

ZZ-H-601D  
February 9, 1981  
SUPERSEDING  
Fed. Spec. ZZ-H-601C  
February 7, 1972

## FEDERAL SPECIFICATION

### HOSE AND HOSE ASSEMBLIES, RUBBER (YARN OR FABRIC REINFORCED) WATER SERVICE

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 covers yarn or fabric-reinforced hose and hose assemblies for general use in water service (see 6.1).

#### 1.2 Classification.

1.2.1 Grades. Hose covered by this specification shall be of the following grades and classes as specified (see 6.2):

Grade 1 - Commercial hose.  
Grade 3 - Weather and ozone-resistant hose.  
Class 1 - General water inner tube.  
Class 2 - Potable water inner tube.

1.2.2 Sizes. Hose covered by this specification shall be of the sizes (inside diameter), listed in table I, as specified (see 6.2).

#### 2. APPLICABLE DOCUMENTS

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

##### Federal Specifications:

WW-C-440 - Clamps, Hose (Low Pressure).  
WW-C-624 - Coupling Assembly, Hose (Fire, Garden, Water Suction).

##### Federal Standards:

Fed. Std. No. H28 - Screw-Thread Standards for Federal Services.  
Fed. Std. No. 162 - Hose, Rubber, Visual Inspection Guide for.  
Fed. Test Method Std. No. 601 - Rubber; Sampling and Testing.

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(Activities outside the Federal Government may obtain copies of Federal specifications, standards, and commercial item descriptions as outlined under General Information in the Index of Federal Specifications, Standards and Commercial Item Descriptions. The Index, which includes cumulative bimonthly 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, other Federal specifications, and commercial item descriptions required by activities outside the Federal Government for bidding purposes are available without charge from General Services Administration Business Service Centers in Boston; New York; Washington, DC; Philadelphia; Atlanta; Chicago; Kansas City, MO; Fort Worth; Houston; Denver; San Francisco; Los Angeles; and Seattle, WA.

(Federal Government activities may obtain copies of Federal specifications, standards, and commercial item descriptions, and the Index of Federal Specifications, Standards and Commercial Item Descriptions from established distribution points in their agencies.)

Military Specification:

MIL-P-775 - Hose, Hose Assemblies; Rubber, Plastic, Fabric or Metal (including Tubing); and Fittings, Nozzles and Strainers; Packaging of.

Military Standard:

MIL-STD-105 - Sampling Procedures and Tables for Inspection by Attributes.

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

Laws and Regulations:

21CFR 177 - Federal Food, Drug, and Cosmetics Act; Food Activities.

(The Code of Federal Regulations (CFR) and Federal Register (FR) are for sale on a subscription basis by the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402. When indicated, reprints of certain regulations may be obtained from the Federal agency responsible for issuance thereof.)

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.

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American Society for Testing and Material (ASTM) Standards:

- D 297 - Rubber Products - Chemical Analysis.
- D 380 - Testing Rubber Hose.
- D 412 - Rubber Properties in Tension.
- D 413 - Rubber Property - Adhesion to Flexible Substrate.
- D 573 - Rubber Deterioration in Air Oven.
- D 1149 - Rubber Deterioration - Surface Ozone Cracking in a Chamber (Flat Specimen).

(Application for copies should be addressed to the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.)

### 3. REQUIREMENTS

3.1 First article. When Specified (see 6.2), the supplier shall furnish a complete hose length or hose assembly for the first article inspection and approval (see 4.2.1 and 6.5).

3.2 Materials. Materials used shall be free from defects which would adversely affect the performance or maintainability of individual components or of the overall assembly. Materials not specified herein shall be of the same quality used for the intended purpose in commercial practice. Unless otherwise specified herein, all equipment, material, and articles incorporated in the work covered by this specification are to 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 are allowed under this specification unless otherwise specified.

#### 3.2.1 Rubber.

3.2.1.1 Grade 1. The rubber compound used in the construction of the cover and the class 1 tube of grade 1 hose shall be compounded from natural rubber, synthetic rubber, or a mixture of natural and synthetic rubber.

