



MECKLENBURG COUNTY
Land Use and Environmental Service Agency
Code Enforcement

CONSISTENCY MEETING

Date: 3-15-2013

DEPARTMENTAL GOALS:

- **85 - 90 % 1 DAY TURN AROUND**
- **80 - 85 % CONTRACTOR PASS RATE**
- **QUALITY INSPECTIONS!**
- **EXCELLENT CUSTOMER SERVICE!**

SAFETY ISSUES:

REMEMBER COUNTY CELL PHONE POLICY, USE ALL APPROVED SAFETY EQUIPMENT ISSUED TO YOU. (i.e. HARDHAT, SAFETY GLASSES, SAFETY SHOES, PPE)

Q: WHY ARE WE HERE? A: TO SERVE THE CUSTOMER

1. In wiring a remodel job, I had to run a new circuit for a microwave. I ran a 12-2 into the back of the outdoor main panel. I landed the ground and neutral in the main panel. Since there were no breaker spaces left, I ran the hot conductor through a nipple into an existing sub-panel beside the main panel and landed it on a breaker. The inspector turned the job down. Is she correct?

Yes she is correct per NEC 300.3(B)

(B) Conductors of the Same Circuit. All conductors of the same circuit and, where used, the grounded conductor and all equipment grounding conductors and bonding conductors shall be contained within the same raceway, auxiliary gutter, cable tray, cablebus assembly, trench, cable, or cord, unless otherwise permitted in accordance with 300.3(B)(1) through (B)(4).

2. Please discuss in detail the current procedure for getting Temporary Utilities.

The following link gives a full detailed description of the Temporary Utilities process; this was discussed in detail during the meeting.

<http://charmec.org/mecklenburg/county/CodeEnforcement/Publications/Documents/Temporary%20Utility%20Process%202.15.13.pdf>

3. I have an old fuse or circuit breaker box inside and it's in a closet or kitchen cabinet, mounted in an outside wall. I'm going to put a main breaker panel outside. Then I will take the interior of the old panel out and make it a junction box. I plan on re-feeding some of the old 2-wire circuits with new 14/2. The new panel and old panel, which is now a junction box, are back-to-back. Can I put these new re-fed circuits on a 15amp breaker or do I have to use AFCI 15amp breakers? By moving this old panel out of a closet or kitchen cabinet I've made it a better installation. And I know you can't extend these old 2 wires to feed another receptacle or light. Would this be considered an extension, or a re-feed?

This is a re-feed, and no AFCI is required. Below is some of the discussion captured from the Code Making Panel #2. From it one can see that the intent of this new section was not to require AFCI protection in this question's scenario.

Proposal to Change 2011 NEC

2-115 Log #536 NEC-P02 **Final Action: Accept in Principle**
(210.12(B))

Submitter: Dennis Alwon, Alwon Electric Inc.

Recommendation: Add new text to read as follows:

Exception: Where extension of the branch circuit does not include any added outlets or devices.

Substantiation: Often times when changing a service in an older home the branch circuit conductors do not reach the new location of the panel. The wire is sometimes just spliced inside the panel to reach the termination points while other times the circuit may need to be extended a short distance to reach the new location. Since many areas are inspecting this differently throughout the country this exception would clarify this section and bring uniformity throughout.

Panel Meeting Action: Accept in Principle

Revise the proposed wording to read as follows:

“Exception: AFCI protection shall not be required where the extension of the existing conductors is not more than 1.8 m (6 ft.) and does not include any additional outlets or devices.”

Panel Statement: The revised wording provides clarity and satisfies the intent of the submitter.

Number Eligible to Vote: 11

Ballot Results: Affirmative: 9 Negative: 1 Abstain: 1

Explanation of Negative:

KING, D.: This Proposal should be rejected. It is the intent of Section 210.12(B) to provide AFCI protection where circuits that are covered by 210.12(A) are “modified.” The submitter has not provided any substantiation to allow for an exception for AFCI Protection in the branch circuit modification described in his substantiation. Accepting the proposed exception would greatly diminish the level of safety currently provided by the requirements of 210.12(B).

Explanation of Abstention:

ORLOWSKI, S.: See my Explanation of Vote on Proposal 2-92.

Comment on Affirmative:

HILBERT, M.: Continue to accept in principle. The issues noted in the substantiation for this proposal and Proposal 2-11 are often topics of discussion at IAEEI meetings as well as other educational meetings and do need clarification.

The proposed language as revised by the panel’s accept in principle action will go a long way in promoting uniform interpretations. It will clarify that extending branch circuit conductors within an enclosure for the purposes of replacing a device or utilization equipment or for extending a branch circuit to a panelboard being replaced or upgraded does not require an AFCI protective device to be installed.

Six feet was chosen for branch circuit extensions as it should provide a sufficient length for most applications where an existing panel is being relocated out of a clothes closet or to comply with readily accessible requirements, etc.

4. They have a mini split system by Mitsubishi. The wires running from the split system to the interior unit upstairs is run in SJOW flexible cord. This is line control wiring, (breaking one leg of 240v). As per article 400 for uses not permitted, you can't run this wire thru walls, floors, ceilings etc. I've turned this down because of the way the mechanical contractor ran the wiring, not because of the wiring. Anyway the M/C contacted the manufacturer of this unit and they said this unit requires stranded wire. The E/C and M/C wants to “override” my decision. Are they correct?

No they are not correct. NEC 400.8(2) clearly states:

400.8 Uses Not Permitted. Unless specifically permitted in 400.7, flexible cords and cables shall not be used for the following:

(2) Where run through holes in walls, structural ceilings, suspended ceilings, dropped ceilings, or floors The manufacturer’s specification for stranded wire has no bearing here.

5. Can NM flex be used to protect leads for floor heat cables?

Yes where not subject to physical damage and installed per 362.10 and 424.44(E)

6. I am changing a service on a house. I ran an equipment ground and neutral from the meter can to the main panel and separated grounds and neutrals there. The inspector turned it down. Can I do this?

No; Equipment grounding conductors are not allowed ahead of main service disconnect.

250.142 Use of Grounded Circuit Conductor for Grounding Equipment.

(A) **Supply-Side Equipment.** A grounded circuit conductor shall be permitted to ground non-current-carrying metal parts of equipment, raceways, and other enclosures at any of the following locations:

- (1) On the supply side or within the enclosure of the ac service-disconnecting means
- (2) On the supply side or within the enclosure of the main disconnecting means for separate buildings as provided in 250.32(B)
- (3) On the supply side or within the enclosure of the main disconnecting means or overcurrent devices of a separately derived system where permitted by 250.30(A)(1)

7. In a lay in ceiling I have a duct heater. The disconnect is in the hinged front cover. The cover will not open 90 degrees. Can I remove the hinges and put screws, so the cover can be removed to get the clearance.

No, 110.3 and Listing rules do not allow the altering of equipment without a field evaluation of the equipment after the alteration.

8. Is there a circuit breaker that can be used with any panelboard regardless of the manufacturer's name brand?

Yes there are circuit breakers on the market that are permitted to be installed in panelboards (load centers) of other manufacturers; but special attention to the installation instructions is a must in order to use these breakers according to the detailed listing specifics.

9. What code section addresses wet/damp location requirements for walk-in coolers?

300.7 Raceways Exposed to Different Temperatures.

(A) **Sealing.** Where portions of a raceway or sleeve are known to be subjected to different temperatures, and where condensation is known to be a problem, as in cold storage areas of buildings or where passing from the interior to the exterior of a building, the raceway or sleeve shall be filled with an approved material to prevent the circulation of warm air to a colder section of the raceway or sleeve. An explosion proof seal shall not be required for this purpose.

