

14 September 1978

SUPERSEDING

MIL-C-83450(USAF)

2 October 1974

MILITARY SPECIFICATION

CLOTH, META-ARAMID WARP, META-ARAMID/
PARA-ARAMID FILLING, META-ARAMID/NOVOLOID FILLING, NAPPED

This specification is approved for use by Air Force Materials Laboratory, Department of the Air Force, and is available for use by all Departments and Agencies of the Department of Defense.

1. SCOPE

1.1 Scope. This specification covers the requirements for non-melting cloth used in the manufacture of special flying clothing.

2. APPLICABLE DOCUMENTS

2.1 Issues of documents. The following documents, of the issue in effect on date of invitation for bids or request for proposal, form a part of this specification to the extent specified herein.

SPECIFICATIONS

FEDERAL

PPP-P-1133

Packaging and Packing of Synthetic Fiber
Fabric

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: AFML/MXA, WPAFB, O. 45433, by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426 appearing at the end of this document or by letter.

FSC 8305

STANDARDS

FEDERAL

FED-STD-4	Glossary of Federal Imperfections
FED-STD-191	Textile Test Methods

MILITARY

MIL-STD-105	Sampling Procedures and Table for Inspection by Attributes
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(Copies of specifications, standards, drawings and publications required by suppliers in connection with specific procurement functions should be obtained from the procuring activity or as directed by the contracting officer.)

3. REQUIREMENTS

3.1 Standard sample for nap. The napped side of the finished cloth shall match the degree of nap of the standard sample.

3.2 Material.

3.2.1 Warp. The yarn shall be 200/100 denier continuous filament, meta-aramid. The yarn shall not char at temperature less than 675°F when tested as specified in 4.3.

3.2.2 Filling. The yarn shall be 200/100 denier continuous filament meta-aramid and a 50/50 staple fiber blend of meta-aramid and para-aramid intermediate modulus, or meta-aramid and novoloid, 12 s \pm 2 cc.

3.3 Color. The color of the continuous filament aramid shall be Sage Green 1565, solution dyed yarn. The color of all the staple fibers shall be natural.

3.4 Physical requirements. The physical requirements of the finished cloth shall be as specified in Table I when tested as specified in 4.3.

3.4.1 Weave. The weave shall be a 8 harness warp face stain, 5 counter as relates to the staple filling yarn. The weave shall be 1 up, 3 down right twill for two ends and 3 down, 1 up reversal for two ends as relates to the continuous filling aramid. The fabric shall be woven two picks continuous filament and two picks staple.

Table I. Physical requirements.

Characteristics	Requirements
Weight (oz./sq. yd.)	9.0 ± 0.5
Yarns per inch (minimum)	
Warp	105
Filling (continuous filament)	65
Filling (staple)	65
Turns per inch (Continuous filament yarn)	
Minimum	4.0
Maximum	8.0
Breaking strength	
Warp	150
Filling	100
Tearing strength (lbs.) (minimum)	
Warp	20
Filling	20

3.4.2 Width. Unless otherwise specified (see 6.2), the width shall be 54 inches inclusive of selvages.

3.5 Finishing. The cloth shall be desized, scoured, heat set and given a durable antistatic finish. The filling side of the fabric shall be napped with two passes through the machine.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the supplier is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract or order, the supplier 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.

4.1.1 Certificate of compliance. Where certificates of compliance are submitted the Government reserves the right to check test such items to determine the validity of the certification.

4.2 Inspection. Sampling for inspection shall be performed in accordance with MIL-STD-105, except where otherwise indicated hereinafter.

4.2.1 Examination of the end item. Examination of the end item shall be in accordance with the provisions of 4.2.1.1 through 4.3.

4.2.1.1 Yard-by-yard examination. Each roll in the sample shall be examined on the face side only. When the total yardage in the roll does not exceed 100 yards, the entire yardage in the roll shall be examined. When the total yardage in the roll exceeds 100 yards, only 100 yards shall be examined. All defects as defined in Section III of FED-STD-4 which are clearly noticeable at normal inspection distance (3 feet) shall be scored and assigned demerit points as listed in 4.2.1.1.1 except as follows:

- a. Only coarse yarns that exceed twice the normal yarn diameter shall be scored.
- b. Mixed filling (shade bar) shall be scored only when resulting from wrong ply, wrong twist in the yarn, or off shade yarn.
- c. Only knots and slubs which exceed limits shown in Figure 1 of FED-STD-4 shall be scored.

