

CHAPTER 33 GAS FITTING

Installation, Extension, And Alteration Of Gas Piping For Natural Or Manufactured Gas In And About Buildings And The Installation, Alteration Or Maintenance, And Use Of Gas Appliances Connected Thereto.

Sec. 33-1. Definitions

Sec. 33-1.1 Municipality: The term municipality means the municipal corporation adopting this Ordinance

Sec. 33-1.2 Approved: The term “approved” means approval by the Gas Inspector

Sec. 33-1.3 Gas Inspector: The term “gas inspector” means the person or persons appointed by the municipality to make the inspections provided for by this Ordinance.

Sec. 33-1.4 Gas Appliance: The term “gas appliance” means any device using natural or manufactured as a source of energy.

Sec. 33-1.5 Gas Piping: The term “gas piping” means any pipe, tubing or conduit, valves and fittings, conveying or holding natural or manufactured gas, in and about any building or buildings beginning at the outlet of the gas meter.

Sec. 33-1.6 Gas Company: The term ‘gas company’ means the public utility providing gas service in the municipality, or any individual or association of individuals providing gas service for himself, themselves or others, within the corporate limits of the municipality.

Sec. 33-1.7 Person: The term “person” means any individual group of individuals, partnerships, association, firm or corporation.

Sec. 33-1.8 Gas Fitter: The term “gas fitter” means any person who is qualified by license as a gas fitter.

Sec. 33-1.9 Gas Fitting: The term “gas fitting” means the installation, extension, or alteration of any system of as piping as defined in this Ordinance, as well as the installation, rearrangement or replacement of any gas appliances and the installation, alteration, or extension of the flues and connections conveying products of combustion of any gas appliances.

Sec. 33-1.10 Flue or Vent: The term “flue” or “vent” means the vertical or nearly vertical pipe, conduits, or passageway conveying the products of combustion from the connection at the flue or vent connector to the outside atmosphere.

Sec. 33-1.11 Flue or Vent Connector: The term “flue” or “vent connector” means the pipe connecting the appliance with the flue or vent.

Sec. 33-1.12 Low Pressure: The term “low pressure” means nominal gas pressure of 5 oz. or less.

Sec. 33-2 Application Of Regulations

1. General: No person shall do any gas fitting in any manner that does not conform to the provisions of this Ordinance. It shall be unlawful for any person to perform gas fitting for which a permit is required unless he is a gas fitter, as defined by this Ordinance.
2. Hazardous Installation: The Gas Inspector may prohibit the use of any gas fitting, or any part thereof, which after inspection or test is considered as introducing a distinct hazard to life or property. The Gas Company shall not be required to render service to hazardous installations or service to installations which are in violation of the gas company’s standards.
3. Work Between Main And Meter: No person unless in the employ of the Gas Company shall repair, alter, or open the service pipe carrying unmetered gas, or set or disconnect the service meter, or do any other work on that part of the gas piping when containing gas, up to and including the meter.
4. Disconnecting Meter: Unless in the employ of the Gas Company or having a permit from the Gas Company, no person shall disconnect the outlet of a service meter from the building piping.
5. Service Lines: Service lines to carry unmetered gas shall be installed by the Gas Company or its representative in accordance with standards and specifications as prescribed by the Gas Company’s “Distribution Standards” and the U.S. Department of Transportation “Regulations for the transportation of Natural and Other Gas by Pipeline”, Parts 191 and 192, Title 49 of the Code of Federal Regulations.

