

March 2012

ENGINEERING NEWSLETTER



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Building Code Council Meeting

The next NC Building Code Council Meeting will be held Monday, March 12 at 9:00AM at the NC Department of Insurance, 322 Chapanoke Road, Raleigh, NC 27603 in the 1st floor classroom.

The agenda for the meeting will be posted on this page:
http://www.ncdoi.com/OSFM/Engineering/BCC/engineering_bcc_agenda.asp

New Web Interpretations Posted

The following interpretations have been posted since the last Engineering Newsletter edition. You can find interpretations on the Engineering Website located at http://www.ncdoi.com/OSFM/Engineering/CodeServices/engineering_codeservices_interpretations.asp

Building Code

Section 303	Internet Sweepstakes Café Occupancy Classification
Section 602.3	Prefabricated Metal Buildings of Type III Construction
Section 1407	Exterior Metal Wall Panels with a Foam Plastic Core

Rehab Code

Section 1.27f	Duplex Fire Separation Requirement
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Carbon Monoxide Detectors

We have received several questions regarding the requirement for carbon monoxide (CO) detectors for multi-family dwellings. CO detectors are not addressed by the NC Building Code. (Note that they are addressed for 1 and 2 family dwellings in the 2009 and 2012 NC Residential Codes, Sections R313 and R315 respectively.)

CO detectors are required by general statutes concerning landlord-tenant agreements. NC General Statute Chapter 42 requires carbon monoxide detectors in certain rental dwellings. See especially Sections 42-38, 42-39, and 42-42(7). Section 42-42(7) states in part “This subdivision applies only to dwelling units having a fossil-fuel burning heater, appliance, or fireplace, and in any dwelling unit having an attached garage.”

2012 Residential Code Requires One-Foot Freeboard in Flood-Resistant Construction

As you can imagine, calls are coming in about the new requirements in the 2012 codes. Some of those questions have been concerned with the requirements for the flood elevation design freeboard whereby buildings and structures have the lowest floors elevated to or above the base flood elevation plus one foot or to the design flood elevation, whichever is higher. Reproduced below are some of the significant sections concerning the requirements for the one-foot freeboard in flood resistant construction.

PORTIONS OF SECTION R322 FLOOD-RESISTANT CONSTRUCTION

R322.1.1 Alternative provisions. As an alternative to the requirements of Section R322.3 for buildings and structures located in whole or in part in coastal high-hazard areas (V Zones), ASCE 24 is permitted subject to the limitations of this code and the limitations therein.

R322.2 Flood hazard areas (including A Zones). Areas that have been determined to be prone to flooding but not subject to high velocity wave action shall be designated as flood hazard areas. Flood hazard areas that have been delineated as subject to wave heights between 1½ feet (457 mm) and 3 feet (914 mm) shall be designated as coastal A Zones. All buildings and structures constructed in whole or in part in flood hazard areas shall be designed and constructed in accordance with Sections R322.2.1 through R322.2.3.

R322.2.1 Elevation requirements.

1. Buildings and structures shall have the lowest floors elevated to or above the base flood elevation plus one foot (305 mm), or the design flood elevation, whichever is higher.
2. In areas of shallow flooding (AO Zones), buildings and structures shall have the lowest floor (including basement) elevated at least as high above the highest adjacent grade as the depth number specified in feet (mm) on the FIRM plus one foot (305 mm), or at least 3 feet (915 mm) if a depth number is not specified.
3. Basement floors that are below grade on all sides shall be elevated to or above the base flood elevation plus one foot (305 mm), or the design flood elevation, whichever is higher.

Exception: Enclosed areas below the design flood elevation, including basements whose floors are not below grade on all sides, shall meet the requirements of Section R322.2.2.

R322.3.2 Elevation requirements.

1. All buildings and structures erected within coastal high hazard areas shall be elevated so that the lowest portion of all structural members supporting the lowest floor, with the exception of mat or raft foundations, piling, pile caps, columns, grade beams and bracing, is:
 - 1.1 Located at or above the design flood elevation if the lowest horizontal structural member is oriented parallel to the direction of wave approach, where parallel shall mean less than or equal to 20 degrees (0.35 rad) from the direction of approach, or
 - 1.2 Located at the base flood elevation plus 1 foot (305 mm), or design flood elevation, whichever is higher, if the lowest horizontal structural member is oriented perpendicular to the direction of wave approach, where perpendicular shall mean greater than 20 degrees (0.35 rad) from the direction of approach.
2. Basement floors that are below grade on all sides are prohibited.
3. The use of fill for structural support is prohibited.
4. Minor grading, and the placement of minor quantities of fill, shall be permitted for landscaping and for drainage purposes under and around buildings and for support of parking slabs, pool decks, patios and walkways.

Exception: Walls and partitions enclosing areas below the design flood elevation shall meet the requirements of Sections R322.3.4 and R322.3.5.

