June 2020

Contents

Table of Contents
Introduction .................................................................................................................................................. 2
Current Topics ........................................................................................................................................... 2
  Technical Bulletin – Metal Roof Installations .................................................................................. 2
Recurring Articles .................................................................................................................................. 3
  Building Code Council Approved Rule Changes ........................................................................ 3
  Qualification Board Update ............................................................................................................. 5
    Temporary Certificates and Covid-19 .............................................................................................. 5
  Residential Changeout Inspector Certification Update ................................................................. 6
  Minutes .................................................................................................................................................. 6
Department Notes ................................................................................................................................... 6
  Engineering Department ................................................................................................................... 6
  Personnel Notes ............................................................................................................................... 6
  Deputy Commissioner Recognized ............................................................................................... 7
Introduction
Welcome to the June 2020 OSFM Engineering Newsletter. Work never stopped at OSFM during this pandemic. It has changed somewhat, and many staff members focused their work on preparing training slides, updating interpretations, and other tasks that can be done while working remotely. Presently, as of June 15th, the Albemarle building is back fully open to employees, including the Engineering Division within OSFM.

During the work-remotely time period, there was a concerted push to develop the Residential Changeout Inspector (RCI) curriculum, and that task is on schedule and the team is excited about the benefits the course will provide for the code officials, as well as the permit holders and the general public who will benefit from this changeout-focused certificate.

Please take a moment to read the Technical Bulletin concerning problems with residential metal roof installations in the Current Topics section, along with the updates from the Building Code Council meetings and other recurring articles.

Current Topics

Technical Bulletin – Metal Roof Installations
The Engineering team has researched and reviewed the issue of metal roofing panels in North Carolina. The conclusion is that permit holders are responsible for meeting the NC Code, specifically the 2018 NC Residential Code (NCRC). Within the NCRC, R905.1 Roof Covering Application states, “Roof coverings shall be applied in accordance with the applicable provisions of this section and the manufacturer's installation instructions. Unless otherwise specified in this section, roof coverings shall be installed to resist the component and cladding loads specified in Table R301.2(2), adjusted for height and exposure in accordance with Table R301.2(3).” Any roof coverings shall be installed to meet these tables and any other provisions of the NCRC.

A guidance paper on residential plan review was issued to give needed understanding in a broad way to jurisdictions that perform residential plan review. It is located here:

This plan review under Section 4. Structural Plans – Roofs – “Live loads, size of members, type of members (solid sawn, engineered, etc.), spacing, minimum required wood grade of members, means of anchorage to wall, minimum required grade and type of roof sheathing”. This would include information on the metal panels such as the thickness, type, spacing, etc. in
order to meet the NCRC tables and Code. An inspector can ask for documentation on roofing material, testing, fastener spacing to verify it does meet the NCRC. Some further research shows the following:

A - The Residential Code does not specifically require that aluminum panels comply with UL 1897. Based on the description on UL’s site UL 1897 is a test method rather than a material or component requirement.

B - The Residential Code Table R905.10.3(1) requires aluminum panels comply with ASTM B 209. Which, based on the description on ASTM’s web site, has material properties but not structural performance requirements.

C - The Residential Code Section 905.1 requires roof coverings be installed to resist the component and cladding loads specified in Table R301.2(2), adjusted for height and exposure in accordance with Table R301.2(3) – as stated earlier.

The following are ways we believe the permit holder may document that an aluminum panel complies with the code requirement to resist the required loads. Such documentation is not required but an inspector can request:

Provide a Building Code Compliance Report from an acceptable testing agency documenting compliance with the requirements of the Residential Code, to include Tables R301.2(2) and R301.2(3).

1. Provide a copy of a test report based on UL 1897 or equivalent test procedure. The test report must indicate the details of installation for the test and the test pressure. The test pressure must at least equal the pressure from Tables R301.2(2) and R301.2(3).
2. Provide an engineered design specifying the material and installation required to comply with the Residential Code, to include Tables R301.2(2) and R301.2(3).

Typically, building inspectors do not inspect residential roofing installations. Like other materials and installations, inspectors do not visibly inspect all aspects of construction. The nailing (or fastening) patterns are often not observed on roofs; regardless, it is the responsibility of the permit holder to meet the Code. Simply stating that a building was passed by the inspector does not remove the obligation of the permit holder to meet the Codes. We will note that re-roofing jobs must also comply with the NCRC, but they are not required to be permitted and inspected if the project is less than $15,000 (NCGC157A-357 and 160A-417 and 1/1/2021 160D-1110).

