

Internal Use Only

INTERNATIONAL ASSOCIATION OF PLUMBING AND MECHANICAL OFFICIALS

IAPMO GUIDE CRITERIA FOR

FREEZE FREE FAUCETS

IAPMO IGC 216-2005

1. PURPOSE

- 1.1 The purpose of this standard is to establish a generally acceptable standard for freeze free faucets. 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 freeze free faucets.
- 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 document and changes are amended to this standard.

2. SCOPE

- 2.1 This standard covers minimum standards for materials in the construction of freeze free faucets, and to prescribe minimum test requirements for the performance of these faucets, together with methods of marking and identification.
- 2.2 This standard addresses the issue of outdoor faucet, protecting itself and the immediately connected supply line from freezing, without manual intervention, with or without a garden hose attached, with the valve closed, open, or in between, while consistently retaining the faucet's utility as an ordinary faucet, to consistently deliver or shut off the flow of water, in or out of extreme ambient temperature ranges.

3. REFERENCED STANDARDS

- 3.1 All standards referenced herein shall be the current edition of that standard.

ASME B1.20.7	Hose Coupling Screw Threads, Inch
ASSE 1019	Vacuum Breaker Wall Hydrants, Freeze Resistant, Automatic Draining Type

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4. GENERAL REQUIREMENTS

- 4.1 Material.** The faucet material shall comply with Section 4.1 entitled Materials in ASSE 1019.
- 4.2 Design.** The faucet shall be designed for a maximum working pressure of 125 psi and for flow temperatures of 33.0 to 140.0°F.
- 4.3 Connections.** The outlet connections shall comply with ASME B1.20.7. The inlet connection shall comply with ASSE 1019.

5. TESTING REQUIREMENTS

- 5.1 Hydrostatic Pressure Test.** The faucet shall be tested in accordance with Section 3.1 in ASSE 1019. There shall be no sign of external leakage.
- 5.2 Water Flow Capacity and Pressure Loss.** The faucet shall be tested in accordance with Section 3.2 in ASSE 1019. The faucet shall comply with the requirements in Table 1 of ASSE 1019.
- 5.3 Deterioration at Maximum Rated Temperature and Pressure.** The faucet shall be tested in accordance with Section 3.3 in ASSE 1019. There shall be no sign of external leakage.
- 5.4 Life Cycle Test.** The faucet shall be tested in accordance with Section 3.4 in ASSE 1019. The faucet shall comply with the remaining testing sections of this standard. Failure to comply shall result in rejection of the device.
- 5.5 Resistance to Bending.** The faucet shall be tested in accordance with Section 3.5 in ASSE 1019. There shall be no sign of external leakage.
- 5.6 Freeze Test.** Install the faucet on a water line in accordance with the manufacturer's installation instructions. The faucet shall be attached to a water supply line capable of delivering a water pressure between 15-125 psi by means of a suitable pipe or hose. The faucet shall be opened to full flow of water to purge any air from the supply line and the faucet. In the closed position and minimum 40°F air temperature, any leakage from the pressurized device shall be noted. The water pressurized device, including one foot of the attached supply line, shall be totally confined within a cold chamber for 1 hour at or below a temperature of 0°F with the valve in the closed position. After 1 hour the faucet handle will be turned to the open position and the normal flow of water will be observed.

The water pressurized device shall then be fitted with a sealing cap over the mouth of the device, to simulate an attached and blocked garden hose. The pressurized device, including one foot of the attached supply line, shall be placed in the cold chamber for 1 hour at a minimum temperature of 0°F. At the end of 1 hour the cold chamber shall be warmed to 40°F for 10 minutes. The sealing cap shall be removed and the faucet