Sec. 33-3 Licenses

1. Required To Be Carried: No person shall engage in the business of gas fitting in the City without first obtaining gas fitter’s license from the City. A person licensed under this chapter shall carry such license on his person at all times he is engaged in gas fitting and shall not use his license for more than one business entity engaged in the business of gas fitting.
2. Fees: The fee for a gas fitter’s initial license fee shall be \$100.00 per year and shall be renewed annually on January 1st of each year upon payment of a \$25 fee.
3. Qualifications: No person shall be issued a gas fitter’s license until he shall have taken a gas fitter’s examination given by the gas inspector and shall have passed the same with a grade of seventy-five or better.
4. Bond And Liability Insurance: Before the gas fitter shall receive the license required by this article, he shall execute and deposit in the office of the City Auditor a bond to be approved by the City Council in the sum of \$3,000.00, conditioned that he will comply with all the laws, ordinances, rules and regulations and requirements of the City pertaining to such occupation and that he will indemnify and save harmless the City of and from all accidents and damages caused by any negligence in protecting his work or by any unfaithful or inadequate work done by virtue of such license, or by his failure to comply with the laws, ordinances, rules, regulations and requirements of the City. He

shall also carry a policy of policies of insurance with limits of \$100,000.00 per person and \$100,000.00 per occurrence for bodily injury and \$100,000.00 for property damage for liability resulting from all accidents and damages caused by any negligence of the licensee in connection with his work as a gas fitter. Such policy or policies of insurance shall not be cancellable without written notice to the City by the insurer of its intent to cancel said policy or policies at least two weeks prior to the date of cancellation. A copy of such policy or policies of insurance shall be filed with the City Auditor and approved by the City Council.

5. Forfeiture: Any gas fitter who shall be guilty of a violation of any of the provisions of this Ordinance, laws, ordinances, rules and regulations of the City Council or reasonable requirements of any officer of the City, shall immediately forfeit his license and be guilty of a violation of this Code.

Sec. 33-4. Permits

1. Unlawful Without Permit: It shall be unlawful for any person to do gas fitting, except in those instances listed in paragraph 32-42, unless the owner of the premises on which the work is to be done, or someone on his, her, or its behalf, shall first obtain from the Gas Inspector a written permit authorizing such gas fitting.
2. Work Not Requiring Permit: No permit shall be required in the following instances:
 - (a) In the case of repair work to stop leakage of gas when such work does not involve the replacement or rearrangement of valves, pipes, appliances, or other fixtures.
 - (b) In the case of work involving ordinary operation of any appliance (I.E. cleaning, adjusting, etc.) which does not also involve changes in the method of serving the appliance with gas.
 - (c) In the case of replacement or removal of an appliance or fixture which does not require the turning off or on of gas other than the single branch serving the appliance or fixture which is being replaced or removed.
 - (d) In the case of any ordinary repair or alteration of an appliance or fixture which does not require cutting into the gas piping or which will not result in any change in the operation or the venting of such appliance or fixture.
 - (e) In the case of complete turn-on and turn-off of gas, when the consumer moves in or out of the premises.
 - (f) In the case of work performed on gas mains, services, meters, regulators or other facilities necessary to the operation of the Gas Company's system.
3. Application For Permit: All applications for permits for as fitting shall be made in writing to the Gas Inspector on special permit forms to be provided by the municipality. When satisfied that the person to do the work is qualified, and the work to be done or the facilities to be installed will conform with the provisions of this Ordinance and pay a fee of \$5.00 for original permit and \$3.00 for additions afterwards, he shall issue a permit therefor.

Sec. 33-5. Material

1. Material For Gas Piping: Pipe shall be first quality black steel. Internally tinned copper or brass pipe of full weight, standard gauge and thickness, in iron pipe size with threaded

joints shall be approved. Fittings on screw pipe shall be wrought or malleable iron. Fittings on copper or brass pipe shall be of the same material as the pipe. Welded fittings and joining of pipe by welding is permitted.

Piping installed outside of a building to connect appliances located outside (such as gas lights, gas grills, etc.) may be rigid pipe conforming to underground pipe standards or may be of tubing of material resistant to corrosion.

2. Appliance Connections: Non-portable appliances such as central heating, water heating, room heating and similar equipment should when at all practical be connected to the gas piping with rigid pipe.

