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August 2017

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Introduction

Welcome to the August, 2017 OSFM Engineering Newsletter. Of particular note in this newsletter, observe the limited-time offering of free codes in the next section, Current Topics. Also, there have been a considerable quantity of new and/or updated code interpretations posted since the prior newsletter. I encourage the reader to view these on the DOI Website or in the Department Notes Section.

Current Topics

Limited time only, Free 2012 NC Code Downloads Available

The Building Code Council and the NC Department of Insurance have negotiated for and achieved funding from the NC General Assembly for the offering of a free (free to the user) downloads of the 2012, 2014 and 2015 NC Building Codes. These codes are the fully downloadable and printable for a limited time courtesy of the Department of Insurance. The link to the codes is:

<https://codes.iccsafe.org/public/collections/nc>

The version has the following benefits:

- Fully Downloadable, searchable, printable
- Contains all of the Building Code Council approved amendments from 2012 – 2017 inserted directly into document
- Capable of using electronic sticky notes and highlights when downloaded.

We encourage the reader to take advantage of this downloadable version, and provide feedback to your Building Code Council Members, NC DOI Engineering staff, and your local code enforcement office. This should be considered a test drive, and if the results are favorable, it may be strongly considered, depending on a funding mechanism, to provide this same service for the 2018 NC Building Code. Your feedback is desired for this download version.

Update on 2018 NC Building Code

The 2018 NC Building Code as presented on the NC DOI website, has been adopted by the Building Code Council at the June 2017 quarterly meeting. It is presently pending Rules Review. The review may not be completed until September, so we cannot promise there will not be some minor changes, but to date there are no anticipated issues with the timeline discussed in the previous Engineering Newsletter.

The 2018 NC Code (Except Electrical) will become adopted no later than July 1, 2018, and then we enter into a (minimum) six month overlap timeframe where either the 2012 NC code or the 2018 is acceptable. Then, on January 1, 2019 the 2018 NC code is effective, and the 2018 NC Code is the requirement. This time frame of overlap may be extended, but that cannot be predicted at this time. The 2018 Electrical Code will become effective April 1, 2018.

Remember, the newly adopted 2018 NC Building Code, once it clears Rules Review, is like any other code amendment and can be used as an alternate method prior to the effective date if requested by the user. Reference NC Administrative Code Section 102.5.

The following represents a time line that may aid in planning when to budget for new code training and materials.

