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Introduction

Welcome to the November 2020 OSFM Engineering Newsletter. Since our last newsletter in June, much has changed at OSFM. On a technical matter, our new website was implemented, which will make it easier for those who have never used our website before to navigate it more intuitively. For long-time users, however, it has shuffled things you used to know where to find, and pretty much all the links, including the Engineering Newsletter, are no longer active.

A dedicated team of individuals, including Danny Thomas, David Rittlinger, Mark Burns, Beth Williams, Mike Hejduk and others have been plugging away at the development of the Residential Changeout Inspector (RCI) Course. The goal has been constant, but the means in getting there has changed somewhat in there is an increased desire to deliver it in an on-line course, which is a tremendous undertaking but the team is building a course to fulfill that goal.

Unfortunately, on a personnel matter, we have lost our friend and colleague, Dan Austin who passed away unexpectedly in early July. Also, our Deputy Commissioner, Mr. Cliff Isaac, who has been instrumental in leading and managing the Engineering division has left for another work opportunity. In addition, Ms. Kathy Williams, our long time, and well-known Qualifications Board liaison, certification manager, training manager and coordinator, etc. has retired after more than 33 years of service. Refer to the Personnel article for more details.

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

Current Topics

Call for Beta and Pilot testers-RCI Course

Please email Mike Hejduk, mike.hejduk@ncdoi.gov, if you are interested in registering for any of the courses for beta testing the Residential Changeout Inspector Course. See Residential Changeout Inspector (RCI) Standard Certificate Update article in this newsletter for more information.

Technical Bulletin – Gangway Design Requires Design Professional per NCBC 3604.3

At the Structural AD-Hoc committee meeting on Wednesday October 14, 2020 there was some concern expressed that inspection departments are not requiring gangways covered by section 3601.2 of the commercial code be designed by registered design professionals for 100 psf as indicated in and required by section 3604.3 note 3. Inspection departments should require that gangway designs comply with the NC Building Code.

Technical Bulletin – Comfort cooling equipment not designed for product cooling

It was brought to the attention of our department by the NC State Board of Refrigeration Contractors that some businesses are using after-market controls attached to comfort cooling equipment to act as refrigeration units for produce cooling. The aftermarket controls and devices that force the comfort-cooling unit to cool to a lower temperature than it was designed for is not in compliance with the manufacturer’s installation instructions and is therefore in violation of the NC Building Code. We clarified that this is a violation of NCMC 304.1 and/or 1101.2 if this occurs in a building or process where the NC Building Code is applicable. These sections are reprinted next:
304.1 General. Equipment and appliances shall be installed as required by the terms of their approval, in accordance with the conditions of the listing, the manufacturer's installation instructions and this code. Manufacturer's installation instructions shall be available on the job site at the time of inspection.

1101.2 Factory-built equipment and appliances. Listed and labeled self-contained, factory-built equipment and appliances shall be tested in accordance with UL 207, 412, 471 or 1995. Such equipment and appliances are deemed to meet the design, manufacture and factory test requirements of this code if installed in accordance with their listing and the manufacturer's installation instructions.

If the cooling unit is located in a structure, and performing a purpose that meets the definitions of Industrial Equipment, then it is outside the scope of the NC Building Code, reference NCGS 143-138 paragraph b9, but it may be subject to other agency and licensure rules.

NCDOI-OSFM Webpage Updated
The NCDOI webpage, and the OSFM webpages have been updated. The new design is consistent with what readers have probably been seeing with other websites, both on public agency and private companies. The look and feel is more friendly to mobile devices, and there are less layers to drill down through, and much older material has been purged, including all but the past 2-years of this newsletter and all of the Accessibility Newsletters.

Unfortunately, with the updated website, all the links in prior newsletters have been deactivated. The physical links have been changed, so the mental links in people’s minds also need to be reworked, so we encourage the reader to peruse the new webpages and familiarize themselves with it, and if there are questions as to location, please contact one of our code consultants. We also encourage the user’s of the website to utilize the feedback feature at the bottom of most of the webpages. See following image for what the link looks like.

How can we make this page better for you?

Recurring Articles
Building Code Council Approved Rule Changes
The July BCC meeting was held on July 14th, and the September meeting was held as originally scheduled on September 1, 2020. The full minutes can be read at the following links. The link will take you to the BCC Minutes webpage and the reader must then click on the .pdf file to open the minutes.

