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# SUMMARY OF SPECIFICATION REQUIREMENTS FOR MILITARY FABRICS

by

Testing Methodology Group

DDC

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UNITED STATES ARMY  
NATICK LABORATORIES  
Natick, Massachusetts 01760



Clothing & Organic Materials Laboratory  
TS-102 (Revised)

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U. S. Army Natick Laboratories

Natick, Massachusetts

CLOTHING & ORGANIC MATERIALS LABORATORY

Textile Series Report No. 102

Superseding Textile Series Report No. 102 dated December 1957,

Defense Documentation Center No. AD 153,685

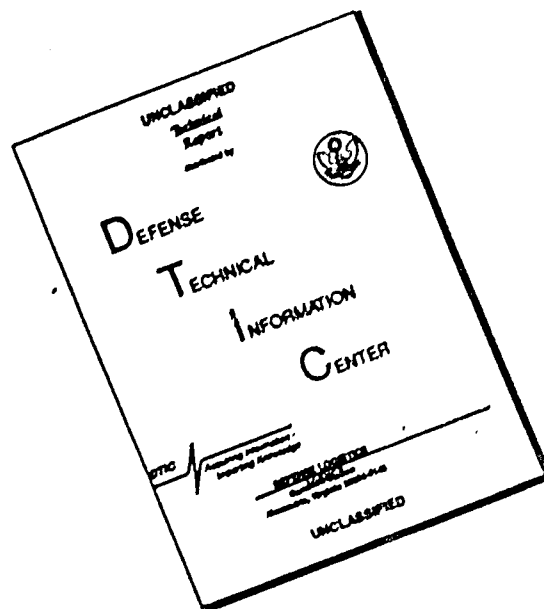
SUMMARY OF SPECIFICATION REQUIREMENTS FOR MILITARY FABRICS

Prepared by

Testing Methodology Function

Quality Assurance Branch, Standardization Division

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#### FOREWORD

Since 1957 when this listing of Military specification requirements was last prepared and issued, the supply of copies has been exhausted. In view of the many continuing requests for copies of this report and due to the many changes which have occurred, it has become necessary to prepare a revised edition.

The present report supersedes Textile Series Report No. 102 dated December 1957.

Since the original issue in 1951 and the subsequent superseded issue of 1957 many changes have occurred in textile specifications. The direct effort at standardization has resulted in the combination and deletion of many specifications. New specifications representing the development of the synthetic to meet specific Military requirements have been added. In addition, many major changes have been implemented across-the-board under the Mandatory Contractor Inspection Program such as complete Quality Assurance Provisions in all specifications under the Point System.

The task of revising specifications requires that one keep abreast of changes in the state of the art, to add innovations such as the "Point System" in facilitating procurement, to standardize and improve on test methods, and to revise requirements and new requirements to meet changing Military needs.

In the use of this report, it is important to take into account the fact that specification requirements are subject to change. Such changes are reflected by issuance of amendments, new or revised specifications and/or interim procurement documents, or by deviations cited in Invitations to Bid. In this respect, it is essential that Invitations to Bid be carefully reviewed, as requirements stated at the time of actual procurement may supersede specification requirements stated herein.

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Director  
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Approved:

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Commanding  
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DALE H. SIELING  
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Cloth, Coated, Cotton (Creped, Phenolic Resin Treated)	MIL-C-3154	Mar. 1950	133
Ponton Float (18-Ton, with Emergency Kit and Carrying Case), Amd. 1	MIL-P-3671	Oct. 1952	134
Cloth, Coated and Laminated, Chloroprene on Nylon	MIL-C-5302B	Sep. 1959	135
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Cloth, Coated, Nylon Twill, Vinyl Coated Both Sides	MIL-C-8077	Apr. 1953	142
Cloth, Coated, Nylon, Buna N Coated, 1 Side	MIL-C-8135A (USAF)	Nov. 1956	142
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Cloth, Laminated, Sateen, Rubberized	MIL-C-9074B (GL)	Jul. 1965	144
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Pad, Lithographic Plate Solution	MIL-P-43296 (GL)	Dec. 1964	312
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**ABSTRACT**

Specification requirements for military fabrics and related military textile materials such as felts and cordage are summarized in tables which give details for yarn, texture, finish and key performance parameters. Included are finishing, after-treatment specifications and test methods.

This report brings up to date and adds to the data contained in Textile Series Report No. 102 dated December 1957 (Revised).

GENERAL NOTES

COTTON CLOTHS - WOVEN

The following parenthetical numbers are utilized throughout this section of the text as referenced notes. Upon observing these numbers, refer to this page for further information dealing with specific portions of the item.

- |   |   |
|---|---|
| (1) To be specified.  | (9) Formula approval required.  |
| (2) Nonfibrous, etc., restrictions.                                   | (10) Bid sample and laboratory report.  |
| (3) See specification for applicable tolerances.                      | (11) Width exclusive of selvege.  |
| (4) Colormatching.  | (12) Width inclusive of selvege.  |
| (5) Preproduction sample.   | (13) See specification for requirements after laundering.   |
| (6) Restrictions on use of sulfur dyes.                               | (14) See specification for woven design and insignia requirements.  |
| (7) See specification for weave diagrams and instructions.            | (15) Use of dyestuffs which would cause deterioration in storage or cause dermatitis on prolonged skin contact is prohibited. |
| (8) Yarns of grade and ply and length of staple to meet requirements. |   |

The specific test methods referenced in this section of the text are listed with their titles at the end of the section.

**COTTON CLOTHS-WOVEN**

NOMENCLATURE	Weight Oz./Sq. Yd.		Weave	Width Inch	Yarn Ply	Yarns Per Inch Min.		Breaking Strength Lb. Min.	Air Permea- bility	Shrink- age Max.	Seam Effici- ency	Dynamic Absorp- tion Max.	Hydro- static Pressure Low range Min.	Water Permea- bility Max.	Point Value Max.
	Min	Max				W	F								

**Bandanna, Table Cotton**  
100-2-71  
CCC-D-71

Type A	4.4 ± 2%	Conserva- tive	38 ± 1/2	--		116	45	30							
Type B	5.2 ± 2%	Patterns (1)	64 ± 1/2			135	50	55							
Type C	5.2 ± 2%		72 ± 1/2			135	50	55							
Type D	5.5 ± 2%		54 ± 1/2			78	76	64	74						
Type E	5.5 ± 2%		64 ± 1/2			78	76	64	74						
Type F	5.5 ± 2%		72 ± 1/2			78	78	64	74						

**Bandanna, Cotton**  
100-2-71A

Type I - Men's 17 x 17 in.	2.0 (3)	Plain	--	--		93	78	30	25						
Type II - Women's 11 x 11 in.	2.0 (3)	"				93	78	30	25						

**Bandanna, Cotton**  
100-2-74

Type I - Blue	2.2 ± 5%	Plain	--	--		57	57	34	20						
Type II - Red	2 ± 5%	"				57	57	34	20						

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness tearing strength, yarn size, etc.)	NOTES (Not Specification Requirements)
--------------	--------	----------------------------	---	---

CCC-D-71  
Type A  
Type B  
Type C  
Type D  
Type E  
Type F

(2)  
Bleached and mercerized.  
Types D, E, and F finished to prevent linting after repeated washings, and to prevent loss of luster and body for mercerization.

DDD-H-71A  
Type I  
Type II

(2)  
Mercerized and singed.

Color (1) (6). (5)  
Standard sample available for shade (4).  
Colorfastness - Standard sample available (5610-5600-5651-5680-5682).

DDD-H-74  
Type I  
Type II

Type I - Blue, with the usual bandanna handkerchief designs in white.  
Type II - Red, with the usual bandanna handkerchief designs in white.  
Colorfastness - (5660-5610-5651).

### COTTON CLOTHS-WOVEN

NOMENCLATURE	Weight Oz./Sq. Yd.		Weave	Width Inch	Yarn Ply	Yarns Per Inch Min.		Breaking Strength Lb. Min.	Air Permea- bility	Shrink- age Max.	Seam Effici- ency	Dynamic Absorp- tion Max.	Hydro- static Pressure low range Min.	Water Permea- bility Max.	Point Value Max.
	Min	Max				W	F								
<u>Washcloth, Terry, Cotton</u>															
DDD-W-80b	16 (a dozen)	-	Single loop terry (7)	-	2 or 1 (1)	68	35	40	35						
<u>Cambic</u>															
CCC-C-81	2.4	-	Plain	(1)	--	100	90	50	32			5%	5%		
<u>Sateen; Cotton</u>															
CCC-S-91a															
Type I - Low Count	3.2	3.8	5-harness satin	(1)	--	66	98	30	30						
Type II - Medium Count	3.3	3.8				84	130	35	40						
<u>Pajama-Check, Cotton</u>															
CCC-P-96															
Type I - 80 x 80	3.25	-	(7) Pajama	35½	1 1	85	72	40	26			1%	1%		
Type II - 88 x 88	3.50	-	check	32-3/4	1 1	94	80	52	35			1%	1%		
<u>Scrim: Curtain</u>															
CCC-S-121	2.8	-	Plain	36½	2 2	24	22	30	24						

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, tearing strength, yarn size, etc.)	NOTES (Not Specification Requirements)
DDD-W-80b	(2) Decized and bleached white.	Color - Cloth shall be bleached white.		
CCC-C-81	Bleached and sized to a cambic finish.	Color (1).		
CCC-S-91a Type I Type II	(2) Clear, smooth, high luster finish.	Color (1). Colorfastness - (5660- 5610).		
CCC-P-96 Type I Type II	(2) Desized and calendered to produce a soft, smooth, nainsook finish.	Bleached and tinted bluish white.		
CCC-S-121		Color (1).	Designs (1).	

### COTTON CLOTHS-WOVEN

NOMENCLATURE	Weight Oz./Sq. Yd.		Weave	Width Inch	Yarn Ply	Yarns Per Inch Min.	Breaking Strength Lb. Min.	Air Permea- bility	Shrink- age Max.	Seam Effici- ency	Dynamic Absorp- tion Max.	Hydro- static Pressure low range Min.	Water Permea- bility Max.	Point Value Max.
	(5050)	(5100)												
		Min.	Max.	W		F	W		F	W		F		
<u>Bedspreed, Cotton Or Cotton/Rayon Blend</u> DDD-B-151e		(of finished bedspread)												
Type I - Crinkles														
Size 1 - 63 x 97	24.0	-	(7)	1	1	72 in	50	50						
Size 2 - 63 x 106	25.5	-	(7)	1	1	plain 62	50	50						
Size 3 - 72 x 97	27.0	-	(7)	1	1	ground	50	50						
Size 4 - 72 x 106	29.0	-	(7)	1	1	62 in crinkle strips	50	50						
Type II - Dimity														
81 x 103	32.5	-	(7)	1	1	70	60	75	45					
Type III - Herring- bone Stripes 56 x 86														
	23.0	-	(7)	1	1	68	38	80	50					
Type IV - Corded														
Size 1 - 63 x 103	38.0	-	(7)	1	1	65	32	85	70					
Size 2 - 76 x 103	45.0	-	(7)	1	1	incl. 32	85	70						
Size 3 - 76 x 113	47.0	-	(7)	1	1	the 32	85	70						
Size 4 - 90 x 113	57.0	-	(7)	1	1	cotton 32	85	70						
						corda.								

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness tearing strength, yarn size, etc.)	NOTES  (Not Specification Requirements)
DDD-B-151e Type I Size 1 Size 2 Size 3 Size 4  Type II  Type III  Type IV Size 1 Size 2 Size 3 Size 4	(2)	Type I - Color (1). Colorfastness - (5660- 5612-5600). Type II - Bleached white. Marked for medi- cal procurement (1). Type III - Color (1). Colorfastness - (5660- 5612-5600). Type IV - Color (1). Colorfastness - (5660- 5612-5600).	(5)	Standard sample available as guide. Bedspreads shall be made of cotton/rayon blend when so specified by purchaser.



### COTTON CLOTHS-WOVEN

NOMENCLATURE	Weight Oz./Sq. Yd.		Weave	Width Inch	Yarn Ply	Yarns Per Inch		Breaking Strength Lb. Min.		Air Permea- bility	Shrink- age Max.		Seam Effici- ency	Dynamic Absorp- tion Max.	Hydro- static Pressure Low range Min.	Water Permea- bility Max.	Point Value Max.
	Min	Max				W	F	W	F		W	F					
<u>Cloth, Cotton, Chambray</u>																	
CCC-C-231f																	
Type I - Mercerized																	
Style A - 3.0 oz.	3.0	-	Plain	(1)	1	1	90	75	45	38		2%	2%	85%			26.00
Type II - Unmercerized																	
Style A - 5.3 oz.	5.3	-	"	(1)	1	1	67	58	75	52				85%			32.00
Style B - 4.3 oz.	4.3	-	"	(1)	1	1	68	50	65	34				85%			32.00
<u>Sheet, Egd, Cotton</u>																	
CCC-S-281f, Amd. 2																	
Type I - 140	4.5	-	Plain	(1)	--	--	74	66	70	70							(1)
Type II - 128	4.0	-	"	(1)	--	--	60	60	55	55							(1)
Type III - 180 (Percale)	3.5	-	"	(1)	--	--	92	88	60	60							(1)

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, tearing strength, yarn size, etc.)	NOTES  (Not Specification Requirements)																											
CCC-C-231f Type I Style A Type II Style A Style B	(2) Type I - Singed, desized and mer- cerized, with a clear lustrous finish (standard sample available). Type II - Regular commercial finish.	Color (1) - Standard Sample available (4-5). Colorfastness - Standard sample available.	Dyed warps for Type I and Type II. Bleached filling for Type I. Natural white filling for Type II. Type I - (5660-5610-5600 5680-5651). Type II - (5660-5610).	Intended Use - For the fabrication of clothing items.																											
DDD-S-281f Type I Type II Type III	(2)	Color (1). Colorfastness - Standard sample available (5600).	<table style="margin-left: 20px; border-collapse: collapse;"> <thead> <tr> <th>Size</th> <th>Width</th> <th>Length Cut or Form</th> </tr> </thead> <tbody> <tr><td>1</td><td>45 in.</td><td>72 in.</td></tr> <tr><td>2</td><td>54 in.</td><td>90 in.</td></tr> <tr><td>3</td><td>54 in.</td><td>99 in.</td></tr> <tr><td>4</td><td>63 in.</td><td>99 in.</td></tr> <tr><td>5</td><td>63 in.</td><td>106 in.</td></tr> <tr><td>6</td><td>72 in.</td><td>106 in.</td></tr> <tr><td>7</td><td>72 in.</td><td>108 in.</td></tr> <tr><td>8</td><td>90 in.</td><td>114 in.</td></tr> </tbody> </table>	Size	Width	Length Cut or Form	1	45 in.	72 in.	2	54 in.	90 in.	3	54 in.	99 in.	4	63 in.	99 in.	5	63 in.	106 in.	6	72 in.	106 in.	7	72 in.	108 in.	8	90 in.	114 in.	
Size	Width	Length Cut or Form																													
1	45 in.	72 in.																													
2	54 in.	90 in.																													
3	54 in.	99 in.																													
4	63 in.	99 in.																													
5	63 in.	106 in.																													
6	72 in.	106 in.																													
7	72 in.	108 in.																													
8	90 in.	114 in.																													

