



Standard Specification for Spray Shields for Mechanical Joints¹

This standard is issued under the fixed designation F1138; 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.

This standard has been approved for use by agencies of the Department of Defense.

1. Scope

1.1 This specification describes the manufacturing requirements for spray shield stock and the fabrication and installation requirements for spray shields made from that stock.

1.1.1 Sections 2-14 address the manufacturing requirements for the spray shield stock. Annex A1 addresses the fabrication and installation requirements for the spray shields.

1.1.2 Fig. 1 shows the typical construction of a spray shield. Figs. 2-6 show methods of installation of a spray shield on various mechanical joints.

1.2 The shields are intended for use around mechanical joints (flanged, bolted unions, and so forth) in liquid piping systems to prevent the impingement of flammable liquid on hot surfaces or fluids onto electrical switchboards and components resulting from a leak in the mechanical joint.

1.3 The values stated in inch-pound units are to be regarded as the standard. The values given in parentheses are for information only.

2. Referenced Documents

2.1 ASTM Standards:²

- A176 Specification for Stainless and Heat-Resisting Chromium Steel Plate, Sheet, and Strip
- A276 Specification for Stainless Steel Bars and Shapes
- A580/A580M Specification for Stainless Steel Wire
- B134/B134M Specification for Brass Wire
- B164 Specification for Nickel-Copper Alloy Rod, Bar, and Wire
- B166 Specification for Nickel-Chromium-Iron Alloys (UNS N06600, N06601, N06603, N06690, N06693, N06025, N06045, and N06696), Nickel-Chromium-Cobalt-Molybdenum Alloy (UNS N06617), and Nickel-Iron-

Chromium-Tungsten Alloy (UNS N06674) Rod, Bar, and Wire

D1308 Test Method for Effect of Household Chemicals on Clear and Pigmented Organic Finishes

D1424 Test Method for Tearing Strength of Fabrics by Falling-Pendulum (Elmendorf-Type) Apparatus

D1682 Test Method for Breaking Load and Elongation of Textile Fabric (Withdrawn 1992)³

D1777 Test Method for Thickness of Textile Materials

D3389 Test Method for Coated Fabrics Abrasion Resistance (Rotary Platform Abrader)

D3776 Test Methods for Mass Per Unit Area (Weight) of Fabric

D3786 Test Method for Bursting Strength of Textile Fabrics—Diaphragm Bursting Strength Tester Method

D3951 Practice for Commercial Packaging

F501 Test Method for Aerospace Materials Response to Flame, with Vertical Test Specimen (for Aerospace Vehicles Standard Conditions) (Withdrawn 1998)³

2.2 American Association of Textile Chemists and Colorists Standards:

AATCC-22 Water Repellency, Spray Test⁴

AATCC-35 Water Resistance, Rain Test⁴

AATCC-127 Water Resistance, Hydrostatic Pressure Test⁴

2.3 Military Standards:

MIL-C-20079 Cloth, Glass, Tape, Textile Glass and Thread, Glass⁵

MIL-C-20696 Cloth, Coated, Nylon Waterproof⁵

2.4 Federal Standard:

WW-C-440 Clamps, Hose (Low Pressure)⁵

3. Ordering Information

3.1 ASTM designation and year of issue,

3.2 Length and width required (see 7.1), and

¹ This specification is under the jurisdiction of ASTM Committee F25 on Ships and Marine Technology and is the direct responsibility of Subcommittee F25.07 on General Requirements.

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

³ The last approved version of this historical standard is referenced on www.astm.org.

⁴ Available from American Association of Textile Chemists and Colorists (AATCC), P.O. Box 12215, Research Triangle Park, NC 27709, http://www.aatcc.org.

⁵ 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.

