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INTERNATIONAL
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AEROSPACE MATERIAL SPECIFICATION

SAE AMS 3783A

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Superseding AMS 3783

Submitted for recognition as an American National Standard

GLASS CLOTH, CHLOROPRENE (CR) COATED

1. SCOPE:

1.1 Form:

This specification covers one type of glass cloth coated with a chloroprene (CR) polymer.

1.2 Application:

This product has been used typically for applications where a semi-flexible, fire resistant, heat insulating material is required, but usage is not limited to such applications.

1.3 Safety - Hazardous Materials:

While the materials, methods, applications, and processes described or referenced in this specification may involve the use of hazardous materials, this specification does not address the hazards which may be involved in such use. It is the sole responsibility of the user to ensure familiarity with the safe and proper use of any hazardous materials and to take necessary precautionary measures to ensure the health and safety of all personnel involved.

2. APPLICABLE DOCUMENTS:

The following publications form a part of this specification to the extent specified herein. The applicable issue of referenced publications shall be the issue in effect on the date of the purchase order.

2.1 U.S. Government Publications:

Available from Standardization Documents Order Desk, Building 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.

PPP-P-1136 Packaging and Packing of Coated (Plastic, Rubber) and Laminated Fabrics
FED-STD-191 Textile Test Methods
MIL-STD-105 Sampling Procedures and Tables for Inspection by Attributes

3. TECHNICAL REQUIREMENTS:

3.1 Material:

3.1.1 Base Cloth: Shall be woven from texturized "E" glass fiber yarn. Vendor's certificate of compliance is acceptable.

3.1.2 Coated Cloth:

3.1.2.1 Coating: Shall be a suitably compounded chloroprene (CR) polymer. Vendor's certificate of compliance is acceptable.

3.1.2.2 Finish: The coating shall be applied to both sides of the base cloth in approximately equal thickness on each side and cured. A pebbled grain is permissible.

3.1.2.3 Color: Shall be black.

3.2 Properties:

Cloth shall conform to the requirements shown in Table 1, 3.2.2.8, 3.2.2.9, 3.2.2.10, and 3.2.2.1.1, determined in accordance with specified test methods of FED-STD-191, unless otherwise specified herein:

TABLE 1 - Properties

Paragraph	Test	Requirement	Test Method
3.2.1	Base Cloth		
3.2.1.1	Weight, minimum	20 ounces/square yard (678 g/m^2)	5041
3.2.1.2	Yarns per inch (25.4 mm)		5050
3.2.1.2.1	Warp	19	
3.2.1.2.2	Filling	11	
3.2.2	Coated Cloth		

TABLE 1 - Properties (Continued)

Paragraph	Test	Requirement	Test Method
3.2.2.1	Thickness	0.060 to 0.080 inch (1.52 to 2.03 mm)	5030
3.2.2.2	Width	40.0 inches ± 0.5 (1016 mm ± 13)	5020
3.2.2.3	Weight, minimum	4.50 pounds per square yard (2.45 kg/m^2)	5041
3.2.2.4	Breaking Strength (Grab Method), minimum		5100
3.2.2.4.1	Warp	250 pounds force (1112 N)	
3.2.2.4.2	Filling	160 pounds force (712 N)	
3.2.2.5	Bursting Strength (Mullen), minimum	500 points	5122
3.2.2.6	Tearing Strength (Tongue Method), minimum		5134
3.2.2.6.1	Warp	20 pounds force (89 N)	
3.2.2.6.2	Filling	15 pounds force (67 N)	
3.2.2.7	Adhesion of Coating, minimum	9.0 pounds force per inch (1576 N/m)	4.5.1

3.2.2.8 Blocking Resistance: The finished cloth shall show no blocking; the cloth surfaces shall not adhere. Tests shall be in accordance with FED-STD-191, Method 5872, except that test specimens shall consist of two 4-inch (102 mm) squares of cloth placed together in a flat, unfolded condition between the glass plates.

3.2.2.9 Flame Resistance: The finished cloth shall have no flaming time, no glow time, and no char length. Tests shall be in accordance with FED-STD-191, Method 5903.

3.2.2.10 Low-Temperature Flexibility: The coating on the finished cloth shall not crack or flake off. Tests shall be in accordance with FSD-STD-191, Method 5874, except that temperature shall be -29 °C ± 1 (-20 °F ± 2) and paragraphs 3.2, 4.4, 4.5, and 4.6 of Method 5874, FED-STD-191a Notice 6, dated 21 June 1990, shall not apply.

3.2.2.11 Heat Resistance: The coating on the finished cloth shall not crack, determined in accordance with 4.5.2.

3.3 Quality:
(R)

Finished cloth, as received by purchaser, shall be evenly woven, and free from foreign materials and from imperfections detrimental to usage of the cloth. No more than 2.5 major or 4 total imperfections shall be present in 100 linear yards (91 linear m).

4. QUALITY ASSURANCE PROVISIONS:

4.1 Responsibility for Inspection:
(R)

The vendor of cloth shall supply all samples for vendor's tests and shall be responsible for performing all required tests. Purchaser reserves the right to sample and to perform any confirmatory testing deemed necessary to ensure that the cloth conforms to the requirements of this specification.

4.2 Classification of Tests:

Tests for all technical requirements are acceptance tests and preproduction tests and shall be performed prior to or on the initial shipment of cloth to a purchaser, on each lot, when a change in ingredients and/or, processing requires reapproval as in 4.4.2, and when purchaser deems confirmatory testing to be required.

4.2.1 For direct U.S. Military procurement, substantiating test data, and, when requested, preproduction test material shall be submitted to the cognizant agency as directed by the procuring activity, contracting officer, or request for procurement.