BCC Meeting Minutes-July 2020
https://www.ncosfm.gov/bcc-minutes-july-14-2020

BCC Meeting Minutes-September 2020
https://www.ncosfm.gov/building/bcc-minutes-september-1-2020
Assuming the July and September BCC-approved D-Items are approved by the Rule Review Commission, the adopted rules will be placed on the NCDOI Engineering website. Since the NCDOI webpage rework, the location and format has changed from the June 2020 Newsletter. Please refer to the Cumulative Supplements article of this newsletter for the link to that new location.

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-July 2020**

- **Item D – 1 Request by Tommy Rowland representing Mecklenburg County Code Enforcement to amend the 2018 N.C. Mechanical Code, Table 403.3.1.1** as follows: (Remainder not shown for brevity) – proposal approved.
- **Item D – 2 Request by Reuben E. Clark representing CMI to amend the 2017 NEC, Section 680.26(B)(2)(b)** as follows: (Remainder not shown for brevity) – **proposal Tabled until next BCC meeting**
- **Item D – 3 Request by Leon Meyers representing BuildSense Inc. to amend the 2018 N.C. Energy Conservation Code, Sections C401.2 and R401.2** as follows: (Remainder not shown for brevity) – proposal approved
- **Item D – 4 Request by David Smith representing the Residential Ad-hoc Committee to amend the 2018 N.C. Residential Building Code, Section R102.5 Appendices** as follows: (Remainder not shown for brevity) – proposal approved.
- **Item D – 5 Request by David Smith, representing the Residential Ad-hoc Committee to amend the 2018 N.C. Residential Building Code, Appendix M** as follows: (Remainder not shown for brevity) – proposal approved.
- **Item D – 6 Request by David Smith representing the Residential Ad-hoc Committee to amend the 2018 Residential Code, Tables R602.3(5) & R602.7.5** as follows: (Remainder not shown for brevity) - proposal approved.
- **Item D – 7 Request by David Smith representing the Residential Ad-hoc Committee to amend the 2018 N.C. Residential Code, Section R311.2 Egress door** as follows: (Remainder not shown for brevity) – proposal approved.
- **Item D – 8 Request by David Smith representing the Residential Ad-hoc Committee to amend the 2018 N.C. Residential Code, Section R311.7.5.3, R312.1.2 and R312.1.3** as follows: (Remainder not shown for brevity) – proposal approved.
- **Item D – 9 Request by David Smith representing the Residential Ad-hoc Committee to amend the 2018 N.C. Residential Code, Section R703.8.2.1** as follows: (Remainder not shown for brevity) – proposal approved.
- **Item D – 10 Request by David Smith representing the Residential Ad-hoc Committee to amend the 2018 N.C. Residential Code, Section R311.7.4 Walkline and R311.7.5.2.1 Winder Treads** as follows: (Remainder not shown for brevity) – proposal approved
- **Item D – 11 Request from Keith Rogers representing the Building Code Council Plumbing Standing Committee to amend the 2018 N.C. Building Code, Section 2902.6** as follows: (Remainder not shown for brevity) – proposal approved.
- **Item D – 12 Request from Keith Rogers representing the Building Code Council Mechanical Standing Committee to amend the 2018 N.C. Plumbing Code, Section 410.2** as follows: (Remainder not shown for brevity) – proposal approved
- **Item D – 13 Request from Keith Rogers representing the Building Code Council Mechanical Standing Committee to amend the 2018 N.C. Building Code, Section 2902.2, Exception 2** as follows: (Remainder not shown for brevity) – proposal approved
• Item D – 14 Request from Keith Rogers representing the Building Code Council Mechanical Standing Committee to amend the 2018 N.C. Plumbing Code, Section 403.2, Exception 2 as follows: (Remainder not shown for brevity) – proposal approved.

• Item D – 15 Request from Keith Rogers representing the Building Code Council Mechanical Standing Committee to amend the 2018 N.C. Building Code, Footnotes to Table 2902.1, footnote o as follows: (Remainder not shown for brevity) – proposal approved.