### COTTON CLOTHS-WOVEN

NOMENCLATURE	Weight Oz./Sq. Yd.		Weave	Width Inch	Yarn Ply	Yarns Per Inch Min.		Breaking Strength Lb. Min.	Air Permea- bility	Shrink- age Max.	Seam Effici- ency	Dynamic Absorp- tion Max.	Hydro- static Pressure Low range Min.	Water Permea- bility Max.	Point Value Max.
	Min	Max				W	F								
<u>Cheesecloth (For Wiping Purposes (Kitchens and Laundry))</u> DDD-C-301, Am. 2															

Type I - Bleached  
 Class A - Short  
 lengths or  
 remnants (3)  
 $\frac{1}{2}$  2 $\frac{1}{2}$  Plain 20-40  
 Class B - Long  
 lengths  $\frac{1}{2}$  2 $\frac{1}{2}$  " 20-40  
 Type II - Unbleached  
 Class A - Short  
 lengths or  
 remnants  $\frac{1}{2}$  2 $\frac{1}{2}$  " 20-40  
 Class B - Long  
 lengths  $\frac{1}{2}$  2 $\frac{1}{2}$  " 20-40

Cloth, Cotton, Uniform  
Twill, Light-Weight  
 MIL-C-304D

Type I - 5.0 oz. Combed	4.5	5.5	2 rt. 2 twill	(1)	1	1	126	64	100	55	Preshrunk 1% 1%	80%			30.00 for dyed
Type II - 5.5 oz. Carded	5.5	6.0	2 rt. 1 twill	(1)	1	1	72	64	50	60	1% 1%	80%			35.00 for white
Type III - 5.5 oz. Combed	5.5	6.0	1 rt. 1 twill	(1)	1	1	116	58	150	50	1% 1%	80%			

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, tearing strength, yarn size, etc.)	NOTES (Not Specification Requirements)
DDD-C-301 Type I Class A Class B Type II Class A Class B	Bleached or unbleached (1).		Class A - short lengths shall be of not less than 1 yard. Class B - long lengths shall be of not less than 10 yards.	
MIL-C-304D Type I Type II Type III	(2) Singed and mercerized, with a clear, lustrous finish.	Color (1) - Standard sample available (4-6). Colorfastness - Standard sample available - (5610-5600-5651-5680- 5682-5660).		Intended Use - Type I - In the manufacture of shirts. Type II - For pockets and various component parts. Type III - For utility shirts worn by female personnel of the Marine Corps.

### COTTON CLOTHS-WOVEN

NOMENCLATURE	Weight Oz./Sq. Yd.		Weave	Width Inch	Yarn Ply	Yarns Per Inch Min.		Breaking Strength Lb. Min.		Air Perme- ability	Shrink- age Max.		Seam Effici- ency	Dynamic Absorp- tion Max.	Hydro- static Pressure low range Min.	Water Perme- ability Max.	Point Value Max.
	Min	Max				W	F	W	F		W	F					
<b>Cloth, Cotton, Billet</b>																	
<b>MIL-C-326E</b>																	
Type I - 5.0 oz.	-	-	1	(11) 35	-	-	72	72	61	60	Preshrunk 2% 2%		80%				
Type II - 4.0 oz.	-	-	2	35	-	-	72	72	50	30	2% 2%		80%	28.00 for dyed			
Type III - 6.0 oz.	-	-	right or left hand twill	35	-	-	72	78	65	90	2% 2%		80%	32.00 for white			
<b>Cloth, Balloon, Cotton</b>																	
<b>MIL-C-332E, Amd. 1 (GL)</b>																	
<b>Class 1 - Unbleached</b>																	
Type I - 3.9 oz.	-	3.90	Plain	(1)	1	1	124	118	70	70	Preshrunk (1) 1% 1%		85%	30.00			
Type III - 2.25 oz.	-	2.25	"	(1)	1	1	116	124	40	40	1% 1%		85%	30.00			
Type IV - 3.6 oz.	-	3.60	"	(1)	1	1	96	100	55	55	1% 1%		85%	30.00			
<b>Class 2 - Dyed and finished</b>																	
Type I - 3.9 oz.	-	3.90	Plain	(1)	1	1	126	112	63	63	1% 1%		85%	25(13)	30(13)	25.00	
Type III - 2.25 oz.	-	2.25	"	(1)	1	1	120	120	35	35	1% 1%		85%	25.00			
Type IV - 3.6 oz.	-	3.60	"	(1)	1	1	100	95	50	50	1% 1%		85%	25.00			

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, tearing strength, yarn size, etc.)	NOTES  (Not Specification Requirements)
MIL-C-326E Type I Type II Type III	(2) Singed and desized.	Color (1) - Standard sample available (4-6) Colorfastness - Standard sample available - (5622- 5680-5651).	Width of each selvage shall not exceed 1/4 in.	Intended Use - In clothing and equipment items for personnel.
MIL-C-332E Class 1 Type I Type III Type IV Class 2 Type I Type III Type IV	(2) Class 1 - Unbleached. Class 2 - Singed before dyeing and finishing. Type I, Class 1, Types III & IV, Classes 1 and 2 - when specified, cloth shall be given a water- repellent finish. Type I, Class 2 - when specified, cloth shall be given an approved durable water-repellent treat- ment. Initial spray rating shall be 90, 90, 80 min. (5526). Down and feather retention - "satisfactory" (5530).	Color - Class 2 (1)- standard sample available (4-6). Colorfastness - Class 2 - standard sample available (5660-5622-5610-5600).		Intended Use - In the manufacture of clothing and equipment items. Type I - In sleeping bags.

### COTTON CLOTHS-WOVEN

NOMENCLATURE	Weight Oz./Sq. Yd.		Weave	Width Inch	Yarn Pt.	Yarns Per Inch Min.		Breaking Strength Lb. Min.		Air Permea- bility	Shrink- age Max.		Seam Effici- ency	Dynamic Absorp- tion Max.	Hydro- static Pressure low range Min.	Water Permea- bility Max.	Poi/zt Value Max.
	Min	Max				W	F	W	F		W	F					
Cloth, Wind Resistant, Twill and Poplin, Cotton MIL-C-342E																	
Type I - Twill Class C - Fire, water, mildew res.	5.8	7.0	2 right 2twill	(1)	2	2	185	90	160	70	3-7	2% 2%	60%		40		28.00 dyed 32.00 white
Type II - Poplin Class A Plain fib.	5.5	6.5	Plain	(1)	2	1-2	106	52	125	70	16	2% 2%	80%				
Class B - Quarpel treated	6.0	7.0	"	(1)	2	1-2	106	52	116	60	-	2% 2%	80%	20(13)	35(13)		

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, tearing strength, yarn size, etc.)	NOTES  (Not Specification Requirements)
MIL-C-342E Type I Class C Type II Class A Class B	(2) Singed, desized, mercerized, and dyed. Use of resin pigments in dyeing or finishing of Type II is prohibited. Type I, Class C shall be given an approved durable fire resistant treatment. Average time of after-flame - 2.0 sec. max. Average length of char - 5.5 in. max. Initially and after 3 cycles of laundering (5903-5556). The cloth shall be given an approved durable water repellent treatment. Type II, Class B shall be given an approved Quarpel-type water repel- lent treatment. Spray rating - 90, 90, 80 min. (5526). Use of materials other than approved water repellents and sodium acetate buffer (and acetic acid) is prohibited. Shall show no wetting by n-tetra- decane initially or after 15 laundings (4.4.2). pH: Type I, Class C - 5.5 min. Type II, Class B - 6.5-8.5 (2811).	Color (1) - standard sample available (4-6). Colorfastness - standard sample available. Type I Class C - (5651-5671). Type II, Classes A & B - (5610-5600-5651- 5622- 5680-5660).	Type I, Class C & Type II, Class B - (10). All types and classes - preproduction sample approval required when specified. Tearing strength shall be: Type I, Class C - 2.3 lb. min. in the warp and 1.5 lb. min. in the filling; Type II, Class A - 3.8 lb. min. in the warp and 3.3 lb. min. in the filling (5132).	Intended Use - In the manu- facture of clothing and equip- age items. Type I, Class C is not intended for uses as furniture coverings or items of clothing which involve pro- longed or frequent contact with the skin.

### COTTON CLOTHS-WOVEN

NOMENCLATURE	Weight Oz./Sq. Yd.		Weave	Width Inch	Yarn Ply	Yarns Per Inch Min.		Breaking Strength Lb. Min.		Air Permea- bility	Shrink- age Max.	Seam Effici- ency	Dynamic Absorp- tion Max.	Hydro- static Pressure Low range Min.	Water Permea- bility Max.	Faint Value Max.																																																																																																																							
	Min	Max				W	F	W	F								W	F																																																																																																																					
<u>Cloth, Cotton, Awning</u> CCC-C-406a																																																																																																																																							
<p><b>Type I - Awning Cloth, Yarn-dyed Stripes</b></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 15%;"></td> <td style="width: 10%; text-align: center;">(3)</td> <td style="width: 15%;">2 sin. W-</td> <td style="width: 10%; text-align: center;">(3)</td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> </tr> <tr> <td>Class 1 - 8.42 oz.</td> <td style="text-align: center;">8.4</td> <td>yarns, sin. F</td> <td style="text-align: center;">31</td> <td style="text-align: center;">1</td> <td style="text-align: center;">1</td> <td style="text-align: center;">61</td> <td style="text-align: center;">28</td> <td style="text-align: center;">150</td> <td style="text-align: center;">70</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: center;">20.32</td> </tr> <tr> <td>Class 2 - 10.00 oz.</td> <td style="text-align: center;">10.0</td> <td>2 ply W &amp; F</td> <td style="text-align: center;">31</td> <td style="text-align: center;">2</td> <td style="text-align: center;">2</td> <td style="text-align: center;">72</td> <td style="text-align: center;">36</td> <td style="text-align: center;">180</td> <td style="text-align: center;">90</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: center;">25.40</td> </tr> <tr> <td>Class 3 - 12.00 oz.</td> <td style="text-align: center;">12.0</td> <td style="text-align: center;">"</td> <td style="text-align: center;">31</td> <td style="text-align: center;">2</td> <td style="text-align: center;">2</td> <td style="text-align: center;">72</td> <td style="text-align: center;">38</td> <td style="text-align: center;">210</td> <td style="text-align: center;">90</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: center;">25.40</td> </tr> <tr> <td>Class 4 - 15.00 oz.</td> <td style="text-align: center;">15.0</td> <td style="text-align: center;">"</td> <td style="text-align: center;">28½</td> <td style="text-align: center;">2</td> <td style="text-align: center;">2</td> <td style="text-align: center;">68</td> <td style="text-align: center;">34</td> <td style="text-align: center;">240</td> <td style="text-align: center;">120</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: center;">25.40</td> </tr> </table> <p style="text-align: right; margin-right: 20px;"><u>Weight lin. yd.</u> (3)</p> <p><b>Type II - Awning Cloth, Painted Stripes or Painted (Tinted) Solid Colors.</b></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 15%;"></td> <td style="width: 10%; text-align: center;">13.0</td> <td style="width: 15%; text-align: center;">"</td> <td style="width: 10%; text-align: center;">28½</td> <td style="width: 10%; text-align: center;">2</td> <td style="width: 10%; text-align: center;">2</td> <td style="width: 10%; text-align: center;">54</td> <td style="width: 10%; text-align: center;">42</td> <td style="width: 10%; text-align: center;">170</td> <td style="width: 10%; text-align: center;">120</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: center;">25.40</td> </tr> </table> <p><b>Type III - Awning Cloth, Piece Dyed</b></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 15%;"></td> <td style="width: 10%; text-align: center;">10.1</td> <td style="width: 15%; text-align: center;">"</td> <td style="width: 10%; text-align: center;">28½</td> <td style="width: 10%; text-align: center;">2</td> <td style="width: 10%; text-align: center;">2</td> <td style="width: 10%; text-align: center;">54</td> <td style="width: 10%; text-align: center;">42</td> <td style="width: 10%; text-align: center;">180</td> <td style="width: 10%; text-align: center;">110</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: center;">25.40</td> </tr> </table>																		(3)	2 sin. W-	(3)														Class 1 - 8.42 oz.	8.4	yarns, sin. F	31	1	1	61	28	150	70							20.32	Class 2 - 10.00 oz.	10.0	2 ply W & F	31	2	2	72	36	180	90							25.40	Class 3 - 12.00 oz.	12.0	"	31	2	2	72	38	210	90							25.40	Class 4 - 15.00 oz.	15.0	"	28½	2	2	68	34	240	120							25.40		13.0	"	28½	2	2	54	42	170	120							25.40		10.1	"	28½	2	2	54	42	180	110							25.40
	(3)	2 sin. W-	(3)																																																																																																																																				
Class 1 - 8.42 oz.	8.4	yarns, sin. F	31	1	1	61	28	150	70							20.32																																																																																																																							
Class 2 - 10.00 oz.	10.0	2 ply W & F	31	2	2	72	36	180	90							25.40																																																																																																																							
Class 3 - 12.00 oz.	12.0	"	31	2	2	72	38	210	90							25.40																																																																																																																							
Class 4 - 15.00 oz.	15.0	"	28½	2	2	68	34	240	120							25.40																																																																																																																							
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	10.1	"	28½	2	2	54	42	180	110							25.40																																																																																																																							

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, tearing strength, yarn size, etc.)	NOTES (Not Specification Requirements)
CCC-C-406a Type I Class 1 Class 2 Class 3 Class 4 Type II Type III	Mildew resistant. After weathering, cloth shall show no increase in mildew growth (5804-5760). Cloth shall show max. loss of 15% of breaking strength after weathering and mildew test. Water resistant. Water resistance of untreated (unfinished) cloth shall have not more than a leakage of 50 cc. at pressure indicated in table using test method indicated in specification, para. 3.7.	Color (1). Colorfastness - (5651-5760). Pattern (1).		

