of 0.360 in warm-humid locations as defined by Figure R301.1 and Table R301.1.
- d. A maximum of two glazed fenestration product assemblies having a *U*-factor no greater than 0.55 and a SHGC no greater than 0.70 shall be permitted to be substituted for minimum code compliant fenestration product assemblies without penalty. When applying this note and using the REScheck "UA Trade-off" compliance method to allow continued use of the software, the applicable fenestration products shall be modeled as meeting the *U*-factor of 0.35 and the SHGC of 0.30, as applicable, but the fenestration products actual *U*-factor and actual SHGC shall be noted in the comments section of the software for documentation of application of this note to the applicable products. Compliance for these substitute products shall be verified compared to the allowed substituted maximum *U*-value requirement and maximum SHGC requirement, as applicable.

The delayed effective date of this Rule is January 1, 2019.

Amanda J. Reeder
Commission Counsel
Date submitted to agency: January 31, 2018

The Statutory authority for Rule-making is G. S. 143-136; 143-138.

Amanda J. Reeder
Commission Counsel
Date submitted to agency: January 31, 2018

REQUEST FOR TECHNICAL CHANGE

AGENCY: NC Building Code Council

RULE CITATION: 2018 NC Plumbing Code, Section 202

DEADLINE FOR RECEIPT: Friday, February 9, 2018

The Rules Review Commission staff has completed its review of this rule prior to the Commission's next meeting. The Commission has not yet reviewed this rule and therefore there has not been a determination as to whether the rule will be approved. You may call this office to inquire concerning the staff recommendation.

In reviewing these rules, the staff determined that the following technical changes need to be made:

Please note that in the version of this Rule approved in August 2017, the sentence you are deleting began with a "The"

"The" will be added and struck.

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Barry Gupton, PE
Chief Code Consultant

Amanda J. Reeder
Commission Counsel
Date submitted to agency: January 31, 2018

2018 NC Plumbing Code
202 GENERAL DEFINITIONS. (170613 Item B-14)

SECTION 202 GENERAL DEFINITIONS

Water service pipe. The pipe from the water main or other source of potable water supply, or from the meter when the meter is at the public right of way, to the water distribution system of the building served. ~~The water service pipe shall terminate 5 feet (1524 mm) outside the foundation wall.~~

The delayed effective date of this Rule is January 1, 2019.
The Statutory authority for Rule-making is G. S. 143-136; 143-138.

Amanda J. Reeder
Commission Counsel
Date submitted to agency: January 31, 2018

REQUEST FOR TECHNICAL CHANGE

AGENCY: NC Building Code Council

RULE CITATION: 2018 NC Plumbing Code, 605.3

DEADLINE FOR RECEIPT: Friday, February 9, 2018

The Rules Review Commission staff has completed its review of this rule prior to the Commission's next meeting. The Commission has not yet reviewed this rule and therefore there has not been a determination as to whether the rule will be approved. You may call this office to inquire concerning the staff recommendation.

In reviewing these rules, the staff determined that the following technical changes need to be made:

The language in this proposed amendment does not match the language that was approved by the RRC at its August 2017 meeting. Please show all changes made to that approved language (such as the addition of "minimum" and "minimum rated").

The only intended changes to the August 2017 approved language are:

... ~~5 feet (1524 mm) outside the building~~ at or before the full-open valve located at the entrance to the structure. ...

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Barry Gupton, PE
Chief Code Consultant

Amanda J. Reeder
Commission Counsel
Date submitted to agency: January 31, 2018

2018 NC Plumbing Code
605.3 Water service pipe. (170613 Item B-15)

605.3 Water service pipe. Water service pipe shall conform to NSF 61 and shall conform to one of the standards listed in Table 605.3. **Water** service pipe or tubing, installed underground and outside of the structure, shall have **a working** pressure rating of **not less than** 160 psi (1100 kPa) at 73.4°F (23°C). Where the water pressure exceeds 160 psi (1100 kPa), piping material shall have **a working** pressure rating **not less than** the highest available pressure. Water service piping materials not third-party certified for water distribution shall terminate ~~5 feet (1524 mm) outside the building at or before the full-open valve located at the entrance to the structure.~~ **Ductile** iron water service piping shall be cement mortar lined in accordance with AWWA C104.

The delayed effective date of this Rule is January 1, 2019.
The Statutory authority for Rule-making is G. S. 143-136; 143-138.

August 2017 approved language

605.3 Water service pipe. Water service pipe shall conform to NSF 61 and shall conform to one of the standards listed in Table 605.3. Water service pipe or tubing, installed underground and outside of the structure, shall have a working pressure rating of not less than 160 psi (1100 kPa) at 73.4°F (23°C). Where the water pressure exceeds 160 psi (1100 kPa), piping material shall have a working pressure rating not less than the highest available pressure. Water service piping materials not third-party certified for water distribution shall terminate **5 feet (1.524 m) outside of the building.** Ductile iron water service piping shall be cement mortar lined in accordance with AWWA C104.

Amanda J. Reeder
Commission Counsel
Date submitted to agency: January 31, 2018