Hot plates, clothes dryers, refrigerators, domestic gas ranges and similar equipment shall be connected to the gas piping with rigid pipe, approved semi-rigid tubing or approved appliance connectors of flexible metal, double-wall, and aluminum lined. When a semi-rigid tubing connector or a connector of flexible metal is used, it shall connect to an outlet in the same room as the appliance. The length of the connector shall not exceed 6 feet. The connector shall be installed so as to be protected against physical damage.

Sec. 33-6. Gas Piping

1. Piping Plan: A definite plan for the piping of appliances shall be made before work is begun. If necessary, a sketch of the piping shall be prepared. Requirements over governing the location of the gas meter will govern provisions of planning the gas piping system.
2. Interconnections: When two or more meters are installed on the same premises which supply separate consumers, the piping systems shall not be interconnected on the outlet side of the meters.
3. Piping Installations: Gas piping and fittings shall be clear and free from cutting burrs and defects in structure or threading and shall be thoroughly brushed and scale blown. Pipe ends shall be thoroughly reamed before threading and making up.

Fitter's cement or wax shall not be used. White lead or other pipe joint compounds or dope may be used sparingly and applied to male pipe threads only.

Defects in pipe or fittings shall in no case be repaired. All such defective pipe or fittings shall, when located, be removed and replaced with perfect material.

The unthreaded portion of outlets shall extend at least one (1) inch through finished walls and at least two (2) inches above floors. The pipe or outlet fitting shall be securely fastened to the wall or partition or construction above the floor. When pipes are secured to masonry or metal surfaces, expansion shields, brackets, clamps, or inserts should be used. Wooden plugs are prohibited.

Piping containing measured gas under pressure shall not be cut into or opened except when done by using equipment designed to prevent escape of gas. When such equipment is not available the piping shall be purged of all gas before cutting.

Any piping run from one building to another shall be installed underground in accordance with the standards for service piping (see section 2.5) and shall be of adequate size to serve the load at the pressure from the original building. When sizing pipe the length of piping in both buildings plus the underground pipe must be considered to take into account the total pressure loss. See Table 7.1

Gas piping shall not be supported by other piping but shall be supported by appropriate pipe hooks, metal pipe straps, bands or hangers suitable for the size of pipe, or proper strength and quality, and at proper intervals so that the piping cannot be moved accidentally from the installed position.

A tee fitting with the bottom outlet plugged or capped, instead of angle fitting, shall be used at the bottom of all appliance risers or drops.

No field bending of pipe for turns or offsets shall be allowed in gas piping.

The building structure shall not be weakened by the installation of gas piping. Notching of beams and joists shall be avoided wherever possible. Before any beams or joists are cut or notched, special permissions shall be obtained from the architect or the owner.

Piping shall not be installed in solid walls or solid floors but shall be located in hollow partitions or laid in channels in a solid floor, suitably covered to permit access to the piping with a minimum of damage to the buildings.

When installing gas piping which is to be concealed, unions, running threads, right and left couplings, bushings, and swing joints made by combinations of fitting shall not be used. If it is necessary to connect piping in concealed locations it may be done with the use of standard couplings. It is preferable to weld at such locations.

Sec. 33-7. Size Of Piping To Gas Burning Devices

1. Table: The size of gas pipe to operate a low pressure to the following table:

Capacity Of Pipe Different Diameters And Lengths, In Cubic Feet Per Hour With Pressure Drop of .3 inches and Specific Gravity Of .60

Length Of Pipe Diameter	Diameter of Pipe- Inches									
	1/2	3/4	1	1 1/4	1 1/2	2	3	4	6	8
15	76	172	345	750	1220	2,480	6,500	13,880	38,700	79,000
30	52	120	241	535	850	1,780	4,700	9,700	27,370	55,850
45	43	99	199	435	700	1,475	3,900	7,900	23,350	45,600
60	38	86	173	380	610	1,290	3,450	6,800	19,330	39,500
75		77	155	345	545	1,120	3,000	6,000	17,310	35,300
90		70	141	310	490	1,000	2,700	5,500	15,800	32,250
105		65	131	285	450	920	2,450	5,100	14,620	29,850
120			120	270	420	860	2,300	4,800	13,680	27,920
150			109	242	380	780	2,090	4,350	12,240	25,000
180			100	225	350	720	1,950	4,000	11,160	22,800
210			92	205	320	660	1,780	3,700	10,330	21,100
240				190	300	620	1,680	3,490	9,600	19,740
270				178	285	580	1,580	3,250	9,000	18,610
300				170	270	545	1,490	3,000	8,500	17,660
450				140	226	450	1,230	2,500	7,000	14,420
600				119	192	390	1,030	2,130	6,000	12,480

