Designation: F 1548 – 01

An American National Standard

Standard Specification for the Performance of Fittings for Use with Gasketed Mechanical Couplings Used in Piping Applications[1]

This standard is issued under the fixed designation F 1548; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This specification defines classification, materials, test requirements, inspection certification, marking and packaging of fittings for use with gasketed mechanical couplings complying to Specification F 1476.

2. Referenced Documents

2.1 *ASTM Standards:*

NOTE 1—See Table 1 for equivalency listing of applicable, equivalent specifications.

A 47 Specification for Ferritic Malleable Iron Castings[2]
A 48 Specification for Gray Iron Castings[2]
A 53 Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless[3]
A 153 Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware[4]
A 216 Specification for Steel Castings, Carbon Suitable for Fusion Welding for High-Temperature Service[2]
A 234 Specification for Piping Fittings of Wrought Carbon Steel and Alloy Steel for Moderate and High Temperature Service[3]
A 312 Specification for Seamless and Welded Austenitic Stainless Steel Pipe[3]
A 395 Specification for Ferritic Ductile Iron Pressure-Retaining Castings for Use at Elevated Temperatures[2]
A 403 Specification for Wrought Austenitic Stainless Steel Piping Fittings[3]
A 536 Specification for Ductile Iron Castings[2]
A 743 Specification for Castings, Iron-Chromium, Iron-Chromium-Nickel, Corrosion-Resistant for General Application[2]
B 26 Specification for Aluminum-Alloy Sand Castings[5]
B 75 Specification for Seamless Copper Tube[6]
B 210 Specification for Aluminum and Aluminum-Alloy Drawn Seamless Tubes[5]
B 369 Specification for Copper-Nickel Alloy Castings[6]
B 580 Specification for Anodic Oxide Coatings on Aluminum[7]
B 584 Specification for Copper-Alloy Sand Castings for General Applications[6]
B 633 Specification for Electrodeposited Coatings of Zinc on Iron and Steel[7]

TABLE 1 Specification Equivalency Table

Spec. Ref. Number	U.S. Designation ASTM	British Standard	ISO Standard
1	A 47	6681	5922
2	A 48	1452	—
3	A 53	3601	—
4	A 153	729	1459, 1460, 1461
5	A 216	3100	—
6	A 234	1640 Pt. 1	—
7	A 312	3605	—
8	A 395	—	—
9	A 403	1640 Pt. 2	—
10	A 536	4772	2531, 4179, 8179
11	A 743	3100	—
12	B 26	1490	3522, 7722
13	B 75	2871	—
14	B 210	1471	209
15	B 369	3071	—
16	B 580	—	—
17	B 584	1400	—
18	B 633	1706	2081
	ANSI		
19	B36.10	3600	4200
20	B36.19	3600	4200
21	Z 540.1	5781	—
	ANSI/AWWA		
22	C151/A21.51	4772	2531, 4179, 8179
23	C606	—	—

[1] This practice is under the jurisdiction of ASTM Committee F25 on Ships and Marine Technology and is the direct responsibility of Subcommittee 25.13 on Piping Systems.

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[2] *Annual Book of ASTM Standards*, Vol 01.02.
[3] *Annual Book of ASTM Standards*, Vol 01.01.
[4] *Annual Book of ASTM Standards*, Vol 01.06.
[5] *Annual Book of ASTM Standards*, Vol 02.02.
[6] *Annual Book of ASTM Standards*, Vol 02.01.
[7] *Annual Book of ASTM Standards*, Vol 02.05.

F 1476 Specification for the Performance of Gasketed Mechanical Couplings for Use in Piping Applications[8]

2.2 *ANSI Standards:*[9]

B 36.10 Welded and Seamless Wrought Steel Pipe

B 36.19 Stainless Steel Pipe

Z 540.1 Calibration Laboratories in Measuring Test Equipment

2.3 *ANSI/AWWA Standards:*[9]

C 151/A21.51 Ductile-Iron Pipe, Centrifugally Cast in Metal Molds or Sand-Lined Molds, for Water and Other Liquids

C 606-87 Grooved and Shouldered Joints

2.4 *British Standards:*[10]

BS 729 Specification for Hot Dip Galvanized Coatings on Iron and Steel Articles

BS 1400 Specification for Copper Alloy Ingots and Copper Alloy and High Conductivity Copper Castings

