

9.6 Appliance and Equipment Connections to Building Piping.

9.6.1 Connecting Appliances and Equipment. Appliances and equipment shall be connected to the building piping in compliance with 9.6.4 through 9.6.6 by one of the following:

- (1) Rigid metallic pipe and fittings.
- (2) Semirigid metallic tubing and metallic fittings. Aluminum alloy tubing shall not be used in exterior locations.
- (3) A listed connector in compliance with ANSI Z21.24, *Standard for Connectors for Gas Appliances*. The connector shall be used in accordance with the manufacturer's installation instructions and shall be in the same room as the appliance. Only one connector shall be used per appliance.
- (4) A listed connector in compliance with ANSI Z21.75, *Connectors for Outdoor Gas Appliances and Manufactured Homes*. Only one connector shall be used per appliance.
- (5) CSST where installed in accordance with the manufacturer's installation instructions.
- (6) Listed nonmetallic gas hose connectors in accordance with 9.6.2.
- (7) In 9.6.1(2), 9.6.1(3), 9.6.1(4), 9.6.1(5), and 9.6.1(6), the connector or tubing shall be installed so as to be protected against physical and thermal damage. Aluminum alloy tubing and connectors shall be coated to protect against external corrosion where they are in contact with masonry, plaster, or insulation or are subject to repeated wettings by such liquids as water (except rain water), detergents, or sewage.
- (8) Materials addressed in 9.6.1(2), 9.6.1(3), 9.6.1(4), 9.6.1(5), and 9.6.1(6) shall not be installed through an opening in an appliance housing, cabinet, or casing, unless the tubing or connector is protected against damage.

9.6.1.1 Commercial Cooking Appliances. Commercial cooking appliances that are moved for cleaning and sanitation purposes shall be connected in accordance with the connector manufacturer's installation instructions using a listed appliance connector complying with ANSI Z21.69, *Connectors for Movable Gas Appliances*.

9.6.2 Use of Nonmetallic Gas Hose Connectors. Listed gas hose connectors shall be used in accordance with the manufacturer's installation instructions and as follows:

- (1) *Indoor.* Indoor gas hose connectors shall be used only to connect laboratory, shop, and ironing appliances requiring mobility during operation.
 - (a) An appliance shutoff valve shall be installed where the connector is attached to the building piping.
 - (b) The connector shall be of minimum length and shall not exceed 6 ft (1.8 m).
 - (c) The connector shall not be concealed and shall not extend from one room to another or pass through wall partitions, ceilings, or floors.
- (2) *Outdoor.* Outdoor gas hose connectors are permitted to connect portable outdoor appliances.
 - (a) An appliance shutoff valve, a listed quick-disconnect device, or a listed gas convenience outlet shall be installed where the connector is attached to the supply piping and in such a manner so as to prevent the accumulation of water or foreign matter.
 - (b) This connection shall be made only in the outdoor area where the appliance is to be used.

9.6.3 Connection of Portable and Mobile Industrial Appliances.

9.6.3.1 Where portable industrial appliances or appliances requiring mobility or subject to vibration are connected to the

building gas piping system by the use of a flexible hose, the hose shall be suitable and safe for the conditions under which it can be used.

9.6.3.2 Where industrial appliances requiring mobility are connected to the rigid piping by the use of swivel joints or couplings, the swivel joints or couplings shall be suitable for the service required and only the minimum number required shall be installed.

9.6.3.3 Where industrial appliances subject to vibration are connected to the building piping system by the use of all metal flexible connectors, the connectors shall be suitable for the service required.

9.6.3.4 Where flexible connections are used, they shall be of the minimum practical length and shall not extend from one room to another or pass through any walls, partitions, ceilings, or floors. Flexible connections shall not be used in any concealed location. They shall be protected against physical or thermal damage and shall be provided with gas shutoff valves in readily accessible locations in rigid piping upstream from the flexible connections.

9.6.4 Appliance Shutoff Valves and Connections. Each appliance connected to a piping system shall have an accessible, approved manual shutoff valve with a nondisplaceable valve member, or a listed gas convenience outlet. Appliance shutoff valves and convenience outlets shall serve a single appliance only and shall be installed in accordance with 9.6.4.1.

9.6.4.1 The shutoff valve shall be located within 6 ft (1.8 m) of the appliance it serves except as permitted in 9.6.4.2 or 9.6.4.3.

- (1) Where a connector is used, the valve shall be installed upstream of the connector. A union or flanged connection shall be provided downstream from the valve to permit removal of appliance controls.
- (2) Shutoff valves serving decorative appliances shall be permitted to be installed in fireplaces if listed for such use.

9.6.4.2 Shutoff valves serving appliances installed in vented fireplaces and ventless firebox enclosures shall not be required to be located within 6 ft (1.8 m) of the appliance where such valves are readily accessible and permanently identified. The piping from the shutoff valve to within 6 ft (1.8 m) of the appliance shall be designed, sized and installed in accordance with Chapters 5, 6, and 7.

9.6.4.3 Where installed at a manifold, the appliance shutoff valve shall be located within 50 ft (15 m) of the appliance served and shall be readily accessible and permanently identified. The piping from the manifold to within 6 ft of the appliance shall be designed, sized and installed in accordance with Chapters 5, 6, and 7.

9.6.5 Quick-Disconnect Devices.

9.6.5.1 Quick-disconnect devices used to connect appliances to the building piping shall be listed to ANSI Z21.41/CSA 6.9, *Quick-Disconnect Devices for Use with Gas Fuel Appliances*.

9.6.5.2 Where installed indoors, an approved manual shutoff valve with a nondisplaceable valve member shall be installed upstream of the quick-disconnect device.