

Customer Piping for Natural Gas

Black Iron Pipe:

Black iron is the piping is the traditional piping for natural gas. Black iron pipe safely encases the natural gas within a thick-walled, durable, metal pipe. Accidental nail strikes don't easily puncture the black iron pipe wall (unlike copper or CSST), and it takes extreme force to bend or break the pipe.

Popularity and a large supply make the black iron pipe one of the most affordable gas plumbing pipe types. Also, it is easy to find "do-t-yourself" information about iron gas pipe or plumbers and technicians that install the pipe.



However, black iron pipe installation is time-consuming to install. Installers must cut the rigid pipe to specific dimensions and thread (manually or automatically) the pipe ends that will be connected together with appropriate black iron fittings sealed with approved pipe joint compound or Teflon tapes. Most black iron pipe projects are best performed by a professional installer or contractor.

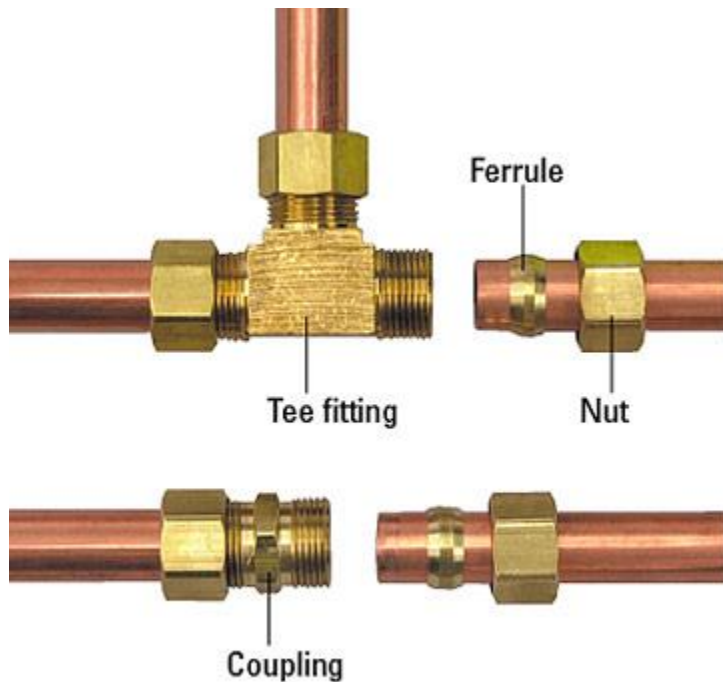
The installer should follow proper installation procedures and also check for leakage. The Village of Morton requires that all gas piping must be installed using the guidelines as prescribed in the latest edition of the **National Fuel Gas Code, ANSI Z223.1, NFPA 54.**

There are a variety of fittings available for use with black iron pipe.



Copper Flares:

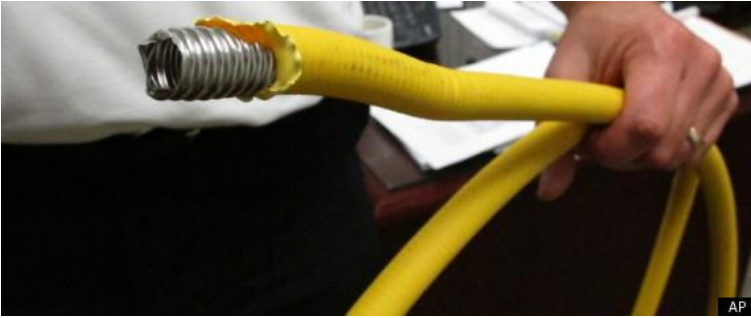
Sometimes copper pipe is used for connecting appliances to the main piping system. If the copper pipe is connected using a 'flare' connection, these connections should be replaced with compression type fittings. The flaring process thins the pipe wall allowing the copper to be weaker than normal allowing corrosion.



Copper Compression Fitting
(See Left)

CSST (Corrugated Stainless Steel Tubing):

A new product has emerged in the industry during the last few years. Corrugated Stainless Steel Tubing (CSST) appeared first in the mobile (trailer) and manufactured home industry and also was used as a flexible connector from the rigid pipe system to the individual appliance.



Because of its physical flexibility (it easily contorts to maneuver around obstacles and through walls) CSST is also used by plumbers and installers for pipe replacement and remote extensions to new appliance locations.

Most commercially available varieties of CSST have a yellow plastic coating or natural metallic exterior. The pipe fittings attached to each end of a length of CSST must be installed by a “qualified” installer. Some of these trade names for CSST are: “Gastite”, “Wardfex”, “Tracpipe”, “Counterstrike” and “Paraflex”.



Recently, some municipalities have allowed the use of CSST for the entire supply system. Following are some dangerous drawbacks for use of CSST in a residential or commercial natural gas piping.

- 1) Because there is no mandatory standard for CSST wall geometry, tubing from different manufactures are not identical even though they are of the same nominal size. Thus, a fitting from one manufacturer cannot be assembled on CSST from another. The fittings are not interchangeable. The lack of interchangeability has raised concerns regarding future modifications and/or repairs to existing CSST systems, especially if a product is discontinued.
- 2) CSST must be installed by a “qualified Installer”. The product does not lend itself for use by “do-it-yourselfer” which allows those who are not familiar with the product a chance for a high degree of failure.
- 3) CSST piping is a tubing with a thin wall thickness of only 0.008” unlike black iron with a wall thickness of 0.12” (15 times greater). If installed improperly without the use of strike plates, nail strikes will puncture the wall of CSST with ease causing a gas leak that is concealed within the building wall.
- 4) CSST has been found to be susceptible to damage from arcing by direct or nearby lighting strikes. A lightning strike can create holes and/or cracks in the thin wall of CSST, allowing gas leaks that can result in a fire and or explosion.
- 5) 5) A gas system that has any CSST gas piping in it, no matter what brand or age, shall be bonded to the electrical service grounding electrode system. The bonding jumper shall connect to a metallic pipe or fitting between the point of delivery and the first downstream CSST fitting. The bonding jumper shall not be smaller than 6 AWG copper wire or equivalent as per ANSI Z223.1-63 7.13.1 If you find CSST in your house or business, the Village of Morton Gas Dept. recommends you contact a licensed electrician to make sure it has been properly bonded.

- 6) The Village of Morton forbids the installation of CSST as a piping system for residential or commercial use. CSST may only be used in a fireplace new installation application, provided it is properly bonded, grounded, meets manufactures installation specifications and is not longer than 6 foot in length. If used in a fireplace application, a shut off valve must be installed upstream of the CSST and be readily accessible and permanently identified as per ANSI Z223.1-71 9.6.4.2 For existing homes and business wanting to do remodel work where black iron piping is not possible, contact the Village of Morton Gas Dept.
- 7) Regardless if the CSST is older or newer counter strike, it must be grounded.

➤ ***The Village of Morton recommends black iron piping.***