

CHAPTER 30

PLUMBING AND GAS.

Article I. In General.

- 30-101. Adoption of International Plumbing Code.
- 30-102. Permits and penalties.
- 30-103. Excavations – On city property.
- 30-104. Same – Safety requirements.
- 30-105. Nonpotable water piping.
- 30-106. Separate water service line required for each building; exception.
- 30-107. Connection to water main to be by licensed plumber.
- 30-108. Connection to private water supply prohibited.
- 30-109. Protection of water distribution and service pipes from freezing; curb stops.
- 30-110. Outdoor swimming pools.
- 30-111. Indoor swimming pools.
- 30-112. Water meter installation.
- 30-113. Water heaters.
- 30-114. Materials.
- 30-115. Workmanship.
- 30-116. Definitions.

Article II. Plumbing Inspector.

- 30-201. Qualifications; supervision; assistants; right of entry.
- 30-202. Duties; records.
- 30-203. Defective installations.
- 30-204. Prohibited acts.

Article III. Inspections.

- 30-301. Required generally; notice of approval of work.
- 30-302. Tests of roughing-in plumbing.
- 30-303. Final inspection.
- 30-304. Request for inspection.

Article IV. Fixtures

- 30-401. Union or disconnect required on water supply and waste lines.
- 30-402. Location of water closet or urinal.

Article V. Mobile Homes

- 30-501. Water supply.
- 30-502. Waste and sewage disposal.
- 30-503. Sewer connections.

Article VI. Miscellaneous Wastes.

- 30-601. Down spouts.

- 30-602. Discharges from air conditioning units and cooling towers.
- 30-603. Connection to storm sewers.
- 30-604. Outdoor swimming pools.

Article VII. Sewers

- 30-701. Privies and cesspools prohibited.
- 30-702. Septic system permit.
- 30-703. Sewer service beyond city limits.
- 30-704. Notice; assessment.
- 30-705. Separate sewer service line required for each building; exceptions.
- 30-706. Old sewers and drains.
- 30-707. Materials – Pipes near water supplies.
- 30-708. Materials – Building sewers, waste and vents.
- 30-709. Main taps; fees.
- 30-710. Location and depth.
- 30-711. Minimum size of house sewers.
- 30-712. Regulation of sewer use.

Article VIII. Backflow Prevention.

- 30-801. General.
- 30-802. Policy and purpose.
- 30-803. Surveys and investigations.
- 30-804. Where protection is required.
- 30-805. Type of protection required.
- 30-806. Backflow prevention devices.
- 30-807. Booster pumps.
- 30-808. Yard hydrants.
- 30-809. Fire suppressions system.
- 30-810. Violations.
- 30-811. Approval standards.
- 30-812. Liability claims.

Article IX. Gas In General.

- 30-901. Applicability of article.
- 30-902. Standards for gas appliances and gas piping.
- 30-903. Work on gas piping containing unmeasured gas.
- 30-904. Qualified installing agency.
- 30-905. General rules governing installations.
- 30-906. Gas meter installation.
- 30-907. Liquid petroleum gas.
- 30-908. Reserved.
- 30-909. Interference with automatic safety equipment prohibited.
- 30-910. Approved gas appliances required.
- 30-911. Installation permit -- Required.
- 30-912. Same -- Nonresident.
- 30-913. Liability for installation by uncertified fitters.

Article X. Gas Piping Installations.

- 30-1001. Procedure prior to installation.
- 30-1002. Piping to provide for proper meter location.
- 30-1003. Interconnections.
- 30-1004. Size of piping to gas appliances.
- 30-1005. Gas pipe and material.
- 30-1006. Pipe coating.
- 30-1007. Use of old pipe.
- 30-1008. Joint compounds.
- 30-1009. Turning on gas.
- 30-1010. Purging.
- 30-1011. Hydronic piping systems.
- 30-1012. Material.
- 30-1013. Valves.
- 30-1014. Piping installation.
- 30-1015. Transfer fluid.
- 30-1016. Tests.
- 30-1017. Embedded piping.
- 30-1018. Electrical bonding and grounding.

Article XI. Gas Appliance Installation.

Division 1. Generally.

- 30-1101. Appliances and accessories to comply with standard requirements.
- 30-1102. Listed appliances and accessories.
- 30-1103. Type of gas.
- 30-1104. Verification of pipe size.
- 30-1105. Permissible temperatures on combustible materials.
- 30-1106. Air for combustion.
- 30-1107. Venting.
- 30-1108. Flammable vapors.
- 30-1109. Accessibility.
- 30-1110. Strain on piping to be avoided.
- 30-1111. Extra device or attachment.
- 30-1112. Combination of appliances.
- 30-1113. Use of air or oxygen under pressure.
- 30-1114. Venting of pressure regulators.
- 30-1115. Installation instructions.
- 30-1116. Gas appliance pressure regulators.
- 30-1117. Appliance connections to building piping.
- 30-1118. Electrical connections.
- 30-1119. Room temperature thermostats.

Division 2. Specific Installations.

- 30-1120. Generally.
- 30-1121. Domestic ranges.
- 30-1122. Bungalow (utility) type domestic and dual oven type combination gas ranges.
- 30-1123. Water heaters.
- 30-1124. Room or space heaters.
- 30-1125. Central heating boilers and furnaces.
- 30-1126. Recessed heaters.
- 30-1127. Floor furnaces.

- 30-1128. Duct furnaces.
- 30-1129. Conversion burners generally.
- 30-1130. Conversion burners for domestic ranges.
- 30-1131. Gas fired unit heaters.
- 30-1132. Clothes dryers.
- 30-1133. Gas-fired incinerators.
- 30-1134. Gas refrigerators.
- 30-1135. Hotel and restaurant ranges, deep fat fryers and unit broilers.
- 30-1136. Gas counter appliances.
- 30-1137. Portable gas baking and roasting ovens.

Division 3. Venting of Appliances.

- 30-1138. Generally.
- 30-1139. Appliances requiring venting.
- 30-1140. Draft hoods.
- 30-1141. Types of flues or vents.
- 30-1142. Flue or vent connectors.
- 30-1143. Flue or vents for natural draft venting.
- 30-1144. Outside flues or vents.
- 30-1145. Special venting arrangements.

Division 4. Readyng Appliances for Use.

- 30-1146. Generally.
- 30-1147. Adjusting burner input.
- 30-1148. Primary air adjustment.
- 30-1149. Automatic pilots.
- 30-1150. Automatic ignition.
- 30-1151. Protective devices.
- 30-1152. Checking the draft.
- 30-1153. Instructions to consumer.
- 30-1154. Notification of completion of installation.

Article XII. Gas Inspector.

- 30-1201. Office created; powers generally; assistants.
- 30-1202. Duties generally.
- 30-1203. Inspections required generally; correction of defective installations.
- 30-1204. Inspection of new installations.
- 30-1205. Records and reports of inspections and tests.

Article XIII. Plumbing, Gas, Mechanical, Utility Installers.

- 30-1301. Examining board.
- 30-1302. Examination.
- 30-1303. Certification -- Required.
- 30-1304. Same -- Application for certification.
- 30-1305. Same -- Corporations, firms and partnerships.
- 30-1306. Same -- Expiration.
- 30-1307. Same -- Renewal.
- 30-1308. Same -- Revocation.
- 30-1309. Same -- Plumbing material and supply dealers.

- 30-1310. Fees for certification and examination.
- 30-1311. Permitting use of name by others.
- 30-1312. Certified electrician required for electrical work.
- 30-1313. Insurance and maintenance bond.
- 30-1314. Advertising by other than master tradesperson.
- 30-1315. Nontransferable.
- 30-1316. Liability for installation by uncertified plumber, water conditioning installer or contractor, or underground lawn sprinkler installer.

Article I. In General

30-101. Adoption of International Plumbing Code; effect of conflicting provisions.

The regulations contained in the International Plumbing Code, 2012 Edition, a copy of which is on file in the office of the City Clerk, is hereby incorporated in and made a part of this chapter the same as though spread at large herein. In the event conflict arises between the International Plumbing Code and other provisions of the City Code, the City Code shall govern.

(Code 1973, 27-1; Ord. No. 1910, 2990-8/86, 3415-8/94, 4110-1/2007, 4249-3/2010, 4417-12/2014)

30-102. Permits and penalties.

(1) No plumbing or fixtures shall be installed within the 2-mile zoning jurisdiction of the City until a permit to do so has been obtained from the plumbing inspector. The permit shall be obtained by submitting a plan of the work to be performed and paying a permit fee. The permit fee shall be as set forth in the most recent Council fee resolution. If the plan submitted complies with this chapter in all respects and the permit fee has been paid, then the plumbing inspector shall issue the permit. The obligation to obtain the necessary permit is hereby imposed upon the installer.

(2) No water conditioning system or fixtures or underground lawn sprinkling system or fixtures shall be installed within the 2-mile zoning jurisdiction of the City until a permit to do so has been obtained from the plumbing inspector. The permit shall be obtained by submitting a plan of the work to be performed and paying a permit fee. The permit fee shall be as set forth in the most recent Council fee resolution. If the plan submitted complies with this chapter in all respects and the permit fee has been paid, then the plumbing inspector shall issue the permit. The obligation to obtain the necessary permit is hereby imposed upon the installer.

(3) Any person who fails to comply with any of the provisions of this chapter shall be deemed guilty of a misdemeanor and, upon conviction thereof, fined in an amount not to exceed \$100.00, and ordered to pay double permit fees to the City.

(4) In lieu of having a person prosecuted for violation of Section 30-102(1) above, the plumbing inspector may dispose of the matter by accepting from the offender a permit fee which is double the rate which should have been paid initially; provided however, this alternative disposition may not be employed by the plumbing inspector for any person for whom that disposition has been utilized twice within the previous twelve months, it being the intention of the City Council to have such individual prosecuted as contemplated in Section 30-102(2) above.

(5) A reinspection fee may be assessed for each inspection or reinspection when such portion of work for which inspection is called is not complete or when corrections called for are not made.

This section is not to be interpreted as requiring reinspection fees the first time a job is rejected for failure to comply with the requirements of this code, but as controlling the practice of calling for inspections before the job is ready for such inspection or reinspection.

Reinspection fees may be assessed when the inspection record card is not posted or otherwise available on the work site, the approved plans are not readily available to the inspector, for failure to provide access on the date and time for which inspection is requested, or for deviating from plans requiring the approval of the Building Inspector.

In instances where reinspection fees have been assessed, no additional inspection of the work will be performed until the required fees have been paid.

(Code 1973, 27-2; Ord. Nos. 1910, 2274, 2775, 2990-8/86, 3690-8/99, 4106-10/2006, 4110-1/2007, 4249-3/2010, 4417-12/2014)

30-103. Excavations -- On city property.

The opening and refilling of all trenches on City property shall be done under the direction of the City Engineer and Plumbing Inspector.

Trenches in public streets or alleys shall be excavated so as to impede public travel as little as possible. The crossings of gutters and all other ways shall be left in such condition as to admit the ready escape of water during storms. Planks shall be provided where sidewalks or crossings are opened so as to facilitate easy crossing over trenches.

All excavations in streets or alleys shall be filled by the City street department and the cost charged to the plumbing contractor.

(Code 1973, 27-3; Ord. Nos. 1910, 2159, 4110-1/2007, 4249-3/2010, 4417-12/2014)

30-104. Same -- Safety requirements.

Yellow lights shall be kept around all unfinished work at night, and barricades shall be placed around excavations at all times.

Trenches in treacherous soil or near large buildings shall be properly braced and the party excavating and his bondsmen shall be liable for all damages arising by reason of any neglect in this respect.

(Code 1973, 27-3; Ord. Nos. 1910, 2159, 4110-1/2007, 4249-3/2010, 4417-12/2014)

30-105. Nonpotable water piping.

In cases where it is impractical to correct individual cross-connections on the domestic water line, the line supplying such outlets shall be considered a nonpotable water line. No drinking or domestic water outlets shall be connected to the nonpotable water line. Backflow or back-siphonage from the nonpotable water line into the domestic water line shall be prevented by the installation of a gravity tank or by a tank having a pump for desired nonpotable water. The domestic water inlets to the nonpotable water tank shall have an approved air gap as required elsewhere in this chapter. Where it is impractical to install tanks as set forth, an approved pressure type backflow or back-siphonage prevention device shall be installed. Where reverse flow due only to gravity or a vacuum within the line can occur, an approved pressure type vacuum breaker unit or other approved backflow prevention device shall be installed in the supply line. Each pressure type vacuum breaker unit shall be installed at a height of at least twelve inches above the highest tank, equipment or point of usage of the nonpotable water. Other approved backflow prevention devices shall be installed in a manner satisfactory to the administrative authority, but in no case less than twelve inches above the surrounding ground or floor. Where backflow can occur due to a steam boiler, pumps, etc., creating a higher pressure in the nonpotable water line, an approved backflow prevention device shall be installed in the supply line. Such backflow prevention device shall be installed at least twelve inches above the surrounding ground or floor. Whenever possible, all portion of the nonpotable water line shall be exposed and all exposed portions shall be properly identified in a

manner satisfactory to the administrative authority. Each outlet on the nonpotable water line which may be used for drinking or domestic purposes shall be posted: DANGER-UNSAFE WATER.
(Ord. No. 4249-3/2010, 4417-12/2014)

30-106. Separate water service line required for each building; exception.

The water service line for each new building, or for new work installed in an existing building, shall be separate from and independent of that of any other building. Every building shall have an independent connection with a water main; provided however, that where two (2) buildings are erected, one in the rear of another on single lot, the water service line may be extended from one building to the other; and further provided that in zoning districts permitting the construction of two (2) or more principal dwelling structures per lot, the water service line servicing the lot may be extended from one principal dwelling structure to another principal dwelling structure on the same lot, but no lot upon which two (2) or more principal dwelling structures share a water service line shall be subdivided until additional water service lines are installed, so that each lot of the proposed subdivision upon which a principal dwelling structure is located is served by at least one (1) water service line directly from the main. The owner of any lot upon which one (1) service line is to be installed for two (2) or more principal dwelling structures shall, prior to connection, covenant in writing that the lot shall not be subdivided until additional service lines are installed so that each lot of the proposed subdivision upon which a principal dwelling structure is located is served by at least one (1) service line, and shall pay the cost of recording the covenant with the Adams County Register of Deeds.

(Code 1973, 27-6; Ord. Nos. 3205-2/91, 4110-1/2007, 4249-3/2010, 4417-12/2014)

30-107. Connection to water main to be by licensed plumber.

No person other than a licensed plumber shall install, alter or repair any pipes, plumbing or fixtures connected to or tapped from any water mains in the city; and a licensed plumber shall do such work only after obtaining a permit from the plumbing inspector.

(Code 1973, 27-7; Ord. Nos. 1910, 4110-1/2007, 4249-3/2010, 4417-12/2014)

30-108. Connection to private water supply prohibits.

A private water supply shall not be connected to the public water system.

No water piping supplied by any private supply system shall be connected to any other source of supply without the approval of the plumbing inspector.

(Ord. No. 4249-3/2010, 4417-12/2014)

30-109. Protection of water distribution and service pipes from freezing; curb stops.

Water distribution pipes and water service pipes shall be protected from freezing. Water service pipes shall be laid at a depth of not less than five feet below finish grade. An all brass, plug type, round way curb stop with T handle shall be placed in the water service at the property line. A stop box shall be installed at the curb stop, with the top of the box level with the finish grade.

(Ord No. 4249-3/2010, 4417-12/2014)

30-110. Outdoor swimming pools.

Outdoor swimming pools shall have the bottom and inner sides constructed of smooth nonabsorbent materials and be so constructed as to be properly drained through one or more metal grated openings. All such drains shall have a gate valve installed therein located in an accessible place or masonry pit outside the walls of the pool. Waste water from any filter, scum gutter, overflow, pool emptying line or similar apparatus or appurtenance shall discharge into an approved type receptor. The floor rim of each

such receptor, shall be at least six inches above the floor level of the adjacent ground. The discharge outlet terminal from any pool or filter shall be protected from backflow by an air gap at least six inches above the flood rim of the receptor; except, that the scum gutter drain, overflow drain, backwash discharge drain or pool emptying line may enter the receptor below the rim of the pool piping at its deepest point, the bottom of the filters, and the bottom of the scum gutter drain trough or overflow outlets are at least six inches above the overflow rim of the receptor.

(Ord. No. 4249-3/2010, 4417-12/2014)

30-111. Indoor swimming pools.

Plans and specifications for all indoor swimming pools shall be submitted to the plumbing inspector for approval prior to commencement of any work, and all piping, equipment and construction shall be equal to the types prescribed for indoor work.

(Ord. No. 4249-3/2010, 4417-12/2014)

30-112. Water meter installation.

Water meters shall be installed in a horizontal (not vertical) position as near as practical to the point where the service enters the building and shall be so located as to be readily accessible for examination, reading and replacement. A water meter shall not be placed where it will be subjected to excessive corrosion. There shall be a hand shut-off valve installed immediately upstream and downstream on all water meters. Water meters one and one-half inches (1 ½") and larger shall also have a bypass line, with the line and hand valve the same size as the water service (and must be lockable).

(Ord. No. 4249-3/2010, 4417-12/2014)

30-113. Water heaters.

(1) Water heaters shall have a shut-off valve on the cold water inlet pipe.

(2) Connections. Pex tubing shall not be installed within the first twelve (12) inches of piping connected to a water heater.

(Ord. No. 4249-3/2010, 4417-12/2014)

30-114. Materials.

All materials used in plumbing work in the City shall conform to the following specifications and requirements:

(1) Solder, flux and pipe. Solder and flux used in water supply systems must contain not more than two tenths of a percent (0.2%) lead. Pipe and pipe fittings used in water supply systems must contain not more than eight percent (8.0%) lead.

(2) Quality. All materials used in any drainage or plumbing system or part thereof shall be free from defects. No used pipe or fittings on new or remodel jobs will be permitted.

(3) Cast iron pipe. Cast iron pipe and fittings shall be what is commercially known as standard or as extra heavy and shall be coated with asphaltum or coal tar pitch.

(4) Wrought iron pipe. All wrought iron pipe and steel pipe shall not be lighter than standard weight and shall be galvanized.

(5) Copper tubing. Copper tube for underground piping and water services shall have a weight of not less than Type K. Copper tube for above-ground draining and vent piping shall have a weight of not less

than that of copper drainage tube Type DWV. Copper tube for water piping above ground shall have a weight of not less than that of copper water tube Type L. When three-inch copper or three-inch plastic is used for waste, four-inch cast iron or four-inch plastic must be used for all underground rough-ins up to and including the cleanout. Ferrule shall be used on all copper-to-iron plastic-to-iron connections.

(6) Plastic water pipe.

(a) The underground plastic water service lines shall meet the following specifications:

(i) The underground plastic water service, one (1) inch through two (2) inches in diameter may be used in lieu of copper tube lines, subject to meeting the following:

(1) AWWA c 901 requirements;

(2) ASTM D 2737 standards; and

(3) Requirement and standards listed by NSF international for potable water.

With the exception being the pressure class, and it shall not be less than that of 200 psi; it shall be O.D. based on one (1) inch through two (2) inches conforming to the outside diameter of copper tubing.

(ii) Fittings for underground plastic water services. One (1) inch through two (2) inch fittings shall only be of brass pack joints and shall conform to AWWA Standard ASTM B62-Index 115-85-5-5. No plastic fittings or brass flared with be allowed.

(iii) Plastic underground water service of four (4) inch, six (6) inch and eight (8) inch diameter shall be Polyvinyl Chloride pipe (PVC). The PVC pipe shall conform to the latest revision of AWWA C900A-92 and subject to the following conditions:

(1) All PVC water service pipe shall conform to the latest revision of C900A-92 and shall have a minimum DR 14 (200 PSI Class). All pipe connections shall be bell and socket or by mechanical joint when connecting PVC to cast iron ductile iron pipe fittings.

(2) All fittings and transitions shall conform to utilities code 4.102. Fittings for four (4) inch, six (6) inch and eight (8) inch shall be 250# mechanical joint; and all joint sockets, socket flanges, packing glands, gaskets and bolts shall conform to AWWA specification C111-72 (ANSI A21.11-1972), American Standard for Rubber Gaskets, Joints for Cast Iron, pressure pipe and fittings and subsequent revisions.

(3) All taps to PVC pipe of auxiliary service lines of two (2) inches and smaller shall be Ford brass S90 style or Ford iron F202 style tapping saddles or approved equal.

(4) Installation of underground plastic water services. Installation of all underground plastic water services shall have a number 14 gauge insulated copper wire attached to the corporation cock and run to the curbstop and up to the top of the stopbox, and from the stopbox to the shutoff valve inside of the building. The wire shall be taped to the service prior to the backfilling.

(iv) All thrust blocks shall be installed in accordance with the following drawings. The class of concrete to be used for thrust blocks around fittings shall be Nebraska Department of Roads Class "47B" or Type "ABXF". All thrust blocks shall be cast in place.

(v) Cross-link polyethylene typing, three-eighths (3/8) inch through two (2) inches in diameter, may be used if it meets ASTM standards F876 and/or F877, and is certified to NSF standards 14 and 61.

Only fittings designed and manufactured for this tubing shall be used with this tubing. This tubing may be installed and repaired only by installers who can demonstrate to the plumbing inspector that they have been trained and certified by the manufacturer of the tubing.

(vi) Installation of plastic water services. Installation of plastic water service shall have a number 14 gauge insulated copper wire attached to the corporation cock and run to the curbstop and up to the top of the stopbox, and from the stopbox to the shutoff valve inside of the building. The wire shall be taped to the service prior to backfilling.

(vii) Grounding. Grounding of electrical services when plastic water services are installed shall be as follows:

(1) New installations: If a metal underground water pipe in direct contact with the earth for ten (10) feet or more is not available on the premises, supplemental electrodes shall be provided. One shall be a rod or pipe electrode as specified in NEC 250-83, and the others shall be as mandated in NEC 250-81. The interior metal water system shall be bonded to the service equipment enclosure.

(2) Replacement services: The interior metal piping system will remain bonded to the service equipment. If there is not a ground rod already in use, an eight (8) foot rod shall be driven and connected to the service equipment. The grounding electrode system shall comply with NEC 250-81 and 250-84.

(3) General: If the interior piping system is changed to plastic, and remaining metal piping shall be connected to the electrical service. If there are no metal piping systems, then the ground rod shall be the connection to the service.

(4) Inspection. The City Electrical Inspector shall approve the installation after being satisfied that there is appropriate grounding.

(viii) Fee. The owner will pay an additional fee in accordance with the prevailing council fee resolution, for having the plumbing and electrical inspectors make the foregoing inspections.

(iv) Threaded fittings. Plain screwed fittings shall be cast iron, malleable iron or brass of standard weight and dimensions. Drainage fittings shall be of cast iron, malleable iron or brass with smooth interior waterway, with threads tapped out of solid metal. All cast iron fittings used for water supply distributions shall be galvanized. All malleable iron fittings shall be galvanized.

(x) Grade of horizontal piping. All horizontal piping shall be run in practical alignment and at a uniform grade of not less than one-eighth of an inch per foot, and shall be supported or anchored at intervals not to exceed ten feet. All stacks shall be supported at their base, and all pipes shall be rigidly secured. Soil pipe shall be supported or anchored at intervals, not to exceed five feet.

(xi) Soil, waste and vent piping. All main or branch soil, waste and vent piping within the building shall be of cast iron, galvanized steel, wrought iron brass, copper, or plastic except that no galvanized steel, wrought iron or copper pipe shall be used for underground soil or waste pipes. Any fittings used below the water line and trap are to be recessed cast iron drainage fittings, or ABS or PVC DWV Schedule 40 plastic drainage fittings. See also Section 30-708. Materials – Building sewers, waste and vents.

(xii) Traps, vents, revents.

(1) Traps for bathtubs, lavatories, sinks and other similar fixtures shall be brass, cast iron, galvanized malleable iron or ABS or PVC Schedule 40 or higher.

(2) No form of trap which depends for its seal upon the action of moveable parts or concealed interior partitions shall be used for fixtures. A cast iron, wrought iron or brass trap will be permitted, provided it has a three-inch seal.

(xiii) Mobile home drainage and vent systems. Pipe and fittings for the drainage and vent systems shall be as follows:

Copper tube with sweated joints, drainage type.
Galvanized steel, galvanized wrought iron or galvanized ferrous alloy.
ABS or PVS Schedule 40 or higher plastic.
Fittings for galvanized drainage systems shall have American National Taper Threads, recessed type.
Fittings for galvanized vents may be galvanized, malleable or cast iron.

(xiv) Mobile home water piping. Water piping shall be brass, copper, wrought iron, open-hearth iron, steel or copper tubing, Type L, with appropriate approved fittings. All ferrous pipe and fittings shall be galvanized.

(xv) Solder, flux and pipe. Solder and flux used in water supply systems must contain not more than two tenths of a percent (0.2%) lead. Pipe and pipe fittings used in water supply systems must contain not more than eight percent (8.0%) lead.
(Ord. No. 4249-3/2010, 4417-12/2014)

30-115. Workmanship.

Workmanship shall be of such character as fully to secure the results sought to be obtained in all of the sections of this chapter.
(Ord. No. 4249-3/2010, 4417-12/2014)

30-116. Definitions.

(1) Water conditioning installer or contractor shall mean any individual, firm, partnership or corporation engaged in the act of installing or connecting any apparatus or equipment designed to soften, filter, or change the mineral content of water to a water supply other than by hose connections to existing faucets.

(2) Water, conditioning installation shall mean only work incidental to the repair, replacement, relocation, removal, or complete installation of water conditioning appliances including piping to hot and cold water lines for such purposes.

(3) Lawn sprinkler installer shall mean any individual, firm, partnership, or corporation engaged in the act of installing or connecting any apparatus or equipment intended to serve as an irrigation system or water supply other than by hose connections to existing faucets.
(Ord. No. 4249-3/2010, 4417-12/2014)

Article II. Plumbing Inspector.

30-201. Qualifications; supervision; assistants; right of entry.

The plumbing inspector shall be a master plumber and shall act under the direction of the Development Services Director and shall have supervision of all plumbing installation work in the city and shall perform such duties as are prescribed herein. Assistants to the plumbing inspector shall be appointed by the Development Services Director after examination and recommendation by the civil service commission.

Any assistant to the plumbing inspector shall have the same powers and duties as the plumbing inspector. The plumbing inspector shall have the authority to enter and inspect any buildings or any premises, at all reasonable hours, to ascertain if the provisions of this chapter or any ordinance relating to plumbing or appliance installations have been or are being violated, or being complied with. (Ord. No. 4249-3/2010 and 4417-12/2014)

30-202. Duties, records.

It shall be the duty of the plumbing inspector to inspect all plumbing installations in the City, including sewer services, all installations of new water services from main to premises, and all repaired or replaced water services from the point of entry of the water service from the boundary of the public right-of-way downstream to the premises of the customer. It shall be the duty of the plumbing inspector to investigate all cases reported to him or referred to him concerning imperfect material or workmanship on any job of plumbing work of any violation of the provisions of this chapter by a plumber, builder or gasfitter, and to report such fault of violation to the Development Services Director for further action. It shall be the duty of the plumbing inspector to make inspections or any piping, installations or connections of any building or premises, in order to ascertain whether or not plumbing appliances are properly installed. The plumbing inspector shall keep a complete record of all inspections and tests made by him except tests made on old work.

(Ord. No. 4249-3/2010 and 4417-12/2014)

30-203. Defective installations.

Whenever the plumbing inspector shall find an unsafe or unsatisfactory installation, he shall tag the same and notify the installer immediately, if the job is a new installation. The installer shall notify the plumbing inspector within forty-eight hours after completion of the corrected changes or repairs and request a reinspection. If the same is not a new installation, he shall notify the owner, agent, tenant or the one in charge of the premises to cause the same to be remedied within not more than ten days. Should the installer, owner, agent, tenant or one in charge of the premises fail to make such corrections, changes or repairs, or fail to notify the inspector to make a reinspection, within ten days after receiving notification to comply therewith, he shall be considered maintaining an unsafe installation and violating this chapter. The inspector shall thereupon make a reinspection of the premises and report his findings to the Development Services Director, who shall, in turn, cause action to be taken to secure compliance with this chapter.

(Ord. No. 4249-3/2010 and 4417-12/2014)

30-204. Prohibited acts.

It shall be unlawful for the plumbing inspector to engage in the business of plumbing or to perform any work as a plumber in the city during his term of office as plumbing inspector. The plumbing inspector shall not show discrimination between organized or unorganized union firms or corporations, and the inspector shall not solicit for union activity during normal working hours.

(Ord. No. 4249-3/2010, 4417-12/2014)

Article III. Inspections.

