INCH-POUND

MIL-H-24136/2A(SH)
3 September 1993
SUPERSEDING
MIL-H-24136/2(SH)
18 June 1984

MILITARY SPECIFICATION

HOSE, SYNTHETIC RUBBER, SYNTHETIC FIBER REINFORCED, FOR FLEXIBLE HOSE ASSEMBLIES (HIGH PRESSURE SIZES -4 THROUGH -32)

This specification is approved for use by the Naval Sea Systems Command, Department of the Navy, and is available for use by all Departments and Agencies of the Department of Defense.

1. SCOPE

1.1 Scope. This specification covers synthetic fiber reinforced rubber hoses in sizes -4 through -32 for use in high pressure applications.

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 document to the extent specified herein. Unless otherwise specified, the issues of these documents are 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).

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Commander, Naval Sea Systems Command, SEA 03Q42, 2531 Jefferson Davis Hwy Arlington, VA 22242-5160 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 4730

SPECIFICATIONS

MILITARY

MIL-H-24136 - Hose, Synthetic Rubber, Synthetic Fiber Reinforced, for Flexible Hose Assemblies, General Specifications for.

MIL-F-24787 - Fittings, End, Reusable for Flexible Hose Assemblies.

(Unless otherwise indicated, copies of the federal and military specifications, standards and handbooks are available from the Standardization Documents Order Desk, Building 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.)

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

3. REQUIREMENTS

3.1 Hose furnished under this specification shall conform to the requirements of MIL-H-24136 and as specified herein.

3.2 Dimensions, pressures and construction. Hose dimensions and pressures shall be in accordance with table I. Hose construction shall be in accordance with table II.

TABLE I. Hose dimensions and pressures.

Hose size (dash no.)	Pressure (psi)		Hose dimensions (inches)			
	Working pressure	Burst pressure	I.D.		O.D.	
			Min.	Max.	Min.	Max
-4	2,500	10,000	0.234	0.266	0.844	0.906
-6	2,000	8,000	0.359	0.390	0.968	1.031
-8	2,000	8,000	0.465	0.531	1.094	1.156
-12	1,500	6,000	0.718	0.781	1.469	1.531
-16	1,400	5,600	0.968	1.031	1.750	1.812
-20	1,000	4,000	1.211	1.289	1.975	2.069
-24	1,000	4,000	1.461	1.539	2.203	2.297
-32	900	3,600	1.961	2.039	2.702	2.828

TABLE II. Hose construction and minimum bend radius.

Hose size	Hose reinforcement		Minimum bend radius (inches)	Impulse peak pressure (psi)
	Construction	No. of layers		
-4	Braided	3	4	3,750
-6	Braided	3	5	3,000
-8	Braided	3	7	3,000
-12	Braided	3	9.5	2,250
-16	Braided	3	11	2,100
-20	Braided	3	16	1,500
-24	Braided	3	20	1,500
-32	Braided	3	25	1,350

3.3 Stability. When tested in accordance with MIL-H-24136, 4.6.2, the hose shall not change in length more than plus 5 percent or minus 2 percent.

4. QUALITY ASSURANCE PROVISIONS

4.1 Quality assurance provisions shall be in accordance with MIL-H-24136 and as specified herein.

4.1.1 Responsibility for compliance. All items shall 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 ensuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling inspection, as part of the manufacturing operations, is an acceptable practice to ascertain conformance to requirements, however, this does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to accept defective material.

4.2 Sampling for qualification testing.

4.2.1 Hose. Qualification testing of hose shall consist of hose samples as specified in table III. Samples shall be not less than 15 inches in length and shall be fitted with end fittings qualified to MIL-F-24787.

4.2.1.1 Qualified end fittings. End fittings used for the qualification of hose to this associated detail specification shall be fittings qualified to Group XI, MIL-F-24787. Where there are no previously qualified end fittings, the prospective hose supplier shall work together with a prospective fitting supplier to qualify their respective products. (The fitting supplier and hose supplier may be a single source.)

4.2.1.2 The quantity of end fittings required shall be in accordance with table IV.

TABLE III. Hose samples required.