4.3 Sampling and Testing:
(R)

Shall be as follows:

4.3.1 For Acceptance Tests: Sufficient cloth shall be taken at random from each lot to perform all required tests. The number of determinations for each requirement shall be as specified in the applicable test procedure or, if not specified therein, not less than three.

4.3.1.1 A lot shall be all cloth produced in a single production run under the same fixed conditions and presented for vendor's inspection at one time. A lot shall not exceed 1000 pounds (450 kg) and may be packaged in smaller quantities and delivered under the basic lot approval provided lot identification is maintained.

4.3.1.2 Components and Materials: For testing the base-cloth yarn identification (3.1.1), coating compound identification (3.1.2.1), and weight and yarn count of base cloth (3.2.1), the sample unit shall be 1 yard (1 m) full width of the uncoated base cloth and the lot size shall be expressed in units of 1 linear yard (1 linear m). The lot shall be unacceptable if one or more units fail to meet any requirement specified. Sample size shall be in accordance with Table 2:

TABLE 2 - Sample Size

Lot Size Yards	Lot Size Meters	Sample Size
Up to 800, incl	Up to 732, incl	2
Over 800 to 2000, incl	Over 732 to 1829, incl	3
Over 2000	Over 1829	5

4.3.1.3 Finished Cloth: For testing for the properties listed in Table 1, a sample 2 yards (1.8 m) long and full width shall be taken from each 1000 continuous produced yards (914 continuous produced m) or fraction thereof, of finished cloth. Failure of any sample of cloth shall be cause for rejection of the cloth represented.

4.3.1.4 (R) Yard-by-Yard (Meter-by-Meter) Examination: The required length of each roll shall be inspected on one side only. The side shall be alternated, however, so that alternate rolls are examined on the face and back, respectively. The imperfections found shall be classified as shown in Table 3. The imperfections found shall be counted regardless of their proximity to each other, except where two or more imperfections represent a single local condition of the cloth, in which case, only the more serious imperfections shall be counted. The lot size shall be expressed in units of 1 linear yard (1 linear m). The inspection level shall be MIL-STD-105, Level II. The number of rolls from which the sample is to be selected shall be in accordance with 4.3.1.3. An approximately equal number of yards (meters) shall be examined in each roll examined.

TABLE 3 - Classification of Imperfections

Characteristic	Imperfection	Major	Minor
Blisters or Lumps	Covering any area 1/8 inch (3.2 mm) square or greater	X	
Crease	Permanent, resulting from faulty coating procedure	X	
Light Area or Window	More than 5 in 1 linear yard (1 linear m)		X
Narrow Width	Width less than minimum specified		X
Pinhole, Cut, or Tear	Any size	X	
Stain or Streak	Coating compound stain or streak clearly noticeable at a distance of 6 feet (1.8 m)		X
Uneven Coating	Thin areas, where coating compound is missing or insufficient	X	
	Heavily coated areas, clearly noticeable at a distance of 6 feet (1.8 m)		X

4.3.2 For Preproduction Tests: As agreed upon by purchaser and vendor.

4.4 Approval:

4.4.1 Sample cloth shall be approved by purchaser before cloth for production use is supplied, unless such approval be waived by purchaser. Results of tests on production cloth shall be essentially equivalent to those on the approved sample cloth.

4.4.2 Vendor shall use ingredients, manufacturing procedures, processes, and methods of inspection on production cloth which are essentially the same as those used on the approved sample cloth. If necessary to make any change in ingredients or processing, in type of equipment for processing, or in manufacturing procedures, vendor shall submit for reapproval a statement of the proposed changes in ingredients and/or processing and, when requested, sample cloth. Production cloth made by the revised procedure shall not be shipped prior to receipt of reapproval.

4.5 Test Methods:

4.5.1 Adhesion of Coating: The adhesion of the coating of the coated cloth shall be determined in accordance with FED-STD-191, Method 5950, with the following exceptions:

4.5.1.1 The test specimens shall be 6 x 1 inch (152 x 25 mm), with the long dimension parallel to the warp. One end of the strip shall be immersed in benzene to a depth of 1 inch (25 mm) for 30 minutes ± 1. The benzene-treated ends shall be immersed in distilled water to a depth of 1 inch (25 mm) for 60 minutes ± 5 at room temperature. Using a sharp knife, the coating shall be peeled back for a distance of 1 to 2 inches (25 to 51 mm). The specimens shall be conditioned by allowing them to age for 24 hours ± 0.5 at normal room conditions before testing.

4.5.2 Heat Resistance: At least three 1 x 4 inch (25 x 102 mm) specimens from each sample, with the long dimension warpwise, shall be tested. The specimens shall be suspended vertically, not touching one another, in a circulating-air oven. The specimens shall be exposed for 24 hours ± 0.5 at 125 °C ± 3 (257 °F ± 5). The specimens shall then be bent over a cool [20 °C ± 3 (68 °F ± 5)] 3/8-inch (9.5-mm) diameter rod within 5 minutes after removal from the oven.

4.6 Reports:

The vendor of cloth shall furnish with each shipment a report showing the results of tests to determine conformance to the technical requirements. This report shall include the purchase order number, lot number, AMS 3783A, vendor's identification, specified cloth weight, and quantity.

4.7 Resampling and Retesting:
(R)

If any specimen used in the above tests fails to meet the specified requirements, disposition of the cloth may be based on the results of testing three additional specimens for each original nonconforming specimen. Failure of any retest specimen to meet the specified requirements shall be cause for rejection of the cloth represented. Results of all tests shall be reported.

5. PREPARATION FOR DELIVERY:

5.1 Packaging and Identification:

5.1.1 The cloth shall be furnished on rolls. Each roll of cloth shall be 50 yards ± 5 (46 m ± 5) long and shall contain no piece under 15 yards (14 m) in length and no more than two pieces per roll.