



ORIGINAL

6/24/14

**EMERGENCY RULE-MAKING
FINDINGS OF NEED
[G.S. 150B-21.1A]**

OAH USE ONLY

VOLUME:

ISSUE:

1. Rule-Making Agency: NC Building Code Council

2. Rule citation(s): 2012 NC Energy Conservation and Residential Codes Chapters 2, 4 and 11, Low Emissivity Fenestration Product

3. Adoption by agency on: June 10, 2014

4. Date agency requests entry of emergency rule in the Code: July 15, 2014

5. What is the need for an emergency rule?

We now have information that reflective energy from some Low-E windows can cause damage to property and may have the potential to create a fire hazard.

6. Has the agency provided the public with abbreviated notice? If so, describe.

No. The Building Code Council also adopted a Temporary Rule at the same as time for continuation of the Rule process.

7. Why is adherence to notice and hearing requirements contrary to the public interest and that the immediate adoption of the rule required by a serious and unforeseen threat to the public health or safety?

Citizens of North Carolina, as well as other states, have been plagued by documented cases of intense reflective energy from Low-E windows causing damage to vinyl siding on homes and plastic parts of automobiles. The Building Code Council is now aware of four documented cases of fires being caused by similar reflective energy involving Four Seasons and Cardinal IG Co. In these four cases, the Consumer Products Safety Commission, in cooperation with the manufacturer, issued a voluntary recall. Given the prevalence of this problem and concern that intense reflective energy may have the potential to create a fire hazard, the North Carolina Building Code Council seeks to remove the mandatory requirement for Low-E glass from the North Carolina Residential Code until a solution can be found to eliminate this potential hazard.

OFFICE OF
ADMIN HEARINGS

2014 JUN 24 AM 8:30

FILED

[Emergency Rule-making Findings of Need Continued]

8. Does the agency have specific statutory authority for the adoption of an emergency rule? If so, has the agency met the statutory criteria for adoption? (attach copy of statutory authority)

Yes. GS 143-138. Yes.

9. Has the agency submitted the proposed temporary rule for publication on the Internet in accordance with G.S. 150B-21.1(a3)?

- Yes
 No

10. Rule establishes or increases a fee? (See G.S. 12-3.1)

- Yes
Agency submitted request for consultation on:
Consultation not required. Cite authority:
- No

11. Rule-making Coordinator: Barry Gupton

Phone: 919-661-5880

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Agency contact, if any: Barry Gupton

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E-Mail: barry.gupton@ncdoi.gov

12. Signature of Agency Head*:



* If this function has been delegated (reassigned) pursuant to G.S. 143B-10(a), submit a copy of the delegation with this form.

Typed Name: Dan Tingen, Chair

Title: NC Building Code Council

REVIEW BY THE CODIFIER OF RULES

Approved. Entered into the North Carolina Administrative Code on: 2 July 2014

Reviewed By: [Signature]
Date: 24 June 2014

Comments: Notified Barry Gupton 06/24/14 2:50 pm

Statement does not meet the criteria.

Reviewed By: _____
Date: _____

Comments:

§ 143-138. North Carolina State Building Code.

(a) Preparation and Adoption. - The Building Code Council may prepare and adopt, in accordance with the provisions of this Article, a North Carolina State Building Code. Before the adoption of the Code, or any part of the Code, the Council shall hold at least one public hearing. A notice of the public hearing shall be published in the North Carolina Register at least 15 days before the date of the hearing. Notwithstanding G.S. 150B-2(8a)h., the North Carolina State Building Code as adopted by the Building Code Council is a rule within the meaning of G.S. 150B-2(8a) and shall be adopted in accordance with the procedural requirements of Article 2A of Chapter 150B of the General Statutes.

