

INTERNATIONAL ASSOCIATION OF PLUMBING AND MECHANICAL OFFICIALS

IAPMO GUIDE CRITERIA FOR COPPER TUBING FPT OUTLETS FOR SUPPLY STOP VALVES IAPMO IGC 184-2003a (R2014)

1. PURPOSE

- 1.1** The purpose of this standard is to establish an acceptable performance standard for water distribution female threaded outlets for use with supply stop valves. It is intended to serve as a guide for producers, distributors, architects, code officials, contractors, installers and end users; to promote understanding regarding materials, manufacture, installation and performance, and to provide for identifying outlets that conform to this standard.
- 1.2** The provisions of this standard are not intended to prevent the use of any alternate material or method of construction, provided any such alternate meets the intent and requirements of this standard.

2. SCOPE

- 2.1** This standard covers general requirements, testing requirements, and markings and identification for hot and cold water distribution female threaded outlets intended for use up to 300 psi water pressure at a maximum working temperature of 180°F. These outlets are to be soldered to copper water supply tubing used in conjunction with supply stop valves made to the requirements of ASME A112.18.1. Requirements are included for materials, workmanship, dimensions and tolerances, temperature and hydrostatic sustained pressure strength. The components covered by this standard are intended for use in residential and commercial, hot and cold, potable water distribution systems.

3. REFERENCED STANDARDS

- 3.1** The standards referenced herein shall be the current edition of the standards, as published.

ASME A112.18.1	Plumbing Fixture Fittings
ASME B1.20.1	Pipe Threads, General Purpose (Inch)

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IGC 184-2003a (R2014) Cu Tubing FPT Outlets for Sup Stop Vlvs

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ASME B16.22	Wrought Copper and Copper Alloy Solder-Joint Pressure Fittings
ASTM B 88	Seamless Copper Water Tube
ASTM D 638	Tensile Properties of Plastics
NSF 61	Drinking Water System Components – Health Effects

4. GENERAL REQUIREMENTS

- 4.1 Materials.** The main components shall be made of copper or copper alloy but shall be of materials which meets the requirements of NSF 61 for drinking water contact.
- 4.1.1** Copper tubing shall be of type L or M that meet the material, dimensions, and tolerances prescribed in ASTM B 88.
- 4.1.2** Brass adapter shall meet the dimensions and tolerances prescribed in ASME B16.22.
- 4.1.3** Flux and solder materials used in solder brass adapter onto copper tubing shall be “lead free” containing not more than 0.2% lead.
- 4.1.4** Brass adapter and threaded plug shall be made from corrosion resistant materials, with brass containing not less than fifty-eight percent (58%) copper. Plastic threaded plug shall have a minimum tensile strength of 1000 lb./in² at 73°F when tested in accordance with ASTM D 638. All threads shall comply with ASME B1.20.1
- 4.2 Workmanship.** Outlets shall be free from defects (sinks, voids, inclusions, etc.) and foreign matter.
- 4.3 Installation.** Outlets shall be installed in accordance with the manufacturer’s Installation instructions.
- 4.4 Flow Rate.** FPT tubing outlets shall have a minimum 3 gpm flow rate at 80 psig.

5. TESTING REQUIREMENTS

- 5.1 Pressure Test.** Pressurize an outlet at 300 psi water pressure at a temperature of 180°F for fifteen minutes. Any signs of leakage or loss of pressure of the assembly, or at the connections, shall constitute failure.
- 5.2 Flow Rate Test.** Supply water to the inlet at 80 psig with the threaded plug removed from the outlet. Measure the flow rate. The flow rate shall be 3 gpm or greater.