3.2.1.2 Grade 3. The rubber compound used in the cover of grade 3 hose shall be weather-resistant and ozone-resistant. The rubber compound used in class 1 tube and other parts of the hose shall be compounded from natural rubber, synthetic rubber, or mixtures of natural and synthetic rubber.

3.2.1.3 Class 2 inner tube. Class 2 inner tube material for grades 1 and 3 hose shall be compounded from natural or synthetic rubber materials that meet the requirements of the Federal Food, Drug, and Cosmetic Act, 21 Code Federal Regulations 177.2600. The cured rubber shall meet the extraction requirements of 3.9 and 4.6.4. The supplier shall also submit a certificate attesting that the compounds and the concentrations of each ingredient used in the inner tube conforms with the Federal Food, Drug, and Cosmetic Act.

#### 3.2.2 Other materials. Other materials shall be as specified hereinafter.

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3.3 Construction. The hose shall consist of:

- (a) An inner rubber tube.
- (b) A ply or plies of cotton or suitable synthetic yarn or fabric.
- (c) An outer rubber cover.

3.4 Reinforcement. The reinforcement shall consist of a ply or plies of braided, knit, or helically wound yarn or plies of fabric. Both the fabric and the yarn shall be made from high grade cotton or synthetic fiber. In accordance with good manufacturing practice, the fabric and the yarn shall be free from defects, sufficiently strong to enable the hose to withstand the hydrostatic test pressure specified in table I, and at the same time be soft and pliable.

3.4.1 Reinforcement plies. The reinforcement plies of yarn may be braided or knitted in one or more plies over the tube or helically wound in multiples of two layers with alternate layers wound in opposite directions. If multiple plies of braided or knitted yarn are used, a distinct layer of rubber compound shall be used between the plies to facilitate adhesion to one another and to the tube and cover. A similar layer may be used between the plies of the helically wound reinforcements. When used, the plies of square woven fabric shall be wrapped at a bias of approximately 45 degrees over the tube. The fabric shall overlap no less than 1/2 inch. The plies of fabric shall adhere to each other and, at the same time, adhere to the inner tube and to the outer cover.

3.5 Length. The length of hose up to and including 1 inch inside diameter shall be 25 feet or multiples thereof up to approximately 500 feet; hose 1-1/4 and 1-1/2 inch inside diameter shall be 25 feet or multiples thereof up to approximately 250 feet as specified (see 6.2). Hose over 1-1/2 inches inside diameter shall be 50 feet.

3.5.1 Tolerance. A tolerance of +/-2 percent shall be permitted when tested as specified in 4.6.6.

3.6 Couplings. Unless otherwise specified (see 6.2), hose shall be furnished without couplings. When specified, a female and a male coupling shall be attached on each end of the hose. The couplings shall be capable of withstanding the test pressures specified in table I without leaking or slipping. On each end of the hose shall be attached one of the following couplings, as specified:

- (a) Shank type coupling with interlocking clamps. Hose fitted with interlocking couplings (removable) shall include a serrated nipple and two sections of a clamp equipped for gripping and compressing the hose surface against the nipple. The clamp shall have grooved or waffled interior surfaces, and shall have holes for fastening with four bolts. For hose with diameter sizes up to and including 3/4-inch, a two bolt clamp shall be furnished. The protecting end of the nipple shall have a recess in the outer surface to engage the fingers of the clamps. The swivel nut used for tightening the female and male portions of the coupling shall be either hexagonal or octagonal.
- (b) Shank type couplings and clamps or ferrules. Shank type couplings and clamps or ferrules, when required, shall be in accordance with WW-C-624, type A or type AA. Clamps shall conform to type H of WW-C-440.
- (c) Internal expansion ring-type. The internal expansion ring-coupling, when required, shall be in accordance with WW-C-624, type B.

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3.6.1 Rubber washers. Female couplings shall be fitted with a rubber washer suitable for the purpose.

