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INTERNATIONAL ASSOCIATION OF PLUMBING AND MECHANICAL OFFICIALS

IAPMO GUIDE CRITERIA

FOR

RUPTURE PREVENTION DEVICES FOR WALL HYDRANTS

IAPMO IGC 204-2004

1. PURPOSE

- 1.1 The purpose of this standard is to establish a generally acceptable standard for producers, distributors, architects, engineers, contractors, inspectors and users; to promote understanding regarding materials, manufacture, and installation; and to provide for identifying Rupture Prevention Devices for Wall Hydrants.
- 1.2 The provisions of this standard are not intended to prevent the use of any alternate material, method of construction, or design, provided the use of any such alternate meets the intent of this standard.

2. SCOPE

- 2.1 This standard serves as a supplement to ASSE 1019 and ASME A112.21.3. This standard addresses rupture prevention devices for wall hydrants pertaining to freezing and subsequent damage.

3. REFERENCED STANDARDS

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

ASME A112.21.3	Floor Drains Hydrants for Utility and Maintenance Use
ASSE 1019	Vacuum Breaker Wall Hydrants, Freeze Resistant, Automatic Draining Type

4. GENERAL REQUIREMENTS

- 4.1 **Material.** The device shall have a maximum density of 0.70 g/mL and comply with the following minimum thermoplastic vulcanizate (TPV) property requirements:

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<u>Property</u>	<u>Value</u>	<u>Test Method</u>
Durometer Hardness(D scale, 0.120")	50	ASTM D 2240
Density – Specific Gravity	0.94sp gr 23/23°C	ASTM D 792
Tensile Set	61 %	ASTM D 412
Tensile Strength @ Yld (73°F)	1740 psi	ASTM D 638
Tensile Elongation @ Yld (73°F)	30 %	ASTM D 638
Max. Continuous Use Tmp	275°F	ASTM D 794
Brittle Temperature	-29°F	ASTM D 746
Flame Rating	HB	UL 94

- 4.2 Wall Hydrants.** When supplied, wall hydrants shall comply with ASSE 1019 or ASME A112.21.3.

5. TESTING REQUIREMENTS

- 5.1** Install device into wall hydrant in accordance with manufacturer's installation instructions. Sample shall be tested in accordance with the Water Flow Capacity and Pressure Loss Test in ASSE 1019.

- 5.1.1 Performance Requirements.** The test sample shall meet the requirements within Table 1 in ASSE 1019.

- 5.2** Wall hydrant to be tested shall have vacuum breakers removed and the inlet end shall be sealed with a minimum volume change plug of less than 2 ml. Any devices threaded on the mouth shall also be removed prior to testing the rupture prevention device.

Install rupture prevention device into wall hydrant in accordance with manufacturer's installation instructions. With wall hydrant open, seal the threaded mouth of the wall hydrant by means of a valve with no more than 5 ml of water between mouth of wall hydrant and valve. Fill with water and purge any air within the wall hydrant. The wall hydrant shall now be mobile. Pressurize wall hydrant to 250 ± 10 psi by using the mouth attached valve to hold the pressure and place in freezer for a minimum of 8 continuous hours at a maximum temperature of 15°F. Remove frozen wall hydrant from the freezer and allow to thaw at room temperature for 1 hours.

Dry wall hydrant with a towel and re-pressurize to 250 ± 10 psi and inspect for leaks. Relieve pressure and drain water from within the wall hydrant and let stand for 2 hours at room temperature. Repeat this process one more time with original rupture prevention device still installed.

- 5.2.1 Performance Requirements.** If at any time during the test procedure, visual leakage from the wall hydrant is observed, the device shall fail. If there is no apparent leakage after final inspection that can be visually detected, the device shall pass test.