### COTTON CLOTHS-WOVEN

NOMENCLATURE	Weight Oz./Sq. Yd.		Weave	Width Inch	Yarn Ply	Yarns Per Inch Min.		Breaking Strength Lb. Min.	Air Permea- bility	Shrink- age Max.	Seam Effic- iency	Dynamic Absorp- tion Max.	Hydro- static Pressure low range Min.	Water Permea- bility Max.	Point Value Max.
	Min	Max				(5050)	(5100)								
						W	F	W	F	W	F				
Cloth, Duck, Cotton, Unbleached, Plied-Yarns, Army And Numbered CCC-C-419b															
Type I - Numbered															
Duck, Hard Texture:															
12/0	48.00	-	Plain	(1)	9	9	20	12	800	430					40.00
8/0	40.00	-	"	(1)	8	14	26.5	12.5	750	600					40.00
2/0	31.90	-	"	(1)	5	7	24	16	465	435					40.00
1/0	30.31	-	"	(1)	5	6	24	16	450	405					40.00
1	28.71	-	"	(1)	5	5	26	19	440	370	2				40.00
2	27.12	-	"	(1)	5	4	26	19	420	345					40.00
3	25.53	-	"	(1)	4	5	29	20	390	370					40.00
4	23.93	-	"	(1)	4	4	31	22	375	300	2				40.00
5	22.33	-	"	(1)	3	4	35	23	345	285					40.00
6	20.74	-	"	(1)	3	3	35	25	335	250	2				40.00
8	17.55	-	"	(1)	3	3	43	25	285	210	2				40.00
10	14.35	-	"	(1)	3	3	45	27	245	160	4				40.00
11	12.75	-	"	(1)	3	2	45	34	240	140					40.00
12	11.26	-	"	(1)	2	2	45	35	195	120	4				40.00
Medium Texture:															
1	28.71	-	"	(1)	5	5	26	15	425	345					40.00
2	27.12	-	"	(1)	5	4	26	15	410	320					40.00
3	25.53	-	"	(1)	4	5	29	15	370	315					40.00
4	23.93	-	"	(1)	4	4	29	17	350	290					40.00
5	22.33	-	"	(1)	3	4	34	18	315	285					40.00
6	20.74	-	"	(1)	3	3	34	18	305	250					40.00
Type III - Army Duck															
8.25	8.25	-	"	(1)	2	2	60	58	125	120					
9.85	9.85	-	"	(1)	2	2	52	40	160	110	4				40.00
12.29	12.29	-	"	(1)	3	2	44	34	210	130	4				40.00
14.77	14.77	-	"	(1)	3	3	44	28	235	175					
15.90	15.90	-	"	(1)	3	3	45	34	245	200					
18.48	18.48	-	"	(1)	4	4	42	28	315	200					

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, tearing strength, yarn size, etc.)	NOTES (Not Specification Requirements)
CCC-C-419b Type I Hard Texture Medium Texture Type III	(2) Unbleached.			Intended Use - In fabrication of tentage and equipage items.

### COTTON CLOTHS-WOVEN

NOMENCLATURE	Weight Oz./Sq. Yd.		Weave	Width Inch	Yarn Ply	Yarns Per Inch Min.		Breaking Strength Lb. Min.		Air Permea- bility	Shrink- age Max.	Seam Effic- lency	Dynamic Absorp- tion Max.	Hydro- static Pressure low range Min.	Water Permea- bility Max.	Point Value Max.
	Min	Max				W	F	W	F							
<b>Cloth, Denim, Cotton, Shrunk and Unshrunk CCC-C-421a</b>																
Type I																
Class 1 - Unshrunk	8.04	-	2 right -1 twill	(1)	1	1	62	39	145	53						40.00
Class 2 - Shrunk	8.78	-	3-harness	(1)	1	1	63	42	145	58	Preshrunk 2% 2%					40.00
Type II																
Class 1 - Unshrunk	8.95	-	"	(1)	1	1	66	43	150	65		Preshrunk				40.00
Class 2 - Shrunk	9.75	-	"	(1)	1	1	67	46	150	70	2% 2%					40.00
Type III																
Class 1 - Unshrunk	9.85	-	"	(1)	1	1	68	42	167	70		Preshrunk				40.00
Class 2 - Shrunk	10.97	-	"	(1)	1	1	69	45	167	75	2% 2%					40.00
Type IV																
Class 1 - Unshrunk	11.06	-	"	(1)	1	1	70	42	177	85		Preshrunk				40.00
Class 2 - Shrunk	12.30	-	"	(1)	1	1	71	45	177	90	2% 2%					40.00

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness tearing strength, yarn size, etc.)	NOTES (Not Specification Requirements)
CCC-C-421a Type I Class 1 Class 2 Type II Class 1 Class 2 Type III Class 1 Class 2 Type IV Class 1 Class 2	(2) pH: 8.0-10.0.	Color (1) - Standard sample available (4). Style A - white-back cloth with dyed warp yarns & white or tinted filling yarns. Style B - dyed warp & filling yarns. Colorfastness - Standard sample available - (5660- 5630-5610-561).		Intended Use - In the manu- facture of clothing items.

### COTTON CLOTHS-WOVEN

NOMENCLATURE	Weight Oz./Sq. Yd.		Weave	Width Inch	Yarn Ply	Yarns Per Inch Min		Breaking Strength Lb. Min.		Air Permea- bility (5450)	Shrink- age Max (5550)	Seam Effici- ency (5110)	Dynamic Absorp- tion Max. (5500)	Hydro- static Pressure low range Min. (5514)	Water Permea- bility Max. (5516)	Point Value Max.
	Min	Max				W	F	W	F							

Blanket, Bed (Other Than Wool) - (See also under Mixed Fiber Cloths)  
DDD-B-421e

**Type I - All cotton**

**Class 1 - Twill, double filling**

Size 1 - 30x40 in.	7.8	9.0	(7)	-	(8)	30	35	23	15		11%	6%
Size 2 - 60x84 in.	3.0#	3.2#	(7)	-	(8)	37	36	30	25		11%	6%
Size 3 - 66x84 in.	3.3#	3.5#	(7)	-	(8)	37	36	30	25		11%	6%
Size 4 - 66x90 in.	3.45#	3.7#	(7)	-	(8)	37	36	30	25		11%	6%

**Class 2 - Plain, single filling**

Size 1 - 70x84 in.	1.2#	1.3#	(7)	-	(8)	35	24	28	15		12%	6%
Size 2 - 72x90 in.	1.5#	1.7#	(7)	-	(8)	27	28	27	17		12%	6%

**Type II - Cotton warp wool filling (see under Mixed Fiber Cloths)**

**Type III - Blended nylon-wool-rayon-cotton and other fibers (see under Mixed Fiber Cloths)**

**Cloth, Cotton, Muslin (Mercerized)**

CCC-C-00422a (GSA-FSS) 5.0	-	Plain	35-36	1	1	53	46	60	60		Preshrunk 1% 1%					28.00
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NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, tearing strength, yarn size, etc.)	NOTES (Not Specification Requirements)
DDD-B-421e Type I Class 1 Size 1 Size 2 Size 3 Size 4 Class 2 Size 1 Size 2 Type II Type III	(2) Nap and hand - standard sample available.	Color - Type I (1) - standard sample available (4). The wool shall be so selected as to avoid the presence of black fibers. Colorfastness - Type I - standard sample available (5600-5651). See specification for information on marking (1).	Wool grade not lower than 44's, U.S.Std.	

CCC-C-00422a	(2) Mercerized, with a crisp, lustrous finish - standard sample available. No change in appearance or hand after three launderings (5550).	Color (1) - standard sample available (4-6). Colorfastness - standard sample available - (5660-5610-5680-5651).	(5)	Intended Use - As dress goods and suiting material.
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**COTTON CLOTHS-WOVEN**

NOMENCLATURE	Weight Oz./Sq. Yd.		Weave	Width Inch	Yarn Ply	Yarns Per Inch Min.		Breaking Strength Lb. Min.	Air Permea- bility	Shrink- age Max.	Seam Effici- ency	Dynamic Absorp- tion Max.	Hydro- static Pressure low range Min.	Water Permea- bility Max.	Point Value Max.
	Min	Max				W	F								

Cloth, Birdseye And  
Gauze; Cotton  
CCC-C-425b

Type I - Birdseye single layer	4.0	-	Sin. layer birdseye	26½ 27½			60	48	40	60		20% total	80% min.		45.00
Type II - Gauze double layer	3.35	-	Dou. layer Plain, Bird- seye, or interlocking. (7).	39½ 40½			total 7½ sin. ply		45	25		20% total	80% min.		45.00

Cloth, Drill, Cotton  
CCC-C-426c

Type I - 30 in. 72x60, 2.50 yd.																
Class 1 - Greige	7.7	-	3 harness 2 left	(1)	1	1	72	60	130	90			80%		45.00	
Class 2 - Desized and preshrunk	7.5	-	1 Twill	(1)	1	1	74	58	120	85		Preshrunk 2% 2%	80%		45.00	
Class 3 - Bleached white or dyed and preshrunk	6.5	-	"	(1)	1	1	74	56	105	70		2% 2%	80%		35.00*	
Type II - 30 in. 72x48, 2.50 yd.																
Class 1 - Greige	7.7	-	"	(1)	1	1	72	48	130	85			80%		45.00	
Class 2 - Desized and preshrunk	7.5	-	"	(1)	1	1	74	46	120	72		Preshrunk 2% 2%	80%		45.00	
Class 3 - Bleached white or dyed and preshrunk	6.0	-	"	(1)	1	1	74	44	105	62		Preshrunk 2% 2%	80%		35.00*	

(Continued)

\*42.00 for any bleached

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, tearing strength, yarn size, etc.)	NOTES (Not Specification Requirements)
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CCC-C-425b Type I Type II	(2) Cleared and bleached.	Color - white.		Intended Use - In the fabri- cation of infant diapers.
CCC-C-426c Type I Class 1 Class 2 Class 3 Type II Class 1 Class 2 Class 3	(2)	Color - Classes 1 & 2 - natural color. Class 3 - (1) - standard sample available (4-6). Colorfastness - Class 3 - standard sample available - (5660-5610-5622-5651-5680).		Intended Use - In clothing and equipment items.

(Continued)

### COTTON CLOTHS-WOVEN

NOMENCLATURE	Weight Oz./Sq. Yd.		Weave	Width Inch	Yarn Ply	Yarns Per Inch Min. (5050)	Breaking Strength Lb. Min. (5100)	Air Permea- bility (5450)	Shrink- age Max. (5530)	Seam Effic- iency (5110)	Dynamic Absorp- tion Max. (5500)	Hydro- static Pressure low range Min. (5514)	Water Permea- bility Max. (5516)	Point Value Max.
	Min	Max												
<b>Cloth, Drill, Cotton CCC-C-426c (Cont'd)</b>														
Type III - 30 in. 72x8, 2.85 yd.														
Class 1 - Orange	6.7	-	3 harness	(1)	1	72	48	110	65		80%			45.00
Class 2 - Desized and preshrunk	6.5	-	2 left 1 twill	(1)	1	74	46	100	60	Preshrunk 2% 2%	80%			45.00
Class 3 - Bleached white or dyed and preshrunk	6.0	-	"	(1)	1	74	44	90	55	2% 2%	80%			35.00*

**Cloth, Duck, Cotton;  
Fire, Water, Weather,  
and Mildew Resistant  
CCC-C-428d**

**Type I - Cloth fin.** See CCC-C-419, CCC-C-443, or MIL-C-2384 in Olive Drab #7. for basic cloth requirements, except that non-fibrous material for CCC-C-443 & MIL-C-2384 shall be as specified in 3.4.1.1.  
**Class 1 - Reg. fin.**  
**Class 2 - Dry fin.**

**Type II - Cloth fin.** Weight of finished cloth shall be the on deck grey color. the actual weight of the grey cloth plus  
**Class 1 - Reg. fin.** an allowance for treatment of 50% for  
**Class 2 - Dry fin.** a grey weight of 12 oz. or over and 65% for a grey weight of under 12 oz.

CCC-C-419 cloth designations	Flexibility			50 ml.	40.00
	Initial bending moment in/lb. max.	After heating at 200°-205°F (bending moment in/lb. max.	At 0° + 5°F (bending moment in/lb. max.		
Numbered					
2	0.16	0.400	0.400	50 ml.	40.00
4	0.12	0.300	0.300	50 ml.	40.00
6	0.06	0.180	0.180		
8	0.05	0.125	0.125		
10	0.03	0.075	0.075		
12	0.02	0.050	0.050		
Army Ducks					
8.25	0.013	0.032	0.032		
9.55	0.013	0.032	0.032		
12.29	0.013	0.032	0.032		

\*42.00 for any bleached.

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness tearing strength, yarn size, etc.)	NOTES (Not Specification Requirements)
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CCC-C-426c (Cont'd)  
Type III  
Class 1  
Class 2  
Class 3

CCC-C-428d  
Type I  
Class 1  
Class 2  
Type II  
Class 1  
Class 2

(2)  
Compound to provide fire, water, weather, and mildew resistance shall be well ground and blended. Compounds containing sulfur may be used when approved (9).  
Water resistance: water resistance requirements p. 10 only to those cloths of CCC-C-443 having weights of 14.90 and 17.55 oz/sq yd and to all ducks of CCC-C-419 and MIL-C-2384.  
Flame resistance - time of flaming shall not exceed 2 sec. (5903T). Average length of char shall not exceed 4.5 in. for cloth with an untreated weight of under 10 oz.; 3.5 in. for cloth of 10-20 oz.; and 2.0 in., for cloth of over 20 oz. Mildew resistance -  
Type I - an approved fungicide shall be used - see 3.5.10.1.  
Type II - an approved fungicide shall be used.