3.6.2 Threads. The coupling connection ends shall be threaded in accordance with Fed. Std. No. H28.

3.7 Physical requirements. The hinge shall conform to the requirements specified in table I.

3.8 Accelerated aging, grades 1 and 3. After accelerated aging in accordance with 4.6.3, the tensile strength shall be not less than 80 percent of the values specified in table I, and the ultimate elongation shall be not less than 50 percent of the values specified in table I.

3.9 Resistance to water. The extractable nonvolatile matter in class 2 inner tube shall not exceed 21 milligrams per square inch when the tubes are tested as specified in 4.6.4.

TABLE I. Physical requirements for hose and hose assemblies.

Nominal size in inches (inside diameter)	1/4	3/8	1/2	5/8	3/4	1
Tolerance, inside diameter, plus or minus	0.031	0.031	0.031	0.031	0.031	0.062
Thickness minimum						
Tube	0.050	0.050	0.060	0.060	0.060	0.060
Cover	0.050	0.050	0.050	0.050	0.050	0.050
Number of reinforcement plies (minimum):						
Wrapped	2	2	2	2	2	2
Braided or knit	1	1	1	1	1	2
Helically wound	2	2	2	2	2	2
Hydrostatic test procedure minimum, pounds per square inch:						
Proof test 1/	300	300	300	300	300	300
Burst pressure	600	600	600	600	600	600
Friction, minimum, pounds						
Between cover and plies	8	8	8	8	8	8
Between tube and plies	6	6	8	8	8	8
Between plies 2/	8	8	8	8	8	8
Tensile strength (before aging) minimum, pounds per square inch:						
Tube	800	800	800	800	800	800
Cover	1000	1000	1000	1000	1000	1000
Ultimate elongation (before aging) minimum, percent:						
Tube	150	150	150	150	150	150
Cover	200	200	200	200	200	200

1/ The hydrostatic proof test shall be made only when hose is purchased with couplings. The hose shall not contract in diameter during the test.

2/ When applicable.

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TABLE I. Physical requirements for hose and hose assemblies. Continued

Nominal size in inches (inside diameter)	1-1/4	1-1/2	2	2-1/2	3	3-1/2	4
Tolerance, inside diameter, plus or minus	0.062	0.062	0.062	0.062	0.062	0.062	0.062
Thickness, minimum							
Tube	0.060	0.060	0.062	0.062	0.094	0.094	0.094
Cover	0.050	0.050	0.062	0.062	0.078	0.078	0.078
Number of reinforcement plies (minimum):							
Wrapped	2	2	2	2	2	2	2
Braided or knit	2	2	2	2	2	2	2
Helically wound	2	2	2	2	2	2	2
Hydrostatic test procedure, minimum, pounds per square inch:							
Proof test 1/ Burst pressure	250 500	250 500	200 400	200 400	200 400	200 400	200 400
Friction, minimum, pounds							
Between cover and plies	8	8	8	8	8	8	8
Between tube and plies	8	8	8	8	8	8	8
Between plies 2/	8	8	8	8	8	8	8
Tensile strength (before aging) minimum, pounds per square inch:							
Tube	800	800	800	800	800	800	800
Cover	1000	1000	1000	1000	1000	1000	1000
Ultimate elongation (before aging) minimum, percent:							
Tube	150	150	150	150	150	150	150
Cover	200	200	200	200	200	200	200

1/ The hydrostatic proof test shall be made only when hose is purchased with couplings. The hose shall not contract in diameter during the test.

2/ When applicable.

3.10 Ozone resistance, grade 3. The rubber cover of grade 3 hose shall show no visible cracking under 2X magnification after testing in accordance with 4.6.6.

