INCH-POUND

MIL-DTL-5593D
8 January,2002
SUPERSEDING
MIL-H-5593C
3 April 1981

DETAIL SPECIFICATION

HOSE, AIRCRAFT, LOW PRESSURE, FLEXIBLE

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

1. SCOPE

1.1 Scope. This specification covers a low-pressure, flexible hose for use in aircraft applications.

2. APPLICABLE DOCUMENTS

2.1 General. The documents listed in this section are specified in sections 3 and 4 of this specification. This section does not include documents cited in other sections of this specification or recommended for additional information or as examples. While every effort has been made to ensure the completeness of this list, document users are cautioned that they must meet all specified requirements documents cited in sections 3 and 4 of this specification, whether or not they are listed.

2.2 Government documents.

2.2.1 Specifications and standards. The following specifications and standards 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).

SPECIFICATIONS

DEPARTMENT OF DEFENSE

AN6270	-	Hose Assembly - Detachable Swivel Fitting, Low Pressure
MIL-H-5606	-	Hydraulic Fluid, Petroleum Base; Aircraft, Missile, and Ordnance
MIL-DTL-38726	-	Adapter Assembly, Reusable, Flexible Hose, Low Pressure
MIL-PRF-83282	-	Hydraulic Fluid, Fire Resistant, Synthetic Hydrocarbon Base, Metric, NATO Code Number H-537

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Commander, Defense Supply Center, Columbus, DSCC-VAI, 3990 East Broad Street, Columbus, OH 43216-5000, by using the Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

AMSC N/A FSC 4720

STANDARDS

FEDERAL

FED-STD-595	-	Colors Used in Government Procurement

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

2.3 Non-Government publications. The following documents form a part of this document to the extent specified herein. Unless otherwise specified, the issues of the documents which are Department of Defense (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 FOR TESTING AND MATERIALS (ASTM)

ASTM D380	-	Rubber Hose, Standard Test Methods for (DoD adopted)
ASTM D471	-	Rubber Property - Effect of Liquids, Standard Test Method for (DoD adopted)

(Application for copies should be addressed to the American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.)

NATIONAL CONFERENCE OF STANDARDS LABORATORIES (NCSL)

ANSI/NCSL Z540-1	-	Calibration Laboratories and Measuring and Test Equipment, General Requirements (DoD adopted)

(Application for copies should be addressed to the National Conference of Standards Laboratories, 1800 30th Street, Suite 305B, Boulder, CO 80301.)

SAE INTERNATIONAL

SAE AMS3002	-	Alcohol, Denatured Ethyl
SAE ARP6002	-	Marking; Standard Hose, Aircraft (DoD adopted)
SAE AS1933	-	Age Controls for Hose Containing Age-Sensitive Elastomeric Material (DoD adopted)

(Application for copies should be addressed to SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001.)

2.4 Order of precedence. In the event of a conflict between the text of this document and the references cited herein (except for related associated 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 Qualification. The hose furnished under this specification shall be a product that is authorized by the qualifying activity for listing on the applicable qualified products list (QPL) before contract award (see 4.4 and 6.3). The hose shall be qualified with adapters from two or more manufacturers (see 3.3.4).

3.2 Materials. Materials used shall be as specified herein and of a quality that will enable the hose to meet the requirements of this specification.

3.2.1 Recycled, recovered, or environmentally preferable materials. Recycled, recovered, or environmentally preferable materials should be used to the maximum extent possible provided that the material meets operational and maintenance requirements, and promotes economically advantageous life cycle costs.

3.2.2 Hazardous substances. The use of hazardous substances, toxic chemicals, or ozone depleting chemicals (ODCs) shall be avoided whenever feasible.

3.3 Design and construction. The hose shall consist of an inner tube that is reinforced and an outer cover fabricated to withstand the tests specified herein. Physical requirements shall be as specified in table I.

3.3.1 Inner tube. The inner tube shall consist of a nonblooming compound of seamless construction, uniform in gage, and resistant to aromatics. It shall be free from pitting, dirt, foreign material, and mandrel lubricants.

3.3.2 Reinforcement. The reinforcement shall consist of yarn, cotton, or other material to provide added strength to the hose.