Color (1) - standard sample available (4). Color shall be obtained by materials not appreciably affected by weathering (5671).  
Colorfastness - standard sample available (5671).  
Crocking - Class 1 - max. Munsell neutral value of 5.0 (5651).  
Class 2 - max. Munsell neutral value of 7.0 (5651).

(10)  
Intended Use - Class 1 - In the manufacture of canvas covers, tents, tarpaulins, and other duck items providing protection under conditions of prolonged outdoor use.  
Class 2 - As upholstery material in motorized vehicles and uses where a higher degree of resistance to crocking is required.

### COTTON CLOTHS-WOVEN

NOMENCLATURE	Weight Oz./Sq. Yd.		Weave	Width Inch	Yarn Ply	Yarns Per Inch		Breaking Strength Lb. Min.		Air Permea- bility	Shrink- age Max.	Seam Effici- ency	Dynamic Absorp- tion Max.	Hydro- static Pressure low range Min.	Water Permea- bility Max.	Point Value Max.	
	Min	Max				W	F	W	F								W
<u>Cloth, Osanburg, Cotton</u>																	
CCC-C-429b																	
Class 2	6.8	-	Plain	(1)	1	1	38	24	60	60							60.00
Class 3	5.4	-	"	(1)	1	1	32	26	50	50							60.00
Class 5	3.9	-	"	(1)	1	1	28	24	40	40							60.00

Cloth, Sheeting, Cotton  
CCC-C-430c, Amd. 1

Style A - #140

Type I - Unbleached

Class 1 - Unshrunk 4.7 - Plain (1) carded (3) 68 72 70 70 45.00

Class 2 - Shrunk 4.8 - " (1) " 74 69 70 70 2% 2% 45.00

Type II - Bleached

or dyed

Class 1 - Unshrunk 4.5 - " (1) " 74 66 70 70 dyed

Class 2 - Shrunk 4.6 - " (1) " 74 69 70 70 2% 2% 30.00

white

Style B - #128

Type I - Unbleached

Class 1 - Unshrunk 4.1 - " (1) " 64 64 55 55 45.00

Class 2 - Shrunk 4.2 - " (1) " 70 63 55 55 2% 2% 45.00

Type II - Bleached

or dyed

Class 1 - Unshrunk 4.0 - " (1) " 68 60 55 55 dyed

Class 2 - Shrunk 4.1 - " (1) " 70 63 55 55 2% 2% 30.00

white

Style C - #180(Percal)

Type II - Bleached

Class 1 - Unshrunk 3.5 - " (1) combed 92 88 60 60 35.00

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness tearing strength, yarn size, etc.)	NOTES (Not Specification Requirements)
CCC-C-429b Class 2 Class 3 Class 5	(2)	Color - natural.		Intended Use - As packaging, packing, and target cloth.

CCC-C-430c Style A Type I Class 1 Class 2 Style B Type I Class 1 Class 2 Style C Type II Class 1	(2) Type I - Unbleached. Type II - Bleached or dyed.	Color (1) - standard sample available (4-6). Colorfastness - standard sample available for dyed cloth (5660-5610- 5600-5651).		Intended Use - In clothing, bedding material, and equipage items.
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**COTTON CLOTHS-WOVEN**

NOMENCLATURE	Weight Oz./Sq. Yd.	Weave	Width Inch	Yarn Plg		Yarns Per Inch Min.		Breaking Strength Lb. Min.		Air Permea- bility	Shrink- age Max.	Seam Effici- ency	Dynamic Absorp- tion Max.	Hydro- static Pressure low range Min.	Water Permea- bility Max.	Point Value Max.
				(5050)	(5100)	(5150)	(5550)	(5110)	(5500)							
Cloth, Cotton, Sheeting, Min   Max				W	F	W	F	W	F	W	F					
(Unbleached, Bleached, And Dyed)																
CCC-C-432b																
Type I																
Class 1 - Unbleached	3.4	-	Plain	(1)	1	1	44	46	40	35						45.00
Class 2 - Bleached, dyed	3.2	-	"	(1)	1	1	46	38	37	32	7.5%	2.0%	80%			35.00
Class 3 - Bleached, dyed preshrunk	3.5	-	"	(1)	1	1	48	42	38	33	2.0%	2.0%	80%			35.00
Type II																
Class 1 - Unbleached	3.3	-	"	(1)	1	1	56	48	44	29						45.00
Class 2 - Bleached, dyed	3.1	-	"	(1)	1	1	58	46	41	26	7.5%	2.0%	80%			35.00
Class 3 - Bleached, dyed preshrunk	3.4	-	"	(1)	1	1	60	50	42	27	2.0%	2.0%	80%			35.00
Type III																
Class 1 - Unbleached	3.8	-	"	(1)	1	1	48	48	48	35						45.00
Class 2 - Bleached, dyed	3.6	-	"	(1)	1	1	50	46	44	32	7.5%	2.0%	80%			35.00
Type IV																
Class 1 - Unbleached	4.3	-	"	(1)	1	1	48	44	55	40						45.00
Class 2 - Bleached, dyed	4.1	-	"	(1)	1	1	50	42	52	37	7.5%	2.0%	80%			35.00
Class 3 - Bleached, dyed preshrunk	4.4	-	"	(1)	1	1	52	46	54	38	2.0%	2.0%	80%			35.00
Type V																
Class 1 - Unbleached	4.0	-	"	(1)	1	1	56	60	45	40						45.00
Class 2 - Bleached, dyed	3.8	-	"	(1)	1	1	58	58	41	37	7.5%	2.0%	80%			35.00
Class 3 - Bleached, dyed preshrunk	4.1	-	"	(1)	1	1	60	62	43	38	2.0%	2.0%	80%			35.00

(Continued)

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, tearing strength, yarn size, etc.)	NOTES (Not Specification Requirements)
CCC-C-432b	(2)			Intended Use - In the manufacture of clothing and equipage items.
Type I	When Class 1 or Class 2 cloth is specified for use as the base	Color - Classes 2 & 3 (1) - standard sample available (4-6).		
Class 1	cloth for coating, the cloth shall	Colorfastness - standard		
Class 2	be singed, scoured, and calendered.	sample available for		
Class 3	It shall contain not more than 0.003% copper or 0.0015% manganese (D-377, ASTM manual).	dyed cloth - (5660-5600- 5610-5680-5651).		
Type II	Mildew resistance - Class 2 (1)			
Class 1	cloth shall be made to conform to			
Class 2	finished requirements of Class D of			
Class 3	CCC-D-950, except that the require- ment for colorfastness, as specified,			
Type III	shall not apply. Treatment shall be			
Class 1	in accordance with inhibitor (a) of			
Class 2	CCC-C-950. Water repellency and			
Class 3	mildew resistance - Class 2 (1)			
Type IV	shall be made to conform to the			
Class 1	finished requirements of Class P			
Class 2	of CCC-D-950, except that the			
Class 3	requirements for hydrostatic resis- tance and colorfastness as speci- fied shall not apply. Treatment			
Type V	shall be in accordance with			
Class 1	inhibitor (a) of CCC-D-950.			
Class 2				
Class 3				
(Continued)				

### COTTON CLOTHS-WOVEN

NOMENCLATURE	Weight Oz./Sq. Yd.		Weave	Width Inch	Yarn Ply	Yarns Per Inch Min.		Breaking Strength Lb. Min.		Air Perme- ability	Shrink- age Max.		Seam Effici- ency	Dynamic Absorp- tion Max.	Hydro- static Pressure Low range Min.	Water Perme- ability Max.	Point Value Max.
	Min	Max				W	F	W	F		W	F					

Cloth, Cotton, Sheeting,  
(Unbleached, Bleached,  
And Dyed)

CCC-C-432b (Cont'd)

Type VI																	
Class 1 - Unbleached	4.6	-	Plain	(1)	1	1	64	68	55	50							45.00
Class 2 - Bleached, dyed	4.4	-	"	(1)	1	1	66	66	50	47	7.5%	2.0%	80%				35.00
Class 3 - Bleached, dyed preshrunk	4.7	-	"	(1)	1	1	68	68	51	48	2.0%	2.0%	80%				35.00
Type VII																	
Class 1 - Unbleached	5.0	-	"	(1)	1	1	46	48	60	50							45.00
Class 2 - Bleached, dyed	4.8	-	"	(1)	1	1	50	46	56	47	7.5%	2.0%	80%				35.00
Class 3 - Bleached, dyed preshrunk	5.1	-	"	(1)	1	1	52	48	57	48	2.0%	2.0%	80%				35.00
Type VIII																	
Class 1 - Unbleached	5.6	-	"	(1)	1	1	48	48	65	55							45.00
Class 2 - Bleached, dyed	5.4	-	"	(1)	1	1	50	46	61	52	7.5%	2.0%	80%				35.00
Class 3 - Bleached, dyed preshrunk	5.7	-	"	(1)	1	1	52	48	62	53	2.0%	2.0%	80%				35.00

Cloth, Cotton, Sheeting  
(Laundry Cover Cloth)

CCC-C-435b

Class 1 - 72 in. wide	6.9	7.3	Plain	(3)	72	1	1	56	58	85	100						35.00
Class 2 - 90 in. wide	6.9	7.3	"	nom. 90 nom.	90	1	1	56	58	85	100						35.00

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness tearing strength, yarn size, etc.)	NOTES (Not Specification Requirements)
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CCC-C-432b (Cont'd)

Type VI  
Class 1  
Class 2  
Class 3  
Type VII  
Class 1  
Class 2  
Class 3  
Type VIII  
Class 1  
Class 2  
Class 3

Intended Use - The cloth of  
Types VI, VII and VIII in Class  
1 or 2 may be used as base  
material for coated fabrics.

CCC-C-435b  
Class 1  
Class 2

(2)

Color - Unbleached.

### COTTON CLOTHS-WOVEN

NOMENCLATURE	Weight Oz./Sq. Yd.		Weave	Width Inch	Yarn Ply	Yarns Per inch Min.		Breaking Strength Lb. Min.	Air Permea- bility	Shrink- age Max.	Seam Effici- ency	Dynamic Absorp- tion Max.	Hydro- static Pressure low range Min.	Water Permea- bility Max.	Point Value Max.
	Min	Max				(5050)	(5100)								
<u>Cloth, Ticking Twill, Cotton</u> CCC-C-436c						W	F	W	F	W	F				
Type I - 9 oz/sqyd Class 1 - Untreated	8.5	9.5	3 <sub>I</sub> twill (1-3)	1	1	78	62	135	90						35.00
Type II - 7 oz/sqyd Class 1 - Untreated Class 2 - Treated	6.5	7.5	2 <sub>I</sub> twill (1-3)	1	1	70	44	110	60		Preshrunk 2% 2%				35.00
	6.5	+130%		1	1	70	39.6	93.5	51						35.00
							min	min	min						

Cloth, Cotton, Broad-  
cloth, Mercerized  
CCC-C-437b

NOMENCLATURE	Weight Oz./Sq. Yd.		Weave	Width Inch	Yarn Ply	Yarns Per inch Min.		Breaking Strength Lb. Min.	Air Permea- bility	Shrink- age Max.	Seam Effici- ency	Dynamic Absorp- tion Max.	Hydro- static Pressure low range Min.	Water Permea- bility Max.	Point Value Max.
	Min	Max				(5050)	(5100)								
Type I - 140x74	3.5	-	Plain	(1)	1	1	148	74	74	28		Preshrunk 1% 1% 85%			
Type II - 140x56	3.2	-	"	(1)	1	1	140	56	65	25		1% 1% 85%			
Type III - 132x64	3.2	-	"	(1)	1	1	132	64	75	30		1% 1% 85%			
Type IV - 116x56	3.2	-	"	(1)	1	1	116	56	60	25		1% 1% 85%			
Type V - 102x56	3.2	-	"	(1)	1	1	102	56	55	25		1% 1% 85%			
Type VI - 82x56	2.8	-	"	(1)	1	1	82	56	30	25		1% 1% 85%			
Class 1 - Bleached															
Class 2 - Unbleached															
Class 3 - Dyed															

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness tearing strength, yarn size, etc.)	NOTES (Not Specification Requirements)
CCC-C-436c Type I Class 1 Type II Class 1 Class 2	(2) Type II, Class 2 shall be given an approved flame-resistant treatment. Average flaming time 2.0 sec. max. (5903T). Average length of char 5.0 in. both initially and after 15 launderings (5903T).	Color - Alternating natural white & blue "dyed" warp stripes, which may be either solid or broken by white warp ends. The white stripe shall be about 1/4 in. wide & the blue stripe shall be about 3/16 in. wide - standard sample available (4). Colorfastness - standard sample available (5630).		Intended Use - In the manufacture of mattress and pillow covers. Type I - For pillows containing feathers or down, and mattresses containing hair. Type II - For all other mattresses.
CCC-C-437b Type I Type II Type III Type IV Type V Type VI	(2) Singed, desized, and mercerized, with a clear, lustrous finish. Class 1 shall be bleached.	Color (1) - standard sample available (4-6). Colorfastness - standard sample available - (5660-5600-5630-5651-5610).		Intended Use - In the manufacture of men's and women's shirts.