30-301. Required generally, notice of approval of work.

All plumbing and fixtures shall be inspected by the plumbing inspector to determine that all of the requirements of this chapter have been met and that the installation and construction of the system is in accordance with the plans, building and plumbing permits. An inspection shall be made after the roughing-in has been completed and again on completion of the job. No person shall cover or conceal from view any plumbing work in the city so as to prevent a proper inspection thereof until after the work

has been inspected by the plumbing inspector, and the plumbing inspector has placed a notice on the work stating that the plumbing work has been inspected and approved. The inspector shall, after inspecting and approving the roughing-in or any plumbing work, place therein a notice stating that the plumbing work has been inspected and approved. Whenever any plumbing work has been covered or concealed by lathing, plastering, flooring or otherwise, before the plumbing inspector has inspected it, the contractor shall upon request of the plumbing inspector remove any construction necessary in order to make a proper inspection.
(Ord. No. 4249-3/2010, 4417-12/2014)

30-302. Tests of roughing-in plumbing.

All tests of roughing-in plumbing shall be made to finish floor and wall line and shall be made with water or with air. If the test is to be made with water, the entire system of plumbing shall be filled with water to the top of the highest vent pipe on the roof. If the test is to be made with air, it shall be made under a pressure of not less than ten pounds to the square inch. All tests shall be made by the plumber in charge of work, in the presence of the plumbing inspector, and maintained for a sufficient length of time to allow the inspector to make a thorough and complete examination of the work. Any defective material or workmanship found on the job, shall be removed at the expense of the plumber having charge of the work and shall be replaced with the proper kind of material and workmanship and retested. When it is necessary to cover over ground before all of the roughing-in is ready for inspection, the plumbing inspector shall be notified and a test made by filling the plumbing with water under a pressure that will be equal to a ten foot stand pipe filled to the stop. Where ground work is to be connected to the sewer, a suitable fitting shall be left in the main soil pipe not more than one foot from where the main soil pipe enters the building so that a testing plug can be inserted.
(Ord. No. 4249-3/2010, 4417-12/2014)

30-303. Final Inspection.

The final inspection shall be made within ten days after the setting of fixtures and the completion of any plumbing work, and before the city water is permanently turned on.
(Ord. No. 4249-3/2010, 4417-12/2014)

30-304. Request for inspection.

Each request for inspection shall be made at the office of the plumbing inspector by the plumber in charge of the work not less than eight working hours in advance of the inspection. The plumber in charge of the work shall make sure that the work will stand the test prescribed before requesting inspection.
(Ord. No. 4249-3/2010, 4417-12/2014)

Article IV. Fixtures

30-401. Union or disconnect required on water supply and waste lines.

(1) All fixtures and appliances installed shall have a union or means of disconnect on all water supply and waste lines, so that replacement of the fixture can be accomplished without alteration to the waste and supply system.

(2) All bathtubs and showers installed in buildings which contain more than one dwelling unit shall be equipped with either pressure balancing or thermostatically-mixing scald prevention device which is designed and installed to prevent:

(a) Sudden unanticipated changes in the temperature of the water delivered; and

(b) The temperature of the water delivered from exceeding one hundred fifteen (115) degrees Fahrenheit.

(Ord. No. 4249-3/2010, 4417-12/2014)

30-402. Location of water closet or urinal.

No water closet or urinal shall be located in any sleeping compartment or room where food is prepared or in any room or apartment which does not contain a window placed in an external wall or is not otherwise provided with proper mechanical ventilation carried through to the exterior of the building.

(Ord. No. 4249-3/2010, 4417-12/2014)

Article V. Mobile Homes.

30-501. Water supply.

An adequate supply of pure water for each trailer and each service house shall be furnished through a piped distribution system laid at a depth of not less than five feet from the surface of the ground and connected with the city water main. The water distribution system shall be constructed from cast iron pipe. The piping shall be able to supply six to eight gallons per minute at a minimum pressure of twenty pounds per square inch at each coach space outlet, and in individual trailer coach supply lines shall not be less than three-fourth inch Type K copper terminating with a connect at an appropriate location at each trailer coach space with a riser extending at least four inches above the ground surface, with two three-fourth inch valve outlets. Check valves shall not be installed on any riser. The outlets shall be threaded so that a screwed connection using flexible copper tubing may be made from one outlet to the coach's water piping system, leaving the other for use as a hose connection for fire control or other uses. The ground surface around the riser pipe shall be graded so as to divert surface drainage away from the connection. The riser shall be encased in a six inch cast iron or tile pipe, with the intervening space filled with an insulating material to protect it from freezing. An insulating cover shall be provided which will encase both valve outlets but not protect connections to the trailer during freezing weather. When the coach space is unoccupied during cold weather, the outlet shall be protected from freezing by draining of the pipes. A shut-off valve or other approved freezeless arrangements shall be placed below frost depth on the service line; it shall in no instance be a stop and waste cock. All necessary precautions shall be taken in laying all water pipes. They shall not be laid in water, nor where they can be flooded by water or sewage during the laying process period. Dirt and other contaminating material shall be excluded from the pipe. Each water supply distribution system providing for a trailer court shall be approved by the plumbing inspector after construction and before it is covered or placed in service.

(Ord. No. 4249-3/2010, 4417-12/2014)

30-502. Waste and sewage disposal.

Each trailer coach space shall be equipped with at least a four inch cast iron or tile sewer connection, trapped by a cast iron soil pipe or tile P trap below frost line and reaching at least four inches above the surface of the ground. The sewer connection shall be protected by a concrete collar, at least three inches deep and reaching eight inches in all directions. The connection between the coach drain and the sewer shall be made water tight by suitable fittings. A threaded or fitted in clamp connection shall be made at the trailer coach drain and at the sewer outlet drain. All joints on the sewer lines shall be made water tight and every effort shall be made to minimize ground water infiltration into the sewage system. Connections in manholes shall be so constructed as to prevent surface water from entering the sanitary sewers. Manholes shall be provided at every change in direction, at every junction of two or more branch sewers, and at intervals of not more than three hundred feet. Cleanouts to grade may be used instead of manholes on four inch lines. They should be provided wherever a manhole would otherwise be

necessary and at intervals of not more than one hundred feet. All cleanouts shall be capped with cleanout plugs. Each sewer lateral serving a row of coaches shall be vented at its upper end. Sewer mains shall be designed to handle the estimated sewage flow and shall be vented at its upper end. Sewer mains shall be designed to handle the estimated sewage flow and shall be a minimum of four inch lines that service each trailer. These four inch lines shall be connected to a six inch main which empties into the city's sewer system. All material used and installation shall be subject to the approval of the plumbing inspector before installation.
(Ord. No. 4249-3/2010, 4417-12/2014)

30-503. Sewer connections.

A watertight connection between the trailer drainage system and the trailer park sewer connection shall be made by means of a readily removable semi-rigid or flexible connector.
(Ord. No. 4249-3/2010, 4417-12/2014)

Article VI. Miscellaneous Wastes.

30-601. Down spouts.

Rain water down spouts or drains carrying water shall not be connected with the sanitary sewer system, but may be connected with the storm sewer system. Any connection with the storm sewer system shall be inspected by the city engineer.
(Ord. No. 4249-3/2010, 4417-12/2014)

30-602. Discharges from air conditioning units and cooling towers.

It shall be unlawful to discharge waste water or other liquid from any air conditioning unit or system directly into the sanitary sewer or into any fixture or appliance connected with the sanitary sewer system of the city. Outlet water or liquids from such units or systems shall be carried to and discharged into the storm sewer system of the city, or may be used for the purpose of irrigating lawns, gardens, trees and shrubs. In no event shall the waste water or liquid from such units, except units having a cooling tower, be discharged upon any street, alley or sidewalk. The water circulated and used in a system having a cooling tower may be discharged upon any street or alley not to exceed one time per month for the purpose of making necessary repairs and for the purpose of cleaning said system. Such waters or liquid shall be discharged only between the hours of 10:00 P.M. and 6:00 A.M. so that the same will not interfere with the effective use and enjoyment of any street, alley or sidewalk. The water supply to all cooling towers shall be installed with an air gap twice the diameter above the overflow rim. All units or systems installed prior to the effective date of this chapter and in non-conformity herewith, shall be converted, modified, adjusted or otherwise made to comply herewith within forty-five days from the date this chapter becomes effective.
(Ord. No. 4249-3/2010, 4417-12/2014)

30-603. Connections to storm sewers.

The City Engineer shall grant permission to construct conduits or pipe lines under the public sidewalk and in the streets and alleys to provide access to the storm sewer system of the City, subject however, to any conditions which he may reasonably impose as assurance that only lawful and appropriate discharges are made into the system, and that any discharges are in such amounts as the system is capable of handling. Permission shall also be subject to any fee established in the most recent council fee resolution. Any pipe line or conduit from inside the building, which is connected directly to the city storm sewer below grade, shall be vented within five feet of the building. Whenever any street, alley or sidewalk shall be broken or opened and excavations made for the purpose of laying connections with the storm sewer, the same shall be done at such times and such places as shall be specified by the City

Engineer and in conformity with this Code and other ordinances of the City. The surface of any street, alley or sidewalk which shall be opened, in providing such storm sewer connections, shall be promptly restored to its original condition according to specifications provided by the office of the City Engineer. (Ord. No. 4249-3/2010, 4417-12/2014)

30-604. Outdoor swimming pools.

Outdoor swimming pool waste water shall be disposed of as prescribed by the plumbing inspector. When a public sewer or storm drain of adequate capacity is available for use, swimming pool waste water shall be discharged therein and permission to do so shall be obtained in writing from the proper authority. A copy of the permit stating the maximum size of the waste line between the receptor and the sewer shall accompany the application for the plumbing permit made to the plumbing inspector. No direct connection shall be made between any storm drain, sewer, drainage system, drywell or subsoil irrigation line and any line connected to a swimming pool.

(Ord. No. 4249-3/2010, 4417-12/2014)

Article VII. Sewers

30-701. Privies and cesspools prohibited.

No person shall construct or maintain any privy or cesspool on any public property or private property within the city. All cesspools or privies shall be removed and the vault cleaned and filled with fresh earth and well tamped.

(Ord. No. 4249-3/2010, 4417-12/2014)

30-702. Septic system permit.

A septic system shall be permitted only when the city sewer system is not available to the property. Written application with plans and specifications for the construction of the septic system according to specifications set forth in this article shall be filed with the plumbing inspector for a permit for installation of a septic system. Construction shall be under the supervision of the plumbing inspector.

(Ord. No. 4249-3/2010, 4417-12/2014)

30-703. Sewer service beyond city limits.

A person owning or controlling premises located beyond the city and desiring to install a plumbing system on the premises and have the same connected with the sanitary sewer system of such city, shall file a written application with the city engineer for a permit for such connection and shall pay a fee, as provided by the city council.

(Ord. No. 4249-3/2010, 4417-12/2014)

30-704. Notice; assessment.

Unless connection is waived, as provided in Section 30-705, a written notice to connect shall be served upon any owner of property to which the sewer main is available where such owner has failed to connect the sanitary facilities of said property to the sewer main. The notice shall describe the real estate required to be connected with the sewer, and shall require the owner to make such connection within ten (10) days after the service of the notice, and shall further provide that, upon failure to comply with the notice, the board of public works will cause connection to be made, and certification of the cost and expenses thereof to the city council for assessment against the property as in the case of any other special improvements. If the owner is a nonresident of the city, the notice shall be published once in a legal newspaper of general circulation in the city.

(Ord. No. 4249-3/2010, 4417-12/2014)

30-705. Separate sewer service line required for each building; exceptions.

The drainage and plumbing system of each new building, or for new work installed in an existing building, shall be separate from and independent of that of any other building. Every building shall have a cleanout five (5) feet or less from the building and shall be independently connected to the public sewer; provided however, that where two (2) buildings are erected, one to the rear of the other on an interior lot, the sewer may be extended from one building to the other; and further provide that in zoning districts permitting the construction of two (2) or more principal dwelling structures per lot, the sewer service line servicing the lot may be extended from one principal dwelling structure to another principal dwelling structure on the same lot, but no lot upon which two (2) or more principal dwelling structures share a service line shall be subdivided until additional sewer service lines are installed, so that each lot of the proposed subdivision upon which a principal dwelling structure is located is served by at least one (1) sewer service line directly from the main. The owner of any lot upon which one (1) service line is to be installed for two (2) or more principal dwelling structures shall, prior to connection, covenant in writing that the lot shall not be subdivided until additional service lines are installed so that each lot of the proposed subdivision upon which a principal dwelling structure is located is served by at least one (1) service line, and shall pay the cost of recording the covenant with the Adams County Register of Deeds. (Ord. No. 4249-3/2010, 4417-12/2014)

30-706. Old sewers and drains.

Old sewers and drains may be used with new buildings or new plumbing only when, on examination and test, they are found to conform in all respects to the requirements governing new sewers or drains prescribed in this article. If the old work is found defective, the plumbing inspector shall notify the owner to make the necessary changes to conform with this article. (Ord. No. 4249-3/2010, 4417-12/2014)

30-707. Materials -- Pipes near water supplies.

All sanitary sewers laid or maintained either upon public or private property within a distance of two hundred feet of any well, reservoir or water supply furnishing water of public supply, shall be constructed of materials listed in Section 30-708. (Ord. No. 4249-3/2010, 4417-12/2014)

30-708. Materials – Building sewers, waste and vents.

(1) Above ground. Waste and vent piping above grade in buildings shall be brass pipe, copper pipe, copper tube DWV weight or heavier, cast iron soil pipe, galvanized steel pipe, ABS or PVC Schedule 40, PVC cellular core Schedule 40, or higher grade plastic pipe.

(2) Below grade sanitary drain. Underground building drains shall be cast iron soil pipe, standard or extra heavy weight, or ABS or PVC Schedule 40 or heavier plastic pipe. Plastic pipe must be protected when going through a concrete wall or footing.

(3) Below grade sanitary sewer. Sewer pipe materials shall be cast iron, vitrified clay, PVC sewer pipe, SDR26, ASTM D3034 size 4-, 6" or 8" or ABS or PVC plastic sewer pipe SDR26 or heavier. Joints shall be gasproof, watertight, and root proof. All plastic pipe shall be surrounded with a six-inch sand or gravel bed.

(4) Other. No bituminous fiber or asbestos cement pipe or fitting shall be used. (Ord. No. 4249-3/2010, 4417-12/2014)

30-709. Main taps; fee.

Sewer drains connected to a sewer main shall run in as direct a line as possible from the building to be drained. The connection to the main shall be made with a special Y saddle and a one-eighth bend or T saddle or without the saddle where a Y is already in the main. All joints shall be tight and smooth on the inside. The trench shall be of ample width to the point of connection to allow the plumbing inspector to easily inspect the work. The City shall make all taps into the main sewer. A permit shall be secured for each tap from the plumbing inspector and the tap fee will be set by the utilities department.
(Ord. No. 4249-3/2010, 4417-12/2014)

30-710. Location and depth.

No house sewer or underground house drain shall be laid parallel to and within three feet of any bearing wall which might be thereby weakened. Any house sewer laid parallel to and closer than five feet to any bearing wall shall be constructed of extra heavy cast iron soil pipe. The house sewer and drains shall be laid at sufficient depth to protect them from frost.
(Ord. No. 4249-3/2010, 4417-12/2014)

30-711. Minimum size of house sewers.

No house sewer shall be less than four inches in diameter, and no closet shall be connected to any drain or horizontal branch less than three inches in diameter.
(Ord. No. 4249-3/2010, 4417-12/2014)

30-712. Regulation of sewer use.

(1) The Mayor and Council of the City of Hastings, Nebraska, hereby find and determine that the City of Hastings, Nebraska (City), has constructed and owns and operates a sanitary sewerage system which conveys the liquid and solid waste sewage of the City and the residents thereof and that it has constructed and owns and operates a wastewater treatment facility for the treatment of said sewage.

(2) Hastings Utilities, a proprietary function of the City of Hastings, Nebraska, operating by authority granted to the Board of Public Works, shall be charged with administration of this Ordinance and shall be authorized to operate and administer the sewerage system of the City.

No person shall maliciously, willfully or negligently damage, destroy, uncover, deface or tamper with any structure, appurtenance or equipment which is a part of the wastewater facilities. Any person violating this provision shall be subject to immediate arrest under the offense of disorderly conduct.

(3) Definitions.

Unless the context specifically indicates otherwise, the following definitions shall govern the meaning of terms used in this Ordinance:

(a) "Biochemical oxygen demand (BOD)" shall mean the quantity of oxygen required for the biochemical oxidation of organic matter. The test procedure for BOD shall be conducted in accordance with the most recent revision of the Code of Federal Regulations, Part 40, Subpart 136. BOD is also referred to as "BOD 5-Day" or "BOD5" indicating the required five-day test period.

(b) "Building drain" shall mean the portion of the lowest horizontal piping of a drainage system which receives the discharge from soil, waste and other drainage pipes inside the walls of the building and conveys it to the building sewer, beginning five (5) feet (1.5 meters) outside the inner face of the building wall.

(c) "Building sewer", "sewer service" and "house connection" shall mean the privately owned and operated sewer extension from the private building drain to the public sewer.

(d) "City" shall mean the City of Hastings, Nebraska, and "City Council" shall mean the City Council of the City of Hastings, Nebraska.

(e) "Combined sewer" shall mean a sewer intended to receive both wastewater and surface water runoff including storm water runoff.

(f) "Easement" shall mean an interest in real estate acquired for a specific use of the real estate owned by another person.

(g) "Fats, oils and grease (FOG)" shall mean fats, oils or grease in such a physical state that they will separate by gravity from wastewater in an approved pretreatment facility. Wastewater shall be considered free of fat, oil and grease (FOG) if it is properly pretreated and does not interfere with the collection system at a temperature of fifty-five (55) degrees Fahrenheit (Thirteen (13) degrees Centigrade) or lower.

(h) "Garbage" shall mean the animal and vegetable waste resulting from the handling, preparation, cooking and serving of foods, usually associated with domestic or residential sanitary waste.

(i) "Industrial wastewater" shall mean the wastewater from industrial and commercial processes, trade or business as distinguished from domestic or residential sanitary waste.

(j) "NDEQ" shall mean the Nebraska Department of Environmental Quality which exercises the regulatory authority of the State of Nebraska for environmental and pollution control activities.

(k) "Manager" shall mean the Manager of Utilities or a person duly authorized to act in behalf of the Manager of Utilities.

(l) "Natural outlet" shall mean a stream flowing into a storm sewer or combined sewer depositing water into a watercourse, pond, ditch, lake or other body of surface water or groundwater.

(m) "Person" shall mean individual, firm, company, association, society, corporation or group.

(n) "pH" shall mean the logarithm of the reciprocal of the hydrogen-ion concentration. The pH of a liquid solution is a measure of the acidity or alkalinity of a solution. Neutral water, for example, has a pH value of seven (7). The test procedure for pH shall be conducted in accordance with the most recent of the Code of Federal Regulations, Part 40, Subpart 136.

(o) "Plumbing Inspector" shall mean the Plumbing Inspector of the City of Hastings.

(p) "Properly shredded garbage" shall mean the waste from the preparation, cooking and dispensing of food which has been shredded to such an extent that all particles will be carried freely under the flow conditions normally prevailing in a public sewer with no particle greater than ½ inch (1.27 cm) in any dimension.

(q) "Public sewer system", "public sewer" and "sanitary sewer" shall mean a publicly owned and operated sewer by which liquid and water-carried wastes from residences, commercial buildings, industrial plants and institutions and limited quantities of groundwater and surface water not intentionally admitted are conveyed.

(r) "Sewer" shall mean a pipe or conduit by which water is conveyed.

(s) "Shall" means a mandatory statement; "may" means a permissive statement.

(t) "Slug" shall mean discharge of wastewater which in concentration of any constituent or in quantity of flow exceeds in duration a period longer than fifteen (15) minutes, constitutes more than five (5) times the average twenty-four (24) hour concentration or flow during normal operation and could adversely affect the collection system or performance of the wastewater treatment facility.

(u) "Storm drain" and "storm sewer" shall mean a drain or sewer by which groundwater, subsurface water or surface water from any source is conveyed.

(v) "Superintendent" shall mean the Superintendent of wastewater treatment facilities for Hastings Utilities or a person duly authorized to act in behalf of the Superintendent.

(w) "Total suspended solids (TSS)" or "suspended solids (SS)" shall mean total suspended matter which floats on the surface of or is in suspension in water, wastewater or other fluid and may be removable by laboratory filtration in accordance with the procedure identified in the most recent revision of the Code of Federal Regulations, Part 40, Subpart 136.

(x) "Total kjeldahl nitrogen (TKN)" shall mean the sum of organic nitrogen, ammonia and ammonium in the chemical analysis of soil, water or wastewater. The test procedure for TKN shall be conducted in accordance with the most recent revision of the Code of Federal Regulations, Part 40, Subpart 136.

(y) "Total toxic organics (TTO)" shall mean the sum of toxic organic compounds as defined by the Code of Federal Regulations, Part 40, Subpart 136. The test procedure for determining TTO shall be conducted in accordance with the most recent revision of the Code of Federal Regulations, Part 40, Subpart 136.

(z) "Unpolluted water" shall mean water of quality equal to or better than the effluent measured by the criteria in effect for the Wastewater Treatment Plant operated by Hastings Utilities or water which would not violate EPA receiving stream water quality standards and would not benefit from discharge into the sanitary sewer for processing by the Wastewater Treatment Plant.

(aa) "USEPA or EPA" shall mean the United States Environmental Protection Agency which exercises the regulatory authority of the Federal environmental and pollution control statutes and regulations.

(bb) "Wastewater", "sanitary sewage" and "sewage" shall mean the spent wastewater of a community. The sources of wastewater are the liquid and water-conveyed wastes from residences, institutions, commercial buildings and industrial facilities.

(cc) "Wastewater facilities" shall mean the structures, equipment and processes required to collect, convey and treat domestic, commercial, institutional and industrial wastes and to dispose of the effluent thereof.

(dd) "Wastewater treatment works" and "wastewater treatment facility" shall mean an arrangement of devices and structures for treatment of wastewater and sludge. The terms are synonymous with "Wastewater Treatment Plant (WWTP)", "Water Pollution Control Facility (WPCF)" or "Pollution Control Facility (PCF)".

(ee) "Watercourse" shall mean a natural or artificial channel through which water flows either continuously or intermittently. A watercourse is a stream or river. A channel is the bed of a stream or river.

(ff) "Hearing Board" shall mean the Board of Public Works as designated by the provisions of Section 30-712(11) of this Ordinance.

(4) Required use of public sewers.

(a) It shall be unlawful for any person to place or to deposit or to permit placement or deposition of any human or animal excrement, garbage or other waste constituting a nuisance in any manner on public or private property within the City, in any area under the jurisdiction of the City or in any area served by or accessible or permeable to the public sewer system of the City.

(b) It shall be unlawful for any person to discharge sewage or polluted waters into any natural outlet within the City, in any area under the jurisdiction of said City or in any area served by or accessible or permeable to the public sewer system of the City, except where suitable treatment has been provided in accordance with provisions of this Ordinance.

(c) Except as hereinafter provided, it shall be unlawful for any person to construct or to maintain any privy, privy vault, septic tank, cesspool or other facility intended or used for the disposal of wastewater or sewage within the City, in any area under the jurisdiction of the City, or in any area served by or accessible or permeable to the public sewer system of the City.

(5) Private wastewater disposal.

(a) Where a public sewer system, public sewer or sanitary sewer system as defined within this Ordinance is not available, the building sewer, sewer service or house connection shall be connected to a private wastewater disposal system in compliance with the provisions of this Article.

(b) Before commencement of construction of a private wastewater disposal system, the owner of the building sewer shall first obtain a permit executed by the Plumbing Inspector of the City of Hastings or other duly authorized employee of the City. The application for such permit shall be made on a form provided by the City which the applicant shall supplement with plans, specifications and other information considered appropriate by the Manager of Utilities. At the time the application is filed the owner shall pay to the City a permit and inspection fee approved, adopted and published by the City Council.

(c) A private wastewater disposal system constructed by virtue of such permit shall not be utilized until the installation is completed to the satisfaction of the Plumbing Inspector of the City or other duly authorized employee of the City. The Plumbing Inspector or other duly authorized employee of the City shall be allowed to inspect the work at any stage of its construction and the holder of the permit shall notify the Plumbing Inspector or other duly authorized employee of the City prior to covering of any above ground or underground portion of the facility that it is ready for final inspection. The inspection shall be made within four (4) business days of the receipt of notice by the Plumbing Inspector of the City of Hastings or other duly authorized employee of the City.

(d) The type, capacity, location and design of a private wastewater disposal system shall comply with all regulations of the Nebraska Department of Health and Human Services and the Nebraska Department of Environmental Quality. Effluent from private wastewater disposal systems shall not be discharged into natural outlets except in the forms of evaporation, transpiration and infiltration as occurring in the process associated with a leach field or drain field. Treated effluent or septic tank pumpage may be deposited at the wastewater treatment facility of the Hastings Pollution Control Facility.

Fees for such deposits shall be charged in accordance with rates approved, adopted and published by the City Council.

(e) When a public sewer becomes accessible to property served by a private wastewater disposal system a connection shall be made therefor to the public sewer within sixty (60) days of such access in compliance with this Ordinance. Any private wastewater disposal system so replaced shall be cleaned of sludge and filled with suitable material in accordance with the Plumbing Code of the City of Hastings within fifteen (15) days after such connection to the public sewer system. Upon failure to complete the proper connection and abandonment requirements the owner of the property upon which such private wastewater disposal is located shall be in violation of this Ordinance and such person may be subject to prosecution therefor.

(f) The owner of a private wastewater disposal facility shall at all times operate and maintain the facility in a sanitary manner at no expense to the City.

(g) No provision of this Section shall be construed to preclude any additional requirement which may be imposed by virtue of any health standard or provision of the City Code or by any other City, State or Federal regulation.

(6) Connection to sanitary sewer.

(a) No unauthorized person shall uncover or make any connection with or opening into or use, alter or disturb any public sewer or appurtenance thereof without first obtaining a written permit from the Building Department of the City of Hastings.

(b) The City of Hastings shall recognize the following classes of building sewer permits: (a) for residential and commercial service, and (b) for service to establishments producing industrial wastewater. In either case the owner or agent of the owner shall make application on a form furnished by the Building Department of the City. The permit application shall be supplemented by any plans, specifications or other information considered pertinent in the judgment of the Manager of Utilities and of the City Building Inspector. A permit and inspection fee therefor shall be paid in accordance with rates approved, adopted and published by the City Council.

(c) All costs and expenses resulting from the installation and connection of the building sewer shall be borne by the owner of the building. The owner shall indemnify the City for any loss or damage which it may suffer either directly or indirectly by the installation of the building sewer.

(d) A separate and independent building sewer shall be provided for every building except where one building stands on an interior lot at the rear of another building and no private sewer is available or can be constructed to the rear building through an adjoining alley, court, yard or driveway. In such exceptional cases the building sewer located in the front building may be extended to the rear building and the whole considered one building sewer. The City does not and will not assume any obligation or responsibility for damage caused by or resulting from any such single connection.

(e) A building sewer, sewer service or house connection of a previous construction may be used in connection with a new building on the same site only when it is found, on examination and test at the expense of the owner to the satisfaction of the Manager of Utilities, to meet all requirements of this Ordinance.

(f) The size, slope, alignment, materials or construction of all building sewers and the methods to be used in excavating, placing of the pipe, jointing, testing and backfilling of the trench shall conform to the requirements of the building and plumbing codes and other applicable rules and regulations of the City. In the absence of suitable Code provisions or in amplification thereof, the materials and procedures

set forth in appropriate specifications of the American Standard of Testing Materials (A.S.T.M.) and guidelines published by the Water Environment Federation (WEF) formerly the Water Pollution Control Federation (WPCF), and Recommended Standards for Wastewater Facilities published by the Great Lakes-Upper Mississippi River Board of State And Provincial Public Health and Environmental Managers, also known as the 10 State Standards for Wastewater Facilities, shall apply.

(g) Whenever possible the building sewer shall be brought to the building at an elevation below its basement floor. In buildings too low to permit gravity flow to the public sewer, the sanitary sewage carried from such building drain shall be lifted by an approved means and discharged to the building sewer.

(h) No person shall make connection of roof downspouts, foundation drains, areaway drains or other sources of surface runoff or groundwater to a building sewer or building drain which is connected directly or indirectly to a public sanitary sewer unless such connection is approved by the Manager of Utilities for purpose of disposal of polluted surface drainage.