Recurring Articles

Building Code Council Approved Rule Changes
The December 2019 and March 2020 Building Code Council meetings were held as scheduled. Presently, the June 2020 meeting has been tentatively rescheduled for July 14th, 2020. Please refer to the following link to review the list of D-Items from the December 2019 Building Code Council Meeting, of which there were nine D-items up for review, and none of these were declined.

BCC Meeting Minutes-December 2019

However, three items in the March meeting were approved, but they were contested after Rules Review, so they are not available for use until the contested issues are resolved. Items D-7, D-8, and D-11a are so noted. BCC Meeting Minutes-March 10, 2019
Assuming the December and March BCC-approved D-Items are approved by the Rule Review Commission, the adopted rules will be placed on the NCDOI Engineering website. The compilation of previously approved rules is in the document “2017-2021 Approved Cumulative Amendments [Effective 1/1/2019]” document.

2017-2021 Approved Cumulative Amendments (Effective 1/1/2019)

The full review of the December-approved code amendments is left to the reader, but the titles of each item are bulleted below.

BCC Proposed Amendments-December 2019

- Item D – 1 Request by Dan Dittman representing the N.C. Department of Insurance to amend the 2018 NC Mechanical Code, Section 202 General Definition as follows: (Remainder not shown for brevity) – proposal approved.
- Request by Dan Dittman representing the NC Department of Insurance to amend the 2018 NC Residential Code, Section M1411.3.2 as follows: (Remainder not shown for brevity) – proposal approved.
- Item D – 3 Request by Dan Dittman representing the NC Department of Insurance to amend the 2018 NC Residential Code, Section M1502.1 as follows: (Remainder not shown for brevity) – proposal approved.
- Item D-4 Request by Dan Dittman representing the NC Department of Insurance to amend the 2018 NC Residential Code, Section M1502.4.2 as follows: (Remainder not shown for brevity) – proposal approved.
- Item D – 5 Request by Dan Dittman representing the N.C. Department of Insurance to amend the 2018 NC Residential Code, Section M1602.3 as follows: (Remainder not shown for brevity) – proposal approved.
- Item D – 6 Request by Kevin Schwartz representing Valet Living LLC to amend the 2018 NC Fire Code, Section 304.4 as follows: (Remainder not shown for brevity) - proposal approved.
- Item D – 7 Request by Patrick Granson representing the Mecklenburg County Code Enforcement to amend the 2018 NC Fire Code Section 3103.2 as follows: (Remainder not shown for brevity) – proposal approved.
- Item D – 8 Request by Keith Rogers representing the North Carolina Building Code Council Mechanical Standing Committee to amend the 2018 NC Residential Code Section P2603.5 as follows: (Remainder not shown for brevity) – proposal approved.
- Item D – 9 Request by Robert Privott representing the North Carolina Home Builders Association to amend the 2018 Residential Code, Section R506.2.1 as follows: (Remainder not shown for brevity) – proposal approved.

BCC Proposed Amendments-March 2020

- Item D – 1 Request by Jackie Flemming and Doug Allen representing Simpson Strong-Tie to amend the 2018 NC Residential Code, Appendix M, Section AM109.1.4 as follows: (Remainder not shown for brevity) – proposal approved.
- Item D – 2 Request by Charles Watts, AIA representing The Apartment Association of North Carolina to amend the 2018 NC Building Code, Section 1107.6.2.2.1 as follows: (Remainder not shown for brevity) – proposal approved.
- Item D-3 Request by Colin Triming representing North Carolina Fire Code Revision Committee to amend the 2018 NC Building Code and Fire Prevention Code, Section 905.3.1 as follows: (Remainder not shown for brevity) – proposal approved.
- Item D – 4 NOTE: Due to some word changes during the edit process, the item that would have been D – 4 remained a C - item for the March 10, 2020 meeting. Therefore, there was no D – 4 for this meeting.
- Item D – 5 NOTE: Due to some word changes during the edit process, the item that would have been D – 5 remained a C - item for the March 10, 2020 meeting. Therefore, there was no D – 5 for this meeting.
• Item D – 6 Request by Cliff Isaac representing the N.C. Department of Insurance to amend the 2018 N.C. Administrative Code and Policies as follows: (Remainder not shown for brevity) – proposal approved.
• Item D – 7 Request by Jerry Fraker and Leon Skinner representing the City of Raleigh to amend the 2018 N.C. Plumbing Code, Section 702.1 Exception as follows: (Remainder not shown for brevity) – proposal approved – BEING CONTESTED AT RULES REVIEW, UNAVAILABLE FOR USE
• Item D – 8 Request by Jerry Fraker and Leon Skinner representing the City of Raleigh to amend the 2018 N.C. Plumbing Code, Section 702.4 Fittings as follows: (Remainder not shown for brevity) – proposal approved - BEING CONTESTED AT RULES REVIEW, UNAVAILABLE FOR USE
• Item D – 9 Request by Jerry Fraker and Leon Skinner representing the City of Raleigh to amend the 2018 N.C. Plumbing Code, Section 1102.2 as follows: (Remainder not shown for brevity) – proposal approved
• Item D – 10 Request by Jerry Fraker and Leon Skinner representing the City of Raleigh to amend the N.C. Plumbing Code, Section 917 as follows: (Remainder not shown for brevity) – proposal approved