**COTTON CLOTHS-WOVEN**

NOMENCLATURE	Weight Oz./Sq. Yd.		Weave	Width Inch	Yarn Ply	Yarns Per Inch Min.		Breaking Strength Lb. Min.	Air Permea- bility	Shrink- age Max.	Seam Effic- lency	Dynamic Absorp- tion Max.	Hydro- static Pressure low range Min.	Water Permea- bility Max.	Point Value Max.
	Min	Max				W	F								
<u>Cloth, Cheesecloth, Cotton, Bleached And Unbleached</u>															
CCC-C-440c															
Type I - 44x36				(12)											
Class 1 - Unbleached	1.60	1.88	Plain	38 $\frac{1}{2}$	-	-	(a)	22	10						70.00
Class 2 - Bleached	1.35	1.59	"	38 $\frac{1}{2}$				20	9						60.00
(a) Yarns/Inch (3)															
Type II - 28x24															
Class 1 - Unbleached	0.98	1.16	"	36				10	5						70.00
Class 2 - Bleached	0.87	1.03	"	36				8	4						60.00
<u>Cloth, Corduroy, Cotton</u>															
CCC-C-441a															
Type I - Unbleached, unshrunk															
Class 1	8.5	-	Single or	(1)	Single	45	126	65	60						45.00
Class 2	10.5	-	Double tie	(1)	or ply	58	142	76	74						45.00
Wales/in. min.															
Type II - Dyed and shrunk															
Class 1	7.2	-	"	(1)	"	46	126	60	55						35.00
Class 2	9.5	-	"	(1)	"	59	142	70	66						35.00
Preshrunk															
<u>Cloths, Polishing</u>															
DDD-C-441b															
	3.5	-	--	--	1	1	45	42	25	11					

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness tearing strength, yarn size, etc.)	NOTES  (Not Specification Requirements)
CCC-C-440c Type I Class 1 Class 2 Type II Class 1 Class 2	Class 1 - Unbleached. Class 2 - Bleached.			Intended Use - In items of clothing and for polishing and cleaning operations.
CCC-C-441a Type I Class 1 Class 2 Type II Class 1 Class 2	(2) Type I - Unbleached and unshrunk. Type II - preshrunk.	Color - Type I - natural. Type - (1) - standard sample available (4-6). Colorfastness - standard sample available for dyed and finished cloth - (5660-5610-5600-5680-5651).	(a) For double tie type the minimum number of warp yarns shall be twice that here specified.	Intended Use - In the manufacture of clothing items.
DDD-C-441b	Soft finish; lightly napped on both sides.	Any color or colors.		

### COTTON CLOTHS-WOVEN

NOMENCLATURE	Weight Oz./Sq. Yd.		Weave	Width Inch	Yarn Ply	Yarns Per Inch Min.		Breaking Strength Lb. Min.	Air Permea- bility	Shrink- age Max.	Seam Effici- ency	Dynamic Absorp- tion Max.	Hydro- static Pressure low range Min.	Water Permea- bility No. ...	Point Value Max.
	Min	Max				(5050)	(5100)								
<u>Cloth, Duck, Cotton</u> <u>Bleached</u> CCC-C-442b						W	F	W	F	W	F				
Type I	5.0	-	Plain lup/down	(1)	2	2	77	44	130	75		Freshrunk 2% 2%			35.00
Type II	7.0	-	(7)	(1)	1	2	88	28	110	60		2% 2%			35.00
Type III	8.2	-	Plain lup/down	(1)	2	2	58	48	135	100		2% 2%			35.00
Type IV	8.5	-	(7)	(1)	1	4	112	32	120	120		2% 2%			35.00
Type V	7.0	-	Plain lup/down	(1)	2	2	52	34	80	48		2% 2%			35.00

Cloth, Cotton, Duck;  
(Single and Plied  
Filling Yarns, Flat)

CCC-C-443b, Amd. 1

(a)															
Type I - Single Fill.	7.26	-	Oxford	(1)	1	1	74	27	90	55	-	-	-	-	40.00
	8.47	-	2 ends	(1)	1	1	74	27	100	65	-	-	-	-	40.00
	10.00	-	weaving	(1)	1	1	74	27	130	85	-	-	-	-	40.00
	10.89	-	as cons-	(1)	1	1	74	26	135	95	-	-	-	-	40.00
	12.10	-	Plain	(1)	1	1	72	26	160	105	-	-	-	-	40.00
	13.32	-		(1)	1	1	72	26	165	110	-	-	-	-	40.00
	14.53	-		(1)	1	1	72	25	170	120	-	-	-	-	40.00
	14.90	-		(1)	1	1	76	28	180	160	-	-	-	-	40.00
	17.55	-		(1)	1	1	86	27	270	245	4	-	-	-	40.00
	18.15	-		(1)	1	1	72	25	180	140	3	-	-	-	40.00

(Continued)

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, tearing strength, yarn size, etc.)	NOTES (Not Specification Requirements)
CCC-C-442b Type I Type II Type III Type IV Type V	(2) Desized, singed, bleached, and mercerized.	Color - chemically white - standard sample available (4). May be supplemented with fluorescent optical brightener. Colorfastness - standard sample available - (5660).		Intended Use - Types I, II and III - for use in white uniforms. Type IV - In dress uniform trousers of U.S. Military Academy cadets. Type V - as the base cloth for Smock, Man's, Dental, Operating; and Smock, Man's, Medical Assis- tant.
CCC-C-443b Type I (Continued)	(2) Unbleached.		(a) Two yarns woven as cons.	Intended Use - In the fabrication of tentage and related items.



**COTTON CLOTHS-WOVEN**

NOMENCLATURE	Weight Oz./Sq. Yd.		Weave	Width Inch	Yarn Ply	Yarns Per Inch		Breaking Strength Lb. Min.	Air Permea- bility	Shrink- age Max.	Seam Effic- lency	Dynamic Absorp- tion Max.	Hydro- static Pressure low range Min.	Water Permea- bility Max.	Point Value Max.
	Min	Max				W	F								
<u>Cloth, Cotton, Duck;</u> <u>(Single and Plied</u> <u>Filling Yarns, Flat)</u> CCC-C-443b, Amd. 1 (Cont'd)															
Type II - Double filling (plied)	7.26 -		Oxford,	(1)-1	1	2	86	30	100	60	-				40.00
	8.47 -		2 ends	(1)-1	1	2	86	30	115	85	-				40.00
	9.68 -		weaving	(1)-1	1	2	86	30	125	100	-				40.00
	10.89 -		as one -	(1)-1	1	3	84	30	140	110	-				40.00
	12.10 -		Plain	(1)-1	1	3	84	30	150	115	-				40.00
	13.32 -			(1)-1	1	4	84	29	165	135	-				40.00
	14.53 -			(1)-1	1	4	82	29	180	160	-				40.00
	18.15 -			(1)-1	1	5	82	25	195	190	-				40.00

<u>Cloth, Cotton, Jean</u> <u>(Bleached)</u> CCC-C-444b	4.7 -		2 twill	(1)			98	60	85	48	Preshrunk 1% 1%				35.00
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<u>Cloth, Muslin, Cotton</u> CCC-C-446d, Amd. 2															
Type I															
Class 1 - Unbleached	2.7 -		Plain	(1)	1	1	64	58	37	26	9%	9%			45.00
Class 2 - Bleached or dyed	2.4 -		"	(1)	1	1	66	52	34	20	6%	6%			dyed- 30.00
Class 3 - Bleached or dyed preshrunk (Continued)	2.5 -		"	(1)	1	1	68	5	36	22	1%	1%			white- 35.00

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness tearing strength, yarn size, etc.)	NOTES (Not Specification Requirements)
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CCC-C-443b (Cont'd) Type II				
CCC-C-444b	(2) Singed, desized, and bleached.			Intended Use - In the manufacture of clothing and equipage items.
CCC-C-446d Type I Class 1 Class 2 Class 3 (Continued)	(2) Classes 2 and 3 cloth shall be singed.	Color (1) - standard sample available (4-6). Colorfastness - standard sample available for dyed cloth - (5610-5600-5660- 5680-5651).		Intended Use - In clothing, flags and equipage items.

### COTTON CLOTHS-WOVEN

NOMENCLATURE	Weight Oz./Sq. Yd.		Weave	Width Inch	Yarn Ply	Yarns Per Inch Min.		Breaking Strength Lb. Min.		Air Permea- bility (5450)	Shrink- age Max. (5550)	Seam Effic- iency (5110)	Dynamic Absorp- tion Max. (5500)	Hydro- static Pressure low range Min. (5514)	Water Permea- bility Max. (5516)	Point Value Max.	
	Min	Max				W	F	W	F								W
Cloth, Muslin, Cotton CCC-C-446d, Amd. 2 (Cont'd)																	
Type II																	
Class 1 - Unbleached	3.1	-	Plain	(1)	1	1	68	70	42	34		9%	9%				45.00
Class 2 - Bleached or dyed	2.7	-	"	(1)	1	1	70	64	38	28		6%	6%				dyed- 30.00
Class 3 - Bleached or dyed preshrunk	2.8	-	"	(1)	1	1	72	68	40	30		1%	1%				white- 35.00
Type III																	
Class 1 - Unbleached	3.4	-	"	(1)	1	1	78	76	46	39		9%	9%				45.00
Class 2 - Bleached for dyed	2.9	-	"	(1)	1	1	80	70	45	32		6%	6%				dyed- 30.00
Class 3 - Bleached for dyed preshrunk	3.0	-	"	(1)	1	1	83	74	44	34		1%	1%				white- 35.00
Type IV																	
Class 1 - Unbleached	2.4	-	"	(1)	1	1	38	36	27	20		9%	9%				45.00
Type V																	
Class 1 - Unbleached	3.9	-	"	(1)	1	1	56	60	44	50		9%	9%				45.00
Type VI																	
Class 2 - Bleached or dyed	2.4	-	"	(1)	1	1	64	56	35	25		6%	6%				dyed- 30.00 white- 35.00
Type VII																	
Class 2 - Bleached or dyed	3.1	-	"	(1)	1	1	35	72	45	30		6%	6%				dyed- 30.00 white- 35.00

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, tearing strength, yarn size, etc.)	NOTES (Not Specification Requirements)
CCC-C-446d (Cont'd)				
Type II				
Class 1				
Class 2				
Class 3				
Type III				
Class 1				
Class 2				
Class 3				
Type IV				
Class 1				
Type V				
Class 1				
Type VI				
Class 2				
Type VII				
Class 2				

### COTTON CLOTHS-WOVEN

NOMENCLATURE	Weight Oz./Sq. Yd.		Weave	Width Inch	Yarn Ply		Yarns Per Inch Min.		Breaking Strength Lb. Min.		Air Permea- bility	Shrink- age Max.	Seam Effici- ency	Dynamic Absorp- tion Max.	Hydro- static Pressure low range Min.	Water Permea- bility Max.	Point Value Max.	
	Min	Max			W	F	W	F	W	F								W
Cloth, Cotton, Percale CCC-C-447b	3.0	-	Plain	(1)	1	1	85	72	45	30		1% 1%						30.00 dyed 35.00 white

Cloth, Cotton,  
Searsucker  
CCC-C-448b

Type I - Narrow Stripe	Type II - Medium stripe	Type III - Stripes pattern effect
Class 1 - 82x86 tex. 4.0 -	Class 1 - 112x80 tex. 4.0 - Class 2 - 80x80 tex. 4.0 -	Class 1 - 280x72 tex. 4.0 -
Plain (1) 1 1 82 86 24 45	" (1) 1 1 112 80 30 40 slack W (1) 1 1 80 80 30 40 weaving 2 ends as 1	Plain (1) 1 1 230 72 25 30 per repeat (2-5/8 in)
Freshrunk 4% 2%	4% 2% 4% 2%	4% 2%
<u>Slack Beam Take-up min.</u>		
40%		40%

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness tearing strength, yarn size, etc.)	NOTES  (Not Specification Requirements)
CCC-C-447b	(2) Singed, bleached, or dyed. May be calendered.	Color (1) - standard sample available (4-6). Colorfastness - standard sample available - (5660- 5610-5622-5651).		Intended Use - In the manufacture of clothing.
CCC-C-448b Type I Class 1 Type II Class 1 Class 2 Type III Class 1	(2) Singed, desized, and bleached. When bleached warp and filling yarns are used for the undyed yarns, yarn or piece bleaching is optional.	Color (1) - standard sample available (4-6). Colorfastness - standard sample available - (5660- 5610-5600-5680 or 5682- 5651). See specification for special instructions on stripe or pattern effects.	(a)Slack beam warp yarn for Type I, Class 1 cloth and tight beam warp yarn for Type II, Class 2 cloth shall be two-ply.	Intended Use - In clothing items.

### COTTON CLOTHS-WOVEN

NOMENCLATURE	Weight Oz./Sq. Yd.		Weave	Width Inch	Yarn Ply	Yarns Per Inch Min.		Breaking Strength Lb. Min.		Air Permea- bility	Shrink- age Max.	Seam Effici- ency	Dynamic Absorp- tion Max.	Hydro- static Pressure low range Min.	Water Permea- bility Max.	Point Value Max.
	Min	Max				W	F	W	F							

Cloth, and Cloths,  
Waffle, Cotton  
CCC-C-00450 (GSA-FSS)

Size 1 - 18x36 in.	6.5	-	Honeycomb	2	2	37	24	55	45							
Size 2 - 36x36 in.	6.5	-	weave	2	2	37	24	55	45							
Roll - 28 in. wide	6.5	-	(dotby)	2	2	37	24	55	45							
Roll - 36 in. wide	6.5	-		2	2	37	24	55	45							

Cloths, Polishing  
(For Electrical  
Contact Surfaces)  
DOD-C-450a

7.0	-		1	1	50½	2	38½	25	17							
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Cloth, Cotton,  
Fajama-Check  
CCC-C-00455 (GSA-FSS)

Type I - 88x88	3.5	-	Fancy Bas- ket Weave (7).	36	1	1	94	80	52	35							Freshrunk 1½ 1½
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NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thict, less tearing strength, yarn size, etc.)	NOTES  (Not Specification Requirements)
CCC-C-00450 Size 1 Size 2 Roll - 28 Roll - 36	Unshrunk and unbleached or bleached. Cloth shall be absorbent to water (4.4.1).			
DOD-C-450a	Soft finish; lightly napped on both sides. Cloth shall be finished by dipping in a silica-base compound until thoroughly impregnated.	Color - white (bleached) (5)		
CCC-C-00455 Type I	(2) Desized, bleached, tinted a bluish white, and calendered to produce a soft, smooth nainsook finish.			Intended Use - In the fabrication of undergarments and pajamas.

