

INCH-POUND

MIL-PRF-32107

27 June 2002

PERFORMANCE SPECIFICATION

HOSE, AIR DUCT,
GENERAL SPECIFICATION FOR

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

1. SCOPE

1.1 Scope. This specification covers textile duct, manufactured of porous fabric, used as air distribution devices in heating, ventilating, and air conditioning systems for Naval surface ship use. It is not appropriate for air transportation duct, and will not transit any bulkhead or deck.

1.2 Classification. Textile ducts are classified by Part or Identifying Numbers (PINs). General PIN structure is outlined in 6.6. Refer to individual specification sheets for duct specific details.

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.

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, ATTN: SEA 05Q, 1333 Isaac Hull Avenue, SE, Stop 5160, Washington Navy Yard DC 20376-5160 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

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MIL-PRF-32107

2.2 Government documents.

2.2.1 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).

SPECIFICATIONS

FEDERAL

- | | |
|-----------|---|
| A-A-59291 | - Ink, Marking (For Parachutes and Other Textile Items) |
| P-D-245F | - Detergent, General Purpose, Laundry and Hand Dishwashing (Granular) |

DEPARTMENT OF DEFENSE

- | | |
|-----------|---|
| MIL-S-901 | - Shock Tests, H.I. (High Impact) Shipboard Machinery, Equipment, and Systems, Requirements for |
|-----------|---|

(See supplement 1 for list of specification sheets.)

STANDARDS

FEDERAL

- | | |
|-----------|------------------------------------|
| FED-STD-4 | - Glossary of Fabric Imperfections |
|-----------|------------------------------------|

DEPARTMENT OF DEFENSE

- | | |
|---------------|--|
| MIL-STD-167-1 | - Mechanical Vibrations of Shipboard Equipment (Type I - Environmental and Type II - Internally Excited) |
|---------------|--|

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

2.2.2 Other Government documents, drawings, and publications. The following other Government documents, drawings, and publications form a part of this document to the extent specified herein. Unless otherwise specified, the issues are those cited in the solicitation.

DRAWINGS

- | | |
|--------------------|--|
| NAVSEA 803-7379036 | - Textile Duct Mounting Standard Drawing |
| NAVSEA 803-7379037 | - Textile Duct Installation Standard Drawing |

MIL-PRF-32107

(Unless otherwise indicated, copies of the above drawings are available from Commander, Portsmouth Naval Shipyard, Portsmouth, NH, 03804-5000.)

2.3 Non-Government publications. The following document(s) form a part of this document to the extent specified herein. Unless otherwise specified, the issues of the documents which are 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 B 221 - 00 - Aluminum and Aluminum Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes
- ASTM D 737 - 96 - Textile Fabrics, Air Permeability of
- ASTM D 2050 - 87 - Standard Terminology Relating to Zippers
- ASTM D 2261 - 96 - Fabrics, Woven, by the Tongue (Single Rip) Method (Constant-Rate-of-Extension Tensile Testing Machine), Tearing Strength of
- ASTM D 6193 - 97 - Stitches and Seams (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.)

UNDERWRITERS LABORATORIES INC

- UL 181 - Air Ducts and Air Connectors, Factory-Made (DoD Adopted)
- UL 214 - Tests For Flame-Propagation of Fabrics and Films (DoD Adopted)
- UL 723 - Test for Surface Burning Characteristics of Building Materials (DoD Adopted)

(Application for copies should be addressed to the Underwriters Laboratories, Inc., 12 Laboratory Drive, Research Triangle Park, NC 27709-3995).

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

- ISO 5077 – 1984 (E) - Textiles - Determination of Dimensional Change in Washing and Drying

(Application for copies should be addressed to the Int'l Organization for Standardization, Case Postale 56, Geneva, Switzerland, CH-1211.)

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 or specification sheets), the text of this document takes precedence. Nothing in this document,

MIL-PRF-32107

however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 Specification sheets. The individual item requirements shall be as specified herein and in accordance with the applicable specification sheet. In the event of any conflict between the requirements of this specification and the specification sheet, the latter shall govern.

3.2 First article. When specified (see 6.2), a sample shall be subjected to first article inspection in accordance with 4.2.

3.2.1 Standard sample. When a standard sample is available, the cloth shall match the sample with respect to all characteristics for which the standard is referenced (see 6.4).