NEXT MEETING:

Contractors – Wednesday June 12, 2013

Inspectors – Friday April 12, 2013

Commercial Consistency

*Land Use and Environmental Service Agency
(Code Enforcement)*

First Quarter Q&A 2013

General:

1. (Q) *Section 705.5 requires the exterior wall to be rate from both sides how far from the property line?*
(A) Less than or equal to 10'-0"
2. (Q) *What is the mounting height for an electrical panel in an A or B unit?*
(A) ANSI A117.1 requires that the top breaker be no more than 48" AFF.
3. (Q) *In a fully sprinklered building can the 1/3 diagonal be used between exits on an occupied roof?*
(A) Yes
4. (Q) *Are fire and smoke dampers required in a smoke barrier wall?*
(A) Yes, see Section 713.3
5. (Q) *What are the requirements for pool chair lifts?*
(A) The only requirements are those found in Section 1109 of the 2009 ANSI 117.1.
6. (Q) *What are racking permit requirements?*
(A) All racks that are not covered by the bass permit would require a separate permit. Racks that are over 12" in height must meet the seismic requirements.
7. (Q) *Where do I find the requirements for vestibules in the energy code?*
(A) See Section 502.4.6 please remember to read all of the exceptions.
8. (Q) *Are the individual patients room doors counted the 10 locks allowed by Section 407.10?*
(A) Yes
9. (Q) *Do the occupants under a canopy in an assembly occupancy count towards the 300 the occupant load in the fire area which may require sprinklers or SI?*
(A) Yes, if the canopy area is not separated from the inside by a fire barrier.
10. (Q) *How far from the exterior wall opening can the top or bottom of a stair be from an exterior opening an sill be an open stair?*
(A) The first riser can be no more that the width of a required landing from the exterior opening.

11. (Q) *What members does foot note b apply to in Table 601?*
(A) This note only applies to secondary members not the primary roof members.

12. (Q) *What is a occupancy like a Jiffy Lube considered?*
(A) It is a repair garage in the 2012 NCBC.

13. (Q) *Can you have a shower curb in a B type unit?*
(A) Yes, curbs are not addressed in the ANSI Standard of B units.

14. (Q) *Is there a 50% rule for bringing a building up to current code?*
(A) No, only the new work would have to meet current code.

15. (Q) *If a wall or floor has a higher rating than required by code can the penetration be less than the wall or floor rating?*
(A) No, the wall or floor rating must be reduced or the penetration must match..

Consistency Quarterly Report

BUILDING

Building held six consistency meetings this quarter three residential and three commercial. There were 10 Q&As and 16 issues covered in the residential meeting and there was an average attendance of 14 contractors at each meeting. There were 15 Q&As and 5 issues covered in the commercial meeting with no public attendance.

PLUMBING AND MECHANICAL

Mechanical/Fuel Gas held three team meetings for the quarter. There were 24 mechanical Q&As and 5 fuel gas Q&As. The March meeting was for the contractors and there were 6 contractors in attendance.

Plumbing held three team meetings for the quarter. There were 17 Q&As. March was for the contractors and there were 5 contractors in attendance.

ELECTRICAL

Electrical held one meeting for inspectors and contractors on March 15th. There was an increase in attendance of contractors over previous meetings. There were 9 Q&As discussed. Electrical also issued 2 formal "policy" interpretations this quarter which will be posted on the web site.



Land Use and Environmental Services
(Code Enforcement)

NC Fuel Gas Code

1st Quarter 2013 Code Answers in brown 2nd Quarter 2013 Code Answers in green
3rd Quarter 2013 Code Answers in blue 4th Quarter 2013 Code Answers in red

1st Quarter

Table of Contents

Chapter 1 Administration	Chapter 2 Definitions
Chapter 3 General Regulations	Chapter 4 Gas Piping Install.
Chapter 5 Chimneys & Vents	Chapter 6 Specific Appliances.
Chapter 7 Gaseous Hydrogen S.	Chapter 8 Ind./Special Waste
POLICY	OTHER

Chapter 1 Administration

Chapter 2 Definitions

Chapter 3 General Regulations

Chapter 4 Gas Piping Install

1) (Q) I continued to look if there were even newer versions of that DOI ruling on protection, and I found one for 2009 & for the 2012 Fuel Gas Codes. I've attached them both. The 2009 reads the same as the one you gave me, but the 2012 is much more vague. Does the 2012 ruling removes the specific 36" requirement found in all the previous rulings, or would that still apply? What are your thoughts?

(A) The questions and code references in both DOI Interpretations are the same. We see no significant change in the 2009 and the 2012 gas code section. The DOI 2012 interpretation merely expands on the 2009 interpretation. Mecklenburg County Code enforcement will continue to enforce the 3 foot above grade requirement for the 2012 North Carolina Fuel/Gas Code. NCDOI 2009 and 2012 NCFGC interpretations are included below in (a) 2009 Code and (b) 2012 Code in italics for reference below. Ref: 404.7 2012 NCFGC

(a) Question: 2009 DOI interpretation of 404.7 NCFGC

Is aboveground gas piping outdoors required to be protected?



Land Use and Environmental Services
(Code Enforcement)

NC Fuel Gas Code

1st Quarter 2013 Code Answers in brown 2nd Quarter 2013 Code Answers in green
3rd Quarter 2013 Code Answers in blue 4th Quarter 2013 Code Answers in red

1st Quarter

Answer:

Yes. Section 404.7 states "Piping installed above ground, outdoors, and installed across the surface of roofs shall be securely supported and located where it will be protected from physical damage."

Copper tubing, corrugated stainless steel tubing (csst), and brass pipe shall be protected with a schedule 40 polyvinyl chloride (pvc) sleeve or equivalent from a point 3 inches below grade to a point 3 feet above grade. The protection shall be provided at the building, when the piping is not protected by the gas meter, gas appliance or other means, and also at the storage tank when L P gas is used. The protection will not be required for black steel and galvanized steel pipe. When the manufacturer's installation instructions require additional protection, the protection shall be provided. Exposed ferrous metal shall be protected from corrosion.

(b)Question: 2012 DOI Interpretation of 404.7 NCFGC

Is outdoor aboveground gas piping required to be protected?

Answer:

Yes. Section 404.7 states;

"Piping installed above ground, outdoors, and installed across the surface of roofs shall be securely supported and located where it will be protected from physical damage."

This section requires elevating the piping 3-1/2 inches. This dimension correlates with 4x4 pressure treated lumber and is intended to keep it from moisture.

Section 403.8 states;

"Where in contact with material or atmosphere exerting a corrosive action, metallic piping and fittings coated with a corrosive-resistant material shall be used."

2) (Q) What are the requirements for inspection of a gas test for low pressure and for high pressure? The 2012 code has different test requirements from the 2009 Code.

(A) We will continue to test low and high pressure gas under the same format as the 2009 Code (the old 10/10 and 50/10 test systems). We are using the 2009 code test requirements as an alternate method with the approval of Bill Moeller of DOI. Ref. 406.4 2012 NCFG



Land Use and Environmental Services
(Code Enforcement)

NC Fuel Gas Code

1st Quarter 2013 Code Answers in brown 2nd Quarter 2013 Code Answers in green
3rd Quarter 2013 Code Answers in blue 4th Quarter 2013 Code Answers in red

1st Quarter

3) (Q) A fuel piping contractor is purging a 3 inch gas pipe inside a high rise building. There is not a means to purge the pipe to the outside as required by code. Is there another way the contractor can purge the system without purging to the outside and still meet minimum code?

