

## **CHAPTER 1 ADMINISTRATION**

### **SECTION 101 (IFGC) GENERAL**

#### **101.1 Title.**

These regulations shall be known as the North Carolina Fuel Gas Code as approved by the North Carolina Building Code Council on September 13, 2005, to be effective July 1, 2006. References to the International Codes shall mean the North Carolina Codes. The North Carolina amendments to the International Codes are underlined.

#### **101.2 Scope.**

This code shall apply to the installation of fuel-gas piping systems, fuel-gas utilization equipment and related accessories in accordance with Sections 101.2.1 through 101.2.5.

#### **Exceptions:**

1. Deleted.
2. As an alternative to the provisions of this code, fuel-gas piping systems, fuel-gas utilization equipment and related accessories in existing buildings that are undergoing repairs, alterations, changes in occupancy or construction of additions shall be permitted to comply with the provisions of the International Existing Building Code.

#### **101.3 Appendices.**

Provisions in the appendices shall not apply unless specifically adopted or referenced in this Code.

#### **101.6 Requirements of other State agencies, occupational licensing boards, or commissions.**

The North Carolina State Building Codes do not include all additional requirements for buildings and structures that may be imposed by other State agencies, occupational licensing boards, and commissions. It shall be the responsibility of a permit holder, design professional, contractor, or occupational license holder to determine whether any additional requirements exist.

### **SECTION 103 (IFGC) DEPARTMENT OF INSPECTION**

Deleted. See the North Carolina Administrative Rules and Policies.

### **SECTION 104 (IFGC) DUTIES AND POWERS OF THE CODE OFFICIAL**

Deleted. See the North Carolina Administrative Rules and Policies.

**106.1 When required.**

An owner, authorized agent or contractor who desires to erect, install, enlarge, alter, repair, remove, convert or replace an installation regulated by this code, or to cause such work to be done, shall first make application to the code official and obtain the required permit for the work.

**Exception:** Where equipment replacements and repairs are required to be performed in an emergency situation, the permit application shall be submitted within the next working business day of the Department of Inspection.

**106.2 Permits not required.**

Permits shall not be required for the following:

1. Any portable heating appliance.
2. Replacement of any minor component of equipment that does not alter approval of such equipment or make such equipment unsafe.

Exemption from the permit requirements of this code shall not be deemed to grant authorization for work to be done in violation of the provisions of this code or of other laws or ordinances of this jurisdiction.

Remainder deleted. See the North Carolina Administrative Rules and Policies.

**SECTION 107 (IFGC)  
INSPECTIONS AND TESTING**

Deleted. See the North Carolina Administrative Rules and Policies.

**SECTION 108 (IFGC)  
VIOLATIONS**

Deleted. See the North Carolina Administrative Rules and Policies.

**SECTION 109 (IFGC)  
MEANS OF APPEAL**

Deleted. See the North Carolina Administrative Rules and Policies.

**CHAPTER 2**  
**DEFINITIONS**

**CLOSET.** An enclosed or recessed area used to store clothing, linens, or other household items.

## CHAPTER 3 GENERAL REGULATIONS

**301.3 Approval.** All listed equipment shall be installed in accordance with its listing, and the equipment shall be labeled accordingly, including the seal or mark of the testing agency that certifies the listing.

When test standards are not available, or when listed equipment is not reasonably available locally (three or more manufacturers), equipment certified by the manufacturer as being constructed in accordance with applicable NEC, ASME, ARI or ANSI standards using listed component parts such as burner, heaters, safety controls, wiring and safety valves and installed in strict compliance with manufacturer's recommendations will be acceptable.

Other equipment used in environmental comfort systems such as humidifiers, air handling fans, power roof ventilators and fan coil units, shall be either listed or deemed acceptable if they are manufactured utilizing motors that comply with NEMA standards, wiring complying with the National Electrical Code and are utilized for the service recommended by the manufacturer.

**301.5 Label information.** Deleted.

**301.8 Vibration isolation.** Deleted.

**302.4 Alterations to trusses.** *(verify same as IBC)*

### **301.14 Rodent proofing.**

**301.14.1 General.** Buildings or structures and the walls enclosing habitable or occupiable rooms and spaces in which persons live, sleep or work, or in which feed, food or foodstuffs are stored, prepared, processed, served or sold, shall be constructed in accordance with the provisions of this section.