3.3.3 Outer cover. The outer cover shall consist of an abrasion-resistant compound of uniform thickness, free from cuts and breaks, and resistant to fuel and oil. The cover may incorporate longitudinal corrugations not exceeding 0.031 inch in depth and spaced no more than 0.031 inch apart around the entire periphery of the hose. Surface irregularities, such as mold marks and laps, as distinguished from cracks or cuts, shall not be cause for rejection.

3.3.4 Adapters. The hose specified herein shall be compatible with adapters qualified to MIL-DTL-38726.

3.3.5 Dimensions.

3.3.5.1 Length. Unless otherwise specified (see 6.2), hose shall be furnished in lengths from 20 to 65 feet. However, not more than 10% of the order may be furnished in random lengths from 10 to 20 feet and not more than an additional 10% may be furnished in random lengths from 3 to 10 feet. When hose length is specified, a tolerance of ±1% of the length shall be allowed.

3.3.5.2 Concentricity. The inside diameter and outside diameter of the hose shall be concentric within 0.030 Full Indicator Movement (FIM) for sizes -2 and -3 and within 0.040 FIM for sizes -4, -6, -8, and -10. All readings shall be made on the end of lengths as supplied.

3.3.5.3 Tube bore. The inside diameter of the hose shall not be reduced by more than 0.020 inch less than the nipple inside diameter after installation of adapters as specified in 3.3.4.

TABLE I. Hose physical requirements.

Hose size	Inside diameter (inch)	Outside diameter (inch)	Operating pressure, max (psi)	Proof pressure, min (psi)	Burst pressure, min (psi)	Flexibility test weight, max (lbs)	Kinking test diameter, max (inch)	Tensile strength of assembly, min (lbs)
-2	.125 ± .010	.375 $^{+.000}_{-.047}$	300	600	2,000	.25	2	100
-3	.188 ± .016	.438 $^{+.000}_{-.047}$	250	500	1,700	.25	2	100
-4	.250 ± .016	.500 $^{+.000}_{-.047}$	200	400	1,250	.25	4	125
-6	.375 ± .016	.625 $^{+.000}_{-.047}$	150	300	1,000	.56	4	150
-8	.500 ± .023	.781 $^{+.000}_{-.063}$	150	250	750	1.00	6	200
-10	.625 ± .023	.906 $^{+.000}_{-.063}$	150	250	700	2.00	6	200

3.4 Performance.

3.4.1 Proof pressure. When tested as specified in 4.6.2 with the applicable proof pressure specified in table I, there shall be no evidence of leakage, damage, or permanent deformation.

3.4.2 Adhesion. When tested as specified in 4.6.3, the adhesion between all adjacent parts shall be not less than 6 pounds per inch.

3.4.3 Tensile strength.

3.4.3.1 Hose. When tested as specified in 4.6.4.1, the tensile strength of the inner tube and the outer cover shall be not less than 1,250 psi.

3.4.3.2 Hose assembly. When tested as specified in 4.6.4.2, the end adapters shall not pull off nor shall the hose rupture at less than the value for tensile strength specified in table I.

3.4.4 Elongation. When tested as specified in 4.6.5, the ultimate elongation of the inner tube and the outer cover shall be not less than 175%.

3.4.5 Burst pressure. When tested as specified in 4.6.6, there shall be no evidence of leakage or malfunction at any pressure that is less than the burst pressure specified in table I.

3.4.6 Swelling. When tested as specified in 4.6.7, the volume change shall be within 0 and +65% for the inner tube and within 0 and +35% for the outer cover.

3.4.7 Flexibility. When tested as specified in 4.6.8, the hose shall bend so that the weighted end of the hose drops to a position that is not lower than the fixed end.

3.4.8 Kinking. When tested as specified in 4.6.9, the hose shall not kink or show any evidence of deterioration.

3.4.9 Vacuum collapse. When tested as specified in 4.6.10, the decrease in the outside diameter of the bent hose shall be not greater than 20% of the original outside diameter.

