

MIL-C-83489  
 INT. AMENDMENT 1 (AS)  
 18 May 1977

MILITARY SPECIFICATION

CLOTH, COATED, NYLON, POLYURETHANE COATED

This interim amendment is issued for use by the Naval Air Systems Command with Military Specification MIL-C-83489, dated 26 October 1976.

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1.1, line 1: Delete "two" and substitute "three".

line 2: Between "cloth", and "radio frequency", insert "thermally".

1.2, delete and substitute the following:

"1.2 Classification. The finished coated cloths shall be of the following types (see 6.2):

Type I - Plain weave, 6.0 ozs/sq yd

Type II - Plain weave, 4.0 ozs/sq yd

Type III - Plain weave, 9.2 ozs/sq yd

2.1, delete:

"MIL-C-19002 - Cloth, Coated, and Tape, Coated Cloth - Polychloroprene on Nylon

FED-STD-4 - Glossary of Fabric Imperfections

FED-STD-601 - Rubber: Sampling and Testing

MIL-STD-810 - Environmental Test Methods"

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3.2, delete and substitute:

"3.2 First article. When specified (see 6.2), the contractor shall furnish 5 yards of coated cloth, 8 thermally bonded seams and 1½ yards of base cloth for first article inspection and approval (see 4.2 and 6.4). The cloth shall be full width."

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- 3.3.1, line 2: After "Table I", add "when tested as specified in Table V.  
The nylon yarn shall have a minimum melting point of 244°C (271°F).  
The color of the cloth shall be specified by the contracting officer."

Table I, delete and substitute:

"TABLE I. Physical requirements of base cloth.

Characteristic	Requirements		
	Type I	Type II	Type III
Weight, ozs./sq. yd.	2.9 - 3.1	1.7 - 1.9	3.7 - 6.0
Yarns per inch (minimum)			
Warp	60	108	82
Filling	50	88	58
Breaking strength (lbs.) (minimum)			
Warp	200	140	290
Filling	170	120	240
Tearing strength (lbs.) (minimum)			
Warp	10	6	20
Filling	8	5	18
Weave	Plain	Plain	Plain"

- 3.3.2, line 2: Between "being" and "radio frequency" insert "thermally,".  
line 6: Delete "compount" and substitute "compound".

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3.3.2.1, delete in its entirety.

3.3.3, delete in its entirety.

3.4, delete the last sentence and substitute: "The use of dusting powder is prohibited."

TABLE III, delete and substitute:

"TABLE III. Physical requirements of coated cloth.

Characteristic	Type I	Type II	Type III
Weight, ozs./sq. yd.	5.5 - 6.5	3.5 - 4.5	8.5 - 10.0
Breaking strength, lbs. Min.			
Warp	200	125	325
Filling	170	100	265
Tearing strength, lbs. Min.			
Warp	7	2	18
Filling	6	2	15
Adhesion of coating, lbs. Min.	32	25	20
Breaking strength, lbs. Min. After humid aging			
Warp	160	100	260
Filling	136	80	212
Blocking, Max.	2	2	2
Air retention	<u>1/</u>	<u>1/</u>	<u>1/</u>
Low Temperature effect	<u>2/</u>	<u>2/</u>	<u>2/</u>

1/ There shall be no leakage of any specimen.

2/ There shall be no evidence of cracking, flaking or separation of any specimen."

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3.5, at the end of the paragraph, add:

"The length of the roll shall be as specified by the procuring activity."

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3.8, delete and substitute:

"3.8 Workmanship. The finished coated cloth shall conform to the quality of product established by this specification and the occurrence of defects shall not exceed the specified acceptable quality level."

4.1, delete and substitute:

"4.1 Responsibility for inspection. Unless otherwise specified in the contract, the contractor is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract, 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 assure supplies and services conform to prescribed requirements."

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Table V, delete and substitute:

"TABLE V. Testing of components."

Component	Characteristic	Requirement reference	Test method
Base Cloth	Material Identification	3.3.1	<u>1/</u>
	Weave	3.3.1	Visual <u>2/</u>
	Weight	3.3.1	5041
	Yarns per inch	3.3.1	5050
	Breaking strength	3.3.1	5100
	Tearing strength	3.3.1	5134
Yarn	Melting point	3.3.1	1534 <u>1/</u>
Coating Compound	Identification	3.3.2	<u>1/</u>

1/ A certificate of compliance shall be accepted for this characteristic.

2/ One determination shall be made from each sample unit and the result reported as "pass" or "fail."

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4.3.2, at the end of the paragraph: Delete "and 4.3.2.2" and substitute "through 4.3.2.3".

4.3.2.1, line 13: Delete "2.5" and substitute "1.5".  
line 14: Delete "Level II" and substitute "Level III".