(i) The connection of the building sewer into the public sewer shall conform to the requirements of the building and plumbing codes and other applicable rules and regulations of the City or with the procedures set forth in appropriate specifications of the A.S.T.M. and the published guidelines of Water Environment Federation and the 10 State Standards for Wastewater Facilities as identified in section 6 hereinabove. All such connections shall be made gastight and watertight and verified by proper testing. Any deviation from the prescribed procedures and materials must be approved by the Manager of Utilities before installation.

(j) The applicant for the building sewer permit shall notify the Plumbing Inspector of the City of Hastings or other duly authorized employee of the City when the building sewer is ready for inspection and connection to the public sewer. The connection and testing shall be made under the supervision of the Plumbing Inspector of the City of Hastings or other duly authorized employee of the City.

(k) All excavations for building sewer installation shall be adequately guarded with barricades and lights so as to protect the public from hazard. All excavations shall be properly braced and shored in accordance with applicable City, State and Federal safety standards for the local soil conditions to allow for safe access by employees of Hastings Utilities and of the City of Hastings to conduct required inspections of the installation. All streets, sidewalks, parkways, terraces, plantings and other public property disturbed in the course of the work shall be restored in a manner satisfactory to the City.

(7) Discharge prohibitions.

(a) The following substances, materials, waters or wastewater shall be limited in discharges to the public sewer system to concentrations or quantities which will not harm the sewers, wastewater treatment process or equipment, will not have an adverse effect on the receiving stream, or will not otherwise endanger persons or public property or constitute a nuisance. The Manager of Utilities may set limitations lower than the limitations established in the regulations as noted below if such more severe limitations are necessary to meet the above noted objectives. In forming an opinion of the acceptability of such discharge, the Manager of Utilities shall give consideration to such factors as the quantity of wastewater in relation to flows and velocities in the sewers, materials of construction of the sewers, the wastewater treatment process employed, the capacity of the wastewater treatment facilities, the degree of treatability of the wastewater in the wastewater treatment facility, and other pertinent factors. The limitations or restrictions on materials or characteristics of wastewaters discharged to the sanitary sewer shall not be exceeded without the approval of the Manager of Utilities.

The following prohibitions shall obligate all users of the wastewater facilities whether or not the user is subject to NPDES Pretreatment Standards or any other Federal, State or City pretreatment standards or

other enforceable requirements. A user shall not contribute or cause to be contributed, directly or indirectly, to the wastewater treatment facilities, the following substances:

(i) Pollutants or wastewater which will cause interference with or pass through the wastewater treatment facility.

(ii) Temperature of the wastewater which will inhibit biological activity in the wastewater treatment facilities resulting in interference, but in no case heat at such a level that temperature at the wastewater treatment facility would exceed One hundred and four (104) degrees Fahrenheit (forty (40) degrees Centigrade).

(iii) Wastewater having a Ph less than 6.0 or greater than 9.0 or having any other corrosive property which may cause damage or hazard to structures, equipment or employees of the wastewater facilities unless approved in writing by the Manager of Utilities.

(iv) Any slug from a residential, commercial or industrial source.

(v) Solid or viscous substances which may cause obstruction to the flow in a sewer or interference with the operation of the wastewater treatment facilities such as, but not limited to grease, garbage with particles greater than one-half inch ($\frac{1}{2}$ " in any dimension, animal tissue, paunch, manure, bones, hair, hides, flesh, entrails, whole blood, feathers, ashes, cinders, sand, spent lime, stone or marble dust, metal, glass, straw, shavings, grass clippings, rags, spent grains, spent hops, wastepaper, wood, plastics, gasoline, tar, asphalt residues or residues from refining or processing of fuel or lubrication oil, mud or glass grinding or polishing wastes.

(vi) Any wastewater containing toxic pollutants as defined in this Ordinance in sufficient quantity, either singly or by interaction with other pollutants, to injure or interfere with any wastewater treatment facilities, to constitute a hazard to humans, animals or environment, to create a toxic effect in the receiving waters of the wastewater facilities or to exceed the limitation set forth in a Categorical Pretreatment Standard as currently defined by the Nebraska Department of Environmental Quality Title 119 regulations. A toxic pollutant shall include but not be limited to any pollutant identified in Article VIII, Section 3, or pursuant to Section 307(a) of the USEPA Clean Water Act.

(vii) Any substances which by reason of their nature or quantity may create or contribute to a fire or explosion hazard or be injurious to the wastewater facilities or to the operation of the wastewater facilities, including but not limited to wastewaters with closed cup flashpoint of less than one hundred and forty (140) degrees Fahrenheit (sixty (60) degrees Centigrade) using the test methods specified in Code of Federal Regulations, Part 40, Subpart 261.21. At no time shall two (2) successive readings on an explosion hazard meter, at the point of discharge into the system or at any point in the system be more than five percent (5%) nor any single reading more than ten percent (10%) of the Lower Explosive Limit (LEL) of the meter. Prohibited materials include, but are not limited to, gasoline, kerosene, naphtha, benzene, toluene, xylene, ethers, alcohols, ketones, aldehydes, peroxides, chlorates, perchlorates, bromates, carbides, hydrides and sulfides and any other substances which City, State, Federal or USEPA regulations has determined to be a fire hazard or a hazard to wastewater treatment systems.

(viii) Any noxious or malodorous liquids, gases, or solids which either singly or by interaction with other wastewater are sufficient to create a public nuisance or hazard or are sufficiently hazardous to prevent entry into the sewers for maintenance and repair.

(vii) Wastewater causing the effluent of the wastewater treatment facilities to fail toxicity tests.

(x) Substances which may cause the effluent of the wastewater facilities or any other product of the wastewater facilities including bio-solids, scums or residues to be unsuitable for disposal,

reclamation or reuse or to interfere with the reclamation process. In no case shall a substance discharged to the wastewater facilities cause the wastewater facilities to fail to comply with bio-solids use, disposal criteria, guidelines or regulations developed under section 405 of the Clean Water Act or any criteria, guidelines or regulations affecting bio-solids use or disposal developed pursuant to the Solid Waste, Clean Air, or Toxic Substances Control Acts, or State criteria applicable to the bio-solids management method being used.

(xi) Wastewater with objectionable color not removed in the wastewater treatment facility such as, but not limited to, dye wastes and vegetable tanning solutions.

(xii) Any wastewater containing any radioactive wastes or isotopes of such half-life or concentration which may exceed limits established by the Manager of Utilities in compliance with applicable State or Federal regulations.

(xiii) Wastewater which causes a hazard to human life or creates a public nuisance.

(xiv) Wastewaters containing petroleum oil, non-biodegradable cutting oil or products of mineral oil origin in amounts greater than allowed in Section 30-712(8)(c), which may cause interference with pass through.

(xv) Wastewater containing strong acid iron pickling waste or concentrated plating solutions either neutralized or not neutralized.

(xvi) Trucked or hauled wastewater, except in a vehicle possessing a valid liquid waste hauler permit.

(xvii) Sludge, screenings or other residues from the pretreatment of industrial wastewater.

(xviii) Any medical waste or wastewater except that which is specifically authorized by the Manager of Utilities or a duly authorized representative or which is authorized by a valid industrial user discharge permit issued by the Nebraska Department of Environmental Quality.

(xix) Wastewater containing recognizable portions of the human anatomy.

(xx) Wastewater containing detergents, surface active agents (surfactants) or other substances which may cause excessive foaming in the wastewater treatment facilities.

(b) No person shall increase the use of process water or in any way attempt to dilute a discharge as partial or complete substitute for adequate treatment to achieve compliance with the limitations contained in the Federal and State Categorical Pretreatment Standards or in any other pollutant specific limitation developed by the City.

(c) No person shall discharge or cause to be discharged into the public sewer system any unpolluted waters such as storm water, surface water, groundwater, roof runoff, subsurface drainage, interior and exterior foundation drainage or cooling water except storm water runoff from limited areas which may be polluted at times and which may be discharged to the sanitary sewer by permission of the Manager of Utilities or duly authorized representative of the Manager of Utilities. Storm water other than that exempted within this Ordinance and all other unpolluted drainage shall be discharged to such sewers which are specifically designated as storm sewers or to a natural outlet approved by the Manager of Utilities or a representative of the Manager of Utilities, City or other regulatory agency.

(8) Wastewater discharge, rates and water quality.

(a) The Manager of Utilities may establish limitations lower than those established in the regulations below if such more severe limitations are necessary to meet treatment objectives. In forming an opinion concerning such acceptability, the Manager of Utilities shall give consideration to such factors as the quantity of wastewater in relation to flows and velocities in the public sewers, the materials of construction of the public sewers, the wastewater treatment process employed, the hydraulic capacity of the wastewater treatment facilities, the degree of treatability of the wastewater in the wastewater treatment facilities and other pertinent factors.

(b) For determining the wastewater surcharge to be made against a building sewer for a given period of time, the Manager of Utilities shall sample and analyze the wastewater from the building sewer service in order to determine the strength of such wastewater over such period. Samples shall be taken from such wastewater discharge on at least three composites during normal operations and periodically sampled on such building sewer to confirm continued compliance.

(i) All such sampling and analyzing of the wastewater discharge from a building sewer shall be conducted in accordance with the provisions of this Ordinance; provided, however, that the Manager of Utilities may accept such sampling and analyzing results as may be submitted by the wastewater system user on such property if the Manager of Utilities reasonably determines that such results properly reflect the overall nature of such discharge.

(ii) Each property for which more than two sampling stations are used may be required to reimburse the City for its sampling and analyzing costs resulting from samples taken from more than two of such stations.

(iii) Facilities which have an average daily wastewater discharge greater than 0.5% of the average daily wastewater treatment facility flow shall be subject to evaluation concerning the necessity of providing collection of wastewater samples prior to discharge thereof to the sewer collection system.

(iv) If the wastewater contains any level of pollutants greater than the maximum base concentrations identified in the following section, then the cost for the laboratory sampling shall be reimbursed by the user independent of the regular sewer rates applied. The Manager of Utilities may exercise discretion to waive these assessments if it is determined that these pollutant levels are consistent with past samples and thus represent confirmation thereof.

(c) Users may discharge wastewater containing pollutants to the maximum concentrations as identified in the following table. Pursuant to the pollutant concentrations as identified in Section 30-712(8)(f) a surcharge shall be assessed in accordance with sewer surcharge rates duly adopted by the City.

Biological Oxygen Demand (BOD)	300.0 mg/l
Total Suspended Solids (TSS)	350.0 mg/l
Ammonia	30.0 mg/l
Total Kjeldahl Nitrogen (TKN)	50.0 mg/l
Phosphates	10.0 mg/l
Fats, Oils and Greases (FOG)	200.0 mg/l
Hydrocarbon Oil and Grease	100.0 mg/l
Ph	6.0 to 9.0 units
Aluminum	5.00 mg/L
Antimony	5.00 mg/L
Arsenic	0.07 mg/l
Cadmium	0.10 mg/l
Chromium (Hexavalent)	0.25 mg/l
Chromium (Total)	2.50 mg/l

Chloride 20.0 mg/l
Copper 2.00 mg/l
Cyanide (Total) 0.25 mg/l
Gross Alpha 15 pCi/l
Lead 0.50 mg/l
Mercury 0.0006 mg/l
Nickel 2.70 mg/l
Phenols 1.00 mg/l
Selenium 1.00 mg/l
Silver 0.20 mg/l
Total Toxic Organics (TTO) 1.3 mg/l
Uranium 0.030 mg/l
Zinc 2.50 mg/l
Asbestos 7.0 million fibers / liter (Filter to 5 micron size)

(d) All measurements, tests, and analyses of the characteristics of waters and wastes to which reference is made in this Ordinance shall be determined in accordance with the most recent revision of the Code of Federal Regulations, Part 40, Subpart 136, or most recent revision of the Standard Methods for the Examination of Water and Wastewater. Sampling methods, location, times durations, and frequencies are to be determined on an individual basis subject to approval by the Manager of Utilities.

(e) Hauled Wastewater Disposal.

(i) Any person who transports contents of a septic tank, seepage pit, cesspool, liquid industrial wastewater or other batch wastewater and wishes to discharge such wastewater to the public sewer system shall first obtain a valid Wastewater Hauler's Permit issued by the Manager of Utilities. All applicants for a Wastewater Hauler's Permit shall complete the application form and receive a copy of the City's regulations governing discharge to sewers of liquid wastewaters from trucks. All persons receiving such permits shall agree in writing to abide by all applicable provisions of this section and any other special provisions which may be established by the City as necessary for the proper operation and maintenance of the sewerage system.

(ii) Discharge of a septic tank, seepage pit, interceptor, cesspool contents or other wastewaters containing no industrial wastewaters may be made by trucks holding a valid Permit at a structure designated by the Manager of Utilities for that purpose. Discharge of truck-transported grease pit contents or industrial wastewater may be authorized only after notification is made to the Manager of Utilities and only at the location specified by the Manager of Utilities. Applicable fees for disposal shall be paid promptly and in accordance with published sewer disposal rates.

(iii) The Manager of Utilities may refuse permission to discharge any wastewater which may cause interference or difficulty with the wastewater treatment facilities or any wastewater which violates any provision of this Ordinance.

(iv) Any person or company holding a valid Wastewater Hauler's Permit and wishing to discharge wastewater to the sewer system shall be required prior to discharge to submit to the Manager of Utilities evidence that a sample of the sewage to be discharged has been sent to a certified laboratory for analysis for parameters outlined in the Wastewater Hauler's Permit. A copy of the laboratory testing results shall be delivered directly from the laboratory to the Manager of Utilities.

(v) Dumping times shall be limited to the period from 8:30 am to 11:30 am and from 1:00 pm to 4:00 pm local time, Monday through Friday, excluding recognized City holidays and weather limited

access days caused by heavy storms or snow accumulation. Dumping after hours or on holidays may be allowed by permission from the Manager of Utilities.

(vi) The wastewater hauler shall complete a chain of custody report for each load of wastewater deposited into the sewer system. The information on the chain of custody report (manifest) shall be recorded and signed by the wastewater hauler or by an employee of the wastewater hauler and shall be on forms furnished by the Manager of Utilities. The chain of custody (manifest) shall provide as a minimum the name and address of the facility from which the wastewaters are collected, contact information, typical yearly volumes and results of analytical testing as determined by the Manager of Utilities

(vii) Discharge of all wastewaters allowed under this section shall take place only at the location designated by the Manager of Utilities. The designated location or manhole to be used under the Wastewater Hauler's Permit may be changed by the Manager of Utilities when considered necessary to protect the sewer system.

(viii) Any wastewater hauler discharging wastewater to the public sewer system or discharging wastewater not authorized in the permit shall be subject to immediate revocation of discharge privileges and further subject to the penalties and enforcement actions prescribed in Section 30-712(12). The wastewater hauler shall immediately cease discharging any wastewaters to the sanitary sewer system of the City or to facilities that discharge directly or indirectly into its system. Should a wastewater hauler fail to voluntarily comply with any suspension order, the Manager of Utilities shall take such actions as are deemed necessary or appropriate to prevent or minimize damage to the sewer system and wastewater treatment plant and to protect the health and welfare of the general public.

(vii) A suspended permit may be reinstated by the Manager of Utilities upon submission of assurances satisfactory to the Manager of Utilities that the wastewater hauler will comply with this section and the rules and regulations promulgated pursuant this section together with payment of such fines or other penalties as may be levied.

(x) The discharge of trucked or hauled wastewaters from industrial plating processes, grit from vehicle and equipment washing mud pits or grit from automotive radiator repair mud pits is prohibited.

(xi) Nothing in this section shall relieve wastewater haulers of the responsibility for compliance with the City, State and Federal regulations.

(f) Surcharge.

(i) A surcharge shall be levied on any customer discharging wastewater exceeding two hundred (200) milligrams per liter BOD, two hundred and ten (210) milligrams per liter TSS, twenty-five (25) milligrams per liter Ammonia, and one hundred (100) milligrams per liter (FOG).

(ii) The surcharge shall be assessed in accordance with sewer use rates approved, adopted and published by the City Council.

(iii) Method of Billing Surcharges. The excessive strength surcharge shall be based on the following formula with the total applied to the monthly bill of affected users:

Payment (\$/month)

$$(Ax[E-200] + Bx[F-210] + Cx[G-25] + Dx[H-100]) \times 0.00834 \times I = \text{Surcharge}$$

Where formula components are as follows:

A = Surcharge rate for BOD, in \$/pound.
B = Surcharge rate of TSS, in \$/pound.
C = Surcharge rate for ammonia in \$/pound.
D = Surcharge rate for FOG in \$/pound.
E = User's average BOD concentration, in mg/l. for values greater than 200 mg/l
F = User's average TSS concentration, in mg/l. for values greater than 210 mg/l
G = User's average ammonia concentration, in mg/l. for values greater than 25 mg/l
H = User's average FOG concentration, in mg/l. for values greater than 100 mg/l
I = User's monthly flow to the public sewer system, per 1,000 gallons.

(iv) No reduction in sewage service charges or fees shall be permitted because certain wastewaters discharged to the public sewer system contain less than the limit for mg/l of BOD, TSS, Ammonia or FOG.

(v) If the foregoing surcharge unit cost determination is inequitable to either the City or the users affected on account of unusual economic or wastewater load circumstances, then the Manager of Utilities shall exercise discretion by an appropriate method to determine new surcharge unit costs which more accurately reflect the actual economic and waste load impact on the wastewater system.

(g) Any person who discharges any toxic pollutants which cause an increase in the cost of managing the effluent or the sludge from the wastewater system or any user who discharges any substance which singly or by interaction with any other substances causes identifiable increases in the cost of operation, maintenance, or replacement of the wastewater system shall pay for such increased costs. The charge to each such user shall be determined by the Manager of Utilities.

(h) If any wastewaters containing the substances or possessing the characteristics identified in Section 30-712(8)(c) are proposed to be discharged to the public sewer and, in the judgment of the Manager of Utilities, may have a deleterious effect upon the wastewater facilities, processes, equipment or receiving waters or may otherwise create a hazard to life or constitute a public nuisance, the Manager of Utilities may:

(i) Reject the wastewaters in their entirety;

(ii) Set a period of time during which the wastewater will be received without change;

(iii) Require pretreatment to an acceptable condition for discharge to the public sewers;

(iv) Require control over the quantities and rates of discharge; or,

(v) Require payment to cover the added cost of handling and treating the wastewaters not covered by existing sewer charges under the provisions of Section 30-712(8)(f).

(i) No statement contained in this article shall be construed to preclude any special agreement or arrangement between the City and any industrial concern whereby industrial wastewater of unusual strength or character may be accepted by the City for treatment.

(9) Pretreatment systems.

(a) Any wastewater having an average daily flow greater than 13,400 cubic feet per day (100,000 gallons per day) shall be subject to review by the Manager of Utilities for the necessity of pretreatment.

(b) When required by the Manager of Utilities, the owner of any property serviced by a building sewer carrying industrial wastewaters shall install a suitable structure together with such necessary meters and other appurtenances in the building sewer to facilitate observation, sampling and measurement of the wastewaters. Such structures shall be accessible and safely located and shall be constructed in accordance with plans approved by the Manager of Utilities and regulatory agencies. The structure shall be installed at the expense of the owner and shall be maintained in a safe and accessible manner at all times.

(c) Grease, oil and sand interceptors shall be provided when, in the opinion of the Manager of Utilities, they are necessary for the proper handling of liquid wastewaters containing fats, oils and grease (FOG) or any flammable wastewaters, sand, grit, debris or other harmful ingredients. All interceptors shall be of a type and capacity approved by the Manager of Utilities and shall be in a location readily and easily accessible for cleaning and inspection. The owner shall be responsible for the proper removal and disposal by appropriate means of the captured material and shall maintain records of the date and means of disposal which are subject to review by the Manager of Utilities. Any removal and hauling of the collected materials not performed by employees of the owner shall be performed by a Nebraska licensed and bonded wastewater disposal firm. All materials shall be hauled, handled and disposed in accordance with City, State and Federal regulations.

(d) Plans, specifications, and any other pertinent information relating to proposed pretreatment facilities or flow equalization shall be submitted for the approval of the Manager of Utilities and construction of such facilities shall not commence until approvals are obtained in writing. All users in this category shall provide the following information to the City for review and approval:

- (i) Wastewater discharge, peak rate and volume over a specified period of time;
- (ii) Chemical analyses of wastewater;
- (iii) Information on raw materials, processes and products affecting wastewater volume and quality;
- (iv) Quantity and disposition of specific liquid, sludge, oil, solvent or other materials important to sewer use control;
- (v) A plot plan of sewers of the user's property, showing sewer and pretreatment facility location;
- (vi) Details of wastewater pretreatment facilities;
- (vii) Details of systems to prevent and control the losses of materials through spills into the municipal sewer.

(e) Where pretreatment or flow-equalizing facilities are provided or required for any wastewaters, they shall be maintained continuously in satisfactory and effective operation by the owner at the expense of the owner.

(10) Powers and authority of inspectors.

(a) The Manager of Utilities, Superintendent and other duly authorized employees of the City bearing proper credentials and identification shall be permitted to enter all properties for the purposes of inspection, observation, measurement, sampling and testing pertinent to discharge of wastewater to the sewer system in accordance with the provisions of this Ordinance. The Manager of Utilities, Superintendent or other duly authorized City employees shall have no authority to inquire into any

processes, including metallurgical, chemical, oil, refining, ceramic, paper or other industries, beyond information required for the kind and source of discharge to the sewers or waterways or facilities for wastewater treatment.

(b) While performing the necessary work on private properties referred to in Section 30-712(10)(a), above, the Manager of Utilities, Superintendent or duly authorized employees of the City shall observe all safety rules applicable to the premises established by the owner thereof. Liability for the death or injury of any employee of the City engaged in inspection or enforcement of these Ordinances shall be governed by the statutory and case law of the State of Nebraska.

(c) The Manager of Utilities, Superintendent and other duly authorized employees of the City bearing proper credentials and identification shall be permitted to enter all private properties for which the City holds a duly negotiated easement for the purposes of, but not limited to, inspection, observation, measurement, sampling, repair and maintenance of any portion of the wastewater facilities lying within the said easement. All entry and subsequent work on said easement, if any, shall be performed in full accordance with the terms of the duly negotiated easement pertaining to the private property.

(11) Hearing board.

The Board of Public Works is hereby appointed to be the Hearing Board for arbitration of disputes between the Manager of Utilities and sewer users concerning interpretation and execution by the Manager of Utilities of the provisions of this Ordinance. Any consumer aggrieved for being required to pay the charge demanded for sewer use or for the resumption of sewer service after it has been denied may pay such charge under protest. Such aggrieved customer may request a hearing in writing and may present the claim for reimbursement for the consideration of the Hearing Board.

(12) Penalties.

(a) Any person found in violation of any provision of this Ordinance, except pollutant limits of Section 30-712(8)(c), shall be served by the City with written notice stating the nature of the violation and providing a reasonable time limit for the satisfactory correction thereof. The offender shall, within the period of time stated in such notice, permanently cease all violations.

(b) Any person who shall continue any violation beyond the time limit provided for in Section 30-712(8)(h), shall be subject to fines and penalties approved, adopted and published by the City Council. Each day during which any such violation shall continue shall be deemed a separate offense.

(c) Any person violating any of the provisions of this Ordinance shall become liable to the City for any expense, loss or damage caused by such violation.

(13) Validity.

(a) All Ordinances or parts of Ordinances in conflict herewith are hereby repealed.

(b) The invalidity of any section, clause, sentence, or provision of this Ordinance shall not affect the validity of any other part of this Ordinance which can be given effect without such invalid part or parts.

(c) Appropriate sections of existing code are hereby repealed by virtue of substitution or conflict with existing Ordinances.

(14) Ordinance in force.

This Ordinance shall be in full force and effect from and after its passage, approval, recording and publication in pamphlet form as provided by law.

(15) Historical sewer use ordinance summary.

Initial Sewer Use Ordinance No. 2764 issued February 9, 1981.

Revised Sewer Use Ordinance No. 3149 issued November 29, 1989.
(Ord. No. 4360-10/2013, 4417-12/2014)

Article VIII. Backflow Prevention.

30-801. General.

(1) Definitions. The following definitions shall apply in the interpretation and enforcement of this ordinance.

(a) "Air gap separation" means the unobstructed vertical distance through the free atmosphere between the lowest opening of any pipe or faucet supplying water to a tank, plumbing fixture, or other device and the flood level rim of the said receptacle. An approved air-gap shall be at least double the diameter of the supply pipe, measured vertically, above the top of the rim of the receptacle and, in no case less than one inch.

(b) "Antisiphon vacuum breaker" is a device which restricts the backflow of water into a potable water system by a simple check valve. The vacuum is broken by allowing air to enter upstream of the check valve.

(c) "Approved" means that a backflow prevention device or method has been accepted by the Manager as being suitable for the intended use.

(d) "Auxiliary water system" means any water supply system available to the premises other than the public water supply system and includes the water supplied by such system. These auxiliary water systems may include water from another owner's public water supply system; polluted or contaminated water, process fluids; used water; or other sources of water which the owner of the public water supply system does not have sanitary control.

(e) "Backflow" or "backsiphonage" means the flow of water or other liquids, mixtures, or substances into the water distribution system from any other source than the intended source of the potable water supply.

(f) "Backflow prevention device" means any device, method or type of construction intended to prevent backflow into a potable water system. Devices such as an "Approved Air-gap", "Double Check Valve Assembly", "Antisiphon Vacuum Breaker" or a "Reduced Pressure Principle Devices" can be used which have been approved by the Manager.

(g) "Consumer" means the owner or person in control of any premises supplied by or in any manner connected to a public water supply system.

(h) "Consumer's water supply system" means any water supply system, located on the consumer's premises, supplied by or in any manner connected to a public water supply system. A household plumbing system is considered to be a consumer's water supply system. A fire suppression system is also considered a consumer's water supply system.

(i) "Contamination" means an impairment of the quality of the water by sewage, or waste to a degree which could cause an actual hazard to the public health through poisoning or through spread of disease by exposure.

(j) "Cross-connection" means any arrangement whereby contamination due to backflow or backsiphonage can occur.

(k) "Degree of hazard" is a term derived from an evaluation of the potential risk to health and the adverse effects upon the potable water system.

(l) "Double check valve assembly" means an assembly composed of two single, independently acting, check valves including one hundred percent closing shutoff ball valves located at each end of the assembly and suitable connections for testing the water-tightness of each check valve.

(m) "Health hazard" means any condition, device, or practice in a water system or its operation that creates, a real or potential danger to the health and well being of the consumer.

(n) "Interchangeable connection" means an arrangement or device that will allow alternate but not simultaneous uses of two sources of water.

(o) "Licensed plumber" means a person which has obtained the appropriate license from the Mayor and Council to perform plumbing related work within the City limits of Hastings.

(p) "Manager" means the Manager of Hastings Utilities or his authorized representative.

(q) "Non-potable water" means water not safe for drinking, personal, or culinary use, or which does not meet the requirements of the Nebraska Department of Health.

(r) "Owner" means the person delivering water through a public water supply system. The owner is City of Hastings operating through the Board of Public Works.

(s) "Person" means the state, any political subdivision, public or private corporation, individual, partnership, or other legal entity. When the term he, or his is used, it shall mean any male or female person.

(t) "Plumbing hazard" means a plumbing type cross-connection in a consumer's potable water system that has not been properly protected by air-gap separation or backflow prevention devices.

(u) "Pollution" means the presence in water of any foreign substance (organic, inorganic, or biological) that degrades the quality of water to a degree which does not necessarily cause an actual hazard to the public health but which does adversely and unreasonably affect such waters for any desired use.

(v) "Pollution hazard" means a condition through which an aesthetically objectionable or degrading material not dangerous to health may enter the public water supply system or the consumer's water supply system.

(w) "Potable water" means water which is satisfactory for drinking, culinary, and domestic purposes and meets the requirements of the Nebraska Department of Health.

(x) "Public water supply system" means a water supply system designed and intended to provide potable water to a designated consumer. The water supply shall include the water supply source and distribution piping network. The water supply source is defined as any artificial or natural accumulation of

water used to supply the potable water system. The distribution piping network includes all piping, pumping and treatment devices used to convey an adequate quality and quantity of potable water to the consumer.

(y) "Reduced pressure zone backflow prevention device" means a device containing a minimum of two independently acting check valves together with an automatically operated pressure differential relief valve located between two check valves. During normal flow and at the cessation of normal flow, the pressure between these two checks shall be less than the supply pressure. In case of leakage of either check valve, the differential relief valve, by discharging to the atmosphere, shall operate to maintain the pressure between the check valves at less than the supply pressure. The unit must include one hundred percent closing shutoff ball valves located at each end of the device, and each device shall be fitted with properly located test cocks.

(z) "Service connection" means the terminal end of a service line from the public water system. If a meter is installed at the end of the service, then the service connection means the downstream end of the meter.