The Council shall request the Office of State Budget and Management to prepare a fiscal note for a proposed Code change that has a substantial economic impact, as defined in G.S. 150B-21.4(b1), or that increases the cost of residential housing by eighty dollars (\$80.00) or more per housing unit. The change can become effective only in accordance with G.S. 143-138(d). Neither the Department of Insurance nor the Council shall be required to expend any monies to pay for the preparation of any fiscal note under this section by any person outside of the Department or Council unless the Department or Council contracts with a third-party vendor to prepare the fiscal note.

(b) Contents of the Code. - The North Carolina State Building Code, as adopted by the Building Code Council, may include reasonable and suitable classifications of buildings and structures, both as to use and occupancy; general building restrictions as to location, height, and floor areas; rules for the lighting and ventilation of buildings and structures; requirements concerning means of egress from buildings and structures; requirements concerning means of ingress in buildings and structures; rules governing construction and precautions to be taken during construction; rules as to permissible materials, loads, and stresses; rules governing chimneys, heating appliances, elevators, and other facilities connected with the buildings and structures; rules governing plumbing, heating, air conditioning for the purpose of comfort cooling by the lowering of temperature, and electrical systems; and such other reasonable rules pertaining to the construction of buildings and structures and the installation of particular facilities therein as may be found reasonably necessary for the protection of the occupants of the building or structure, its neighbors, and members of the public at large.

(b1) Fire Protection; Smoke Detectors. - The Code may regulate activities and conditions in buildings, structures, and premises that pose dangers of fire, explosion, or related hazards. Such fire prevention code provisions shall be considered the minimum standards necessary to preserve and protect public health and safety, subject to approval by the Council of more stringent provisions proposed by a municipality or county as provided in G.S. 143-138(e). These provisions may include regulations requiring the installation of either battery-operated or electrical smoke detectors in every dwelling unit used as rental property, regardless of the date of construction of the rental property. For dwelling units used as rental property constructed prior to 1975, smoke detectors shall have an Underwriters' Laboratories, Inc., listing or other equivalent national testing laboratory approval, and shall be installed in accordance with either the standard of the National Fire Protection Association or the minimum protection designated in the manufacturer's instructions, which the property owner shall retain or provide as proof of compliance.

(b2) Carbon Monoxide Detectors. - The Code (i) may contain provisions requiring the installation of either battery-operated or electrical carbon monoxide detectors in every dwelling unit having a fossil-fuel burning heater, appliance, or fireplace, and in any dwelling unit having an attached garage and (ii) shall contain provisions requiring the installation of electrical carbon monoxide detectors at a lodging establishment. Violations of this subsection and rules adopted pursuant to this subsection shall be punishable in accordance with subsection (h) of this section and G.S. 143-139. In particular, the rules shall provide:

- (1) For dwelling units, carbon monoxide detectors shall be those listed by a nationally recognized testing laboratory that is OSHA-approved to test and certify to American National Standards Institute/Underwriters Laboratories Standards ANSI/UL2034 or ANSI/UL2075 and shall be installed in accordance with either the standard of the

Suggested language for low emissivity glazing emergency rule –One and Two family dwellings and townhouses

Add to the 2012 NCECC, in Chapter 2 the following definition:

Low Emissivity Fenestration Product. A fenestration product containing glass which has a transparent coating which acts as a thermal mirror and is used to increase a window's insulating value, block or increase heat flow, and reduce fading.

For the 2012 NCECC, Chapter 4, modify Table 402.1.1 as follows:

**TABLE 402.1.1
INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT^a**

CLIMATE ZONE	FENESTRATION U-FACTOR b, <u>l</u>	SKYLIGHT ^b U-FACTOR	GLAZED FENESTRATION SHGC b,e, <u>m</u>	CEILING R-VALUE ^k	WOOD FRAME WALL R-VALUE ^e	MASS WALL R-VALUE ⁱ	FLOOR R-VALUE	BASEMENT ^c WALL R-VALUE	SLAB ^d R-VALUE & DEPTH	CRAWL SPACE ^c WALL R-VALUE
3	0.35	0.65	0.30	30	13	5/10	19	10/13 ^r	0	5/13
4	0.35	0.60	0.30	38 or 30 cont. ^j	15, 13+2.5 ^h	5/10	19	10/13	10	10/13
5	0.35	0.60	NR	38 or 30 cont. ^j	19, 13+5, or 15+3 ^{eh}	13/17	30 ^g	10/13	10	10/13

