INCH-POUND
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6 MARCH 1989
SUPERSEDING
MIL-C-7580B
23 JULY 1982

MILITARY SPECIFICATION

COUPLING, FIRE HOSE, REUSABLE, HIGH PRESSURE

This specification is approved for use within the Department of the Air Force and is available for use by all Departments and Agencies of the Department of Defense.

1. SCOPE.

1.1 Scope. This specification covers reusable fire hose couplings.

1.2 Classification. Fire hose shall be one type and of the following three sizes, as specified:

Size 3/4 coupling for 3/4-inch fire hose.
Size 1 coupling for 1-inch fire hose.
Size 1-1/4 coupling for 1-1/4 inch fire hose.

2. APPLICABLE DOCUMENTS.

2.1 Government documents.

2.1.1 Specifications, standards and handbooks. The following specifications, standards, and handbooks form a part of this specification to the extent specified herein. Unless otherwise specified, the issues of these documents shall be those listed in the issue of the Department of Defense Index of Specifications and Standards (DODISS) and supplement thereto, cited in the solicitation (see 6.2).

SPECIFICATIONS

Federal

QQ-C-390	Copper Alloy Castings (Including Cast Bar)

Military

MIL-H-775	Hose, Rubber or Fabric (including tubing) and Fittings, Nozzles, and Strainers, Packaging of.

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: WR-ALC/MMVRS, Robins AFB, GA 31098-5609 by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

AMSC N/A FSC 4210

MIL-R-6855	Rubber; Synthetic, Sheet, Molded and Extruded, For Aircraft Application.
DOD-D-1000	Drawings, Engineering, and Associated Lists.
MIL-F-24385	Fire Extinguisher Agent, Aqueous Film Forming Foam, (AFFF) Liquid Concentrate, For Fresh and Sea Water.

STANDARDS

Military

MIL-STD-105	Sampling Procedures and Tables for Inspection by Attributes.
MIL-STD-130	Identification Marking of U.S. Military Property.
MIL-STD-970	Standards and Specifications, Order of Preference for the Selection of.
MIL-STD-810	Environmental Test Methods.

(Unless otherwise indicated, copies of federal and military specifications, standards, and handbooks are available from the Naval Publications and Forms Center, (ATTN: NPODS), 5801 Tabor Avenue, Philadelphia, PA 19120-5099.)

2.2 Non-Government publications. The following document(s) form a part of this document to the extent specified herein. Unless otherwise specified, the issues of the documents which are DoD adopted are those listed in the issue of the DODISS cited in the solicitation. Unless otherwise specified, the issues of documents not listed in the DODISS are the issues of the documents cited in the solicitation (see 6.2).

AMERICAN SOCIETY OF TESTING AND MATERIALS (ASTM)

ASTM D380	Rubber Hose, Methods of Testing.

(Application for copies should be addressed to ASTM, 1916 Race Street, Philadelphia PA 19103.)

UNDERWRITER LABORATORIES, INC. (UL)

UL 92	Standard for Fire Extinguisher and Booster Hose.

(Application for copies should be addressed to Underwriter Laboratories, Inc. Publications Stock, 333 Pfingsten Road, Northbrook IL 60062.)

U.S. Department of Commerce, National Bureau of Standards

Handbook H28 (1944)	Screw-Thread Standards for Federal Services and Supplement (1950) thereto

(Application for copies should be addressed to the Superintendent of Documents, Government Printing Office, Washington, DC 20402.)

2.3 Order of precedence. In the event of a conflict between the text of this specification and the references cited herein (except for associated detail specifications, specification sheets or MS standards), the text of this specification shall take precedence. Nothing in this specification, however, shall supersede applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS.

3.1 Components. The coupling assembly shall consist of a nipple, subassembly and a matching coupling subassembly with a threaded swivel nut. Each subassembly shall consists primarily of an outer sleeve and an inner, hose-expanding, nipple.

3.2 Materials.

3.2.1 Protective treatment. Materials that are subject to deterioration when exposed to foam solutions, as specified in MIL-F-24385 or climatic and environmental conditions, shall be protected against such deterioration in a manner that will in no way prevent compliance with the performance requirements of this specification. The protective coating shall not crack, chip, or scale with age or extremes of climatic and environmental conditions.

3.2.2 Selection of materials. Coupling assemblies shall be made of material conforming to QQ-C-390. Specifications and standards for all materials, parts, and Government certification and approval of processes and equipment, which are not specifically designated herein and which are necessary for the execution of this specification, shall be selected in accordance with MIL-STD-970, except as provided in the following paragraph.