Note: Due Allowance for the effect of an ordinary number of fittings has been made.

Sec. 33-8. Tests

1. Covering Pipe: Gas piping shall not be covered, concealed or painted before inspection and test of same are made and the work approved.
2. Testing For Tightness: Upon completion of construction extension or alteration of any gas piping for any natural or manufactured gas for which a permit is required by this Ordinance, and before any piping has been covered or concealed the person to whom said permit has been granted shall notify the Gas Inspector that the work is ready for inspection and test. Said person shall test said low pressure as piping for a period of 15 minutes under an air pressure of at least twenty-five (25) pounds per square inch gauge. Gas piping that will operate at a pressure greater than low pressure must be tested as specified by section 32-8.4. The gauge shall be one pound graduation and show no drop in pressure during the test. Said person shall furnish the gauge, pump and other equipment required to make the test. Appliances connected to the gas piping shall be disconnected before making the test; the openings so left shall be capped or plugged.
3. Unlawful: It shall be unlawful to attach any gas appliance, or to connect any gas meter to any gas piping for which a permit is required until after such gas piping shall have been made tight, installed in accordance with the provisions of this Ordinance, and examined and approved by the Gas Inspector. Certification of examination and approval

shall be made by said Gas Inspector on the back of the copy of the permit on file in his office.

4. Construction And Test Requirements For Building Systems That Will Operate At Pressures Greater Than Low Pressure:

(a) Systems Designed for Pressure Exceeding Ounces- Up to and Including 5 Psig.

Piping systems designed for pounds operation up to and including 5psig may be constructed of threaded pipe and fittings. If any portion of the piping system is installed in concealed areas, the piping must be of all welded construction in such areas. The piping system must be pressure tested at minimum pressure of 60 psig for a minimum of 30 minutes and must show no leakage. Where a city inspector has jurisdiction, the installation and/or test must be approved by the inspector as required by local ordinance.

(b) Systems Designed for Pressure Over 5psi – Up to and Including 10 Psig

Piping systems designed for operation at pressures in excess of 5 psig shall be constructed of all welded pipe. The piping system must be pressure tested at a minimum pressure of 100 psig for a minimum of 30 minutes and must show no leakage. Where a city inspector has jurisdictions the installation and/or test must be approved by the inspector as required by local ordinance.

(c) Systems Designed for Pressures Over 10 Psig

Piping systems designed to operate at pressures greater than 10 psi will be served only where the equipment is designed for higher pressures and cannot be operated at a pressure of 10 psig or less. The limitations of our distribution system must be considered and again, they will not connect any installation which would require them to operate their system at a higher than normal pressure to serve on customer.

Sec. 33-9. Gas Appliances

1. Accessibility: Every gas appliance shall be located so as to be accessible for operational repair, and adjustment.
2. Fire Hazard: Gas appliances shall be so installed that their continued operation will not constitute a fire hazard to surrounding combustible construction. The temperature of surrounding combustible construction shall in no case be raised beyond 160 degrees F. Approved insulation of a permanent nature must be provided where necessary.
3. Appliance Connections: Each gas appliance shall be connected to the gas piping in such manner that it may be disconnected without cutting a pipe or breaking a solid fitting.
4. Individual Shut-off: Every gas appliance shall be provided with an individual cock or shut-off located as close to and as convenient to the appliance as possible, yet readily accessible for operation and repair. Such cocks or shutoffs shall be placed sufficiently far apart so that they will be readily distinguishable.