• Item D – 16 Request from Keith Rogers representing the Building Code Council Mechanical Standing Committee to amend the 2018 N.C. Plumbing Code, Table 403.1, footnote o as follows: (Remainder not shown for brevity) – proposal approved.

• Item D – 17 Request from Keith Rogers representing the Building Code Council Mechanical Standing Committee to amend the 2018 N.C. Building Code, Table 2902.1, line 2 as follows: (Remainder not shown for brevity) – proposal approved.

• Item D – 18 Request from Keith Rogers representing the Building Code Council Mechanical Standing Committee to amend the 2018 N.C. Plumbing Code, Table 403.1, line 2 as follows: (Remainder not shown for brevity) – proposal approved.

• Item D – 19 Request by Tim Henshaw representing the N.C. Fire Code Revision Committee to add the 2018 N.C. Fire Code, Sections 1031.10, 1031.10.1, 1031.10.2 and 1031.10.3 as follows: (Remainder not shown for brevity) – proposal approved.

• Item D – 20 Request by Tim Henshaw representing the N.C. Fire Code Revision Committee to add the 2018 Existing Building Code, Section 405.6 as follows: (Remainder not shown for brevity) – proposal approved.

**BCC Proposed Amendments-September 2020**

• Item D – 1 Request from Wayne Hamilton representing the NC Building Code Council to amend the 2018 NC Fire Code, Sections 202, 304.4, and add Sections 304.4.3 and 304.4.4 as follows: (Remainder not shown for brevity) – proposal approved.

• Item D – 2 Request from Colin Trimming representing the NC Fire Code Revision Committee to amend the 2018 NC Fire Code, Section 609.2 and Chapter 80 as follows: (Remainder not shown for brevity) – proposal approved.

• Item D – 3 Request from Colin Trimming representing the NC Fire Code Revision Committee to add the 2018 NC Fire Code, Section 3103.3.1 as follows: (Remainder not shown for brevity) – proposal approved.

• Item D – 4 Request from Colin Trimming representing the NC Fire Code Revision Committee to add the 2018 NC Fire Code, Section 3103.6 as follows: (Remainder not shown for brevity) – **Tabled until next meeting**

• Item D – 5 Request from James Anthony representing the Anthony Property Group to amend the 2018 NC Residential Code, Section 202 Definitions as follows: (Remainder not shown for brevity) – proposal approved.

• Item D – 6 Request from Carl Martin representing the NC Department of Insurance to amend the 2018 NC Building Code, Section 705.12 as follows: (Remainder not shown for brevity) – proposal approved.

• Item D – 7 Request from David Smith representing the Residential Ad-hoc Committee to amend the 2018 NC Residential Code, Section R302.1.1 Soffit Protection as follows: (Remainder not shown for brevity) – proposal approved.

• Item D – 8 Request by David Smith representing the Residential Ad-hoc Committee to amend the 2018 NC Residential Building Code, Tables R602.3(3), R602.10.1 and R602.10.3 as follows: (Remainder not shown for brevity) – proposal approved.

• Item D – 9 (NOTE: This was Item D – 2 on the July 14, 2020 agenda.) Request by Reuben E. Clark representing CMI to amend the 2017 NEC, Section 680.26(B)(2)(b) as follows: (Remainder not shown for brevity) – proposal tabled by Residential Super Committee, until the December BCC Meeting
• Item D – 10 (NOTE: This item was Item D – 5 on the July 14, 2020 agenda.) Request by David Smith, representing the Residential Ad-hoc Committee to amend the 2018 N.C. Residential Building Code, Appendix M as follows: (Remainder not shown for brevity) – proposal denied

Qualification Board Update

Residential Changeout Inspector (RCI) Standard Certificate Update

The NC Code Officials Qualification Board will soon have a new inspector certification available. 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. However, in a change from other single trade certifications, taking and passing the course and end-of-course test is required BEFORE a Probationary Certificate will be issued. Also, prior to coming to the first day of the classroom course, registered students must acquire the code books and complete an online self-study training program. The Board’s staff anticipates administering the RCI exams for the first six months before transferring the exam to the computer-based testing vendor.

A tentative schedule of one Beta Test and four Pilot Courses taught by NCDOI staff is listed below. Please email Mike Hejduk, mike.hejduk@ncdoi.gov, if you are interested in registering for any of these courses. These courses are free and will be conducted 100% online in webinar format. The online self-study portion is taught as a one day class so there are five days of class total, similar to Code College.