(A) Yes. The exception to 406.7.1 would allow purging inside the building under specific conditions stated in the exception. 406.7.1 Exception NCFGC 2012

4) (Q) Gas piping is installed exposed in the ceiling of a ware house. The piping is supported by metal pipe hooks except where it crosses a 10 inch sprinkler line where it is supported by the top of the sprinkler piping. Should the inspector approve the installation? What would the code require?

(A) The inspector should not approve the installation. The sprinkler piping shall not be used to support the gas piping. 407.2 NCFGC 2012

Chapter 5 Chimneys & Vents

1) (Q) A contractor is installing a vent connector as part of a natural draft system in accordance with the manufacturer's installation instructions. The vent connector has been installed without the code required slope upward toward the chimney of one quarter inch. Can this installation be approved by the inspector?

(A) Yes. As long as the vent connector is installed per the manufacturers installation Instructions a slope greater than quarter inch may be used. 503.10.8 Exception NCFGC

Chapter 6 Specific Appliances

Chapter 7 Gaseous Hydrogen S.

Chapter 8 Ind./Special Waste

POLICY

OTHER



Land Use and Environmental Service Agency
(Code Enforcement)

NC Mechanical Code

1st Quarter 2013 **Answers in Brown**, 3rd Quarter 2013 **Answers in Blue**
2nd Quarter 2013 **Answers in Green**, 4th Quarter 2013 **Answers in Red**

Table of Contents

Chapter 1 Administration	Chapter 2 Definitions
Chapter 3 General Regulations	Chapter 4 Ventilation.
Chapter 5 Exhaust Systems	Chapter 6 Duct Systems
Chapter 7 Combustion Air	Chapter 8 Chimneys & Vents
Chapter 9 Specific Appliances	Chapter 10 Boilers, Water Htrs
Chapter 11 Refrigeration	Chapter 12 Hydronic Piping
Chapter 13 Fuel Oil Piping	Chapter 14 Solar Systems
POLICY	OTHER

Chapter 1 Administration

Chapter 2 Definitions

Chapter 3 General Regulations

1) (Q) An Italian MP regulator is installed on an appliance that is specified by the code to meet the reference standard for the 2003 ANSI Z21.80. It meets the 2005 ANSI Z21.80 standard. Should the inspector approve the regulator?

(A) The regulator meets the 2005 standard specified by the ICC 2012 Code. We would have no problem approving the regulator with the new ANZI standard. This meets the intent of the code. 101.3, 301.4 NCMC 2012

2) (Q) The inspector has turned down a gas grill installation outside a single family home because the hood is not labeled for use in a damp location. The inspector calls the hood manufacturer to find out if the hood is approved for the location. The manufacture of the hood informs the inspector the hood is approved for damp locations. What information should be required by the inspector to approve the installation?

(A) The inspector should require a letter from the manufacturer defining a damp location and the grills and hood combinations approved for those locations. 301.4 NCMC 2012

3) (Q) A Mechanical Field inspector has turned down a gas grill installation that is located outside the apartment buildings in a common use area for residents. The grill has a large 20 inch by 20 inch wood beam approximately 9 feet high directly above the grill cooking surface. The manufacturer's installation instructions do not allow any



Land Use and Environmental Service Agency
(Code Enforcement)

NC Mechanical Code

1st Quarter 2013 **Answers in Brown**, 3rd Quarter 2013 **Answers in Blue**
2nd Quarter 2013 **Answers in Green**, 4th Quarter 2013 **Answers in Red**

combustibles above the grill. The manufacturer did not provide any data about the height so it is assumed anything combustible above the grill would violate the installation instructions. The designer wants to provide a flame retardant stain on the beam. Should the inspector approve the stain? Should the Mechanical Inspector ask the Building Inspector to get involved in the approval?

(A) The flame retardant stain does not make the beam non-combustible. The Mechanical Inspector defers to the Building Inspector to make the call on the material. The Building Inspector gives the designer the following options:

If you can provide a letter from the manufacturer stating that your installation is acceptable to them based on the height of the combustibles above the grill, we can accept that. Otherwise, your options are limited to: placing a hood above the grills, providing a non-combustible covering on the wood above the grills (such as a sheet metal cover), or removing the wood totally from above the grill area. 303.6 NCMC

4) (Q) I am installing a roof top unit that has neither a secondary drain pan or provisions to install a secondary or auxiliary drain pan. Would it be acceptable to install an in line condensate overflow device to shut the unit down so water will not overflow into the ducts?

(A) No. It is not acceptable. A water-level monitoring device is required to shut off the unit in the event the primary drain line becomes restricted. An in-line detection device is not allowed because blockage inside the pan at the drain hole would not be detected by an in-line device. Water would overflow from the pan and never reach the device. Ref: 307.2.3.1 NCMC 2012

5) (Q) An up flow furnace and air handler is installed on supports of treated wood located inside the auxiliary drain pan. Is this allowed by the 2012 NCMC?

(A) Yes. The code states that supports located inside the pan to support the appliance or equipment shall be water resistant and approved. We have approved treated wood in the past. All portions that are subject to water damage must be installed above the flood level rim of the pan. Examples are electrical components, metal items subject to rust and insulation within the appliance. 307.2.3.2 NCMC 2012



NC Mechanical Code

1st Quarter 2013 Answers in Brown, 3rd Quarter 2013 Answers in Blue
2nd Quarter 2013 Answers in Green, 4th Quarter 2013 Answers in Red

Chapter 4 Ventilation

- 1) (Q) A contractor wants to install an inverted dryer vent to provide make up air for a residential single family dwelling hood that exhausts 300 cfm. Would this be allowed by code?

(A) Yes. Make up air is not required by the residential code for a hood that exhausts less than 400 cfm. You should check to see whether the designer is requiring natural or mechanical ventilation. Check kitchen ventilation requirements. 402, 403, table 403.3 NCMC 2012

Chapter 5 Exhaust Systems

- 1) (Q) Is there a height above a sidewalk where a Type I or II hood exhaust discharge may be allowed?

(A) Yes. It can be exhausted over a public walkway but not onto a public walkway. 501.2.1.1 NCMC 2012

DOI- Yes, refer to 506.3.12.3 for Type I hoods, and 506.4.2 for Type II ductwork terminations. Do not exhaust onto a walkway, (you could even have an elevated walkway that you would not want to direct it onto, say like at a stadium), but you can exhaust over a walkway provided you have ample vertical clearance. –DED 11/27/12

- 2) (Q) The mechanical inspector has turned down an existing exhaust duct terminating into an open parking garage while inspecting an existing restaurant renovation. The exhaust system is used to exhaust moisture from a commercial dish washer and is a manufactured system. Should the inspector have turned down the installation?

(A) No. If the hood system meets 502.2 exception 2 requirements and is installed per the manufacturer's instructions it should be approved. If it is an existing installation and is not a type I hood discharge which requires either a water wash type hood or a specially designed system in order to use a louver discharge. Under certain circumstances DOI's current interpretation is that the exhaust discharge can be allowed. General code 501.2 NCMC 2012

DOI-Remember to follow the separation requirements and protection requirements. A parking garage will be an S-2, and there will be a separation requirement from the



Land Use and Environmental Service Agency
(Code Enforcement)

NC Mechanical Code

1st Quarter 2013 **Answers in Brown**, 3rd Quarter 2013 **Answers in Blue**
2nd Quarter 2013 **Answers in Green**, 4th Quarter 2013 **Answers in Red**

1st Quarter

adjacent building. Section 506.3.12.2 directly prohibits a Type I exhaust from penetrating a plane where protected openings are required, because you cannot put a fire damper in a Type I exhaust duct. Type II exhaust terminations are required to be protected via Section 506.4.2, Item 8.-DED 11/27/12

3) (Q) We are working on several multifamily projects with pool equipment rooms. It has come to my attention that the fans for pool equipment rooms are required to be corrosion resistant when storage of chlorine is in the room. In general, this makes sense because the buildup chlorine could eat away at the fan and eventually disable it. The question I have is does this also apply to pools that do not use Chlorine but use Salt and store it in the pool equipment room ?