5. **How Supported:** Every gas appliance shall rest on its own legs or supports and on a solid foundation and shall be so connected to the piping and not to exert any strain on the connection.
6. **Use of Gas Hose:** The connection of an appliance within buildings or structures with any type of gas hose is prohibited, except when used with laboratory, shop or ironing equipment that requires mobility during operation. Such connection shall have the shut-off or stop cock installed at the connection to the building piping. Where gas hose is used, it shall be of the minimum practical length, but not to exceed 6 feet, and shall not extend from one room to another nor pass through any walls, partitions, ceilings or floors. Portable gas grills installed outside may be connected with a listed gas hose not exceeding fifteen (15) feet in length. Under no circumstances shall gas hose be concealed from view or used in a concealed location. Only listed gas hose shall be used and shall be used only in accordance with the terms of its listing. Gas hose shall not be used where it is likely to be subject to excessive temperatures (above 125 degrees F).
7. **Attachments:** No device or attachment shall be installed on any gas appliance which may in any way impair the combustion of gas.
8. **Combinations:** Any combination of gas appliances, attachments, or other auxiliary devices used together in any manner shall meet the requirements of this Ordinance which apply to individual gas appliances.
9. **Thermostatically Controlled Appliances:** Every thermostatically controlled appliance having a main burner or burners that go off and on shall be equipped with a safety pilot. A safety pilot is a device which will close off the main gas supply to the burner in the event of failure of burner ignition or gas supply within three (3) minutes of such failure. Safety pilots shall not depend upon the closing of an electric circuit to shut off the main gas supply to the appliance. Room and space heaters must be equipped with an appliance pressure regulator and safety pilot.
10. **Ventilation:** No gas appliance shall be installed in a confined space unless there are provided two permanent openings, near the top of the enclosure and one near the bottom. Each opening shall have a free area of not less than one square inch per 1000 Btu per hour of the total input rating of all appliances in the enclosure freely communicating with interior areas having in turn adequate infiltration from the . Each such appliance must in all cases be connected to an effective flue or vent.

If building construction is tight enough so that infiltration is not adequate to supply gas appliance combustion and draft hood dilution air, provisions must be made to bring in outside air adequate to meet the needs for combustion and draft hood dilution air. Exhaust fans, clothes dryers, fireplaces, etc., may also create air shortage conditions that will require provisions for adequate replacement air from outside. It is the responsibility of the installing contractor to check the air supply situation and determine if it is adequate at the time of installation.

11. **Prohibited Locations:** Gas appliances shall not be installed in bedrooms, bathrooms, toilet rooms or rooms used for sleeping purposes except as follows: Direct vent appliance with a sealed combustion chamber where combustion air and products are sealed away from the room area may be used. Also space heaters manufactured after December 31, 1981 according to consumer Product Safety Commission rules listed in 16 CFR Part 1212 equipped with an Oxygen Depletion Safety Shutoff System (ODS)

designed to shut off the gas supply to the heater when the oxygen level in the room falls below 18% having specific appliance warning labels and installed according to the manufacturers installation instructions.

12. Incinerators: Incinerators shall be installed as close to the chimney or flue as practical, except those of the wall or built-in type, which shall be installed in a non-combustible wall, integrally a part of the chimney or flue. No gas-served appliance shall be vented into any incinerator of the wall built-in type, nor to the chimney or flue serving such an incinerator. No gas-served appliance shall be vented into any vent connector serving an incinerator; provided, however, they may be connected to a common chimney or flue of adequate size. No draft hood shall be used on any incinerator.
13. Appliance Adjusting: No gas appliance shall be installed which is not capable of adjustment to affect the complete combustion of the gas. Every gas appliance shall be properly adjusted after being installed and the customer shall be instructed in its safe and proper operation.
14. Standards: All gas appliances shall bear the seal of approval of the American Society of Mechanical Engineers, American Gas Association, or Fire Underwriters Laboratories for the type of gas served. In the absence of such seal, the appliance shall meet the approval of the Gas Company and bodies such as Factory Mutual Testing Laboratories, Factory Insurance Association, etc.