**301.14.2 Foundation wall ventilation openings.** Foundation wall ventilator openings shall be covered for their height and width with perforated sheet metal plates no less than 0.070 inch (1.8 mm) thick, expanded sheet metal plates not less than 0.047 inch (1.2 mm) thick, cast iron grills or grating, extruded aluminum load-bearing vents or with hardware cloth of 0.035 inch (0.89 mm) wire or heavier. The openings therein shall not exceed 1/4 inch (6.4 mm).

**301.14.3 Foundation and exterior wall sealing.** Annular spaces around pipes, electric cables, conduits, or other openings in the walls shall be protected against the passage of rodents by closing such openings with cement mortar, concrete masonry or noncorrosive metal.

### **303.3 Prohibited locations.**

Appliances shall not be located in, or obtain combustion air from, any of the following rooms or spaces:

1. Sleeping rooms.

2. Bathrooms.
3. Toilet rooms.
4. ~~Storage closets.~~ Closets used for storage.
5. Surgical rooms.

**Exceptions:**

1. Direct-vent appliances that obtain all combustion air directly from the outdoors.
2. Vented room heaters, wall furnaces, vented decorative appliances and decorative appliances for installation in vented solid fuel-burning fireplaces, provided that the room meets the required volume criteria of Section 304.5.
3. A single wall-mounted unvented room heater equipped with an oxygen depletion safety shutoff system and installed in a bathroom, provided that the input rating does not exceed 6,000 Btu/h (1.76kW) and the bathroom meets the required volume criteria of Section 304.5.
4. Deleted.
5. Appliances installed in an enclosure in which all combustion air is taken from the outdoors, in accordance with Section 304.6. Access to such enclosure shall be through a solid weather-stripped door, equipped with an approved self-closing device.

**303.4 Protection from vehicle impact damage.**

Appliances shall not be installed in a location subject to vehicle impact damage except where protected by an approved means. Protection is not required for appliances located out of the vehicle's normal travel path.

**303.8 Drainage.**

Below grade installations shall be provided with a natural drain or an automatic lift or sump pump.

**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.

**305.7 Clearances from grade Under floor and exterior grade installations.**

~~Equipment and appliances installed at grade level shall be supported on a level concrete slab or other approved material extending above adjoining grade or shall be suspended a minimum of 6 inches (152 mm) above adjoining grade.~~

**305.7.1 Exterior Grade Installations.** Equipment and appliances installed above grade level shall be supported on a solid base or approved material a minimum of 2 inches thick.

**305.7.2 Underfloor installation.** Suspended equipment shall be a minimum of 6 inches (152 mm) above the adjoining grade.

**305.7.3 Crawlspace supports.** In a crawl space, a minimum of 4x8x16 inch block or brick supports shall be held in place with mortar. Formed concrete or approved prefabricated steel units are acceptable.

**305.7.4 Drainage.** Below grade installations shall be provided with a natural drain or an automatic lift or sump pump.

**305.8 Clearances to combustible construction.**

Heat-producing equipment and appliances shall be installed to maintain the required clearances to combustible construction as specified in the listing and manufacturer's instructions. ~~Such clearances shall be reduced only in accordance with Section 308.~~ Clearances to combustibles shall include such considerations as door swing, drawer pull, overhead projections or shelving and window swing. Devices, such as door stops or limits and closers, shall not be used to provide the required clearances.

**[M] 306.3 Appliances in attics.**

Attics containing appliances requiring access shall be provided with an opening and unobstructed passageway large enough to allow removal of the largest component of the appliance. The passageway shall not be less than 30 inches (762 mm) high and 22 inches (559 mm) wide and not more than 20 feet (6096 mm) in length when measured along the centerline of the passageway from the opening to the equipment. The passageway shall have continuous solid flooring not less than 24 inches (610 mm) wide. A level service space not less than 30 inches (762 mm) deep and 30 inches (762 mm) wide shall be present at the front or service side of the equipment. The clear access opening dimensions shall be a minimum of 20 inches by 30 inches (508 mm by 762 mm), where such dimensions are large enough to allow removal of the largest component of the appliance.

**Exceptions:**

1. The passageway and level service space are not required where the appliance is capable of being serviced and removed through the required opening.
2. Where the passageway is not less than 6 feet (1829 mm) high for its entire length, the passageway shall not be limited in length .