(A) Chapter 31, Corrosive Materials, in the Fire Code is the driver for requiring ventilation for indoor use(3105.1.2). 3105.1.2 Refers you to 2705.2.1.1. "Where gases, liquids, or solids having a hazard ranking of 3 or 4 in accordance with NFPA 704 are dispensed or used, mechanical exhaust ventilation shall be required." You would need to ask your fire reviewer about the hazard ranking. If it is not considered corrosive in the quantities you store in the room a non corrosive resistant fan will be ok. 503.4 NCMC (In this case a non corrosive fan was required)

4) (Q) They say Waxhaw, Mecklenburg, and union County inspectors approve a dryer duct transitions. I guess this is a transition duct that attaches to the 4" dryer vent and transitions to a 2" x 6" periscope duct then back to a 4" round. Is it true this transition duct fitting is approved in Mecklenburg County?

(A) We have never allowed the transition box you are talking about in your question. It is rectangular and can trap lint in the ends of the transition. No one is going to pull the machine out and properly clean the dryer duct annually as is the required maintenance for dryer ducts. It is hard enough to get them to clean the dryer filter. 504.6.3 NCMC

5) (Q) A mechanical contractor wants to install an inverted dryer vent fitting as a makeup air duct for a residential single family hood that exhaust 500 cfm. Would the inverted dryer vent fitting be allowed by the code for makeup air?

(A) No. The code would require make up air approximately equivalent to the hood exhaust cfm and the ductwork shall have either a barometric or electrically operated damper that opens automatically when the hood is turned on. The product should be listed and sized for the application by the manufacturer. 505.2 NCMC 2012



Land Use and Environmental Service Agency
(Code Enforcement)

NC Mechanical Code

1st Quarter 2013 **Answers in Brown**, 3rd Quarter 2013 **Answers in Blue**
2nd Quarter 2013 **Answers in Green**, 4th Quarter 2013 **Answers in Red**

1st Quarter

6) (Q) The General Contractor of a new tract of homes is installing 600 cfm hoods in Kitchen of the new single family dwelling. The General Contractor wants to install a Whirlpool Make up air unit with ductwork attached to the return air duct just prior to the connection of the return duct to the unit. The manufacturer's installation instructions would allow the installation. The General Contractor says he has been turned down by the Mechanical field inspector and wants to know if the Mechanical CA can approve the installation?

(A) The most efficient method of providing make up air would be to provide the Make Up Air directly into the Kitchen. The Contractor does not want to use this method because of his concern about bringing in unconditioned make up air into the Kitchen. He is worried about getting complaints from the owner.

This started a dialogue between the General Contractor, the Mechanical Contractor, The Mechanical Code Administrator and the Department of Insurance. Once all the questions were answered the final determination was discussed with the General and Mechanical Contractors. Based on the information supplied from the Mechanical Contractor and once all the CA and DOI questions were answered the installation was approved by Mecklenburg County pending a makeup air cfm test.

NOTE: Any new or existing installation of Make Up Air equipment and ductwork per 505.2 of the 2012 North Carolina Mechanical Codes for new or relocated hoods in residential dwelling units, unless all the Make Up Air is provided directly in the Kitchen space, shall be approved by the Mechanical Code Administrator on a case by case basis. The Code Administrator may accept HVAC and ventilation sizing information which shall include Energy Code and Manual D and J calculations from a Mechanical Engineer licensed in the State of North Carolina for single family homes, duplexes, and townhomes land for sale up to three stories. At his discretion the Mechanical Code Administrator may require a performance test of a worst case scenario for makeup air designs that are installed as part of the HVAC duct system. Ref; 505.2 NCMC, NCRC 505.2

Note: The damper controls mounted above the hood shall be accessible. This may mean a false panel has to be installed within the cabinetry.

7) (Q) A designer has provided a separate 2 hour shaft on the second floor of a two story Building to run the grease duct from a type 1 hood on the first floor of the building. The grease duct from the Type 1 hood will pass through the shaft and then penetrate the roof exhausting through the roof mounted fan. The Type 1 hood is on the first floor in a restaurant. The designer wants to use approved Fire Master duct wrap starting at the hood, penetrating the ceiling of the first floor entering the two hour



Land Use and Environmental Service Agency
(Code Enforcement)

NC Mechanical Code

1st Quarter 2013 **Answers in Brown**, 3rd Quarter 2013 **Answers in Blue**
2nd Quarter 2013 **Answers in Green**, 4th Quarter 2013 **Answers in Red**

1st Quarter

shaft on the second floor. The plan examiner has turned the plans down the installation stating the reason the Fire Wrap has to be continuous from the hood through the roof penetration. Can the designer terminate the fire wrap at the penetration into the two hour shaft? Does stopping the fire wrap at the penetration comply with the manufacturers installation requirements?

(A) Yes to both questions. The designer had to provide a shaft penetration detail approved by manufacturer of the Fire Wrap and the manufacturer had to agree that his product could terminate at the shaft on the second floor. A letter was obtained from the manufacturer with an approved penetration detail. The designer submitted a detail for the Fire Wrap material to the plan examiner and it was approved without a continuous wrap from hood to roof being required. 506.3.10.1, 506.3.10.2 NCMC 2012

8) (Q) A large restaurant has been submitted to plan review on the first floor of a high rise building. There are several exhaust systems that terminate into an open parking garage. There are two type 1 hoods that discharge through an environmental air filtering system. They terminate at a louvered exhaust grill in the open parking deck. Another type 1 hood with a separate exhaust duct terminates after exhausting through a water wash hood which also terminates in an exhaust grill in the parking deck. The restaurant also has 4th Type 1 hood that is an approved recirculation type hood. Can the plan reviewer approve these installations? If no, what are the conditions, if any, that these installations may be allowed?

(A) The Type I recirculation type hood is allowed by current code if the installation meets 507.1 Exception # 2 NCMC. The environmental air system and the water wash hood system may be allowed as an alternate method by the code official. The ductwork is required to be welded both entering and leaving the environmental air filtering system. With Mecklenburg County approval as alternate methods both systems may terminate at a louvered exhaust in the open parking garage. See DOI comment below on design requirements for an engineer who submits exhaust terminations in an open parking garage.

DOI- Exhaust Terminations in open parking garages. This is not uncommon in heavy urban areas, and to consider it as an alternate means or materials is within your authority. As addressed below, the alternate method must take into account that the exhaust stream leaving the water-wash system is no longer subject to 506.3.12.2, as you cannot put a fire damper in a Type I exhaust. Since these are open garages, it is



Land Use and Environmental Service Agency
(Code Enforcement)

NC Mechanical Code

1st Quarter 2013 [Answers in Brown](#), 3rd Quarter 2013 [Answers in Blue](#)
2nd Quarter 2013 [Answers in Green](#), 4th Quarter 2013 [Answers in Red](#)

1st Quarter

little different from exhausting out to the public way, but you would still want to locate the termination in a manner to minimize any potential backdrafting or reverse chimney effect. Also when considering any exhaust into any place other than the code-prescribed locations outside a building, take into account that the exhaust stream many times carries the byproducts of combustion for gas-fired equipment, and the natural ventilation option that many open parking decks utilize do not take into account any other pollutant source than the cars coming in, stopping, and shutting off. The quantity of combustion byproducts to dilution air in most cases will be very, very, small, but should be addressed in any proposed alternate method. Where the exhaust goes, after it enters the parking deck, should therefore be addressed also since it could have combustion byproducts. Although not real common, in Mecklenburg you could have icing problems also if the exhaust stream carries a high moisture content, so slipping and sliding would occur if not directed to the outside of the parking deck immediately. - DED 11/27/12 (comments by Dan Dittman, Chief Mechanical Engineer)

9) (Q) Under what conditions could the Mechanical Code Administrator approve a hood other than Type I in a commercial application where there may be smoke or grease laden vapors present?