3.11 Marking of hose.

3.11.1 General Water hose. Each length of hose shall be marked in a color that contrasts with the color of the hose cover. Marking shall be accomplished either by in-laying a rubber or suitable material brand or by applying a suitable composition ink, bonding the marking onto the cover so that the marking cannot be removed except by mechanical means. The marking shall consist of the manufacturer's name or trademark, the quarter and year of manufacture, the word "water", the symbol "ZZ-H-601", the grade, the class of hose and the words "NOT FOR USE WITH POTABLE WATER". Hose shall be marked at regular intervals of at most 25 feet. Letters shall be at least 0.125-inch

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high for sizes 1/4-inch to 5/8-inch inside diameter inclusive. Hoses in sizes 3/4-inch and larger shall have letters at least 0.25-inch high. An alternative method of marking may be by the application of a continuous embossed strip along the entire length, vulcanizing the hose, and subsequently removing the strip, leaving a continuous relief identification area. Identification shall include the manufacturer's name or trademark, the word "water", the symbol "ZZ-H-601", the grade, the class of hose, and the words "NOT FOR USE WITH POTABLE WATER" shall be repeated at maximum intervals of 36 inches. When the alternative method of marking is used, no color contrast is required.

3.11.2 Potable water hose, class 2. When class 2 is specified (see 6.2), each hose length shall be marked in the same manner as specified in 3.11.1 except that the words "POTABLE WATER USE ONLY" shall be used in place of "NOT FOR USE WITH POTABLE WATER".

3.11.3 Commercial marking. When specified (see 6.2), commercial marking may be substituted for the marking in 3.11.1 or 3.11.2.

3.12 Workmanship. The quality of workmanship shall be such as to produce hose and hose assemblies that are in accordance with the requirements of this specification.

#### 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 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 insure that supplies and services conform to prescribed requirements.

4.2 Classification of inspection. Inspection requirements shall be classified as follows:

- (a) First article inspection (see 4.2.1).
- (b) Quality conformance inspection (see 4.2.2).

4.2.1 First article inspection. First article inspection shall be performed on one sample hose length when a first article sample is required (see 3.1, 6.2, and 6.5). This inspection shall include the examination of 4.5 and the tests of 4.6. The first article may be a standard production item from the contractor's current inventory provided the unit meets the requirements of this specification and is representative of the design, construction, and manufacturing technique applicable to the remaining units to be furnished under the contract.

4.2.2 Quality conformance inspection. Quality conformance inspection shall be performed on the sample hose lengths selected in accordance with 4.4. This inspection shall include the examination of 4.5 and the tests of 4.6.

4.3 Inspection lot. All hose and hose assemblies of the same type and size offered to the Government at one time shall be considered a lot for the purpose of inspection.

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4.4 Sampling. A random sample of hose lengths shall be selected from each lot in accordance with MIL-STD-105.

4.4.1 Sampling for examination. Examination of the hose shall be based on inspection level II and an Acceptable Quality Level (AQL) of 2.5 percent defective for major defects and 4.0 percent defective for minor defects.

4.4.2 Quality conformance inspection. Quality conformance inspection shall be performed on the sample hose lengths selected in accordance with 4.4. This inspection shall include the examination of 4.5 and the tests of 4.6.

4.3 Inspection lot. All hose and hose assemblies of the same type and size offered to the Government at one time shall be considered a lot for the purpose of inspection.

4.4 Sampling. A random sample of hose lengths shall be selected from each lot in accordance with MIL-STD-105.

4.4.1 Sampling for examination. Examination of the hose shall be based on inspection level II and an AQL of 2.5 percent defective for major defects and 4.0 percent defective for minor defects.

4.4.2 Sampling for tests. Tests of the hose shall be based on inspection level S-3 with an AQL of 4.0 percent defective. A representative sample 3 feet in length shall be cut from lengths selected from each lot. If hose is ordered with couplings (see 3.6), the supplier shall re-attach couplings to the remaining length from which the 3-foot length was cut. After the couplings have been re-attached, the remaining length of the hose shall be used to conduct the hydrostatic proof pressure test specified in 4.6.1. When the remaining length has passed the hydrostatic proof test, it shall be accepted as a full length of hose.

4.5 Examination. Each of the sample hose lengths selected in accordance with 4.4.1 shall be visually and dimensionally examined to determine conformance with all the requirements of this specification not involving tests. The classification of defects in Fed. Std. No. 162 shall be used to determine and evaluate defects through visual inspection.