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Table VI, delete and substitute:

"TABLE VI - Sample size.

Lot size (yards)	Sample size (rolls)	Maximum number of over- all defects acceptable
Up to 1200 inclusive <u>1/</u>	3	0
1201 to 3200 inclusive	5	0
3201 to 10,000 inclusive	8	0
10,001 to 35,000 inclusive	13	0
35,001 to 150,000 inclusive	20	1
150,001 and over	32	2

1/ If the lot contains fewer than 3 rolls, each piece in the lot shall be examined."

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Add new paragraph:

"4.3.2.3 Overall examination. Each defect listed below shall be counted no more than once in each roll examined. The sample unit for this examination shall be one roll. The sample size and acceptance number shall be as specified in Table VI.

Overall defects

Overall uncleanness

Color off shade, not uniform, mottled or spotted

Odor not characteristic of coating compound

Tackiness (coating adheres and will not readily unroll)

Width less than specified."

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4.4, at the end of the fourth sentence: Delete "(.)" and add "and 8 thermally bonded seams."

at the end of the paragraph: Delete "(.)" and substitute "plus 8 thermally bonded seams per sample unit."

Table VII, delete and substitute:

"TABLE VII. Test methods.

Characteristic	Requirement reference	Test method
<u>Coated cloth</u>		
Weight	3.4	5041
Breaking strength	3.4	5100
Tearing strength	3.4	5134
Blocking	3.4	5872
Adhesion of coating (coating to coating)	3.4	4.4.1
Air retention	3.4	4.4.2
Low temperature effect	3.4	4.4.3
Breaking strength (After humid aging)	3.4	5100 & 4.4.4
Colorfastness to:		
Water	3.4.1.4	5630
Light	3.4.1.4	5660"

4.4.1 through 4.4.8, delete in their entirety.

Add the following:

"4.4.1 Adhesion of coating. Each seam specimen of the coated cloth shall be tested for adhesion. Each specimen shall be cut 1 inch (plus or minus 1/16 inch) wide and 6 inches (plus or minus 1/16 inch) long, with the length dimension in the warp direction of the coated nylon cloth. One of the specimens shall be superimposed and aligned on another of the specimens, with the coated sides in contact. The two specimens shall be heat sealed together, across the entire width, 1/4 inch from one end. The width of the seal (adhesive bond) shall be 1/8 inch (plus or minus 1/32 inch). A suitable inspection apparatus equipped with an autographic recording device shall be used to conduct the test.

The bond strength shall be determined in accordance with Method 5100 of FED-STD-191. The free ends of the specimen shall be clamped in the jaws (one end in each jaw) of the test apparatus with the bond centered midway between the jaws. The jaws shall be separated until the bond opens or the coating and base cloth separate. The highest value at this point shall be recorded as the test result. Unless otherwise specified, the test results for each sample unit shall be the average of five determinations. No individual specimen shall fail to meet the minimum requirement.

4.4.2 Air retention. Air retention shall be determined on a test jig as shown in Figure 1. The test specimen shall have a minimum diameter of 13 inches. The specimen shall be placed, coated side down, on the holder and the plate collar tightly bolted thereon. Care shall be taken to insure that there is no leakage at the seal. A sufficient quantity of water shall be poured on the specimen to keep it completely covered under maximum pressure. Increase the pressure to 10 psi. Air bubbles on the surface of the specimen produced by air pressure closing the spaces between the cloth and the coating shall be removed. The pressure shall be held at 10 psi for 5 minutes. At the end of the 5 minute period, the specimen shall be examined for evidence of bubble formation indicating leakage. Unless otherwise specified, specimens from each sample unit shall be tested.

4.4.3 Low temperature effect. The test for low temperature effect shall be performed in accordance with method 5874 of FED-STD-191, except that the determination of hydrostatic resistance shall not be required. Prior to the test, the specimen shall have been exposed for 4 hours (+5 minutes) to a temperature of  $-51.1^{\circ}\text{C}$  ( $-60^{\circ}\text{F}$ ). After the test the specimen shall be examined for evidence of cracking, flaking or separation.

4.4.4 Breaking strength after humid aging. The test specimen, 4 in. x 6 in., shall be laid flat with the coated side up on a supporting plate. The assembly shall be placed in a desiccator containing water. The water level shall be approximately one inch below the specimens. The lid of the desiccator shall be put in place and the desiccator placed in a circulating air oven having a temperature of  $93^{\circ}\text{C} \pm 1^{\circ}\text{C}$  ( $200^{\circ}\text{F} \pm 1.8^{\circ}\text{F}$ ) for a period of seven (7) days. At the end of the aging period, each specimen shall be removed from the desiccator and tested immediately for breaking strength. The number of test specimens and the test method shall be in accordance with method 5100 of FED-STD-191."