No linear yard (increments of 1 yard on the measuring device of the inspection machine) from any one roll within the sample shall be penalized more than 4 points. The sample size shall be 20 rolls selected from 20 containers. The lot shall be unacceptable if the points per 100 square yards of the total yardage examined exceeds 50 points. The lot shall be unacceptable if the points per 100 square yards of two or more individual rolls exceeds 75 points. If one roll exceeds 75 points per 100 square yards a second sample of 20 rolls shall be examined only for individual roll quality examination. The lot shall be unacceptable if one or more rolls in the second sample exceeds 75 points per 100 square yards. Point computation for lot quality and individual roll quality shall be as follows:

$$\frac{\text{Total points scored in sample} \times 3600}{\text{Contracted width of cloth (inches)} \times \text{total yards inspected}} = \text{Points per 100 sq yds}$$

4.2.1.1.1 Demerit points. Demerit points shall be assigned as follows:

For defects 3 inches or less in any dimension - one point

For defects exceeding 3 inches, but not exceeding 6 inches in any dimension - two points

For defects exceeding 6 inches, but not exceeding 9 inches in any dimension - three points

For defects exceeding 9 inches in any dimension - four points.

The following defects, when present, shall be scored four points for each yard in which they occur:

Baggy, ridgy or wavy cloth
Width less than specified
Uneven Weaving,

4.3 Testing of the end item. The methods of testing specified in FED-STD-191, wherever applicable as listed in Table II shall be followed. The physical and chemical values specified in Section 3, except where otherwise specified, apply to the results of the determinations made on a sample unit for test purposes as specified in the applicable test method. The sample unit shall be 5 continuous yards, full width, of the finished cloth. All test reports shall contain the individual values utilized in expressing the final result. The lot size shall be expressed in units of 1 yard. The lot shall be unacceptable if one or more units fail to meet any requirement specified. The sample size (number of sample units) shall be as follows:

<u>Lot size (yards)</u>	<u>Sample size</u>
800 or less	2
801 thru 22,000	3
22,001 and over	5

Table II. Test methods.

Characteristic	Requirement Paragraph	Test method
Aramid		
Identification	3.2.1 & 3.2.2	<u>1/</u>
Charring	3.2.1	<u>1/</u>
Denier	3.2.1	<u>1/</u>
Novoloid		
Identification	3.2.2	<u>1/</u>
Weight	3.4	5041
Yarns per inch		
Warp	3.4	5050
Filling	3.4	5050
Turns per inch	3.4	4052
Breaking strength		
Warp	3.4	5100
Filling	3.4	5100
Tearing strength		
Warp	3.4	5134
Filling	3.4	5134

1/ Unless otherwise specified, a certificate of compliance shall be submitted and will be acceptable for the stated requirements.

5. PACKAGING

5.1 Put-up and packaging. Put-up and packaging shall be level A or C as specified (see 6.2).

5.1.1 Level A and C. The cloth shall be put-up and packaged in accordance with the applicable requirements of PPP-P-1133.

5.2 Packing. Packing shall be level A, B, or C as specified (see 6.2).

5.2.1 Levels A, B, and C. The cloth shall be packed in accordance with the applicable requirements of PPP-P-1133.

5.3 Marking. In addition to any special marking required by the contract or order, shipments shall be marked in accordance with PPP-P-1133.

6. NOTES

6.1 Intended use. The cloth covered by this specification is intended for use in the fabrication of flight clothing.

6.2 Ordering data. Procurement documents should specify the following:

- a. Title, number and date of this specification.
- b. Width (see 3.4.2).
- c. Selection of applicable levels of packaging and packing (see 5.1 and 5.2).

6.3 The fabric has been successfully woven on a Dornier loom of a nominal machine width of 82 inches.

Custodian:
Air Force - 11

Preparing Activity:
Air Force - 11

Project No. 8305-F511



FOLD

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STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

OMB Approval
No. 22-R255

INSTRUCTIONS: The purpose of this form is to solicit beneficial comments which will help achieve procurement of suitable products at reasonable cost and minimum delay, or will otherwise enhance use of the document. DoD contractors, government activities, or manufacturers/vendors who are prospective suppliers of the product are invited to submit comments to the government. Fold on lines on reverse side, staple in corner, and send to preparing activity. 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. Attach any pertinent data which may be of use in improving this document. If there are additional papers, attach to form and place both in an envelope addressed to preparing activity.

DOCUMENT IDENTIFIER AND TITLE

MIL-C-83450 A

NAME OF ORGANIZATION AND ADDRESS

CONTRACT NUMBER

MATERIAL PROCURED UNDER A

 DIRECT GOVERNMENT CONTRACT SUBCONTRACT

1. HAS ANY PART OF THE DOCUMENT CREATED PROBLEMS OR REQUIRED INTERPRETATION IN PROCUREMENT USE?

A. GIVE PARAGRAPH NUMBER AND WORDING.

B. RECOMMENDATIONS FOR CORRECTING THE DEFICIENCIES

2. COMMENTS ON ANY DOCUMENT REQUIREMENT CONSIDERED TOO RIGID

3. IS THE DOCUMENT RESTRICTIVE?

 YES NO (If "Yes", in what way?)

4. REMARKS

SUBMITTED BY (Printed or typed name and address - Optional)

TELEPHONE NO.

DATE

DD FORM 1426
1 JAN 72

REPLACES EDITION OF 1 JAN 66 WHICH MAY BE USED

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