



# NC Plumbing Code 2011

Attention: ✓ Denotes a new question from the previous month!

★ Denotes a revised/revisited question.

December 2011

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### Chapter 3 General Regulations:

- 1) (Q) *Is a check valve required on the water supply to a mobile home?*  
(A) No. Water supply piping shall be directly connected to the mobile home. The utility requirements are the same as any single family dwelling in Mecklenburg County. Ref: 301.3, 301.4 & North Carolina Mobile Home Code requirements.
- 2) (Q) *Under what circumstances can a nylon zip tie be used as a pipe strap for pex pipe?*  
(A) This application can be used in parallel water distribution systems for bundling or securing, not supporting purposes, unless the zip tie is listed for that application. Ref: 308.9
- 3) (Q) *What is the minimum height required by code on a partition between water closets in a multi fixture bathroom group?*  
(A) The code does not specifically cover the height of the partition. It requires the water closets to be "suitably screened for privacy". The typical partition sold is 5feet high and there is a 1 foot clearance under partitions for cleaning and sanitation. The total height of the partition with clearance is 6 feet. Ref: 310.4, 310.5
- 4) (Q) *A large fast food chain wants to stay in operation during a major remodel by keeping the drive through window open and employee's only working in the building. The building will not be serving customers inside the restaurant. The contractor wants to remodel both bathrooms at the same time and provide a temporary bathroom facility outside the building. Will this be allowed by the Plumbing Official?*  
(A) No. Any time you have permanent utilities on the site they must connect to the plumbing facilities if the public or employees are still running a business out of the building. Alternate approved method: Install a temporary handicap facility with permanent connections to the utility for water and sanitary sewer. The walkway from the occupied business to the bathrooms shall be covered or in a corridor and not more than 500 feet from the employee work area. The bathroom(s) shall be handicap accessible. Ref: 301.3, 301.4



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- 5) (Q) *Is it required to insulate thermal expansion tanks that are installed in residential garages? After all, there is very little if any water that would occupy space in the tank. Should any freezing occur, there would be ample room for any expansion within the tank.*
- (A) The ruling from this department on insulating appliances in a garage has been; if the water piping must be insulated, then the expansion tank does as well. NCDOI has concurred with this interpretation and they state “if exposed inside an unheated residential garage, it must be insulated” Ref: 305.6
- 6) (Q) *A pool equipment room located in an apartment complex is not used in the winter months. The water lines are drained to prevent freezing. Is the trap on the sink located in the pool equipment room required to be insulated?*
- (A) Yes. The water piping and sink drain trap shall be insulated. Ref: 305.6. 305.6.1
- 7) (Q) *Is the water piping in the wall separating habitable space from the garage in a single family residence required to be protected from freezing?*
- (A) Yes. Water piping installed in attics or unconditioned utility rooms shall be insulated with an insulation having a minimum R-factor of 6.5 at 75 Degrees F in accordance with ASTM C-177. Garages are similar spaces. Ref: 305.6
- 8) (Q) *Are plumbing fixtures required to be third-party certified?*
- (A) No. Plumbing fixtures are required to be third-party tested. Ref: Table. 303.4
- 9) (Q) *Are downspouts and gutters located on the side of a single family dwelling exposed directly to an alley way required to be protected?*
- (A) No. 305.9 exception. (Yes if components of a plumbing system)
- 10) (Q) *The contractor has met the horizontal spacing requirements in table 308.5 for PEX pipe. The plumbing inspector is not satisfied that the hangers will provide proper support for the piping. Can the plumbing inspector require additional hangers that will exceed minimum code?*
- (A) Yes. If the inspector deems it necessary for strength and stability. Ref: 308.5, 102.9

## Chapter 4 Fixtures, Faucets and Fixture Fittings:

- 1) (Q) *What is the maximum height of the curb on a shower pan threshold?*
- (A) There is not a maximum height for a non-handicap shower threshold. The requirement is; “the remaining side (threshold) shall wrap over the curb”. Ref: 417.4 The maximum height for the threshold of a handicap shower, (either roll-in or transfer type) is ½ inch. The exception is for existing facilities where structural reinforcement would be disturbed. If that is the case a maximum threshold of 2 inches would be allowed. Ref: ICC/ANSI A117.1- 2003



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- 2) (Q) *Can standard drywall coverings be used on the walls of a shower enclosure with shower head?*  
(A) No. The wall area shall be constructed of smooth, non-corrosive, non-absorbent, and water proof materials to a height of 6 feet. Ref: 417.4.1
  
- 3) (Q) *I have an old existing apartment building three stories high that have no washer and dryer facilities. I can alter the plumbing piping to provide a 2 inch drain for the washers. I have no practical way to install a horizontal 3inch drain for the washers. Will the re-hab code offer me any relief so these washers may be installed?*  
(A) No. The Re-hab code offers the designer no relief from the horizontal 3 Inch drain requirement, however, the plumbing official may look at the existing DWV system to determine the feasibility of accommodating the washers before making a final determination. Ref: 406.3
  