Note: NO CE for FIRE is available. However, because this is a Standard Course, 12 hours of CE will be awarded with 3 hours in each trade of Building, Mechanical, Electrical and Plumbing.

Beta Test – 11/6-11/13
Pilot #1 - 11/30-12/4
Pilot #2 - 1/8 – 1/14
Pilot #3 - 2/5 – 2/11
Pilot #4 - 3/5-3/11

Minutes

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

Meeting Minutes and Agendas

The location of the agendas and minutes has changed. The following link can be used to go to the webpage where the agendas and minutes are located. The agendas and minutes can then be accessed by clicking the appropriate link, and then opening a .pdf. We have noticed that for larger .pdf documents, only the first page will display. The document can be downloaded to a device and read in its entirety if desired.

https://www.ncosfm.gov/licensing-cert/code-officials-qualification-board-coqb/coqb-meeting-dates
As mentioned in the Newsletter introduction, after a long and productive career at NCDOI, Ms. Kathy Williams has retired. For questions concerning Q’Board, please contact Mr. Sam Whittington or Mr. Thomas Cooney.

- **Sam Whittington**: Certification and Investigator, Complaints  
  919-647-0028  [sam.whittington@ncdoi.gov](mailto:sam.whittington@ncdoi.gov)
- **Thomas Cooney**: Certification and Investigator, Complaints  
  919-647-0105  [thomas.cooney@ncdoi.gov](mailto:thomas.cooney@ncdoi.gov)

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**Department Notes**

**Engineering Department**

**Personnel Notes**

**Dan Austin, P.E.**

Dan passed away unexpectedly in early July of a heart attack. He was 43 years old. We lost a friend and a coworker, and his family lost a dad, husband, and son. Dan held several different positions and responsibilities in his approximate 14 years at NCDOI, but most people probably remember him best for his work with the NC Fire Code and his reviews of NFPA 13 sprinkler piping and NFPA 72 smoke alarms for state-owned properties and his development of some of the first on-line training courses for NC Fire Code and Crowd Management. As an NC State Aeronautical department graduate, he was our resident “rocket scientist” who did not shy away from the most technical assignments when it came to project review or audio-visual support. He most recently was employed as the Existing Building Code Consultant. Dan will be missed.

**Mr. Cliff Isaac, P.E.**

Cliff has accepted a position with the City of Fayetteville as the Director of Construction Management and Capitol Projects, and has assumed that role as of September 7, 2020. Since Cliff joined the Office of State Fire Marshal he has been a valuable and well respected member of our team. As an employee of the Department of Insurance, he was appreciated by his co-workers for his contribution, including the extended hours of dedication. We will miss Cliff’s energy, professionalism, and knowledge. On behalf of everyone at the Office of State Fire Marshal, we all wish Cliff good luck for the future.
Ms. Kathy Williams
Ms. Williams, after 33 ½ years of service, has retired as of September 30th, 2020. She was known by virtually all code officials across the state either by phone, e-mail or in person. She was instrumental in helping virtually every code official start and maintain their careers in code enforcement through her work with the Licensing Requirements and Qualifications Board. Much of her responsibilities over the years involved real roll-up the sleeves work to establish and update the records for thousands of field inspectors. Kathy, along with her staff, were able to process all the Statute-mandated training records and licensing requirements with multiple file cabinets filled with manilla envelopes. She also was instrumental in aiding in the transition of this process to our present-day electronic, web-based system. It was a very difficult position, one that required real dedication to getting the code officials the applications for certificates and maintenance of said certificates so they could do the work that their jurisdictions across the entire state required. Kathy was a constant in the department that held everything together around her. So, we are giving a well-deserved hats-off to Kathy, an acknowledgement of her accomplishments, and wish her well in her retirement.