4.6 Tests. Sample hose sections selected in accordance with 4.4.2 shall be subjected to the applicable test specified in table II and paragraphs 4.6.1 through 4.6.6.

4.6.1 Hydrostatic proof test, coupled assemblies. When hose is ordered with couplings, samples selected in accordance with 4.4.2 after couplings have been re-attached, shall be subjected to the hydrostatic proof test pressure specified in table I in accordance with ASTM Test Method D380. Water shall be used as the test media. Leakage or other evidence of defects shall be cause for rejection.



Table II. Tests.

Test	Test Methods No.	Reference Paragraph
Hose Size I.D.	2221 (1)	Table I
Hose length	2411 (1)	4.6.6
Thickness of tube and cover	2011 (1)	Table I
Tensile strength and elongation of tube and cover	ASTM D412	Table I
Adhesion	ASTM D413	Table I
Hydrostatic pressure		
Proof pressure test	ASTM D380	4.6.1
Burst pressure test	ASTM D380	4.6.2
Accelerated aging		
grade 1, class 2 and grade 3, class 2	ASTM D573	4.6.3
Extraction in distilled water		
grade 3, class 2	ASTM D297	4.6.4
Ozone resistance		
grade 3, cover	ASTM D1149	4.6.5

(1) Method in Fed. Test Method Std. No. 601

4.6.2 Burst test. Hose samples selected in accordance with 4.4.2 shall be subjected to the hydrostatic straight bursting test of ASTM Test Method D380. Water shall be used as the test media. Failure of the hose at a pressure below the minimum burst pressure specified in table I shall be cause for rejection of the lot.

4.6.3 Accelerated aging test. Hose samples selected in accordance with 4.4.2 shall be subjected to accelerated aging in accordance with ASTM Test Method D573, except that the time for aging shall be 70 hours at a temperature of 212 deg Fahrenheit (F). After aging, the tensile strength shall be not less than 80 percent of the values specified in table I, and the ultimate elongation shall be not less than 50 percent of the values specified in table I. The die for cutting the specimen shall be die F of ASTM D412.

4.6.4 Extraction of class 2 hose. The inner tube surface of one hose sample selected in accordance with 4.4.2 shall be extracted in distilled water at reflux temperature in accordance with the following procedures:

- (a) Remove a 1-inch ring of rubber inner tube and cut or buff away the outer surface until the surface is smooth.
- (b) Cut sufficient length of inner tube to obtain approximately 10 grams, based on a minimum thickness of 3/64-inch.
- (c) Subject sample to distilled water, at reflux temperature, for 7 hours in an extraction apparatus as shown in figure 1 of ASTM Method D297.
- (d) Filter the solution through #40 filter paper and collect the extract in a tared container.

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- (e) Extract the rubber sample in an additional 50-75 cubic centimeters of distilled water at a reflux temperature for 2 more hours and repeat step [d]. Combine the extract solutions and evaporate to dryness. The container and residue shall be dried in an oven at 105 deg +/-3 deg celsius (C) (221 deg +/-5 deg F) for one hour, cooled in a desiccator and weighed. The weight of the residue shall be recorded. A blank shall be run using the same amount of distilled water. After making allowance for the blank, the weight of the residue shall be recorded to the nearest milligram.
- (f) Report the amount of matter extracted from the rubber in milligrams per square inch of surface, determined as follows: Length (inches) x width (inches) x 2 = total surface area (in<sup>2</sup>).  
 Milligrams per square inch = weight of extract/total surface area.

4.6.5 Ozone resistance test. Hose samples selected in accordance with 4.4.2 shall be tested in accordance with ASTM Test Method D1149. The samples shall be mounted in a 20 percent (%) elongated position, conditioned for 24 hours in an ozone-free atmosphere, then exposed for 72 hours at 104 deg F to an atmosphere containing 50 parts per hundred million (pphm) of ozone. Visible cracking under 2X magnification at the end of such test shall be cause for rejection.