- 4) (Q) *Is a drain required for an outside shower used on a pool deck that has only a cold water connection?*  
(A) No. The shower is not used for bathing and has no hot water connection. The water could be considered clear water waste under normal circumstances and can drain into the same system that is used for the pool deck drainage. Similar in some respects to Emergency Showers and Eyewash Stations. Ref: 411
  
- 5) (Q) *Are bottle trap installations allowed by the NC Plumbing Code?*  
Since they are not expressly prohibited by ICC we would have to approve them as long as they meet the standards listed under NC IPC 421.1.2 and comply with ASME A112.18.2. also, ref: 1002.3 #6
  
- 6) (Q) *An engineer submits a plan with a system of trench drains in a factory that drain various grease producing cooking equipment to a grease interceptor located outside the building. The engineer wants to pour concrete forms and install stainless steel trench drain inserts in the concrete. The project is turned down by the plan examiner. Neither the plans nor specifications show how the project meets 412.1 construction requirements (ASME A112.6.3.). What information does the plan reviewer need to approve the review?*  
(A) The Engineer suggested supplying a letter showing how the installation met the trench drain provision ASME A112.6.3. The CA agreed to review the engineers sealed letter. If the letter was disapproved by the CA the engineer would be required to provide trench drains that meet the code or have the trench drains field verified by a third party testing agency to meet the ASTM standard. Ref: 412.1.
  
- 7) (Q) *My church has ball fields and they would like to build toilets facilities in lieu of the portable units they have now. Because they are not required by code do we have to meet a certain number of toilets?*  
(A) The following code interpretation was put out by the department in 1993 with the assistance of the parks department and should be used as a guide to determine the fixture count for your church ball field. Ref: Table 403.1, Park Fixture Requirements. Revised April 2009. The information on calculating the minimum facilities is in the chapter 4 interpretations reference guide on our web site.



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8) (Q) *Are there specific minimum facilities requirements for medical office buildings? What information do I need to calculate and label bathrooms for male, female and unisex use ?*

(A) **Yes. Because of the number of facilities in a typical medical office building and the availability of assistance by nurses and medical personnel for patients the following calculations shall be used ONLY in a medical office building for minimum facilities counts per the Plumbing official.**

### Special requirements for minimum facilities in medical office buildings.

Exception number 2 to 403.2 of the North Carolina Plumbing code allows a unisex bathroom if the occupant content is 25 people or less which includes employees and customers. If the occupant content in a tenant space is over 25 people then 403.2 applies and separate facilities for men and women are required and signage for each sex shall be required.

1. If a tenant space used as a medical office has an occupant content less than 25 people (business occupancy) then only one unisex bathroom is required. The designer may add additional bathrooms in the tenant space. All other bathrooms added can be unisex bathrooms and shall be handicap accessible. Each shall have, as a minimum, one lavatory and one water closet. If the bathroom is directly accessible from a private office then it shall be handicap accessible or handicap adaptable. This shall not be considered a public bathroom; however, the office space the bathroom serves may be deducted from the minimum facilities calculations for the rest of the tenant space.
2. If the occupant content of a tenant space used as a medical office has an occupant content greater than 25 people then 403.2 applies. At least one male and one female handicap bathroom shall be provided and labeled male and female. Each bathroom shall have at least one lavatory and one water closet. If additional facilities are required per table 403.1 calculations or if the designer wishes to install additional patient facilities they may be considered unisex. See “All other.....tenant space” in paragraph 1. Above. The same requirements apply for paragraph 2.
3. If facilities are calculated for the entire floor of the building in the core bathrooms then no bathrooms are required in the medical office tenant spaces. Facilities provided may be unisex and handicap accessible for any tenant space that chooses to provide additional facilities. Private office facilities shall be the same as in the two paragraphs above.

If core facilities are provided that do not meet the minimum facility calculations for the entire floor then each separate tenant space on that floor shall be calculated separately as stated in either paragraph one or paragraph two above. No tenant space may “take credit” for the core facilities in calculating their individual space minimum facilities. Ref: 403.2

9) (Q) *The minimum number of drinking fountains required for an office building is provided in table 403.1. The designer has requested a substitution of 50 % of the drinking fountains required with bottled water dispensers. One of the required drinking fountains that would be substituted for a bottled water dispenser is in the private bathroom of one of the company executives. Is this bottled water dispenser allowed in this location?*

(A) **No. Since it is a required drinking fountain it cannot be located in a private bathroom. Bottled water dispensers are not allowed to be used unless they meet the requirements of 1109.5.1 & 1109.5.2 of the North Carolina Building Code. The Building Code is more**