(A) Per DOI the 2012 ICC code has a provision to allow a cooking appliance to operated with a type II hood if the appliance has been tested to meet UL 710 B requirements. The owner must provide a menu. Food shall be pre packaged and pre cooked to meet the EPA 202 requirements of less than 5mg/m³ for smoke and grease laden vapor quantities. The approval would be an alternate method per 105.2 for that particular project and with a defined use.

DOI comment-If the designer can demonstrate the HVAC system has the capacity to handle the heat and moisture the AHJ may approve the installation without a hood. DED 507.2, 507.2.1 NCMC 2012

Chapter 6 Duct Systems

1) (Q) The plan reviewer has turned down a 5 story type R2 occupancy. He is requiring smoke dampers or a code approved alternate where individual bathroom exhaust ducts terminate in an exhaust shaft. The engineer is using the exception for sub ducts in lieu of fire dampers at the shaft penetration per 606.5.5 Exception #1 (1.1). The reviewer is asking, in addition to the sub ducts, either smoke dampers at the penetration of each bathroom exhaust duct terminating through the two hour shaft or to supply emergency power for the roof mounted exhaust fan. The fan on the roof is pulling exhaust air from all the bathrooms and runs continuously. The designer does not believe he needs to



Land Use and Environmental Service Agency
(Code Enforcement)

NC Mechanical Code

1st Quarter 2013 **Answers in Brown**, 3rd Quarter 2013 **Answers in Blue**
2nd Quarter 2013 **Answers in Green**, 4th Quarter 2013 **Answers in Red**

1st Quarter

supply the protection the plan reviewer requires and sites 909.1 of the NC Building Code as a reference. (1) Does section 909 of the building code apply? (2) Should the reviewer turn the job down, if yes, why? (3) Can the designer use an alternate power source as an approved method?

(A) (1) Section 909 of the building code does not apply. Section 909 states that “Mechanical smoke control systems shall not be considered exhaust systems under chapter 5 of the North Carolina Mechanical Code”. The requirements the plan examiner is turning the system down for are in Chapter 6 not chapter 5 of the Mechanical Code.

(2) Yes. The designer has to either install smoke dampers as referenced above or comply with 909.11.1 of the NC Building Code.

(3) Yes. 909.11.1 allows the designer to use an alternate power source that will allow the roof mounted exhaust fan to run for a sufficient duration to span a 15 minute primary power interruption. A separate one hour room is required for the alternate power source per 909.11. Ref: 606.5.5 Exception # 2

2) (Q) We have been getting complains about the alternate design requirements allowed in multi-family dwelling. We allow a smoke detector mounted either in the return at the unit, a separate line powered thermostat with battery backup, or a smoke detector tied to the apartment unit smoke detector system in lieu of a dynamic one hour radiation damper which is required at the penetration of the floor/ceiling or roof/ceiling assembly. The engineer ask if the smoke detectors could be on a delay of 3 minutes to allow a cool down period for the unit because of unit warranty issues?

(A) No. The fan shall shut down immediately upon detection of smoke. If the designer can not comply with that requirement as part of the alternate method allowed then the designer should provide a dynamic radiation damper required by code. We understand a 3 hour dynamic radiation is manufactured, however, a one hour is allowed for the floor/ceiling membrane penetration. The designer may use the 3 hour or find a one hour dynamic radiation damper that is approved for the penetration. Ref: 607.6.2 #2, 607.6.2.1.1 NCMC 2012

Chapter 7 Combustion Air

Chapter 8 Chimneys & Vents

Chapter 9 Specific Appliances



Land Use and Environmental Service Agency
(Code Enforcement)

NC Mechanical Code

1st Quarter 2013 **Answers in Brown**, 3rd Quarter 2013 **Answers in Blue**
2nd Quarter 2013 **Answers in Green**, 4th Quarter 2013 **Answers in Red**

Chapter 10 Boilers, Water Htrs

1) (Q) A contractor that we work closely with is asking if “mushroom type” emergency burner/boiler push-button shutoff switches are required at each exit door from the mechanical room (per ASME CSD-1) where a large boiler has been installed. The Fuel Gas Code only references manual valves at each piece of equipment. Does Mecklenburg county code enforcement require such devices?

(A) I need more information before I can answer your question.

- There is no definition of a mechanical room in the gas code. I assume you have a gas fired boiler?
- Boiler Room and Machinery Room requirements are discussed in the 2012 North Carolina Building Code: 1015.3 Boiler, incinerator and furnace rooms. This section has a square foot/ BTU limitation in determining the number of exits. 1015.4 Refrigeration Machinery Rooms. (Note: Square footage of the room determines number of exits.) Which of these requirements apply to your project?
- What sections of the Boiler Code apply to your project. Does 13 NCAC 13.0420 (c) apply to your Boiler? If so a shut off at each exit is required by the Boiler Code.
- North Carolina Fuel Gas Code Section 631 has standards specified for “listed” Boilers. The requirements of ASME-CSD-1 apply if applicable.
- If the manufacturers installation instructions for the Boiler require the “mushroom type” shut off devices then they shall be installed per code. (See 631.2 NCFGC). 631.2 NCFGC also references the North Carolina Mechanical Code. You need to analyze chapter 10 requirements to see what information applies to your installation. Providing the information above should help in determining if the “mushroom type” kill switches are required. I do not have the ASME-CSD-1 reference. Please provide a copy of the reference information.

Chapter 11 Refrigeration

Chapter 12 Hydronic Piping

Chapter 13 Fuel Oil Piping

Chapter 14 Solar Systems

POLICY



Land Use and Environmental Service Agency
(Code Enforcement)

NC Mechanical Code

1st Quarter 2013 Answers in Brown, 3rd Quarter 2013 Answers in Blue
2nd Quarter 2013 Answers in Green, 4th Quarter 2013 Answers in Red

OTHER: Includes: NC Energy Code 2012, NC Building Code

- 1) (Q) The Energy Code in Section 503.2.4.4 exception 2 allows gravity dampers for exhaust airflows of 300 cfm or less. Is the exhaust airflow based on what an individual fan is providing or do you add the aggregate amount of exhaust as in the case of when multiple fans are manifolded together?

(A) If multiple fans are manifolded together such that the resultant air flow exceeds 300 cfm, the shutoff dampers would be required, unless exempted elsewhere. The code cites "airflows", so I am going with air flow of the outlet and not the individual fan capacity. – DED—503.2.4.4, exception 2, NC Energy Code 2012

- 2) (Q) Same situation as above. How is this code section applied to the case of kitchen exhaust ducts?