BS 1452 Specification for Flake Graphite Cast Iron

BS 1471 Specification for Wrought Aluminum and Aluminum Alloys for General Engineering Purposes—Drawn Tube

BS 1490 Specification for Aluminum and Aluminum Alloy Ingots and Castings for General Engineering Purposes

BS 1640 Pt. 1 Wrought Carbon and Ferritic Alloy Steel Fittings

BS 1640 Pt. 2 Wrought and Cast Austenitic Chromium—Nickel Steel Fittings

BS 1706 Method for Specifying Electroplated Coatings of Zinc and Cadmium on Iron and Steel

BS 2871 Specification for Copper and Copper Alloys—Tubes

BS 3071 Specification for Nickel—Copper Alloy Castings

BS 3100 Specification for Steel Castings for General Engineering Purposes

BS 3600 Specification for Dimensions of Steel Pipe for the Petroleum Industry

BS 3601 Specification for Carbon Steel Pipes and Tubes with Specified Room Temperature Properties for Pressure Purposes

BS 3605 Austenitic Stainless Steel Pipes and Tubes for Pressure Purposes

BS 4772 Specification for Ductile Iron Pipes and Fittings

BS 5781 Measurement and Calibration System

BS 6681 Specification for Malleable Cast Iron

2.5 *International Standards Organization:*[11]

209 Composition of Wrought Products of Aluminum and Aluminum Alloys . . . Chemical Composition (Percent)

1459 Metallic Coatings—Protection Against Corrosion by Hot Dip Galvanizing—Guiding Principles

1460 Metallic Coatings—Hot Dip Galvanized Coatings on Ferrous Materials—Determination of the Mass Per Unit Area—Gravimetric Method

1461 Metallic Coatings—Hot Dipped Galvanized Coatings on Fabricated Ferrous Products—Requirements

2081 Metallic Coatings—Electroplated Coatings of Zinc on Iron or Steel

2531 Ductile Iron Pipes, Fittings and Accessories for Pressure Pipe Lines

3522 Cast Aluminum Alloys—Chemical Composition and Mechanical Properties

4179 Ductile Iron Pipes for Pressure and Non-Pressure Pipelines—Centrifugal Cement Mortar Lining—General Requirements

4200 Plain End Steel Tubes, Welded and Seamless—General Tables of Dimensions and Masses Per Unit Length

5922 Malleable Cast Iron

7722 Aluminum Alloy Castings Produced by Gravity, Sand, or Chill Casting, or by Related Processes—General Conditions for Inspection and Delivery

8179 Ductile Iron Pipes—External Zinc Coating

3. Terminology

3.1 *Definitions:*

3.1.1 *fabricated fitting*—a fitting constructed by welding together sections of pipe or tube.

3.1.2 *fitting*—a device used in a piping system to change pipe direction, size, split or combine flows, or adapt to other joining methods.

3.1.3 *grooved end*—type of fitting or pipe end having a groove for use with grooved mechanical couplings (Type I) as defined in F 1476.

3.1.4 *pipe*—hollow tubular product conforming to Table 1 Specification Reference Nos. 19, 20, 22 and 13, Nominal Dimensions, or O.D. tube.

3.1.5 *plain end*—type of fitting or pipe end for use with a gasketed mechanical coupling (Type II) that is plain end as defined in Specification F 1476.

3.1.6 *tangent*—a section of straight pipe or tube integral to or welded to the end(s) of a fitting.

3.1.7 *wrought fitting*—a fitting made by shaping or shaping and welding.

4. Classification

4.1 These fittings are classified into the following design types:

4.1.1 *Type I*—Grooved end.

4.1.2 *Type II*—Plain end.

5. Ordering Information

5.1 Orders for fittings under this specification shall include the following:

5.1.1 Specification designation, title, number and year of issue.

5.1.2 Quantity.

5.1.3 Size and appropriate suffix (Example 8 in. IPS, 76.1 mm O.D.).

5.1.4 Fitting description (90° Elbow, Tee, Cross, etc.).

[8] *Annual Book of ASTM Standards*, Vol 01.07.

[9] Available from American National Standards Institute, 11 W. 42nd St., 13th Floor, New York, NY 10036.

[10] Available from British Standards Institution, 2 Park Street, London W1A 2BS.

[11] Available from ISO Central Secretariat; 1, rue de Varembe; Case postale 56; CH-1211 Geneve 20; Switzerland.