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stringent than the North Carolina State Plumbing Code so no bottled water dispensers are allowed in any occupancy even if the minimum number of drinking fountains has been exceeded. Ref: 410.1, 410.2(PC), 1109.5.1, 1109.5.2.1 (BC)

- 10) (Q) *A very expensive Italian marble has been installed on all sides of a whirlpool tub in the bathroom of a single family dwelling with no access to the pump. The inspector turned the inspection down on a final sighting no pump access. The plumbing contractor then installed an access panel in the floor under the tub in a crawl space and called for a re-inspection. Is this access allowed by the code?*
- (A) Under certain conditions the inspector may pass the installation. The crawl space shall be a minimum of 24 inches high, the access panel shall be at least 12 inches by 12 inches unless the pump is more than 2 feet away from the access hole. If more than 2 feet away the access opening then the access panel shall be 18 inches by 18 inches.  
Ref: 421.5
- 11) (Q) *A manufacturing facility has heavy equipment arriving ahead of schedule. The contractor re-permits the project to install the equipment in a section of the plant that cuts off employee access to the minimum facilities. The installation of the equipment will take about two months to complete to obtain a Certificate of Compliance. Can the contractor bring in a temporary modular toilet facility and install them inside the building? Can the existing facilities be used if the path of travel exceeds 500 feet if the path of travel is protected from the new construction activity?*
- (A) A temporary facility may be installed in the building if it is the same construction type as the building and provisions can be made to exhaust the bathrooms. The plumbing official may approve a path or travel greater than 500ft. in factory and industrial occupancies ONLY. Ref: 403.4.1 Exception
- 12) (Q) *A designer has questioned whether a check cashing business is required to have bathrooms accessible to the public? His client has several locations. The other locations do not allow the public to use the bathrooms.*
- (A) This is a business occupancy per code. Fixtures are required per the code, however, the tenant is not required to allow the public to use the facilities. The facilities are required to be handicap accessible and shall be on an accessible route from the public area inside the building. The business may allow members of the public to use the facilities. If the tenant space has an occupant count of 25 or less per the building code a unisex bathroom may be installed in lieu of male and female separate facilities.  
Ref: Table 403.1, 403.2 exception 2.
- 13) (Q) *The plumbing inspector checks a daycare and it appears to be short minimum facilities per table 403.1. The contractor calls the Architect to check on the facilities count. The Architect informs the inspector the daycare minimum facilities are based on the posted occupant count which has been approved by the building official. Will the Architect be required to add additional facilities?*
- (A) No. An interpretation from Department of Insurance would allow the fixture count to be calculated per the posted number of people. Ref: 403.3, DOI interpretation



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14) (Q) *Is the plastic backing plate provided by a shower valve manufacturer, by itself, with no connection to the structure, adequate support for a shower or tub and shower valve?*

(A) No, unless the plate is listed for that application. Ref: 417.2

15) (Q) *Are slip joint connections allowed in a sheetrock ceiling?*

(A) Yes. Fixtures with concealed slip joint connections shall be provided with an access panel or utility space at least 12 inches in its smallest dimension or other approved arrangement so as to provide access to slip joint connections for inspection and repair. Where such access cannot be provided, access doors shall not be required, provided, that all joints are soldered, solvent cemented or screwed to form a solid connection. 405.8

16) (Q) *Are terrazzo shower pans required to be identified with the manufacturers label and the applicable standards on the pan itself? What standards should be listed on the pan?*

(A) Yes. The shower pans should meet ASME A112.19.16. Ref: 417.1, 417.4

17) **Shell construction minimum facilities requirements for multistory business occupancies. Specific review requirements for checking upfits for minimum facilities calculations:**

(Q) *How should we enforce the new code interpretation from Mike Page, Plumbing Chief for DOI. The interpretation states; "footnote "J" to table 403.1, would not require the additional facilities if the occupant content of the space remained unchanged." This interpretation assumes the plumbing minimum facilities met the Code at the time it was built or modified. If the existing building does not meet accessibility requirements, Building Code Section 3409.7 will apply and disproportionality may require additional drinking fountains or other the accessibility features ?*

(A) If the designer can show the core minimum facilities calculations meet the occupancy requirements for the code the shell was built under then no additional facilities are required. If the addition of large assembly rooms or other mixed use occupancies change the occupancy count and it exceeds the original calculation then additional facilities are required.

18) **Continuing the discussion of the shell occupancy/minimum facilities requirements above;**

(Q) *What information should be required on the plans by the designer so the plans examiner can readily check the plans for a consistent fixture count on shell up-fit plans?*

(A) If the designer chooses to use the core facilities when up-fitting a space in a multi-story business occupancy, they shall provide the following information. 1. Fill out the minimum facilities chart listed in the appendix "B" for the shell floor. 2. Provide calculations to verify the fixture count and occupancy information for the floor on which the upfit will be constructed. 3. Provide a floor plan showing the location and access to the core facilities including drinking fountains. 4. If additional facilities are required the designer may provide the facilities either within the tenant space or add fixturers to the core facilities. 5. The plan submittal requirements on our web site will be changed for upfits in a shell building to reflect this change.



