

INTERNATIONAL ASSOCIATION OF PLUMBING AND MECHANICAL OFFICIALS

IAPMO GUIDE CRITERIA FOR

RELIEF VALVE FOR USE ON BACKFLOW PREVENTERS

IAPMO IGC 170-2002r¹ (R2013)

1. PURPOSE

- 1.1** The purpose of this standard is to establish requirements for relief valves for use on backflow preventers. 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 a means for identifying devices 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 and requirements of this standard.

2. SCOPE

- 2.1** This standard shall be used as general requirements on relief valves for use on backflow preventers. This standard is necessary as ASME articles do not address relief valves for use on backflow preventers.
- 2.2** This standard covers referenced standard material requirements, dimensional requirements, assembly and quality requirements, relief valve purpose and testing.

3. REFERENCED STANDARDS

- 3.1** The standards referenced herein shall be the current edition of the standards, as published in Table 14-1 of the Uniform Plumbing Code, unless otherwise noted.

ASTM A 313	Stainless Steel Spring Wire
ASTM F 152	Tension Testing of Nonmetallic Gasket Materials
NSF 61	Drinking Water System Components – Health Effects

4. MATERIALS

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- 4.1 The valve body and its operating parts shall be made of compatible corrosion resistant materials. All materials coming in contact with potable water shall be non-toxic and shall comply with NSF 61.
- 4.2 All components made of fiber shall be tested to the requirements of ASTM F 152. The across grain tensile strength shall be equal to or greater than 1740 psi.
- 4.3 All components made of stainless steel shall be tested to the requirements of ASTM A 313, standard specifications for stainless steel spring wire. The stainless steel shall contain not less than 17% chromium and 7% nickel.

5. DIMENSIONS AND TOLERANCES

- 5.1 The minimum dimension of the outlet flow openings and or outlet nozzle opening shall be equal to or greater than the minimum dimension of the inlet of the relief valve.

6. TESTING REQUIREMENTS

- 6.1 **Hydrostatic Test.** Relief valve shall be hydrostatically tested at 300 psi for 15 minutes $65^{\circ}\text{F} \pm 10^{\circ}\text{F}$ with the inlet and outlet blocked and the relief valve open. Purge all air from the valve before testing.
- 6.2 **Relief Valve Set Pressure.** Flush all air from the valve. Pressurize the inlet side of the side of the valve, increasing the inlet pressure no more than 1 psi per second until the valve seat begins to relieve the pressure. Record the pressure at which the valve seat first opened. Repeat the procedure three times. Each valve shall be tagged with the set pressure arrived at by this procedure.
- 6.3 **Relief Flow Capacity Test.** The relief valve shall be flow tested with a flowing inlet pressure of 10 psi above the relief valve set pressure.
- 6.3.1 **Performance Requirements.** The flow rate through a 1 inch relief valve shall be a minimum of 20 mL/min.

7. MARKINGS AND IDENTIFICATION

- 7.1 The following information shall be permanently and legibly marked on the relief valve body so as to be visible after installation:
- (a) Manufacturer's name;
 - (b) Model number.
- 7.2 A durable tag made from metal or plastic material shall be affixed to the valve in such a manner that tools are required to remove it. The tag shall bear the relief valve set-point determined in section 6.2. The tag markings shall be permanent and legible.

Adopted: January 2002

Revised: May 2002

Reaffirmed: December 2013

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