Land Use and Environmental Service Agency
(Code Enforcement)

NC Fuel Gas

1st Qtr. 2016 Code Answers in brown (Jan-Mar) 2nd Qtr. 2016 Code Answers in green (Apr- Jun)
3rd Quarter 2016 Code Answers in blue (Jul-Sep) 4th Quarter 2016 Code Answers in red (Oct-Dec)

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100 Chapter 1 Administration

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300 Chapter 3 General Regulations

301.1.1 - Question: I heard as of Jan 1st, CSST doesn't have to be bonded anymore. Is that true?

Answer: The Building Code Council approved a code language change that did go into effect on Jan 1, 2016. CSST with an arc-resistant jacket (Black Jacket), does not require direct bonding as per section 310.1.1 NCFGC and shall be installed per the manufacturer's installation instructions. The bonding comes from the electrically grounded equipment such as a furnace or tankless waterheater. When the equipment is grounded, then not direct bonding is required for CSST with an arc-resistant jacket.
If there is a situation were the gas piping is only connected to a set of gas logs or a traditional tank style gas water heater with not equipment ground, then in a case such as this, direct bonding would be required.

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310.1.1 CSST. Corrugated stainless steel tubing (CSST) gas piping systems shall be bonded to the electrical service grounding electrode system at the point where the gas service enters the building. The bonding jumper shall be not smaller than 6 AWG copper wire or equivalent.

CSST with an arc-resistant jacket listed by an approved agency for installation without the direct bonding, as prescribed in this section, shall be installed in accordance with Section 310.1 and the manufacturer's installation instructions.

304.11 - Question: Can combustion air ducts have offsets or bends?

Answer: The code does not directly address this and the commentary only gives examples of straight runs. After researching, nothing was found to prohibit an offset or bend in the combustion air duct. The minimum area required by code must be maintained through out the duct, including the offsets or bends.
See Attached Email

304.11 - Question: Can flex duct be used for combustion air duct to bring air into a room from outside in accordance with 304.11 NCFGC?

Answer: No, Section 304.11 NCFGC requires the duct to be constructed of galvanized steel or of a material having equivalent corrosion resistance, strength and rigidity.
304.11 Combustion air ducts. Combustion air ducts shall comply with all of the following:

1. Ducts shall be constructed of galvanized steel complying with Chapter 6 of the International Mechanical Code or of a material having equivalent corrosion resistance, strength and rigidity.

Exception: Within dwellings units, unobstructed stud and joist spaces shall not be prohibited from conveying combustion air, provided that not more than one required fireblock is removed.

See Attached Email

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305.3 - <u>Question:</u> I installed an 80% gas furnace in a mechanical room located in the corner of the garage. I installed weather stripping and a closer. The inspector says it still needs to be raised 18 inches, is this true?

<u>Answer:</u> Yes, Section 305.3 NCFGC requires ignition sources to be elevated 18 inches above the garage floor. Rooms that are not part of the living space and communicate directly with the garage are considered part of the garage. There is no alternate for weather stripping doors or providing closers in lieu of elevating the ignition source. Appliances listed as Flammable Vapor Ignition Resistant (FVIR) do not need to be elevated.

305.3 Elevation of ignition source. Equipment and appliances having an ignition source shall be elevated such that the source of ignition is not less than 18 inches (457 mm) above the floor in hazardous locations and public garages, private garages, repair garages, motor fuel-dispensing facilities and parking garages. For the purpose of this section, rooms or spaces that are not part of the living space of a dwelling unit and that communicate directly with a private garage through openings shall be considered to be part of the private garage.

Exception: Elevation of the ignition source is not required for appliances that are listed as flammable vapor ignition resistant.

<u>400</u> <u>Chapter 4 Gas Piping Installation</u>

403.10.4 - <u>Question:</u> Can a copper threaded male adaptor be directly screwed into black steel for gas piping?

<u>Answer:</u> No, Section 403.10.4 NCFGC requires fittings used with steel or wrought-iron pipe to be steel, brass, bronze, malleable iron or cast iron. A threaded copper fitting can be used, but in conjunction with a brass coupling or similar fitting. Direct copper to steel connection would cause the joint to corrode.

403.10.2 - <u>Question:</u> Can a swaging tool be used for tubing joints on a gas line?

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Answer: Yes, there has been some confusion with section 403.10.2. The section gives you 3 options:

1. approved gas fittings
2. brazed
3. press-connect fittings

The confusion comes with the first option, approved gas fittings. This is referring to flare fittings or a listed fitting for joining tubing, not a solder coupling (that would be under option 2). Looking at the code section, it uses the "or" statement, any of the 3 options will work. Swaging is a common practice in the industry. The requirement for swaging is the cup depth would be equal to or greater than the OD of the tubing.

403.10.2 Tubing joints. Tubing joints shall be made with approved gas tubing fittings, brazed with a material having a melting point in excess of 1,000°F (538°C) or made with press-connect fittings complying with ANSI LC-4. Brazing alloys shall not contain more than 0.05-percent phosphorus.