(aa) "System hazard" means a condition posing an actual or potential threat of damage to the physical properties of the public's or the consumer's water supply system.

(bb) "Used water" means any water supplied by the public water supply system to a consumer's water supply system after it has passed through the service connection and is no longer under the sanitary control of the water supplier.

(2) Responsibility. The consumer as defined in these regulations, if requested by the Manager, shall designate an individual or individuals, who shall be responsible for contact and communications with the Manager in matters relating to system alteration and construction, monitoring and sampling, maintenance, operation, record keeping, and reporting, as required by law and these regulations. Any change in assigned responsibilities or designated individuals shall be promptly reported to the Manager.

(3) Title. Hastings City Code Sections 30-801 through 30-812, and any amendments pertaining thereto, shall be known as the backflow prevention ordinance.
(Ord. Nos. 3169-5/90, 4110-1/2007, 4249-3/2010, 4417-12/2014)

30-802. Policy and purpose.

(1) The purpose of this ordinance is to protect the public water supply system of the City of Hastings from the possibility of contamination by isolating real or potential sources of contamination or pollution which may backflow into the public water supply system. This ordinance provides for the maintenance of a continuing program of cross-connection control which will systematically and effectively prevent the contamination or pollution of the potable water supply systems.

(2) The Manager shall be responsible for the implementation of the backflow prevention program as outlined within this ordinance. If in the judgment of the Manager an approved backflow prevention device is required for the safety of the public water supply system then the Manager shall give notice in writing to the consumer to install said device at each recommended location. The Manager shall inspect and approve all installations of the required backflow prevention devices. The costs for purchasing, installing, and maintaining a backflow prevention device shall be the responsibility and sole expense of the consumer. The installation of backflow prevention devices, except for outlet fixture vacuum breakers, shall be by a licensed plumber. Annual testing of all double check valves and reduced pressure zone devices shall be performed by the Manager. If deemed necessary by the Manager that maintenance or repairs are necessary, the Owner shall be contacted and issued an order to make all necessary repairs or maintenance. The Owner shall complete all maintenance or repairs within thirty (30) days; if not, the

owner shall be considered in violation of the backflow ordinance and will be subject to disconnection of the service as provided in Section 30-810.

(3) No person shall install or maintain a water service connection, containing cross-connections to a public water supply system or a consumer's potable water supply system unless such cross-connections are abated or controlled in accordance with this rule, and as required by the laws and regulations of the Nebraska Department of Health.

(4) For the purpose of this backflow prevention ordinance, whenever the Manager is to make any decision or interpretation, or whenever reference is made to the fact that the Manager is to exercise judgment, such decision, interpretation or judgment shall be in accordance with the provisions of this backflow prevention ordinance, and any other applicable provisions of the Hastings City Code, and state and federal law.

(Ord. Nos. 3169-5/90, 4110-1/2007, 4249-3/2010, 4417-12/2014)

30-803. Surveys and investigations.

(1) It shall be the responsibility of the water consumer to conduct or cause to be conducted, periodic surveys of water use practices on his premises as necessary to determine whether there are actual or potential cross-connections in the consumer's water supply system. The Manager shall have the authority to conduct or cause to be conducted periodic surveys and investigations, of a frequency as determined by the Manager, of water use practices within a consumer's premises to determine whether there are actual or potential cross-connections to the consumer's water supply system through which contaminants or pollutants could backflow into the public water supply system. The Manager may conduct these surveys to provide information in determining what level of protection will be necessary to protect the public health and safety.

(2) On request by the Manager the consumer shall furnish the Manager information on water use practices within the consumer's premises. If the consumer refuses to submit the proper information or to cooperate in obtaining the proper information, the Manager shall treat the premises as if no appropriate cross-connection survey has been completed, and in such event the consumer shall be required to install an approved backflow prevention device as required to Section 30-804.

(3) The Manager shall have the right to enter a premises served by the public water supply system at all reasonable times for the purpose of making surveys and investigations of water use practices within the premises. In order to inspect a premise, the Manager shall give notice setting forth a proposed date and time to the consumer at least ten (10) days in advance. If the consumer cannot make the premises available for inspection at the proposed date and time, the consumer shall contact the manager and arrange for another date and time for the inspection. If the Manager and the consumer cannot agree on a date and time, then the Manager shall treat the premises as if no appropriate cross-connection survey has been completed, and in such event the consumer shall be required to install an approved backflow prevention device as required to Section 30-804.

(4) The Board of Public Works is hereby appointed as a Hearing Board to hear differences between the Manager and the consumer on matters concerning interpretation and execution of the provisions of this ordinance by paying the expense of installing, furnishing, and or maintaining a backflow prevention device may, within fourteen (14) days of the act or event causing the grievance, request a hearing in writing to present those grievances to the Hearing Board. The Hearing Board shall schedule the matter for hearing within thirty (30) days, and provide written notice of the meeting by first class mail to the consumer. The notice shall be mailed to the consumer at least seven (7) and not more than twenty-one (21) days before the hearing. At the hearing the consumer shall first state the nature of the grievance, and the Manager shall be entitled to respond thereto, whereupon the hearing board shall render its decision which will be binding upon the consumer and the Manager.

(Ord. Nos. 3169-5/90, 4110-1/2007, 4249-3/2010, 4417-12/2014)

30-804. Where protection is required.

(1) An approved backflow prevention device shall be installed between the service connection and the point of potential backflow into a consumer's water supply system when in the judgement of the Manager a health, plumbing, pollution or system hazard exists.

(2) An approved backflow prevention device shall be installed when the following conditions are found by the Manager to exist:

(a) Premises on which any substance is handled in such a fashion as to create an actual or potential hazard to a public water supply system. This shall include premises having sources or systems containing process fluids or waters originating from a public water supply system which are no longer under the sanitary control of the owner;

(b) Premises having internal cross-connections that, in the judgment of the Manager, are not correctable, or there exist intricate plumbing arrangements which make it impracticable to determine whether or not cross-connections exist;

(c) Premises where, because of security requirements or other prohibitions or restrictions, it is impossible or impractical to make a complete cross-connection survey;

(d) Premises having a repeated history of cross-connections being established or re-established;

(e) Premises having more than one customer service connection which could constitute a potential cross-connection.

(3) An approved backflow prevention device shall be installed on each service line to a customer's water supply system serving the following types of facilities unless the Manager determines that no health, pollution, or system hazard to the public water supply system exists:

(a) Hospitals, mortuaries, dental clinics, nursing and convalescent homes, medical buildings;

(b) Testings laboratories, film laboratories, film development facilities;

(c) Sewage treatment plants, sewage pumping stations, or storm water pumping stations;

(d) Food or beverage processing plants;

(e) Chemical plants;

(f) Metal de-greasing, plating industries, machine tool plants, dye and metal processing or productions;

(g) Chemical and petroleum processing or storage plants;

(h) Car washes, automobile servicing facilities;

(i) Lawn irrigation systems and swimming pools;

(j) Laundries and dry cleaners;

- (k) Packing houses;
- (l) Power plants;
- (m) Premises having radioactive materials such as laboratories, industries, hospitals;
- (n) Rendering plants;
- (o) Premises having water recirculating system as used for boilers or cooling systems;
- (p) Veterinary establishments, kennels, feedyards, stables, rodeo grounds, stockyards, pet grooming salons;
- (q) Beauty salons, barbershops, message parlors, health clubs;
- (r) Fire suppression systems;
- (s) Multi-storied buildings greater than three (3) stories in height;
- (t) Schools, universities, colleges;
- (u) Other commercial or industrial facilities which may constitute potential cross-connection.
(Ord. Nos. 3169-5/90, 4110-1/2007, 4249-3/2010, 4417-12/2014)

30-805. Type of protection required.

(1) The type of protection required under Sections 30-804(1) and 30-804(2) of this Article shall depend on the degree of hazard that exists as follows:

(a) An approved air gap separation or an approved reduced pressure principle backflow prevention device shall be installed where a public water supply system may be contaminated with any substance that could cause a system hazard or health hazard;

(b) An approved double check valve assembly shall be installed where a public water supply system may be contaminated with any substance that could cause a pollution hazard;

(c) An approved reduced pressure principle backflow prevention device shall be installed at the service connection where there exists a plumbing hazard;

(d) In the case of any premises where, because of security requirements or other prohibitions it is impossible or impractical to make a complete cross-connection survey of the consumers potable water system, a reduced pressure principle backflow prevention device shall be installed at the service connection.

(2) An approved anti-siphon vacuum breaker may be used as a backflow prevention device where it is not subjected to back pressures. This device shall not be used for applications where water flow is expected to be continuous for 12 or more hours. The device shall be installed ahead of the potential source of contamination on the discharge side of the last control valve. It shall be placed at least 18" above the highest point reached by any water passing through the potential source of contamination. Typically this type of device is used for such equipment as lawn sprinklers, water-cooled compressors, or other water cooled equipment.

(Ord. Nos. 3169-5/90, 4110-1/2007, 4249-3/2010, 4417-12/2014)

30-806. Backflow prevention devices.

(1) Any approved backflow prevention device required by Section 30-804 shall be installed at a location and in a manner approved by the Manager. The consumer, at his sole expense, shall obtain and install said approved backflow prevention device(s) within 90 days of notice and as directed by the Manager.

(2) Existing backflow prevention devices approved by the Manager prior to the effective date of this rule and which are properly maintained shall, except for inspection, testing, and maintenance requirements, be excluded from the requirements of Section 30-806(1) but only if the Manager determines that the devices will satisfactorily protect the public water supply system. One hundred percent closing shutoff ball valves for testing shall be provided on existing backflow prevention devices, if deemed necessary for proper testing by the Manager. If deemed necessary by the Manager that an existing backflow prevention device requires replacement, it shall be replaced with an approved backflow prevention device.

(Ord. Nos. 3169-5/90, 4110-1/2007, 4249-3/2010, 4417-12/2014)

30-807. Booster pumps.

(1) No person shall install or maintain a water service connection to any premises where a booster pump has been installed on the service line to or within such premises, unless such booster pump is equipped with a low pressure cut-off designed to shut-off the booster pump when the pressure in the service line on the suction side of the pump drops to twenty (20) pounds per square inch gauge or less.

(2) It shall be the duty of the water customer to maintain the low pressure cut-off device in proper working order.

(Ord. Nos. 3169-5/90, 4110-1/2007, 4249-3/2010, 4417-12/2014)

30-808. Yard hydrants.

(1) The installation of yard hydrants where water is available or accessible for drinking or culinary purposes and which have drip openings below ground surface, is prohibited unless such hydrants are equipped with an approved device to prevent entrance of ground water into chambers connected with the water supply.

(2) Yard hydrants or hose bibs which would be used by the consumer to provide water to mix pesticides, fertilizer, or other chemicals, for direct use or aerial application to surface areas shall be equipped with an anti-siphon vacuum breaker.

(3) All underground lawn and garden sprinkler systems shall be equipped with an approved backflow prevention device.

(Ord. Nos. 3169-5/90, 4110-1/2007, 4249-3/2010, 4417-12/2014)

30-809. Fire suppression system.

(1) All proposed installations of fire suppression systems shall be reviewed by the manager to determine the appropriate type of backflow prevention device(s) required.

(2) All proposed fire suppression systems requiring an antifreeze solution shall use a pharmaceutical grade antifreeze. The Consumer shall provide to the Manager a certification identifying the type of pharmaceutical grade antifreeze which shall be used. A double check valve backflow prevention device shall be installed in an approved manner.

(3) A double check valve of an approved type shall be installed on all proposed fire suppression systems not utilizing antifreeze, but this may be done only when there are no other cross-connections.

(4) All existing fire suppression systems shall meet the requirements of Subsections (2) or (3) above, whichever applies. An inspection by a certified fire suppression specialist shall be done to determine whether pharmaceutical grade antifreeze(s) have been utilized. This shall be done at the expense of the consumer. If it cannot be certified that only pharmaceutical grade antifreezes have been used, then a reduced pressure principle backflow prevention device shall be installed as approved by the Manager. This also shall be done at the expense of the consumer.

(5) In the event cross-connections, such as those found in using auxiliary water supply systems or in providing other water additives such as foaming agents are necessary for the proper operation of the fire suppression system, then a reduced pressure zone backflow prevention device shall be installed in an approved manner.

(Ord. Nos. 3169-5/90, 4110-1/2007, 4249-3/2010, 4417-12/2014)

30-810. Violations.

(1) The Manager shall deny or discontinue, after notice to the consumer thereof, the water services to any premises wherein:

(a) Any backflow prevention device required by these regulations is not installed or maintained in a manner acceptable to the Manager;

(b) It is found that the backflow prevention device has been removed or by-passed;

(c) An unprotected cross-connection exists on the premises;

(d) A low pressure cut-off required by Section 30-807 is not installed and maintained in working order; or

(e) The Manager is denied entry to determine compliance with these regulations.

(2) The Manager shall immediately deny or discontinue, without notice to the consumer thereof, the water service to any premises wherein a severe cross-connection exists which constitutes an immediate threat to the safety of the public water system. The Manager shall notify the consumer within twenty-four (24) hours of said denial or discontinuation of service.

(3) Water service to such premises shall not be restored until the consumer has corrected or eliminated such conditions or defects in conformance with these regulations, and to the satisfaction of the Manager.

(Ord. Nos. 3169-5/90, 4110-1/2007, 4249-3/2010, 4417-12/2014)

30-811. Approval standards.

(1) Any backflow prevention device required herein shall be of a model and size approved by the Manager. The term "Approved Backflow Prevention Device" shall mean a device that has been manufactured in full conformance with the standards established by the American Water Works Associations (AWWA) entitled: AWWA C506-69 Standards for Reduced Pressure Principle and Double Check Valve Backflow Prevention Devices and by the American Society of Sanitary Engineers (ASSE) entitled:

No. 1001 Pipe Applied Atmospheric Type Vacuum Breakers-ANSI Approved 1982-Revised, 1988

- No. 1011 Hose Connection Vacuum Breakers-ANSI Approved 1982
- No. 1012 Backflow Preventer/Intermediate Atmospheric Vent-1978
- No. 1013 Reduced Pressure Principle Backflow Preventer-Revised 1988
- No. 1015 Double Check Backflow Prevention Assembly-Revised 1988
- No. 1019 Wall Hydrants, Freezeless, Automatic Draining, Anti-Backflow Types-ANSI Approved 1978
- No. 1020 Vacuum Breakers, Anti-siphon, Pressure Type-ANSI Approved 1982
- No. 1024 Dual Check Valve Type Backflow Preventers-ANSI Approved 1984-Revised 1988
- No. 1032 Dual Check Valve Type Backflow Preventer for Carbonated Beverage Dispensers-1980
- No. 1035 Laboratory Faucet Vacuum Breakers-ANSI Approved 1984
- No. 1048 Double Check Detector Assembly Backflow Preventer-1989

Said standards and specifications have been adopted by the Manager. Final approval shall be evidenced by a "Certificate of Approval" issued by an approved testing laboratory certifying full compliance with said standard and specifications.

(2) The Manager shall keep a current list of all certified suppliers and their appropriate list of makes and models of backflow prevention devices which the Manager has deemed approved.

(3) The Manager may require a strainer of approved type and size to be installed in conjunction with required backflow prevention devices. The installation of strainers shall preclude the fouling of backflow device(s) due to foreseen and unforeseen circumstances occurring to the water supply system such as water main repairs, water main breaks, fires, periodic cleaning and flushing of mains. These occurrences may cause debris such as scale deposits and sand to flush through the mains causing fouling of backflow device(s).

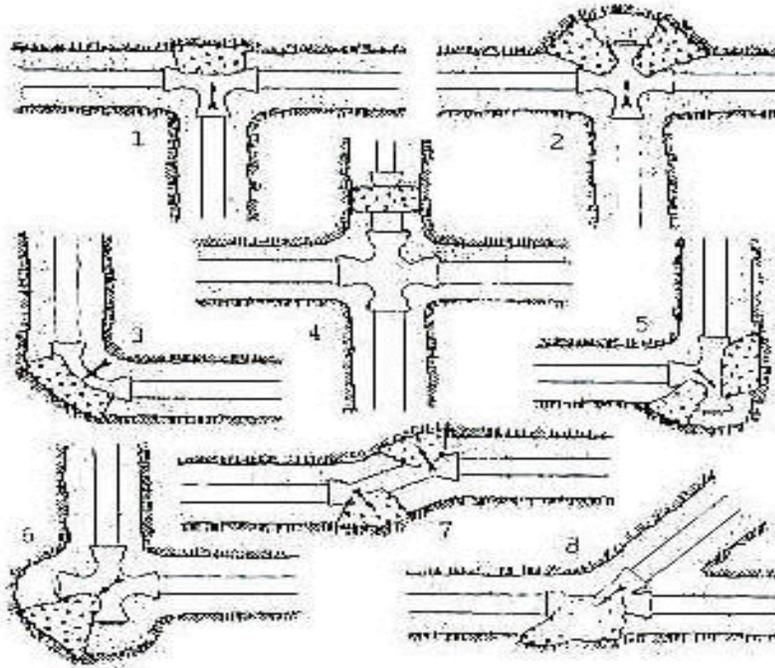
(Ord. Nos. 3169-5/90, 4110-1/2007, 4249-3/2010, 4417-12/2014)

30-812. Liability claims.

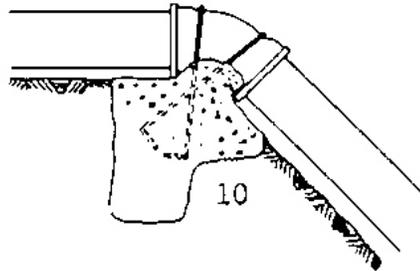
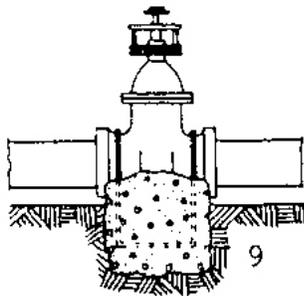
The Manager shall be relieved from personal liability. The City shall hold harmless the Manager when acting in good faith and without malice, from all personal liability for any damage that may occur to any person or property as a result of any act required or authorized by this title, or by reason of any act or omission of the Manager in the discharge of his duties hereunder. Any suit brought carrying out the provisions of the title shall be defended by the City, or the City's insurance carrier, if any, through final determination of such proceeding.

(Ord. Nos. 3169-5/90, 4110-1/2007, 4249-3/2010, 4417-12/2014)

PVC Pipe – Design and Installation



If thrusts, due to high pressure, are expected, anchor valves as below. At vertical bends, anchor to resist outward thrusts.



- | | |
|--|--|
| <ul style="list-style-type: none"> 1. Thru line connection, tee 2. Thru line connection, cross used as tee 3. Direction change, elbow 4. Change line size, reducer 5. Direction change, tee used as elbow | <ul style="list-style-type: none"> 6. Direction change, cross used as elbow 7. Direction change 8. Thru line connection, wye 9. Valve anchor 10. Direction change vertical, bend anchor |
|--|--|

Article IX. Gas In General.

30-901. Applicability of article.

The provisions of 30-901 through 30-1313 shall apply only to low pressure (not in excess of one-half pound per square inch) gas piping systems in buildings, extending from the gas meter outlet to the inlet connections of appliances, and the installation and operation of residential and commercial gas appliances supplied through such systems by public utilities. They are intended to cover the design, fabrication, installation, tests and operation of such systems for fuel gases such as natural gas, manufactured gas, liquefied petroleum gas-air, or mixtures thereof. They are not intended to cover systems distributing undiluted liquefied petroleum gas. They are also not intended to cover systems or portions of systems supplying equipment engineered, designed and installed for specific manufacturing, production processing and power generating applications, such as large and high pressure boilers, melting and treating furnaces, production ovens, etc. For piping in gas distribution systems, in gas manufacturing plants, in compressing stations and in gas processing plants, refer to the latest edition of Code of Pressure Piping, A.S.A. B31.1.

In applying these regulations reference should also be made to the manufacturer's instructions, gas department regulations and the City Building Code, Plumbing Code and other codes in effect in the area in which the installation is made.

(Code 1973, 16-1; Ord. Nos. 1837, 2101, 4417-12/2014)

30-902. Standards for gas appliances and gas piping.

The publication entitled "National Fuel Gas Code", 2012 edition, published by the National Fire Protection Association, identified as NFPA No. 54, a copy of which is on file in the office of the city clerk, is hereby adopted and incorporated into this chapter as though set out herein in full. In the event of any conflict between such publication and the provisions of this Code, the provisions of this Code shall govern.

(Code 1973, 16-2, Ord. No. 3691-7/99, 3896-5/2003, 4147-10/2007, 4217-5/2009, 4417-12/2014)

30-903. Work on gas piping containing unmeasured gas.

(1) Permission required. No person, unless in the employ of the gas department or having permission from the gas department, shall open or make connections with a gas main.

(2) Service pipe. No person, unless in the employ of the gas department or having permission from the gas department, shall repair, alter, open or make connection to the service pipe, or do any other work on the parts of the gas supply system up to and including the meter.

(3) Gas department's meter. Meters shall be located on the outside in all districts unless such requirement is waived by the gas inspector and utilities department. Where possible, they shall also be located outside in the fire zone. No person, unless in the employ of the gas department or having permission from the gas department, shall disconnect the inlet of the gas meter, nor move the meter. A gas fitter may disconnect the outlet of a meter from the house piping only when necessary. He shall remake the joint at the meter outlet, and shall leave the meter turned off unless permission is obtained from the gas department to do otherwise.

(4) Notification of gas department of any repairs needed. In case any work done by a gas fitter discloses the need for repairs or alterations on any part of the supply system containing unmeasured gas, the gas department shall be notified promptly of this fact.

(5) Notification of gas department of any leaks. If gas is leaking from any part of the gas supply system containing unmeasured gas, a gas fitter or plumber not in the employ of the gas department may make necessary temporary repairs and shall promptly notify the gas department.
(Code 1973, 16-3; Ord. Nos. 1837, 2101, 4417-12/2014)

30-904. Qualified installing agency.

Installation and replacement of gas piping or gas appliances and repair of gas appliances shall be performed only by a qualified installing agency. By the term qualified installing agency is meant any individual, firm, corporation or company which, either in person or through a representative, is engaged in and is responsible for the installation or replacement of gas piping on the outlet side of the gas meter, or the connection, installation or repair of gas appliances within a building, and who is experienced in such work, familiar with all precautions required and who has complied with all the requirements as to qualification, registration, licensing, etc., of the city.
(Code 1973, 16-4; Ord. Nos. 1837, 2101, 4417-12/2014)

30-905. General rules governing installations.

(1) Turn gas off. All gas piping or gas appliance installation shall be performed with the gas turned off to eliminate hazards from leakage of gas.

(2) Notification of interrupted service. It shall be the duty of the installing agency when the gas supply is to be turned off to notify all affected consumers.

(3) Checking pilots, burners, etc. Before turning off the gas at the meter for the purpose of installation, repair, replacement, or maintenance of piping or appliances, all burner and pilot valves on the premises supplied with gas through the meter shall be turned off and the meter test hand observed for a sufficient length of time to ascertain that there is no gas passing through the meter. Where there is more than one meter on the premises, precautions shall be exercised to assure that the proper meter is turned off.

(4) Checking for gas leaks. No matches, candles, flame, or other sources of ignition shall be employed to check for gas leakage from meters, piping, or appliances. Checking for gas leakage with a soap and water solution by a contractor is recommended, but the City's MSA gas port gas tester or equivalent shall mandate the repair or replacement for all leaks found.

(5) Use of lights. Artificial illumination used in connection with a search for gas leakage shall be restricted to electric hand flashlights (preferably of the safety type) or approved safety lamps. In searching for leaks, electric switches should not be operated. If electric lights are already turned on, they should not be turned off.

(6) Working alone. An individual shall not work alone in any situation where accepted practice dictates that two or more men are necessary to perform the work safely.

(7) Handling of liquid from drips. Liquid which is removed from a drip in existing gas piping shall be handled with proper precautions and shall not be left on the consumer's premises.

(8) No smoking. When working on piping which contains or has contained gas, smoking shall not be permitted.

(9) Handling flammable liquids. Flammable liquids used by the installer shall be handled with proper precautions and shall not be left within the premises from the end of one working day to the beginning of the next.

(10) Work interruptions. When interruptions in work occur, the system shall be left in a safe and satisfactory condition.

(Code 1973, 16-5; Ord. Nos. 1837, 2101, 3691-7/99, 4417-12/2014)

30-906. Gas meter installation.

The following provisions covering the gas meter installation are included for the guidance of architects and building contractors when plans for the building piping are prepared. For further information, consult the gas department.

(1) Gas meters should be installed as near as practicable to the point where the service enters the building and should be so located as to be readily accessible for examination, reading and replacement.

(2) The gas meter should not be installed in a small, unventilated or confined space.

(3) A gas meter should not be placed where it will be subjected to damage, such as in driveways, public passages, halls, coal bins, etc., or where it will be subjected to excessive corrosion.

(4) Gas meters should be located at a safe distance from equipment where there is an unguarded flame or the possibility of electric sparks. It is desirable to avoid extreme temperatures and sudden extreme changes in temperature.

(5) All piping from the point where the service enters the building to the meter should be exposed and accessible.

(Code 1973, 16-6; Ord. No. 1837, 4417-12/2014)

30-907. Liquid petroleum gas.

Subject to the penalty prescribed by this Code, no installation for the handling and use of liquid petroleum gas will be permitted within the city unless (1) installed by a plumber or gas fitter duly registered under this chapter, and unless (2) such installation is found to conform in all respects to the standards of the National Fire Protection Association Pamphlet No. 54 adopted in section 902 of this code.

Liquid petroleum cylinders and tanks used in the City of Hastings shall comply with the following:

(1) No more than two cylinders not exceeding 20 pounds each shall be allowed per residence, except that campers, RV's or camper trailers that are permitted to be stored on the premise shall be permitted to have up to two 40 pound cylinders, provided they are mounted on and attached to the camper, RV, etc. by approved means.

(2) Cylinders and tanks shall be filled, handled and stored in accordance with NFPA 58 LP Gas Code, 2014 Edition.

(3) Campers, camper trailers and mobile homes located in RV parks and mobile home parks shall be permitted to have not more than two 40 pound cylinders, provided they are mounted on and attached to the camper, RV, etc. by approved means.

(Code 1973, 16-7; Ord. No. 1837, 4417-12/2014)

30-908. Reserved. (Ord. No. 4417-12/2014)

30-909. Interference with automatic safety equipment prohibited.

Any owner of a gas installation, who has an installation which has been provided with automatic safety equipment, or any employee or agent of such owner, or any other person, who shall block open by manual means or in any manner whatsoever interfere with, or defeat the purpose of, such devices to function automatically in the interest of safety, shall be guilty of a misdemeanor within the terms of this Code and subject to its penalties, as in the case of a violation of any other of its terms or provisions. (Code 1973, 16-9; Ord. No. 1837, 4417-12/2014)

30-910. Approved gas appliances required.

No person engaged in the business of handling gas appliances, nor the employees or representatives of such person may install or connect for use any gas designed furnace or boiler; any conversion burner, floor furnace, circulating forced air unit heater or any other space heater; any gas range; water heater; refrigerator; incinerator or any other gas consuming appliance which has not been approved by the laboratories of the American Gas Association or affiliated testing laboratories. (Code 1973, 16-10; Ord. No. 1837, 4417-12/2014)

30-911. Installation permit -- Required.

It shall be unlawful for any person to engage in the handling of any gas consuming appliance, either new or used, or in the installation of any gas piping connections, without first having applied at the office of the city gas inspector for a special permit. If the applicant is qualified under article 5 of this chapter, such permit will be issued upon payment of the appropriate fees. (Code 1973, 16-11; Ord. No. 1837 and 4417-12/2014)

30-912. Same -- Nonresident.

The gas inspector shall require from any nonresident person performing a contract or completing a job within the jurisdiction of the city (1) satisfactory evidence that the applicant is qualified, and (2) a set of plans and specifications for the work to be performed.

Any contractor whose business address is other than this city will be considered a nonresident applicant. (Code 1973, 16-12; Ord. Nos. 1837, 2272, 2369, 3644-5/98 and 4417-12/2014)

30-913. Liability for installations by uncertified fitters.

It shall be unlawful for any person to cause or permit any job of gas fitting or making any gas connection incident to any property owned, managed or controlled by such person, unless the fitter performing such work has been certified as required by this Code, has received a permit from the city gas inspector for the particular work, and paid all applicable fees and occupation taxes. Any such person causing or permitting any work to be done in violation of the provisions hereof shall be guilty of a violation of this Code and subject to the penalties provided for such violation. (Code 1973, 16-13; Ord. No. 1837, 3644-5/98, 4417-12/2014)

Article X. Gas Piping Installations.