3.3 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 or exceeds the operational and maintenance requirements, and promotes economically advantageous life cycle costs.

3.4 Materials and components. The materials and components shall conform to applicable specifications, standards, and specification sheets required herein.

3.4.1 Textile duct materials. Textile duct shall be constructed of the following materials and components.

3.4.1.1 Duct. The fabric shall be meta-aramid or a blend consisting of not less than 93 percent by weight of meta-aramid, not greater than 5 percent of para-aramid, and not greater than 2 percent by weight of an anti-static fiber. The duct may be constructed of a double thickness of fabric to meet the performance characteristics of 3.5. The fabric shall not degrade below 572 degrees Fahrenheit.

3.4.1.1.1 Permeability. The fabric shall be within the specified permeability range (see 3.5.1).

3.4.1.2 Thread. The thread shall be meta-aramid or a blend of meta-aramid, para-aramid, and anti-static fibers. The thread shall not degrade below 572 °F.

3.4.1.3 Cord. The cord shall be meta-aramid or a blend consisting of not less than 93 percent by weight of meta-aramid, not greater than 5 percent of para-aramid, and not greater than 2 percent by weight of an anti-static fiber. The cord shall not degrade below 572 °F. The cord diameter shall be sized to fit into the mounting track (see 3.4.3). The cord shall be free of kinks or knots that will deter easy insertion into the track channel. The ends of the cord shall be finished to prevent fraying when the textile duct fitting is laundered. Cord shall be stitched at the ends of the duct to prevent migration of cord. The finish on the ends shall not prevent the cord from insertion in the channel.

MIL-PRF-32107

3.4.1.4 Mesh. The mesh shall be meta-aramid or a blend consisting of not less than 93 percent by weight of meta-aramid, not greater than 5 percent of para-aramid, and not greater than 2 percent by weight of an anti-static fiber. The mesh shall not degrade below 572 °F.

3.4.1.5 Zipper. The zipper shall be separable, as defined in ASTM D 2050. The chain, slider, and other non-fabric parts of the zipper shall be brass, or equivalent. The cloth tape shall be manufactured from meta-aramid or a blend consisting of not less than 93 percent by weight of meta-aramid, not greater than 5 percent of para-aramid, and not greater than 2 percent by weight of an anti-static fiber. The slider side of the zipper stringer shall be sewn on the inside of the air inlet end of the textile duct piece. The mating zipper stringer, with the separable pin, shall be sewn on the outside of the air leaving end of the textile duct piece. The zipper top and bottom stops shall be located at the bottom (6 o'clock) position of the textile duct piece. The zipper stops may overlap up to 1 inch, as needed, to suit standard zipper lengths. The zipper shall fully encircle the duct such that no gaps are evident. The zipper shall be installed such that two textile duct fittings can be zipped together with their respective cords in alignment, and shall not be visible from the outside of the installed textile duct section.

3.4.1.6 Color. The color and shade of the finished item shall approximate the standard sample when available. When a standard sample is not available, the color and shade shall approximate the first article sample, which has been approved by the contracting officer as conforming to the desired color and shade (see 6.2). The color of the textile duct shall be natural (non colored), khaki, blue, black, or midnight blue. The cord used for all textile duct items and the mesh used for the Static Regain Device, Slots or Caps may be of any color, however, it shall be consistent within a purchase order. The zipper tape may be natural or the same color as the textile duct to which it is attached. If the textile duct is constructed of two layers of cloth, the inner layer shall either match the color of the outer layer or be natural (non-colored).

3.4.1.6.1 Design and patterns. The finished product shall be natural or a solid color and tint.

3.4.2 Textile duct construction.

3.4.2.1 Straight fittings. Straight fittings of duct shall conform to the dimensions in the specification sheets. Straight fittings of textile duct, that are a minimum of 12 inches in length, shall have openings in the side of the duct when specified. The openings shall be either a slot 0.125 inch wide or a row of holes 0.1875 inch in diameter.

3.4.2.1.1 Openings. Openings consisting of either slots or holes shall be manufactured in the fabric of the textile duct for straight fittings.

3.4.2.1.1.1 O'clock positions. When openings are specified, they shall be located at the 2 o'clock, 4 o'clock, 8 o'clock, or 10 o'clock position as viewed in the airflow direction.