**[M] 306.3.1 Electrical requirements.** Deleted.

**[M] 306.4 Appliances under floors.**

Under-floor spaces containing appliances requiring access shall be provided with an access opening and unobstructed passageway large enough to remove the largest component of the appliance. The passageway shall not be less than 22 inches (559 mm) high and 36 inches (914 mm) wide, nor more than 20 feet (6096 mm) in length when measured along the centerline of the passageway from the opening to the equipment. A level service space not less than 30 inches (762 mm) deep and 30 inches (762 mm) wide shall be present at the front or service side of the appliance. If the depth of the passageway or the service space exceeds 12 inches (305 mm) below the adjoining grade, the walls of the passageway shall be lined with concrete or masonry extending 4 inches (102 mm) above the adjoining grade and having sufficient lateral-bearing capacity to resist collapse.

The clear access opening dimensions shall be a minimum of 22 inches by 30 inches (559 mm by 762 mm), where such dimensions are large enough to allow removal of the largest component of the appliance.

**Exceptions:**

1. The passageway is not required where the level service space is present when the access is open and the appliance is capable of being serviced and removed through the required opening.
2. Where the passageway is not less than 6 feet high (1829 mm) for its entire length, the passageway shall not be limited in length.

**[M] 306.4.1 Electrical requirements. Deleted.**

**[M] 306.5 Appliances on roofs or elevated structures.**

Where appliances requiring access are installed on roofs or elevated structures at a height exceeding 16 feet (4877 mm), such access shall be provided by a permanent approved means of access, the extent of which shall be from grade or floor level to the appliance's level service space. Such access shall not require climbing over obstructions greater than 30 inches high (762 mm) or walking on roofs having a slope greater than four units vertical in 12 units horizontal (33-percent slope).

Permanent ladders installed to provide the required access shall comply with the following minimum design criteria.

1. The side railing shall extend above the parapet or roof edge not less than 30 inches (762 mm).
2. Ladders shall have a rung spacing not to exceed 14 inches (356 mm) on center.
3. Ladders shall have a toe spacing not less than 6 inches (152 mm) deep.
4. There shall be a minimum of 18 inches (457 mm) between rails.
5. Rungs shall have a minimum diameter of 0.75-inch (19 mm) and shall be capable of withstanding a 300-pound (136.1 kg) load.
6. Ladders over 30 feet (9144 mm) in height shall be provided with offset sections and landings capable of withstanding a load of 100 pounds per square foot (488.2 kg/m<sup>2</sup>).
7. Ladders shall be protected against corrosion by approved means.

Catwalks installed to provide the required access shall be not less than 24 inches wide (610 mm) and shall have railings as required for service platforms.

**Exception:** This section shall not apply to Group R-3 occupancies.

**[M] 306.5.2 Electrical requirements. Deleted.**

**[M] 306.6 Guards.**

Guards shall be provided where appliances, fans or other components that require service are located within 6 feet (1829 mm) of a roof edge or open side of a walking surface and such edge or open side is located more than 30 inches (762 mm) above the floor, roof or grade below. The guard shall extend not less than 30 inches (762 mm) beyond each end of such appliances, fans or other components and the top of the guard shall be located not less than 42 inches (1067 mm) above the elevated surface adjacent to the guard. The guard shall be constructed so as to prevent the passage of a 21-inch-diameter (533 mm)

sphere and shall comply with the loading requirements for guards specified in the International Building Code.

**307.1 Fuel-burning appliances.**

An auxiliary drain pan for liquid combustion by-products of condensing appliances shall be required. Liquid combustion by-products of condensing appliances shall be collected and discharged to an approved plumbing fixture or disposal area in accordance with the manufacturer's installation instructions. Condensate piping shall be of approved corrosion-resistant material and shall not be smaller than the drain connection on the appliance. Such piping shall maintain a minimum slope in the direction of discharge of not less than one-eighth unit vertical in 12 units horizontal (1-percent slope).

