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SUPERSEDING  
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FEDERAL SPECIFICATION

COUPLING ASSEMBLY AND MENDER, HOSE  
(PLASTIC AND RUBBER)

This specification was approved by the Commissioner, Federal Supply Service, General Services Administration, for the use of all Federal agencies.

1. SCOPE AND CLASSIFICATION

1.1 Scope. This specification includes the requirements for garden hose coupling assemblies and menders.

1.2 Classification. Coupling assemblies and menders shall be of the following types, classes, and sizes as specified (see 6.2).

1.2.1 Type.

- I - Coupling
- II - Mender

Class:

- 1 - Non-reusable
- 2 - Reusable

Size, inch:

- 5/8 (0.625)
- 3/4 (0.750)

2. APPLICABLE DOCUMENTS

2.1 The following documents, of the issues in effect on the date of invitation for bids, or request for proposal, form a part of the specification to the extent specified herein.

Federal Specifications:

- PPP-B-566 - Boxes, Folding, Paperboard.
- PPP-B-636 - Box, Fiberboard.
- PPP-B-665 - Boxes, Paperboard, Metal Stayed (Including Stay Material).
- PPP-B-676 - Boxes, Setup.

Federal Standard:

- Fed. Std. No. 123 - Marking for Domestic Shipment (Civil Agencies).

(Activities outside the Federal Government may obtain copies of Federal Specifications, Standards, and Handbooks as outlined under General Information in the Index of Federal Specifications and Standards and at the prices indicated in the Index. The Index, which includes cumulative monthly supplements as issued, is for sale on a subscription basis by the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

(Single copies of this specification and other Federal Specifications required by activities outside the Federal Government for bidding purposes are available without charge from Business Service Centers at the General Services Administration Regional Offices in Boston, New York, Washington, DC, Atlanta, Chicago, Kansas City, MO, Fort Worth, Denver, San Francisco, Los Angeles, and Seattle, WA.

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(Federal Government activities may obtain copies of Federal Specifications, Standards, and Handbooks and the Index of Federal Specifications and Standards from established distribution points in their agencies.)

Military Standards:

MIL-STD-105 - Sampling Procedures and Tables for Inspection by Attributes.  
MIL-STD-129 - Marking for Shipment and Storage.

(Copies of Military Specifications and Standards required by suppliers 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 documents form a part of this specification to the extent specified herein. Unless a specific issue is identified, the issue in effect on date of invitation for bids or request for proposal shall apply.

National Motor Freight Traffic Association, Inc., Agent:

National Motor Freight Classification.

(Application for copies should be addressed to the American Trucking Associations, Inc., Tariff Order Section, 1616 P St., N.W., Washington, DC 20036.)

Uniform Classification Committee, Agent:

Uniform Freight Classification.

(Application for copies should be addressed to the Uniform Classification Committee, Room 1106, 222 South Riverside Plaza, Chicago, IL 60606.)

National Bureau of Standards (NBS) Handbook:

H28 - Screw-Thread Standard for Federal Services.

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

3. REQUIREMENTS

3.1 Material. Materials shall be metal of the quality normally used in commercial practice.

3.2 Dimensions and tolerances. The minimum length of coupling assemblies and menders shall be as specified in table I, (see 4.3.1).

TABLE I. Length dimensions			
Coupling assembly class	Mender class	Size (inch)	Length, (inches) minimum -1/32
1	--	5/8, 3/4	2.500
2	--	5/8, 3/4	2.000
--	1	5/8, 3/4	1.734
--	2	5/8	1.750
--	2	3/4	2.125

3.3 Finish.

3.3.1 Brass. All nonmating surfaces shall be finished reasonably smooth and shall be free from slivers and sharp edges. All mating surfaces shall be 300 r.m.s. finish or better. The portion of the surface that contacts the hose may be left rough so as to help bind the hose, (see 4.3.1).

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3.3.2 Steel. All steel parts shall be zinc coated in accordance with commercial practice.

3.3.3 Aluminum. All surfaces of aluminum components shall be 300 r.m.s. finish or better.

3.4 Threads. Mating threads of the coupling nut and the male section of the coupling assembly shall be of the NH series for garden hose in accordance with NBS H28 and shall be free from burrs, (see 4.3.1).

3.4.1 Thread length. The minimum full thread length of the coupling nut and male end shall be  $\frac{3}{8}$  inch.

### 3.5 Construction.

3.5.1 Class 1. Class 1 coupling assemblies and menders shall be so constructed as to have an external gripping device for attachment to the hose. The method of attaching the gripping device to the hose shall be at the option of the manufacturer. The gripping device shall be capable of being attached to a rubber or plastic hose with normal hand tools, i.e., a hammer or pliers. The gripping device, when engaged on the hose, shall be cylindrical and have no projecting areas or sharp edges. Each tube insert shall have a minimum of 2 cylindrical corrugations. A minimum of one corrugation shall be engaged by the gripping device. The two ends of the coupling assembly shall be capable of being joined by means of a coupling nut on a swivel of the female end.