3.4.10 Low temperature flexibility. When tested as specified in 4.6.11, the hose shall not leak or crack.

3.4.11 Water and alcohol resistance. When tested as specified in 4.6.12, the tensile strength loss of the inner tube and the outer cover shall be not greater than 35%.

3.4.12 Oil resistance. When tested as specified in 4.6.13, the tensile strength loss of the inner tube shall be not greater than 35% and its elongation loss shall be not greater than 50%.

3.5 Marking. The hose shall be marked on the outer cover, parallel to the bore, with the following information (see 6.5):

a. Capital letters "LP" (low pressure).
b. Specification number.
c. Hose size.
d. Date of manufacture (quarter of year and year).
e. Manufacturer's Commercial and Government Entity (CAGE) code.

For example, a size -6 hose manufactured during the fourth quarter of 2000 shall be marked as "LP-MIL-DTL-5593-6-4Q00-XXXXX".
The marking shall be yellow, color 13538 of FED-STD-595 (gasoline, oil, and water resistant), legible with normal vision at a minimum distance of 3 feet, and shall be repeated every 12 inches or less along the entire length of the hose. The marking shall withstand the tests specified in SAE ARP6002.

3.6 Age. The bulk hose that is covered by this specification shall not exceed the age limits specified in SAE AS1933.

3.7 Workmanship. The hose shall be manufactured to be uniform in diameter and free from cracks, cuts, or other defects or irregularities that would adversely affect its service performance.

4. VERIFICATION

4.1 Test equipment and inspection facilities. Test and measuring equipment and inspection facilities of sufficient accuracy, quality, and quantity to permit performance of the required inspection shall be used. The establishment and maintenance of a calibration system to control the accuracy of the test and measuring equipment shall be in accordance with ANSI/NCSL Z540-1 or equivalent.

4.2 Classification of inspections. The inspection requirements specified herein are classified as follows:

a. Qualification inspection (see 4.4).
b. Quality conformance inspection (see 4.5).

1. Individual tests (see 4.5.1).
2. Sampling tests (see 4.5.2).
3. Periodic control tests (see 4.5.3).

4.3 Inspection conditions. Unless otherwise specified, all required inspections shall be performed in accordance with the test conditions specified in 4.6.

4.4 Qualification inspection. Qualification inspection shall be performed at a laboratory acceptable to the qualifying activity on sample units produced with equipment and procedures used in production.

4.4.1 Samples for qualification. Qualification samples shall be representative of the products proposed to be furnished to this specification. Samples consisting of four hose assemblies of the same size, with lengths as specified in the applicable test method, shall be subjected to qualification testing. Each hose assembly shall consist of the hose as specified herein, coupled with adapters as specified in 3.3.4. Hose shall be qualified with adapters from a minimum of two specific qualified manufacturers. In addition, hose samples of lengths as specified in the applicable test method, cut from no less than 15 feet of bulk hose, shall be subjected to qualification testing. For tensile and elongation tests of size -4 and smaller, one platen press sheet of the same stock and cure as the inner tube and the outer cover shall be used. The sheet shall be not less than 6 inches by 6 inches by 0.0625 inch thick, but shall not exceed a thickness 0.125 inch.

4.4.2 Qualification inspection routine. All samples shall be subjected to qualification testing in accordance with table II and in the sequence specified in table III.

TABLE II. Inspection requirements.

Requirement	Requirement paragraph	Test method paragraph	Qualification inspection	Conformance inspection		
				Individual tests	Sampling tests	Periodic control tests
Examination of product	3.3, 3.5, 3.7	4.6.1	X	X		
Proof pressure	3.4.1	4.6.2	X	X		
Adhesion	3.4.2	4.6.3	X			X
Tensile strength	3.4.3	4.6.4	X			X
Elongation	3.4.4	4.6.5	X			X
Burst pressure	3.4.5	4.6.6	X		X	
Swelling	3.4.6	4.6.7	X			
Flexibility	3.4.7	4.6.8	X			
Kinking	3.4.8	4.6.9	X			
Vacuum collapse	3.4.9	4.6.10	X			X
Low temperature flexibility	3.4.10	4.6.11	X			
Water and alcohol resistance	3.4.11	4.6.12	X			
Oil resistance	3.4.12	4.6.13	X			

4.4.3 Acceptance of qualification data. For identical requirements and test procedures, using an identical adapter, qualification test data from the manufacturer of MIL-DTL-5593 hose may be accepted as qualification test data for MIL-DTL-38726, and proof pressure test results from the manufacturer of MIL-DTL-5593 hose may be accepted as test data for AN6270, provided that documented approval has been obtained from the qualifying activity. Unless otherwise approved by the qualifying activity, qualification test data from one manufacturer shall not be accepted for another.