3.4.2.1.1.2 Slots. When specified, slots shall be 0.125 inch in width and extend from zipper to zipper. The slot shall be reinforced such that the slot shall not be wider than 0.1875

MIL-PRF-32107

inch when the duct is pressurized to an air pressure of 0.5-inch water gauge. The slot reinforcing may consist of mesh (see 3.4.1.4). The edges of the slots shall have seams to prevent fraying of the fabric (see 3.4.2.6).

3.4.2.1.1.3 Holes. When 0.1875-inch diameter holes are specified, the holes shall not be larger than 0.1875-inch diameter when the duct is pressurized to an air pressure of 0.5-inch water gauge. The holes shall extend from zipper to zipper, with a spacing between hole edges of not less than 0.875 inch nor greater than 1.0 inch. The hole edges shall be seared or overstitched to prevent fraying.

3.4.2.2 Caps. Caps shall have an opening in the end of the duct, when specified. The opening shall be a square opening, called a patch. Caps shall conform to the dimensions in the specification sheets.

3.4.2.2.1 Patch. The patch shall be a square opening located in the center of the end of the cap. The patch shall have a mesh inset (see 3.4.1.4). The patch shall not be larger than the specified size when the duct is pressurized to an air pressure of 0.5-inch water gauge. The edges of the patch shall have seams to prevent fraying of the fabric.

3.4.2.3 Duct fittings other than straight. Duct fittings shall conform to the dimensions in the specification sheets.

3.4.2.4 Labels. Labels shall be made of a white or off-white fire-resistive fabric sewn to the inside of one end of the finished textile duct fitting. It may be stitched on the inside of the zipper flap, or it may be stitched into a seam such that it is not visible from the outside when installed in a permanent installation. The label shall not hinder operation of the zipper, nor shall it flap when installed in an operating air conditioning or ventilation system. The label shall be written in black ink specified in A-A-59291. Each label shall have the following minimum information:

- a. Part identification number.
- b. Color.
- c. Cage code of the manufacturer of the finished article.
- d. Month and year the finished product was manufactured.

3.4.2.5 Weave and yarn count. Any weave and yarn count may be used consistent with the total performance requirements of this specification and the intended use of the finished item.

3.4.2.6 Cut edges. Cut edges of the fabric shall be finished by searing or overstitching prior to fabrication of the article to prevent fraying, however, seam edges may be finished after assembly. No finished cut edges, except for holes, shall be visible from the outside of the duct fitting. The ends of the textile duct fitting shall be seamed to form a zipper flap, with no finished cut edge visible from the outside of the textile duct fitting.

MIL-PRF-32107

3.4.2.7 Seam and stitching. Sewing shall conform to ASTM D 6193. Each row of stitching shall be straight and parallel to the seam edge. The straightness of the stitching in any row shall be maintained within a tolerance of 0.0625 inch. The ends of the stitching shall be backstitched by overlapping on itself by a minimum of 0.5 inch. Thread breaks, skips, and run-offs shall be overstitched not less than 1 inch.

3.4.3 Track materials and assembly. The track is to be supplied with the textile duct. The track shall be comprised of the channel, 3.4.3.1 and clips, 3.4.3.2. The track shall be able to be used on the appropriate textile duct mounts in accordance with the interface mounting details of NAVSEA 803 – 7379036. NAVSEA 803 – 7379037 shows the intended installation of textile duct with its associated track. The length of the channel and the number of clips shall be as specified in 6.2.

3.4.3.1 Channel. The channel shall be an aluminum or aluminum alloy profile, or equivalent, manufactured in accordance with ASTM B 221-00. The channel supports the length of the textile duct section. The channel shall be sized to allow easy insertion of the cord, on the textile duct section, into the channel. The channel shall be designed so that the cord will not fall out when the textile duct section is inflated. All edges of the channel shall be smoothed to prevent damage to the textile duct fitting. The channel shall be supplied in a minimum length of 6 linear feet.

3.4.3.2 Clip. The clip shall be an aluminum or aluminum alloy profile, or equivalent, manufactured in accordance with ASTM B 221-00. The clip supports the channel by a friction fit. All edges of the clip shall be smoothed to prevent injury to personnel. The clip shall have a minimum length of 3 inches, and a maximum length of 3.5 inches. The clip shall come in various styles to suit the interface mounting details of NAVSEA 803-7379036.