• Item D– 11 Request by Jerry Fraker and Leon Skinner representing the City of Raleigh to amend the 2018 N.C. Plumbing Code, Section 917.1.1 as follows: (Remainder not shown for brevity) – proposal approved
• Item D – 11A Request by Jerry Fraker and Leon Skinner representing the City of Raleigh to amend the 2018 N.C. Plumbing Code, Section 1102.7 as follows: (Remainder not shown for brevity) – proposal approved - BEING CONTESTED AT RULES REVIEW, UNAVAILABLE FOR USE
• Item D – 12 Request by Cothran Harris representing the North Carolina Self Storage Association (NCSSA) to amend the 2018 N.C. Building Code, Table 504.4 as follows: (Remainder not shown for brevity) – proposal approved
• Item D – 13 Request by Robert Schwachenwald representing Bizzy Bee Plumbing, Inc. to amend the 2018 N.C. Plumbing Code, Section 718 and Chapter 15 as follows: (Remainder not shown for brevity) – proposal approved
• Item D – 14 Request by Colin Triming representing the N.C. Fire Code Revision Committee to amend the 2018 Fire Code, Section 321 as follows: (Remainder not shown for brevity) – proposal approved
• Item D – 15 Request by David Smith representing the N.C. Residential Code Ad-Hoc Committee to amend the 2018 N.C. Residential Code, Section R311.7.8.1 as follows: (Remainder not shown for brevity) – proposal approved

Qualification Board Update
Temporary Certificates and Covid-19
Due to COVID-19, all community college courses were cancelled in March 2020. The inability to complete courses and take state exams created a potential hardship for code officials who have active probationary certificates. Due to this hardship, the NC Code Officials Qualification Board held an Emergency Board meeting to discuss and approve the issuance of a Temporary Certificate. The issuance of a Temporary Certificate was made on April 20, 2020. A Temporary Certificate was issued to a code official who had or has a probationary certificate with an expiration date between March 12, 2020 through December 31, 2020. This Temporary certificate is for the same trade and level as the probationary certificate that falls within the applicable expiration date. This certificate is not renewable or extendable and expires March 12, 2021. The Temporary Certificate is denoted with a “T” when viewed online. The Board will continue to monitor the impacts of COVID-19 on inspector certifications and take appropriate actions as necessary.
Residential Changeout Inspector Certification Update
As reported in the November 2019 Engineering Newsletter, the NC Code Officials Qualification Board has a new inspector certification available. It is the Residential Changeout Inspector (RCI) certification. This certification will be used in residential occupancies which includes one-two family dwellings, townhomes, condos, and apartments where the appliance is used for one dwelling unit. The inspection is for the replacement of existing like-for-like single phase HVAC systems and gas and electric water heaters. There is no level attached to the certification.

Course development for this new certification is ongoing and expected to be available by January 1, 2021. At this point, the course is estimated to cover four days and includes electrical, mechanical, and plumbing components of an appliance changeout. The Board’s staff anticipates administering the RCI exams for the first six months before transferring the exam to the computer-based testing vendor.

Further information will be posted as more details are confirmed.

Minutes
The minutes of the Qualifications Board Meeting Minutes are available at the following links:

Meeting Minutes and Agendas

Individuals wishing to provide feedback are encouraged to contact Kathy Williams at Kathy.Williams@ncdoi.gov

Department Notes

Engineering Department Personnel Notes
There has been some moving around within the Engineering Department due to retirements, new hires, and job duty changes over the past several years, but we currently have all the positions filled.