(A) A type I exhaust system is not required to have a fire damper, per NCMC 607.5.5 Exception 4, and in fact anything that restricts the air flow would be prohibited, including motorized backdraft dampers.-DED 607.5.5 Exception 4, NCMC 2012

- 3) (Q) Same situation as in # 3 above... how could a motorized damper be located in the exhaust air stream of a type 1 hood exhaust? (I don't think that even a gravity damper has ever been used in a type 1 or type 2 hood exhaust)

(A) A Type II hood would not be exempt, but be careful if it is serving appliances that require exhaust of byproducts of combustion, such as a water heater installed under a kitchen dishwasher Type II hood. – DED--607.5.5 Exception 4, NCMC 2012

- 4) (Q) When is a programmable thermostat required by 403.1 of the 2012 NC Energy Code?

(A) Per the North Carolina Energy Conservation Code, section 403.1.1, where the primary heating system is a forced-air furnace, (not a Heat Pump) at least one programmable thermostat per dwelling unit shall be capable of controlling the heating and cooling system on a daily schedule to maintain different temperature set points at different times of the day. This thermostat shall include the capacity to set back or temporarily operate the system to maintain zone temperatures down to 55 degrees (F) or up to 85 degrees (F). North Carolina Department of Insurance Comments: This requirement (programmable thermostat) only applies to the installation of gas, oil, solid fuel and electric furnaces. Heat pump installations do not require programmable thermostats,



Land Use and Environmental Service Agency
(Code Enforcement)

NC Mechanical Code

1st Quarter 2013 **Answers in Brown**, 3rd Quarter 2013 **Answers in Blue**
2nd Quarter 2013 **Answers in Green**, 4th Quarter 2013 **Answers in Red**

1st Quarter

but, (strip lock out controls) are required to be installed per the North Carolina Energy Conservation Code, section 403.1.2 Heat pumps having supplementary electric-resistance heat shall have controls that, except during defrost, prevent supplemental heat operation when the heat pump compressor can meet the heating load. A hear strip outdoor temperatures lockout shall be provided to prevent supplemental heat operation in response to the thermostat being changed to a warmer setting. The lockout shall be set no lower than 35 degrees (F) and no higher than 40 degrees (F). 403.1.1, 403.1.2 NCEC 2012

5) (Q) Are Nest@ programmable thermostats allowed to be installed for HVAC system controls in Mecklenburg County?

(A) Yes, We had a call from a contractor who said another County was questioning the use of the thermostats.

A Nest@ Thermostat system is a smart stat with an IP connection that can be controlled through the internet. It reads outdoor temperature via the location of the property zip code. The other County was concerned about what would happen if you lost the internet connection. The thermostat has a very strong battery back up system that should easily keep the dwelling temperature stable until the homeowner returns or the internet connection is restored. As long as the thermostat is installed per manufacturer's installation instructions Mecklenburg County will have no problem approving the installation of Nest@ Programmable thermostats. Ref: 403.1.1 NC Energy Conversation Code (Chapter 4 residential)

DOI information:

From: Dittman, Daniel E [dan.dittman@ncdoi.gov]

Sent: Monday, February 25, 2013 9:18 AM

To: Paul D. Roper

Subject: Excerpt from Prior outdoor T' stat Proposal

Mr. Roper.

A proposal that allowed essentially a small DDC system to be used has already been approved by the BCC. It is in rules review now, and there is no indication it will not pass. The proposed method does not monitor outdoor air temperature at all; please refer to the wording below my signature. If combined with the requirements of sizing the heat pump according to Manual S, the heat pump compressor should be capable of meeting the loads when air temp is above 34 – 40F. Therefore, although there is no direct measurement of outdoor air temperature, the added time delays that the DDC system has in the software will likely limit the amount of time that the heat strips are energized when they do not need to be. I view the NEST t' stat along the same lines. It has the capability to work and meet the intent of the code, but it is difficult as an inspections department to know it is working when you leave a



Land Use and Environmental Service Agency
(Code Enforcement)

NC Mechanical Code

1st Quarter 2013 **Answers in Brown**, 3rd Quarter 2013 **Answers in Blue**
2nd Quarter 2013 **Answers in Green**, 4th Quarter 2013 **Answers in Red**

1st Quarter

building. The requirement to get and maintain an internet connection is also something that would need to be communicated to the owner of the house. As any Alternate Materials proposal, these issues would need to be addressed.

Based on the previous proposal to the BCC, I think the NEST would be well-received, as it does not impact the affordability of a code-minimum house, but is intended to be an upgrade to minimum. The following is a link to the code-change form; the provider may want to submit this.

http://www.ncdoi.com/OSFM/Engineering_and_Codes/Documents/BCC_Documents/CodeChangeForm.pdf

Sincerely,

Daniel Dittman, PE, CMVP
919-661-5880 x237
NC DOI
Chief Mechanical Code Consultant

6) (Q) The Mechanical Inspector on a 10 story building finds supply and return duct penetrating the wall of the elevator machinery room. The ductwork is part of the same system supplying air conditioned air to the floor. The machinery room also has a separate unit in the room that heats and cools only that room. The elevator machinery room contains solid state equipment for controlling the elevator operation. Should the Mechanical inspector approve this installation?

(A) The inspector cannot allow ductwork from other spaces/rooms on the same or adjacent floors to penetrate the elevator machinery room. A separate unit supplying heat and air to the room installed within the room would meet code.

Ref: 3006.2 NCBC 2012



NC Plumbing Code

1st Quarter 2013 Code Answers in brown 2nd Quarter 2013 Code Answers in green
3rd Quarter 2013 Code Answers in blue 4th Quarter 2013 Code Answers in red

Table of Contents

Chapter 1 Administration	Chapter 2 Definitions
Chapter 3 General Regulations	Chapter 4 Fixtures, Fau & Fit.
Chapter 5 Water Heaters	Chapter 6 Water Supply & Dist.
Chapter 7 Sanitary Drainage	Chapter 8 Ind./Special Waste
Chapter 9 Vents	Chapter 10 Traps, Inter. & Sep.
Chapter 11 Storm Drainage	APPENDIX A-H
POLICY	OTHER

Chapter 1 Administration

1) (Q) The owner of a coin operated Ice House is using an approved water tap from the utility. The weekly discharge from the Ice House is about a gallon of water that is drained from the building into a gravel lined trench. Several locations in Charlotte as well as 10 more around the state including the City of Raleigh have allowed the installation without a sanitary sewer connection to drain the Ice House waste. The unit is washed down weekly using a hose bib inside the building and a bio-degradable cleaner is used for the wash down. The owner has ask the Plumbing Code Administrator to waive the sanitary sewer connection requirement. The utility tap fees are \$6000.00. Should the CA require the Sanitary Sewer connection? Can the owner use an existing water service on an adjacent property if both properties are owned by the same person? Can the owner run a waste line into the adjacent property septic tank?

(A) It depends on specific site conditions. Per the utility the owner has permission to use the water service on the adjacent property. We would allow that also if the owner had a dedeed easement for the water service. Can the sanitary sewer be connected to an existing septic tank on the adjacent property. The utility said no problem. We would put a hold for approval on the permit pending Wastewater Management Department of Mecklenburg County approval of an additional drain tied to the Septic Tank. Even if the Septic Tank is not allowed as a waste receptor for the Ice House we would probably not require a Sanitary Sewer connection for the Ice House wash down.

Chapter 2 Definitions



NC Plumbing Code

1st Quarter 2013 Code Answers in brown 2nd Quarter 2013 Code Answers in green
3rd Quarter 2013 Code Answers in blue 4th Quarter 2013 Code Answers in red

Chapter 3 General Regulations

- 1) (Q) The floor drain in the elevator machinery room of a 10 story building has been installed without a means to prime the trap. The contractor proposes installing a hose bib in the machinery room to prime the trap. Is this an acceptable means of priming the trap?