**SECTION 308 (IFGS)**

**CLEARANCE REDUCTION FOR UNLISTED EQUIPMENT**

**TABLE 308.2 a-k**

**REDUCTION OF CLEARANCES WITH  
SPECIFIED FORMS OF PROTECTION**

**310.1 Gas pipe bonding.** Deleted. See the NC Electrical Code.

## **CHAPTER 4 GAS PIPING INSTALLATIONS**

### **401.1 Scope.**

This chapter and Appendix A shall govern the design, installation, modification and maintenance of piping systems. The applicability of this code to piping systems extends from the point of delivery to the connections with the equipment and includes the design, materials, components, fabrication, assembly, installation, testing, inspection, operation and maintenance of such piping systems.

### **401.2 Liquefied petroleum gas storage.**

The enforcement of the location of undiluted liquefied petroleum gas containers shall be the responsibility of the North Carolina Department of Agriculture in accordance with Article 5 of Chapter 119-54 of the General Statutes.

### **401.5 Identification.**

For other than black steel pipe, exposed piping shall be identified by a yellow label marked "Gas" in black letters. The marking shall be spaced at intervals not exceeding 5 feet (1524 mm).

### **401.9 Meter location.**

When required, a meter shall be provided for the building or residence to be served. The location shall be such that the meter can be read, serviced, or changed. The location, space requirements, dimensions, and proper clearances shall be acceptable to the local gas company.

### **402.2 Maximum gas demand.**

The volume of gas to be provided shall be determined directly from the manufacturer's input ratings of the gas utilization equipment served. Where an input rating is not indicated, the gas supplier, equipment manufacturer or a qualified agency shall be contacted, or the rating from Table 402.2 shall be used for estimating the volume of gas to be supplied.

The total connected hourly load shall be used as the basis for pipe sizing, assuming that all equipment could be operating at full capacity simultaneously. Where a diversity of load can be established, pipe sizing shall be permitted to be based on such loads.

### **402.4 Sizing tables and equations.**

Where Tables 402.4(1) through 402.4(35) are used to size piping or tubing, the pipe length shall be determined in accordance with Section 402.4.1, 402.4.2 or 402.4.3.

Where Equations 4-1 and 4-2 are used to size piping or tubing, the pipe or tubing shall have smooth inside walls and the pipe length shall be determined in accordance with Section 402.4.1, 402.4.2 or 402.4.3.

*(Equations 4-1 and 4-2 remain)*

(2002 NCFGC Table 402.3(32). This table should be inserted in the 2003 IFGC and renumbered to 402.3(34).)

(2002 NCFGC Table 402.3(33). This table should be inserted in the 2003 IFGC and renumbered to 402.3(35).)

**TABLE 402.4(27)**  
**SEMI-RIGID COPPER TUBING**

**402.6.2 Specific gravity.**

Application of the gravity factor converts the figures given in the tables provided in this code to capacities for another gas of different specific gravity. Such application is accomplished by multiplying the capacities given in the tables by the multipliers shown in Appendix A, Table A.2.4. In case the exact specific gravity does not appear in the table, choose the next higher value specific gravity shown.

*(Insert Table A.2.4 after new Section 402.6.2 and label as **Table 402.6.2.**)*

**403.3 Other materials.**

Material not covered by the standards specifications listed herein shall be investigated and tested to determine that it is safe and suitable for the proposed service, and, in addition, shall be recommended for that service by the manufacturer.

**403.10.4 Metallic fittings.**

Metallic fittings, including valves, strainers and filters, shall comply with the following:

1. Threaded fittings in sizes larger than 4 inches (102 mm) shall not be used.
2. Fittings used with steel or wrought-iron pipe shall be steel, brass, bronze, malleable iron or cast iron.
3. Fittings used with copper or brass pipe shall be copper, brass or bronze.
4. Fittings used with aluminum-alloy pipe shall be of aluminum alloy.
5. Cast-iron fittings:
  - 5.1. Flanges shall be permitted.
  - 5.2. Bushings shall not be used.
  - 5.3. Fittings shall not be used in systems containing flammable gas-air mixtures.
  - 5.4. Fittings in sizes 4 inches (102 mm) and larger shall not be used indoors.
  - 5.5. Fittings in sizes 6 inches (152 mm) and larger shall not be used.
6. Aluminum-alloy fittings. Threads shall not form the joint seal.
7. Zinc aluminum-alloy fittings. Fittings shall not be used in systems containing flammable gas-air mixtures.
8. Special fittings. Fittings such as couplings, proprietary-type joints, saddle tees, gland-type compression fittings, and flared, flareless or compression-type tubing fittings shall be: used within the fitting manufacturer's pressure-temperature recommendations; used within the service conditions anticipated with respect to vibration, fatigue, thermal expansion or contraction; and installed or braced to prevent separation of the joint by gas pressure or external physical damage.