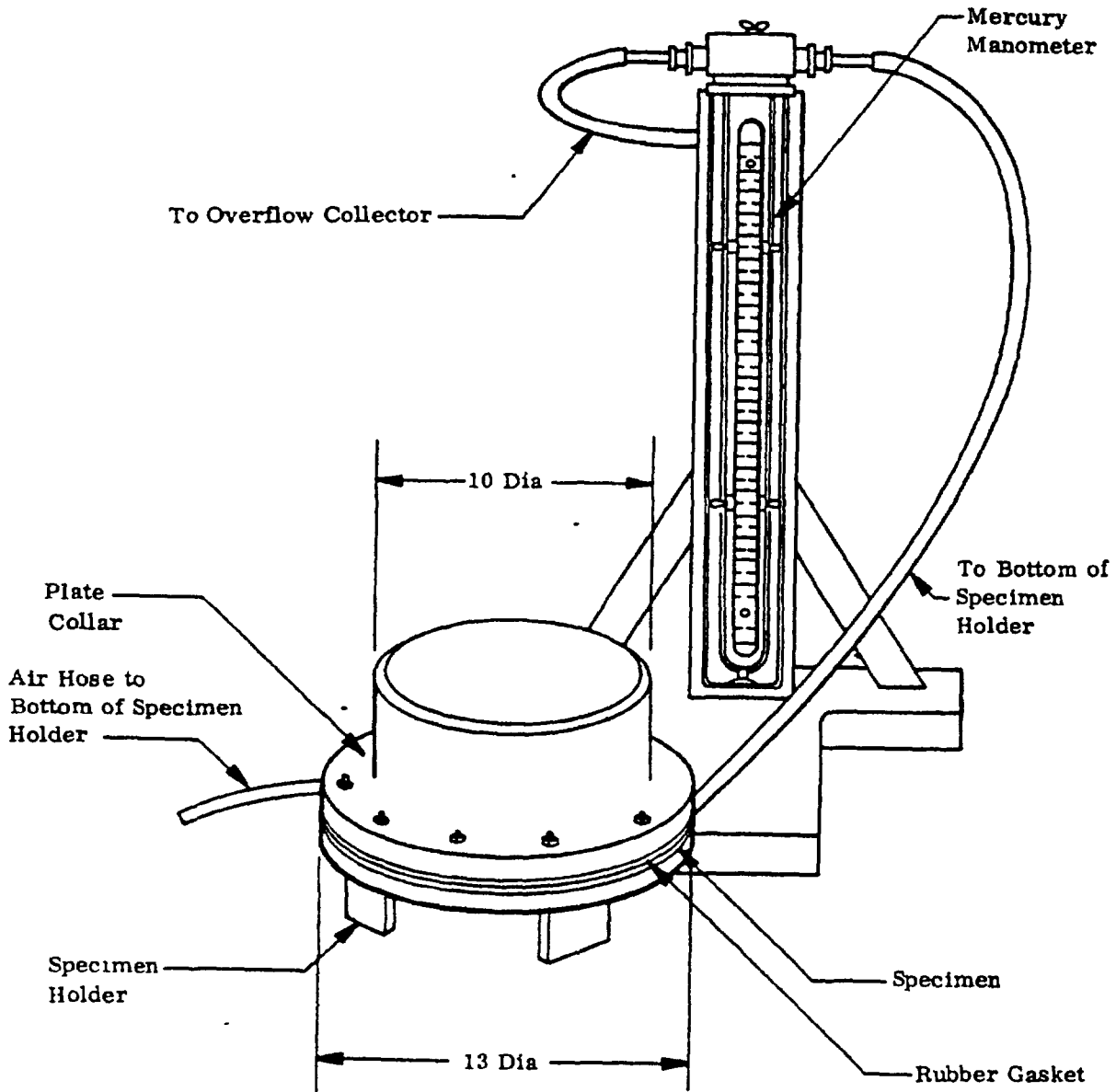
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6.1, at the end of the paragraph: Delete "(.)" and substitute "and other inflatable survival equipment."

6.2, add the following:

- "g. Length of roll (see 3.5)
- h. Quantity in yards"

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DIMENSIONS IN INCHES

FIGURE 1. Air leakage test jig.



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Add the following new paragraph:

"6.4 First article. When a first article is required, it shall be tested and approved under the appropriate provisions of 7-104.55 of the Armed Services Procurement Regulation. The first article should be a preproduction sample. The first article should consist of 5 yards of coated cloth, 1-1/2 yards of base cloth and 8 thermally bonded seams. The contracting officer should include specific instructions in all procurement instruments, regarding arrangements for examinations, test and approval of the first article."

Preparing activity:  
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