(A) Plumbing systems shall not be installed in elevator machinery rooms.
Ref: 301.6 NCPC, 3006.6 NCSBC 2012

Chapter 4 Fixtures, Fau & Fit.

- 1) (Q) Top and side fed water heaters- what are the prescribed clearances to combustible construction including plastic piping? How much transition material is required?

(A) Install per the WH manufacturer's instructions. 403.4, 403.6 2012 PC

- 2) (Q) Would a take- out only restaurant, without seating for dining, or a dry cleaning facility with only a small pick- up area for the public require public bathrooms?

(A) The code would require public bathrooms; however, there is a proposal in the 2015 code that has been approved by the ICC to eliminate public bathrooms in these types of occupancies for the public if the pick- up area is less than 1500 square feet. Per Bill Moeller, DOI Plumbing Chief Engineer, we should look at approving these types of occupancies without requiring public bathrooms. We have allowed these occupancies to supply only employee bathrooms in the past and will continue to do so.

DOI- These are some links to the recently approved P35-12 proposal to eliminate public restrooms at the front of takeout businesses for the 2012/2013 IPC code cycle, group A.

<http://www.iccsafe.org/cs/codes/Documents/2012-13cycle/FAA/2-IPC.pdf>

[http://www.iccsafe.org/cs/codes/Documents/2012-13cycle/Summary-FinalAction-](http://www.iccsafe.org/cs/codes/Documents/2012-13cycle/Summary-FinalAction-Group-A.pdf)

[Group-A.pdf](http://www.iccsafe.org/cs/codes/Documents/2012-13cycle/Summary-FinalAction-Group-A.pdf)

Bill Moeller

Chapter 5 Water Heaters



NC Plumbing Code

1st Quarter 2013 Code Answers in brown 2nd Quarter 2013 Code Answers in green
3rd Quarter 2013 Code Answers in blue 4th Quarter 2013 Code Answers in red

Chapter 6 Water Supply & Dist.

- 1) (Q) Are multiple main shut-offs required in a strip shopping center for each tenant space?

(A) No. Per DOI we would allow only one main readily accessible shut off valve for the building with supplemental shut off valves in the ceiling of each tenant space. "Tenant space shutoffs should be marked on the ceiling. 606.1 (2), (4), 606.2, 606.3 NCPC

- 2) (Q). Is there anything in the code that addresses water heating or sizing in the code? I couldn't find anything. And, as a matter of fact, I couldn't find anything mandating a water heater at all in a residential dwelling?

(A) Water Heater sizing is up to the designer for any dwelling unit. Commercial Water Heater sizing is also up to the designer, however, if the Health Department is involved in the approval they have certain sizing requirements they enforce. Chapter 5 of the North Carolina Plumbing Code (Commercial) and the North Carolina Residential Code (Plumbing Section) is devoted strictly to the installation of water heaters. You may also check our Meckpermit.com web site to get further information on water heaters from the 2012 Q & A on the interpretations page. 607.1 of the North Carolina 2012 Plumbing Code requires that each dwelling unit shall be provided with a source of hot water for each family unit. This applies to single family dwellings, duplexes and townhomes with land for sale up to three stories in height in the North Carolina Residential Code and for apartments and condominiums in the North Carolina Plumbing Code. 607.1 NCPC

- 3) (Q) What is the maximum water temperature at public lavatory? What is the temperature at a handicap lavatory? What is the maximum water temperature at a hot tub? What if the maximum temperature of a residential water heater?

(A) Single or multi-family water heaters shall be set at 120 degrees. Ref: GS 66-27.1 "Water thermostat settings"
Individual shower valves in a residence shall be set at 120 degrees. 424.3 NCPC
Hot tubs and showers in the HC code Lavatories 120 degrees, nothing listed, Bath Tubs 120 degrees per 607.8, Showers 120 degrees per 608.8 ANSI 117.1, 2009
Commercial occupancy Energy Code Requirements. 504.3 Temperature Controls.
"Service water-heating equipment shall be provided with controls to allow a set point of 110 degrees F for equipment serving dwelling units and 90 degrees F for equipment serving other occupancies.



NC Plumbing Code

1st Quarter 2013 Code Answers in brown 2nd Quarter 2013 Code Answers in green
3rd Quarter 2013 Code Answers in blue 4th Quarter 2013 Code Answers in red

Note: (The outlet temperature of lavatories in public rest rooms shall be limited to 110 Degrees F. "504.3 NC Energy Code 2012) See Chapter 6 references above.

Chapter 7 Sanitary Drainage

Chapter 8 Ind. /Special Waste

Chapter 9 Vents

1) (Q) We are running into a situation where AAV's are being installed on third floor attic Areas (some partial floors Exp: bonus rooms) just above the insulation level. Equipment is being set in front (Exp: HVAC/water heating equipment) and the AAV is no longer accessible.

(A) Advise contractor(s) that they must be accessible on final. 917.2, 917.5 2012 PC

2) (Q) The 2012 Plumbing Section of the North Carolina Residential Code has deleted the Code section allowing AAV's to be used in single family dwellings, duplexes and townhomes up to 3 floors. Can AAV's still be used in these occupancies?

(A) **Yes. Per Bill Moeller they may still be used. See information from DOI below.**

Section 917 was deleted from the residential plumbing code by the plumbing adhoc committee which eliminates the use of Studor (or other brands of AAV) vents from residential construction.

We have been using the statement on page 671 of the residential code to use the plumbing code requirements versus the residential plumbing code requirements.

"Where differences occur between the provisions of this abridged text and the North Carolina Plumbing Code, the provisions of the

North Carolina Plumbing Code shall apply. Requirements not specifically covered by this text shall conform to the North

Carolina Plumbing Code."

This is the catchall for any mistakes or omissions. It works well in most cases, not so much with lavatory sidewall clearances.

Bill Moeller

William H. Moeller, P.E.

Chief Plumbing Code Consultant

NCDOL/OSFM Engineering Division

Bill.Moeller@ncdoi.gov



Land Use and Environmental Service Agency
(Code Enforcement)

NC Plumbing Code

1st Quarter 2013 Code Answers in brown 2nd Quarter 2013 Code Answers in green
3rd Quarter 2013 Code Answers in blue 4th Quarter 2013 Code Answers in red

Quarter 1

Phone: 919-661-5880 extension 238

Fax: 919-662-4414

Bill,

Just so I am clear on this issue. We can use Air Admittance Valves in residential single family homes? We are using 671 of the residential code language to allow the use of AAV's in single family construction. Am I correct in my assessment of your email?

Willis,

You are correct.

Bill Moeller

Chapter 10 Traps, Inter. & Sep.

1) (Q) One quick question I had on the 2012 Plumbing code. Chapter 10 item 1002.4 concerning trap primer valves. Does the new code not allow for the hose bib or mop sink to prime the trap? I understand the concern is with maintaining the seal, and a trap primer does provide an automatic means to achieve this.

(A) We have allowed a hose bibs with a deep seal traps as an alternate method to achieve priming of the trap. The code has changed slightly to identify the location of the connection point of the trap priming line to the trap. We will continue to allow a deep seal trap with a hose bibs as a substitute for a direct trap priming line to the trap. 1002.4, 105.2 NCPC 2012

Chapter 11 Storm Drainage

APPENDIX A-H

Appendix C

1) (Q) Heidi, weren't you involved with a group that was looking at developing local plumbing standards for rainwater catchment systems? I thought you might share the link below with that group unless they are already involved with it. Is rainwater catchment in the plumbing code or is it an appendix for reference only?

