

Standard Specification for Welded Joints for Shipboard Piping Systems¹

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1. Scope

1.1 This specification covers typical details of welded joints commonly used in shipboard piping systems. These joints and other joints may be used provided the welding procedures used have been qualified in accordance with the applicable regulatory rules and regulations.

1.2 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

2. Referenced Documents

2.1 Federal Standards:

Code of Federal Regulations Title 46 Shipping, Parts 30 to 40²

Code of Federal Regulations Title 46 Shipping, Parts 41 to 69²

Code of Federal Regulations Title 46 Shipping, Parts 140 to 149²

Rules for Building and Classing Steel Vessels³

3. Application, Service, Limitations, and List of Weld Joint Details

3.1 Details of welded joints, including application, service, and limitation notes, are provided in the appropriate figures, as follows:

3.1.1 Butt-Welded Joints for Pipes, Valves, Fittings, and Flanges:

Fig. 1 Butt Joint, Square

Fig. 2 Butt Joint, V-Grooved

Fig. 3 Butt Joint, V-Grooved, Welded Both Sides

Fig. 4 Butt Joint, Double V-Grooved, Welded Both Sides

Fig. 5 Butt Joint, Compound Bevel V-Grooved, Welded Both Sides

Fig. 6 Butt Joint, V-Grooved, Miter Type

Fig. 7 Butt Joint, V-Grooved, Welded with Bevel End-Type Backing Ring

Fig. 8 Butt Joint, Compound Bevel V-Grooved, Welded with Bevel End-Type Backing Ring

Fig. 9 Butt Joint, V-Grooved Welded with Bevel End Lug-Type Backing Ring

Fig. 10 Butt Joint, V-Grooved, Welded with Square End-Type Backing Ring

Fig. 11 Butt Joint, V-Grooved, Welded with Consumable Insert Ring

Fig. 12 Butt Joint, Compound Bevel V-Grooved, Welded with Consumable Insert Ring

Fig. 13 Butt Joint, U-Grooved, Welded with Consumable Insert Ring

Fig. 14 Butt Joint, V-Grooved, Welded with Consumable Insert Ring

Fig. 15 Butt Joint, Socket Weld to Socket Weld Valve, Fitting or Flange Welded on Pipe Nipple

Fig. 16 Butt Joint, Transition between Unequal Inside and Outside Diameter Components

3.1.2 Fillet Welded Joints for Valves, Fittings, and Flanges:

Fig. 17 Fillet Welded Sleeve-Type Pipe Coupling

Fig. 18 Fillet Welded Socket Weld Fitting or Valve

Fig. 19 Fillet Welded Socket Weld-Flange

Fig. 20 Double Fillet Welded Slip-On Flange (Forged)

Fig. 21 Double Fillet Welded Slip-On Flange (Plate Type)

Fig. 22 Fillet Welded Slip-On Flange (Plate Type), Single Bevel

3.1.3 Fabricated Joints:

Fig. 23 Fillet Welded Internal Root Connection

Fig. 24 Fillet Welded External Root Connection

Fig. 25 Fillet Reinforced External Root Connection Single Bevel

Fig. 26 Fillet Reinforced External Root Connection, Single Bevel, Welded Both Sides

Fig. 27 Fillet Reinforced External Root Connection, Single Bevel, Welded with Square End Backing Ring

Fig. 28 Fillet Reinforced Internal Root Connection, Single Bevel, Welded with Square End Backing Ring

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² Available from U.S. Government Printing Office Superintendent of Documents, 732 N. Capitol St., NW, Mail Stop: SDE, Washington, DC 20401, <http://www.access.gpo.gov>.

³ Available from American Bureau of Shipping (ABS), ABS Plaza, 16855 Northchase Dr., Houston, TX 77060, <http://www.eagle.org>.