3.5.2 Class 2. Class 2 coupling assemblies and menders shall be so constructed that they may be attached to a rubber or plastic hose by means of threaded devices. The application of the threaded devices may be either external or internal at the option of the manufacturer. The portion of the end of the coupling assembly or mender that is in contact with the exterior or interior surface of the hose shall be deformed to insure conformance to the requirements of 3.7.1. Where a special tool is required to engage the threaded components, one such tool shall be furnished with each coupling assembly or mender. The two ends of the coupling assembly shall be capable of being joined by means of a coupling nut on a swivel of the female end.

3.5.2.1 The threaded devices for attaching the ends of the coupling assembly or mender to the hose shall be threaded in accordance with NBS H28. The threads shall be formed, machined, or rolled at the option of the manufacturer.

3.5.3 Exterior knurling. Exterior surfaces that are to be grasped for hand tightening shall be knurled, or otherwise sufficiently irregular to provide a secure grip.

3.6 Components. All coupling assemblies and menders shall be furnished as a unit and shall conform with the requirements of 3.7. A flat rubber washer of appropriate size shall be a component part of a coupling assembly, (see 4.3.1).

### 3.7 Performance.

3.7.1 Leakage. Coupling assemblies and menders when tested in accordance with 4.4.1, shall be capable of withstanding a hydrostatic pressure of 100 p.s.i. for 2 minutes at a room temperature of  $23.3^{\circ} \pm 3^{\circ}\text{C}$ . ( $75^{\circ} \pm 5^{\circ}\text{F}$ .) without visible signs of leakage.

#### 3.7.2 Dead load pull.

3.7.2.1 Class 1. Class 1 coupling assemblies and menders when tested in accordance with 4.4.2.1, shall be capable of withstanding a dead load pull of 75 pounds for a minimum of 5 minutes; at the end of this test there shall be no visible signs of the hose parting from the coupling assembly or mender.

3.7.2.2 Class 2. Class 2 coupling assemblies and menders when tested in accordance with 4.4.2.2, shall be capable of withstanding a dead load pull of 50 pounds for a minimum of 5 minutes; at the end of this test there shall be no visible signs of the hose parting from the coupling assembly or mender.

3.8 Workmanship. The coupling nut on the swivel of the coupling assembly shall turn freely by hand, (see 4.3.1).

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## 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 prescribed requirements.

4.2 Sampling.

4.2.1 Lot. Unless otherwise specified (see 6.2), a lot shall consist of one type, class, and size of coupling assembly or mender submitted for inspection at one time.

4.2.2 Visual and workmanship examination of end item. Coupling assemblies and menders shall be examined for these characteristics in accordance with level S-1 in MIL-STD-105. The Acceptable Quality Levels (AQL's) for defects shall be 4.0 percent defective for major defects and 6.5 percent defective for minor defects.

4.2.3 Samples for tests. Samples for tests shall be in accordance with level S-1 in MIL-STD-105. The AQL for tests shall be 1.5 percent defective.

4.3 Inspection.

4.3.1 End item. Coupling assemblies and menders shall be examined for defects listed in table II.

TABLE II. Classification of defects, end item

Defects	Major	Minor
Type, class, or size not as specified (see 1.2).	X	
Dimensions not as specified (see 3.2).	X	
Finish not as specified (see 3.3)1/.	X	
Slivers or sharp edges on visible surfaces (see 3.3).		X
Threads burred (see 3.4).	X	
Gripping device not cylindrical or has projecting parts (see 3.5.1).		X
Number of cylindrical corrugations not as specified (see 3.5.1).	X	
Minimum of 1 corrugation not engaged by gripping device (see 3.5.1).	X	
Components missing or damaged affecting function or serviceability (see 3.5.2 and 3.6).	X	
Coupling nut not easily turned by hand (see 3.8).		X

1/ Rough areas are allowed on insert tubes of class 1 items to aid gripping.

4.3.2 Examination of preparation for delivery requirements. An examination shall be made to determine that packaging, packing and marking requirements are in compliance with section 5 of this specification. Defects shall be scored in accordance with table III. The sample unit shall be one shipping container fully prepared for delivery. Defects of closure listed below shall be examined on shipping containers fully prepared for delivery. The lot size shall be the number of shipping containers in the end item inspection lot. The inspection level shall be S-2 and the acceptable quality level shall be 4.0 defects per 100 units.