Sec. 33-10. Pilots

1. Installation Details: The pilot or pilots shall occupy a fixed and structurally secure position in relation to the burner or burners they serve and shall be located so as to be readily accessible for lighting, repair, or replacement.
2. Separate Valve: Except in the case of approved 100% shutoff safety devices pilot lines must be taken off the piping system to the appliance ahead of (on meter side) the main shut-off valve, and where appliance regulators are used, ahead of the regulator. Pilot lines must have a separate cock or shut-off valve.
3. Pilot Line Take-Off: Pilot lines shall not be taken off the underside of piping.
4. Number Of Pilots: Pilots shall ignite burner or burners without delayed ignition. Where this cannot be accomplished with one pilot, sufficient pilots shall be provided.
5. Pilots:
 - (a) Safety pilots of either the flame conductivity or thermostatic type must be so designed that the gas pilot and the flame rod, thermocouple, bimetal expanding rod, etc., must be in the form of an integral unit so upon insertion of pilot assembly after removal for repairs or cleaning) safety pilot will be in the same position relative to the main burner as when originally installed.
 - (b) The pilot flame and the thermostatic safety pilot shall occupy such a fixed position in relation to each other that a sufficient drop in gas pressure will cause the thermostatic safety pilot to shut off gas supply to main burner if pilot light is not sufficient to assure properly ignition main burner.
 - (c) The flame conductivity type of pilot shall consist of a flame rod and flame head, relay, start and stop push button type of switch, solenoid gas valve for shutting of safety pilot gas well as gas to the plain pilots, the necessary high tension cable, and a positive shut-off gas valve.

Sec. 33-11. Chimneys, Flues and Vents

1. Type of Flues Or Vents

- (a) Type A: Lined chimneys of masonry or reinforced concrete and Underwriter's approved prefabricated flues for all fuels shall constitute a type A flue or vent. Type A flues are required for (1) incinerators; (2) all appliances which may be converted readily to the use of solid or liquid fuels; (3) Appliance listed for use with a type A flue only.

Metal smokestacks may be type A flues, when designed in accordance with accepted engineering principles, used in large installations.

- (b) Type B: Vent piping of non-combustible, corrosion-resistant material of sufficient thickness, cross sectional area and heat insulating qualities to avoid excess temperature to avoid excess temperature on adjacent combustible material and certified by American Gas Association Laboratories, Inc., or Underwriters Laboratories, Inc. shall constitute a type B flue or vent.

2. Flue Connections Required

A.G.A, approved appliances that are not vented in the traditional manner shall be installed according to the manufacture instructions.

Approved energy conservation devices approved by a recognized testing agency shall be installed in accordance with the manufacturer's instructions.

Gas fired equipment shall not be connected to a chimney flue serving a separate appliance that burns solid fuel.

3. Marking Type B Flues Or Vents: Flues or vents installed for use with as appliances but which are not suitable for solid or liquid fuels shall be plainly and permanently labeled as a Type B flue or vent.
4. Check Chimney: Before connecting a flue or vent connector the flue or vent shall be examined to ascertain that it is properly constructed, clear, and will freely conduct the products of combustion to the outside air.
5. Chimney Entrance: In entering a flue or vent the connection shall be at least ten (10) inches above the extreme bottom to avoid stoppage. Means shall be employed which will prevent the flue or vent connector from entering so far as to unduly restrict the space between its end and the opposite wall. A thimble or slip joint may be used to facilitate removal of the connector for cleaning up where more than one appliance is vented to a flue or vent the connection shall be at different levels, wherever practicable.