30-1001. Procedure prior to installation.

It is recommended that before proceeding with the installation of a gas piping system, a sketch or plan be prepared showing the proposed location of the piping as well as the size of different branches. Adequate consideration should be given to future demands and provisions made for added gas service.

Before any final plans or specifications are completed the gas inspector should be consulted.

When an additional appliance is to be served through an extension of present piping, the capacity of the existing line shall be verified.

(Code 1973, 16-14; Ord. Nos. 1837, 2101, 4417-12/2014)

30-1002. Piping to provide for proper meter location.

A meter location shall be provided for the building or premises to be served and the location shall be such that the meter connections are easily accessible in order that the meter may be read or changed. Location, space requirements, dimensions and type of installation shall be acceptable to the gas department.

Piping at multiple meter installations shall be plainly marked by a metal tag or other permanent means installed by the gas fitter or plumber, designating the part of the building being supplied.

(Code 1973, 16-15; Ord. Nos. 1837, 2101, 4417-12/2014)

30-1003. Interconnections.

Where two or more meters are installed on the same premises but supply separate consumers, the piping systems shall not be interconnected on the outlet side of the meter.

(Code 1973, 16-16; Ord. Nos. 1837, 2101, 4417-12/2014)

30-1004. Size of piping to gas appliances.

(1) Generally. Piping shall be of such size and so installed as to provide a supply of gas sufficient to meet the maximum demand without undue loss of pressure between the meter and the appliance or appliances. The size of gas pipe depends upon the following factors:

(a) Allowable loss in pressure from meter to appliance.

(b) Maximum gas consumption to be provided for.

(c) Length of pipe and number of fittings.

(d) Specific gravity of the gas.

(e) Diversity factor.

(f) In all cases, the line from the meter to the first major appliance shall have an inside diameter of at least one inch.

(2) Pressure loss. It is recommended that the pressure loss in any piping system from the gas meter to any appliance at the maximum probable gas demand not exceed 0.3 inch water column.

(3) Gas consumption.

The volume of gas to be provided for, in cubic feet per hour, shall be determined, whenever possible, directly from the manufacturer's BTU ratings of the appliances which will be installed and the heating value of the gas to be used. In case the ratings of the appliances to be installed are not known, Table 1 is given to show the approximate consumption of average appliances of certain types in BTU per hour.

To obtain the cubic feet per hour of gas required, divide the total BTU input of all appliances by the

average BTU heating value per cubic foot of the gas. The average BTU per cubic foot of the gas in the area of the installation may be obtained from the local gas department.

TABLE 1

Approximate Maximum Gas Consumption for Some Common Appliances

Appliance	Input BTU per hr. (approx.)
Range, domestic, 4 top burners and 1 oven burner	62,500
Range, domestic, 4 top burners and 2 oven burners	82,500
Range, domestic, 6 top burners and 2 oven burners	107,500
Hot plate or laundry stove, domestic, per burner	9,000
Room heater, domestic, radiant type, per single radiant	2,000
Room heater, domestic, radiant type, per double radiant	4,000
Water heater, automatic instantaneous	
4 gal. per minute	150,000
Capacity 6 gal. per minute	225,000
8 gal. per minute	300,000
Water heater, domestic, circulating or side arm	25,000
Refrigerator	2,500

For automatic storage water heaters and other appliances, the input should be determined from the manufacturer's rating.

(4) Capacity of pipe. Capacities of different sizes and lengths of pipe in cubic feet per hour with a pressure drop of 0.3 inch of water column for gas of 0.60 sp. gr. are shown in Table 2. In using this table, no allowance for an ordinary number of fittings is necessary.

(5) Diversity factor. The diversity factor is the percentage of the total connected load in use at any one time and is an important factor in determining the correct pipe size to be used in multi-family dwellings. It is dependent upon the number and kinds of gas appliances being installed. Consult the local gas department or the gas inspector for the diversity factor to be used.

(6) Extensions. Extensions to existing piping shall conform to Table 2. Existing piping shall be converted to the proper size of pipe where necessary. On all new construction a minimum of one inch service pipe shall be run from the meter to the branch opening to the first major heating unit. Any replacement of a central heating plant will require an increase in the service line to a minimum of one inch.

TABLE 2

Capacity of Pipe of Different Diameters and Lengths
in Cu. Ft. Per Hr. with Pressure Drop of 0.3 in. and
Specific Gravity of 0.60

Lath. of Pipe (ft.)	Iron Pipe Size (IPS) Inches									
	1/2	3/4	1	1 1/4	1 1/2	2	3	4	6	8
15	76	172	345	750	1,220	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	19,300	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

To convert the figures in Table 2 to capacities of another gas of different specific gravity multiply the tabular values by the multipliers shown in Table 3 below.

TABLE 3

Multipliers to be Used with Table 2 When the Specific Gravity of the Gas is other than 0.60

Specific Gravity	Multiplier	Specific Gravity	Multiplier
.35	1.31	1.00	.775
.40	1.23	1.10	.740
.45	1.16	1.20	.707
.50	1.10	1.30	.680
.55	1.04	1.40	.655
.60	1.00	1.50	.633
.65	.962	1.60	.612
.70	.926	1.70	.594
.75	.895	1.80	.577
.80	.867	1.90	.565
.85	.841	2.00	.547

30-1005. Gas pipe and material.

(1) Above ground gas pipe and fittings shall meet all of the following specifications, unless otherwise approved by the Gas Inspector:

(a) Wrought iron or steel pipe and fittings shall comply with the American Standard for Wrought-Steel and Wrought-Iron Pipe, A.S.A. B36-10-1950. The connecting of pipe by welding is permissible. Cast iron and sweat fittings will not be permitted. Rubber hose connections or fittings arranged for rubber hose connections or flexible plastic connectors for gas heaters or similar appliances will not be allowed. Any variation from rule requires specific approval from the Gas Inspector.

(b) Gastite flexible gas piping and fitting or equivalent. Three-eighths (3/8) inch through two (2) inch may be used for interior use only if it meets ASTM standards A240 Type 304, 321 stainless steel (TMH 1042) Jacket: tenite polyethylene with flame retardant ASTM E84 index flame 25, smoke 20 fittings three-eighths (3/8) inch through two (2) inch shall be (3/8) XRFTG-6 (1/2) XRFTG-8 (3/4) XRFTG-11(1) XRFTG-16 (11/4) XRFTG-20 (11/2) XRFTG-24 (2) XRFTG-32. Material specifications: CA360 Brass: protection devices striker plates 16 gauge AISI 1050 carbon steel hardened to Rc 45. Steel conduit 12" lengths floppy conduit: steel strip wound UL listed. Termination bracket 3/8" through 2" L Brace-1 16 gauge galvanized steel. "T" and step-down "T" fittings size 3/8" through 2" CA360 brass manifold bracket Mbrace-1 16 gauge galvanized steel. Multi-port manifolds coated steel 4 port: welded IPS schedule 40 cast 4 port; ASTM A47 32510 malleable iron. Gastite flexible gas piping, or equivalent, shall be permitted for use with elevated pressure systems (1/2 PSI to 5 PSI), except in single family dwellings, two family dwellings and townhouses. This tubing may be installed and repaired only by installers who can demonstrate to the Gas Inspector that they have been trained and certified by the manufacturer of the tubing.

(c) Heat fusion. Plastic pipe specifications are CTS high density, SDR7, PE3408 Polyethylene (PE) pipe per ASTM D2513. See installation requirements, attached to City Gas Code 30-1005. Chapter XVI - Plastic pipe Hastings Utilities Code.

(d) Corrosion protection tapes.

(i) 3M Scotchrap 50 and 51 meet requirements of L-T-1512A.

(ii) Tapecoat heat tape, tapecoat 20 meets ASTM-E-28, ASTM-0-5, ASTM-G-8.

(e) Viega MegaPressG Natural Fuel Gas Systems shall be approved for above ground use only, in accordance with the following:

Fittings: Cold Press Mechanical Joint Fitting shall conform to material requirements of ASTM A420 or ASME B16.3 and performance criteria ANSI/CSA LC4. Sealing elements for press fittings shall be HNBR. Sealing elements shall be factory installed or an alternative supplied by fitting manufacturer. Press ends shall have SC (Smart Connect™) feature design (leakage path). MegaPress fittings with the Smart Connect Feature assure leakage of liquids and/or gases from inside the system past the sealing element of an un-pressed connection. The function of this feature is to provide the installer quick and easy identification of connections which have not been pressed prior to putting the system into operation. Piping and fittings shall comply with CSA LC-4 and the latest edition of NFPA-54.

(2) 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.

(3) Defects in pipe or fittings shall not be repaired. When defective pipe or fittings are located in a system, the defective pipe or fittings shall be replaced.

(4) When using piping materials and attaching any new pipe to any existing pipe, the Utilities guidelines should be followed at all times. The Utilities guidelines are attached to the end of this Chapter as Appendix A.

(Code 1973, 16-18; Ord. Nos. 1837, 2101, 2230, 3691-7/99, 3952-6/2004, 4019-4/2005, 4417-12/2014)

30-1006. Pipe coating.

When in contact with material exerting a corrosive action, piping and fittings coated with a corrosion resisting material shall be used.

(Code 1973, 16-19; Ord. Nos. 1837, 2101, 4417-12/2014)

30-1007. Use of old pipe.

Pipe, fittings, valves, etc., removed from any existing installation shall not be again used until they have been thoroughly cleaned, inspected and ascertained to be equivalent to new material.

(Code 1973, 16-20; Ord. Nos. 1837, 2101, 4417-12/2014)

30-1008. Joint compounds.

Joint compounds (pipe dope) shall be applied sparingly and only to the male threads of the joints. Such compounds shall be resistant to the action of LP gas-air mixtures.

(Code 1973, 16-21; Ord. Nos. 1837, 2101, 4417-12/2014)

30-1009. Turning on gas.

(1) Close all gas outlets. Before turning gas under pressure into any piping, all openings from which gas can escape shall be closed.

(2) Checking for leakage with meter. Immediately after turning gas into the piping, the system shall be checked to ascertain that no gas is escaping. This can be done by carefully watching the test dial of the meter to determine whether gas is passing through the meter. To assist in observing any improvement of the test hand, wet a small piece of paper and paste its edge directly over the centerline of the hand as soon as the gas is turned on. Allow five minutes for a one-half foot dial and proportionately longer for a larger dial in checking for gas flow. This observation should be made with the test hand on the upstroke. In no case should a leakage test be made using a gas meter unless immediately prior to the test it has been determined that the meter is in operating condition.

(3) Procedure in case test hand does not move. In case careful observation of the test hand for a sufficient length of time reveals no movement, the pipe shall be purged and a small gas burner turned on and lighted and the hand of the test dial again observed. If this dial hand now moves (as it should) it will show that the meter is operating properly. If the test hand does not move or register the flow of gas through the meter to the small burner, it is certain that the meter is defective and the gas should be turned off and the gas department notified.

(4) Procedure in case meter test hand moves. In case the test hand shows movement, all appliances or outlets supplied through the meter shall be examined to see if they are turned off and do not leak. If they are found tight, movement of the test hand will indicate that there is a leak in the piping system. The meter valve shall be turned off until the necessary repairs have been made, after which the test specified in subsection (2) of this section shall be repeated.

(Code 1973, 16-22; Ord. Nos. 1837, 2101, 4417-12/2014)

30-1010. Purging.

(1) Purge all gas lines. After the piping has been checked, all piping receiving gas through the meter shall be fully purged. A suggested method for purging the gas line to an appliance is to disconnect the pilot line at the outlet of the pilot valve. Under no circumstances shall a line be purged into the combustion chamber of an appliance.

(2) Light pilots. After the piping has been sufficiently purged, all appliances shall be purged and the pilots lighted. The installer shall assure himself that all piping and appliances are fully purged before leaving the premises.

(3) Purging large lines with inert gas. Lines of four-inch iron pipe or larger should be purged with carbon dioxide, nitrogen or a mixture of the two.
(Code 1973, 16-23; Ord. Nos. 1837, 2101, 4417-12/2014)

30-1011. Hydronic piping systems.

(1) Scope. The provisions of this division shall govern the construction, installation, alteration and repair of hydronic piping systems. This division shall apply to hydronic piping systems that are part of heating, ventilation, and air-conditioning systems. Such systems shall include hot water and ground source heat pump loop systems. Potable cold and hot water distributions systems shall be installed in accordance with the City Plumbing Code.

(2) Certified installer. All hydronic systems shall be installed by a certified installer, or a plumber or heating contractor.

(3) Installation permit - required. It shall be unlawful for any person to install a hydronic system without having first received a permit from the City gas inspector.

(4) Pipe sizing. Piping for hydronic systems shall be sized for the demand of the system.
(Ord. No. 3877-10/2002, 4417-12/2014)

30-1012. Material.

(1) Piping. Piping material shall conform to the standards cited in this section.

(2) Used materials. Reused pipe, fitting, valves or other materials shall be clean and free of foreign materials and shall be approved by the code official for use.

(3) Material rating. Materials shall be rated for the operating temperature and pressure of the hydronic system. Materials shall be suitable for the type of fluid in the hydronic system.

(4) Piping materials standards. Hydronic pipe shall conform to the standards listed in Table 30-1012 A. The exterior of the pipe shall be protected from corrosion and degradation.

(5) Pipe fittings. Hydronic pipe fittings shall be approved for installation with the piping materials to be installed, and conform to the respective pipe standards or to the standards listed in Table 30-1012 B.

(6) Valves. Valves shall be constructed of materials that are compatible with the type of piping material and fluids in the system. Valves shall be rated for the temperatures and pressures of the systems in which the valves are installed.

(7) Flexible connectors, expansion and vibration compensators. Flexible connectors, expansion and vibration control devices and fittings shall be of an approved type.

(8) Backflow device. A Reduced Pressure Principle Type backflow device shall be installed by a certified backflow installer.

TABLE 30-1012 A
HYDRONIC PIPE

MATERIAL	STANDARD
Brass pipe	ASTM B 43
Brass tubing	ASTM B 135
Copper or copper-alloy pipe (Type K)	ASTM B 42; ASTM B 302
Cooper or copper-alloy tube (Type K)	ASTM B 75
Cross-linked polyethylene/aluminum/cross-linked polyethylene' (PEX-AL-PEX) pressure pipe	ASTM F 128 CSA CAN/CSA-B-137.10
Cross-linked polyethylene (PEX) tubing	ASTM F 876; ASTM F 877
Steel pipe	ASTM A 53; ASTM A 106
Steel tubing	ASTM A 254

TABLE 32-212 B
HYDRONIC PIPE FITTINGS

MATERIAL	STANDARD
Bronze	ASME B 16.24
Gray iron	ASTM A 126
Malleable iron	ASME B 16.3
Steel	ASME B 16.5; ASME B 16.9; ASME B 16.11; ASME B 16.28; ASTM A 420

(Ord. No. 3877-10/2002, 4417-12/2014, 4417-12/2014)

30-1013. Valves.

(1) Heat exchangers. Shutoff valves shall be installed on the supply and return side of a heat exchanger.

Exception. Shutoff valves shall not be required when heat exchangers are integral with a boiler; or are a component of a manufacturer's boiler and heat exchanger packaged unit and are capable of being isolated from the hydronic system by the supply and return valves required.

(2) Central systems. Shutoff valves shall be installed on the building supply and return of a central utility system.

(3) Pressure vessels. Shutoff valves shall be installed on the connection to any pressure vessel.

(4) Equipment and appliances. Shutoff valves shall be installed on connections to mechanical equipment and appliances. This requirement does not apply to components of a hydronic system such as pumps, air separators, metering devices and similar equipment.

(5) Relief valves. Safety or relief valves shall be installed on the connection to any pressure vessel.

(a) Pressure relief valves shall meet the ANSI standards and the ASME standards when required by the National Plumbing Code. The valves shall have a relief rating adequate to meet the pressure conditions in the equipment served, and shall be installed in tank tapping. There shall be no shutoff valve between the pressure relief valve and the tank. The pressure relief valve shall be set to open at not less than 25 p.s.i. above the setting of any house water pressure regulating valve. The setting shall not exceed the tank rated working pressure.

(b) Temperature relief valves shall be of adequate relief rating, expressed in BTU/HR, for the equipment served, and shall be installed so that the temperature sensing element is immersed in the hottest water within the top 6 inches of the tank. The valve shall be set to open when the stored water temperature reaches a maximum of 210 degree Fahrenheit.

These valves shall conform to an approved standard and shall be sized so that when the valve opens, the water temperature cannot exceed 210 degree Fahrenheit with the water heating equipment operating at maximum input.

(c) Installation of relief valves.

(i) No check valve or shutoff valve shall be installed between any safety device and the hot water equipment protected, nor shall there be any shutoff valve, traps or dips in the discharge from a relief valve.

(ii) Relief valves shall be provided with copper or galvanized discharge pipe no smaller than the relief valve outlet tapping.

(iii) The outlet pipe shall discharge indirectly into a plumbing fixture approved for this purpose, floor drain approved for this purpose, sump pit, standpipe receptor or other approved point of discharge.

(iv) The discharge end of a discharge pipe shall not be threaded.

(v) The discharge pipe shall terminate within 6 inches above and turn down into the approved point of discharge.

(vi) In addition to all other requirements, if the relief outlet discharge piping is installed so that it leaves the room or enclosure in which the water heater and relief valve are located, there shall be an air

gap installed before or at this point of leaving the room or enclosure.

(d) Relief valve replacement.

(i) When water heaters are replaced, the temperature relief valve and the pressure relief valve or the combination temperature and pressure relief valve shall also be replaced. The safety device(s) shall not be reused.

(Ord. No. 3877-10/2002, 3902-6/2003, 4417-12/2014)

30-1014. Pipe installation.

(1) General. Piping, valves, fittings and connections shall be installed in accordance with the conditions of approval.

(a) Prohibited tee applications. Fluid in the supply side of a hydronic system shall not enter a tee fitting through the branch opening.

(2) System drain down. Hydronic piping systems shall be designed and installed to permit the system to be drained. When the system drains to the plumbing drainage the installation shall conform to the requirements of the City Plumbing Code.

(3) Protection of potable water. The potable water system shall be protected from backflow.

(4) Pipe penetrations. Openings for pipe penetrations in walls, floors or ceilings shall be larger than the penetrating pipe. Openings through concrete or masonry building elements shall be sleeved. The annular space surrounding pipe penetration shall be protected.

(5) Contact with building material. A hydronic piping system shall not be in direct contact with building materials that cause the piping material to degrade or corrode, or that interfere with the operation of the system.

(6) Strains and stresses. Piping shall be installed so as to prevent detrimental strains and stresses in the pipe. Provisions shall be made to protect piping from damage resulting from expansion, contraction, and structural settlement. Piping shall be installed so as to avoid structural stresses or strains within building components.

(a) Flood hazard. Piping located in a flood-hazard zone or high-hazard zone shall be capable of resisting hydrostatic and hydrodynamic loads and stresses, including the effects of buoyancy during the occurrence of flooding to the base flood elevation.

(7) Condensation. Provisions shall be made to prevent the formation of condensation on the exterior of piping.

(Ord. No. 3877-10/2002, 4417-12/2014)

30-1015. Transfer fluid.

Flash point. The flash point of transfer fluid in a hydronic piping system shall be a minimum of 50 degrees F (28 degrees C) above the maximum system operating temperature.

(Ord. No. 3877-10/2002, 4417-12/2014)

30-1016. Tests.

(1) General. Hydronic piping systems, other than ground source heat pump loop systems, shall be

tested hydrostatically at one and one-half times the maximum system design pressure, but not less than 100 pounds per square inch (psi)(689 kPa).

(a) Ground source heat pump loop systems. Before connection (header) trenches are backfilled, the assembled loop system shall be pressure tested with water at 100 psi (689 kPa) for 30 minutes with no observed leaks. Flow and pressure loss testing shall be performed and the actual flow rates and pressure drops shall be compared to the calculated design values. If actual flow rate or pressure drop differ from calculated design values by more than 10 percent, the problem shall be identified and corrected.

(Ord. No. 3877-10/2002, 4417-12/2014)

30-1017. Embedded piping.

(1) Materials. Piping for heating panels shall be standard-weight steel pipe, Type K copper tubing, polybutylene or other approved plastic pipe or tubing rated at 100 psi (689 kPa) at 180 degrees F (82 degrees C). See Tables 32-212 A and B.

(2) Pressurizing during installation. Piping to be embedded in concrete shall be pressure tested prior to pouring concrete. During pouring, the pipe shall be maintained at the proposed operating pressure.

(Ord. No. 3877-10/2002, 4417-12/2014)

30-1018. Electrical bonding and grounding.

All natural gas piping systems shall be bonded and grounded in accordance with figures 30-1018(1), 30-1018(2), 30-1018(3) and the following:

(1) In compliance with the National Electrical Code (NEC) provisions for bonding and grounding systems.

(2) Gas piping on the customer side of the meter shall be permanently and directly connected to a ground rod, footing ground or foundation ground.

(3) A footing or foundation ground shall be provided on new construction.

(4) Up to five services may be hooked to one ground rod, footing ground or foundation ground.

(5) No electrical service equipment may be connected to the gas piping grounding system.

(6) All components of a bonding system shall be UL listed.

(7) Ground rods shall be eight foot long by half-inch diameter.

(8) The bonding conductor shall be:

(a) #6 AWG copper wire, for pipe up to and including two inch diameter

(b) #4 AWG copper wire, for pipe larger than two inch diameter

(c) #6 AWG copper wire, for ground rods

(d) #4 AWG copper wire, for footing or foundation grounds

(9) No bonding system shall directly connect to any CSST tubing. For attachment to the CSST gas

piping system a single bonding clamp shall be attached to any one of the following:

- (a) The brass fitting
 - (b) A steel manifold
 - (c) Any rigid pipe component
- (Ord. No. 4147-10/2007, 4417-12/2014)

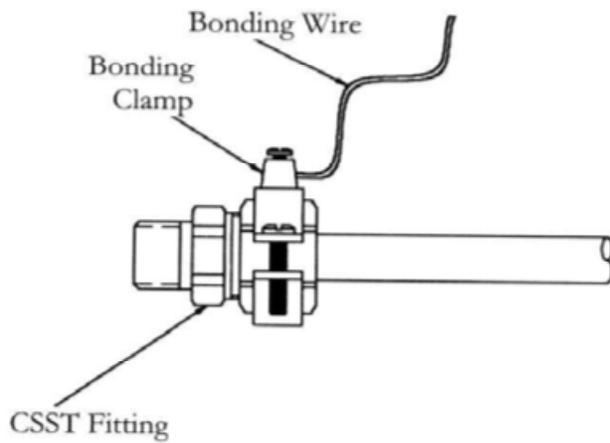


Figure 30-1018(1)

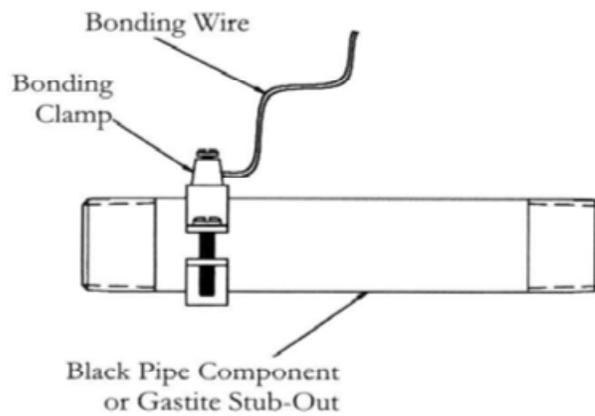


Figure 30-1018(2)

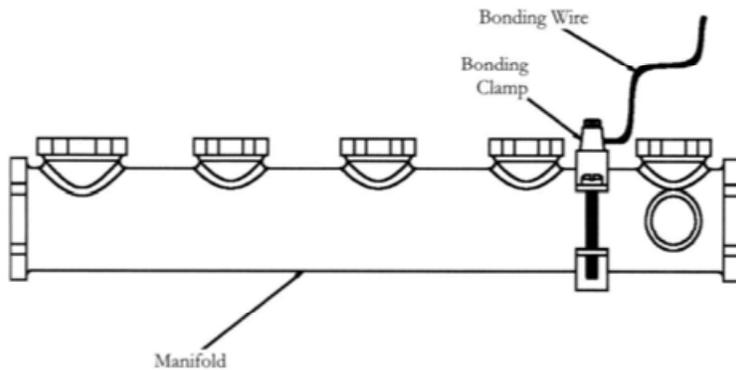


Figure 30-1018(3)

Article XI. Appliance Installation.

Division 1. Generally.

30-1101. Appliances and accessories to comply with standard requirements.

(1) All gas appliances and accessories installed for domestic or commercial use shall:

(a) Be listed by a nationally recognized testing agency.

(b) Comply with applicable American Standard Approval or Listing Requirements covering safe operation, substantial and durable construction and acceptable performance.

(c) Be acceptable to the gas inspector.

(2) The American Gas Association, Inc., Laboratories and Underwriters' Laboratories, Inc. are nationally recognized testing agencies.

(3) Compliance may be determined by the presence on the appliance or accessory of a label of a nationally recognized testing agency qualified and equipped to perform the tests necessary to determine such compliance and maintaining an adequate periodic inspection of current production models, and whose label on the appliance or accessory states that it complies with national safety requirements. In cases where no applicable standard has been developed for a given class of appliance or accessory, approval of the gas inspector should be obtained before the appliance or accessory is installed.

(Code 1973, 16-24; Ord. Nos. 1837, 2101, 4417-12/2014)

30-1102. Listed appliances and accessories.

The word "listed" used in connection with appliances and accessories throughout this chapter refers to appliances and accessories which are shown in a list published by an approved nationally recognized testing agency, qualified and equipped for experimental testing, and maintaining an adequate periodic inspection of current production of listed models and whose listing states either that the appliance or accessory complies with nationally recognized safety requirements or has been tested and found safe for

use in a specified manner.
(Code 1973, 16-25; Ord. Nos. 1837, 2101, 4417-12/2014)

30-1103. Type of gas.

It shall be determined that the appliance has been designed for use with the gas to which it will be connected. No attempt shall be made to convert the appliance from the gas specified on the rating plate for use with a different gas without consulting the gas department or the manufacturer for complete instructions.
(Code 1973, 16-26; Ord. Nos. 1837, 2101, 4417-12/2014)

30-1104. Verification of pipe size.

When connecting additional appliances to a piping system, the existing piping shall be checked to determine if it has adequate capacity. If inadequate, the existing system shall be enlarged as required or a separate line of adequate capacity shall be run from the meter to the appliance.
(Code 1973, 16-27; Ord. Nos. 1837, 2101, 4417-12/2014)

30-1105. Permissible temperatures on combustible materials.

All gas appliances and their flue or vent connectors shall be installed so that continued or intermittent operation will not create a hazard to persons or property. They shall not, during operation, raise the temperature of unprotected combustible walls, partitions, floors, or ceilings more than 90 degrees F. above normal room temperature when measured with mercury thermometers or conventional bead type thermocouples. When wall and partition temperatures are measured with disc type thermocouples as specified in American Standard Approval Requirements for the types of appliances involved, an indicated temperature rise of 120 degrees F. will correspond to the 90 degrees F. rise measured with thermometers or conventional bead type thermocouples.

Minimum clearance between combustible walls and the back and sides of various conventional types of appliances and their flue or vent connectors are specified in this chapter.
(Code 1973, 16-28; Ord. Nos. 1837, 2101, 4417-12/2014)

30-1106. Air for combustion.

(1) Appliances shall be installed in a location in which the facilities for ventilation permit satisfactory combustion of gas and proper venting, under normal conditions of use. While all forms of building construction cannot be covered in detail, this requirement may usually be met by application of one of the following methods in ordinary building construction:

In buildings of conventional frame, brick, or stone construction without enclosed appliance rooms, basement storm windows, or tight stair doors, infiltration is normally adequate to provide air for combustion and draft hood dilution.

(2) Where appliances are installed in a confined space within a building having adequate air infiltration, provisions shall be made for supplying this space with air for combustion and ventilation. This may be accomplished through use of two permanent openings freely communicating with interior areas of adequate infiltration in accordance with Figure 2, or by compliance with the provisions of subsection (3) of this section. If necessary, continuous ducts having cross-sectional areas equal to the opening shall be utilized to communicate with the source of air supply. The minimum dimension of rectangular air ducts shall be not less than three inches.