(A) The North Carolina 2012 Plumbing Code has information in appendix C1 for installing Rain Water Recycling Systems. The C1 appendix is referenced and is a part of the 2012 code per section 301.3 NCSPC General Regulations. Plumbing Inspectors working in code enforcement departments statewide are required to inspect Rain Water Recycling Systems using appendix C1 for minimum code requirements. The web site in



NC Plumbing Code

1st Quarter 2013 Code Answers in brown 2nd Quarter 2013 Code Answers in green
3rd Quarter 2013 Code Answers in blue 4th Quarter 2013 Code Answers in red

your email references ASPE 210 Standard: Rainwater Catchment Systems. Without ordering the book I do not know how the standard compares to the code already in place and approved as State Law in North Carolina. The ASPE web site also has information about ordering ASPE Standard 45: Siphonic Roof Drainage. We already have approved two buildings in Charlotte using Siphonic Roof Drainage design criteria. No system standards are currently in the North Carolina State Plumbing Code for Siphonic Roof Drainage.

POLICY

- 1) (Q) Do you know what the NC Building Code is doing to comply with the following requirement in the amended Safe Drinking Water Act becoming effective January 5, 2014? See definition below:

“(d) DEFINITION OF LEAD FREE.—

“(1) IN GENERAL.—For the purposes of this section, the term ‘lead free’ means—

“(A) not containing more than 0.2 percent lead when used with respect to solder and flux; and

“(B) not more than a weighted average of 0.25 percent lead when used with respect to the wetted surfaces of pipes, pipe fittings, plumbing fittings, and fixtures.”

Is there something that the inspection side of things will be able to see that shows compliance with the lead free act?

- (A) To my knowledge nothing has been proposed to the BCC to comply with the Federal Act. As of January 4, 2014 the definition of lead-free pipe and fittings will go from 8 percent lead to 0.25 percent lead per Federal Law as signed by the President in 2011. This will have a major impact on suppliers and manufacturers that stock these products. See attached email from the EPA.

DOI-Bill Moeller

Jerry L. Ellis, Jr. --- Environmental Scientist Standards and Risk Management Division
Office of Ground Water & Drinking Water U.S. Environmental Protection Agency 1200
Pennsylvania Ave., NW (4607M) Washington, DC 20460

Mr. Moeller,

Thank you for the call this morning. Attached is the Bill that passed both houses and was signed into law January 2012. According to the Bill, the change in definition of "lead free" will not be effective until early 2014. The process for changing Section



Land Use and Environmental Service Agency
(Code Enforcement)

NC Plumbing Code

1st Quarter 2013 Code Answers in brown 2nd Quarter 2013 Code Answers in green
3rd Quarter 2013 Code Answers in blue 4th Quarter 2013 Code Answers in red

Quarter 1

141.43 in the Code of Federal Regulations is complicated right now and I don't have a time-line yet for when it will be completed. I recommend checking back in with us periodically to see where we are. You may contact me or Jeff Kempic who is involved with updating the CFR

(See attached file: Change to SDWA Definition of Lead Free PL 111-380-Jan.4, 2011. pdf)

<http://www.gpo.gov/fdsys/pkg/PLAW-111publ380>

2) (Q) The health department would like one of our inspectors to investigate a clogged floor drain in the vending area in front of one of the buildings on the UNCC Campus. They emailed a picture of the problem to the department. Should an RQ be requested to look at the problem?

(A) No. We cannot send an Inspector out for this, as we have no authority on state owned property. We would recommend a contractor look at it, from the picture that you attached, it appears that they are using a point of use Grease trap. These devices usually have a small orifice flow restrictor built in to the incoming side of the device. That precludes any fast drainage to keep the flow rate of the GT at factory settings to prevent washout of the Interceptor. Is this one Interceptor per food stand? If so, I would think this is the problem. They should go back to their designer of record for a fix...thanks GS 143-135.1 (a) (b) & (c)

3) (Q) Below I've highlighted a question that was raised concerning how far down the path of bringing existing plumbing up to current code a person needs to go for a fire restoration project. Could you shed some light on how I should respond? As far as total rebuild is concerned, this project does not fall into that category and is why the specifications as far as what Meck County requires is blurry. For instance when you said I will have to bring drain lines up to code, I understand this to mean all the way to the 4" sewer line that goes out of the house. Can you specify this more clearly for me?

(A) Our policy is if you do not change the roughs and put back exactly what was taken out we have allowed it as far as mechanical/plumbing and fuel gas work is concerned.

OTHER: Handicap Accessibility,

1) (Q) Discuss the key items to inspect in the plumbing code that are different from a standard handicap bathroom when the bathroom is designed for a hearing impaired person? What should the inspector look for?



NC Plumbing Code

1st Quarter 2013 Code Answers in brown 2nd Quarter 2013 Code Answers in green
3rd Quarter 2013 Code Answers in blue 4th Quarter 2013 Code Answers in red

- (A) Chapter 7 of ANSI 117.1 2009 calls for visual alarms to be installed per NFPA 72.
- 2) (Q) Attached are the shop drawings for a typical pantry. We are installing plumbing fixtures in the pantry. (See drawing attached) The inspector is questioning ADA compliance and handicap access. Can you advise where the dimensions are incorrect?
- (A) There is only one dimension on the drawing that is incorrect and does not meet the ANSI 117.1 provisions. The 8 inch dimension from the face of the cabinet to the Plam Door should be 11 inches minimum. Ref: 306.3 and Knee figures 306.3 on page 10 of the 2009 ANSI 117.1 code.
- 3) (Q) The code section we were talking about yesterday is 602.4 out of the ICC/ANSI A117.1-09. Section 604.10 talks about Ambulatory Accessible Stalls, but 602.4 gives the location of the centerline of the WC as 17" – 19". The requirement for the Ambulatory Accessible Stall comes from the NCBC section 1109.2.2. Why are the center lines for Ambulatory and Standard Accessible stalls different?
- (A) For standard handicap accessible stalls the Center Line of the dimension is from 16 to 18 inches. See Fig. 604.2, ANSI 117.1-09. For the Ambulatory Stall the Center line is between 17 and 19 inches. The standard accessible stall has grab bars on the rear and side of the stall so the dimension difference requires the water closet to sit closer to the corner of the stall to facilitate handicap access. (See grab bar configuration in Fig. 604.2 as ref.)

Residential Consistency

Land Use and Environmental Service Agency
(Code Enforcement)
Q&A 2013

General:

1. (Q) *Does a cat walk or attic floor have to be blocked on the edge same as a regular floor.*
(A) Yes, see Chapter 5 Table 503 and R602.1
2. (Q) *What is the required SHGC for windows in the Residential Code?*
(A) It must be .30 or less, ResCheck can be used if some windows don't meet it.
3. (Q) *How must the termite treatment be applied?*
(A) It must cover the two faces and the edge to a point 24" AFF.
4. (Q) *Does a footing have to be continuous from garage to basement?*
(A) No, if the requirements of appendix Q are met.
5. (Q) *Can a 2x6 nailed on top of the OSB be used as an alternate to end blocking?*
(A) Yes
6. (Q) *Does house wrap need to be installed behind exterior door frames?*
(A) Yes, and it needs to be installed per the ESR from ICC.
7. (Q) *Are detached garages and storage buildings exempt from the 5' from property line requirement in table R302.1*
(A) Yes.
8. (Q) *Is the duct leakage a required test?*
(A) Yes, and the results must be posted on the energy certificate.
9. (Q) *Does the SHGC sticker need to be on the windows at the framing inspection.*
(A) Yes.
10. (Q) *When is a separate sheathing inspection required?*
(A) When the exterior walls need to be covered before the building is ready for a framing inspection or to inspect the encapsulated areas.