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TABLE III. Preparation for delivery defects

Examine	Defects
Marking (exterior and interior)	Omitted, incorrect, illegible, or improper size, location, sequence or method of application.
Materials	Any component damaged, affecting serviceability.
Workmanship	Inadequate application of components, such as incomplete closure of case liners, container flaps, loose strapping, inadequate stapling, bulging or distortion of containers.
Weight or content exterior	Number of intermediate package is more or less than required, gross/net weight exceeds requirements.

#### 4.4 Test method.

4.4.1 Leakage. The specimens shall consist of a length and circumference of hose attached to each end of the coupling assembly or mender to be tested. The units shall be attached to the hose using normal hand tools or special tools as specified in 3.5.1 and 3.5.2. Water shall be pumped into the test specimen so that a pressure of 100 pounds will be developed in approximately 6 seconds. The pressure shall be maintained for 2 minutes. While under pressure, the specimen shall be examined for leakage of coupling assembly or mender.

#### 4.4.2 Dead load pull.

4.4.2.1 Class 1. Release the water pressure and apply a 75 pound tensile load to the coupling assembly or mender test specimen 4.4.1, for 5 minutes at a room temperature of  $24^{\circ} \pm 3^{\circ}\text{C}$ . ( $75^{\circ} \pm 5^{\circ}\text{F}$ .). At the end of the test period, the test specimen shall be visually examined for conformance with the requirements of 3.7.2.1.

4.4.2.2 Class 2. Repeat the procedure outlined in 4.4.2.1, except that the applied tensile load shall be 50 pounds and the test specimen shall be visually examined for conformance with 3.7.2.2.

### 5. PREPARATION FOR DELIVERY

5.1 Packaging. Packaging shall be level A, B or C as specified (see 6.2).

5.1.1 Level A. Ten coupling assemblies or menders shall be packaged in a paperboard box conforming to PPP-B-566, PPP-B-665, or PPP-B-676. Each box shall be adequately closed to prevent accidental opening.

5.1.2 Level B. The coupling assemblies or menders shall be packaged as specified in 5.1.1.

5.1.3 Level C. The coupling assemblies or menders shall be packaged in accordance with the manufacturer's standard practice, providing that this insures protection for the coupling assemblies or menders during shipment and provides for safe delivery to their destination.

5.2 Packing. Packing shall be level A, B or C as specified (see 6.2).

5.2.1 Level A. The coupling assemblies or menders packaged as specified in 5.1, shall be packed in quantities specified in the contract or order in a close-fitting box conforming to PPP-B-636, class weather-resistant, grade W6c minimum. Each box shall be closed, sealed with waterproof tape and reinforced with bands of filament tape in accordance with the appendix to the box specification.

5.2.2 Level B. The coupling assemblies or menders packaged as specified in 5.1 shall be packed in quantities specified in the contract or order in a close-fitting box conforming to PPP-B-636, class domestic, grade 200 minimum. Each shipping container shall be closed in accordance with the appendix to PPP-B-636.

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5.2.3 Level C. The coupling assemblies or menders packaged as specified in 5.1.3 shall be packed in containers that will assure carrier acceptance and safe arrival at destination in compliance with the Uniform Freight Classification rules and the National Motor Freight Classification rules.

5.3 Marking. Marking shall be in accordance with paragraph 5.3.1 or 5.3.2 as specified (see 6.2).

5.3.1 Civil agencies. In addition to any special markings required by the contract or order, all interior packages and shipping containers shall be marked in accordance with Fed. Std. No. 123.

5.3.2 Military agencies. In addition to any special markings required by the contract or order, all interior packages and shipping containers shall be marked in accordance with MIL-STD-129.

## 6. NOTES

6.1 Intended use. Coupling assemblies and menders covered by this specification are intended for use with plastic or rubber garden hose.

6.2 Ordering data. Purchasers should select the preferred options permitted herein and include the following information in procurement documents:

- (a) Title, number, and date of this specification.
- (b) Type, class, and size required (see 1.2).
- (c) Size of lot (see 4.2.1).
- (d) Level of packaging and packing (see 5.1 and 5.2).
- (e) Special marking, if required (see 5.3).

### MILITARY CUSTODIANS:

Army - ME  
Air Force - 82

### Military Coordinating Activity:

Army - ME  
Project No. 4720-0346

### Preparing activity:

GSA-FSS

### Civil Agency Coordinating Activities:

DOT-ACO  
GSA-FSS-PBO  
INTERIOR-BOR-BPA-MIN  
NASA-JFK  
TVA-TVA

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