Here is the staff as of 06/15/2020:

- Bill Kirk: Building Code (non-accessibility)  
  919-647-0025  bill.kirk@ncdoi.gov
- Charlie Johnson: Fire Code (includes Chapter 9 of the NCBC)  
  919-647-0094  charlie.johnson@ncdoi.gov
- Bill Murchison: Residential Code (structural)  
  919-647-0016, 919-215-9226 (cell)  bill.murchison@ncdoi.gov
- Jim Rodgers: Residential Code (non-structural)  
  919-647-0056, 919-270-3699 (cell)  jim.rodgers@ncdoi.gov
- Dan Austin: Existing Building Code  
  919-647-0011  dan.austin@ncdoi.gov
- Tara Barthelmes: Accessibility  
  919-647-0014  tara.barthelmes@ncdoi.gov
- Mark Burns: Plumbing Code  
  919-647-0006  mark.burns@ncdoi.gov
- David Rittlinger: Mechanical and Fuel Gas Code  
  919-647-0008  david.rittlinger@ncdoi.gov
- Dan Dittman: Energy Code
  919-647-0012  dan.dittman@ncdoi.gov
- Danny Thomas: Electrical Code – General Questions
  919-647-0062  daniel.thomas@ncdoi.gov
- Joe Starling: State Electrical Engineer
  919-647-0020  joseph.starling@ncdoi.gov

In addition the following topics will be addressed by:

- **Cliff Isaac**: Statutes, Appeals, Council items (other than meeting minutes and agenda), Engineer Elements and Components,
  919-647-0067, 919-605-9652 (cell)  cliff.isaac@ncdoi.gov
- **Carl Martin**: BCC meeting minutes and agenda, Rules Review Commission, Formal interpretations, Administrative Code (non-statute)
  919-647-0009  carl.martin@ncdoi.gov
- **Mike Page**: Answers questions as backup if staff is out
  919-647-0017  mike.page@ncdoi.gov
- **Sam Whittington**: Certification and Investigator, Complaints
  919-647-0028  sam.whittington@ncdoi.gov
- **Thomas Cooney**: Certification and Investigator, Complaints
  919-647-0105  thomas.cooney@ncdoi.gov

Mr. Ali Kojoori was in the position of Chief Residential Code Consultant, but he has transferred to the Private Plan Review section.

**Deputy Commissioner Recognized**

Mr. Cliff Isaac, PE, has been recognized by ICC for his work in bettering the code and the code enforcement in North Carolina. The following link will transfer you to the article:


**New Code Interpretations, Guidance Papers, and Appeals Posted**

Since the prior newsletter, the following web interpretations, guidance papers, or appeals have been posted. Trades not shown did not have new web interpretations posted.

Code, Guidance, Appeals link:

Interpretations

Administrative
  107.1.2 - Under-slab Inspection.pdf

Residential
  0308.4 - Safety Film for Hazardous Glass Locations.pdf
  0315 - Carbon Monoxide Alarms.pdf
  0403 - Maximum Prescriptive Point Load on Slab.pdf
Accessibility Interpretations
Note: Previously, it was cited that the interpretations within the Accessibility Newsletters were the equivalent of a web interpretation, but the current Chief Building Code Consultant, Carl Martin, has deemed them to more appropriately be guidance or informal interpretations. This note will be included in future printings.

The accessibility interpretations/newsletters/presentations are located on their own webpage, see following link: http://www.ncdoi.com/OSFM/Engineering_and_Codes/Default.aspx?field1=Code_Enforcement_-_Accessibility_Update_-_Newsletters&user=Code_Enforcement_Resources&sub=Accessibility_Update

Also refer to the Reminders and other Resources section for a summary table of the volumes and issues posted.

Electrical Interpretations
On the main matrix showing interpretations, the cell for Electrical – 2017 is blank. However, there are interpretations for the 2017 NC Electrical Code, but they are available in a different location, see following link:


The link should take you to a webpage, and you should see the following line items. Click on the 2017 Electrical Interpretations.

2017 NEC - Effective June 12, 2018 (Current Edition)

- 2017 NC Amendments
- 2017 NC Additional Amendments (Updated December 17, 2019)
- 2017 Electrical Interpretations

2014 NEC - Effective April 1, 2016 through June 11, 2018

Also be sure to check out the illustrations for selected interpretations available under the Electrical Education Resources tab.

