

Gas Burning Appliance Installation Checklist

(2015 Minnesota Mechanical and Fuel Gas Code (MMC + MFGC))

Appliance Requirements:

1. Install according to manufacturer's installation requirements (MIR), MMC and MFGC. The MIR must be on site at time of inspection, MMC 304.1.
2. Locate where not subject to damage. Outside installations must be listed for such use, MMC 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, MMC 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, MMC 304.6.
5. Provide combustion air according to manufacturer's requirements and MFGC 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 fittings listed for concealed use, MFGC 404.3.
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, MFGC 404.7.
8. Piping installed outdoors: MFGC 404.9
 - a. shall be galvanized or protected with corrosion resistant 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 black steel pipe that is 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, MFGC 401.5.
10. Horizontal pipe support spacing for fuel gas appliances shall not be more than: MFGC 415.1
 - 4 feet for ½ inch copper tubing
 - 6 feet for 5/8 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, MFGC 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, MFGC 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, MFGC 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, MFGC 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, MFGC 405.2.

16. Gas line “*air test*” and Gas “*leakage test*” – are: “two separate requirements”.
- a. *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, MFGC 406.1 + 406.4.2.*
 - b. *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, MFGC 406.6.3.*
17. A sediment trap not less than 3 inches long shall be installed before the regulator at a 90-degree change of direction to gas flow, MFGC 408.4.
18. 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, MFGC 409.5.
19. Vent systems shall be sized, installed and terminated in accordance with the vent and appliance manufacturers’ installation instructions and MMC 802.3, (appliance requirements may vary).
20. Unvented fuel burning heaters and appliances are not allowed in a dwelling or occupancy, MMC 901.5.
21. Suspended-unit heaters shall be supported by noncombustible hangers and brackets designed to accommodate the unit’s weight, MFGC 620.2, and shall maintain clearance to combustibles of at least 18 inches – sides, 12 inches – bottom and 6 inches – top, MFGC 620.4.
22. Floor-mounted heaters can only be installed on combustible floors with approved listing, MFGC 620.4.
23. 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, MFGC 609.4.
24. 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, MMC 306.2 **Exception**.
25. Connectors carrying flue/exhaust gases:
- a. From the appliance to a chimney or vent pipe shall rise vertically a minimum ¼ inch per foot, MMC 803.10.5.
 - b. Shall not be smaller than the size of the flue collar or outlet of the draft hood, MMC 803.3.
 - c. Shall be properly supported and fastened with sheet metal screws, rivets or other approved means, MMC 803.10.1. (*the 3-screws requirement is for round metal ducts, MMC 603.4.1*)
 - d. Shall maintain minimum clearance to combustibles according to the appliance labeled clearance or MMC Table 803.10.6, whichever is more restrictive.
 - e. Shall be limited in length to 75% of the height of the chimney or vent, MMC 803.10.2.
26. Connectors carrying fuel gas shall be limited to 6 feet in length MFGC 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 sited references and manufacture requirements for additional information.