404.14 - Question: Are gas outlets/regulators required to be secured behind a range?

Answer: Yes, there are several code sections (404.14, 407.2) that require the outlet to be secured.

404.14 Location of outlets. The unthreaded portion of piping outlets shall extend not less than l inch (25 mm) through finished ceilings and walls and where extending through floors or outdoor patios and slabs, shall not be less than 2 inches (51 mm) above them. The outlet fitting or piping shall be securely supported. Outlets shall not be placed behind doors. Outlets shall be located in the room or space where the appliance is installed.

407.2 Design and installation. Piping shall be supported with metal pipe hooks, metal pipe straps, metal bands, metal brackets, metal hangers or building structural components, suitable for the size of piping, of adequate strength and

quality, and located at intervals so as to prevent or damp out excessive vibration. Piping shall be anchored to prevent undue strains on connected appliances and shall not be supported by other piping. Pipe hangers and supports shall conform to the requirements of MSS SP-58 and shall be spaced in accordance with Section 415. Supports, hangers and anchors shall be installed so as not to interfere with the free expansion and contraction of the piping between anchors. All parts of the supporting equipment shall be designed and installed so they will not be disengaged by movement of the supported piping.

404.2 - Question: When is an EMT sleeve required vs wrap in a fireplace?

Answer: Section 404.2 NCFGC requires piping installed in solid partitions and solid walls to be in a chase or casing. If the brick is notched to provide a chase, then wrap would be acceptable. If a chase in the masonry cannot be provided or it will be poured solid, a sleeve would be required.

404.2 Piping in solid partitions and walls. Concealed piping shall not be located in solid partitions and solid walls, unless installed in a chase or casing.

406.1 - Question: How many gas tests are required for a single gas pipe installation?

Answer: The Code would require two tests. One before you cover the work and one on final inspection. We require an additional test if you would like "temporary heat" which would result in a total of three.

404.17 Testing of piping. Before any system of piping is put in service or concealed, it shall be tested to ensure that it is gas tight. Testing, inspection and purging of piping systems shall comply with Section 406.

406.1 General. Prior to acceptance and initial operation, all piping installations shall be inspected and pressure tested to determine that the materials, design, fabrication and installation practices comply with the requirements of this code.

408.4 - Question: When and where are sediment traps required?

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Answer: Section 408 requires a sediment trap as close as practical to the inlet side of the equipment. This would include gas regulators. Regulators for individual appliances may utilize a single trap for both the regulator as well as the appliance. Illuminating appliances, ranges, clothes dryers, gas logs, log lighters and outdoor grills are exempt from traps.

408.4 Sediment trap. Where a sediment trap is not incorporated as part of the appliance, a sediment trap shall be installed downstream of the appliance shutoff valve as close to the inlet of the appliance as practical. The sediment trap shall be either a tee fitting having a capped nipple of any length installed vertically in the bottommost opening of the tee or other device approved as an effective sediment trap. Illuminating appliances, ranges, clothes dryers, gas logs, log lighters and outdoor grills need not be so equipped.

500 Chapter 5 Chimneys and Vents

600 Chapter 6 Specific Appliances

623.7 - Question: If a microwave is installed over a gas range, which clearance requirements do we use?

Answer: Section 623.7 requires 24 inches of clearance. If the range is listed and the microwave is listed, then the clearances provided for the upper appliance, the microwave, can be used.

623.7 (IFGS) Vertical clearance above cooking top. Household cooking appliances shall have a vertical clearance above the cooking top of not less than 30 inches (760 mm) to combustible material and metal cabinets. A minimum clearance of 24 inches (610 mm) is permitted where one of the following is installed:

1. The underside of the combustible material or metal cabinet above the cooking top is protected with not less than 1/4-inch (6 mm) insulating millboard covered with sheet metal not less than 0.0122 inch (0.3 mm) thick.

2. A metal ventilating hood constructed of sheet metal not less than 0.0122 inch (0.3 mm) thick is installed above

the cooking top with a clearance of not less than 1/4 inch (6.4 mm) between the hood and the underside of the combustible material or metal cabinet. The hood shall have a width not less than the width of the appliance and shall be centered over the appliance.

3. A listed cooking appliance or microwave oven is installed over a listed cooking appliance and in compliance with the terms of the manufacturer's installation instructions for the upper appliance.

700 Chapter 7 Gaseous Hydrogen Systems

Policy

Other - Question: Are Viega Pro-press/Mega Press-G fittings approved for use with Fuel Gas?

Answer: Yes, per ICC ES Letter PMG 1036, they are approved for use for fuel gas service within the manufacturers restrictions.
See Attachment

Other

Manufacture Instructions - Question: Where in the code does it say I cannot use PVC Foam Core for 90%+ appliance venting?

Answer: The 2012 NCFGC states "503.4.1 Plastic piping. Plastic piping used for venting appliances listed for use with such venting materials shall be approved." Therefore, if the appliance manufacturer states a specific type of pipe will be used, we cannot approve less than that.