(3) Where appliances are installed in a confined space within a building, the building being of unusually

tight construction, air for combustion and ventilation must be obtained directly from outdoors or from such spaces (crawl or attic) as freely communicate with the outdoors. Under these conditions, the openings called for in Figure 2 shall be replaced by two openings having a combined area of not less than one square inch per 1,000 BTU per hour of input rating. One opening shall be near the top of the enclosure and one near the bottom. These openings shall be of approximately equal area and shall communicate with the selected source or sources of adequate air supply by continuous ducts of the same cross-sectional area as the openings to which they connect. The minimum dimension of rectangular air ducts shall be not less than three inches. Any duct from the top opening shall be horizontal or pitched upward.

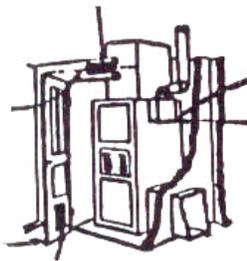
The size of combustion air openings specified in subsections (3) and (4) of this section shall not necessarily govern where special engineering assures an adequate supply of air for combustion, draft and hood dilution and ventilation.

Fig 1. Illustration showing air openings necessary to supply air for combustion when appliance is installed in confined space.

Ventilating air outlet register for furnace room 1 sq. in. free area for each 1000 Btu per hour furnace input, located above relief opening of draft hood. Register must not be blocked by drapes or other furnishings.

Flue should terminate above peak of roof and above nearby walls to assure satisfactory flue performance. In installations where the flue terminal is below nearby walls or roof peaks, an effective vent cool should be used.

Both registers must either face some large well ventilated interior space or extend to such space by means of ducts. Vertical distance to of registers should be not less than 3 1/2 feet.



No part of furnace casing closer than 6 inches to wall.

Spacing between draft hood and wall at least 6 inches. If flue products may be directed toward wall, 12 inches spacing recommended.

Suggest room access door be not less than 6 feet high by a width sufficient to provide for installation or removal of furnace. At least 2 feet horizontal clearance should be provided in front of furnace when closet door is open or 18 inches when door is closed. Combustion and ventilation air inlet register for furnace room 1 sq. in. free area for each 1000 Btu per hour furnace input, located at or below combustion air inlet to furnace. Register must not be blocked by drapes or other furnishings.

Air circulated by furnace must be handled by ducts which are sealed to furnace casing and are entirely separate from means provided for supplying combustion and ventilating air.

(4) Where appliances are installed in unconfined spaces, such as a full basement, within a building of unusually tight construction, air for combustion and ventilation must be obtained from outdoors or from spaces freely communicating with the outdoors. Under these conditions a permanent opening or

openings having a total free area of not less than one square inch per 1,000 BTU per hour of input rating shall be provided. Where ducts are required, they shall be of the same cross-sectional area as the openings to which they connect. The minimum dimension of rectangular air ducts shall be not less than three inches.

For the installation of commercial and industrial equipment, permanent facilities for supplying an ample amount of outside air shall be provided in accordance with the burner manufacturer's instructions. Where no manufacturer's instructions are available, an opening to outside air shall be provided having an area of at least ten square inches for each gallon fuel burner per hour.

The size of combustion air openings specified in subsection (3) and (4) of this section shall not necessarily govern where special engineering assures an adequate supply of air for combustion, draft hood dilution and ventilation.

(5) Operation of exhaust fans, kitchen ventilation systems or fireplaces may create conditions requiring special attention to avoid unsatisfactory appliance operation.
(Code 1973, 16-29; Ord. Nos. 1837, 2101, 4417-12/2014)

30-1107. Venting.

Appliances shall be vented in accordance with the provisions of this article.
(Code 1973, 16-30; Ord. Nos. 1837, 2101, 4417-12/2014)

30-1108. Flammable vapors.

Gas appliances shall not be installed in any location where flammable vapors are likely to be present, unless the design, operation and installation are such as to eliminate the possible ignition of the flammable vapors.
(Code 1973, 16-31; Ord. Nos. 1837, 2101, 4417-12/2014)

30-1109. Accessibility.

Every appliance shall be located so that it will be readily accessible for operation and servicing.
(Code 1973, 16-32; Ord. Nos. 1837, 2101, 4417-12/2014)

30-1110. Strain on piping to be avoided.

Gas appliances shall be adequately supported and so connected to the piping as not to exert undue strain on the connections.
(Code 1973, 16-33; Ord. Nos. 1837, 2101, 4417-12/2014)

30-1111. Extra device or attachment.

No device or attachment shall be installed on any appliance which may in any way impair the combustion of gas.
(Code 1973, 16-34; Ord. Nos. 1837, 2101, 4417-12/2014)

30-1112. Combination of appliances.

Any combination of appliances, attachments or devices used together in any manner shall comply with the standards which apply to the individual appliances.
(Code 1973, 16-35; Ord. Nos. 1837, 2101, 4417-12/2014)

30-1113. Use of air or oxygen under pressure.

Where air or oxygen under pressure is used in connection with the gas supply, effective means shall be provided to prevent air or oxygen from passing back into the gas piping. The gas inspector shall be consulted for details.

(Code 1973, 16-36; Ord. Nos. 1837, 2101, 4417-12/2014)

30-1114. Venting of pressure regulators.

Gas appliance pressure regulators requiring access to the atmosphere for successful operation shall be equipped with a vent pipe leading to the outer air or into the combustion chamber adjacent to a constantly burning pilot. In case of vents leading to the outer air, means shall be employed to prevent water from entering this pipe and also to prevent stoppage of it by insects and foreign matter. In case of vents entering the combustion chamber, the vent shall be located so that the escaping gas will be readily ignited from the pilot flame and the heat liberated will not adversely affect the operation of the thermal element. The terminus of the vent shall be securely held in a fixed position relative to the pilot flame. For manufactured gas a flame arrester in the vent line may also be necessary. Pressure regulator vent limiters are prohibited.

(Code 1973, 16-37; Ord. Nos. 1837, 2101, 4417-12/2014)

30-1115. Installation instructions.

The installer shall leave the manufacturer's instructions for installation in a location on the premises where they are readily available for reference by the gas inspector.

(Code 1973, 16-38; Ord. Nos. 1837, 2101, 4417-12/2014)

30-1116. Gas appliance pressure regulators.

(1) A gas pressure regulator shall be installed on all conversion burner heating installations, on all central heating designed furnaces and on automatic water heaters with a rating of 40,000 BTU or over.

(2) On both domestic and commercial installations where gas is served to the burner at low pressure (ounces or inches water column) this regulator must comply with the American Standard Listings for Domestic Gas Appliance Regulators. A "pound to inches" regulator is not considered satisfactory.

(3) A gas pressure regulator, requiring access to atmosphere for successful operation, shall be vented to the outer air. Means shall be employed to prevent water from entering this pipe, and also to prevent stoppage of it by insects or foreign matter.

(4) If more practicable it may be vented into the firing chamber with the point of emission at a position to be readily ignited from the burning pilot.

(Code 1973, 16-39; Ord. Nos. 1837, 2101, 4417-12/2014)

30-1117. Appliance connections to building piping.

(1) All flexible copper appliance connectors shall be aluminum lined and AGA approved. No aluminum tubing shall be used to connect an appliance through a masonry wall.

(2) Hot plates, clothes dryers, room heaters, 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 tubing and fittings. When a semi-rigid tubing connector of flexible metal tubing and fittings is used, connect to an outlet in the same room as the appliance. The length of the connector shall not exceed six feet. The connector shall be installed so as to be protected against physical damage.

(3) The connection of an appliance with any type of gas hose is prohibited, except when used with laboratory, shop or ironing equipment that requires mobility during operation. Such connections 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 six feet and shall not extend from one room to another nor pass through any walls, partitions, ceilings, or floors. Under no circumstances shall gas hose be concealed from view or used in a concealed location. Only listed gas hose shall be used. Listed gas hose 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.).
(Code 1973, 16-40; Ord. Nos. 1837, 2101, 2230, 4417-12/2014)

30-1118. Electrical connections.

(1) Compliance with National Electrical Code. All electrical connections between gas appliances and the building wiring shall conform to the National Electrical Code.

(2) Electric ignition and control devices. No devices employing or depending upon an electrical current shall be used to control or ignite a gas supply if of such a character that failure of the electrical current could result in the escape of unburned gas or in failure to reduce the supply of gas under conditions which would normally result in its reduction unless other means are provided to prevent the development of dangerous temperatures, pressures or the escape of gas.

(3) Electrical ground. The gas piping shall not be used for an electrical ground nor shall electric circuits utilize gas 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.

(4) Electrical circuit. The electrical circuit employed for operating the automatic main gas-control valve, automatic pilot, room temperature thermostat, limit control or other electrical devices used with gas appliance shall be in accordance with the wiring diagrams supplied with the appliance.

(5) Continuous power. All gas appliances using electrical controls shall have the controls connected into a permanently live electric circuit, i.e., one that is not controlled by a light switch. It is recommended that central heating gas appliances for domestic use be provided with a separate electrical circuit.

(6) Transformer. It is recommended that any separately mounted transformer necessary for the operation of the gas appliance be mounted on a junction box, and a switch with "On" and "Off" markings installed in the hot wire side of the transformer primary.

(7) Wire size. It is recommended that multiple conductor cable, not lighter than No. 18 American Wire Gauge, having type "T" (formerly type SN) insulation or equivalent be used on control circuits. Multiple conductor cables should be color coded to assist in correct wiring and to aid in tracing low voltage circuits.

(Code 1973, 16-41; Ord. Nos. 1837, 2101, 4417-12/2014)

30-1119. Room temperature thermostats.

(1) Locations. To assure good response by the room temperature thermostat, it should be located where it will be in the natural circulating path of room air. Avoid locations which would expose the device to cold air infiltration, or drafts from windows, doors or other openings leading to the outside, or to air currents from warm or cold air registers, or where the natural circulation of the air is cut off such as behind doors, above or below mantles, shelves or in corners. Placing a thermostat which controls a central heating appliance in a bedroom, bathroom or kitchen is not recommended.

(2) Exposure. A room temperature thermostat should not be exposed to heat from nearby radiators, fireplaces, radios, lamps, rays of the sun or mounted on a wall containing pipes or warm air ducts, or a flue or vent, which would affect its operation and prevent it from properly controlling the room temperature.

(3) Drafts. Any hole in the plaster or panel through which the wires pass from the thermostat to the appliance being controlled shall be adequately sealed with suitable material to prevent drafts from affecting the thermostat.
(Code 1973, 16-42; Ord. Nos. 1837, 2101, 4417-12/2014)

Division 2. Specific Installations.

30-1120. Generally.

Under this division appear the fundamental standards covering installation practices for specific type of appliances which must be observed to assure safety and satisfactory performance as well as consumer satisfaction. All provisions outlined in this article shall be fully observed. Responsibility for the proper installation of gas appliances shall rest with the installing agency.
(Code 1973, 16-43; Ord. Nos. 1837, 2101, 4417-12/2014)

30-1121. Domestic ranges.

(1) Clearance from combustible construction. Listed domestic gas ranges, except bungalow and dual oven type combination gas ranges, when installed on combustible floors shall be set on their own bases or legs and shall be installed with clearances not less than shown in Table 4. In no case shall the clearances be such as to interfere with the requirements for combustion air and accessibility.

Listed domestic gas ranges with listed gas room heater sections shall be installed so that the warm air discharge side shall have a minimum clearance of eighteen inches between it and adjacent combustible construction. A minimum clearance of thirty-six inches shall be provided between the top of the heater section and the bottoms of cabinets. The minimum clearance between the back of the heater section and combustible construction shall be in accordance with Table 6, Minimum Clearances for Listed Gas-Fired Room Heaters.

(2) Vertical clearance above cooking top. Domestic gas ranges shall have a vertical clearance above the cooking top of not less than thirty-six inches to a combustible construction. When the underside of such combustible construction is protected with asbestos mill board at least one-fourth inch thick covered with sheet metal of not less than No. 28 U.S. gauge the distance shall be not less than twenty-four inches. The protection shall extend nine inches beyond the sides of the range.

(3) Install level. All gas ranges shall be installed so that the cooking top and oven racks are level.

TABLE 4 Minimum Clearances For Listed Domestic Gas Ranges					
		Distance from Combustible Construction - inches			
		Sides		Rear	
Type of range	Spacing of Top Burner Opening From Side of Range	Wall Not Extending Above Cooking Top	Wall Extending Above Cooking Top	Body Side of Range	Projecting Flue Box
Uninsulated	----	6	6	6	1
Insulated*	Less than 5 in.	1/2	3	1	1
Insulated	5 in. or more	1/2	1/2	1	1
Flush to Wall	Less than 5 in.	Flush	3	Flush	----
Flush to Wall	5 in. or more	Flush	Flush	Flush	----

*Approved as insulated models in accordance with American Standard Approval Requirements for Domestic Gas Ranges.
(Ord. No. 1837 and Ord. No. 2101, 4417-12/2014)

30-1122. Bungalow (utility) type domestic and dual oven type combination gas ranges.

Bungalow (utility) type domestic gas ranges or dual oven type combination gas ranges shall be spaced from combustible construction and otherwise installed in accordance with the standards applying to the supplementary fuel section of the range.
(Code 1973, 16-45; Ord. Nos. 1837, 2101, 4417-12/2014)

30-1123. Water heaters.

(1) Prohibited installations. Water heaters shall not be installed in bathrooms, bedrooms or any occupied rooms normally kept closed. Water heaters, gas or electric, shall not be installed as boilers for hydronic heating systems.

(2) Location. Water heaters shall be located as close as practicable to the flue or vent. They should be so located as to provide short runs of piping to fixtures.

(3) Clearance. Listed gas-fired water heaters shall be positioned in relation to combustible construction with a minimum clearance in accordance with Table 5. In no case shall the clearances be such as to interfere with the requirements for combustion air, draft hood clearance and relief, and accessibility for servicing.

TABLE 5 Minimum Clearances for Listed Gas-Fired Water Heaters		
Type of Heater**	Distance From Combustible Construction--inches	
	Nearest Part of Jacket	Flat Side
Type A	6	----
Type B	2	----
Type C	----	Flush

** Type A--Miscellaneous (Including circulating tank, instantaneous, uninsulated underfired).
Type B--Underfired, insulated automatic storage heaters.
Type C--Type B units with one or more flat sides and tested for installation flush to wall.

(4) Connections. Water heaters shall be connected in a manner to permit observation, maintenance and servicing.

(5) Closed systems. No water heater shall be installed in a closed system of water piping unless an approved water pressure relief valve is provided.

(6) Temperature, pressure and vacuum relief valves. The installation and adjustment of temperature, pressure and vacuum relief valves or combinations thereof, and automatic gas shut-off valves shall be in accordance with the requirements of the gas inspector, or, with the manufacturer's instructions accompanying such devices.

Automatic (Instantaneous or Storage) Types.

(7) Independent gas piping. The gas line shall be a separate line direct from the meter to the appliances, unless the existing gas line is of ample capacity. Any contemplated use of existing gas piping shall be verified.

Automatic Instantaneous Type.

(8) Cold water supply. The water supply to any automatic instantaneous water heater shall be such as to provide sufficient pressure to properly operate the water valve, when drawing hot water from a faucet on the top floor.

Circulating or Tank Types.

(9) Connection to boiler or tank. The method of connecting the circulating water heater to the tank shall assure proper circulation of water through the heater, and permit a safe and useful temperature of water to be drawn from the tank. See Figure 2.

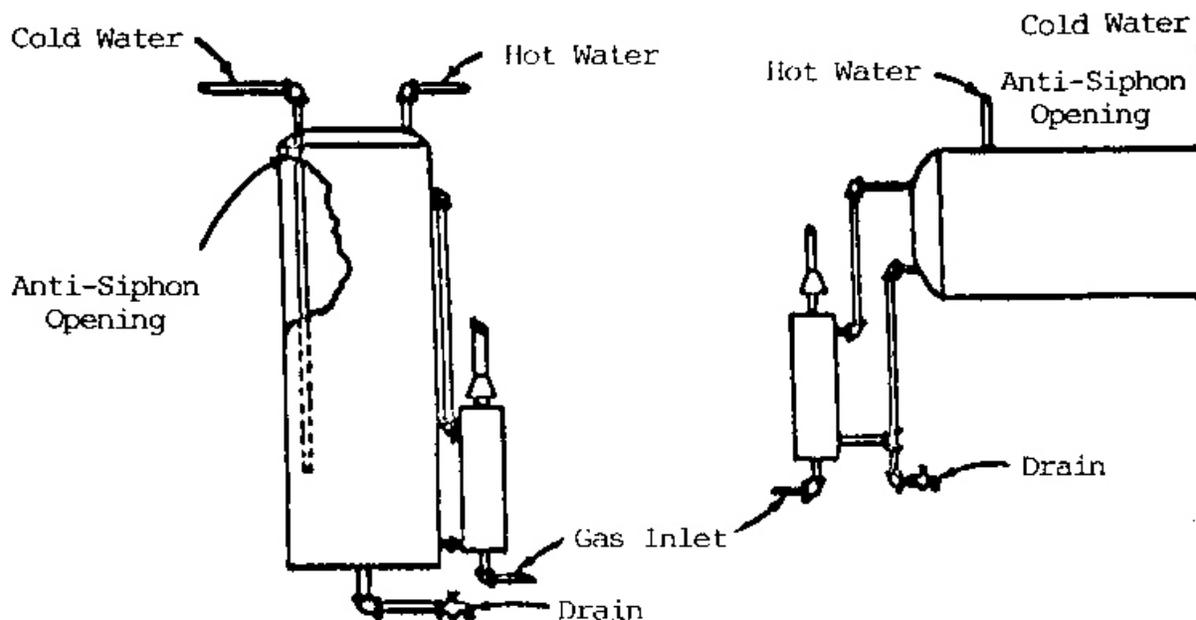


Fig 2. Suggested location for anti-siphon opening in cold water inlet.

(10) Size of water circulating pipe. The size of the water circulating piping, in general, shall conform with the size of the water connections of the heater.

(11) Sediment drain. A suitable water valve or cock, through which sediment may be drawn off or the tank emptied, shall be installed at the bottom of the tank.

(12) Anti-syphoning devices. Means acceptable to the gas inspector shall be provided to prevent syphoning in any boiler or tank to which any circulating water heater is attached. A cold water tube with a hole near the top is commonly accepted for this purpose. See Figure 3.
(Code 1973, 16-46; Ord. Nos. 1837, 2101, 3877-10/2002, 4417-12/2014, 4417-12/2014)

30-1124. Room or space heaters.

(1) Installations in sleeping quarters. Room heaters, installed in sleeping quarters for use of transients, as in hotels, motels and auto courts, shall be of the vented type and shall be connected to an effective flue or vent and equipped with an automatic pilot. Open flame heaters of any type are not acceptable vented heaters.

(2) Installations in institutions. Room heaters installed at any location in institutions such as homes for aged, sanitariums, convalescent homes, orphanages, etc., shall be of the vented type and shall be connected to an effective flue or vent and equipped with an automatic pilot.

(3) Clearances. A room or space heater shall be placed so as not to cause a hazard to walls, floors, curtains, furniture, doors when open, etc., and to the free movements of persons within the room. Appliances designed and marked "For use in incombustible fire-resistive fireplace only," shall not be installed elsewhere. Listed room or space heaters shall be installed with clearances not less than specified in Table 6; except, that appliances listed for installation at less clearances may be installed in accordance with their listings. In no case shall the clearances be such as to interfere with the requirements of combustion air and accessibility.

TABLE 6 Minimum Clearances for Listed Gas-Fired Room Heaters		
Type	Distance from Combustible Construction--inches	
	Jacket, Sides and Rear	Projecting Flue Box or Draft Hood
Warm Air Circulators	6	2
Radiant Heaters	6	2
Wall Heaters	Flush	---
Gas Steam and Hot Water Radiators	6	2

(4) Wall type room heaters. Wall type room or space heaters shall not be installed in walls of combustible construction unless approved for such installation.

(5) Connection. The provisions of Section 30-1117 shall be observed.
(Code 1973, 16-47; Ord. Nos. 1837, 2101, 4417-12/2014)

30-1125. Central heating boilers and furnaces.

(1) Independent gas piping. The gas line shall be a separate line direct from the meter to the boiler or furnace, unless the existing gas line is of ample capacity. Any contemplated use of existing gas piping shall be verified.

(2) Manual main shut-off valves. Where a complete shut-off type automatic pilot system is not utilized, a manual main shut-off valve shall be provided ahead of all controls except the manual pilot gas valve.

Where a complete shut-off type automatic pilot system is utilized, a manual main shut-off valve shall be provided ahead of all controls. A suitable manual valve shall be provided for shutting off the main burner gas independently of the pilot gas.

A union connection shall be provided downstream from the manual main shut-off valve to permit removal of the controls.

(3) Clearances. Listed central heating boilers and furnaces shall be installed with clearances not less than specified in Table 7; except, that appliances listed for installation at lesser clearances may be installed in accordance with their listing. In no case shall the clearance be such as to interfere with the requirements for combustion air, draft hood clearance and relief, and accessibility for servicing.

TABLE 7 Minimum Clearances for Listed Central Heating Boilers and Furnaces				
Type of Appliance	Distance from Combustible Construction -- Inches			
	Above	Jacket Sides & Rear	Front	Projecting Flue Box or Draft Hood
Boilers	6	6	18	6
	18*	6	18	6

*A. APPLIANCES CLASSED AS LOW HEAT APPLIANCES: Low heat appliances shall include ranges, heating stoves, warm air heating furnaces, water heaters and hot water heating boilers, steam boilers operating at not over fifty pounds per square inch gauge pressure, steam boilers of not over ten boiler horsepower regardless of operating pressure, domestic type incinerators, bakery ovens, candy furnaces, coffee roasting ovens, core ovens, lead melting furnaces, rendering furnaces, stereotype furnaces, wood drying furnaces and other furnaces classified as low heat appliances in accordance with nationally recognized good practice. Appliances otherwise classed as medium heat appliances may be considered as low heat appliances if not larger than one hundred cubic feet in size.

*B. APPLIANCES CLASSED AS MEDIUM HEAT APPLIANCES: Medium heat appliances shall include annealing furnaces (glass or metal), charcoal furnaces, galvanizing furnaces, gas producers and steam boilers of over ten boiler horsepower operating at over fifty pounds per square inch gauge pressure when such appliances are larger than one hundred cubic feet in size, and other furnaces classified as medium heat appliances in accordance with nationally recognized good practice. Appliances otherwise classed as high heat appliances if not larger than one hundred cubic feet in size. The stack must be located eighteen inches from all combustible material, unless otherwise specified by the gas inspector.

(4) Erection and mounting. A central heating boiler or furnace shall be erected in accordance with the manufacturer's instructions and shall be installed on a firm, level, fire-resistive foundation unless listed for installation on a combustible floor, or the floor is protected in an approved manner.

(5) Accessibility. The installation of central heating boilers and furnaces shall be such as to make them accessible for cleaning of heating surfaces, removal of burners, replacement of sections, motors, controls, filters, draft hoods and other working parts, and for adjustment and lubrication of parts requiring such attention.

(6) Connection of flow and return pipes. The method of connecting the flow and return pipes on steam and hot water boilers shall facilitate a rapid circulation of steam or water. For common piping systems reference may be made to the American Society of Heating and Ventilating Engineer's--Heating, Ventilating Air Conditioning Guide and to the Institute of Boiler and Radiator Manufacturers' (IBR) Guides.

(7) Feed water and drain connections. A steam or hot water boiler shall be provided with a direct connection to a water supply through an individual control valve. A drain valve, by means of which the boiler may be flushed or drained, also shall be provided.

(8) Temperature of pressure relief devices. Steam and hot water boilers, shall be provided with approved automatic devices to shut down the burners in the event of undue pressure or low water in a steam boiler or overheating in a hot water boiler.

(9) Plenum chambers and air ducts. A plenum chamber when not a part of a furnace shall be constructed in accordance with the manufacturer's instructions. The method of connecting supply and return ducts shall facilitate proper circulation of air. Reference may be made to the NBFU Standards for the Installation of Air Conditioning, Warm Air Heating, Air Cooling and Ventilating Systems, No. 90, and to the Design and Installation Manuals of the National Warm Air Heating and Air Conditioning Association.

Where the furnace is installed within a confined space, the air circulated by the furnace shall be handled by ducts which are sealed to the furnace casing and are entirely separate from the means provided for supplying combustion and ventilating air.
(Code 1973, 16-48; Ord. Nos. 1837, 2101, 4417-12/2014)

30-1126. Recessed heaters.

(1) Installation. Listed recessed heaters may be installed in combustible construction. Because of the necessity for closely correlating the installation of recessed heaters with the building construction, the gas inspector shall be consulted for the proper installation methods to be followed. Recessed heaters should be installed in accordance with the manufacturer's instructions.

(2) Location. Recessed heaters shall be located so as not to cause a hazard to walls, floors, curtains, furniture, doors, etc. Recessed heaters installed between bathrooms and adjoining rooms shall not circulate air from bathrooms to other parts of the building.

(3) Manual main shut-off valve. A manual main shut-off valve shall be installed ahead of all controls including the pilot gas valve.

(4) Accessibility. The installation of recessed heaters shall be such as to make them accessible for cleaning of heating surfaces, removal of burners, replacement of sections, motors, controls, filters and other working parts, and for adjustment and lubrication of parts requiring such attention. Panels, grilles and access doors which must be removed for normal servicing operations shall not be attached to the building construction.

(5) Combustion and circulating air. Adequate combustion and circulating air shall be provided.
(Code 1973, 16-49; Ord. Nos. 1837, 2101, 4417-12/2014)

30-1127. Floor furnaces.

(1) Installation. Listed floor furnaces may be installed in combustible floors.

(2) Manual main shut-off valve. A separate manual main shut-off valve shall be provided ahead of all controls and a union connection shall be provided downstream from this valve to permit removal of the controls or the floor furnace.

(3) Combustion air. Fixed ventilation by means of a duct or grille arranged to supply air from a permanently ventilated attic or underfloor space, shall be provided to any confined space which encloses the floor furnace. The duct or grille shall be screened and have a free area of at least twice the free area of the vent collar of the floor furnace or one square inch per 1,000 BTU per hour of gas input, whichever is the greater, and shall be installed in such a manner as to insure proper combustion.

(4) Placement. The following are requirements that will serve in properly placing the furnace or furnaces to serve one story:

(a) No floor furnace shall be installed in the floor of any aisle or passageway of any auditorium, public hall, or place of assembly, or in an exit-way from any such room or space.

(b) With the exception of wall-register models, a floor furnace shall not be placed closer than six inches to the nearest wall, and wall-register models shall not be placed closer than six inches to a corner.

(c) The furnace shall be so placed that a door, drapery or similar object cannot be nearer than twelve inches to any portion of the register of the furnace.

(d) Generally speaking, the more central the location, the better, favoring slightly the sides exposed to the prevailing winter winds.

(5) Bracing. The floor around the furnace shall be braced and headed with a framework of material not lighter than the joists.

(6) Support. Means shall be provided to support the furnace when the floor grille is removed.

(7) Clearance. The lowest portion of the floor furnace shall have at least a twelve inch clearance from the general ground level. When these clearances are not present, the ground below and to the sides shall be excavated to form a "basin-like" pit under the furnace so that the required clearance is provided beneath the lowest portion of the furnace. A twenty-four inch clearance shall be provided on all sides.

(8) Wind protection. Floor furnaces shall be protected, where necessary, against severe wind conditions.

(9) Upper floor installations. Listed gas floor furnaces may be installed in an upper floor; provided, that the furnace assembly projects below into a utility room, closet, garage or similar noninhabitable space. In such installations, the floor furnace shall be enclosed completely, entirely separated from the noninhabitable space, with means for air intake to meet the provisions of subsection (3) of this section, with access facilities for servicing on the control side, with minimum furnace clearances of six inches to all sides and bottom, and with the enclosure constructed of portland cement plaster on metal lath or material of equal fire resistance.

(Code 1973, 16-50; Ord. Nos. 1837, 2101, 4417-12/2014)

30-1128. Duct furnaces.

(1) Clearance. Listed gas-fired duct furnaces shall be installed with clearances of at least six inches between adjacent walls, ceilings and floors of combustible construction and the appliance projecting flue box or draft hood, except that duct furnaces listed for installation at lesser clearance may be installed in accordance with their listings. In no case shall the clearance be such as to interfere with the requirements for combustion air and accessibility.

(2) Erection of appliance. A duct furnace shall be erected and firmly supported in accordance with the manufacturer's instructions.

(3) Accessibility. The installation of duct furnaces shall be such as to make them accessible for cleaning the heating surfaces, removal of burners, replacement of sections, controls, draft hoods and other working parts, and for adjustment of parts requiring such attention.

(4) Access panels. The ducts connected to or enclosing duct furnaces shall have removable access

panels on both upstream and downstream sides of the furnace.

(5) Location of draft hood and controls. The controls and draft hoods for duct furnaces shall be located outside the ducts. The draft hood shall be located in the same enclosure from which combustion air is taken.