l. For one- and two-family dwellings and townhouses, non-low emissivity glazed fenestration products may be substituted for low emissivity glazed fenestration products without energy penalty where judged by the permit holder to be a safety concern due to reflection of concentrated sunlight. The substitute fenestration products shall have a maximum U-value of 0.55. When applying this note, the use shall be documented to allow identification for compliance with this requirement.

m. For one- and two-family dwellings and townhouses, non-low emissivity glazed fenestration products may be substituted for low emissivity glazed fenestration products without energy penalty where judged by the permit holder to be a safety concern due to reflection of concentrated sunlight. The substitute fenestration products shall have a maximum solar heat gain coefficient of 0.80. When applying this note, the use shall be documented to allow identification for compliance with this requirement.

For the 2012 NCECC, Chapter 4, modify Table 402.1.3 as follows:

**TABLE 402.1.3
EQUIVALENT U-FACTORS_a**

CLIMATE ZONE	FENESTRATION U-FACTOR _e	SKYLIGHT U-FACTOR	CEILING U-FACTOR	FRAME WALL U-FACTOR	MASS WALL U-FACTOR _b	FLOOR U-FACTOR	BASEMENT WALL U-FACTOR _d	CRAWL SPACE WALL U-FACTOR _c
3	0.35	0.65	0.035	0.082	0.141	0.047	0.059	0.136
4	0.35	0.60	0.030	0.077	0.141	0.047	0.059	0.065
5	0.35	0.60	0.030	0.061	0.082	0.033	0.059	0.065

e. For one- and two-family dwellings and townhouses, non-low emissivity glazed fenestration products may be substituted for low emissivity glazed fenestration products without energy penalty where judged by the permit holder to be a safety concern due to reflection of concentrated sunlight. The substitute fenestration products shall have a maximum U-value of 0.55. When applying this note, the use shall be documented to allow identification for compliance. When applying this note and using REScheck, to allow continued use of the software, the applicable fenestration product 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-value and 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 subject products shall be verified compared to the allowed substituted maximum U-value requirement and maximum SHGC requirement, as applicable.

For the 2012 NCECC, Chapter 4, add an exception to:

402.3.5 Thermally isolated conditioned sunroom U-factor and SHGC

Exception: For one- and two-family dwellings and townhouses, non-low emissivity glazed fenestration products may be substituted for low emissivity glazed fenestration products without energy penalty where judged by the permit holder to be a safety concern due to reflection of concentrated sunlight. The substitute fenestration products shall have a maximum U-value of 0.55 and, when cooling is provided, a maximum SHGC of 0.80. When applying this note, the use shall be documented to allow identification for compliance with this requirement.

402.5 Maximum fenestration U-factor and SHGC (Mandatory)

Exception: For one- and two-family dwellings and townhouses, non-low emissivity glazed fenestration products may be substituted for low emissivity glazed fenestration products without energy penalty where judged by the permit holder to be a safety concern due to reflection of concentrated sunlight. The substitute fenestration products shall have a maximum U-value of 0.55 and a maximum SHGC of 0.80. When applying this note, the use shall be documented to allow identification for compliance.

Add to the 2012 NC Residential Code, in Chapter 2 the following definition:

Low Emissivity Fenestration Product. A fenestration product containing glass which has a transparent coating which acts as a thermal mirror and is used to increase a window's insulating value, block or increase heat flow, and reduce fading.