3.4.3.2.1 Clip style “U”. The “U” clip shall be capable of being mounted from the top-center by means of a fastener. The mount shall be capable of meeting the interface mounting details of NAVSEA 803-7379036.

3.4.3.2.2 Clip style “F”. The “F” clip shall be capable of being flush-mounted by means of fasteners through one extension on the top of the clip. The mount shall be capable of meeting the interface mounting details of NAVSEA 803-7379036.

3.4.3.2.3 Clip style “H”. The “H” clip shall be capable of being flush-mounted by means of fasteners through two extensions on the top of the clip. The mount shall be capable of meeting the interface mounting details of NAVSEA 803-7379036.

3.5 Performance characteristics.

3.5.1 Permeability. Textile duct, when tested at an air pressure of 0.5-inch water gauge, shall not exceed the maximum permeability nor drop below the minimum permeability for its permeability range, see Table I. Permeability limits may be achieved by using two thicknesses of cloth.

MIL-PRF-32107

TABLE I. Performance characteristics.

Permeability Range	Maximum Permeability CFM/ Square Foot	Minimum Permeability CFM / Square Foot	Test method
5	9.5	5	ASTM D 737 – 96
15	19.5	15	ASTM D 737 – 96
20	24.5	20	ASTM D 737 – 96
25	29.5	25	ASTM D 737 – 96
40	44.5	40	ASTM D 737 – 96

3.5.2 Surface burning characteristics. The finished item shall conform to the requirements of Class 1 material in section 5, “Tests for Surface Burning Characteristics”, of UL 181 conducted as specified in UL 723. It shall have a flame-spread index of not over 25 and a smoke-developed index of not over 50.

3.5.3 Flame resistance characteristics. The finished item shall conform to the requirements specified in UL 181 section 6, “Flame Resistance Test”, conducted as specified in UL 214.

3.5.3.1 Small-flame characteristics. The finished item when tested (see 4.5.3) shall conform to the requirements of section 11 of UL 214, except that the test item shall not drip or melt.

3.5.3.2 Large-flame characteristics. The finished item when tested (see 4.5.3) shall conform to the requirements of section 12 of UL 214, except that the test item shall not drip or melt.

3.5.4 Burning characteristics. The finished item when tested (see 4.5.4) shall conform to the requirements specified in section 9, “Burning Test”, of UL 181, except that the test item shall not drop particles that ignite surgical cotton during the test. Melting and dripping particles spread fire and is considered unacceptable for shipboard use. This test shall be considered successfully completed when the requirements of UL 181, “Burning Test”, are met and the test item does not drop particles that ignite untreated surgical cotton during the test.

3.5.5 Laundrying. The finished item shall be capable of being washed and dried for 10 complete cycles without any deterioration of the item. (see 4.5.5)

3.5.5.1 Dimensional change. After laundrying, the shrinkage or elongation of the fabric and cord of the finished item shall be of the same amount. The dimensions of the assembled textile duct piece, including shrinkage or elongation, shall be within the dimensional specifications of the applicable performance specification sheet. (see 4.5.6)

3.5.6 Odor. The finished item shall have no objectionable odor as defined in FED-STD-4. (see 4.5.7)

MIL-PRF-32107

3.5.7 Durability. The finished textile duct section shall be capable of withstanding repeated inflation cycles without splitting the fabric, zippers, or seams nor shall it elongate to more than the maximum dimensions defined in the applicable performance specification sheet. The finished duct section shall withstand an internal air pressure of 20 inches water gauge without any visual damage. (see 4.5.8)

3.5.8 Cleanliness. Textile duct shall be free of all loose thread, lint, and foreign matter. Textile duct shall be uniform in quality and shall be free from irregularities or defects that could adversely affect performance or durability.

3.6 Environmental conditions.

3.6.1 Shock. The track shall, when assembled with textile duct, meet Grade A equipment Class I shock, as specified by MIL-S-901.

3.6.2 Vibration. The track shall, when assembled with textile duct, meet the vibration requirements of MIL-STD-167-1 for frequency range 10 through 25 hertz.

