

NFPA®

54

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**National
Fuel Gas
Code**

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5.6.2.5 Aluminum Alloy. Aluminum alloy pipe shall comply with ASTM B241, *Standard Specification for Aluminum and Aluminum-Alloy Seamless Pipe and Seamless Extruded Tube* (except that the use of alloy 5456 is prohibited), and shall be marked at each end of each length indicating compliance. Aluminum alloy pipe shall be coated to protect against external corrosion where it is in contact with masonry, plaster, or insulation or is subject to repeated wettings by such liquids as water, detergents, or sewage.

5.6.2.6 Aluminum Installation. Aluminum alloy pipe shall not be used in exterior locations or underground.

5.6.3 Metallic Tubing.

N 5.6.3.1 Tubing shall not be used with gases corrosive to the tubing material

5.6.3.2 Steel. Steel tubing shall comply with ASTM A254, *Standard Specification for Copper-Brazed Steel Tubing*.

N 5.6.3.3 Stainless Steel. Stainless steel tubing shall comply with one of the following:

- (1) ASTM A268, *Standard Specification for Seamless and Welded Ferritic and Martensitic Stainless Steel Tubing for General Service*
- (2) ASTM A269, *Standard Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service*

5.6.3.4* Copper and Copper Alloy. Copper and copper alloy tubing shall not be used if the gas contains more than an average of 0.3 grains of hydrogen sulfide per 100 scf of gas (0.7 mg/100 L). Copper tubing shall comply with standard Type K or Type L of ASTM B88, *Standard Specification for Seamless Copper Water Tube*, or ASTM B280, *Standard Specification for Seamless Copper Tube for Air Conditioning and Refrigeration Field Service*.

5.6.3.5 Aluminum. Aluminum alloy tubing shall comply with ASTM B210, *Standard Specification for Aluminum and Aluminum-Alloy Drawn Seamless Tubes*, or ASTM B241, *Standard Specification for Aluminum and Aluminum-Alloy Seamless Pipe and Seamless Extruded Tube*. Aluminum alloy tubing shall be coated to protect against external corrosion where it is in contact with masonry, plaster, or insulation or is subject to repeated wettings by such liquids as water, detergent, or sewage. Aluminum alloy tubing shall not be used in exterior locations or underground.

5.6.3.6 Corrugated Stainless Steel. Corrugated stainless steel tubing shall be listed in accordance with ANSI LC 1/GSA 6.26, *Fuel Gas Piping Systems Using Corrugated Stainless Steel Tubing*.

5.6.4 Plastic Pipe, Tubing, and Fittings.

5.6.4.1 Standard and Marking.

5.6.4.1.1 Polyethylene plastic pipe, tubing, and fittings used to supply fuel gas shall conform to ASTM D2513, *Standard Specification for Polyethylene (PE) Gas Pressure Pipe, Tubing, and Fittings*. Pipe to be used shall be marked “gas” and “ASTM D2513.”

Δ 5.6.4.1.2 Polyamide pipe, tubing, and fittings shall be identified in and conform to ASTM F2945, *Standard Specification for Polyamide 11 Gas Pressure Pipe, Tubing, and Fittings*. Pipe to be used shall be marked “gas” and “ASTM F2945.”

5.6.4.1.3 Polyvinyl chloride (PVC) and chlorinated polyvinyl chloride (CPVC) plastic pipe, tubing, and fittings shall not be used to supply fuel gas.

5.6.4.2* Regulator Vent Piping. Plastic pipe and fittings used to connect regulator vents to remote vent terminations shall be PVC conforming to ANSI/UL 651, *Schedule 40 and 80 Rigid PVC Conduit and Fittings*. PVC vent piping shall not be installed indoors.

Δ 5.6.4.3 Anodeless Risers. Anodeless risers shall comply with the following:

- (1) Factory-assembled anodeless risers shall be recommended by the manufacturer for the gas used and shall be leak tested by the manufacturer in accordance with written procedures.
- (2) Service head adapters and field-assembled anodeless risers incorporating service head adapters shall be recommended by the manufacturer for the gas used and shall be design-certified to meet the requirements of Category I of ASTM D2513, *Standard Specification for Polyethylene (PE) Gas Pressure Pipe, Tubing, and Fittings*, and 49 CFR 192.281(e). The manufacturer shall provide the user qualified installation instructions as prescribed by 49 CFR 192.283(b).
- (3) The use of plastic pipe, tubing, and fittings in undiluted LP-Gas piping systems shall be in accordance with NFPA 58.

5.6.5 Workmanship and Defects. Gas pipe, tubing, and fittings shall be clear and free from cutting burrs and defects in structure or threading and shall be thoroughly brushed and chip and scale blown. Defects in pipe, tubing, and fittings shall not be repaired. Defective pipe, tubing, and fittings shall be replaced.

5.6.6 Metallic Pipe Threads.

5.6.6.1 Specifications for Pipe Threads. Metallic pipe and fitting threads shall be taper pipe threads and shall comply with ANSI/ASME B1.20.1, *Pipe Threads, General Purpose, Inch*.

5.6.6.2 Damaged Threads. Pipe with threads that are stripped, chipped, corroded, or otherwise damaged shall not be used. Where a weld opens during the operation of cutting or threading, that portion of the pipe shall not be used.

5.6.6.3 Number of Threads. Field threading of metallic pipe shall be in accordance with Table 5.6.6.3.

5.6.6.4* Thread Joint Compounds. Thread joint compounds shall be resistant to the action of LP-Gas or to any other chemi-

Δ Table 5.6.6.3 Specifications for Threading Metallic Pipe

Iron Pipe Size (in.)	Approximate Length of Threaded Portion (in.)	Approximate No. of Threads to Be Cut
½	¾	10
¾	¾	10
1	⅞	10
1¼	1	11
1½	1	11
2	1	11
2½	1½	12
3	1½	12
4	1¾	13

For SI units, 1 in. = 25.4 mm.