## COTTON CLOTHS-WOVEN

NOMENCLATURE	Weight Oz./Sq. Yd.		Weave	Width Inch	Yarn Ply	Yarns Per Inch Min.		Breaking Strength Lb. Min.		Air Permea- bility	Shrink- age Max.	Seam Effic- iency	Dynamic Absorp- tion Max.	Hydro- static Pressure low range Min.	Water Permea- bility Max.	Point Value Max.
	Min	Max				W	F	W	F							
Cloth, Flannel, Cotton CCC-C-458a																
Type I - Plain weave (soft filled sheet- ing) unbleached, napped one side											single					
Class 1	4.7	-	Plain	(1)	1	1	42	40	26	21	napped	Freshrunk 2% 2%				32.00
Type II - Plain weave (soft filled sheet- ing) unbleached, napped both sides											double					
Class 1	4.6	-	"	(1)	1	1	42	40	26	19	napped					32.00
Type III - Plain weave (cutting flannel) bleached or dyed, napped both sides																Bleached
Class 1	3.5	-	"	(1)	1	1	42	40	20	17						28.00
Class 2	4.0	-	"	(1)	1	1	42	40	23	19		Freshrunk (1)				25.00
Class 3	4.6	-	"	(1)	1	1	50	40	28	23		2% 2%				"
Type IV - Twill weave (canton flannel) unbleached, napped on the filling side																
Class 1	5.0	-	3' or 4 har-	(1)	1	1	62	38	45	20						32.00
Class 2	6.0	-	ness twill	(1)	1	1	62	38	60	25						32.00
Class 3	7.0	-	"	(1)	1	1	62	38	60	30						32.00
Class 4	8.0	-	"	(1)	1	1	62	38	65	40						32.00
Class 5	10.0	-	"	(1)	1	1	60	34	100	50						32.00
Class 6	12.0	-	"	(1)	1	1	60	34	100	70						32.00

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness tearing strength, yarn size, etc.)	NOTES (Not Specification Requirements)
CCC-C-458a	Type I - napped on one side. Type II - napped on both sides. Type III - napped on both sides. Type IV - napped on the filling side.	Color - Types I, II and IV - unbleached. Type III (1) - standard sample available (4-6). Colorfastness - standard sample available for dyed cloth - (5610-5651-5680).		Intended Use - In the manufacture of pajamas, gloves, the back of gloves, glove lining, padding for front interlining in coats and interlining in caps.
Type I				
Class 1				
Type II				
Class 1				
Type III	Type IV, Class 3 shall be singed on the unnapped side when speci- fied. Standard samples available for finishes.			
Class 1				
Class 2				
Class 3				
Type IV				
Class 1				
Class 2				
Class 3				
Class 4				
Class 5				
Class 6				

**COTTON CLOTHS-WOVEN**

NOMENCLATURE	Weight Oz./Sq. Yd.		Weave	Width Inch	Yarn Ply	Yarns Per Inch		Breaking Strength Lb. Min.	Air Permeability	Shrinkage Max.	Seam Efficiency	Dynamic Absorption Max.	Hydrostatic Pressure low range Min.	Water Permeability Max.	Point Value Max.
	Min	Max				W	F								
Cloth, Cotton, Flannel (Heavy, For Table Felts) CCC-C-460	12.5	-	Filling reversible weave (7)	(1)		66	42	60	30						

Cloth, Uniform Twill  
Cotton  
CCC-C-461a

Type	Weight Min	Weight Max	Weave	Width	Yarn Ply	Yarns W	Yarns F	Breaking Strength	Air Permeability	Shrinkage	Seam Efficiency	Dynamic Absorption	Hydrostatic Pressure	Water Permeability	Point Value
Type I	7.9	8.6	3/1 right twill	(1)	2	2	116	56	180	120	1%	1%	80%		dyed- (25.00)
Type II	7.9	8.6	"	(1)	2	1	116	56	180	110	1%	1%	80%		(35.00)
Type III	7.7	8.4	3/1 left twill	(1)	1	1	112	54	160	110	1%	1%	80%		"
Type IV	7.2	7.9	"	(1)	1	1	100	54	160	110	1%	1%	80%		"
Type V	7.2	7.9	"	(1)	1	1	100	54	150	100	1%	1%	80%		"
Type VI	8.2	8.6	"	(1)	1	1	112	56	170	80	1%	1%	80%		"

Cloth, Squeeze,  
Dental

Style	Weight	Notes
DDD-C-00475(DSA-DM)		(fin. cloth, jaws at initial distance of 1 inch)
Style 1 - Round	2.75	74 74 36 36
Style 2 - Square	2.75	102 52 55 32

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, tearing strength, yarn size, etc.)	NOTES (Not Specification Requirements)
CCC-C-460	Unbleached. Full nap on both sides.			
CCC-C-461a Type I Type II Type III Type IV Type V Type VI	(2) Singed, desized, and mercerized. White cloth shall be singed, desized, mercerized and bleached.	Color (1) - standard sample available (4-6). When white is specified, cloth shall be bleached and tinted to match std. sample. Colorfastness - standard sample available for dyed cloth (5660-5610-5600-5680-5651).		Intended Use - In clothing and equipage items.
DDD-C-00475 Style 1 Style 2				

### COTTON CLOTHS-WOVEN

NOMENCLATURE	Weight Oz./Sq. Yd.		Weave	Width Inch	Yarn Ply	Yarns Per Inch Min.		Breaking Strength Lb. Min.		Air Permea- bility	Shrink- age Max.		Seam Effici- ency	Dynamic Absorp- tion Max.	Hydro- static Pressure low range Min.	Water Permea- bility Max.	Point Value Max.	
	Min	Max				W	F	W	F		W	F						W
<u>Cloth, Wind Resistant</u> <u>Oxford, Quarpel treated</u> MIL-C-484E																		
Type I	6.5	-	Oxford	(1)	1	1	130	54	135	50								28.00
Type V	9.0	-	(2 ends weaving as 1)	(1)	2	1	128	48	200	95								28.00
Type VI	5.5	-		(1)	2	1	196	86	180	80								28.00
<u>Towels, Cotton,</u> <u>For Glassware</u> DDD-T-501c																		
Class A - Plain weave	5.1	-	Plain				54	38	50	50								
Class B - Plain weave with 5-harness 4/1 woven stripe	5.5	-	Plain with warp stripe produced with a 5- harness, 4/1 weave				36	29	50	40								
<u>Cloth, Poplin, Cotton</u> MIL-C-507E																		
	4.5	5.0	Plain	(1)	2	1	106	48	110	50								dyed- 28.00 32.00 white

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, tearing strength, yarn size, etc.)	NOTES (Not Specification Requirements)
MIL-C-484E Type I Type V Type VI	(2) The cloth shall be given an approved Quarpel type, water-repellent treatment. Initial spray rating shall be 90, 90, 80. (5526). Cloth shall be singed, scoured, and mercerized. pH: 6.5-8.5.	Color (1) - standard sample available (4-6). Colorfastness - standard sample available (5610-5600-5651-5660).	Stiffness - Type VI - max. flex-stiffness shall be 0.00050 in/lb for the warp and 0.00075 in/lb for the filling (5206).	Intended Use - In clothing where a high degree of wind resistance and water resistance is of prime importance.
DDD-T-501c Class A Class B		Color - towels shall be bleached white except for the stripes in Class A, which shall be either Turkey red or blue. Colorfastness - "good" (5600-5610).	(1)	Intended Use - Primarily for drying glassware.
MIL-C-507E	(2) Singed, desized, and mercerized, with a clear lustrous finish.	Color (1) - standard sample available (4-6). When white is specified cloth shall be bleached and may be supplemented with fluorescent optical brightener. Colorfastness - standard sample available (5660-5610-5600-5651).		Intended Use - In the manufacture of clothing items.

### COTTON CLOTHS-WOVEN

NOMENCLATURE	Weight Oz./Sq. Yd.		Weave	Width Inch	Yarn Ply	Yarns Per Inch Min.		Breaking Strength Lb. Min.	Air Permea- bility	Shrink- age Max.	Seam Effic- iency	Dynamic Absorp- tion Max.	Hydro- static Pressure low range Min.	Water Permea- bility Max.	Point Value Max.
	Min	Max				W	F								
<u>Towel or Dishcloth</u> (Crash, Cotton, and Cotton and Linen-Mixed); <u>Cloth, Crash, Cotton</u> DDD-T-511c (See also under Mixed Cloths)															
Type I - Towel or dishcloth Class 1 - Cotton warp & linen filling (unbleached)															
Class 2 - All cotton (bleached)															
Size 1 - 17x30 in. 5.8 - Plain 38 30 50 40															
2 - 17x36 in. 5.8 - " 38 30 50 40															
3 - 17x14½ in. 5.8 - " 38 30 50 40															
Type II - Cloth, crash, cotton (bleached) 5.8 - " 38 30 50 40															
40.00															

Towel, Hand and Cloth,  
Cotton, Huck  
DDD-T-531d

Type I - Hand towel	2.55	-	Huck(7)	(3)	(a)	17	1 or 2	52	26	70	60
Class 1 - With woven design and stripe	(1b/doz for 17x36 in.)								(as sin. or 52 in pairs)		
Pattern 1 - U.S. Government Color a - White											
Pattern 2 - Medical Color a - Green Color b - Gray											
(Continued)											

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, tearing strength, yarn size, etc.)	NOTES (Not Specification Requirements)
DDD-T-511c Type I Class 1 Class 2 Size 1 Size 2 Size 3 Type II	(2) Cloth shall be scoured and bleached.	Color - cloth shall be bleached. When specified, towels shall have woven, colored stripes 3/16 to 5/16 in. wide, located 7/16 to 9/16 in. from each selvage edge.	Rate of absorbency: height of rise of colored water shall be a min. of 6 cm. in 5 min. in both W and F.	
DDD-T-531d Type I Class 1 Pattern 1 Color a Pattern 2 Color a Color b (Continued)	(2)	Color - color of towels and toweling shall be bleached or dyed as specified. (6). Std. samples available (4). Colorfastness - for dyed towels and toweling and for colored stripe in bleached towels - standard sample available (5600-5610).	(5)(14).	



### COTTON CLOTHS-WOVEN

NOMENCLATURE	Weight Oz./Sq. Yd.		Weave	Width Inch	Yarn Ply	Yarns Per Inch Min.		Breaking Strength Lb. Min.		Air Permea- bility		Shrink- age Max.		Seam Effici- ency		Dynamic Absorp- tion Max.		Hydro- static Pressure low range Min.		Water Permea- bility Max.		Point Value Max.	
	Min	Max				W	F	W	F	W	F	W	F	W	F	W	F	W	F	W	F		W
<u>Towel, Hand and Cloth,</u> <u>Cotton, Huck</u> DDD-T-531d (Cont'd)																							
Class 2 - Without woven design & strips Color a - White Color b - Green	2.55	-	Huck(7)	(3) 17	(a) 1 or 2	52	26	70	60														
(lb/doz for 17x36 in.) (as sin. or 52 in pairs)																							
Type II - Cloth, cotton, huck	3.35	-	Huck(7)	(3) 17	1 or 2	52	26	70	60														
oz/lin yd (as sin. or 52 in pairs)																							
<u>Towels, Machinery</u> <u>Wiping (Laundered)</u> DDD-T-539																							
Sizes: 18x18 in.	6.0x0.2					28	18																
18x30 in.	6.0x0.2					28	18																
<u>Towel, Machinery</u> <u>Wiping</u> DDD-T-541c																							
Size 1 - 16½x18 in.	5.5	-	Plain		1	1	28	18	40	75													
Size 2 - 18x30 in.	5.5	-	"		1	1	28	18	40	75													

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness tearing strength, yarn size, etc.)	NOTES (Not Specification Requirements)
DDD-T-531d (Cont'd)				
Class 2 Color a Color b Type II				
DDD-T-539	(2)			
Sizes: 18x18 in. 18x30 in.	Towels shall be laundered & dried by the best commercial processes & shall be free of paint, oil, grease, metal, plastic or other foreign objects, & shall have no objectionable odor.		Towels shall be free of torn, frayed, or tattered edges, and not less than 97% of the area of each towel shall be free from holes. Absorbency: ave. time of saturation shall be 10 sec. max. (4.4.2). Capillarity: ave. time of water to rise 1 in. shall be 40 sec. max.; to rise 2 in. shall be 90 sec. max. (4.4.3).	Intended Use - This specification is intended to define quality of towels received from commercial laundry facilities.
DDD-T-541c	(2)		(5)	
Size 1 Size 2	Towels may be bleached or unbleached as specified.			Intended Use - Primarily for use in cleaning machinery and mechanical components.

### COTTON CLOTHS-WOVEN

NOMENCLATURE	Weight Oz./Sq. Yd.		Weave	Width Inch	Yarn Ply	Yarns Per Inch Min.		Breaking Strength Lb. Min.	Air Permea- bility	Shrink- age Max.	Seam Effic- iency	Dynamic Absorp- tion Max.	Hydro- static Pressure low range Min.	Water Permea- bility Max.	Point Value Max.
	Min	Max				(5050)	(5100)								
<u>Towel, Bath, Cotton Terry</u> DDD-T-00551r(GL)						W	F	W	F	W	F				
Type I - Sin. loop Class 1 - 20x40 in.	(lb/doz)		(7) Terry		Ground Pile	1	1	72	32	75	70				
Type II - Dou. loop Class 1 - 22x44 in.	8.5	-	"		2	1	1	84	42	45	40				
Class 2 - 16x27 in.	3.0	-	"		2	1	1	84	42	45	40				
Class 3 - 16x27 in.	3.65	-	"		2	1	1	84	42	45	40				
Class 4 - 20x40 in.	5.5	-	"		2	1	1	71	32	45	40				
Style A - Selvage edge both sides															
Style B - One sel. edge, one hemmed															

Cloth, Wind Resistant Sateen, Cotton  
MIL-C-557E

Type	Weight Oz./Sq. Yd.	Weave	Width Inch	Yarn Ply	Yarns Per Inch		Breaking Strength Lb.		Air Permea- bility	Shrink- age Max.	Seam Effic- iency	Initial		Point Value Max.		
					(7)	(7)	112	68				150	125		(13)	(13)
Type I	9.0	-	5 harness sateen(7)	(1)	2	2	112	68	150	125	1%	1%	80%	25	35	25.00
Type II	7.0	-	"	(1)	2	1	120	88	130	105	1%	1%	85%	25	35	25.00

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, tearing strength, yarn size, etc.)	NOTES (Not Specification Requirements)
DDD-T-00551r(GL) Type I Class 1 Type II Class 1 Class 2 Class 3 Class 4 Style A Style B	(2)	Color - towels shall be bleached white or dyed as specified. Standard sample available (4-6). Colorfastness - standard sample available (5600-5610).	When design (non-military) is required, it shall be as specified.	
MIL-C-557E Type I Type II	(2) Singed, desized, & mercerized, & dyed, & given a water-repellent treatment. Initial spray rating 90, 90, 80 (5526). Type I - finished with filling effect side as face. Type II - finished with warp effect side as face.	Color (1) - standard sample available (4-6). Type I - matched with filling effect side used as face. Type II - matched with warp effect side used as face. Colorfastness - standard sample available (5610-5600-5680-5651-5660).	Type I - filling effect side shall be stamped in ink, to identify the face of the cloth.	Intended Use - In clothing where a high degree of wind and water resistance is of prime importance.