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19) (Q) *An architect for a multi-story building project specifies 7 of the 10 lavatories required by table 403.1 for assembly occupancy to be lavatories. He wants to specify three sinks to meet the total lavatory count of 10. Can the plans examiner allow the three sinks to be substituted for the required lavatories? How many sinks may be installed in bathrooms that exceed the minimum fixture requirements?*

(A) No. Lavatories are specified because they have a different fouling surface that allows them to drain quicker for sanitary requirements than sinks. Sinks may not be substituted for Lavatories. Ref: 418

## Chapter 5 Water Heaters:

1) (Q) *May a plastic safety pan be used for a gas fired instantaneous W/H?*

(A) Yes, provided that the water heaters minimum distance from combustibile material is maintained. Ref: Manufacturers Instructions

2) (Q) *What is the minimum size of a water heater pan drain per the current North Carolina Plumbing Code?*

(A) The plumbing code minimum in 504.7.1 requires a 3/4 inch drain minimum This is incorrect and is a misprint in the code. The correct minimum size is 1 Inch. See DOI letter From Henry Webster Chief Plumbing Engineer for the State Department of Insurance Office of the State Fire Marshall.

3) (Q) *What is the maximum temperature setting for a tankless water heater allowed for a residential use only? What if temperature exceeds 140 degrees can the water heater still be installed?*

(A) 501.6 Maximum temperature is 140 degrees. 501.8 Where temperatures exceed 140 degrees a mixing valve shall be installed.

4) (Q) *A plumbing contractor "converted" a water heater from a 12 kW to an 18kW. The water heater is located in the ceiling. It will be difficult for the inspector to observe the data plate of the water heater. The new data plate reflecting the 18KW change has been added to reflect the new heating capacity. The water heater now has dual (two) data plates. Is there a problem with this installation change?*

(A) Yes. Not allowed. The addition of a new data plate to the appliance negates the factory listing/labeling of the appliance. The labels should be installed at the factory. From our limited knowledge of this situation it sounds like a data plate has been taken from one heater and added to another. Ref: Labeled by the Manufacturer, see def. 501.9

5) (Q) *1. Does a point of use tankless water heater used for a sink require a drain pan and pan discharge line to a floor or hub drain in a new building? 2. Several tank type point of use water heaters sized between one and five gallons are installed in a new building. Do the water heaters require a pan, drain and indirect drain within the room location? 3. Are the requirements similar for an existing building?*

(A) 1. Yes. Per DOI all water heaters require a drain pan and drain to the point of discharge.

2. Yes. The same as above.

3. Yes. Only if an available drain is readily accessible. Ref: 504.7, 504.7.2



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6) (Q) *A homeowner calls to question a water heater the contractor located in the middle of the floor of the garage. They are having difficulty parking cars around the water heater. The water heater is on the slab and has no drain pan. What are the code issues with this installation?*

(A) The plumbing contractor that installed the Water Heater told the homeowner no permit was required. The Water Heater must be protected from the vehicle traffic. This is “priority one” if the Water Heater is preventing parking cars in the garage. Ref: 502.5

## Chapter 6 Water Supply & Distribution:

1) (Q) *What is the maximum distance a fixture supply pipe may be from the fixture it serves?*

(A) Section 604.5 states 72”.

2) (Q) *When are water hammer arrestors required?*

(A) The flow velocity of the water distribution system shall be controlled to reduce the possibility of water hammer. A water-hammer arrestor shall be installed where quick-closing valves (clothes washers and dishwashers) and metallic piping is used. The water-hammer arrestor shall not be required on any valves where plastic piping is used for water distribution. Water-hammer arrestors shall be installed in accordance with the manufacturer’s specifications. Water-hammer arrestors shall conform to ASSE 1010. Ref: 604.9

3) (Q) *Does the Code require a water distribution system to be sanitized?*

(A) (No) 602.3.4 purged and disinfected, 610.1 purged of deleterious matter.

4) (Q) *Is an expansion device required on a tankless water heater?*

(A) No. An expansion device is required only if there is a tank type waterheater installed in the residence. An expansion device is not required if hot water distribution is from a tankless water heater. Ref: 607.3

5) (Q) *The Plumbing Code defines the "Water Supply System" and gives the point where the Water service pipe terminates and becomes the water distribution pipe. When the water is supplied by a well and not a meter what is the starting point of the service pipe inspection?*

(A) The plumbing inspections begin at the valve at the outlet of the pressure tank. Ref: 602.3.5, 602.3.5.1

6) (Q) *When and where are pressure-reducing valves required by code, and upon what circumstances should the Inspectors be requiring them to be installed?*