**404.7 Above-ground outdoor piping.**

All piping installed outdoors shall be elevated not less than 31/2 inches (152 mm) above ground and where installed across roof surfaces, shall be elevated not less than 31/2 inches (152 mm) above the roof surface.

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. Where passing through an outside wall, the piping shall also be protected against corrosion by coating or wrapping with an inert material. Where piping is encased in a protective pipe sleeve, the annular space between the piping and the sleeve shall be sealed. Ferrous metal exposed in exterior locations shall be protected from corrosion.

#### **404.8 Protection against corrosion underground.**

Metallic pipe or tubing exposed to corrosive action, such as soil condition or moisture, shall be protected in an approved manner. Zinc coatings (galvanizing) shall not be deemed adequate protection for gas piping underground. Where dissimilar metals are joined underground, an insulating coupling or fitting shall be used. Piping shall not be laid in contact with cinders.

#### **404.8.2 Protective coatings and wrapping.**

Pipe protective coatings and wrappings shall be approved for the application.

**Exception:** Where installed in accordance with the manufacturer's installation instructions, field application of coatings and wrappings shall be permitted for pipe nipples, fittings and locations where the factory coating or wrapping has been damaged or necessarily removed at joints.

#### **404.14.3 Tracer.**

An insulated copper tracer wire or other approved conductor shall be installed adjacent to underground nonmetallic piping. Access shall be provided to the tracer wire or the tracer wire shall terminate above ground at each end of the nonmetallic piping. The tracer wire size shall not be less than 18 AWG and the insulation type shall be suitable for direct burial.

#### **406.1.2.1 Additions to existing piping systems.**

In cases where the work authorized by the permit consists of additional piping to an existing system, a shut-off valve shall be installed and the additional piping shall be tested in accordance with Section 406.4.

#### **406.1.3 New branches. Deleted.**

#### **406.1.4 Section testing. Deleted.**

#### **406.4.1 Method of Testing.**

Low pressure gas piping shall withstand a pressure of at least 10 psi for a period of not less than 10 minutes without showing any drop in pressure. High pressure piping, 5 psi and greater must withstand a pressure of at least 50 psi for a period of not less than 10 minutes without showing any drop in pressure.

#### **406.4.2 Test instruments.**

For these tests, pressure shall be measured with a manometer or slope gauge or other accurate and sensitive pressure indicating device, the scale of which is so graduated that variations in pressure may be accurately read. All necessary apparatus for conducting the pressure test shall be furnished by the installer.

#### **408.1 Slopes. Deleted.**

#### **408.2 Drips. Deleted.**

#### **408.3 Location of drips. Deleted.**

#### **408.4 Sediment trap.**

Where a sediment trap is not incorporated as part of the gas utilization equipment, a sediment trap, if required by the manufacturer's installations, shall be installed as close to the inlet of the equipment as practical. The sediment trap shall be either a tee fitting with a capped nipple in the bottom opening of the run 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.

#### **409.2 Meter valve. Deleted.**

#### **409.3 Shutoff valves for multiple building line systems.**

Where a single meter is used to supply gas to more than one building or tenant, a separate shutoff valve shall be provided for each building or tenant.

#### **409.5.1 Shutoff valve in fireplace.**

Equipment shutoff valves located in the firebox of a fireplace shall be installed in accordance with the appliance manufacturer's instructions. This Section shall not prohibit the use or the installation of gas shut-off valves in the firebox of fireplaces serving listed gas appliances.

#### **410.1 Pressure regulators.**

A line pressure regulator shall be installed where the appliance is designed to operate at a lower pressure than the supply pressure. Line gas pressure regulators shall be listed as complying with ANSI Z21.80. Line pressure regulators exceeding 2 psi nominal shall install a tested and approved overpressure protection device (OPD) for use with the regulator. Access shall be provided to pressure regulators and overpressure protection devices. Pressure regulators shall be protected from physical damage. Regulators installed on the exterior of the building shall be approved for outdoor installation.