(6) Circulating air. Circulating air shall not be taken from the same enclosure in which the furnace is located.

(7) Duct furnaces used with refrigeration systems. Duct furnaces when used in conjunction with a refrigeration system shall not be located downstream from the evaporator coil.
(Code 1973, 16-51; Ord. Nos. 1837, 2101, 4417-12/2014)

30-1129. Conversion burners generally.

Installation of conversion burners shall conform to the American Standard Requirements for Installation of Domestic Gas Conversion Burners, Z21.9-1948.
(Code 1973, 16-52; Ord. Nos. 1837, 2101, 4417-12/2014)

30-1130. Conversion burners for domestic ranges.

Installation of conversion burners in ranges originally designed to utilize solid or liquid fuels shall conform to American Standard Requirements for Installation of Gas Conversion Burners in Domestic Ranges, Z21.38-1953.
(Code 1973, 16-53; Ord. Nos. 1837, 2101, 4417-12/2014)

30-1131. Gas fired unit heaters.

(1) Support. Suspended type gas-fired unit heaters shall be safely and adequately supported with due consideration given to their weight and vibration characteristics.

(2) Clearances. Listed gas-fired unit heaters shall be installed with clearances from combustible construction of not less than six inches above the appliance and from projecting flue box or draft hood and not less than eighteen inches at the sides and bottoms, except that heaters listed for installation with lesser clearances may be installed in accordance with their listings. Additional clearances required for servicing shall be in accordance with the manufacturer's recommendations contained in the installation instructions.

(3) Negative pressure. The location of any unit heater or the duct work attached thereto shall be such that a negative pressure will not be created in the room in which the unit heater is located.

(4) Ductwork. A unit heater shall not be attached to a warm air duct system unless listed and marked for such installation.

(5) Garage installation. Unit heaters installed in garages for more than three motor vehicles or in airplane hangars shall be of a type listed for such use and be installed at least eight feet above the floor.
(Code 1973, 16-54; Ord. Nos. 1837, 2101, 4417-12/2014)

30-1132. Clothes dryers.

(1) Clearance. Listed clothes dryers shall be installed with minimum clearance of six inches from adjacent combustible construction; except, that clothes dryers listed for installation at lesser clearances may be installed in accordance with their listings. Moisture exhaust ducts shall be installed with

clearances for high temperature duct systems in accordance with the National Fire Protection Association Standards for the Installation of Air Conditioning, Warm Air Heating, Air Cooling and Ventilating Systems, No. 90. A minimum clearance of eighteen inches shall be provided between the lower surface of any combustible material located above the dryer and the top of any other vent outlet not protected by a 250 degree F. or lower limit control.

(2) Public use. Gas fired clothes dryers installed for multiple family use shall be equipped with approved automatic pilots.

(Code 1973, 16-55; Ord. Nos. 1837, 2094, 2101, 4417-12/2014)

30-1133. Gas-fired incinerators.

(1) Clearances. Listed gas fired incinerators shall be installed as close as practicable to a chimney and with at least twelve inches clearance between sides and combustible construction; except, that incinerators listed at lesser clearances may be installed in accordance with their listing except that the clearance to combustible construction shall not be less than three inches. The clearance above a charging door shall be not less than forty-eight inches. The clearance shall be such as not to interfere with the requirements for combustion air and accessibility. Listed incinerators of the wall type shall be installed on a noncombustible wall communicating directly with a chimney flue.

(2) Smoke pipe connection. No draft hood shall be connected into the smoke pipe of an incinerator. Where conditions permit, it is preferable to have the smoke pipe connected to a separate chimney flue.

(3) Smoke pipe clearance. Smoke pipes shall have at least eighteen inches clearance from combustible construction and shall not pass through combustible construction unless guarded at the point of passage as specified in subsection (8) of Section 16-343.

(4) Smoke pipe material. The smoke pipe from an incinerator to a Type A flue or vent shall be galvanized steel of a thickness at least No. 24 U.S. Standard gauge or of material having equivalent or superior heat and corrosion resistant properties, and the joints shall be secured by sheet metal screws. (Code 1973, 16-56; Ord. Nos. 1837, 2101, 4417-12/2014)

30-1134. Gas refrigerators.

Gas refrigerators shall be provided with adequate clearances for ventilation at the top and back. They shall be installed in accordance with the manufacturer's instructions. If such instructions are not available, at least two inches shall be provided between the back of the refrigerators and the wall and at least a twelve inch clearance above the top.

(Code 1973, 16-57; Ord. Nos. 1837, 2101, 4417-12/2014)

30-1135. Hotel and restaurant ranges, deep fat fryers and unit broilers.

(1) Mounting on combustible floors. Listed hotel and restaurant ranges, deep fat fryers and unit broilers, where set on their own bases or legs, may be installed on unprotected combustible floors unless marked "For use only in fireproof locations."

Hotel and restaurant ranges, deep fat fryers and unit broilers, which are not listed for mounting on a combustible floor shall be mounted on fire-resistant floors or be mounted in accordance with one of the following paragraphs, or in some manner substantially equivalent thereto that is acceptable to the gas inspector.

(a) Where the appliances are set on legs which provide not less than eighteen inches open space under the base of the appliance, or where it has no burners and no portion of any oven or broiler within

eighteen inches of the floor, it may be mounted on a combustible floor without special floor protection; provided, that there is at least one sheet metal baffle between the burner and the floor.

(b) Where the appliance is set on legs which provide not less than eight inches open space under the base of the appliance, it may be mounted on combustible floors; provided, that the floor under the appliance is protected with not less than three-eighths inch asbestos mill board covered with sheet metal of not less than 24 U.S. Standard gauge. The above specified floor protection shall extend not less than six inches beyond the appliance on all sides.

(c) Where the appliance is set on legs which provide not less than four inches under the base of the appliance, it may be mounted on combustible floors; provided, that the floor under the appliance is protected with hollow masonry not less than four inches in thickness covered with sheet metal of not less than 24 U.S. Standard gauge. Such masonry courses shall be laid with ends unsealed and joints matched in such a way as to provide for free circulation of air through the masonry. The hollow masonry shall be kept in place by a holding strip fastened to the floor on all four sides. The ends of hollow masonry shall be not less than three inches from any wall or obstruction.

(d) Where the appliance does not have legs at least four inches high, it may be mounted on combustible floors; provided, that the floor under the appliance is protected by two courses of four inch hollow clay tile or equivalent with courses laid at right angles and with ends unsealed and joints matched in such a way as to provide for free circulation of air through such masonry courses and covered with steel plate not less than three- sixteenths inch in thickness. The tile shall be kept in place by a holding strip fastened to the floor on all sides. The ends of the tile shall be not less than three inches from any wall or obstruction.

(2) Clearance for listed appliances. Listed hotel and restaurant ranges, deep fat fryers and unit broilers shall be installed at least six inches from combustible construction except that at least a two inch clearance shall be maintained between the flue box or draft hood and combustible construction. Appliances designed and marked "For use only in fire-proof locations" shall not be installed elsewhere.

(3) Combustible construction adjacent to cooking top. Any portion of combustible construction adjacent to a cooking top section of a hotel or restaurant range, even though certified for close-to-wall installation, which is not shielded from the wall by a high shelf, warming closet, etc., shall be protected as specified in above paragraphs for a distance of at least two feet above the surface of the cooking top.

(4) Install level. All hotel and restaurant ranges, deep fat fryers and unit broilers shall be installed level on a firm foundation.

(5) Ventilation. Adequate means shall be provided to properly ventilate the space in which hotel and restaurant equipment is installed to permit proper combustion of the gas. When exhaust fans are used for ventilation, special precautions may be required to avoid interference with the operation of the equipment.

(Code 1973, 16-58; Ord. Nos. 1837, 2101, 4417-12/2014)

30-1136. Gas counter appliances.

(1) Vertical clearance. A vertical distance of not less than forty-eight inches shall be provided between the top of all commercial hot plates and griddles and combustible construction.

(2) Listed appliances. Listed gas counter appliances such as commercial hot plates and griddles, food and dish warmers, coffee brewers and urns, waffle bakers and hot water immersion sterilizers, when installed on combustible surfaces shall be set on their own bases or legs, and shall be installed with a minimum horizontal clearance of six inches from combustible construction.

(Code 1973, 16-59; Ord. Nos. 1837, 2101, 4417-12/2014)

30-1137. Portable gas baking and roasting ovens.

Listed portable gas baking and roasting ovens shall be installed at least six inches from combustible construction, except that at least a two inch clearance shall be maintained between the flue box or draft hood and combustible construction. Appliances designed and marked "For use in fireproof locations only" shall not be installed elsewhere.

(Code 1973, 16-60; Ord. Nos. 1837, 2101, 4417-12/2014)

Division 3. Venting of Appliances.

30-1138. Generally.

Under this division appear the fundamental standards for venting gas appliances which must be observed to assure safety to persons or property under ordinary circumstances. Responsibility for the proper venting of appliances shall rest with the installing agency.

(Code 1973, 16-61; Ord. Nos. 1837, 2101, 4417-12/2014)

30-1139. Appliances requiring venting.

(1) Classification of appliances. Gas appliances are hereby divided into two classifications:

(a) Appliances required to be vented.

(b) Appliances not required to be vented.

(2) Appliances required to be vented. Appliances of the following types shall be flue or vent connected or provided with other approved means for exhausting the flue gasses to the outside atmosphere:

(a) Central heating appliances including steam and hot water boilers, warm air furnaces, floor furnaces and vented recessed heaters.

(b) Unit heaters and duct furnaces.

(c) Gas-fired incinerators.

(d) Water heaters with inputs over 5,000 BTU per hour.

(e) Room heaters listed for vented use only. This includes the space heating sections of bungalow gas ranges.

(f) Appliances which have draft hoods supplied by the appliance manufacturer, except room heaters for either vented or unvented use.

(g) Appliances equipped with gas conversion burners.

(Code 1973, 16-62; Ord. Nos. 1837, 2101, 4417-12/2014)

30-1140. Draft hoods.

(1) Required. Every vented appliance, except incinerators, dual oven type combination ranges, and unit designed for power burners or for forced venting, shall have a draft hood. If the draft hood is not a part of the appliance or supplied by the appliance manufacturer, it shall be supplied by the installer and in

the absence of other instructions shall be the same size as the appliance flue collar.

(2) Installation. 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. In the absence of 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 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.

(3) Position. A draft hood shall be installed in the position for which it was designed with reference to the horizontal and vertical planes and shall be so located that the relief opening is not obstructed by any part of the appliance or adjacent construction.

(4) Special draft hoods. Where the installer must supply a draft hood of special design, advice of the gas inspector as to its use should be secured.

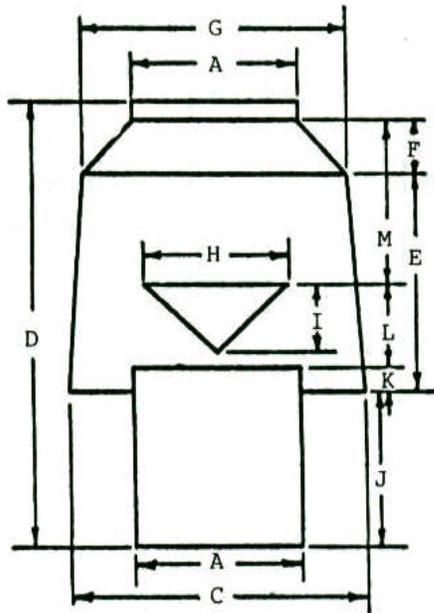


Fig 3. Suggested general dimensions for a vertical draft hood.

TABLE OF DIMENSIONS

(Inches)

A	C	D	E	F	G	H	I	J	K	L	M
3	5.5	7.0	3.8	0.7	4.4	3.0	1.5	2.5	0.7	1.5	2.3
4	7.2	9.5	5.0	1.0	6.0	4.0	2.0	3.5	1.0	2.0	3.0
5	9.4	10.8	5.3	1.5	8.0	5.0	2.3	4.0	0.9	2.4	3.5
6	11.5	12.0	5.6	1.9	9.8	6.0	2.5	4.5	0.8	2.7	4.0
7	13.5	13.9	6.4	2.3	11.6	7.0	2.9	5.3	0.9	3.1	4.6
8	15.5	15.8	7.1	2.7	13.4	8.0	3.2	6.0	1.0	3.5	5.3
9	17.5	17.5	7.7	3.1	15.2	9.0	3.5	6.7	1.0	4.0	5.8
10	19.7	18.8	7.9	3.6	17.2	10.0	3.8	7.3	1.0	4.3	6.2
11	22.2	20.7	8.4	4.3	19.6	11.0	4.1	8.0	1.5	4.6	6.6
12	24.7	22.2	8.7	5.0	22.0	12.0	4.4	8.5	1.7	5.0	7.0

Note: This is only one design of a vertical hood and should not be construed as the only design that may be used. A hood of any other design which will meet the American Standard Listing Requirements for Draft Hoods, Z21.12-1937, should be satisfactory within the limits of performance specified.

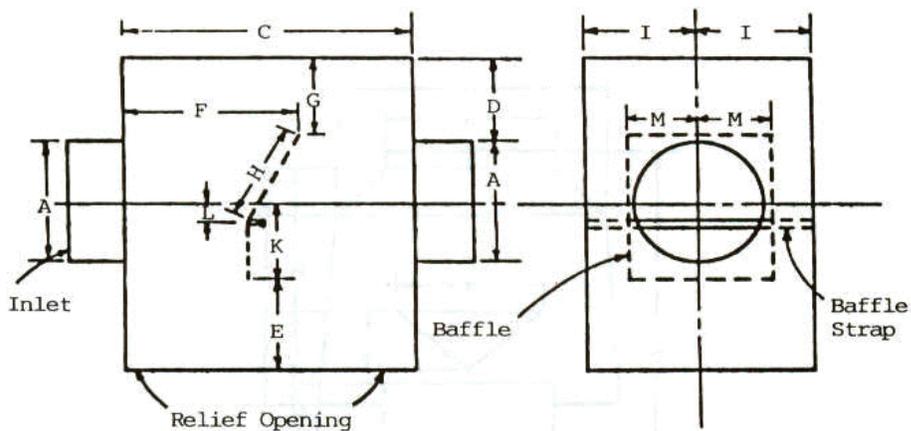


Fig 4. Suggested general dimensions for a horizontal draft hood.

TABLE OF DIMENSIONS

(Inches)

A	C	D	E	F	G	H	I	J	K	L	M
3	6	1 1/2	4 3/4	3 3/4	1 3/8	2 1/2	2 1/2	2 1/2	2 1/8	9/16	1 3/4
4	8	2	4 3/4	5	1 7/8	3 3/8	3 3/8	3 3/8	2 7/8	5/4	2 5/16
5	10	2 1/2	4 3/4	6 1/4	2 3/8	4 3/16	4 3/16	4 3/16	3 1/2	15/16	2 15/16
6	12	3	4 3/4	7 1/2	2 7/8	5	5	5	4 1/4	1 1/8	3 1/2
7	14	3 1/2	4 3/4	8 3/4	3 3/8	5 7/8	5 7/8	5 7/8	5	1 5/16	4 11/16
8	16	4	4 3/4	10	3 7/8	6	6 11/16	6 11/16	5 5/8	1 1/2	4 11/16
9	18	4 1/2	4 3/4	11 1/4	4 3/8	7 1/2	7 1/2	7 1/2	6 3/8	1 11/16	5 1/4
10	20	5	4 3/4	12 1/2	4 7/8	8 3/8	8 3/8	8 3/8	7	1 7/8	5 13/16
11	22	5 1/2	4 3/4	13 3/4	5 3/8	9 3/16	9 3/16	9 3/16	7 3/4	2 1/16	6 3/8
12	24	6	4 3/4	15	5 7/8	10	10	10	8 1/2	2 1/4	7

Note: This is only one design for a horizontal hood and should not be construed as the only design that may be used. A hood of any other design which will meet the American Standard Listing Requirements for Draft Hoods, Z21.12-1937, should be satisfactory within the limits of performance specified.

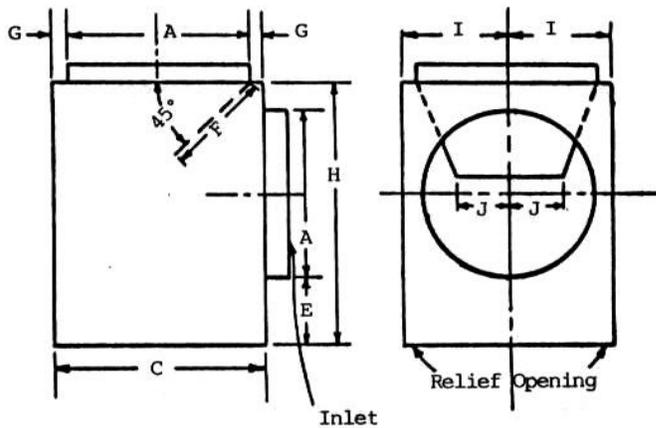


Fig 5. Suggested general dimensions for a horizontal to vertical draft hood.

TABLE OF DIMENSIONS

(Inches)

A	C	D	E	F	G	H	I	J
3	4	1/2	3/4	2	1/2	4 1/4	2	5/8
4	5	1/2	1	2 11/16	1/2	5 1/2	2 1/2	13/16
5	6	1/2	1 1/4	3 5/16	1/2	6 3/4	3	1
6	7	1/2	1 1/2	4	1/2	8	3 1/2	1 3/16
7	8	1/2	1 3/4	4 11/16	1/2	9 1/4	4	1 3/8
8	9	1/2	2	5 5/16	1/2	10 1/2	4 1/2	1 9/16
9	10	1/2	2 1/4	6	1/2	11 3/4	5	1 3/4
10	11	1/2	2 1/2	6 11/16	1/2	13	5 1/2	1 15/16
11	12	1/2	2 3/4	7 5/16	1/2	14 1/4	6	2 1/8
12	13	1/2	3	8	1/2	15 1/2	6 1/2	2 5/16

Note: This is only one design of a horizontal to vertical hood and should not be construed as the only design that may be used. A hood of any other design which will meet the American Standard Listing Requirements for Draft Hood, Z21.12-1937, should be satisfactory within the limits of performance specified.

(Code 1973, 16-63; Ord. Nos. 1837, 2101, 4417-12/2014)

30-1141. Types of flues or vents.

(1) Type A. Type A flues or vents shall be employed for venting the following types of appliances, except as otherwise permitted by subsection (2) of this section:

(a) All incinerators.

(b) All appliances which may be converted readily to the use of solid or liquid fuels.

(c) All boilers and warm-air furnaces except where the gas inspector approves the use of Type B gas flues or vents.

(2) Special flues for 1000 degree F. flue gas (flues for low heat appliances). Listed prefabricated flues for low heat appliances may be employed in accordance with their listing for venting the following types of appliances:

(a) Domestic incinerators.

(b) Gas appliances.

(3) Type B and Type BW. Type B and Type BW gas flues or vents shall be used only with approved gas appliances which produce the flue gas temperatures not in excess of 550 degrees F. at the outlet of

the draft hood when burning gas at the manufacturer's normal input rating and not specified by subsection (1) of this section to be vented to Type A flues or vents. Type B gas flues or vents shall be installed with clearances to combustible construction in accordance with their listing.

Type BW gas vents may be used for venting only approved vented recessed heaters. Such vents shall be installed in accordance with their listing.

For the purpose of this provision listed appliances with the exception of incinerators and conversion burners may be accepted as producing flue gas temperatures not in excess of 550 degrees F. at the outlet of the draft hood.

(4) Type C. Type C gas flues or vents shall be used only for runs directly from the space in which the appliance is located through the roof or exterior wall to the outer air. Such flues or vents shall not pass through any attic or concealed space nor through any floor. Installation with reference to clearance to combustible construction and passages through wall or roof shall comply with provisions of subsections (7) and (8) of Section 16-342.

(5) Marking of gas flues or vents not suitable for other fuels. In those sections of the country where solid and liquid fuels are used extensively chimneys, flues or vents installed for use with gas appliances but which are not suitable for solid or liquid fuels, shall be plainly and permanently labeled: "This flue is for use of gas burning appliances only."

The gas inspector shall determine whether the locality constitutes such an area. The label shall be attached to the wall or ceiling at a point near where the flue or vent connector enters the chimney, or, where a Type B gas flue or vent is used in place of a chimney, at a point near where the Type B gas flue or vent or the flue or vent connector enters the wall or ceiling.
(Code 1973, 16-64; Ord. Nos. 1837, 2101, 4417-12/2014)

30-1142. Flue or vent connectors.

(1) Materials. The material used for the flue or vent connector shall be resistant to corrosion and be of sufficient thickness to withstand damage. Where a question arises as to the suitability of a particular material, the gas inspector should be consulted.

(2) Avoid bends. The flue or vent connector shall be installed so as to avoid short turns or other constructional features which would create excessive resistance to the flow of flue gases.

(3) Pitch. The flue or vent connector shall maintain a pitch or rise from the appliance to the flue or vent. A rise as great as possible, at least one-fourth inch to the foot (horizontal length) shall be maintained. The horizontal run shall be free from any dips or sags.

(4) Vertical run. Wherever sufficient headroom is available, appliances having a horizontal flue outlet shall be provided with a vertical run of flue or vent connector before the horizontal run. To minimize frictional resistance to the connector, it is recommended that forty- five degree elbows be used.

(5) Length. The horizontal run of the connector shall be as short as possible and the appliance shall be located as near the flue or vent as practicable. The maximum length of horizontal run shall not exceed seventy- five percent of the height of the flue or vent.

(6) Support. Flue or vent connectors shall be securely supported.

(7) Clearance. Flue or vent connectors shall be located in such a manner that continued operation of the appliance will not raise the temperature surrounding combustible construction more than 90 degrees

F. above normal room temperature when measured with mercury thermometers or conventional bead type thermocouples. Where flue or vent connectors pass through partitions of combustible construction, ventilated thimbles shall be used. Minimum clearances from combustible construction to flue or vent connectors for listed appliances are shown in Table 8.

Appliance	Minimum Distance from Combustible Construction	
	Metal Flue or Vent Connectors	Type B Flue or Vent connectors
Boiler	6 inches	1 inch*
Warm Air Furnace	6 inches	1 inch*
Water Heater	6 inches	1 inch*
Room Heater	6 inches	1 inch*
Floor Furnace	9 inches	3 inches**
Incinerator	18 inches	Not permitted

*Except as otherwise specified in the listing by a nationally recognized testing agency.

**3 inches for a distance of not less than three feet from outlet of the draft hood. Beyond three feet the minimum clearance is one inch.

The clearance from metal flue or vent connectors to combustible construction may be reduced as specified in Table 9 where the combustible construction is protected in accordance with this Table.

(8) Use of thimbles. Flue or vent connectors other than Type B shall not pass through any combustible walls or partitions unless they are guarded at the point of passage by ventilated metal thimbles not smaller than the following:

For listed appliances except floor furnaces and incinerators, four inches larger in diameter than the flue or vent connector, unless there is a run of not less than six feet of flue or vent connector in the open, between the draft hood outlet and the thimble, in which case the thimble may be two inches larger in diameter than the flue or vent connector.

For listed floor furnaces, six inches larger in diameter than the flue or vent connector.

For incinerators, twelve inches larger in diameter than the flue or vent connector.

(9) Size. The flue or vent connector shall not be smaller than the size of the flue collar or the size of the outlet of the draft hood supplied by the manufacturer of a gas-designed appliance. Where the appliance has more than one flue outlet, and in the absence of the manufacturer's specific instructions, the flue or vent shall equal the combined area of the flue outlets for which it acts as a common connector to the flue or vent.

(10) Dampers. No manually operated damper shall be placed in the flue or vent connector from a gas appliance except as noted below. Fixed baffles ahead of draft hoods are not classified as dampers.

A manually operated or barometric damper may be installed in the flue or vent connector of a gas incinerator when recommended by the manufacturer. The manual damper shall be so constructed that it will not close off more than eighty percent of the cross-sectional area of the flue or vent connector. Such a damper will be supplied with a listed incinerator if the manufacturer recommends its use, and the installation instructions accompanying the incinerator will include complete information for installation of the damper.

(11) Fireplace. A flue or vent connector shall not be connected to a chimney flue having a fireplace opening unless the opening is permanently sealed.

TABLE 9 Clearances With Specified Forms of Protection			
Type of Protection Applied as Illustrated Below	Where the required clearance with no protection is:		
	6 inches clearance reduced to	9 inches clearance reduced to	18 inches clearance reduced to
1/4-in. asbestos millboard spaced out 1-in. with non-combustible spacers.	3 inches	6 inches	12 inches
28 gauge sheet metal on 1/4-in. asbestos millboard.	2 inches	4 inches	12 inches
28 gauge sheet metal spaced out 1-in. with noncombustible spacers.	2 inches	4 inches	9 inches

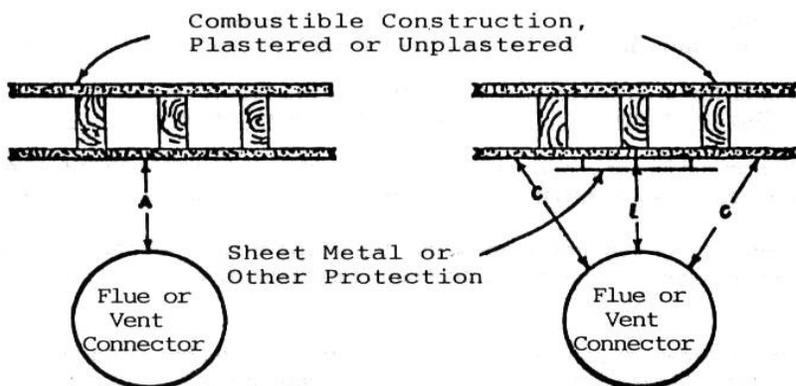


Fig 6.

A equals the required clearance with no protection as specified in Table 8.

B equals the reduced clearance permitted in accordance with Table 9.

The protection applied to combustible construction is required to extend far enough in each direction to make C equal to A.

(Code 1973, 16-65; Ord. Nos. 1837, 2101, 4417-12/2014)

30-1143. Flue or vents for natural draft venting.

This section applies only to natural draft venting. Forced draft or exhaust systems and power burners usually require special engineering and installation and should be approved by the gas inspector.

(1) 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 outer air.

(2) Size. The flue or vent to which the flue or vent connector is connected shall be of a size not less than specified in Figure 7. In no case shall the area be less than the area of three-inch-diameter pipe. When more than one appliance vents into a flue or vent, the flue or vent shall not be less than the area of the largest flue or vent connector plus fifty percent of the area of the additional flue or vent connectors. Any shaped flue or vent may be used provided its flue gas venting capacity is equal to the capacity of round pipe for which it is substituted.

(3) Height. Gas vents shall extend at least two feet above the highest point where they pass through the roof of a building and at least two feet higher than any portion of a building within ten feet; except, that gas vents need not comply with this provision when equipped with an approved device and proper effective venting is accomplished. Chimneys shall extend at least three feet above the highest point where they pass through the roof of a building and at least two feet higher than any portion of the building within ten feet. See Figure 8.

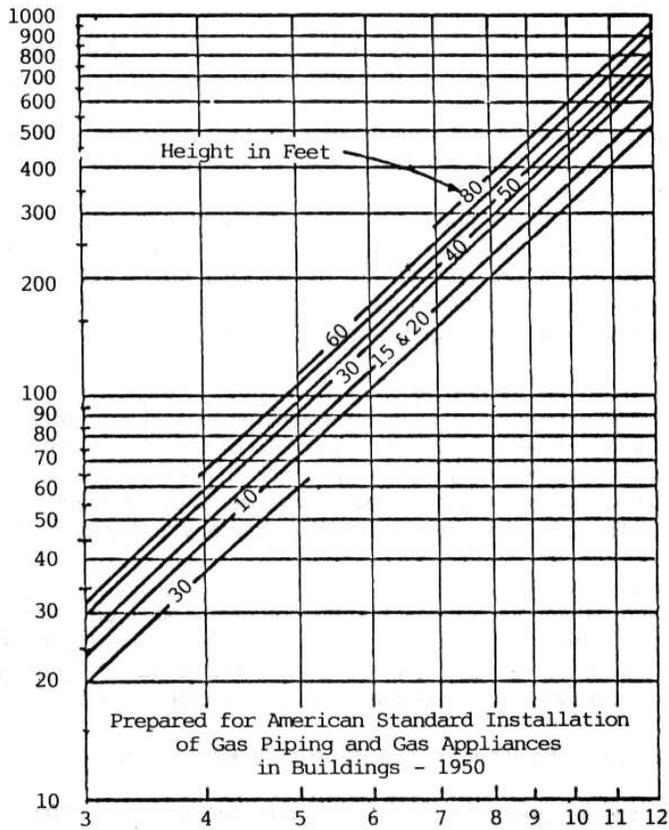
(4) Chimney entrance. In entering a chimney flue the connection shall be above the extreme bottom to avoid stoppage. Means shall be employed which will prevent the flue or vent connector from entering so far as to unduly restrict the space between its end and the opposite wall of the chimney. A thimble or slip joint may be used to facilitate removal of the flue or vent connector for cleaning.