R322.3.3 Foundations. Buildings and structures erected in coastal high-hazard areas shall be supported on pilings or columns and shall be adequately anchored to those pilings or columns. Pilings shall have adequate soil penetrations to resist the combined wave and wind loads (lateral and uplift). Water loading values used shall be those associated with the design flood. Wind loading values shall be those required by this code. Pile embedment shall include consideration of

decreased resistance capacity caused by scour of soil strata surrounding the piling. Pile systems design and installation shall be certified in accordance with Section R322.3.6. Mat, raft or other foundations that support columns shall not be permitted where soil investigations that are required in accordance with Section R401.4 indicate that soil material under the mat, raft or other foundation is subject to scour or erosion from wave-velocity flow conditions. Slabs, pools, pool decks and walkways shall be located and constructed to be structurally independent of buildings and structures and their foundations to prevent transfer of flood loads to the buildings and structures during conditions of flooding, scour or erosion from wave-velocity flow conditions, unless the buildings and structures and their foundation are designed to resist the additional flood load.

R322.3.4 Walls below design flood elevation. Walls and partitions are permitted below the elevated floor, provided that such walls and partitions are not part of the structural support of the building or structure and:

1. Electrical, mechanical, and plumbing system components are not to be mounted on or penetrate through walls that are designed to break away under flood loads; and
2. Are constructed with insect screening or open lattice; or
3. Are designed to break away or collapse without causing collapse, displacement or other structural damage to the elevated portion of the building or supporting foundation system. Such walls, framing and connections shall have a design safe loading resistance of not less than 10 (479 Pa) and no more than 20 pounds per square foot (958 Pa); or
4. Where wind loading values of this code exceed 20 pounds per square foot (958 Pa), the construction documents shall include documentation prepared and sealed by a registered design professional that:
 - 4.1. The walls and partitions below the design flood elevation have been designed to collapse from a water load less than that which would occur during the design flood.
 - 4.2. The elevated portion of the building and supporting foundation system have been designed to withstand the effects of wind and flood loads acting simultaneously on all building components (structural and nonstructural). Water loading values used shall be those associated with the design flood. Wind loading values shall be those required by this code.

R322.3.5 Enclosed areas below design flood elevation. Enclosed areas below the design flood elevation shall be used solely for parking of vehicles, building access or storage.

R322.3.6 Construction documents. The construction documents shall include documentation that is prepared and sealed by a registered design professional that the design and methods of construction to be used meet the applicable criteria of this section.

Job Opportunities

If you wish to publicize a position that is open for applications in your jurisdiction, please send it to Samantha.Ewens@ncdoi.gov. If the position is still open for applications at the time the newsletter is posted, we will include it.

Current Job Opportunity

NCDOI Qualification Board Investigator

For more information go to: <http://www.osp.state.nc.us/jobs/> “Search Jobs” and search “Engineering”

From the Q-Board:

Certification Exams

At the last NC Code Officials Qualification Board meeting, held January 24th, the Board approved updating the standard Certification Exams in all trades except Electrical on June 1st, 2012. Note that this decision includes updates to the Building Exam, including Residential Code topics.

Also, the Board has approved the June 1st, 2012 exam updates to include questions from the Energy Conservation Code into all trade exams with the exception of Fire. If you schedule an exam after June 1st, please refer to your exam bulletin for the topics from the Energy Code that will be included on your exam. Energy Code topics will be incorporated into the standard certification classes before the test update.

Standard Certification Courses

Certification course materials will be updated to include 2012 Code Edition updates on or about May 1st, 2012, approximately one month prior to the exam updates. If you schedule a course for this spring, please be sure to confirm with your instructor or community college contact the appropriate reference materials for the course.

Topics from the Energy Conservation Code will be introduced into all trade certification courses, with the exception of Fire Prevention. This update is in response to the addition of these topics to the certification exams. The Energy Conservation materials will be in a web-based format available from the DOI website. Students will be expected to work through the material – PowerPoint presentations with voiceovers – on their own time. Any questions arising from the web-based material should be brought to the certification course instructor for discussion. Links to the material will be available in the class and in future newsletters.

Certification Renewals

Certification renewal will be an on-line process this year. The exciting thing about this change is that we will be better able to keep inspectors in the loop as to their status – if they've completed CE requirements and if their renewal fees have been paid. Further, using your email address, we will be able to create an account for you that will allow you to log-in to our system and get real-time information about courses, certificates of employment, forms and applications, etc. – anytime from your computer. Exciting! However, in order for this magic to happen, you must visit the DOI website and provide us with your email address. This should be your own individual address, not one for your department, as personal information may be sent via that address.

As renewal season gets closer, we will be sending out more information and posting some quick training information that you can use to orient yourself to the new system.

Important!

Although we have accumulated many of your email addresses, there are still some building officials who have not provided their information to us yet. This is the most efficient way we can get information to you in a timely manner. Note: This is a different list serve than the one you are receiving this newsletter from. In other words, just because you got this newsletter, does not mean you are on the Q-Board's email list.

If you have not already, please log on today to http://www.ncdoi.com/OSFM/Engineering/COQB/engineering_cogb_home.asp and click on the bright green box in the top right corner to provide your email address.