### COTTON CLOTHS-WOVEN

NOMENCLATURE	Weight Oz./Sq. Yd.		Weave	Width Inch	Yarn Ply	Yarns Per Inch Min.		Breaking Strength Lb. Min.	Air Permea- bility	Shrink- age Max.	Seam Effic- iency	Dynamic Absorp- tion Max.	Hydro- static Pressure low range Min.	Water Permea- bility Max.	Point Value Max.
	Min	Max				W	F								
<u>Toweling; Cotton, Glass</u>															
CCC-T-561	5.3	-	Plain	16		54	38	50	50						
	+ any			±½		+ any									
	- 3%					- 2									
<u>Prints; Cotton</u>															
CCC-P-651															
Type I	2.7	-	Plain	35½		72	64	52	32						Preshrunk 1% 1%
Type II	2.4	-	"	35½		66	54	38	17						1% 1%
<u>Cloth, Brattice, Cotton, Fire-Resistant</u>															
MIL-C-788D(SHIP6)	12	13		(1)±½		22-26	19-21	120	80						

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness tearing strength, yarn size, etc.)	NOTES (Not Specification Requirements)
CCC-T-561	Cloth shall be fully bleached and properly neutralized.	Color - red or blue. Colorfastness - "fast" to washing.	Cloth shall have a checked pattern formed by 2 colored warp ends & 2 colored filling picks woven in at intervals at ½ to 1 in.; or a line pattern with 2 colored lines running parallel to the warp about an inch apart formed by 2 colored warp ends woven in.	
CCC-P-651 Type I Type II	(2) Singed. May be lightly calendered or uncalendered.	Colors & patterns (1). Colorfastness - (5660-5610).		Intended Use - Type I - In women's and children's dresses. Type II - for comforter coverings.
MIL-C-788D	Fire resistant - flame time, 3 sec. max. Average length of char - 3 in. Treatment must be compatible with adhesive Type I of MIL-A-3316 (5903T). Flexibility (3.2).		Drying time and adhesive strength (3.5.1).	Intended Use - For repairing and covering the surface of fibrous glass insulation board.

**COTTON CLOTHS-WOVEN**

NOMENCLATURE	Weight Oz./Sq. Yd.		Weave	Width Inch	Yarn Ply	Yarns Per Inch Min.		Breaking Strength Lb. Min.		Air Permea- bility (5450)	Shrink- age Max. (5550)	Seam Effic- lency (5110)	Dynamic Absorp- tion Max. (5500)	Hydro- static Pressure Low range Min. (5514)	Water Permea- bility Max. (5516)	Point Value Max.
	Min	Max				W	F	W	F							

Swiss, Cotton, Cotton  
CCC-8-891  
1.4 - Woven dots 36 -1  
(clipped)  
on plain  
background

Cloth, Cotton, Terry  
(For Filtering)  
MIL-C-1164B  
9.0 - Terry(7) (11')  
35-37 1 1 62 32

Cloth, Cotton, Oxford  
And Poplin (For  
Pajamas)  
MIL-C-2107C

Type	Weight	Weave	Width	Yarn Ply	Yarns Per Inch	Breaking Strength	Air Permeability	Shrinkage	Seam Efficlency	Dynamic Absorption	Hydrostatic Pressure	Water Permeability	Point Value
Type I - Oxford	5.0	Oxford	(1)	1 1	128 42	95 65	Preshrunk 2% 2%	80%					30.00
Type II - Oxford	4.5	"	(1)	1 1	128 60	95 45	2% 2%	80%					30.00
Type III - Poplin	5.5	Poplin	(1)	1 1	114 52	140 45	2% 2%	80%					30.00

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, tearing strength, yarn size, etc.)	NOTES  (Not Specification Requirements)
CCC-8-891		Color (1). Colorfastness - (5610).		
MIL-C-1164B	(2) Bleached or unbleached.		(5)	Intended Use - For filtering feed water systems on ships driven by reciprocating engines.
MIL-C-2107C Type I Type II Type III	(2) Singed, scoured, mercerized, and dyed, with a clear lustrous finish.	Color - light blue, shade No. 14 - standard sample available (4 1). Colorfastness - standard sample available (5610- 5600-5680).		Intended Use - In the fabrication of pajamas for hospital and orthopedic use.

### COTTON CLOTHS-WOVEN

NOMENCLATURE	Weight Oz./Sq. Yd.		Weave	Width Inch	Yarn Ply	Yarns Per Inch Min.		Breaking Strength Lb. Min.	Air Permea- bility	Shrink- age Max.	Seam Effici- ency	Dynamic Absorp- tion Max.	Hydro- static Pressure low range Min.	Water Permea- bility Max.	Point Value Max.
	Min	Max				(5050)	(5100)								
<u>Cloth, Duck, Cotton:</u> <u>Plied and Single Yarns</u> <u>(High Slay)</u> MIL-C-2384C						W	F	W	F	W	F				
Type I - Plied yarn									(3)						
Class 1	10.75	-	Oxford	(1)	2	1	70	40	195	135					40.00
Class 2	14.75	-	weave (plain weave,	(1)	2	1	72	28	245	180					40.00
Type II - Single yarn															
Class 1	8.50	-	2 ends	(1)	1	1	110	44	180	90					40.00
Class 2	9.75	-	weaving	(1)	1	1	86	50	150	130					40.00
Class 3	11.25	-	as 1)	(1)	1	1	100	30	200	135					40.00

<u>Cloth, Damask, Cotton</u> MIL-C-2758C	5.5	-	Sin. damask 5-leaf twill (14)	(1)	1	1	78	76	74	74					6%	6%
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<u>Cloth, Cotton, Oxford</u> MIL-C-4122A (USAF) Amd. 1																
Type I - White	4.25	4.50	Plain,	36	(8)		88	42	40	70						Preshrunk 1% 1%
Type II - Shade Blue Number 501	4.25	4.50	1-up 1-down (2 warp ends	±1/2	std. sample avail- able		88	42	40	70						1% 1%
Type III - Shade Blue Number 126	3.80	4.10	weaving as 1)				88	42	40	70						1% 1%

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness tearing strength, yarn size, etc.)	NOTES  (Not Specification Requirements)
MIL-C-2384C Type I Class 1 Class 2 Type II Class 1 Class 2 Class 3	(2)			Intended Use - In the fabri- cation of tentage and equipage items.
MIL-C-2758c	(2) Bleached and mercerized, with a clear lustrous finish.	Color - White, Navy Shade 3017. - standard sample available.	(5)	Intended Use - In making table cloths.
MIL-C-4122A Type I Type II Type III	(2) Singed, desized, boiled off, scoured, and mercerized, with a clear lustrous finish.	Color - Type I - white (bleached). Type II - Shade Blue, #501, vat dyed in the piece. Type III - Shade Blue #125. Warp of vat dyed blue yarns; fill of bleached white yarns. (-). Colorfastness - "Good" (5660-5610-5600-5651- 5680-5620-5622).	(5)	Intended Use - In the fabri- cation of USAF shirts and WAF sirtwaists.

### COTTON CLOTHS-WOVEN

NOMENCLATURE	Weight Oz./Sq. Yd.		Weave	Width Inch	Yarn Ply	Yarns Per Inch Min.		Breaking Strength Lb. Min.		Air Permea- bility	Shrink- age Max.	Seam Effic- iency	Dynamic Absorp- tion Max.	Hydro- static Pressure low range Min.	Water Permea- bility Max.	Point Value Max.
	Min	Max				W	F	W	F							
<u>Cloth, Muslin, Cotton</u> <u>(Parachute Canopy)</u>																
MIL-C-4279B																
Type II	3.7	-	Plain	(1)	1	1	54	56	48	42	170-	-230	90%	Tearing Strength lb. Min.		20.00
Type III (Mildew resistant treated)	3.8	-	"	(1)	1	1	56	58	50	50	130-	-190	90%	3.0	2.5	20.00
<u>Cloth, Cotton</u> <u>Airplane</u>																
MIL-C-5646D(ASG)																
	4.0	4.5	Plain, 1 up 1 down	(1)	2	2	80-84	80-84	80	80						
<u>Cloth, Cotton,</u> <u>Inflatable Equipment</u>																
MIL-C-6820D																
Class 1 - Plain	-	2.2	Plain, 1 up 1 down	40	(2)		120	120	40	40						
Class 2 - Twill	-	8.0	4 left 1 twill				90	90	145	140						

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness tearing strength, yarn size, etc.)	NOTES (Not Specification Requirements)
MIL-C-4279B Type II Type III	(2) Type III - treated with a dispersed polyethylene softener, and with sali- cylanilide for mildew resistance. Application of softener and mildew inhibitor in combination with dyeing.	Color (1) - standard sample available (4-6). Dyed without prior pre- paration except optional light scouring. No bleaching permitted. Dyeing by padding with direct dyes at or near boil. Colorfastness - standard sample available (5651).	(5) Tension in processing greater than necessary for control purposes shall be avoided.	Intended Use - In cargo para- chutes.
MIL-C-5646D	(2) Washed, framed, and medium-cold calendered. Smooth and wrinkle free. Avoid excess roll pressure on cloth. pH: 6.0-8.0.		Bursting Strength, Mullen Points (min.) - 170 (5122). Cloth shall be compatible with air- craft dope. Dope shall dry in 45 min. when applied to finished cloth.	Intended Use - In covering control surfaces, fuselages, and wings of airplanes.
MIL-C-6820D Class 1 Class 2	Smooth surface. Finished cloth shall contain no more than 1.0% methyl ethyl ketone extractable matter.			Intended Use - In the manufacture of laminated cloths or coated cloths which provide gas & air impermeable properties suitable for components of life rafts, flotation bags, and other inflatable items.

### COTTON CLOTHS-WOVEN

NOMENCLATURE	Weight Gz./Sq. Yd.	Weave	Width Inch	Yarn Ply	Yarns Per Inch Min.		Breaking Strength Lb. Min.		Air Permea- bility (5450)	Shrink- age Max. (5550)	Seam Effici- ency (5110)	Dynamic Absorp- tion Max. (5500)	Hydro- static Pressure Low range Min. (5514)	Water Permea- bility Max. (5516)	Point Value Max.
					W	F	W	F							
<u>Cloth, Cotton, Shooting, Plain Weave, Firm, Porous</u> MIL-C-8104(ASG)															
	3.5±0.5	Plain, 1 up 1 down	(1)	(S)	62	60	60	60	175- 260						
<u>Cloth, Cotton, Basket Weave and Plain Weave</u> MIL-C-9231(HEAD)															
Type I - Plain Weave	(a) 4.5	Plain, 1 up 1 down	(1)	2	2	86	70	72	72						
Type II - 4x4 Basket Weave	4.5	4x4 Basket (4 warp ends weav- ing as 1; 4 picks in each shed)	(1)	2	2	86	80	72	72						

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness tearing strength, yarn size, etc.)	NOTES  (Not Specification Requirements)
MIL-C-8104A	(2)(15) Cloth shall be given a chemical flameproofing treatment which shall not affect the air permeability of the cloth.	Color - (1-4) - Color shall be obtained by the use of vat dyes. Colorfastness - "good" (5660-5651-5610-5630).	Finished cloth shall be noncorrosive (4.4.2.2). Elongation - 7.5% min. Tearing strength - 4.5 lb. min. (5134). Flame resistance - Time of flaming 0 sec. Time of glow - 0 sec. Length of char - 2.3 in. max. (5902). After oven aging (4.4.2.3.2.2) finished cloth shall not lose more than 10% of initial breaking strength.	Intended Use - On aircraft insulation & soundproofing blankets. Cloth will be used only in areas in aircraft where temperatures will not be high enough to cause cloth to lose its strength properties.
MIL-C-9231 Type I Type II	(2)(15) Washed, framed, and medium-cold calendered, with a smooth even surface. Excessive roll pressure shall not be applied during calendering. Type I shall be mercerized, smooth and wrinkle free. pH: 5.0-9.0 (2811).		(a) Except for cloth having a nominal length of 90 in., weight shall not exceed 4.75 oz/sqyd.	Intended Use - In coated fabrics. It is not intended for use as a covering for airfoils.

### COTTON CLOTHS-WOVEN

NOMENCLATURE	Weight Oz./Sq. Yd.		Weave	Width inch	Yarn Ply	Yarns Per Inch Min.		Breaking Strength Lb. Min.		Air Permeability	Shrinkage Max.	Seam Efficiency	Dynamic Absorption Max.	Hydrostatic Pressure low range Min.	Water Permeability Max.	Point Value Max.	
	Min	Max				W	F	W	F								W
<u>Cloth, Cotton, Netting</u> MIL-C-9278(USAF)	5	1	Conventional Leno	42 ±1		8	8	6	6	85	85						

Cloth, Cotton, Airplane  
Curtain

MIL-C-9336(USAF) Amd. 1	6.0	6.5	Plain (1/1)	(1)	2	2	56	56	(5104) 95	85							
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(on unaged & oven aged samples.)