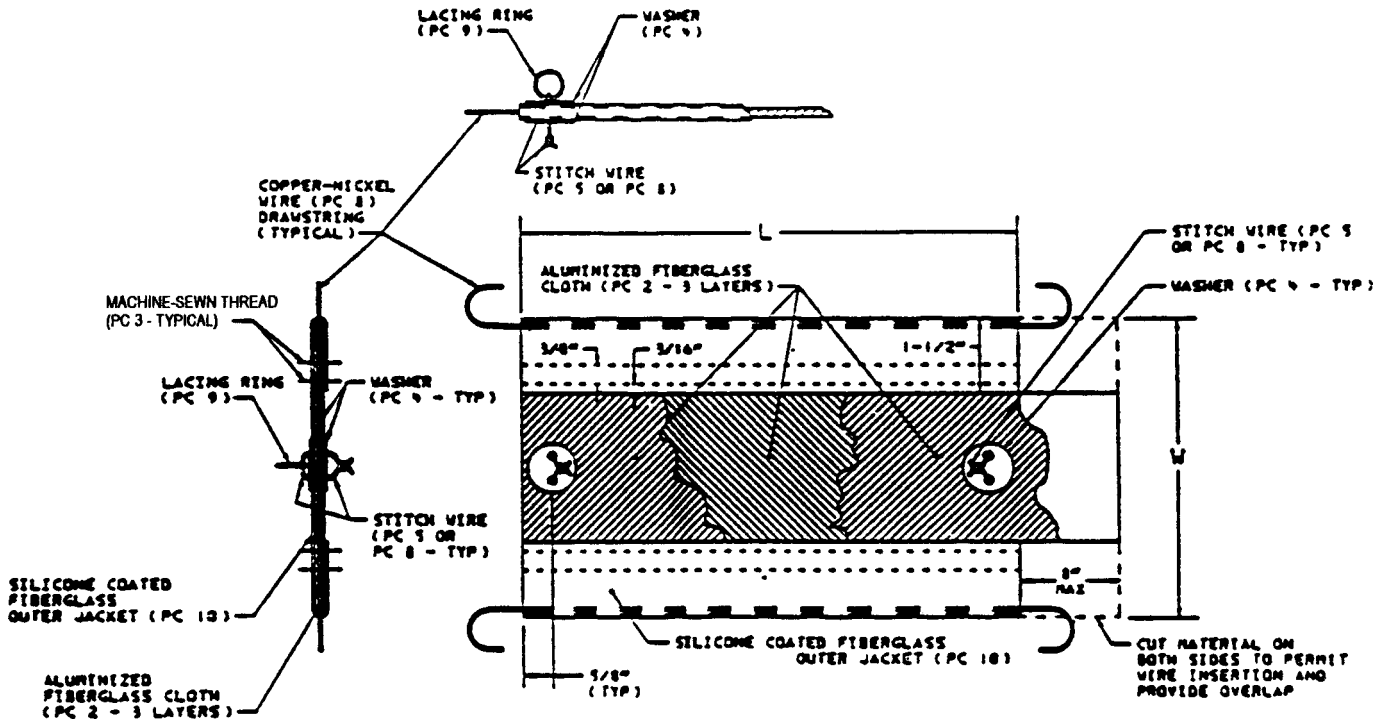


FIG. 1 Spray Shield Construction (Typical)

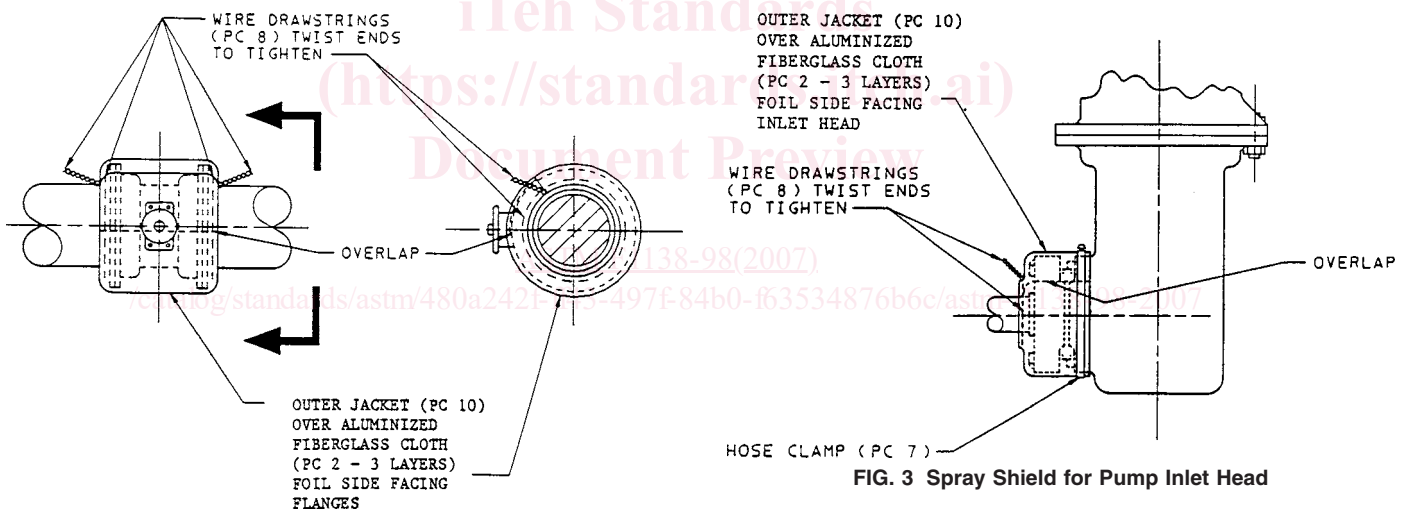


FIG. 2 Installation of Butterfly Valve Shield

FIG. 3 Spray Shield for Pump Inlet Head

3.3 Type of stainless steel (see 4.1).

3.4 Type of lacing hardware required (see 4.1.1).

4. Materials and Manufacture

4.1 Lacing hooks, lacing rings, and lacing washers (see Fig. 7) shall be constructed of stainless steel in accordance with Specifications A176, A276, or A580/A580M.

4.1.1 Lacing rings may be used instead of lacing hooks where practicable or preferable (see 3.3).

4.1.2 Lacing washers for fastening hooks or rings shall be two-hole washers.

4.2 Stitch wire (Piece 5 in Table 1) shall be constructed of stainless steel in accordance with Specification A580/A580M.

4.3 The aluminized glass cloth, thread, and the protective outer jacket shall be constructed of material as specified in Table 1 and Table 2.

5. Physical and Mechanical Properties

5.1 The physical and mechanical properties for the aluminized glass cloth, thread, and protective outer jacket shall be as specified in Table 1 and Table 2.

6. Requirements

6.1 If lacing hooks or rings are of the type that fasten by stitching, the hooks or rings shall be attached to the backup washers using a wire stitch machine and wire (Pieces 5 or 8 in Table 1).