For the 2012 NC Residential Code, Chapter 11, modify Table N1102.1as follows:

**TABLE N1102.1
INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT^a**

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

l. For one- and two-family dwellings and townhouses, non-low emissivity glazed fenestration products may be substituted for low emissivity glazed fenestration products without energy penalty where judged by the permit holder to be a safety concern due to reflection of concentrated sunlight. The substitute fenestration products shall have a maximum U-value of 0.55. When applying this note, the use shall be documented to allow identification for compliance with this requirement.

m. For one- and two-family dwellings and townhouses, non-low emissivity glazed fenestration products may be substituted for low emissivity glazed fenestration products without energy penalty where judged by the permit holder to be a safety concern due to reflection of concentrated sunlight. The substitute fenestration products shall have a maximum solar heat gain coefficient of 0.80. When applying this note, the use shall be documented to allow identification for compliance with this requirement.

For the 2012 NC Residential Code, Chapter 11, modify Table N1102.1.2 as follows:

**TABLE N1102.1.2
EQUIVALENT U-FACTORS^a**

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

e. For one- and two-family dwellings and townhouses, non-low emissivity glazed fenestration products may be substituted for low emissivity glazed fenestration products without energy penalty where judged by the permit holder to be a safety concern due to reflection of concentrated sunlight. The substitute fenestration products shall have a maximum U-value of 0.55. When applying this note, the use shall be documented to allow identification for compliance. When applying this note and using REScheck, to allow continued use of the software, the applicable fenestration product 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-value and 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 subject products shall be verified compared to the allowed substituted maximum U-value requirement and maximum SHGC requirement, as applicable.

For the 2012 NC Residential Code, add an exception to:

N1102.3.5 Thermally isolated conditioned sunroom U-factor and SHGC

Exception: For one- and two-family dwellings and townhouses, non-low emissivity glazed fenestration products may be substituted for low emissivity glazed fenestration products without energy penalty where judged by the permit holder to be a safety concern due to reflection of concentrated sunlight. The substitute fenestration products shall have a maximum U-value of 0.55 and, when cooling is provided, a maximum SHGC of 0.80. When applying this note, the use shall be documented to allow identification for compliance with this requirement.

N1102.5 Maximum fenestration U-factor and SHGC

Exception: For one- and two-family dwellings and townhouses, non-low emissivity glazed fenestration products may be substituted for low emissivity glazed fenestration products without energy penalty where judged by the permit holder to be a safety concern due to reflection of concentrated sunlight. The substitute fenestration products shall have a maximum U-value of 0.55 and a maximum SHGC of 0.80. When applying this note, the use shall be documented to allow identification for compliance.

Commentary

The value for maximum U-value identified above for the substituted glazed fenestration products is extracted from the table for the default glazed fenestration U-value properties for unlabeled glazed fenestration products identified in Table 303.1.3(1). The value for maximum SHGC identified above for the substituted glazed fenestration products was originally extracted from the table for the default glazed fenestration SHGC properties for unlabeled glazed fenestration products identified in Table 303.1.3(3) which was 0.70 maximum but was revised to 0.80 maximum based on reports of product availability in the marketplace. When applying this exception, the use shall be documented by the permit holder to allow determination of compliance by the inspector for the substituted fenestration product. Substitute fenestration products will be allowed to be modeled in the REScheck analyses as conforming to the maximum table requirements for U-value and SHGC, as applicable, to allow continued use of the REScheck program without energy penalty. When using the REScheck compliance program for the NC requirements, document the substitute glazed fenestration products via the "Project" tab page under the "Notes" section and identify the applicable glazed fenestration as assigned by the program for the substitute glazed fenestration products. Include the actual U-value and SHGC for the substitute products. This will identify the exempted fenestration products on the program's "compliance certificate". Also, this information should be documented in the "notes" cell for the particular fenestration product. This will identify the exempted fenestration product on the program's "inspection checklist". Then verification of compliance for these subject substituted glazed fenestration products will be verified compared to the requirements of the substitute glazed fenestration product maximum U-value and SHGC requirements.