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INTERNATIONAL ASSOCIATION OF PLUMBING AND MECHANICAL OFFICIALS

IAPMO GUIDE CRITERIA

FOR

MALLEABLE CAST IRON FITTINGS WITH MECHANICAL PRESS CONNECTIONS FOR STEEL PIPE

IGC 253-2008a

1. PURPOSE

- 1.1** The purpose of this standard is to establish a generally acceptable standard for malleable iron fittings with mechanical press type end connections for use with steel piping systems. 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 mechanical press type malleable iron fittings 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 document and changes are amended to this standard.

2. SCOPE

- 2.1** This standard covers minimum standards for materials in the construction of malleable iron fittings with mechanical press type end connections may also be combined with other end connections such as threaded, and/or alternate types and to prescribe minimum test requirements for the performance, together with methods of marking and identification.
- 2.2** These fittings are intended to be used with steel piping for applications as specified by the manufacturer's recommendations.

3. REFERENCED STANDARDS

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

ASME B16.3	Malleable Iron Threaded Fittings
ASTM A 197	Cupola Malleable Iron
ASTM F 1387	Performance of Piping and Tubing Mechanically Attached Fittings

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IAPMO PS 117 Copper and Copper Alloy Tubing System Incorporating Press-Type or Nail-Type Connections
NSF/ANSI 61 Drinking Water System Components – Health Effects

4. MATERIAL REQUIREMENTS

- 4.1 Classification.** The fittings shall be classified in accordance with the design requirements in Section 4.1 of ASTM F 1387.
- 4.2 Material.** The chemical and physical properties of the malleable iron castings shall be in accordance with ASTM A 197.
- 4.2.1 Rated Pressure.** The rated pressure shall be classified in accordance with Section 4.3 of ASTM F 1387.
- 4.3** Seals shall comply with the requirements in Section 6.3 of ASTM F 1387. O-Rings are used on mechanical fittings to make a static seal and shall be manufactured from ethylene propylene rubber (EPDM), with a Shore A Durometer value of 60-70 when tested in accordance with ASTM Standard D 2240.
- 4.4** Fittings for use in drinking water systems shall conform to the requirements of NSF/ANSI 61.
- 4.5 Alternate End Connections.** Alternate end connections shall comply with the requirements in ASME B16.3.

5. PERFORMANCE REQUIREMENTS

- 5.1** Fittings covered under this standard shall comply with the performance requirements in Section 13.1 of ASTM F 1387. For the hydrostatic burst test, the minimum testing pressure shall be 600 psi or 3 times the manufacturer's rated pressure, whichever is greater.
- 5.1.1 Alternate test method.** The vibration test within IAPMO PS 117 may be used as an alternate performance test in lieu of the Flexure Fatigue Test. The Hydraulic Shock (Water Hammer) Test may be used as an alternate performance test in lieu of the Tensile Test.
- 5.2** Supplementary testing requirements provided in Section 13.2 of ASTM F 1387 shall apply only when specified in part or whole by the purchaser or manufacturer. Unless otherwise specified, U.S. Navy contracts shall invoke the supplementary requirements in whole.

6. MARKINGS & IDENTIFICATION

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