4.4.4 Failures. One or more failures shall be cause for refusal to grant qualification approval.

4.4.5 Retention of qualification. To retain qualification, the manufacturer shall submit a report at 12-month intervals to the qualifying activity. The qualifying activity shall establish the initial reporting date. Each report shall contain a summary of the results obtained from both the sampling tests and the periodic control tests performed during the 12-month period. The number of lots and the quantities of hose that have passed and failed shall be included. All reworked sampling lots shall be accounted for and identified.

If the summary of test results indicates nonconformance with the requirements specified herein, but corrective measures acceptable to the qualifying activity have not been taken, action may be taken to remove the failing product from the QPL

Failure to submit the report within 30 days after the end of each 12-month period may result in loss of qualification for the product. In addition to the periodic submission of inspection data, the manufacturer shall immediately notify the qualifying activity at any time during the 12-month period that the inspection data indicates failure of the qualified product to meet the requirements of this specification. If there has been no production during the reporting period, a report shall be submitted certifying that the manufacturer still has the capability and facilities necessary to produce the qualified product. If there has been no production during two consecutive reporting periods, the manufacturer may be required, at the discretion of the qualifying activity, to submit his next production run of qualified product for testing in accordance with the qualification inspection requirements.

Table III. Qualification inspection sequence.

Required qualification test	Test method paragraph	Sample number					
		Hose assemblies				Hose	Tube and cover
		1	2	3	4	5	6
Examination of product	4.6.1	X	X	X	X	X	X
Proof pressure	4.6.2	X	X	X	X		
Adhesion	4.6.3					X	
Tensile strength	4.6.4	X					X
Elongation	4.6.5						X
Burst pressure	4.6.6			X	X		
Swelling	4.6.7						X
Flexibility	4.6.8					X	
Kinking	4.6.9					X	
Vacuum collapse	4.6.10		X				
Low temperature flexibility	4.6.11					X	
Water and alcohol resistance	4.6.12						X
Oil resistance	4.6.13						X 1/

1/ Only the inner tube shall be subjected to testing.

4.5 Quality conformance inspection.

4.5.1 Individual tests. Inspection of the product for delivery shall consist of subjecting each hose length to the individual tests specified in table II. Any item failing to meet the requirements of the individual tests shall be immediately removed from the lot.

4.5.2 Sampling tests. Hose lengths, randomly selected from a production lot (see 4.5.2.1) to form an inspection sample (see 4.5.2.2), shall be subjected to the sampling tests specified in table II.

4.5.2.1 Production lot. A production lot shall consist of all hose of one size manufactured , a production lot shall consist of 750 ft increments of all hose of one size manufactured on the same production line(s) by means of the same production techniques, materials, controls, and design during the same continuous production run.

4.5.2.2 Inspection sample. An inspection sample shall consist of hose lengths randomly selected from the production lot without regard to quality. For each full or partial increment of 750 feet of bulk hose produced in a continuous run, one sample shall be subjected to the sampling tests (for up to a maximum of 10 samples).

4.5.2.3 Nonconformance of sampling tests. If one or more defects are found in the inspection sample, both the qualifying and inspection activities shall be immediately notified and the production lot shall be rejected and not be supplied to this specification. Acceptance and shipment of the product shall be discontinued until corrective action, acceptable to the qualifying activity, has been taken. The corrective measures shall be performed on the materials or processes, or both, as warranted, and on all products considered subjected to the same failure. Once the corrective action has been completed, either the specific sampling test in which the original sample failed or all sampling tests may be required to be repeated on additional samples, at the option of the qualifying activity. However, final acceptance shall be withheld until testing has shown that the corrective action was successful. In the event of a failure after re-

inspection, information concerning the failure and the corrective action taken shall be furnished to both the qualifying and inspection activities.