4.6.6 Hose length measurement. Each hose selected in accordance with 4.4.2 shall be measured for length in accordance with method 2411 of Fed. Test Method St. No. 601.

4.7 Preparation for delivery inspection. An examination shall be made to determine compliance with the requirements of section 5. The sample unit shall be on one unit prepared for shipment, i.e., one shipping container, one reel, or one hose length as applicable. Sampling shall be in accordance with MIL-STD-105. The inspection level shall be S-2 with an AQL of 4.0% defective.

## 5. PREPARATION FOR DELIVERY

5.1 Preservation-packaging. Preservation-packaging shall be level A or C, as specified (see 6.2).

5.1.1 Level A. Hoses shall be preserved and packaged in accordance with the level A requirements of MIL-P-775.

5.1.2 Level C. Hoses shall be preserved and packaged in accordance with the level C requirements of MIL-P-775.

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

5.2.1 Level A. Hoses shall be packed in accordance with the level A requirements of MIL-P-775.

5.2.2 Level B. Hoses shall be packed in accordance with the level B requirements of MIL-P-775.

5.2.3 Level C. Hoses shall be packed in accordance with the level C requirements of MIL-P-775.

## 6. NOTES

### 6.1 Intended use.

6.1.1 Grade 1, class 1. Grade 1, class 1 hose is intended for general water discharge services.

6.1.2 Grade 3, class 1 or class 2. Grade 3, class 1 or class 2 hose is intended for water applications where resistance to deterioration by weather and ozone is required.

6.1.3 Class 2 inner tube. Grade 1 or grade 3 with class 2 inner tube is for use with potable water.

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) Grade, class, and size (see 1.2.1, 1.2.2 and 3.11.2).
- (c) If first article is required (see 3.1).
- (d) Length of hose required (see 3.5).
- (e) If couplings are required (types) (see 3.6).
- (f) When commercial hose marking is acceptable (see 3.11.3).
- (g) Levels of preservation-packaging and packing required (see 5.1 and 5.2).

6.3 Recommended working pressure. Recommended working pressures for the hose covered by this specification are shown in table III.

Table III. Recommended maximum working pressure.

Size (inches)	Maximum recommended working pressure (psi)
1/4	150
3/8	150
1/2	150
5/8	150
3/4	150
1	150
1 1/4	125
1 1/2	125
2	100
2 1/2	100
3	100
3 1/2	100
4	100

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6.4 Contract data requirements. When this specification is used in an acquisition which incorporates a DD Form 1423 and invokes the provisions of paragraph 7-104.9(n) of the Defense Acquisition Regulations (DAR), the data requirements will be developed as specified by an approved Data Item Description (DD Form 1664) and delivered in accordance with the Contract Data Requirements List (DD Form 1423) incorporated into the contract. When the provisions of DAR 7-104.9(n) are not invoked, the data shall be delivered in accordance with the contract requirements.

6.5 First article. When a first article is required, it shall be tested and approved under the appropriate provisions of paragraph 7-104.55 of the DAR. The first article should be a first production item consisting of one complete hose length or assembly or it may be a standard production item from the contractor's current inventory, as specified in 4.2.1. The contracting officer should include specific instructions in all procurement documents regarding arrangement for examinations, tests, and approval of the first article.

6.6 Yarn or fabric-reinforced hose. The terms or fabric-reinforced hose, as defined in this specification, cover the following types: wrapped, braided, knit, or helically wound reinforcements.

## MILITARY CUSTODIANS:

Navy - YD  
Air Force - 99

## Preparing activity:

Navy - YD

## Civil Agency Coordinating Activities:

## Review activities:

Army - ME  
Navy - SH

DOT - ACO  
GSA - FSS  
HEW - FEC

## User activities:

Army - CE  
Navy - MC

Project No. 4720-0440

Orders for this publication are to be placed with General Services Administration, acting as an agent for the Superintendent of Documents. See section 2 of this specification to obtain extra copies and other documents referenced herein.