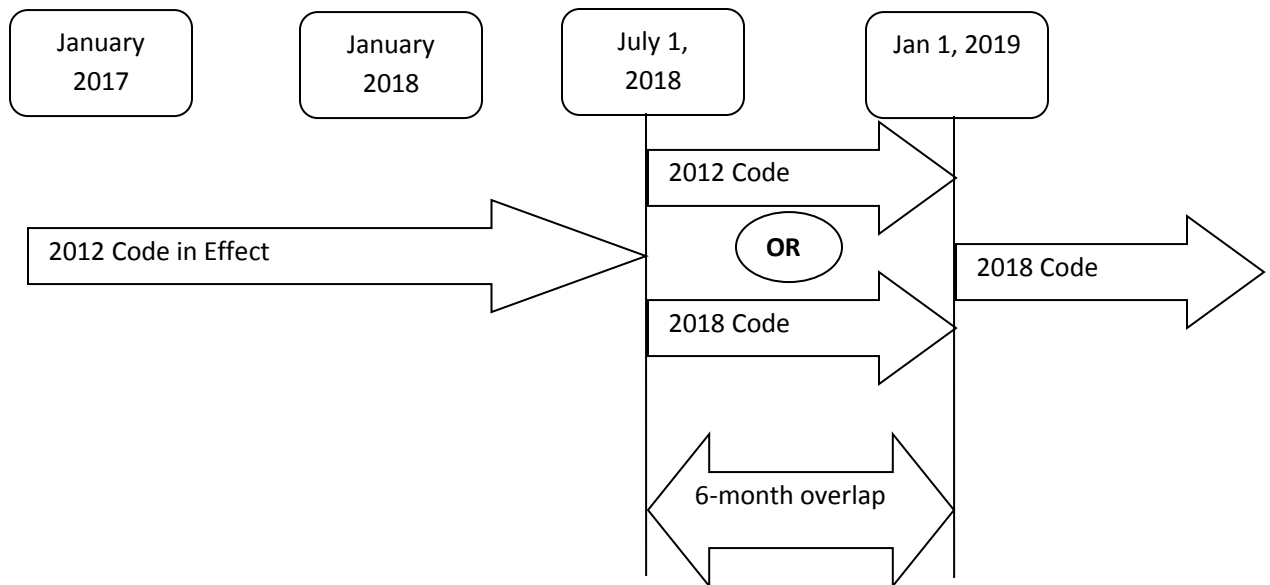


FIGURE 1: TENTATIVE ADOPTION AND EFFECTIVE DATES*

- *Dates of overlap and earliest adoption date (July 1, 2018) are subject to variation due to the public adoption process and the direction of the Building Code Council

Feature Articles

NC 2018 Codes

The 2018 NC State Building Codes are currently with Rules Review Commission after being approved as a D-item at the June 2017 Building Code Council meeting.

Building Code Council Approved Rule Changes

At the June 2017 Building Code Council meeting, there were 11 D-Items (21 including sub items, and 18 of these were adopted in December). Please refer to the following link to review the list of D-Items from the June 2017 Building Code Council Meeting:

BCC Meeting Agenda-June 2017 (Minutes will be published in August online)

http://www.ncdoi.com/OSFM/Engineering_and_Codes/Documents/BCC_Agendas/2017%2006~June%2013,%202017_.pdf

Assuming the BCC-approved D-Items are approved by the Rule Review Commission, the adopted rules will be placed on the NCDOT Engineering website. The compilation of previously approved rules is located in the document "**2016-2018 Approved**

Cumulative Amendments (Effective 2016-2018)” document. Previously approved amendments that had an effective date of January 1, 2017 or earlier can be found in the document “**Accumulative Supplement to the 2012 NC Building Code**”. This document contains all amendments from 2012, 2013, 2014, and 2016, and 2017 and are posted in this single document.

Accumulative Supplement to the 2012 NC Building Code links:

http://www.ncdoi.com/OSFM/Engineering_and_Codes/Documents/2012_NCBuildingCode_amendments/2012-2017ApprovedCumulativeTest1Format.pdf

2016-2018 Approved Cumulative Amendments (Effective 1/1/2018)

http://www.ncdoi.com/OSFM/Engineering_and_Codes/Documents/2012_NCBuildingCode_amendments/2016-2018ApprovedCumulative.pdf

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

BCC Approved Amendments-June 2017

- **Item D - 1 Request by the NC Building Code Council, Ad-Hoc Committees, to adopt the 2018 North Carolina State Building Codes. The Base Documents for the 2018 NC Codes are the 2015 International Codes. The 2018 NC Ad-Hoc Committee amendments are posted at the link below and are replacements to the Sections printed in the Base Documents. (Items D-1.1 – D-1.8 Adopted)**
- **Item D - 1.1 NC State Building Code, Volume – 2018 Building Code**
- **Item D - 1.2 NC State Building Code, Volume - 2018 Energy Conservation Code, including Residential Energy**
- **Item D – 1.3 NC State Building Code, Volume – 2018 Existing Building Code**
- **Item D – 1.4 NC State Building Code, Volume – 2018 Fire Prevention Code**
- **Item D – 1.5 NC State Building Code, Volume – 2018 Fuel Gas Code**
- **Item D – 1.6 NC State Building Code, Volume – 2018 Mechanical Code**
- **Item D – 1.7 NC State Building Code, Volume – 2018 Plumbing Code**
- **Item D – 1.8 NC State Building Code, Volume – 2018 Residential Code**
- **Item D - 2 Additional individual requests to further amend the 2018 North Carolina Energy Conservation Code**
- **Item D – 2.1 Request from Ryan Miller, representing North Carolina Building Performance Association, to revise the 2018 NC Energy Conservation Code, Section 403.3.3 Duct Leakage (Perspective and duct testing (Mandatory)). (Motion to adopt with Exception #3. Adopted)**
- **Item D – 2.2 Request from Bridget Herring, representing Mathis Consulting Company, to revise the 2018 NC Energy Conservation Code, Section C402. – Request withdrawn by Bridget Herring, Mathis Consulting**
- **Item D – 2.3 Request from Chuck Perry, representing Appalachian State University, to revise the 2018 NC Energy Conservation Code, Section R406 Energy Rating Index Compliance Alternative. (Adopted as modified)**
- **Item D – 2.4 Request from Chuck Perry, representing Appalachian State University, to revise the 2018 NC Energy Conservation Code, Section N1106 Energy Rating Index Compliance Alternative. (Adopted)**
- **Item D – 3 Request from Dave Crawford, representing AIA-North Carolina, to revise the 2018 NC Building Code, Section 2902.1.2, and the 2018 NC Plumbing Code, Section 403.1 and Section 403.2 Separate Facilities (Denied)**
- **Item D – 4 Request from Terry Cromer, representing NC Association of Electrical Contractors, to amend the 2014 NC Electrical Code, Section 680.21(C)(1) Pool Pump Motor Replacement. (Adopted as modified)**
- **Item D – 5 Request from Daniel Priest, representing Priest Architecture, PLLC, to amend Section 901.1 from the 2018 NC Fire Prevention Code. (Sent to Committee)**
- **Item D – 6 Request from Robbie Davis, representing the NC Building Code Council Building/Fire Ad-Hoc Committees, to amend the 2018 NC Building Code, Section [A] 101.2 Scope. (Adopted as modified)**