4.5.3 Periodic control tests. For each size hose manufactured under essentially the same conditions, periodic control testing shall be performed on either four samples from every 20,000 feet of bulk hose produced or one sample from every 5,000 feet. If there has been some production but the footage of bulk hose produced has not reached 5,000 feet for a specific size within 3 years, the manufacturer shall perform periodic control tests on one sample of that size for each required periodic test unless documented approval to not perform the test has been obtained from the qualifying activity.

4.5.3.1 Periodic control test plan. Testing shall be in accordance with table II.

4.5.3.2 Nonconformance of periodic control tests. If a sample fails a periodic control test, both the qualifying and inspection activities shall be immediately notified of such failure. Acceptance and shipment of the product shall be discontinued until corrective action, acceptable to the qualifying activity, has been taken. The corrective measures shall be performed on the materials or processes, or both, as warranted, and on all products considered subjected to the same failure. Once the corrective action has been completed, either the specific periodic control test in which the original sample failed or all periodic control tests may be required to be repeated on additional samples, at the option of the qualifying activity. Furthermore, the sampling tests may be reinstituted in addition to the periodic control tests if deemed applicable by the qualifying activity. However, final acceptance shall be withheld until testing has shown that the corrective action was successful. In the event of a failure after re-inspection, information concerning the failure and the corrective action taken shall be furnished to both the qualifying and inspection activities.

4.5.4 Disposition of test samples. Samples that have been subjected to any sampling or periodic control tests are considered damaged and shall not be delivered as part of a contract or purchase order.

4.5.5 Discontinuation and resumption of production. If there has been no production of a specific size for a period of 3 years or more, twenty-four samples shall be randomly selected from the first lot produced when production of that size has been resumed. Eight of the samples shall be subjected to the sampling tests and the remaining sixteen shall be used to prepare duplicate test specimens for each of the periodic control tests (see table II).

4.5.6 Acceptance of conformance inspection data. For identical requirements and test procedures, using an identical adapter, conformance inspection data from MIL-DTL-38726 may be accepted as conformance inspection data for MIL-DTL-5593, provided that documented approval has been obtained from the qualifying activity. When conformance inspection data from MIL-DTL-38726 is to be accepted as conformance inspection data for MIL-DTL-5593, one hose assembly shall be considered to be the equivalent of 2 feet of bulk hose.

4.6 Test methods.

4.6.1 Examination of product. Each length of hose shall be visually and physically examined for conformance to the following requirements:

a. Design and construction (see 3.3).
b. Marking (see 3.5).
c. Workmanship (see 3.7).

4.6.2 Proof pressure. Proof pressure testing shall be conducted in accordance with ASTM D380. The hose or hose assembly shall be subjected to the applicable proof pressure specified in table I for not less than 60 seconds and not more than 5 minutes. Requirements shall be as specified in 3.4.1.

4.6.3 Adhesion. Two 3-inch lengths of hose shall be tested in accordance with the ring specimen procedure of ASTM D380 using the Static-Mass Method. Requirements shall be as specified in 3.4.2.

4.6.4 Tensile strength.

4.6.4.1 Hose. The tensile strength of the inner tube and the outer cover shall be determined in accordance with ASTM D380. Requirements shall be as specified in 3.4.3.1.

4.6.4.2 Hose assembly. The tensile strength of the hose assembly shall be determined in accordance with the tension test described in ASTM D380. Requirements shall be as specified in 3.4.3.2.

4.6.5 Elongation. The ultimate elongation of the inner tube and the outer cover shall be determined in accordance with ASTM D380 at the time of conducting the tensile test. Requirements shall be as specified in 3.4.4.

4.6.6 Burst pressure. An 18-inch length of hose shall be tested in accordance with ASTM D380. The hose assembly shall be subjected to pressure and the pressure increased until burst of the assembly occurs. Pressure shall be applied with a rate of pressure rise of 300 to 1,000 psi per minute. The test sample shall be observed throughout the test and the type of failure and the pressure at which it occurred shall be recorded. Requirements shall be as specified in 3.4.5.