3.2.2.1 Standard parts. Military standard (MS) or aeronautical (AN) parts shall be used wherever they are suitable for the purpose, and shall be identified on the drawing by the MS or AN part numbers. Commercial utility parts may be used provided they possess suitable properties and are replaceable by the standard MS or AN parts without alteration. The standard part numbers shall be referenced in the parts list and on the contractor's drawings.

3.2.2.2 Recycled materials. All materials, equipment and articles incorporated in the work covered by this specification shall be new and fabricated using materials produced from recovered materials to the maximum extent possible without jeopardizing the intended use. The term "recovered materials" means materials which have been collected or recovered from solid waste and reprocessed to become a source of raw materials, as opposed to virgin raw materials. None of the above shall be interpreted to mean that the use of used or rebuilt products is allowed.

3.3 Design and construction.

3.3.1 Design. The coupling shall be designed for assembly with hose conforming to UL 92. The hose shall be securely gripped by a combination of compression of the outside diameter of the hose and expansion of the inside diameter of the hose. The internal surface of the coupling sleeve shall contain both longitudinal and circumferential ribs against which the outside wall of the hose shall be securely seized when the inside diameter of the hose is expanded by the nipple component of the coupling.

3.3.2 Restriction. The inside diameter of the nipple and the restriction in the inside diameter of the hose, due to any deformation of the hose resulting from coupling attachment, shall not exceed the limits specified in Table I.

3.3.3 Coupling assembly. The coupling shall be designed with a male and female threaded connection to facilitate quick connecting and disconnecting in the field. External components of the coupling shall be hexagonal in shape. The hexagon size shall be as specified in Table II.

TABLE I. Inside Diameter and Maximum Restriction in Dimension

Nominal hose size (inch)	Inside diameter of coupling (inch)	Maximum restriction inside diameter of hose due to deformation caused by coupling attachment - (inch)
.75	.703 + 0.005 - 0.000	.062
1	.937 + 0.010 - 0.000	.062
1.25	1.171 + 0.015 - 0.000	.062

3.3.4 Thread. The thread on the sleeve component and swivel nut portion of the matching coupling sub-assembly shall be American National Standard Fire hose thread, as specified in Handbook H28.

3.3.5 Gasket. A suitable gasket, made of material conforming to MIL-R-6855, Class II, Grade 60, shall be provided with each coupling assembly.

3.3.6 Nipple. The nipple shall be of sufficient length and wall thickness to retain the hose in the coupling when exposed to the tension test specified in 4.4.3.

3.4 Interchangeability. All parts having the same manufacturer's part number shall be directly and completely interchangeable with each other with respect to installation and performance. Changes in manufacturer's part numbers shall be governed by drawing number requirements of DOD-D-1000.

3.5 Performance. The coupling shall perform satisfactorily after being exposed to atmosphere containing salt-laden moisture. See 4.5.1.

3.6 Limitations. Dimensions and weight shall be kept to a minimum consistent with other sections of this specification, but in no case shall they exceed the values given in Table II.

TABLE II. Dimensions and Weight

Nominal hose size (inch)	Maximum overall length (inch)	Maximum overall across corners (inch)	Maximum weight of complete coupling
.75	4.25	1.75	1 lb 7 oz
1	5	2.03	2 lb 3 oz
1.25	5.06	2.28	2 lb 11 oz

3.7 Identification of product. The nipple subassembly and matching coupling subassembly of each coupling shall be marked in accordance with MIL-STD-130 in a manner that will not be obliterated in the lifetime use of the coupling. The identification data applied to the nipple subassembly and matching coupling subassembly shall be as follows:

Manufacturer
Specification MIL-C-7580
Size (3/4, 1, or 1-1/4 as applicable)

3.8 Workmanship.

3.8.1 General. The coupling, including all parts, shall be fabricated and finished in a professional workmanlike manner. Couplings shall be consistent with a commercially similar product. Parts or hardware shall be assembled and secured or mounted in a manner to satisfactorily accomplish the purpose for which intended. Couplings having defects, incorrect tolerance or alignment, burrs, sharp edges, blemishes, poor surface finish, restrictive movement, looseness of parts or improper markings are unacceptable.

4. QUALITY ASSURANCE PROVISIONS.

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the contractor is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract or purchase order, the contractor may use his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to assure supplies and services conform to prescribed requirements.

