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INTERNATIONAL ASSOCIATION OF PLUMBING AND MECHANICAL OFFICIALS

IAPMO GUIDE CRITERIA

FOR

SHOWER ARM ADAPTER WHICH ALLOWS CONNECTION OF THE SHOWER ARM ASSEMBLY TO BE MADE TO CTS TUBE OUTSIDE OF THE FINISHED WALL

IGC 174-2002

1. PURPOSE

- 1.1** The purpose of this standard is to establish a generally acceptable standard for adapters which allow connection of the shower arm assembly outside of the finished wall. This standard is intended 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 shower arm adapters that conform 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 or exceeds the intent of this standard.

2. SCOPE

- 2.1** This standard applies to shower arm adapters which allow connection of the shower arm assembly to be made outside of the finished wall.
- 2.2** This standard covers referenced standards, material requirements, testing requirements, and marking and identification for shower arm adapters which allow connection of the shower arm assembly to be made outside of the finished wall.

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.

ASTM D638	Tensile Properties of Plastics
ASTM D696	Coefficient of Linear Thermal Expansion of Plastics
	Between -30°C and 30°C with a Vitreous Silica Dilatometer
ASTM D2000	Rubber Products in Automotive Applications
ASTM D4000	Specifying Plastic Materials
MIL S-5059	Steel, Corrosion-Resistant (18-8), Plate, Sheet Strip

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4. DEFINITIONS

- 4.1 Free End Mounting** – Mounting which does not interfere, block off or restrict any part of the test.

5. MATERIAL REQUIREMENTS

- 5.1** Rubber components shall comply with the requirements for compound N701 found in ASTM D2000.
- 5.2** Stainless steel components shall comply with the requirements for Type 301SS found in MIL S-5059.
- 5.3** Plastic components shall comply with the requirements for Polyamide 66 found in ASTM D4000.
- 5.4 Minimum Sizing.** Minimum ID of the adapter shall be 0.375" to maintain adequate flow to the shower head.

6. TESTING REQUIREMENTS

- 6.1 Thermocycling.** This method describes a pass-fail test for thermocycling fittings used collectively over a critical temperature range for a selected number of cycles while subjected to a nominal internal pressure. The test provides a measure of resistance to failure due to the combined effects of differential thermal expansion and creep for fittings intended for a continuous use up to and including 180°F (82°C).
- 6.1.1 Apparatus.** A water source capable of maintaining a nominal internal pressure of 100±10 psi (690±69kPa) is required. The immersion system shall consist of two water reservoirs controlled at 60±3.6°F (16±2°C) and 180±3.6°F (82±2°C). The specimens shall be cycled from one reservoir to the other or the hot and cold water shall be alternately cycled over the test specimens automatically and returned to the proper reservoir. Automatic cycling may be accomplished by pumping from each reservoir through a delivery system having timer actuated valves to a specimen water trough having synchronized, timer-actuated return drains. Any automatic apparatus shall provide for complete immersion of the test specimens in the trough.
- 6.1.2 Sampling and Specimen Preparation.** Select at random six specimens to be tested. Assemble the fittings according to the installation instructions of the manufacturer. Close the specimen assembly with any suitable end closures that allow free-end mounting and will not leak under the thermocycling conditions, and connect the specimen assembly to the pressure source.
- 6.1.3 Procedure.** Pressurize the specimen assembly with water at 100±10 psi (690±69kPa). Determine if there are any initial leaks. All leaks shall be eliminated before the thermocycling test is started. Thermally cycle the specimen assembly either manually or automatically, and under an internal pressure of 100±10 psi (690±69kPa) alternately

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