- **Item D – 7 Request by Robbie Davis, representing the NC Building Code Council Building/Fire Ad-Hoc Committees, to amend the 2018 NC Fire Prevention Code, Chapter 1, Section 102.13 Exception to applicability and Chapter 2. (Adopted as modified)**
- **Item D – 8 Request from Robbie Davis, representing the NC Building Code Council Building/Fire Ad-Hoc Committees, to amend the 2018 NC Fire Prevention Code, Chapter 1, Section 105.6.45 Temporary membrane structures and tents (mandatory permit), Section 105.7.18 Temporary membrane structures and tents and Chapter 31, Section 3103.2 (Adopted)**
- **Item D – 9 Request from Robbie Davis, representing the NC Building Code Council Building/Fire Ad-Hoc Committees, to amend the 2018 NC Fire Prevention Code, Chapter 34, Section 3406.1 Required access. (Adopted)**
- **Item D – 10 Request from Robbie Davis, representing the NC Building Code Council Building/Fire Ad-Hoc Committees, to amend the 2018 NC Building Code, Section 1107.6.2.2.1 Type A units. (Adopted)**
- **Item D – 11 Request from Robbie Davis, representing the NC Building Code Council Building/Fire Ad-Hoc Committees, to amend the 2018 NC Fire Prevention Code, Chapter 9, Section 903.4.1. (Adopted)**

Qualification Board Update

Code Officials and Home Inspectors-Competency and Character

As Director for both the Code Officials Qualification and Home Inspector Licensure boards, I can't help but see more similarities than differences in the purpose of these boards to protect the public health, safety and welfare. The size and composition of board members is different, the following items are common:

- Both provide oversight of inspector programs administered by Engineering and Codes Division staff. While the Code Officials Qualification Board (COQB) has 20 members and the Home Inspector Licensure Board (HILB) has 8 members.
- Both include appointees by the Governor, General Assembly, and designees by the Commissioner of Insurance.
- Both include members of the profession regulated.
- Both programs include the functions of licensing/certification, examination, education (mandatory and elective), complaint investigation and board discipline.

The similarities have given rise to the development of web based computer applications, online payments and credential renewals. In hindsight, the transition to digital records several years ago was well-timed in light of staff's permanent relocation to the Albemarle Building that has limited space for onsite records storage.

The major differences between the role of inspectors certified by the COQB and licensed by the HILB are:

- 1) Civil servant versus independent contractor,
- 2) New construction (codes) versus occupied building (systems performance), and
- 3) Clients consisting of industry professionals versus homebuyers and sellers who are not.

If we agreed that trade inspections for code compliant construction do not generally require the electrical power or water service to be turned on, then a licensed home inspector is checking components and systems once they have been in

operation for some time – often years – and who also may advise the client of potential safety concerns. Code officials report code violations to the permit holder for correction. While Home inspectors are authorized by General Statute § 143-151.58 to report defects as code violations, they must use the code applicable at the time of construction and provide a copy of the code section to the client. Home inspectors must also provide the client a contract prior to the inspection and a written report. The buyer and seller decide whether defects are corrected.

