

MIL-C-7580B  
 15 April 1965  
 Superseding  
 MIL-C-7580A(ASG)  
 12 March 1953

## MILITARY SPECIFICATION

### COUPLING, FIRE HOSE, REUSABLE, HIGH PRESSURE

This specification is mandatory 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 of 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 The following specifications, standards, and publication, of the issue in effect on date of invitation for bids, form a part of this specification to the extent specified herein.

#### SPECIFICATIONS

##### Federal

O-F-555	Foam-Forming Liquids, Concentrated Fire Extinguishing, Mechanical
QQ-B-621	Brass, Casting, Leaded Yellow

##### Military

MIL-H-775	Hose, Rubber or Fabric (including tubing) and Fittings, Nozzles and Strainers, Packaging Of
MIL-H-4497	Hose, Cotton, Rubber Lined, Water, Braided Construction, With Couplings
MIL-E-5272	Environmental Testing, Aeronautical and Associated Equipment, General Specifi- cation For

FSC 4730

**MIL-C-7580B**

MIL-R-6855 Rubber; Synthetic, Sheet, Molded and  
Extruded, For Aircraft Application  
MIL-D-70327 Drawings, Engineering and Associated  
Lists

**STANDARDS**

**Federal**

FED-STD-601 Rubber, Sampling and Testing  
TEST METHOD

**Military**

MIL-STD-105 Sampling Procedures and Tables For  
Inspection by Attributes  
MIL-STD-130 Identification Marking of U.S. Military  
Property  
MIL-STD-143 Military Standard, Specification and  
Standards Order of Precedence For The  
Selection Of

(Copies of specifications, standards, and drawings required by contractors in connection with specific procurement functions should be obtained from the procuring activity or as directed by the contracting officer.)

2.2 Other publications. The following document forms a part of this specification. Unless otherwise indicated, the issue in effect on date of invitation for bids shall apply.

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

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

(Application for copies should be addressed to the Superintendent of Documents, Government Printing Office, Washington 25, D.C.)

**3. REQUIREMENTS**

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

3.2 Materials.

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3.2.1 Protective treatment. Materials that are subject to deterioration when exposed to foam solutions, as specified in O-F-555 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-B-621. 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-143, 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.

3.3 Design and construction.

3.3.1 Design. The coupling shall be designed for assembly with hose conforming to MIL-H-4497. 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.

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TABLE I

## Inside Diameter and Maximum Restriction in Dimension

Nominal hose size (inch)	Inside diameter of coupling (inch)	Maximum restriction in inside diameter of hose due to deformation caused by coupling attachment - (inch)
3/4	45/64 + 0.005 - 0.000	1/16
1	15/16 + 0.010 - 0.000	1/16
1-1/4	1-11/64 + 0.015 - 0.000	1/16

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 MIL-D-70327.

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
3/4	4-1/4	1-3/4	1 lb 7 oz
1	5	2-1/32	2 lb 3 oz
1-1/4	5-1/16	2-9/32	2 lb 11 oz

3.7 Identification of product. The nipple sub-assembly and matching coupling sub-assembly 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 sub-assembly and matching coupling sub-assembly shall be as follows:

Manufacturer  
 Specification MIL-C-7580B  
 Size (3/4, 1, or 1½ as applicable)

### 3.8 Workmanship.

3.8.1 General. The coupling, including all parts, shall be fabricated and finished in a workmanlike manner. Particular attention shall be given to free movement of the swivel nut, freedom from blemishes, defects, burrs, and sharp edges; accuracy of dimensions, radii of fillets, and marking of parts.

## 4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the supplier is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified, the supplier may utilize his own facilities or any commercial laboratory acceptable to 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 that supplies and services conform to the prescribed requirements.

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4.1.1 Component and material inspection. In accordance with 4.1 above, the supplier is responsible for insuring that components and materials used are manufactured tested and inspected in accordance with the requirements of referenced subsidiary specifications and standards to the extent specified herein, or if none, in accordance with this specification.

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% 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 paragraph 4.2.1 shall be visually and dimensionally examined for conformance with the dimensions and workmanship requirements of section 3.

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

4.4.1 Preparation of sample. Test specimens of couplings shall be attached to a 3-foot section of hose, conforming to MIL-H-4497, before conducting the following tests.

4.4.2 Pressure. Test specimens of couplings, with hose attached, shall be subjected to the Hydrostatic tests specified in FED-STD-601, to the requirements of MIL-H-4497.

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  $1\frac{1}{2}$  coupling, shall pass under its own weight through the applicable coupling test specimen with a 3-foot sections of hose attached.

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#### 4.5 Special Tests.

4.5.1 Salt spray. One coupling assembly shall be subjected to salt spray tests in accordance with Procedure 1, of MIL-E-5272. 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. PREPARATION FOR DELIVERY

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

#### 6. NOTES

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 Ordering data. Procurement documents shall 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).

#### Custodians:

Army - MO  
Navy - WP  
Air Force - 69

#### Preparing Activity:

Air Force - 69  
Proj No. 4730-0290

#### Review Activity:

DCSC - CS  
Army - MO  
Navy - WP  
Air Force - 69

Review/user information is current as of the date of this document. For future coordination of changes to this document, draft circulation should be based on the information in the current DODISS.



SPECIFICATION ANALYSIS SHEET		Form Approved Budget Bureau No. 119-R004
<b>INSTRUCTIONS</b>		
This sheet is to be filled out by personnel either Government or contractor, involved in the use of the specification in procurement of products for ultimate use by the Department of Defense. This sheet is provided for obtaining information on the use of this specification which will insure that suitable products can be procured with a minimum amount of delay and at the least cost. Comments and the return of this form will be appreciated. Fold on lines on reverse side, staple in corner, and send to preparing activity.		
SPECIFICATION		
ORGANIZATION		CITY AND STATE
CONTRACT NO.	QUANTITY OF ITEMS PROCURED	DOLLAR AMOUNT \$
MATERIAL PROCURED UNDER A		
<input type="checkbox"/> DIRECT GOVERNMENT CONTRACT <input type="checkbox"/> SUBCONTRACT		
1. HAS ANY PART OF THE SPECIFICATION CREATED PROBLEMS OR REQUIRED INTERPRETATION IN PROCUREMENT USE? A. GIVE PARAGRAPH NUMBER AND WORDING		
B. RECOMMENDATIONS FOR CORRECTING THE DEFICIENCIES		
2. COMMENTS ON ANY SPECIFICATION REQUIREMENT CONSIDERED TOO RIGID		
3. IS THE SPECIFICATION RESTRICTIVE? <input type="checkbox"/> YES <input type="checkbox"/> NO      IF "YES", IN WHAT WAY?		
4. REMARKS (Attach any pertinent data which may be of use in improving this specification. If there are additional papers, attach to form and place both in an envelope addressed to preparing activity)		
SUBMITTED BY (Printed or typed name and activity)		DATE

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REPLACES NAVSHIPS FORM 4863, WHICH IS OBSOLETE

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