4. VERIFICATION

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

- a. First article inspection. (see 4.2)
- b. Conformance inspection (see 4.3)

4.2 First article inspection. First article inspection for textile duct shall be performed on one textile duct section when a first article test is required (see 3.2). First article inspection of textile duct and track shall be performed on a six-foot section of channel mounted to two clips with a six foot section of textile duct mounted in the channel when a first article test is required (see 3.2). The inspection of textile duct shall include the examination of 4.4.1 and the tests specified in Table II. The tests specified shall be performed on each blend of fabric and on each permeability. The inspection of textile duct track shall include the examination of 4.4.2 and the tests specified in Table III.

TABLE II. Textile duct test agenda.

Tests	Requirements	Verification	First Article	Conformance
Permeability	3.5.1	4.5.1	X	X
Surface burning characteristics	3.5.2	4.5.2	X	--
Flame resistance tests	3.5.3	4.5.3	X	--
Burning tests	3.5.4	4.5.4	X	--
Laundering	3.5.5	4.5.5	X	--
Dimensional change	3.5.5.1	4.5.6	X	--
Odor	3.5.6	4.5.7	X	X
Durability	3.5.7	4.5.8	X	--

MIL-PRF-32107

TABLE III. Textile duct track test agenda.

Tests	Requirements	Verification	First Article	Conformance
Shock	3.6.1	4.5.9	X	--
Vibration	3.6.2	4.5.10	X	--

4.3 Conformance inspection. Conformance inspection shall include the examinations of 4.4 and the tests as specified in Tables II and III. The tests specified shall be performed on each blend of fabric and on each permeability.

4.4 Examinations.

4.4.1 Textile duct examination. Each textile duct piece shall be examined for compliance with the requirements specified in 3.4.1 and 3.4.2. Any redesign or modification of the contractor's standard product to comply with specified requirements, or any necessary redesign or modification following failure to meet the specified requirements shall receive particular attention for adequacy and suitability. This element of inspection shall encompass all visual examinations and dimensional measurements. Noncompliance with any specified requirements or presence of one or more defects preventing or lessening maximum efficiency shall constitute cause for rejection.

4.4.2 Textile duct track examination. Each textile duct track piece shall be examined for compliance with the requirements specified in 3.4.3. Any redesign or modification of the contractor's standard product to comply with specified requirements, or any necessary redesign or modification following failure to meet the specified requirements shall receive particular attention for adequacy and suitability. This element of inspection shall encompass all visual examinations and dimensional measurements. Noncompliance with any specified requirements or presence of one or more defects preventing or lessening maximum efficiency shall constitute cause for rejection.

4.5 Methods of inspection. Inspection methods shall be conducted in accordance with 4.5.1 through 4.5.10.

4.5.1 Permeability. Permeability shall be determined in accordance with the air permeability test of ASTM D 737-96. Performance at permeabilities outside the specified range shall constitute failure of this test.

4.5.2 Surface burning characteristics. The finished item shall be tested as specified in section 5 of UL 723. Flame-spread index over 25 or smoke-developed index over 50 shall constitute failure of this test.

4.5.3 Flame resistance. The finished item shall be tested as specified in section 6 of UL 214. Noncompliance with any of the specified requirements or melting or dripping of the test item shall constitute failure of this test.

MIL-PRF-32107

4.5.4 Burning. The finished item shall be tested as specified in section 9, “Burning Test”, of UL 181. Noncompliance with any of the specified requirements or melting or dripping of the test item shall constitute failure of this test.

4.5.5 Laundrying. The finished item shall be washed in an automatic commercial washing machine using Type I detergent in accordance with P-D-245F. Bleach used shall be oxygen-based. Sour used shall be 1 – 4 ounce of ammonium silicofluoride. The operating cycle of Table IV is to be employed. After laundrying, the item is to be dried in a drying tumbler at 225 °F. The laundrying and drying procedures are to be repeated until 10 complete cycles of washing and drying have been accomplished. After the 10 cycles of washing and drying have been accomplished, the item shall be inspected for defects defined in accordance with FED-STD-4. Presence of any defects shall constitute failure of this test.

TABLE IV. Operating cycle.