Why is this important? Increasingly, out-of-state homebuyers tell me they hired a licensed home inspector during the construction phase because they doubt whether local government inspectors are holding builders sufficiently accountable. Home inspectors may be hired to act as an owner’s rep to perform one or all of the following inspections: “pre-drywall” during the construction process (similar to rough-in), prior to purchase or before the end of the one year builder warranty period. This situation reminds me of the expression “canary in a coal mine.” If the public’s perception of building safety officials’ integrity really is eroding, what is being done about it?

To be fair, consumers also submit complaints about the service they expect and receive from licensed home inspectors. If the licensee did not adhere to the Standards of Practice they may be sanctioned by the Board. The client may also chose to litigate in a civil proceeding for costly unreported deficiencies. Complaints against code officials usually stem from an alleged dereliction of duty to enforce the code, a job for which the code official has taken an oath of office.

In either case, allegations that an inspector (public or private) missed defects because he or she simply did not perform an adequate inspection is a dimension of competency that may be addressed by improving inspector knowledge, skills and ability through education and training. Allegations that an inspector missed reporting defects because of personal motives is a dimension of character. Which attribute deserves greater scrutiny – competence or character?

Minutes

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

Meeting Minutes and Agendas

http://www.ncdoi.com/OSFM/Engineering_and_Codes/Default.aspx?field1=COQB - Meeting_Dates&user=Code_Officials_Qualification_Board&sub=COQB_Meeting

Individuals wishing to provide feedback are encouraged to contact Mike Hejduk at mike.hejduk@ncdoi.gov.

Department Notes

Engineering Department

New Code Interpretations Posted

Since the last Engineering Newsletter was posted, there have been several Appeal and Formal Interpretations posted.

Code Interpretations link:

http://www.ncdoi.com/OSFM/Engineering_and_Codes/Default.aspx?field1=Code_Interpretations&user=State_Building_Codes

Since the prior Newsletter, there has been the following web interpretations posted to aid the building owners, inspection, design professional, and construction personnel:

Administrative

106.1- Closed Crawl Space Moisture Control – Permitting and H3 Licensure.doc
G S 143-138 - Wedding Venues and Farm Buildings.doc

Residential

0101.2 - Outdoor Fire Pits. Doc
0101.2 - Outdoor Fire Pits. Doc
0302.6 - Garage Separation from Habitable Rooms Above.doc
0310 - Window Replacement - Emergency Escape and Rescue Openings.doc
0409.5 Closed Crawl Space Moisture Control – Permitting and H3 Licensure.doc
106.1- Closed Crawl Space Moisture Control – Permitting and H3 Licensure.doc
0101.2 - Migrant Housing Facilities.doc

Building Code (Commercial)

G S 143-138 - Wedding Venues and Farm Buildings.doc
0101.2 - Migrant Housing Facilities.doc
425.3.1 Small Licensed Residential Care Facilities Sprinkler System Monitoring.doc
425.3.7 - Small Licensed Residential Care Facilities Fire Alarm Panel.doc

Electrical

210.8(B)(2) - GFCI Receptacles in Commercial Kitchens.doc
210.11 - Number of Outlets on Circuits in Dwellings.doc
210.12(A) - Arc-Fault Circuit-Interrupters in Dwellings.doc
210.21(B)(3) - 15 Amp Duplex Receptacles on 20 Amp Circuits.doc
210.52(E) - Outdoor Receptacle Requirements for Dwellings.doc
250.53 - Grounding Electrodes For Single Family Dwellings.doc
300.5(D) - Non-Metallic Conduit Subject to Physical Damage.doc
334.10 - NM Cable Other Than Dwellings.doc
406.9(B) - In-Use Type Receptacle Covers In Wet Locations.doc
550.33 - Mobile Home Feeders and Equipment Grounding Conductors.doc
680.26(B) - Swimming Pool Equipotential Bonding Grid.doc
700.20 - Motion Detector Switched Means of Egress Emergency Illumination.doc
100 - Structures versus Equipment.doc
440.6 - Air-Conditioning and Refrigerating Equipment Branch Circuit Ampacity and Protection.doc

Fuel Gas

403.8 - Metal Piping-Hanger Compatibility.doc

Mechanical

0101.2 - Closed Crawl Space Moisture Control – Permitting and H3 Licensure.doc
0505.1 - Exhaust Hood for Domestic Cooking Equipment.doc
0312.1 - Heating and Cooling Load Calculations.doc

Fire Protection

404.3.3 - Lockdown Hardware Operation.docx
2403.2 - Approval of Inflatable Amusement Devices.docx

Formal interpretations and Appeals are available in the interpretations link shown above. They are located under the table heading "SPECIFIC ACTIONS". There are no new Formal interpretations or Appeals to report at this point.