6. Flue or Vent Size: The flue or vent to which the flue or vent connector is connected shall be sized in accordance with the venting tables in the latest edition of N.F.P.A. 54 “National Fuel Gas Code” or in accordance with approved Type B vent manufacturers published tables consistent with current industry practices. In no case shall the area be less than the area of three (3) inch diameter pipe. When more than one appliance vents into a flue or vent the flue or vent area shall be not less than the area of the largest flue or vent connector plus 50 percent of the areas of the additional flue or vent connectors. Oval or rectangular shaped flues or vents may be used, providing their flue gas venting capacities are equal to the capacity of the round flue or vent for which substituted.
7. Cleanouts: Cleanouts shall be of such construction that they will remain tightly closed when not in use.
8. Chimney Lines: Unlined masonry chimneys may be converted to type A flues by installation of approved chimney liners of proper dimensions. Masonry chimneys should be inspected to ascertain the need of liners. Liners may be required for unlined bracket and outside chimneys to prevent deterioration. Liners may also be required if the existing chimney flue is too large which would result in poor venting conditions. Type B flues are recommended for lining wherever practical. Single wall aluminum, stainless steel, or vitro-lined type C flue pipe may also be used. The use of black or galvanized steel pipe is prohibited. All liners shall terminate at the bottom with a tee.

Section 33-12. Flue or Vent Connectors

1. Type C Flue or Vent: Piping of sheet copper, galvanized sheet steel or sheet aluminum of 26 U.S. Standard gauge or heavier may constitute a type C flue or vent. Type C flues or vent shall be installed only as vent connectors to type A or type V flues or vents. They shall not pass through any wall partition, floor or ceiling of combustible construction nor through any concealed space or attic. When passing through a non-combustible wall, the minimum clearance shall be one (1) inch from such construction.
2. Size: The flue or vent connector shall not be smaller than the size indicated by the vent collar on the appliance and not less than one (1) square inch in cross sectional area for each 7,500 Btu per hour input to the appliance; provided however, that in no case shall the vent from any appliance be less than three (3) inches in diameter or its equivalent in capacity in other than round vent connectors; provided further, that where high chimneys create high draft intensities, or where mechanical draft is applied, the foregoing rule may be deviated from to the extent of practicability.

In converting solid or liquid fuel appliances to gas burning appliances, it may be necessary to restrict the size of the existing flue or vent connector, or to install a replacement sized in accordance with the above rule.

3. Length of Vent Connector: The horizontal run of the flue or vent connector shall be as short as practicable and the appliance shall be located as near the flue or vent as possible.

The maximum length of a horizontal run shall not exceed 75 percent of the height of the flue or vent. Runs longer than 12 feet shall be avoided wherever possible.

Wherever sufficient head room is available appliances having a horizontal flue outlet shall be provided with a vertical runoff flue or vent connector before the horizontal run. Wherever practicable, short, turns should be avoided, by the use of 45 degrees elbows to minimize frictional resistance in the connector.

4. Supports: The horizontal runoff the flue or vent connector shall maintain a uniform upward pitch from the appliance to the flue or vent, and shall be securely supported.
5. Clearance: Flue or vent connectors shall be located in such a manner than continued operation of the appliance will not raise the temperature of surrounding combustible construction more than 90 degrees F, above normal room temperature.

Minimum distances from combustible construction for all appliances, except floor furnaces and incinerators, shall be one (1) inches for type B flues and six (6) inches from Type C flues. For floor furnaces, the minimum distance for type B vent connectors shall be three (3) inches for a distance of not less than three (3) feet from the outlet of the draft hood; beyond which the minimum clearance is one (1) inch; type C vent connector shall not be used. The minimum distance for type C vent connectors shall be eighteen (18) inches for incinerators; type B vent connectors shall not be permitted.

