

**INTERNATIONAL ASSOCIATION OF PLUMBING
AND MECHANICAL OFFICIALS**

**SAMPLE
IAPMO GUIDE CRITERIA
FOR**

**FITTINGS FOR
INSTALLATION ON TUBING**

IGC XXX – 2004

1. PURPOSE

- 1.1** The purpose of this standard is to establish a generally acceptable standard for fittings for installation on tubing. Its purpose is to serve as a guide for producers, distributors, architects, engineers, contractors, installers, inspectors and users; to promote understanding regarding materials, manufacture and installation; and to provide for identifying fittings for installation on tubing complying with 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 of this standard.

2. SCOPE

- 2.1** This standard serves to supplement the provisions of the Uniform Plumbing Code, Section something for joints as required on tubing.
- 2.2** This standard covers minimum standards for materials in the construction of fittings, and to prescribe minimum test requirements for the performance of fittings joints, together with methods of marking and identification.

3. REFERENCED STANDARDS

- 3.1** All standards referenced herein shall be the current edition of that standard as published in Table 14-1 of the Uniform Plumbing Code.

ASME B16.18
ASTM D 3350

Cast Copper Alloy Solder Joint Pressure Fittings
Polyethylene Plastics Pipe and Fittings Materials

4. GENERAL REQUIREMENTS

- 4.1** Fittings covered under this standard shall meet the material requirements of ANSI/ASME ### and chemical composition requirements of ASTM ###.

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- 4.2 O-ring seals shall be made of non-toxic synthetic rubber that will meet the requirements of ASTM ####, Classification System for Rubber Products in Automotive Applications and the requirements of something.

5. TESTING REQUIREMENTS

- 5.1 Fittings covered under this IGC shall meet the following physical test requirements and shall be tested on type K, L and M tubing and both hard and annealed types.
- 5.2 **Unrestrained Hydrostatic Pressure Test To Rupture At 22.8°C (73°F).** A test specimen shall be fabricated containing a joint. The unrestrained test specimen shall be filled with water and the internal pressure increased until the test specimen ruptures. Minimum rupture value shall be 5516 Kpa (800 psi) for 12.7 mm (1/2"), 19.1 mm (3/4"), and 25.4 mm (1") tubing sizes.
- 5.3 **Unrestrained Hydrostatic Pressure Test At 98.9°C (210°F).** A test specimen shall be fabricated containing a joint. The test specimen shall be filled with water and heated to 98.9°C (210°F) with an internal hydrostatic pressure of 1034 Kpa (150 psi) for a period of forty-eight (48) hours. No leakage shall occur.
- 5.4 **Torque Test.** A test specimen shall be fabricated containing a joint. The test specimen shall be filled with water and internally pressured to 1034 Kpa (150 psi). Apply torque until the tubing rotates in the fitting socket or leakage occurs. Minimum torque value shall be 1.1 Kg-m (8 ft-lb) for 12.7 mm (1/2"), 19.1 mm (3/4"), and 25.4 mm (1") tubing sizes.
- 5.5 **Bending Test.** Two (2) 762 mm (30") long tubes shall be joined with a press type coupling with an internal stop. The assembly shall be placed on supports 1016 mm (40") apart and a concentrated load applied to the center of the span at the center of the coupling. An internal hydrostatic pressure of 1034 Kpa (150 psi) shall be applied and maintained while the load is applied at the center of the span until leakage occurs. Minimum deflection shall be at least 76.2 mm (3") for 12.7 mm (1/2"), 19.1 mm (3/4"), and 25.4 mm (1") tubing sizes.
- 5.6 **Tensile Test.** Two (2) 203.2 mm (8") long tubes shall be joined with a coupling with an internal stop. The assembly shall be placed in a test machine and a load applied to pull the joint apart at a speed of 2.54 mm per minute (0.1 inch per minute). The minimum value at the point of release shall be 181.4 Kg (400 lbs) for 12.7 mm (1/2"), 19.1 mm (3/4"), and 25.4 mm (1") tubing sizes.

6. MARKINGS & IDENTIFICATION

- 6.1 All fittings shall bear the following markings:
- (a) Manufacturer's name or trademark; and
 - (b) Nominal Size.

Adopted: January 2004