Cumulative Supplements

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

Cumulative code changes link:

http://www.ncdoi.com/OSFM/Engineering_and_Codes/Documents/2012_NCBuildingCode_amendments/2012-2017ApprovedCumulativeTest1Format.pdf

2016-2018 Approved Cumulative Amendments (Effective 1/1/2018)

http://www.ncdoi.com/OSFM/Engineering_and_Codes/Documents/2012_NCBuildingCode_amendments/2016-2018ApprovedCumulative.pdf

As mentioned in the Current Topics section of this Newsletter, the limited-time free offerings have all the approved amendments (that were available prior to the July 1, 2017 start date) printed into the code. It may be very helpful to download this document for the purpose of having all the amendments in the code, and for this reason alone. You may have to scroll down on the screen that is accessed at the above link to see another link to the “**Accumulative Supplement to the 2012 NC Building Code.**” This document now contains all code amendments that are adopted since 2012. Use the Table of Contents to scan for changes by Code.

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.

Qualifications Assurance Section – COQB, HILB & PYRO

Training Summary – Standard Courses

A review of the Standard Course offerings for July 2016 – Jun 2017 showed 1981 student names were submitted on 195 class rosters for L&A, F,B,M,E,P. This is an average of about 10.2 students per class. These classes are open to the public, and are an excellent chance for anyone associated with the building trade to obtain the same basic training a code official receives.

TABLE 1: STANDARD COURSE TRAINING SUMMARY TO DATE (FY 2016-2017)

Trade	Total Classes FY 16-17	total students ¹	pass	fail	Ce Credit only
LAW AND ADMIN	34	506	492	1	13
B1	18	235	182	34	19
B2	10	77	65	8	4

B3	7	45	64	4	7
E1	16	123	110	5	8
E2	8	49	47	2	0
E3	9	52	45	4	3
F1	25	280	258	12	9
F2	12	86	80	3	3
F3	10	80	74	3	3
M1	9	95	87	3	5
M2	7	49	46	0	3
M3	8	39	38	0	1
P1	10	107	97	5	5
P2	5	51	49	0	2
P3	7	44	40	0	4
Totals FY2016-2017	195	1981	1774	84	89
Totals FY 2015-2016	136	1261	1108	63	90

Standard Course Statistics 6/30/16-1/31/2017

¹An inspector may be taking more than one course; therefore total students may be more than the total quantity of inspectors.

Qualifications Board Link:

http://www.ncdoi.com/OSFM/Engineering_and_Codes/Default.aspx?field1=Code_Officials_Qualification_Board_USER&user=Code_Officials_Qualification_Board

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Phil Joyner, Investigation (HILB)	phil.joyner@ncdoi.gov

Upcoming NC Building Code Training

The most up-to-date training schedule for all building codes are available at the following link:

[http://www.ncdoi.com/OSFM/Engineering_and_Codes/Default.aspx?field1=Code Education -
_Student Main&user=Code Education Resources](http://www.ncdoi.com/OSFM/Engineering_and_Codes/Default.aspx?field1=Code_Education_-_Student_Main&user=Code_Education_Resources)

Once the web page is accessed, click the “**FIND A CLASS**” button to refine your search. As discussed in previous newsletters, please consider the use of the Standard Classes if you are a design professional, contractor, or code official, as they are an underutilized offering.

The NC Building Inspectors Association, NC Plumbing Inspectors Association, NC Mechanical Inspectors Association and NC Fire Marshal’s Association have scheduled their Annual Meetings, which have training hours included, please refer to their following websites for further information.

<http://www.ncbia.org/>

<http://ncpia.us/>

<http://ncmia.com/>

<http://www.ncfma.com/>

<http://www.nciae.org/>

End of Newsletter