6. Draft Hoods: Every flue-connected appliance, except incinerators, dual over-type combination ranges, and units designed for power burners or for forced venting shall have a draft hood. Where the draft hood is a part of the appliance, or is supplied by the appliance manufacturer, it shall be installed without alteration in accordance with the manufacturer's instructions, the draft hood shall be attached to the flue collar of the appliance or as near to the appliance as conditions permit, in the position for which is was designed with reference to the horizontal and vertical planes, and so located that the relief opening is not obstructed by any part of the appliance or adjacent construction. In no case shall a draft hood be installed in a false ceiling in a different room or in any manner that will permit a difference in pressure between the draft hood relief opening and the combustion air supply.
7. Dampers: No manually operated damper shall be placed in any flue or vent connector. Fixed baffles ahead of draft hoods are not classed as dampers. Approved automatic vent dampers shall be installed according to the manufacturer's instructions.

Sec. 33-13. Electrical Connections

1. Electric Ignition And Control Devices: Devices employing or depending on electric current to control or ignite a gas supply shall not be used if the failure of the electrical current could result in the escape of unburned gas, or in failure to shut off the supply of

gas unless other means are provided to prevent the development of dangerous temperatures, pressures or the escape of gas.

2. **Electrical Ground:** The gas piping shall not be used for an electrical ground nor shall electric circuits utilize as piping, casing of controls, panels, or other metal parts in lieu of wiring. This provision shall not apply to low voltage control and ignition circuits and to electronic flame detection device circuits incorporated as part of the appliance.
3. **Continuous Power:** It is recommended that central heating as appliances for domestic use be provided with a separate electrical circuit.
4. **Wiring:** All electrical connections between gas appliances and the building wiring shall conform to the provisions of any applicable local or state electrical code or to the National Electrical Code.
5. **Electrical Bonding:** The above ground gas piping system downstream of the Gas Company's meter to conduct gas to the appliances must be electrically continuous and bonded to a grounding electrode as defined by the National Electrical Code.

Sec. 33-14. General

1. **Cap All Outlets:** Each outlet, including a valve or cock outlet, shall be securely closed gas-tight with a threaded iron plug or cap immediately after installation and shall be left closed until an appliance is connected thereto. Likewise, when an appliance is removed from an outlet and the outlet is not to be used again immediately, it shall be securely closed gas-tight. In no case shall the outlet be closed with tin caps, wooden plugs, corks, etc.
2. **Burner Input:** Each burner shall be adjusted to its proper input in accordance with the manufacturer's instructions. Over-rating of burners shall not be allowed.
3. **Notify Gas Company:** In case any work done by a gas fitter discloses the need for repairs or alterations on any part of the supply system containing unmetered gas, the Gas Company shall be notified promptly of this fact.

If gas is leaking from any part of the gas supply system containing unmetered gas, a gas fitter or plumber shall promptly notify the gas company to make repairs and if the Gas Company does not make the necessary repairs at once, the gas fitter or plumber may make the necessary temporary repairs.

4. **Turn Gas Off:** All gas fitting shall be performed with the gas turned off.

Sec. 33-15. Inspection

Inspection: Before any gas fitting is put into service, it shall be inspected and approved in writing by the Gas Inspector. The written approval shall be attached to and remain on the gas fitting after its inspection. Within two days (exclusive of Sunday and Holidays) after receiving notice that a gas fitting is ready for inspection, the Gas Inspector shall make his inspection. In case of an emergency, the Gas Inspector may permit the gas to be turned on before the gas fittings are inspected.

Sec. 33-16. Validity

Portions Invalid: Should any section, clause or provisions of this ordinance be held unconstitutional or invalid by any court, all other sections, clauses and provisions shall nevertheless be deemed to be effective as though such unconstitutional or invalid section, clause or provisions had never been inserted in this ordinance.

Sec. 33-17. Violations

Violations: The continued violation of any provision of this ordinance shall be and constitute a separate offense under this Ordinance, for each and every day such violation shall continue. Any person upon conviction for the violation of this Ordinance or any such rule or regulation shall be punished by a fine not exceeding five hundred dollars or by imprisonment not to exceed three months, or by both such fine and imprisonment, for each such offense.

Sec. 33-18. LP- Gas code

The City of Carrington shall use the 1998 LP-gas code addition and any subsequent additions as contained in the National Fire Protection Association.