(A) When the incoming water pressure exceeds 80 PSI, and on the cold water line no further downstream than the beginning of the water distribution system. Ref: 604.8

7) (Q) *Past policies have required a expansion device installed on a closed water distribution system where there is a tank style water heater and/or backflow prevention- is this still the case?*

(A) Yes Ref: 604.8.1, 504.4.1





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- 8) (Q) *How should expansion tanks be supported?*  
(A) Per the tank manufacturers installation instructions. Ref: 607.3.2
- 9) (Q) *Does the code allow a yard hydrant with a stop and waste that is fed from underground, potable water, yard irrigation loop? The irrigation system is for a garden and not close to any structure.*  
(A) No. The code does not allow a stop and waste on a potable water system. Any underground opening represents a possibility of contamination through back siphon age into the potable water system. Alternate approved method. A stop-and-waste may be installed in the situation noted above if a reduced pressure backflow preventer on the potable irrigation loop is installed and the piping is identified from the RP to the yard hydrant as non-potable water. Non -potable piping must be painted yellow with black lettering stating "NON POTABLE WATER". Ref: 608.7, 608.8.2
- 10) (Q) *When is a Thermal expansion control device required on a water distribute system?*  
(A) An expansion device is required per the instances below. Ref: 607.3
1. When a tank type water heater is installed: *See below*
- Change \* 2. When a tank type water heater is present and a new water service is installed. No if the water pressure is below 80 psi and there is not an existing PRV or BFP on the water service or distribution piping.
3. When a tank style water heater is present and a new PRV is installed: Yes
  4. When a BFP is installed: Yes
  5. When a tankless water heater is present or has been installed: No
- 11) (Q) *What is typical about the equipment installed that would require an expansion device to be required?*  
(A) A tank style water heater.
- 12) (Q) *The water distribution piping in a restaurant is protected b a vacuum breaker that is located under a commercial hood. Is this installation allowed by code?*  
(A) No. It must be located outside the hood area of exhaust. Ref: 608.15.4

## Chapter 7 Sanitary Drainage:

- (1) (Q). *Can a force main tie into gravity drain line? If yes can a Y connection be used for this purpose? What other requirements apply to meet code minimums?*  
(A) Yes. Must be 10 feet from the base of any soil stack, waste stack, or fixture drain or the connection to a septic tank. Where the connection is to a horizontal drain pipe the ejector shall be made on top of the drain pipe through a wye fitting at an angle of 45 deg. Ref: 712.3.5
- 2) (Q) *A plumbing contractor wants to use saddle valves to tap a live 6 inch main. The approval is based on an engineer approved letter of approval for use of the valve as an alternate method. Is this allowed?*  
(A) No. Saddle valves are clearly prohibited by the code. Ref: 707.1 #6



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- 3) (Q) *Is the flexible drain line piping approved for under sink waste piping?*  
(A) No. Flexible drain piping, sold at most of the big box stores, is not approved by the NC Plumbing Code. The fittings shall not have ledges, shoulders or reductions capable of retarding or obstructing flow in the piping. Threaded drainage pipe fittings shall be of the recessed drainage type. Ref: 706.2
- 4) (Q) *The plumbing inspector has turned down a forced sewer because the cleanouts are not spaced properly per code. The contractor says the cleanouts on the force sewer are optional and he does not have to meet the clean out spacing requirements. Is the contractor correct?*  
(A) Yes. The code is silent on cleanouts for forced sewers. The addition of cleanouts is optional and therefore the cleanout spacing is optional. Ref: DOI interpretation per State Mechanical Engineer.
- 5) (Q) *1. ABS and PVC DWV pipe normally has a warp or a bend. When inspecting an inground installation, should the warp or bend be pointed up, down, or to the side?*  
(A) The warp should be to the side in order to support the length of the pipe and to maintain a uniform grade. Ref: 704.1
- 6) (Q) *Can a Fernco coupling be used underground to join like materials.  
Example: ABS to ABS or is it required to be used only as a transition fitting?*  
(A) Yes. A Fernco coupling may be used in the application listed above. Ref: 706.1
- 7) (Q) *Can a sewer/building drain two- way cleanout be used as the clean out for the base of the stack if it is installed vertically and directly connected to the main building drain?*  
(A) Yes. The cleanout on the vertical stack may be used as the clean out at the base of the sewer/building drain. Ref: 708.3, 708.5
- (8) (Q) *Are pro set pipe joints allowed under slabs?*  
(A) Yes. See manufacturer's data. Ref: 702.2

## Chapter 8 Indirect/Special Waste:

- 1) (Q) *What is a sacristy and what special allowances apply?*  
(A) It is one use where the drain is allowed to discharge directly into a drywell outside of the structure. Ref: 803.4