(5) Cleanouts. Cleanouts shall be of such construction that they will remain tightly closed when not in use.

(6) Venting into flues used for other fuels. An automatically controlled gas appliance connected to a flue which also serves equipment for the combustion of solid or liquid fuel shall be equipped with an automatic pilot. A gas appliance flue or vent connector and a smoke pipe from an appliance burning another fuel may be connected into the same flue through separate openings, or may be connected into the same flue through a single opening if joined by a Y fitting as close as practical to the flue. If two or more openings are provided into one flue they should be at different levels.

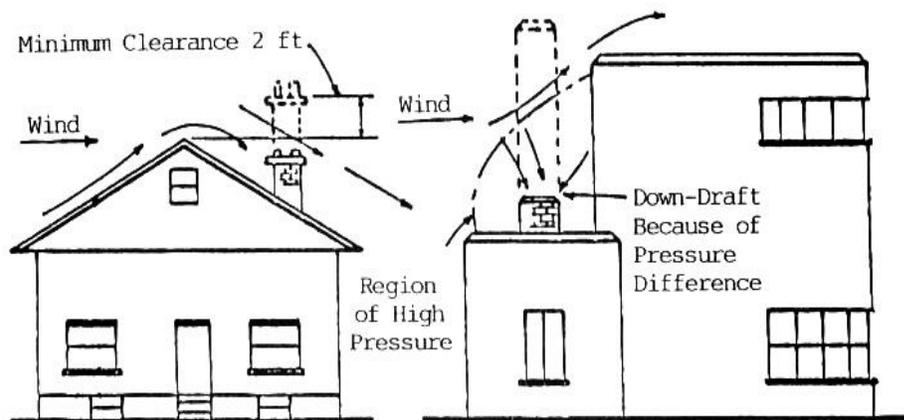
(7) Flue connecting two or more gas appliances. In order to promote better draft where more than one gas appliance flue or vent connector is connected to a flue or vent, the connections should be made at different levels. Two or more gas appliances may be vented through a common flue or vent connector when necessary, if joined by Y fittings as close as practical to the flue or vent, and provided the size of the common flue or vent is sufficient to accommodate the total volume of flue gases. Y fittings shall be made so that the angle at which the flue or vent connectors intersect is as small as possible and should not exceed forty-five degrees.

(8) Unlined chimneys. Where an existing chimney is unlined or where local experience indicates that the flue gas condensate might be a problem, consult the gas inspector for information about liners that are suitable for the locality.



Inside Diameter of Flue in Inches

Fig 7. Capacity in btu per hour for gas appliance flues or vents.



Correct chimney design shown by dotted lines.

Note: Carry chimney well above roof of high building. Outside metal stacks unsatisfactory unless type B vent is used.

Fig 8. Typical chimney conditions apt to result back drafts.

(Code 1973, 16-66; Ord. Nos. 1837, 2101, 4417-12/2014)

30-1144. Outside flues or vents.

(1) Material. Outside flues or vents are not recommended and they are particularly unsuccessful in severe climates and in small sizes, but when they must be used the material shall be resistant to the action of combustion products and shall possess high insulation qualities or be adequately insulated to minimize condensation and aid draft.

(2) Support flue or vent pipe. When a flue or vent must be installed on the outside of the building, it shall be securely supported. A capped "tee" should be installed at the base of the riser with an opening to drain off condensate. A suitable vent cap which does not obstruct or reduce the effective cross-sectional area of the flue or vent outlet should be placed on top of the riser.

(3) Prohibited installation. Natural draft vents extending through an outside wall and terminating adjacent to the outside walls are prohibited. See provisions of subsection (3) of Section 16-343 and subsection (2) of Section 16-344.

(Code 1973, 16-67; Ord. Nos. 1837, 2101, 4417-12/2014)

30-1145. Special venting arrangements.

(1) Appliances with sealed combustion chambers. The provisions of this division do not apply to listed appliances having sealed combustion chambers and which are so constructed and installed that all air for combustion is derived from outside the space being heated and all flue gasses are discharged to the outside atmosphere. Such appliances shall be installed in accordance with their listings.

(2) Flue exhausters. Flue exhausters may be used with gas appliances in lieu of natural draft vents except on incinerators. Where a flue exhauster is used with gas appliances requiring venting, provisions shall be made to prevent the flow of gas to the main burners in the event of failure of the exhaust system. (Code 1973, 16-68; Ord. Nos. 1837, 2101, 4417-12/2014)

Division 4. Readyng Appliances for Use.

30-1146. Generally.

Under this division appear the fundamental procedures to be followed in placing an appliance in operation and instructing the consumer in its safe and satisfactory use. Responsibility for carrying into effect the following procedures shall rest with the installing agency. (Code 1973, 16-69; Ord. Nos. 1837, 2101, 4417-12/2014)

30-1147. Adjusting burner input.

(1) Required. Each burner shall be adjusted to its proper input in accordance with the manufacturer's instructions. OVERRATING OF BURNERS IS PROHIBITED.

(2) Checking burner input. To check the BTU input rate, the test hand on the meter should be timed for at least one revolution and the input determined from this timing. Test dials are generally marked 1/2, 1, 2 or 5 cubic feet per revolution depending upon the size of the meter. Instructions for converting the test hand readings to cubic feet per hour are given in Table 10.

TABLE 10 Gas Input to Burner in Cubic Feet Per Hour				
Size of Test Meter Dial				
Seconds for One Revolution	One-Half Cu. Ft.	One Cu.Ft.	Two Cu.Ft.	Five Cu.Ft.
Cubic Feet Per Hour				
10	180	360	720	1,800
11	164	327	655	1,636
12	150	300	600	1,500
13	138	277	555	1,385
14	129	257	514	1,286
15	120	240	480	1,200
16	112	225	450	1,125
17	106	212	424	1,159
18	100	200	400	1,000
19	95	189	379	947
20	90	180	360	900
21	86	171	343	857
22	82	164	327	818
23	78	157	313	783
24	75	150	300	750
25	72	144	288	720
26	69	138	277	692
27	67	133	267	667

28	64	129	257	643
29	62	124	248	621
30	60	120	240	600
31	58	116	232	581
32	56	113	225	563
33	55	109	218	545
34	53	106	212	529
35	51	103	206	514
36	50	100	200	500
37	49	97	195	486
38	47	95	189	474
39	46	92	185	462
40	45	90	180	450
41	44	88	176	440
42	43	86	172	430
43	42	84	167	420
44	41	82	164	410
45	40	80	160	400
46	39	78	157	391
47	38	77	153	383
48	37	75	150	375
49	37	73	147	367
50	36	72	144	360
51	35	71	141	353
52	35	69	138	346
53	34	68	136	340
54	33	67	133	333
55	33	65	131	327
56	32	64	129	321
57	32	63	126	316
58	31	62	124	310
59	30	61	122	305
60	30	60	120	300
62	29	58	116	290
64	29	56	112	281
66	29	54	109	273
68	28	53	106	265
70	26	51	103	257
72	25	50	100	250
74	24	48	97	243
76	24	47	95	237
78	23	46	92	231
80	22	45	90	225
82	22	44	88	220
84	21	43	86	214
86	21	42	84	209
88	20	41	82	205
90	20	40	80	200
94	19	38	76	192
98	18	37	74	184
100	18	36	72	180

104	17	35	69	173
108	17	33	67	167
112	16	32	64	161
116	15	31	62	155
120	15	30	60	150
130	14	28	55	138
140	13	26	51	129
150	12	24	48	120
160	11	22	45	112
170	11	21	42	106
180	10	20	40	100

Note: To convert to BTU per hour multiply by the BTU heating value of the gas used.

(3) Adjusting rate. The input rate as determined by timing the test hand on the meter shall be adjusted to the required rate by changing a fixed orifice size, changing the adjustment of an adjustable orifice, or by readjustment of the gas pressure regulator outlet pressure, when a regulator is provided, within limitations authorized by the gas department.

(Code 1973, 16-70; Ord. Nos. 1837, 2101, 4417-12/2014)

30-1148. Primary air adjustment.

The primary air for injection (Bunsen) type burners shall be adjusted for proper flame characteristics in accordance with the manufacturer's instructions. Normally, the primary air adjustment should first be set to give a soft blue flame having luminous tips and the increased to a point where the yellow tips just disappear. If the burner cannot be adjusted as above, the manufacturer or gas inspector should be consulted. After setting the primary air the adjustment means shall be secured in position.

(Code 1973, 16-71; Ord. Nos. 1837, 2101, 4417-12/2014)

30-1149. Automatic pilots.

When an automatic pilot is provided it shall be checked for proper operation and adjustment in accordance with the manufacturer's instructions. If the pilot does not function properly to turn off the gas supply in the event of pilot outage, it shall be properly serviced or replaced with new equipment.

(Code 1973, 16-72; Ord. Nos. 1837, 2101, 4417-12/2014)

30-1150. Automatic ignition.

Appliances equipped with means for automatic ignition, such as used with domestic gas range top burners, shall be checked to assure proper operation. If necessary, proper adjustments shall be made.

(Code 1973, 16-73; Ord. Nos. 1837, 2101, 4417-12/2014)

30-1151. Protective devices.

All protective devices furnished with the appliance, such as a limit control, fan control to blower, temperature and pressure relief valve, low water cut-off device and manual operating features, etc., shall be checked to assure proper operation.

(Code 1973, 16-74; Ord. Nos. 1837, 2101, 4417-12/2014)

30-1152. Checking the draft.

On flue connected appliances, the appliances shall be operated for a few minutes and the installation checked to see that the products of combustion are going up the flue or vent properly by passing a lighted match or taper around the edge of the relief opening of the draft hood. If the flue or vent is drawing

properly, the match flame will be drawn into the draft hood. If not, the products of combustion will tend to extinguish this flame. If the products of combustion are escaping from the relief opening of the draft hood, the appliance shall not be left in operation until proper adjustments or repairs are made to assure adequate draft through the flue or vent.

(Code 1973, 16-75; Ord. Nos. 1837, 2101, 4417-12/2014)

30-1153. Instructions to consumer.

(1) The consumer should be thoroughly instructed, by demonstration, how to operate the appliance properly and safely before it is left in operation.

(2) When operating instructions are furnished by the manufacturer they shall be left with the consumer or in a prominent position near the appliance.

(Code 1973, 16-76; Ord. Nos. 1837, 2101, 4417-12/2014)

It is the intent of the Mayor and City Council that all provisions pertaining to the creation and the powers of the City's Board of Appeals shall be set forth in this Article of the Hastings City Code. Therefore, to the extent that any other provision of the Hastings City Code or any standard building and construction code adopted by the City of Hastings, including but not limited to, the International Building Code, International Fire Code, International Residential Code, International Mechanical Code, International Energy Conservation Code, International Existing Building Code, Property Maintenance Code, and International Urban-Wildland Interface Code (all of which shall be collectively referred to in this Article as the "City Building and Construction Codes"), which in any way limit the powers of the Board of Appeals as set forth in this Article, are hereby expressly repealed. It is the intent of the Mayor and City Council that future provisions in the City Building and Construction Codes which limit the powers of the Board of Appeals as set forth in this Article shall not apply, unless specifically set forth in this Article. (Code 1973, 8-27; Ord. Nos. 2631, 3255-3/92, 4417-12/2014)

30-1154. Notification of Completion of installation.

Where regulations so require, the gas inspector shall be notified that the installation has been completed.

(Code 1973, 16-77; Ord. Nos. 1837, 2101, 4417-12/2014)

Article XII. Gas Inspector.

30-1201. Office created; powers generally; assistants.

There is hereby created and established the office of the gas inspector. He shall act under the direction of the city engineer and shall have supervision of all gas installation work in the city, and shall perform such duties as are hereinafter prescribed. He shall have such assistants as may be necessary. The city engineer shall make the final decision on all applicants recommended for this office. Any such assistant shall have the same powers and duties as the gas inspector.

(Code 1973, 16-78; Ord. No. 1837, 4417-12/2014)

30-1202. Duties generally.

It shall be the duty of the gas inspector to inspect all gas distribution, from the outlet side of the meter, excluding gas mains, and all gas installation in the city and to investigate all cases reported to or referred to him, of the use of imperfect material or workmanship on any job of gas work, or the violation of the provisions of this chapter by a plumber, builder or gas fitter, and to report such fault or violation to the city engineer for further action.

(Code 1973, 16-79; Ord. No. 1837, 4417-12/2014)

30-1203. Inspections required generally; correction of defective installations.

It shall be the duty of the gas inspector to make inspections of any gas piping, appliance installations or connections at the request of the installer, department head, owner, agent, tenant or occupant of any building or premises where the gas piping work is located, in order to ascertain whether or not the gas piping or appliances in the building or premises are in a safe condition. The gas inspector shall have the authority to enter any building or upon any premises at all reasonable hours to ascertain if the provisions of this chapter or any ordinance relating to gas piping or appliance installations has been, or are being violated or being complied with. Should the gas inspector, upon making such an inspection as requested by an installer, owner, agent, tenant or department head, find an unsafe or unsatisfactory installation, he shall have the authority to shut off the appliance, or service at the meter, depending on the seriousness of the conditions, as determined by the inspector; tag the same, and he shall notify the (1) installer immediately, if the job is a new installation, and (2) the owner, agent, tenant or one in charge of the property to cause the same to be remedied within a specified time and not exceeding ten days, if the same is not a new installation. Should the installer, owner, agent, tenant or one in charge of the premises fail to make such corrections, changes or repairs, or fail to notify the inspector to make a reinspection, within the specified time after receiving such notification to comply therewith, he shall be considered maintaining an unsafe gas installation and violating the requirements of this chapter; and the inspector shall make a reinspection of the premises and report his findings to the city engineer, who shall, in turn, cause action to be taken in the proper court to secure compliance, and the penalties set forth in this Code shall apply. It shall be the duty and the responsibility of the installer or one making the correction, changes or repairs to notify the inspector within forty-eight hours after completion of the correction, changes or repairs and request a reinspection.

New work shall be designated as any piping or appliance installation that has been in operation one year or less.

Old work shall be deemed to be any piping or appliance installation that has been operated more than one year.
(Code 1973, 16-80; Ord. No. 1837, 4417-12/2014)

30-1204. Inspection of new installations.

All gas piping and fixtures of gas installation shall be inspected by the gas inspector to insure compliance with all the requirements of this chapter and the installation and construction of the system in accordance with the approved plans and the permits.

Requests for inspection shall be made at the office of the gas inspector by the gas fitter or gas appliance installer not less than eight (8) working hours in advance of inspection.

An inspection fee will be charged for each gas appliance unit inspected, as set forth in the most recent Council fee resolution.

If the plan submitted complies with this chapter in all respects, upon payment of the inspection fee the gas inspector shall issue a permit for the installation thereof. Any installation completed for which a permit has not been taken, will be inspected and a permit fee double the rate shown will be assessed against the installer.

A reinspection fee may be assessed for each inspection or reinspection when such portion of work for which inspection is called is not complete or when corrections called for are not made.

This section is not to be interpreted as requiring reinspection fees the first time a job is rejected for

failure to comply with the requirements of this code, but as controlling the practice of calling for inspections before the job is ready for such inspection or reinspection.

Reinspection fees may be assessed when the inspection record card is not posted or otherwise available on the work site, the approved plans are not readily available to the inspector, for failure to provide access on the date and time for which inspection is requested, or for deviating from plans requiring the approval of the Building Inspector.

In instances where reinspection fees have been assessed, no additional inspection of the work will be performed until the required fees have been paid.

(Code 1973, 16-81; Ord. Nos. 1837, 2775, 4106-10/2006, 4106-10/2006, 4417-12/2014)

30-1205. Records and reports of inspections and tests.

The gas inspector shall keep a complete record of all inspections and tests made by him as such inspector, and make such reports as may be required by superintendents of other departments; except, that it shall not be necessary to report the tests made on old work.

(Code 1973, 16-82; Ord. No. 1837, 4417-12/2014)

Article XIII. Plumbing, Gas, Mechanical, Utility Installers.

30-1301. Examining board.

There is hereby created an examining board for Plumbing, Gas and Mechanical Installers, hereafter call the Mechanical Examining Board, which shall comprise the Plumbing Inspector, Gas Inspector, City Engineer, one licensed Master Plumber, one licensed Master Gas/Mechanical Installer, one member from the City Council, all to be selected by the Mayor and City Council. The Plumbing Inspector or the Gas Inspector shall be the secretary of the Examining Board and shall have custody of all records of the same, and shall be elected by the members of the Mechanical Examining Board. The Mechanical Examining Board is hereby authorized, empowered and directed to prescribe, amend and enforce rules and regulations consistent with this Chapter for the examination of master plumbers, journeyman plumbers, master gas fitters, journeymen gas fitters, master mechanical installers, journeyman mechanical installers, water conditioning installer or contractor, or an underground lawn sprinkler installer. Each appointment shall be for a period of two (2) years with the term of office to expire the first day of July after the full two (2) year period has been served or in the case of the city councilperson, until his or her term of office as councilperson ends, whichever comes first. Vacancies shall be filled by the appointive power to serve for the balance of the term of the member of the board whose position becomes vacant.

(Code 1973, 16-83; Ord. Nos. 1837, 2204, 2384 3644-5/98, 4417-12/2014)

30-1302. Examination.

(1) Before the applicant shall be certified as a master plumber, journeyman plumber, master gas fitter, journeymen gas fitter, master mechanical installer, journeyman mechanical installer, water conditioner installer or contractor, or underground lawn sprinkler installer, as the case may be, he shall submit to an examination to determine his fitness and competency to engage in the business, trade or calling, as the case may be, which examination shall be given by the Mechanical Examining Board, as hereinabove provided. Upon the payment of the required certification fee, such applicant, after having by the examination shown himself to the satisfaction of the Mechanical Examining Board to be fit, competent and qualified to engage in the business, trade or calling of a master plumber, journeyman plumber, master gas fitter, journeymen gas fitter, master mechanical installer, journeyman mechanical installer, water conditioning installer or contractor, or an underground lawn sprinkler installer as the case may be, shall be registered by the Development Services Department who shall deliver to the applicant a

certificate signed by the Plumbing Inspector or Gas Inspector, as the case may be.

(2) Utility contractors. No examination shall be required of applicants for a utility contractor's certification provided that the holder of such certification shall comply with all applicable provisions of this Chapter and any requirements of any contract with the city for the installation of service lines in conjunction with water main and sewer main upon public rights-of-way. An application for a utility contractor's certification shall be reviewed by the City Engineer or his designated representative, who shall, upon completion of such review, issue a utility contractor's certification to any individual who has complied with all applicable provisions of this Chapter and any requirements of any contract with the City for the installation of service lines in conjunction with water main and sewer main upon public rights-of-way.

(3) An applicant failing to pass an examination shall not be eligible for re-examination until ninety days shall have elapsed after the previous examination. Should he fail after the third examination, he shall not be eligible for a period of one year thereafter to take an additional examination. He shall pay an examination fee for each re-examination required.

(4) An applicant must have worked under the supervision of a certified journeyman or master in the respective trade for a period of two years, before being eligible to take a journeyman's examination, and a journeyman shall not be eligible for a master's examination until two years after his certification as a journeyman.

(Code 1973, 16-84; Ord. Nos. 1837, 2264, 3644-5/98, 4417-12/2014)

30-1303. Certification -- Required.

(1) No person shall hereafter engage in or work at the business, trade or calling of a master plumber, journeyman plumber, master gas fitter, journeymen gas fitter, master mechanical installer, journeyman mechanical installer, water conditioning installer or contractor, or an underground lawn sprinkler installer in the city until he shall have been certified as a master plumber, journeyman plumber, master gas fitter, journeymen gas fitter, master mechanical installer, journeyman mechanical installer, water conditioner installer, water conditioning installer or contractor, or an underground lawn sprinkler installer qualified with the Mechanical Examining Board for such work, and paid all applicable fees and occupation taxes.

(2) Utility contractors. No person, other than an employee of the City engaged in City business, shall engage in the installation of service lines in conjunction with water main and sewer main upon public rights-of-way until he has obtained a certification from the City Engineer to work as a utility contractor. This subsection shall not apply to service connections as set forth in Section 31-307(verify reference) of this Chapter.

(Code 1973, 16-85; Ord. Nos. 1837, 2264, 3644-5/98, 4417-12/2014, 4417-12/2014)

30-1304. Same -- Application for certification.

Application for certification shall be made in writing to the Development Services Department upon forms furnished by that office, which shall show the name, residence and business location of the applicant, and such other information as may be required.

(Code 1973, 16-86; Ord. Nos. 1837, 2264, 3644-5/98, 4417-12/2014)

30-1305. Same -- Corporations, firms and partnerships.

Any corporation, firm or partnership which may be certified under this article as a plumber, gas fitter, mechanical installer, water conditioner installer, etc in the name of such corporation, firm or partnership shall have a master licensed in such trade who has submitted to the examination given by the Mechanical

Examining Board and has thereby shown himself fit, competent and qualified to engage in such business, trade or calling of as a bona fide officer of such corporation or as a member of such firm or partnership, and who shall at all times be in actual charge of and be responsible for the installation, removal or repair of any such work done by such corporation, firm or partnership. Before such corporation, firm or partnership shall be certified in its corporate, firm or partnership name, there shall be filed with the Development Services Department a certificate from the Mechanical Examining Board showing the fitness and competency of such officer of such corporation or such member of such firm or partnership to engage in the said business or calling; provided, that if after a certificate is issued such corporation, firm or partnership, such master as an officer of such corporation or a member of such firm or partnership shall withdraw therefrom and cease to be connected therewith, then and in that event the City Council shall forthwith revoke the certificate of such corporation, firm or partnership.
(Code 1973, 16-87; Ord. Nos. 1837, 2264, 3644-5/98, 4417-12/2014)

30-1306. Same -- Expiration.

Certification under this article shall expire on April 30 following the date thereof and shall not be assignable. If certification fees are not paid within thirty days of expiration, the certification shall be automatically revoked.
(Code 1973, 16-88; Ord. Nos. 1837, 2234, 3644-5/98, 4417-12/2014)

30-1307. Same -- Renewal.

Certificates, at the time of their expiration, may be renewed upon recommendation of the Mechanical Examining Board, without an examination, upon payment of the required certification fee.

Any person certified under the provisions of this Chapter as a master or journeyman, who does not renew his certificate for a period of one month after the expiration of same, shall pay the examination fee required by this Chapter and submit himself to an examination by the Mechanical Examining Board before such person can be certified hereunder.
(Code 1973, 16-89; Ord. Nos. 1837, 2234, 3644-5/98, 4417-12/2014)

30-1308. Same -- Revocation.

The City Council by a majority vote shall have the power to revoke any journeyman or master certificate, upon the recommendation of the Mechanical Examining Board, if the same was obtained through error or fraud, or if the recipient thereof is shown to be grossly incompetent or has a second time willfully violated any of the provisions of this Chapter. This penalty shall be cumulative and in addition to the penalties prescribed for the violation of the provisions of this Chapter. If a certificate is revoked, the holder of the same shall not apply for certification until one year from the date of such revocation.
(Code 1973, 16-90; Ord. Nos. 1837, 2234, 3644-5/98, 4417-12/2014)

30-1309. Same -- Plumbing material and supply dealers.

Any person engaged in dealing in plumbing or gas connecting materials or supplies, but not engaged in the installation, alteration, repair or removal of gas piping or appliances shall not be required to register under this article to sell such materials and supplies.
(Code 1973, 16-91; Ord. Nos. 1837, 2234, 4417-12/2014)

30-1310. Fees for certification and examination.

A fee shall be charged for certification and examination as set forth in the most recent Council fee resolution.

Such fees shall be paid to the City Clerk and, upon payment of the same, such Clerk shall issue a receipt in duplicate which duplicate receipt shall be retained by the Clerk and filed in his office. (Code 1973, 16-92; Ord. Nos. 1837, 2234, 2775, 3644-5/98, 4417-12/2014)

30-1311. Permitting use of name by others.

No certified master or journeyman tradesperson shall allow their name to be used by another person, directly or indirectly, either to obtain a permit for the any installation or to do any gas fitting work. If any certified installer violates this provision, the City Council shall forthwith revoke the certificate issued to such installer. In addition to having their certificate revoked, such installer may be prosecuted under the penalty section of this Code for such violation. (Code 1973, 16-93; Ord. Nos. 1837, 2234, 3644-5/98, 4417-12/2014)

30-1312. Certified electrician required for electrical work.

No person engaged in the business of installing electrically controlled plumbing equipment, mechanical equipment or gas burning equipment of any type, and no employee of such person, may attempt to make any connection from any primary electrical service leads or in any manner disturb such existing wiring, but shall call in a duly certified electrician to perform such work; provided, that this does not prohibit the appliance installer from completing the necessary wiring on the low tension (outlet) side of the transformer to electrically operated valves or controls and thermostats on existing installations. (Code 1973, 16-94; Ord. Nos. 1837, 2234, 3644-5/98, 4417-12/2014)

30-1313. Insurance and maintenance bond.

(1) Insurance. The holder of a certificate under this Chapter shall secure and maintain during all times that the certificate is in effect, bodily injury and property damage liability insurance coverage with limits as follows:

- (a) For plumber's, gas fitter's or mechanical installer's certification, \$1,000,000.00; and,
- (b) For utility contractor's certification, \$1,000,000.00.

The certification holder shall furnish the City Clerk with a certificate of such insurance coverage, which certificate shall note that the insurance coverage shall not be terminated except upon thirty (30) days' written notice to the City of Hastings.

The policy of insurance required by this section shall be purchased at the expense of the certification holder, shall be in effect for at least one (1) year from May 1 of the current year, and shall provide coverage of products, hazards and completed operations. Cancellation of the policy shall automatically suspend the certification until a substitute policy has been obtained, and a certificate of that fact filed in the office of the City Clerk.

(2) Maintenance bond. The holder of a utility contractor's certification under this Chapter shall provide to the City Clerk a maintenance bond with a surety company to be approved by the City Engineer. A bond shall be provided for each contract the certification holder shall have with the city for the purpose of the installation of service lines in conjunction with water main and sewer upon the public rights-of-way. The amount of guarantee the replacement of defective materials and/or workmanship for a period of two years after the completion of work pursuant to any such contract. (Code 1973, 12-38; Ord. Nos. 1896, 1915, 2162, 3533-5/96, 3644-5/98, 4110-1/2007, 4249-3/2010, 4417-12/2014)

30-1314. Advertising by other than master tradespersons.

It shall be unlawful for any person not licensed as a master plumber, master gas fitter, master mechanical installer or water conditioner installer to use the words "master plumber," master gas fitter", "gas fitter", "plumber" or "plumbing" in any advertising.

(Code 1973, 27-23; Ord. Nos. 1910, 4110-1/2007, 4249-3/2010, 4417-12/2014)

30-1315. Nontransferable.

A plumber's certification, certification as a water conditioning installer or contractor, or certification as an underground lawn sprinkler installer shall not be transferred or assigned. No plumber, water conditioning installer or contractor, or underground lawn sprinkler installer holding a certification shall allow his or her certificate to be used by another person, directly or indirectly, to obtain a permit for the installation of any plumbing, to do any plumbing work, or any part of the installation of a water conditioning system or underground lawn sprinkling system.

(Code 1973, 27-30, 27-32, 27-33, 27-34, 27-35, 27-36, 27-37; Ord. Nos. 1910, 2775, 3644-5/98, 3690-8/99, 4110-1/2007, 4249-3/2010, 4417-12/2014)

30-1316. Liability for installation by uncertified plumber, water conditioning installer or contractor, or underground lawn sprinkler installer.

It shall be unlawful for any persons to cause or permit any job of plumbing, the making of any plumbing connection, installing of any water conditioning device, or installing of any underground lawn sprinkling system in or upon any property owned, managed or controlled by such person unless the person performing such work is a plumber, water conditioning installer or contractor, or underground lawn sprinkler installer holding a certification and has obtained a plumbing permit to do so from the plumbing inspector for the work. Any person causing or permitting any work to be done in violation of this article shall also be guilty of violation of this Chapter.

(Code 1973, 27-30, 27-32, 27-33, 27-34, 27-35, 27-36, 27-37; Ord. Nos. 1910, 2775, 3644-5/98, 3690-8/99, 4110-1/2007, 4249-3/2010, 4417-12/2014)