

DECORATIVE GAS LOG APPLIANCES
MECHANICAL PERMIT and CODE REQUIREMENTS

This guideline is intended to provide the homeowner and decorative gas-fired log installer/contractor with basic information regarding permit and other mechanical code requirements applicable to the installation of decorative gas-fired log appliances in existing masonry and in new or existing prefabricated fireplaces.

1. **Permits:** A mechanical permit is required for the installation of new gas-fired log appliances. A mechanical permit is not required to replace an existing gas-fired log appliance with the same type of listed appliance.

Mechanical permits for the installation of decorative gas-fired logs in existing fireplaces will be issued as a same day over-the-counter type permit. Mechanical permits for the installation of a new prefabricated fireplace having a gas-fired decorative log appliance may be issued as a while-you-wait plan review type permit. If the installation of the new prefabricated fireplace includes framing work, the permit will be issued as an integrated building/mechanical permit. See homeowner/contractor guideline titled “Prefabricated Wood Burning Fireplaces or Stoves” for additional information on plan submittal requirements when installing a new prefabricated fireplace.

The installer/contractor must be a registered financial responsible (bonded and insured) or licensed contractor authorized to do mechanical work. Homeowners performing their own work may obtain a permit to do mechanical work within their own dwelling with no requirement to be registered or licensed.

2. **General:** Decorative gas-fired appliances designed for installation in approved solid fuel-burning fireplaces must be listed and labeled by an approved agency, such as Underwriter’s Laboratories (UL), the American Gas Association (AGA), etc. and must be installed in accordance with the conditions of the listing and Manufacturer’s installation instructions.

When the fireplace is a prefabricated fireplace the fireplace must be listed to allow for the installation of the decorative gas log appliance and associated gas piping leading to the appliance.

3. **Manufacturers Installation Instructions:** The Manufacturer’s installation instructions must be maintained available to the inspector at the site during installation and inspection.

When the fireplace is a prefabricated fireplace the fireplace installation instructions shall also be available.

4. **Approved Gas Piping Materials:** Gas piping material must comply with the St. Louis County Mechanical Code as listed in the following table titled “Fuel Gas Pipe”.

FUEL GAS PIPE

MATERIAL	STANDARD
Aluminum-alloy pipe and tubing ³	ASTM B 210; ASTM B 241
Brass pipe ²	ASTM B 43
Copper or copper-alloy pipe ²	ASTM B 42; ASTM B 302
Copper or copper-alloy tube ² seamless (Type K or L)	ASTM B 88
Copper tube seamless (Type ACR)	ASTM B 280
Corrugated stainless steel tubing	ANSI LC-1
Ductile iron pipe	ANSI A 21.52
Plastic pipe and tubing ¹	ASTM D 2513
Steel pipe	ASTM A 53; ASTM A 106
Steel tubing	ASTM A 254; ASTM A 539

1 - To be used underground and outside only

2 - Not to be used with hydrogen sulfide content gas.

3 - Not to be used underground or outside. Shall be coated to protect against external corrosion where in contact with masonry, plaster, or insulation.

5. **Flame Safeguard Device:** Decorative gas appliances installed in solid-fuel burning fireplaces must have the main burner ignition by means of a direct ignition device, an igniter, or a pilot flame to ignite the fuel at the main burner, and shall be equipped with a flame safeguard device. The flame safeguard device must automatically shut off the fuel supply to a main burner or group of burners when the means of ignition of such burners becomes inoperative.
6. **Fixed Dampers:** Manual fireplace dampers must be fixed in a manner that maintains the gas appliance manufacturer's required minimum permanent vent opening at all times. If the manufacturer does not specify a minimum opening, then Table VII of the 1996 Fuel Gas Code, NFPA 54 shall be used.
7. **Shutoff Valves:** Shutoff valves must be provided for decorative gas-fired appliances. The required valves must be installed in the following manner: A combination safety pilot valve with integral shutoff must be located in the firebox at the appliance connection. A secondary service valve must be located outside the firebox in the fuel-gas pipe serving only the gas log appliance (Note: A shut-off valve for the gas main does not satisfy this requirement). Access must be provided to both shutoff valves.
8. **Ash Dumps.** Fuel-gas piping, installed in accordance with the Mechanical Code, serving decorative gas-fired appliances may be installed through an existing ash dump.
9. **Piping into a masonry firebox.** Above ground gas piping serving an appliance installed in a masonry firebox must be installed in accordance with the requirements of the Mechanical Code. A high temperature seal is required on the inside of the firebox and a waterproof seal is required on the outside if exposed to weather. Piping shall not enter through the floor of the firebox except as provided in Item 8 above.

10. **Piping into a factory-built (prefabricated) firebox.** This is only allowed if the prefabricated fireplace is listed to allow for the installation of the decorative gas log appliance and associated gas piping leading to the appliance. Piping should be run through an existing knockout and must be of an approved piping material from the “Fuel Gas Pipe” chart. Aluminum-alloy, brass and copper pipe should be protected from contact with the knockout with a non-combustible material.
11. **Piping through foundation walls.** Where installed to pass through masonry, gas piping must be encased in a sleeve. Sleeve material may be Schedule 40 steel pipe or other pipe material capable of supporting the pipe and should be sized one pipe diameter larger than the gas pipe. The sleeve must be sealed at the outside of the foundation wall to prevent entry of water. Gas piping must not penetrate a building foundation wall below grade. Piping installed aboveground outside of the building must be securely supported and protected from physical damage.
12. **Piping passing above grade through solid floors and solid walls:** One of the following methods of installation must be used to install above-grade piping through solid floors and solid walls, unless otherwise approved by the code official. Piping passing through masonry floors and walls must be protected by a sleeve.
 1. Piping must be installed in a casing, or through an opening of adequate size.
 2. Piping must be encased in 1:3 mixture of cement and sand, which coating shall not be less than 3/4 inch thick.
13. **Pipe sizing:** Sizing of the gas piping serving the installation of a new gas log appliance shall be determined according to Section 1302.4 of the 1998 International Mechanical Code. **CAUTION:** Due to the substantial gas load requirements of specific appliances, the entire gas piping distribution system may have to be resized. Adding a section of gas pipe on the end of an existing run will, in most circumstances, not be sufficient to supply the proper amount of fuel to the appliance according to its listed heat input rating.

Applicants should check with their local fire district for any additional requirements which may apply.