As of October 2020, here is the staff list and respective responsibilities:

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
- Pak Yip: Residential Code  
  919-647-0007  pak.yip@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.rogers@ncdoi.gov
- **Existing Building** Code  
  Vacant
- Tara Barthelmess: **Accessibility (and temporary Existing Building contact)**  
  919-647-0014  tara.barthelmess@ncdoi.gov
- Mark Burns: **Plumbing** Code  
  919-647-0006  mark.burns@ncdoi.gov
- David Rittlinger: **Mechanical** and **Fuel Gas** Code  
  919-647-0008  daniel.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:

- Statutes, Appeals, Council items (other than meeting minutes and agenda), Engineer Elements and Components, **Vacant** – Carl Martin temporary contact
- **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
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. The matrix of codes has been replaced with a drop-down menu box-driven sort function. Please notice that whenever you sort, then view an interpretation, you need to re-apply the sort function as the site defaults back to all the interpretations when the back-arrow is pressed.

Code, Guidance, Appeals link:
https://www.ncosfm.gov/interpretations

Figure 3: New look of Code Interpretations Landing Page

Interpretations

Plumbing
0305.4 - Areas subject to freezing
0305.4 - Hose Bibbs
0312.2 - Drainage and vent water test
0802.1.5 - Prohibited waste receptor-No condensate to Lavatory

Residential
AM-Prescriptive Design of a Deck
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 several future printings.

The accessibility newsletters/presentations have been removed from the website to avoid confusion. They will be updated and reposted as deemed necessary. For questions concerning the Accessibility Interpretations, please contact Ms. Tara Barthelmess (919-647-0014).

Electrical Interpretations

Presently, if you use the main Interpretations site, you need to click on “ALL” edition to view the Electrical interpretations on that site. However, if you go to the main Electrical Division site, there are interpretations for the 2017 NC Electrical Code, see following link:


The link should take you to a webpage, and you should see the following line items when you scroll down.

2017 Electrical Interpretations

<table>
<thead>
<tr>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>90.2(B)(5) - Electrical Utility Conductors and Equipment</td>
</tr>
<tr>
<td>Article 100 - Structures Defined</td>
</tr>
<tr>
<td>110.14 - Tightening Torque Inspection and Responsibility</td>
</tr>
<tr>
<td>210.8(A)(4) - GFCI Protection in a Crawl Space</td>
</tr>
</tbody>
</table>

**Figure 4: Main Electrical Code Interpretations Section**

The illustrated diagrams that used to be on the Electrical Division website are not available at this time, we are working to get them formatted so they can be posted again.

Formal Interpretations and Appeals

Here are the Formal Interpretations posted since the prior Newsletter:

200701 Bistry - NCBC D102.2.11 EIFS in the Primary Fire District
200925 Brunswick Co - NCRC Exterior Stairway and Doorway Landings

**Appeals**

20200810 Askew DOI Decision - Lavatory Spacing
20200831 Gough - Manual S Cold Climate BCC Order

Guidance Papers

Unfinished Rooms Names On Residential Plans
Cumulative Supplements
Cumulative code changes and their adoption dates can be found on the DOI website at:

Cumulative code changes link:
https://www.ncosfm.gov/codes/codes-current-and_past

Figure 5: Table of Approved Amendments

<table>
<thead>
<tr>
<th>2018 Administrative</th>
<th>Approved Amendments</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018 Building</td>
<td>Approved Amendments</td>
</tr>
<tr>
<td>2018 Residential</td>
<td>Approved Amendments</td>
</tr>
<tr>
<td>2018 Energy Conservation</td>
<td>Approved Amendments</td>
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<tr>
<td>2018 Existing Building</td>
<td>Approved Amendments</td>
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<tr>
<td>2018 Fire</td>
<td>Approved Amendments</td>
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<tr>
<td>2018 Fuel Gas</td>
<td>Approved Amendments</td>
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<tr>
<td>2018 Mechanical</td>
<td>Approved Amendments</td>
</tr>
<tr>
<td>2018 Plumbing</td>
<td>Approved Amendments</td>
</tr>
<tr>
<td>2017 Electrical Code</td>
<td>Approved Amendments</td>
</tr>
</tbody>
</table>

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

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 many 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.

Other websites of Inspector Organizations that offer training
http://www.ncbia.org/
http://ncpia.us/
Reminders and other Resources

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.

With the updating of the NCDOI webpage, the Accessibility Newsletter were removed. If there are any questions about a specific topics or general Accessibility questions, please contact Tara Barthelmess (919-647-0014).

End of Newsletter