4.1.1 Responsibility for compliance. All items must meet all requirements of sections 3 and 5. The inspection set forth in this specification shall become a part of the contractor's overall inspection system or quality program. The absence of any inspection requirements in the specification shall not relieve the contractor of the responsibility of assuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling in quality conformance does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to acceptance of defective material.

4.2 Classification. Tests and inspection shall be classified as quality conformance test and inspection.

4.2.1 Quality conformance tests. Random samples shall be taken from each lot offered to the Government in accordance with MIL-STD-105 at inspection level II. The AQL shall be 2.5 percent defective.

4.3 Sampling for test. Random samples of coupling assemblies shall be taken from each lot of coupling assemblies offered to the Government in accordance with MIL-STD-105 at inspection level S-4. Any coupling failing the prescribed test shall be cause for rejection of the lot.

4.3.1 Examination. Each coupling selected in accordance with 4.2.1 shall be visually and dimensionally examined for conformance with the dimensions and workmanship requirements of Section 3.

4.4 Test. Each sample coupling selected in accordance with 4.3 shall be subjected to the following tests.

4.4.1 Preparation of sample. Test specimens of couplings shall be attached to hose conforming to UL 92 before conducting the following tests.

4.4.2 Pressure. Test specimens of couplings with hose attached, shall be subjected to the Hydrostatic Pressure Tests of ASTM D380.

4.4.3 Tension. Test specimens of coupling assemblies, with hose attached, shall be subjected to a tension test by firmly holding one end of the hose assembly in a fixture and applying a pull of at least 450 pounds along the longitudinal axis at the other end of the hose. The coupling shall not pull off nor shall the hose rupture at the point of attachment to coupling.

4.4.4 Restriction test. A ball gage having a diameter of 0.640 + 0.000 -0.001 inch for the size 3/4 coupling, one having a diameter of 0.875 + 0.000 -0.001 inch for the size 1 coupling, and one having a diameter of 1.109 + 0.000 -0.001 inches for the size 1 1/4 coupling, shall pass under its own weight through the applicable coupling test specimen with a 3-foot section of hose attached.

4.5 Special Tests.

4.5.1 Salt spray. One coupling assembly shall be subjected to salt fog tests in accordance with the applicable requirements of MIL-STD-810, Method 509.2. After completion of the test, the coupling assembly shall show no evidence of corrosion.

4.6 Rejection and retest. Failure of a test sample may be cause for rejection of the lot represented. At the discretion of the Government inspector, the manufacturer may subject five additional samples from the rejected lot to all the tests specified herein. If the samples satisfactorily pass the tests the lot shall be accepted. Failure of any one sample to pass the retest shall be cause for final rejection of the lot represented.

4.7 Examination for the preparation for delivery. The preservation, packing, packaging, and marking shall be examined for conformance with the requirements of Section 5.

5. PACKAGING.

5.1 Preservation, packaging, packing, and marking. Couplings shall be prepared for delivery in accordance with MIL-H-775.

6. NOTES.

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

6.1 Intended use. The fire hose couplings covered in this specification are intended for use on high pressure handline hose installed on crash fire trucks.

6.2 Acquisition requirements. Acquisition documents must specify the following:

a. Title, number, and date of this specification.
b. Size of coupling required (See 1.2).
c. Type of packaging and packing required (See 5.1).

6.3 Subject term (Key Word) listing.

Coupling
Fire hose
High pressure
Reusable

6.4 Changes from previous issue. Asterisks (or vertical lines) are not used in this revision to identify changes with respect to the previous issue due to the extensiveness of the changes.

Custodians:
Navy - AS
Air Force - 99

Review activity:
DLA - CS

Preparing activity:
Air Force - 84

Project No. 4210-0393

STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

(See Instructions – Reverse Side)

1. DOCUMENT NUMBER	2. DOCUMENT TITLE
MIL-C-7580C	

3a. NAME OF SUBMITTING ORGANIZATION	4. TYPE OF ORGANIZATION *(Mark one)*
	☐ VENDOR
b. ADDRESS *(Street, City, State, ZIP Code)*	☐ USER
	☐ MANUFACTURER
	☐ OTHER *(Specify)*: _____

5. PROBLEM AREAS

a. Paragraph Number and Wording:

b. Recommended Wording:

c. Reason/Rationale for Recommendation:

6. REMARKS

7a. NAME OF SUBMITTER *(Last, First, MI)* – Optional	b. WORK TELEPHONE NUMBER *(Include Area Code)* – Optional
c. MAILING ADDRESS *(Street, City, State, ZIP Code)* – Optional	8. DATE OF SUBMISSION *(YYMMDD)*

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