Accessibility Updates Posted

Since the last issue of the Engineering Newsletter was posted, two new accessibility updates have been posted. To read them and to sign up to be notified when future updates are available, please go to:

http://www.ncdoi.com/OSFM/Engineering/CodeServices/engineering_codeservices_interpretations_accessibility.asp

In addition to the new accessibility updates posted there, the USDOJ Guideline on Pools, which goes into effect on March 15, 2012, can be reviewed at that link. Remember that there is a brand new 2010 ADA Standard for Accessible Design that becomes mandatory for the entire country on the same date. Many designers are already using it, even though NC's 2012 NC Building Code will not be mandatory until June 1st.

Also posted on the website under the Tech Data section is [USDOJ ADA Update: A Primer for Small Business](#) Requirements effective March 15, 2012 for removing architectural barriers in existing buildings and making sure that newly built or altered facilities are constructed to be accessible to individuals with disabilities. These will be helpful handouts for owners or new tenants renovating existing tenant spaces.

NCBIA 2012 Education Seminar

The last NCBIA winter Education Seminar will be held in Hickory March 23-26 at the Park Inn, Gateway Conference Center in Hickory. For more information and to register, go to: <http://www.ncbia.org/>

NCMIA 2012 Workshops

There are 4 remaining NCMIA winter workshops.

Morganton – March 14, 2012

Wilson – April 25, 2012

Jacksonville – May 16, 2012

Burlington – June 27, 2012

REGISTRATION: 7:30 – 8:00 AM

WORKSHOP: 8:00 AM TO 3:00 PM (ONE HOUR LUNCH BREAK)

The NCMIA workshops have been approved by the North Carolina State Board of Examiners of Plumbing, Heating & Fire Sprinkler Contractors for continuing education credit toward license renewal in the amount of six (6) hours.

A registration application can be printed from the COCO newsletter at:

[http://www.ncdoi.com/OSFM/Engineering/Documents/COCO_Newsletters/COCO_NEWSLETTER\(January-2012\).pdf](http://www.ncdoi.com/OSFM/Engineering/Documents/COCO_Newsletters/COCO_NEWSLETTER(January-2012).pdf)

2012 Plumbing Code Workshops

The remaining 2012 NCMIA Plumbing Code workshops are scheduled for:

March 13, 2012 in Morganton

May 9, 2012 in High Point

June 12, 2012 at the annual meeting in Kitty Hawk, NC

October 18, 2012 in Burlington

For more information and to print a registration form, go to the COC newsletter at:

[http://www.ncdoi.com/OSFM/Engineering/Documents/COCO_Newsletters/COCO_NEWSLETTER\(January-2012\).pdf](http://www.ncdoi.com/OSFM/Engineering/Documents/COCO_Newsletters/COCO_NEWSLETTER(January-2012).pdf)

Free Energy Code Training Classes

Free training on the 2012 North Carolina Energy Conservation Code continues to be offered through March. The remaining dates are:

March 6-7	Smithfield
March 8-9	Raleigh*
March 20-21	Franklin
March 22-23	Asheville*
March 27-28	Fayetteville*
March 29-30	Raleigh

All dates are open to inspectors. The dates with an asterisk are also open to contractors, home builders, engineers, and architects. The first day of each two day work shop provides 6 hours of training on the residential energy conservation provisions and the second day provides 6 hours of training on the commercial energy conservation provisions. Each day provides 6 hours of continuing education credit for inspectors. You may register for either day or both days. The classes are free. Registration is by way of the Building & Fire Code Academy website at the following web address: www.bfcacademy.com and click on "Click here to register online for North Carolina classes".

For information, call (847) 884-4969

Free Energy Code Training Webinars

Free energy code training webinars on the 2012 North Carolina Energy Conservation Code continue to be offered to inspectors during March. The remaining dates are:

2012 NC Commercial Energy Conservation Code provisions:

March 5, 2012	10:00 am - 12:00 pm	Commercial Mechanical provisions
March 12, 2012	10:00 am - 12:00 pm	Commercial Electrical provisions

The webinars do not provide continuing education credit.

Registration for these webinars is by way of the BFCA website at: <http://www.bfcacademy.com> and click on "Click here to register online for North Carolina classes".

Free REScheck and COMcheck Energy Code Compliance Software

The US Department of Energy provides free software for demonstrating compliance with the 2012 North Carolina Energy Conservation Code. The use of this software is referenced in our code and is allowed for demonstrating compliance with our energy code. The latest release for the **REScheck** program corrects an existing issue, so please use the current version of the software, Version 4.4.3.0. The current version for the **COMcheck** software is Version 3.9.0.4. When using these programs, please first go to the "Code" menu and select "North Carolina" for the compliance code.

The link to REScheck and COMcheck on the USDOE website is www.energycodes.gov

Feedback and Suggestions

We welcome your feedback on the newsletters. If you have comments or suggestions, just send it in a reply to the email that sent you the link to this newsletter.