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- 2) (Q) *Can the tail piece of a lavatory or sink be used as a direct connection for the drainage from an ice maker or medical equipment?*  
(A) No. An air gap shall be provided and the waste shall discharge into an approved receptor to protect against backflow. Ref: Section 801.2, 802.1, and 802.1.6
- 3) (Q) *Do all acid waste neutralization tanks require a monitoring device with alarm?*  
(A) Yes. We require monitoring and alarms on all neutralization tanks installed in Mecklenburg County. Ref: Code Interpretation Letter & 702.5/803.2,803.5.
- 4) (Q) *Can the discharge from a three compartment sink in a commercial Restaurant be pumped to an indirect waste receptor in a remote location?*  
(A) Yes. The three compartment sink shall discharge through a flow control fitting and a point of use grease interceptor before terminating in the lift station. The lift station pumped discharge shall have a check valve and terminate over an indirect waste receptor which must be visible from the three compartment sink location. Ref: 802.1.1, 802.2.1
- 5) (Q) *Is a condensate pump that is not listed for installation in a plenum allowed in a plenum if it has all non –combustible parts?*  
(A) Yes. (307.2.1, 307.2.2 Mech. Code) The plumbing official may allow the use of this pump as an equivalency to a listed pump under the conditions stated above. Ref: 801.1
- 6) (Q) *Are AAV's approved for venting in Corrosive Waste DWV systems?*  
(A) They are not approved unless the acid soil and waste DWV system is an engineered system approved as an alternate method by the Plumbing Code Administrator. Ref: 803.5.

## Chapter 9 Vents:

- 1) (Q) *When a floor drain or a floor sink receives the discharge from an espresso or soda machine, the drain must be individually vented. Correct?*  
(A) No. Espresso and soda machines are not fixtures, they are pieces of equipment. Therefore the indirect waste receptor serving those devices shall be trapped and may be primed but not individually vented. The term "fixture" means a sink type fixture only which is required to have an indirect drain. Examples would be a food prep sink, vegetable or fruit prep sink or a meat prep sink. As long as the floor sink/drain trap is installed as part of a properly vented combination waste and vent system an individual vent is not required. Ref: 912.2.4



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- 2) (Q) *In checking the installation of an AAV in an attic the inspector notices one of the AAV's is leaning over slightly. He measures the degrees it is out of plumb. It turns out it is only 18 degrees out of plumb. Should the inspector pass the installation?*

(A) No. AAV's do not work properly when they are not installed vertically. Different

manufacturers allow different deviations from vertical. The AAV in the example above

happens to be a studor –vent which allows a 15 degree deviation from vertical, therefore

the installation should be disapproved by the inspector. Always check manufacturer's

instructions. Ref: 917.2

- 3) (Q) *The plumbing inspector notices a specific contractor installing the AAV's on the attic vents during the rough in inspection. What should the inspector do?*

(A) The inspector should turn down the job until the contractor removes the AAV's.

AAV's should only be installed after all DWV testing has been completed. Ref: 917.2

- 4) (Q) *Can a Positive Air Pressure Attenuator be installed in conjunction with a conventional DWV system?*

(A) Yes. If approved as an alternate method by the plumbing official. The PAPA is tested per ASSE 1030 and may be used in conventional DWV systems to remove positive transients related to hydraulic jump. The PAPA is usually installed in High Rise buildings which experience the effect of positive transients on the system when water closets tend to spit water while flushing.

## Chapter 10 Traps, Interceptors & Separators:

- 1) (Q) *What is required for laundry drain protection for lint, buttons or strings?*

(A) Laundries other than a single family residence, shall be equipped with a manufactured device (not field fabricated) that will limit lint, buttons or string larger than ½" from entering the drainage system. Ref: 1003.6

- 2) (Q) *Is a separate draw off storage tank allowed to be installed as part of an oil/water separator installation?*

(A) Yes. When circumstances exist on a site that would not permit the full storage tank capacity calculated for an integral storage oil/water separator to be installed, an integral separator sized to meet the minimum capacity of the code may be installed with an additional draw off tank to store the remaining capacity calculated for the separator. All

other requirements for oil/water separators installed in Mecklenburg County shall remain the same. Ref: 1003.1, 1003.2, 1003.4, & 1003.4.2