Formal Interpretations and Appeals
Here are the Formal Interpretations posted since the prior Newsletter:

191118 Whaley - NCPC 403.3.3 Fixture Location Relative to Adjacent Building.pdf
191213 Askew - NCBC 508.2.2 Accessory Occupancy Story Limitation.pdf
191216 Gough - Manual S Cold Climate.pdf
200312 Kugler - NCBC 1109.13 Apex All Starz Thermostat Height.pdf
200317 Burke - NCMC Table 403.3.1.1 Pet Shop Ventilation Requirements.pdf
200317 Fasolino - Dwelling Unit Mixed Occupancy Separation Requirements.pdf
Formal interpretations and Appeals are available in the interpretations link shown above. They are located under the table heading “SPECIFIC ACTIONS”.

**Cumulative Supplements**
Cumulative code changes and their adoption dates can be found on the DOI website at:

Cumulative code changes link:

Remember, refer to NC Administrative Code section 102.4 Effective date of rules, and 102.5 Interim use of approved rules for clarification of effective dates and the process for using approved rules prior to the effective date.

**Education Section**

**OSFM Engineering Division Programs – Inspector Education FY 2019-2020**

As of the April meeting of the Code Officials Qualification Board about 75% of Code Enforcement Officials had earned enough Continuing Education credit to renew their certificates. Due to the COVID-19 emergency, many planned sponsor seminars were canceled due to meeting size and travel restrictions. Realizing the hardship, the Board delayed and extended the CE requirement until FY 2021. Inspectors should be aware that 12 hours of CE will be required in each trade for each certificate held.

Because of the on-going pandemic, plans have not been finalized for the 2020 Code College. If held, it would likely be an online webinar type event using MS Teams.

Please email mike.hejduk@ncdoi.gov with your comments, questions or concerns.

**NC Building Code Training**
The most up-to-date training schedule for all building codes are available at the following link:


Once the web page is accessed, click the “FIND A CLASS” button to refine your search. Although most in-person classes have been delayed or canceled until further notice, there are quite a few on-line courses available. Please check out the available on-line courses.

COCO Newsletters
[http://ncpia.us/](http://ncpia.us/)
[https://www.nc-mia.com/](https://www.nc-mia.com/) (note new website address – formerly www.ncmia.com)
Reminders and other Resources

Web Page Update in Progress
The OSFM webpage is currently being updated, but the priority has shifted somewhat during the pandemic. There will continue to be changes on our webpage, but these will happen later in the calendar year than anticipated.

Accessibility Newsletters
Note: Previously, it was cited that the interpretations within the Accessibility Newsletters were the equivalent of a web interpretation, but the current Chief Building Code Consultant, Carl Martin, has deemed them to more appropriately be guidance or informal interpretations. This note will be included in future printings.

There are many presentations and interpretations in the newsletters for Accessibility. They are available at the following link: http://www.ncdoi.com/OSFM/Engineering_and_Codes/Default.aspx?field1=Code_Enforcement_-_Accessibility_Update_-_Newsletters&user=Code_Enforcement_Resources&sub=Accessibility_Update

2018 NC Codes Errata
With the release of the 2018 NC Building Codes, you may discover errors in the documents. If you discover an error, we would like to invite you to share it with our staff as we verify and document these discrepancies. We will then forward them to ICC or post them on our website dependent upon whether the correction is related to the base document or the NC amendments.

Errata is different from a desired code change. Errata are basically editing mistakes, such as dropped footnotes, references to code sections that got moved or misplaced, references to table or figures that are inaccurate, etc. Seemingly insignificant grammar changes that change the code meaning would not automatically be considered errata.

Please submit your corrections to the following contacts:

Bill Kirk Building bill.kirk@ncdoi.gov
Pak Yip Residential pak.yip@ncdoi.gov
Dan Dittman Energy dan.dittman@ncdoi.gov
Charlie Johnson Fire Charlie.johnson@ncdoi.gov
Dan Austin Existing Building dan.austin@ncdoi.gov
Mark Burns Plumbing mark.burns@ncdoi.gov
David Rittlinger Mechanical, Fuel Gas david.rittlinger@ncdoi.gov
Joseph Starling Electrical joseph.starling@ncdoi.gov
Mike Page Administrative mike.page@ncdoi.gov
Tara Barthelmess Accessibility tara.barthelmess@ncdoi.gov

Current ICC Errata are posted at http://www.iccsafe.org/cs/codes/Pages/errata.aspx

End of Newsletter