#### **410.2 MP regulators.**

MP pressure regulators shall comply with the following:

1. The MP regulator shall be approved and shall be suitable for the inlet and outlet gas pressures for the application.

2. The MP regulator shall maintain a reduced outlet pressure under lockup (no-flow) conditions.
3. The capacity of the MP regulator, determined by published ratings of its manufacturer, shall be adequate to supply the appliances served.
4. The MP pressure regulator shall be provided with access.  
Where located indoors, the regulator shall be vented to the outdoors or shall be equipped with a leak-limiting device, in either case complying with Section 410.3.
5. A tee fitting with one opening capped or plugged shall be installed between the MP regulator and its upstream shutoff valve. Such tee fitting shall be positioned to allow connection of a pressure-measuring instrument and to serve as a sediment trap.
6. A means to test pressure shall be installed not less than 10 pipe diameters downstream of the MP regulator outlet. Such ~~tee~~ fitting shall be positioned to allow connection of a pressure-measuring instrument.

### **410.3 Venting of regulators.**

Pressure regulators that require a vent shall have an independent metallic vent to the outside of the building. The vent shall be designed to prevent the entry of water or foreign objects.

**Exception:** A vent to the outside of the building is not required for regulators equipped with and labeled for utilization with approved vent-limiting devices installed in accordance with the manufacturer's instructions.

### **412.1 General.**

Motor fuel-dispensing facilities for LP-gas fuel shall be as regulated by the North Carolina Department of Agriculture.

**412.2 Storage and dispensing.** Deleted.

**412.3 Approved equipment.** Deleted.

**412.4 Listed equipment.** Deleted.

**412.5 Attendants.** Deleted.

**412.6 Location.** Deleted.

**412.7 Installation of dispensing devices and equipment.** Deleted.

**412.7.1 Valves.** Deleted.

**412.7.2 Hoses.** Deleted.

**412.7.3 Vehicle impact protection.** Deleted.

**412.8 Private fueling of motor vehicles.** Deleted.

## **CHAPTER 5 CHIMNEYS AND VENTS**

### **501.1 Scope.**

This chapter, Appendix B and Appendix C shall govern the installation, maintenance, repair and approval of factory-built chimneys, chimney liners, vents and connectors and the utilization of masonry chimneys serving gas-fired appliances. The requirements for the installation, maintenance, repair and approval of factory built chimneys, chimney liners, vents and connectors serving appliances burning fuels other than fuel gas shall be regulated by the International Mechanical Code. The construction, repair, maintenance and approval of masonry chimneys shall be regulated by the International Building Code.

### **501.8 Equipment not required to be vented.**

The following listed appliances shall not be required to be vented.

1. Ranges.
2. Built-in domestic cooking units listed and marked for optional venting.
3. Hot plates and laundry stoves.
4. Type 1 clothes dryers (Type 1 clothes dryers shall be exhausted in accordance with the requirements of Section 613).
5. A single booster-type automatic instantaneous water heater, where designed and used solely for the sanitizing rinse requirements of a dishwashing machine, provided that the heater is installed in a commercial kitchen having a mechanical exhaust system. Where installed in this manner, the draft hood, if required, shall be in place and unaltered and the draft hood outlet shall be not less than 36 inches (914 mm) vertically and 6 inches (152 mm) horizontally from any surface other than the heater.
6. Refrigerators.
7. Counter appliances.
8. Room heaters listed for unvented use.
9. Direct-fired make-up air heaters.
10. Other equipment listed for unvented use and not provided with flue collars.
11. Specialized equipment of limited input such as laboratory burners and gas lights.

Where the appliances and equipment listed in Items 5 through 11 above are installed so that the aggregate input rating exceeds 20 British thermal units (Btu) per hour per cubic feet (207 watts per m<sup>3</sup>) of volume of the room or space in which such appliances and equipment are installed, one or more shall be provided with venting systems or other approved means for conveying the vent gases to the outdoor atmosphere so that the aggregate input rating of the remaining unvented appliances and equipment does not exceed the 20 Btu per hour per cubic foot (207 watts per m<sup>3</sup>) figure. Where the room or space in which the equipment is installed is directly connected to another room or space by a doorway, archway, or other opening of comparable size that cannot be closed, the volume of such adjacent room or space shall be permitted to be included in the calculations.