Operation	Time, Minutes	Temperature, °F
Sudsing	20	160
Bleaching	8	150
Rinsing	8	135
Rinsing	3	100
Souring	3	90

4.5.6 Dimensional change. The finished item shall be tested for dimensional changes in accordance with ISO 5077, except that instead of expressing the results as a percent in accordance with section 8, “Expression of results”, the final dimensions shall be compared to the dimensions specified on the applicable performance specification sheet. Noncompliance with any dimension on the applicable performance specification sheet shall constitute failure of this test.

4.5.7 Odor. The finished unit shall be inspected for objectionable odor in accordance with FED-STD-4. Presence of any objectionable odor shall constitute failure of this test.

4.5.8 Durability. The finished item shall be zipped together to form a test duct section. The test duct section shall consist of, at a minimum, an adapter, a cap, and four other textile duct pieces. The test duct section shall be inflated to an air pressure of 20 inches water gauge, and shall maintain that pressure for 15 minutes. Then the test duct section shall be deflated and re-inflated for 30 cycles. After completion of the 30 cycles of deflation and re-inflation, a visual inspection shall occur of the test duct section for permanent pulling or splitting of seams, zippers, or fabric. Any permanent pulling or splitting of seams, zippers, or fabric shall constitute failure of this test.

4.5.9 Shock. A section of track, consisting of a six foot piece of channel and two clips, with attached textile duct mounted to a textile duct mount detailed on NAVSEA 803-7379036 shall be tested for Grade A equipment class I shock in accordance with MIL-S-901.

MIL-PRF-32107

After completion of the test, a visual inspection shall occur of the channel and clips. Any dislodgment of the channel from the clips shall constitute failure of this test.

4.5.10 Vibration. A section of track, consisting of a six foot piece of channel and two clips, with attached textile duct mounted to a textile duct mount detailed on NAVSEA 803-7379036 shall be tested for vibration from a frequency of 10 hertz to 25 hertz in accordance with MIL-STD-167-1. After completion of the test, a visual inspection shall occur of the channel and clips. Any dislodgment of the channel from the clips shall constitute failure of this test.

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 which may be helpful, but is not mandatory.)

6.1 Intended use. Textile duct sections are intended to distribute air evenly throughout a compartment to reduce objectionable drafts and temperature differentials created by conventional diffusing terminals. Textile duct is may be used in compartments where additional air filtration is desired.

6.2 Acquisition requirements. Acquisition documents must specify the following:

- a. Title, number, and date of the specification.
- b. Color (see 3.4.1.6).
- c. Issue of DoDISS to be cited in the solicitation, and if required, the specific issue of individual documents referenced (see 2.2.1 and 2.2.2).
- d. Applicable specification sheet number, title, and date.
- e. Applicable specification sheet PIN.
- f. Quantity required.
- g. Length of channel and quantity and style of clips (see 3.4.3).
- h. First article inspection, if other than as specified (see 4.2).
- i. Packaging requirements (see 5.1).

MIL-PRF-32107

6.3 Associated Data Item Descriptions (DIDs). This specification is cited in DoD 5010.12-L, Acquisition Management Systems and Data Requirements Control List (AMSDL), as the source document for the following DIDs. When it is necessary to obtain the data, the applicable DIDs must be listed on the Contract Data Requirements List (DD Form 1423), except where the DoD Federal Acquisition Regulation Supplement exempts the requirement for a DD Form 1423.

<u>DID Number</u>	<u>DID Title</u>
DI-DRPD-80651	Engineering drawings
DI-NDTI-80809B	Test reports

The above DIDs were current as of the date of this specification. The current issue of the AMSDL must be researched to ensure that only current and approved DIDs are cited on the DD Form 1423.

6.4 Standard sample. For access to a standard sample, address the contracting activity using the invitation for bids (see 3.2.1).

6.5 Definitions.

6.5.1 Cap. Caps are textile duct fittings at the end of a textile duct section, which closes the textile duct to create a tubular shape when inflated by the ship's air conditioning or ventilation system.

6.5.2 Channel. Channel is an aluminum or aluminum alloy profile that supports the textile duct by having the textile duct cord inserted into it.

6.5.3 Clip. Clip is an aluminum or aluminum alloy profile that supports the channel by a friction fit. The clip is fastened to the ship's structure by a hanger.