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- 3) (Q) *Grease interceptors that are required by the plumbing code and by Charlotte Mecklenburg Utility Department should be designed to meet both standards. The utility company would like Mecklenburg County to alter its policy statement. Is there any reason we should not honor that request?*
- (A) No. Unless the change is a violation of current code we can honor their request. They would like us to add the access provision to our requirements. This standard provision would require access to each chamber separately of a grease interceptor. Our policy will be revised to reflect this change. Ref: 1003.3
- 4) (Q) *The plumbing plans examiner has turned down a plan requiring a system of floor drains or trench drains in a repair garage that will have to discharge through an oil/water separator. The owner calls the CA to find out if he may use dry clean up and environmental disposal of waste just like the garage next door to his has for years?*
- (A) If the owner does not have floor drains or trench drains and uses dry clean up and proper environmental disposal methods per our on line OWS interpretation, I see no reason to require the OWS. I would always advise checking the plans to get the overall picture of the project. We may not be getting the whole picture. If there are existing floors or trench drains in the original building they are adding on to then the new floor and trench drains should be added to the original drain installation and the OWS sized to accommodate all the waste from the garage floor. We need to get a letter from the owner about the pick up and disposal of the dry clean up material Ref: Oil Water Separator Policy letter on our web site. Ref: 1003.4 exception
- 5) (Q) *Does a fire sprinkler equipment room that is required to have an annual test blow down require a properly sized drain to sanitary sewer or can it go to the storm sewer?*
- (A) When you have an RP dump discharge water in an equipment room an opening in the exterior wall at grade level or a pipe sleeve used to channel emergency over flow outside the building my typically be used for blow down water. That water flows to the storm drain. Neither the plumbing plan examiners nor the fire plans examiners have ever required any type of oil water separator based on the possibility the fire line would discharge oil and/or chemicals into the storm or sanitary sewer system. Separators are not required. Any quantity of oil or chemicals in the waste water would be minute and diluted. The discharge can go to either the storm or the sanitary sewer system. No separator is required. . Ref: 1003.2.
- 6) (Q) *A residential washing machine is installed as part of the restaurant equipment without a separate lint interceptor. The designer shows the plans examiner the integral lint interceptor information supplied by the manufacturer. The washing machine is only used to wash hand towels. Is a separate lint interceptor required?*
- (A) No. It is determined the washing machine is used for minimal washing of hand towels and has an integral lint filter therefore a separate lint interceptor is not required. Ref: 1003.6



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(7) (Q) *Under what conditions would we accept concrete grease interceptors in Mecklenburg County?*

- (A) (1) It shall have a capacity equal to or greater than 500 gallons storage capacity.  
(2) It shall be installed outside the building. (3) The interceptor shall be delivered on site as a complete unit and require no field fabrications or modifications. (4) It shall be clearly marked with the manufacturers name and the standards to which they comply.  
(5) An engineer (registered in the state of North Carolina) is responsible for proper sizing of the grease interceptor. Ref: 1003.3

## Chapter 11 Storm Drainage:

1) (Q) *How do vertical walls affect roof drain calculations?*

(A) In sizing roof drains and storm drainage piping, one-half of the area of any vertical wall that diverts rainwater to the roof shall be added to the projected roof area for inclusion in calculating the required size of vertical conductors, leaders and horizontal storm drainage piping. Ref: 1106.4

2) (Q) *I am attaching a handmade metal box I designed to a 4 inch overflow roof drain that terminates on the side wall of an apartment building. I am installing a screen in the box to restrict the flow so the water will not be pouring down the side of the building and staining the brick finish. Does this installation meet the Code?*

(A) No. The size of the drainage pipe is reduced in the direction of flow. The fitting is not approved and retards the direction of flow. The fitting has shoulders and/or reductions that retard flow. Strainers are allowed on roof surfaces only for overflow drains this is a side wall mounted fitting. Ref: 1101.5, 1101.6, 1102.7, 1105.1, 1107.2

3) (Q) *Is it still applicable to use the 3.2" and 6.6" rainfall amounts for primary and secondary roof drain quantities? These values were in the table approved by Phil Edwards for rainfall as long as we noted on the plans that we used those totals? It has been about 8-12 months since I last checked.*

(A) Yes. You can still use either the NC Plumbing Code calculations or CMUD data. It is the designers' choice as long as the code tables do not contain a lesser value than local weather conditions. The rainfall amounts in your email are from CMUD data and would still apply for local rainfall amounts used in your calculations. Ref: 1106.1

4) (Q) *What should the maximum drain size be for a swimming pool drain terminating in a CMUD manhole? Maximum drains from the manhole are typically 4 inch.*

(A) CMUD (the utility) is consistently having manhole flooding problems. The problem arises when a 6 inch pool drain discharges into a utility manhole that has 4 inch maximum utility drains. CMUD wants to eliminate this costly problem by requiring a maximum drain size of 4 inches for all pool drains. In order to resolve the problem and reduce flooding problems we will require the maximum drain size from a pool to the utility manhole to be 4 inch. Larger pools, example: (Olympic size pools.) We will increase the drain size when the utility connection can handle the larger drain size from the pool.