4.6.7 Swelling. Three test samples from the inner tube shall be immersed in fluid conforming to ASTM D471 Reference Fuel B at room temperature for 24 hours. Three test samples from the outer cover shall be immersed in fluid conforming to ASTM D471 Reference Fuel A at room temperature for 24 hours. At the end of the immersion period, the samples shall be removed from the fuel and the change in volume shall be determined within 5 minutes in accordance with ASTM D380. Requirements shall be as specified in 3.4.6.

4.6.8 Flexibility. A 12-inch length of hose shall be placed vertically in a vise and gripped at the lower end. A weight, as specified in table I, shall be attached to the opposite end. The hose shall meet the requirements specified in 3.4.7.

4.6.9 Kinking. A length of hose shall be bent around a mandrel, having a diameter conforming to the kinking test diameter specified in table I, and exposed to a temperature of 158 ±1 °F for 3 hours. At the end of the 3-hour period, the hose shall meet the requirements specified in 3.4.8.

4.6.10 Vacuum collapse. A length of hose shall be bent around a mandrel having a diameter of 10 times the outside diameter of the hose. A vacuum of 20 inches of mercury shall be applied to hose with an inside diameter of less than 0.500 inch. A vacuum of 10 inches of mercury shall be applied to hose with an inside diameter of 0.500 inch and larger. Requirements shall be as specified in 3.4.9.

4.6.11 Low temperature flexibility. One oil-aged and one air-aged hose sample, each 12 inches long, shall be conditioned in an oven at a temperature of 158 ±2 °F for a minimum of 168 continuous hours. The oil-aged sample shall be filled with fluid or immersed in fluid conforming to MIL-H-5606 or MIL-PRF-83282 while the air-aged sample shall be open to the oven atmosphere. After conditioning, both samples shall be placed in a cold chamber at -65 ±2 °F for 72 hours. After this time and while at -65 ±2 °F, the test samples shall be flexed through 180° over a mandrel of the same temperature having a diameter of 10 times the outside diameter of the hose for 1 cycle. The rate of cycling is 1 cycle in

4 seconds. The samples shall then be subjected to the proof pressure test (see 4.6.2). The hose shall meet the requirements specified in 3.4.10.

4.6.12 Water and alcohol resistance. Three test samples from the inner tube and three test samples from the outer cover shall be immersed in a solution of 50% water and 50% alcohol, conforming to AMS3002, at a temperature of 158 ±2 °F for 24 hours. At the end of the immersion period, the samples shall be removed from the solution and the tensile strength shall be determined within 15 minutes in accordance with ASTM D380. Requirements shall be as specified in 3.4.11.

4.6.13 Oil resistance. Three test samples from the inner tube shall be immersed in fluid conforming to MIL-H-5606 or MIL-PRF-83282 at a temperature of 158 ±2 °F for 7 days. At the end of the immersion period, the samples shall be removed from the fluid and allowed to cool at room temperature for not less than 4 hours. Tensile strength and elongation shall be determined in accordance with ASTM D380. Requirements shall be as specified in 3.4.12.

5. PACKAGING

5.1 Packaging. For acquisition purposes, the packaging requirements shall be as specified in the contract or order (see 6.2). When actual packaging of materiel is to be performed by DoD personnel, these personnel need to contact the responsible packaging activity to ascertain requisite packaging requirements. Packaging requirements are maintained by the Inventory Control Point's packaging activity within the Military Department or Defense Agency, or within the Military Department's System Command. Packaging data retrieval is available from the managing Military Department's or Defense Agency's automated packaging files, CD-ROM products, or by contacting the responsible packaging activity.

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 hose covered by this specification is intended to be coupled with adapters qualified to MIL-DTL-38726 to form hose assemblies per AN6270, for use as a flexible connection on low-pressure air and vacuum instrument systems, automatic pilots, and all types of pressure gages in use with these systems. The hose is a military-unique item because it is compatible with associated components and equipment in military aircraft and is capable of operating at temperatures ranging from -65 °F to +160 °F.