Hose size (dash size)	Number of hose samples to be provided
-8	4
-32	5

TABLE IV. End fittings required.

End fitting size (hose dash no.)	Number of end fitting samples to be provided
-8	8
-32	10

4.2.2 End fitting mix. Where there are two or more qualified suppliers of end fittings to Group XI of MIL-F-24787, the sample end fitting mix shall be in accordance with table V. Where there is only one previously qualified supplier, the "previously qualified" samples shall come from that supplier.

TABLE V. Hose and fitting mix for combined qualification, or where there is more than one qualified fitting source.

One approved source					
Hose size (dash no.)	No. of hose samples to be provided		End fitting 4/ size (hose dash no.)	No. of end fittings 4/ to be provided	
	2/3/ Qualifier	Appvd 1/ source		2/3/ Qualifier	Appvd 1/ source
-8	2	2	-8	4	4
-32	3	2	-32	6	4

Two or more approved sources			
Hose size (dash no.)	Number of hose samples to be provided by		
	Qualifier 2/ 3/	Approved 1/ source #1	Approved 1/ source #2
-8	2	1	1
-32	3	1	1
End 4/ fitting size (dash no.)	Number of end fittings to be provided by 4/		
	Qualifier 2/ 3/	Approved 1/ source #1	Approved 1/ source #2
-8	4	2	2
-32	6	2	2

Hose samples shall be not less than 15 inches in length and shall be coupled on one end with the fitting being submitted for qualification and on the other end with previously qualified end fittings.

1/ Approved source - Previously qualified hose and fitting, or hose or fitting.
2/ Qualifier - Offeror of hose and fittings, or hose to be qualified.
3/ Satisfactory completion of qualification testing of the samples selected in accordance with tables III, IV and V will qualify the offeror for all sizes in this associated detail specification.
4/ End fittings shall be in accordance with Group XI of MIL-F-24787.

4.2.3 Hose and end fittings combined. In the event that a supplier for hose and end fittings or a hose supplier and a fitting supplier desire to qualify hose to this associated detail specification and fittings to Group IX, MIL-F-24787 in a combined qualification test, the samples required for testing shall be in accordance with table V.

4.2.4 Sample requirements when there are less than two previously qualified suppliers. Where there is only one qualified source for qualified samples, all the "previously qualified" samples required shall come from that source. Where there are no previously qualified sources, all samples of hoses and fittings shall be submitted by the prospective qualifier(s).

4.2.5 Test sequence. The sequence of tests on sample hose assemblies shall be as specified in table VI.

TABLE VI. Sequence of qualification tests on sample assemblies.

Test sequence (see MIL-H-24136)	Sample numbers								
	Size -8				Size -32				
	1	2	3	4	5	6	7	8	9
Proof pressure (see 4.6.1)	X	X	X	X	X	X	X	X	X
Stability test (see 4.6.2)	X	X	X	X	X	X	X	X	X
Aging test (see 4.6.3)		X	X	X	X		X	X	X
Hydraulic fluid circulation test (see 4.6.4)		X					X		
Impulse test (see 4.6.5)				X	X				X
Burst test (see 4.6.6)	X					X			
Cold temperature flexing test (see 4.6.8)			X					X	

4.2.6 Satisfactory completion of qualification testing of the samples selected in accordance with tables III, IV and V will qualify the offeror for all sizes in this associated detail specification.

5. PACKAGING

5.1 Packaing shall be in accordance with MIL-H-24136.

6. NOTES

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

6.1 Intended use. Hose to this associated detail specification is intended for use in shipboard or shore to ship piping systems where pressures do not exceed the rated working pressure, and temperatures do not exceed minus 40°F or plus 200°F.

6.2 Acquisition requirements. Acquisition documents should specify the following:

(a) Title, number and date of this specification.
(b) Issue of DODISS to be cited in the solicitation, and if required, the specific issue of individual documents referenced (see 2.1 and 2.1.1).
(c) Size hose.
(d) Quantity of hose (linear feet) per size.

6.3 Subject term (key word) listing.

Group XI
Braided

6.4 Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extensiveness of the changes.

Preparing activity:
Navy - SH
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