

# Gas Burning Appliance Checklist

(2020 Minnesota Mechanical Code (MC) and Fuel Gas Code (FGC))

## Appliance Requirements:

1. Install according to manufacturer's installation requirements (MIR), MC and FGC. The MIR must be on site at time of inspection, MC 304.1.
2. Locate where not subject to damage. Outside installations must be listed for such use, MC 303.4+.6.
3. In private garages locate at least 6 feet above the floor unless protected from motor vehicle impact. The ignition source must be at least 18 inches above the floor, MC 304.7+.3.
4. In public garages locate at least 8 feet above the floor but not less than 1 feet higher than the height of the tallest vehicle, MC 304.6.
5. Provide combustion air according to manufacturer's requirements and FGC 304. Requirements will vary depending on type and size of unit and where it is located.
6. Fittings cannot be concealed except brazed tubing and others listed for concealed use, FGC 404.3.-.5.
7. Piping other than steel installed through holes of framing members with less than 1½ inches from nearest edge of member shall be protected by minimum 16-gage steel plates, FGC 404.7.1.
8. Piping installed *outdoors*: FGC 404.9
  - a. shall be protected against corrosion by coating or wrapping with an inert material
  - b. elevated not less than 3½ inches above the ground or roof surface
  - c. securely supported and protected from physical damage
  - d. when encased in a protective sleeve must have the annular space around the pipe sealed
9. Exposed piping other than steel pipe and pipe not located in the same room as the equipment served shall be identified with a yellow label marked "Gas" in black letters every 5 feet, FGC 401.5.
10. Horizontal pipe support spacing for fuel gas appliances shall not be more than: FGC 415.1
  - 4 feet for ½ inch copper tubing
  - 6 feet for ½ inch steel pipe and 5/8 inch or ¾ inch copper tubing
  - Corrugated Stainless Steel Tubing (CSST) is supported according to MIR.
11. Underground piping minimum depth is 12 inches. May be 8-inches *with prior approval*, FGC 404.12.
12. Underground piping installed beneath buildings is *prohibited* unless encased in a rigid material designed to withstand the superimposed loads and with prior building official approval, FGC 404.14.
13. Underground nonmetallic piping requires a minimum 18-gauge yellow tracer wire suitable for direct burial to be installed adjacent to the piping and terminate at each end above ground, FGC 404.17.3.
14. CSST gas piping requires a certified installer; *special grounding requirements apply*. It must be grounded between gas meter and structure with a 6-AWG wire or larger. If connected to steel piping inside structure, steel piping must be grounded before it connects to CSST piping, FGC 305.1 + MIR.
15. Bends in metallic piping shall be smooth and free from buckling, cracks, or damage. Bends shall be made with bending equipment and have no bends with an arc of more than 90 degrees, FGC 405.2.

16. **Gas line “air test” and Gas “leakage test”** – are: “two separate requirements”.
- Before piping is put in service or concealed, it shall be tested with not less than 25 psig of air for 30 minutes or 10 minutes for a single-family dwelling, FGC 406.1 + 406.4.1+.2.*
  - After the air test and gas is put into the system, it shall be tested for leakage using a gas detector, manometer, soapy water or other approved method, FGC 406.5.1.*
17. A sediment trap tee fitting of any length with a capped nipple shall be installed downstream of the shutoff valve, before the regulator at a 90-degree change of direction to gas flow, FGC 408.4.
18. Condensate pipes not less than ¾ inch internal diameter shall drain to an approved plumbing fixture or disposal area, MC 307.1 and not decrease in size from the drain connection, MC 307.2.2
19. Appliances require a separate shutoff valve within 6 feet from the appliance in the same room, installed upstream from the union connector and regulator and be readily accessible, FGC 409.5.1.
20. Vent systems shall be sized, installed and terminated in accordance with the vent and appliance manufacturers’ installation instructions, MC 802.3, (appliance requirements may vary).
21. Unvented room heaters and appliances (with exceptions for unvented infrared heaters) are not allowed in a dwelling or occupancy, MC 901.5.
22. Suspended-unit heaters shall be supported by noncombustible hangers and brackets designed to accommodate the unit’s weight, FGC 620.2, and shall maintain clearance to combustibles of at least 18 inches – sides, 12 inches – bottom and 6 inches – top, FGC 620.4.
23. Floor-mounted heaters can only be installed on combustible floors with approved listing, FGC 620.4.
24. A floor furnace requires at least 6 inches of clearance from grade level. It may be reduced to 2 inches if the lower 6-inch portion is sealed by the manufacturer to prevent the entrance of water. The minimum clearance for all sides is 12 inches except the control side which is 18 inches, FGC 609.4.
25. A furnace within a dwelling unit shall have not less than 30 inches of clear space at the front or service side for the height of the appliance, MC 306.2 **Exception**.
26. Connectors carrying flue/exhaust gases:
- From the appliance to a chimney or vent pipe shall rise vertically a minimum ¼ inch per foot, MC 803.10.5.
  - Shall not be smaller than the size of the flue collar or outlet of the draft hood, MC 803.3.
  - Shall be properly supported and fastened with sheet metal screws, rivets or other approved means, MC 803.10.1. (*the 3-screws requirement is for round metal ducts, MC 603.4.1*)
  - Shall maintain minimum clearance to combustibles according to the appliance labeled clearance or MC Table 803.10.6, whichever is more restrictive.
  - Shall be limited in length to 75% of the height of the chimney or vent, MC 803.10.2.
27. Connectors carrying fuel gas shall be limited to 6 feet in length FGC 411.1.3.1. **Exception**: Rigid metal piping connecting an appliance to the piping system may be more than 6 feet when properly sized.

**Note:** This is a guide only. Refer to cited references and manufacture requirements for additional information.