### **503.6.7 Minimum height.**

A Type B or a Type L gas vent shall terminate at least 6 feet (1524 mm) in vertical height above the highest connected equipment draft hood or flue collar. A Type B-W gas vent

shall terminate at least 12 feet (3658 mm) in vertical height above the bottom of the wall furnace.

**505.1.1 Commercial cooking appliances vented by exhaust hoods.**

Kitchen exhaust hood systems used to vent commercial cooking appliances shall comply with Chapter 5 of the International Mechanical Code.

## CHAPTER 6 SPECIFIC APPLIANCES

### 614.5 Makeup air.

Where a closet is designed for the installation of a clothes dryer, an opening having an area of not less than 100 square inches (645 mm<sup>2</sup>) for makeup air shall be provided in the closet enclosure, or makeup air shall be provided by other approved means.

### 614.6 Domestic clothes dryer ducts.

Residential dryer exhaust ducts which are not designed for a specific dryer shall be constructed of minimum 0.0157 inch (0.4mm) galvanized steel or other noncombustible material of equivalent strength and corrosion resistance. The ducts shall have a smooth interior finish with joints running in the direction of the air flow. Minimum size of the exhaust duct shall be 4 inches (102 mm) ID. The maximum length of rigid metal duct shall not exceed 45 ft. (13716 mm) from dryer location to wall or roof cap. There shall be a deduction of 5 ft. (1524 mm) for each 45 degree (0.785 rad) bend and 10 ft. (3048 mm) for 90 degree (1.57 rad) bend. The maximum length for noncombustible flexible duct shall not exceed 25 ft. (7620 mm) from dryer location to the wall or roof cap. There shall be a deduction of 2-1/2 ft (762 mm) for each 45 degree (0.785 rad) bend and 5 feet (1524 mm) for each 90 degree (1.57 rad) bend. All wall or roof caps shall be nonscreened with backdraft damper and minimum size of 4 inches (102 mm). The entire exhaust system shall be properly secured in place and shall terminate not less than 12-inches above finished grade.

Clothes dryer transition ducts used to connect the appliance to the exhaust duct system shall be metal and limited to a single length not to exceed 8 feet (2438 mm) and shall be listed and labeled for the application. Transition ducts shall not be concealed within construction.

**Exception:** Where the make and model of the clothes dryer to be installed is known and the manufacturer's installation instructions for such dryer are provided to the code official, the maximum length of the exhaust duct, including any transition duct, shall be permitted to be in accordance with the dryer manufacturer's installation instructions.

**614.6.1 Maximum length.** Deleted.

**623.7 Domestic appliances installed in commercial establishments.** See the 2006 NC Mechanical Code and 2006 NC Fire Prevention Code.

## SECTION 634 (IFGS)

### CHIMNEY DAMPER OPENING AREA

**634.1 Free opening area of chimney dampers.** Deleted.

**TABLE 634.1**  
**FREE OPENING AREA OF CHIMNEY DAMPER FOR VENTING FLUE GASES**  
**FROM UNLISTED DECORATIVE APPLIANCES FOR INSTALLATION IN**  
**VENTED FIREPLACES Deleted.**

**CHAPTER 7**  
**GASEOUS HYDROGEN SYSTEMS**

*(use 2004 supplement language)*

**IFGC/IFGS CHAPTER 8  
REFERENCED STANDARDS**

*(use 2004 supplement language)*

**APPENDIX A (IFGS)**

**SIZING AND CAPACITIES OF GAS PIPING**

(This appendix is ~~informative and is not~~ adopted as part of the code.)

**APPENDIX B**

**SIZING OF VENTING SYSTEMS SERVING APPLIANCES EQUIPPED WITH DRAFT HOODS, CATEGORY I APPLIANCES, AND APPLIANCES LISTED FOR USE AND TYPE B VENTS**

(This appendix is ~~informative and is not~~ adopted as part of the code.)

**APPENDIX C (IFGS)**

**EXIT TERMINALS OF MECHANICAL DRAFT AND DIRECT-VENT VENTING SYSTEMS**

(This appendix is ~~informative and is not~~ adopted as part of the code.)

**APPENDIX D (IFGS)**

**RECOMMENDED PROCEDURE FOR SAFETY INSPECTION OF AN EXISTING APPLIANCE INSTALLATION**

Deleted.