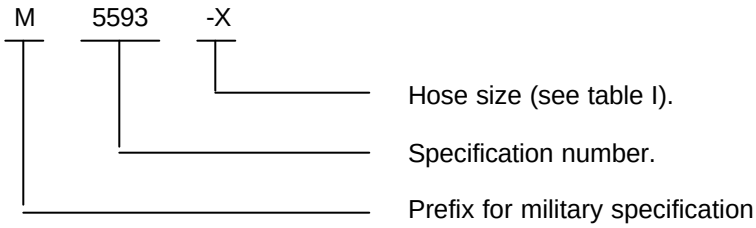
6.2 Acquisition requirements. Acquisition documents should specify the following:

a. Title, number, and date of this specification, including any amendments.
b. Issue of DoDISS to be cited in the solicitation and, if required, the specific issue of individual documents referenced (see 2.2 and 2.3).
c. Hose size (see table I).
d. Hose length, where applicable (see 3.3.5.1).
e. Packaging requirements (see 5.1).

6.3 Qualification. With respect to products requiring qualification, awards will be made only for products which are, at the time of award of contract, qualified for inclusion on Qualified Products List QPL-5593 whether or not such products have actually been so listed by that date. The attention of the contractors is called to these requirements. Manufacturers are urged to have products they propose to offer to the Federal Government tested for qualification so that they may be eligible for contract awards or

purchase orders for the products covered by this specification. Information pertaining to qualification of products may be obtained from Commander, Defense Supply Center, Columbus, DSCC-VQP, 3990 East Broad Street, Columbus, OH 43216-5000.

6.4 Part or Identifying Number (PIN). The PIN to be used for hose acquired under this specification is constructed as follows:



Example of PIN: a 0.250-inch inside diameter hose is described as M5593-4.

6.5 Parts of previous issue. Hose made to the previous issue may be used for a period equal to the age limits per paragraph 3.6, from the date of this revision to deplete existing stock.

6.6 Subject term (key word) listing.

Air systems
Alcohol resistant
Gasoline resistant
Low temperature
Oil resistant
Vacuum systems
Water resistant

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

Custodians:
Air Force - 99
Army - AV
Navy - AS
DLA - CC

Review activities:
Air Force - 71
Navy - MC, SA

Preparing activity:
DLA - CC

(Project No. 4720-0127)

STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

INSTRUCTIONS

1. The preparing activity must complete blocks 1, 2, 3, and 8. In block 1, both the document number and revision letter should be given.

2. The submitter of this form must complete blocks 4, 5, 6, and 7, and send to preparing activity.

3. The preparing activity must provide a reply within 30 days from receipt of the form.

NOTE: This form may not be used to request copies of documents, nor to request waivers, or clarification of requirements on current contracts. Comments submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or to amend contractual requirements.

I RECOMMEND A CHANGE:	**1. DOCUMENT NUMBER** MIL-DTL-5593D	**2. DOCUMENT DATE (YYYYMMDD)** 20020108

3. DOCUMENT TITLE HOSE, AIRCRAFT, LOW PRESSURE, FLEXIBLE

5. REASON FOR RECOMMENDATION

6. SUBMITTER

a. NAME *(Last, First, Middle Initial)*	b. ORGANIZATION	
c. ADDRESS *(Include Zip Code)*	d. TELEPHONE (Include Area Code) (1) Commercial (2) AUTOVON *(if applicable)*	**7.DATE SUBMITTED** (YYYYMMDD)

8. PREPARING ACTIVITY

NAME Commander, Defense Supply Center	b. TELEPHONE *Include Area Code)* (1) Commercial (614) 692-0538 (2) AUTOVON 850-0538
c. ADDRESS *(Include Zip Code)* DSCC-VAI, 3990 East Broad Street Columbus, OH 43216-5000	**IF YOU DO NOT RECEIVE A REPLY WITHIN 45 DAYS, CONTACT:** Defense Standardization Program Office (DLSC-LM) 8725 John J. Kingman road, Suite 2533, Ft. Belvoir, VA 22060-2533 Telephone (703) 767-6888 AUTOVON 427-6888