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## POLICY/ADMINISTRATION/DEFINITIONS; Chapter 1,2

- 1) (Q) *What is the maximum depth that a two-way C/O may be installed?*  
(A) The maximum depth shall not exceed 24" below grade. If deeper depths are required, then an additional combination may be placed as close as possible downstream of the required building drain/sewer junction C/O.
- 2) (Q) *A single family home is connected to a septic tank. Can a dishwasher or washing machine be connected to the drainage system of the house? Can the washing machine be connected to a dry well?*  
(A) The homeowner would be required to contact the Environmental Health Department for Mecklenburg County. They regulate the installation, repair, and alteration of the septic tank systems in Mecklenburg County.
- 3) (Q) *I've received a complaint on one of our child care centers and apparently the center's sewage grinder tank does not work properly, to the point that the center has their tank pumped weekly or whenever the tank's alarm goes off. The tank overflows into the adjacent playground/parking lot. I'm planning to visit the facility and advise them that the sewage cannot flow onto the ground and that their sewage system must work properly. That being said, the caller also advised that the grinder in the tank was not adequate when it was installed. As far as the effectiveness of the grinder tank, will the issue fall under Code Enforcement?*  
(A) We do not get involved with the performance of the pump; it comes down to "Does the pump/tank operate as designed?" It goes back to the installing contractor- he/she is liable for the design/installation/performance of the equipment. If I were the tenant, I would call the installing contractor and have them check on why it did not work as designed.
- 4) (Q) **21 NCAC 50 .0505 (NC Administrative Code)**  
◆ The general supervision required by G.S. 87-26 is that degree of supervision which is necessary and sufficient to ensure that the contract is performed in a workmanlike manner and with the requisite skill and that the installation is made properly, safely and in accordance with applicable codes and rules. General supervision requires that review of the work done pursuant to the license be performed by a licensee of the firm while the work is in progress.  
*What are the requirements per the North Carolina Plumbing, Heating, and Fire Sprinkler Contractors licensing laws?*  
(A) **\*\*Contractors must immediately inform the board that he/she is no longer the qualifier and all work must cease\*\*** The contractors Mecklenburg County account will be put into an "H" status which will prevent the contractor from obtaining permits until he has a new qualifier.
- 5) (Q) *A domestic water heater replacement was installed in a crawl space on its side because of clearance problems. The homeowner complained to the department that she has had no hot water in her kitchen since the water heater was installed. The homeowner also contacted the contractor who told her a permit was not required to install a water heater. What should the department do to resolve the problem? Does the contractor have to get a permit for this*



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- work?*
- (A) Inspections must create an RQ to inspect the work. They should instruct the homeowner to contact the State Plumbing, Heating and Fire Sprinkler Contractor Board if they wish to file a complaint against the licensed contractor. Inspections will triple fee the licensed contractor and notify him of the need for a permit and inspection.
- 6) (Q) *Is a plumbing license required to replace a shower liner? Does the replacement require a permit?*
- (A) Yes. A plumbing license is required. Yes. A permit is required. Per DOI – Henry Webster
- 7) (Q) *Does a NC state plumbing license cover the installation of a vent for a gas fired water heater?*
- (A) Yes. Per John Taderro, investigator for the North Carolina Plumbing, Heating, and Fire Sprinkler Contractor Licensing Board.
- 8) (Q) *What are the goals of the TAB (Technical Advisory Board) as an arm of the BDC (Building Development Commission)?*
- (A) The Technical Advisory Board (TAB) is made up of members of the design community, the utility, and the Code Enforcement CA's. The goal of the committee is to assist the design community in their efforts to install equipment and systems that qualify as sustainable design features of a building and are in compliance with the minimum codes.
- 9) (Q) *A plumbing inspector is called to inspect a renovation project for a restaurant. While inspecting the underground connection outside the building he/she notices the grease interceptor is overflowing into the parking lot. Does the inspector have the authority to require the owner to have the Grease Interceptor re-inspected to see if it is code compliant?*
- (A) Yes. The code official shall have the authority to require any plumbing system to be re-inspected. Ref: 102.3
- 10) (Q) *While making a routine inspection the plumbing inspector notices that the occupancy has clearly changed from the information on the plans. He notes that the minimum facilities will not meet the minimum requirements for the new occupancy. What should the Plumbing Inspector do to resolve these issues? Ref: 102.5*
- (A) The inspector should inform the Building Inspector of the occupancy change especially if the change results in any hazard to the public health, safety or welfare.
- 11) (Q) *A plumbing inspector is checking a Vacuum Breaker location in a dental office. There are no critical level markings on the device. Should the inspector turn the inspection down because the VB is not marked?*





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(A) No. If the device is not marked the bottom of the device shall constitute the critical level (C-L). The VB shall be installed above the flood level rim of the fixture served by the device. Ref: Chapter 2-Definitions-Critical Level (C-L)

12) *(Q) Are water heaters installed in one and two family residences and townhouses required to meet seismic support requirements?*

(A) Neither 2009 IRC code or the 2009 MC or FGC require seismic support for residential water heaters. It is not required in the current code. See 2009 IRC.



Land Use and Environmental Service Agency  
(Code Enforcement)

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Quarter 4

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Color code below denotes the calendar year quarter of each question listed above. Tan, Blue, Green, Red