6.5.4 Direction of airflow. Textile duct fittings are zipped together to form an air distribution system. These duct fittings are air-direction dependent due to the requirement that they zip to the adjoining duct fitting. For the purpose of this specification the terms top, bottom, up, down, o'clock positions, center, right, and left are as viewed in the air flow direction.

6.5.5 Direction of duct fitting. The individual fittings are defined as left-hand, right-hand, centered, up or down as viewed in the direction of airflow.

6.5.6 Duct section. Duct section or textile duct section are three or more textile duct pieces zipped together to form an air distribution device when fastened to a metal duct air distribution system. Minimum requirements for a duct section include an adapter, a duct fitting (for example, straight or elbow), and a cap.

6.5.7 Holes. Holes are 0.1875-inch diameter openings in a linear pattern along the length of straight textile duct fittings from zipper to zipper.

MIL-PRF-32107

6.5.8 Openings. Openings are either slots or holes in textile duct straight fittings.

6.5.9 Patch. The patch is an aramid mesh inset in a square opening in the end of textile duct caps.

6.5.10 Permeability. Permeability is the quantity of air that flows through a unit area of the textile duct at a nominal pressure. The standard units of measure are CFM / ft² at an air pressure 0.5 inches water gauge.

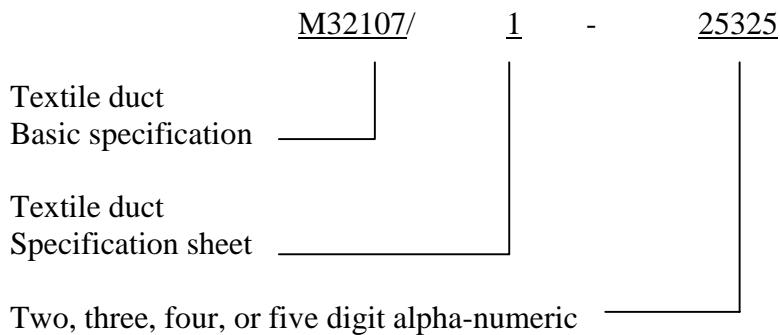
6.5.11 Profile. Profile is an extruded aluminum or aluminum alloy section, long in relation to its cross-sectional dimensions, whose cross section is other than that of wire, rod, bar, or tube.

6.5.12 Slot. Slot is a 0.0625-inch wide opening that runs the length of straight textile duct fittings. Slots are reinforced with an aramid mesh.

6.5.13 Textile duct. Textile duct is an air distribution device used in heating, ventilating, and air conditioning systems. It is manufactured from aramid. Textile duct pieces are attached together via zippers to become textile duct sections.

6.5.14 Track. The track is supplied from the textile duct manufacturer, and consists of a channel and various friction fit clips.

6.6 Part or Identifying Number (PIN). The PIN is constructed in accordance with the following:



Examples:

M32107/1-25325

M32107/4-2R93

MIL-PRF-32107

6.7 Subject term (key word) listing.

Duct
Duct, cloth
Duct, fabric
Duct, textile
Terminals, air conditioning
Terminals, Heating, Ventilation and Air Conditioning (HVAC)
Terminals, HVAC
Terminals, textile diffusing
Terminals, ventilation

6.8 Changes from previous issue. This section is not applicable to this specification.

Custodian:
Navy – SH

Preparing activity:
Navy – SH
(Project 4720-0334)

Review activities:
Navy – NP, SA
DLA – CC
CIV – 7FXE

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.
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I RECOMMEND A CHANGE:

1. DOCUMENT NUMBER
MIL-PRF-32107

2. DOCUMENT DATE (YYYYMMDD)
2002/06/27

3. DOCUMENT TITLE HOSE, AIR DUCT, GENERAL SPECIFICATION FOR

4. NATURE OF CHANGE (Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets as needed)

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) DSN
(if applicable)

7. DATE SUBMITTED
(YYYYMMDD)

8. PREPARING ACTIVITY

a. NAME
SEA 05Q

b. TELEPHONE (Include Area Code)
(1) Commercial
(202) 781-3726

(2) DSN
326-3726

c. ADDRESS (Include Zip Code)
Commander, Naval Sea Systems Command
ATTN: SEA 05Q
1333 Isaac Hull Avenue, SE, Stop 5160
Washington Navy Yard DC 20376-5160

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Telephone (703) 767-6888 DSN 427-6888