Cloth, Sateen, Cotton  
MIL-C-10296F

Class 1 - Dyed	-	8.2	5 harness sateen (7)	(1)	1	1	85	48	140	118								30.00
Class 2 - White	-	8.2	Filling effect side shall be face side.	(1)	1	1	85	48	115	100								35.00

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, tearing strength, yarn size, etc.)	NOTES (Not Specification Requirements)
MIL-C-9278	(15) Sized for a stiff finish. Treated for mildew resistance.	Color - to match shade No. 3412 of Spec. TT-C-595. (6-15).	Cloth shall retain 85% of initial breaking strength after mildew resistance treating.	Intended Use - In the manufacture of aircraft wing and stabilizer protective covers.
MIL-C-9336	(2)(15) Calendered; smooth and free from wrinkles. Mercerized, either yarn or piece mercerization is acceptable. Treated for flame resistance. pH: 4.0-10.0 (after oven aging) (2811).	Color - to match shade No. 3406 of Spec. TT-C-595. Vat dyed. Uniform color. Either yarn or piece dyeing is acceptable. Colorfastness - "good" (5610-5660).	Cloth shall lose no more than 15% of initial breaking strength after oven aging. Flame resistance: length of flame - 0 sec., length of char - 3.5 in. max.	Intended Use - In the manufacture or replacement of aircraft curtains.
MIL-C-10296F Class 1 Class 2	(2) Class 1 cloth shall be singed, desized, and mercerized. Class 2 cloth shall be bleached.	Color - Class 1 (1). Standard sample available (4-6). Class 2: White to match std. sample (4). Cloth shall be fully bleached & may be supplemented with fluorescent optical brighteners. Cloth may not discolor to a greater degree than std. sample. Colorfastness - standard sample available for Class 1 (5660-5610-5600-5680-5651).	Filling effect side shall be identified by stamping that side with the word "Face" at each end of the piece.	Intended Use - In clothing and equipment items.



### COTTON CLOTHS-WOVEN

NOMENCLATURE	Weight Oz./Sq. Yd.		Weave	Width Inch	Yarn Ply	Yarns Per Inch Min.		Breaking Strength Lb. Min.		Air Permea- bility	Shrink- age Max.		Seam Effici- ency	Dynamic Absorp- tion Max.	Hydro- static Pressure low range Min.	Water Permea- bility Max.	Point Value Max.
	Min	Max				W	F	W	F		W	F					
<u>Cloth, Oxford, Cotton</u> <u>(Permeable)</u> MIL-C-10859E																	
Type I																	
Class 1 - Plain fin.	5.2	-	Oxford	(1)	1 1	124	42	75	60	20	1%	1%	90%				40.00
Class 2 - Flame resistant treated	5.0	6.8	(Plain, 2 ends weav- ing as 1)	(1)	1 1	122	40	75	60	20	-	-	80%				45.00
Type II																	
Class 1 - Plain fin.	6.0	-	"	(1)	1 1	115	44	100	65	20	1%	1%	90%				40.00
<u>Cloth, Cotton, Denim</u> MIL-C-11854E	5.8	-	<sup>(11)</sup> 1 right 2 twill	36 min	1 1	65	42	90	38								

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness tearing strength, yarn size, etc.)	NOTES  (Not Specification Requirements)
MIL-C-10859E Type I Class 1 Class 2 Type II Class 1	(2) Types I & II, class 1 - singed, desized & mercerized. Type I, class 2 - desized. Type I, class 2 - given an approved cellu- lose reactant durable flame resis- tant treatment. Average flaming time - 2.0 sec. max. Average length of char - 5.0 max., before and after 3 cycles of laundering (5903-5556). Flex stiffness of finished cloth cloth shall be 0.0008 in. lb. max. initially, and 0.0035 after temp- eratures of -25°F ± 2°F for 1 hr. (5206). pH: 5.5 (of finished cloth min. (2811).	Color - Types I & II, Class 1 (1) - standard sample available except for white or natural (4-6). Type I, class 2 - undyed unbleached, natural color. Colorfastness - Types I and II - standard sample available (5660-5610- 5600-5682-5651). Type I Class 2 - standard sample available (5651).	(5) Type I, class 2 shall have a tearing strength of 4.5 in the warp and 4.0 in the filling (5132).	Intended Use - Types I & II Class 1 - In the manufacture of clothing and mittens. Type I Class 2 - In the manufacture of tent liners.
MIL-C-11854E	(2) pH: 5.0-8.5 (2811).	Color (1) - standard sample available (4-6). Colored warp of vat dyed yarn; white fill. Colorfastness - standard sample available (5660- 5610-5680-5651).		Intended Use - In the fabrica- tion of uniforms for female personnel.

### COTTON CLOTHS-WOVEN

NOMENCLATURE	Weight Oz./Sq. Yd.		Weave	Width Inch	Yarn Ply	Yarns Per Inch Min.		Breaking Strength Lb. Min.		Air Permea- bility	Shrink- age Max.	Seam Effici- ency	Dynamic Absorp- tion Max.	Hydro- static Pressure low range Min. (5514)	Water Permea- bility Max. (5516)	Point Value Max.
	Min	Max				W	F	W	F							
Cloth, Wind-Resistant Sateen, Cotton; Fire and Water Resistant MIL-C-12095D	8.5	9.5	5 harness W sateen (7)	(12) 35 min.	3	3	104	88	170	150	2.0	60%	25	40 (45 min. average)		30.00

Cloth, Cotton, Balloon  
MIL-C-12318A(CE)

NOMENCLATURE	Weight Oz./Sq. Yd.	Weave	Width Inch	Yarn Ply	Yarns Per Inch Min.		Breaking Strength Lb. Min.		Air Permea- bility	Shrink- age Max.	Seam Effici- ency	Dynamic Absorp- tion Max.	Hydro- static Pressure low range Min. (5514)	Water Permea- bility Max. (5516)	Point Value Max.	
					W	F	W	F								W
Type I - BB	2.90	Plain	40.5- 42.5	1	1	100	100	58	58							
Type II - HH	2.05	1 down	41.5- 42.5	1	1	120	120	40	40							
Type III - KK	1.40	"	53.5- 54.5	1	1	120	120	24	24							
Type IV - MM	4.00	"	41.5- 42.5	2	2	80	80	80	80							
Type V - RR	5.65	Basket, 5 up 5 down	41.5- 42.5	3	3	94	94	140	140							
Type VI - SS	1.70	Plain 1 up 1 down	39.5- 40.5	1	1	120	120	32	30							

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness tearing strength, yarn size, etc.)	NOTES (Not Specification Requirements)
MIL-C-12095D	(2) Singed and mercerized. Water repellent treated. Spray rating (3 tests) 90, 90, 80 min. (5526). Approved durable flame-resistant treatment. Average time of flaming - 2.0 sec. max. Average length of char - 5.0 in. max. initially and after 3 laundering cycles (5903-5556). pH: 5.5 min. (2811).	Color (1) - standard sample available (4-6). Colorfastness - standard sample available (5651-5671).	Tearing strength - 4.0 min. in the warp; 3.8 min. in the filling. (5132).	Intended Use - In the fabrication of tentage.
MIL-C-12318A Type I Type II Type III Type IV Type V Type VI	(2) Clean, singed, desized and calendered, with a smooth even surface. Excess pressure during calendering shall be avoided. Type RR shall be made from bleached & mercerized yarns. pH: 5.0-9.0 (2810).	Color - Type RR shall be bleached white. All other types shall be undyed & unbleached.	(5)	Intended Use - For impregnation with either synthetic or natural rubber.

### COTTON CLOTHS-WOVEN

NOMENCLATURE	Weight Oz./Sq. Yd.		Weave	Width Inch	Yarn Ply		Yarns Per Inch Min.		Breaking Strength Lb. Min.	Air Permea- bility	Shrink- age Max.	Seam Effici- ency	Dynamic Absorp- tion Max.	Hydro- static Pressure low range Min. (5514)	Water Permea- bility Max. (5516)	Point Value Max.
	Min	Max			W	F	W	F								
<b>Cloths, Cable Wiping</b>																
<u>MIL-C-13194 (SigC)</u>																
Cloth MC-74, 3x3 in. (Cotton ticking)	8.5	-					80	70	90	70						
Cloth MC-75, 5x5 in. (Cotton ticking)	8.5	-					80	70	90	70						
Cloth MC-76, 6x6 in. (Cotton ticking)	8.5	-					80	70	90	70						
Cloth MC-79, 3x3 in. (Moleskin)	18.0	-							100	150						
Cloth MC-80, 5x5 in. (Moleskin)	18.0	-														
Cloth MC-81, 6x6 in. (Moleskin)	18.0	-														
<b>Cloth, Cotton, Sheeting</b>																
<u>(For Bandoleers)</u>																
<u>MIL-C-13453A (ORD)</u>	4.6	5.0	Plain	(11) 42 min.	1	1	68	66	70	70						
<b>Cloth, Wigan, Cotton</b>																
<u>MIL-C-16375E, Amd. 1</u>																
Type I	2.5	-	Plain	(1)	1	1	40	34	35	25						40.00
Type II	3.6	-	"	(1)	1	1	48	40	52	28						40.00

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness tearing strength, yarn size, etc.)	NOTES (Not Specification Requirements)
MIL-C-13194 Cloth MC-74 Cloth MC-75 Cloth MC-76 Cloth MC-79 Cloth MC-80 Cloth MC-81	Wiping surface shall be given a permanent smooth finish by an application of tallow dressing and soapstone dressing. Each dressing shall be applied uniformly and worked into the grain by means of a rotary polisher.		(5)	Intended Use - Wiping cloths are to be used in wiping lead joints on cable splices.
MIL-C-13453A	(2) pH: 6.9-7.3 (2611).		Color - Olive Drab No. 7 - standard sample available. (4-6). Color to be obtained by vat dyeing. Chromium salts shall not be used for oxidation of the vat dye-stuffs. Colorfastness - standard sample available - (5610-5600-5651-5650).	Intended Use - In making bandoleers for small arms ammunition.
MIL-C-16375E Type I Type II	Firm, plain calender finish. Type I shall have a bending moment (stiffness) of 0.005 in. lb. max. in the direction of the warp (5202)	Color - Natural.		Intended Use - As interlining for clothing.

### COTTON CLOTHS-WOVEN

NOMENCLATURE	Weight Oz./Sq. Yd.		Weave	Width Inch	Yarn Ply	Yarns Per Inch Min.		Breaking Strength Lb. Min.	Air Permea- bility	Shrink- age Max.	Seam Effic- iency	Dynamic Absorp- tion Max.	Hydro- static Pressure low range Min.	Water Permea- bility Max.	Point Value Max.
	Min	Max				W	F								

Cloth, Cotton, Twill,  
Fire Retardant Treated  
MIL-C-18387D (WEP)

	4.2±0.2	3	steep	(1)	2	2	105	100	100	70	25-60	2%	2%	80%
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untreated  
(+28% after  
treatment).

Cloth, Impregnated;  
Cotton, Colloid  
Treated

MIL-C-18543A

12.5	Cotton	(3)	50	68	34	175	150
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untreated flannel  
37.0 dou. line  
treated of filler  
thread

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, tearing strength, yarn size, etc.)	NOTES (Not Specification Requirements)
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MIL-C-18387D

Fire-retardant treated. After 15 launderings, average flame time - 2.0 sec. max.; glow time - 2.0 sec. max.; average length of char - 6.5 in. max. Compounds used for finish shall not deteriorate the cloth during storage or use, or cause burning itching or other harmful effects on the skin. Hand shall be firm, but not stiff or boardy. Stiffness - 0.010 lb. max. (5202). pH: 5.5-9.0 (2811).

Color - (1-6).  
Colorfastness - "good"  
(5660-5632-5682-5610-  
5651).

Tearing strength -  
initial - 6.0 lb. min.  
after 15 launderings -  
2.6 lb. min. (5134).  
Resistance to abrasion -  
1100 cycles to failure,  
min. (5308).

Intended Use - In the fabrica-  
tion of lightweight flight  
garments. An acceptable cloth  
has been made from Delfos cotton  
having a staple length of 1 1/4 in.

MIL-C-18543A

Base cloth shall be uniformly napped on both sides, with nap laying in the direction of the warp. Base cloth shall be impregnated with pyroxylin and an inorganic fire-retardant. Cloth shall not burn down more than 6. in. in 120 sec. (4.4.1). Shall conform to flexibility tests (4.4.2).

Color - light gray -  
standard sample  
available

Intended Use - In the manufacture of orthopedic appliances, such as artificial arms, body jackets, etc. Also, for repairing and building up foundry patterns.

### COTTON CLOTHS-WOVEN

NOMENCLATURE	Weight Oz./Sq. Yd.		Weave	Width Inch	Yarn Ply	Yarns Per Inch Min.		Breaking Strength Lb. Min.	Air Permea- bility	Shrink- age Max.	Seam Effici- ency	Dynamic Absorp- tion Max.	Hydro- static Pressure low range Min.	Water Permea- bility Max.	Point Value Max.
	Min	Max				W	F								
<u>Cloth, Cotton, Cartridge</u>															
MIL-C-20313, Amd. 2															
Grade A	-	5.0	-	36-42 (40 prer')		7-	66	70	70			Stretch (max) W      F 12%    20%		Water Extract (max.) 0.5%	
Grade B	-	3.1	-	"		-	-	30	30					0.5%	
Grade C	-	2.1	-	"		87-93	76-82	28	25					2.0%	
Grade D	-	8.2	3 1	right twill	"	116	56	180	130			12.5%	12.5%	0.5%	

Cloth, Cotton, Oxford  
and Uniform Twill, For  
Summer Uniforms  
MIL-C-26959A (USAF)

Type I - Oxford	4.25	4.75	2x2 Oxford	(1)	1	1	90	80	40	90	33	Freshrunk 1%    1%				
Type II - Uniform Twill	6.0	6.5	2 1	right twill	(1)	2	1	82	50	90	80	30	1%    1%			

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, tearing strength, yarn size, etc.)	NOTES (Not Specification Requirements)
MIL-C-20313 Grade A Grade B Grade C Grade D	(2) Grade A - free from starch and calendered. Grade B - free from starch and calendered. Grade C - lightly sized with starch and calendered. Starch shall be undegraded (e.g. no gums or dextrines). Grade D - free from starch and calendered. pH: Neutral ± 0.1%.	Color - white.	Grade A - shall be manufactured from Type 140 sheeting, narrow or wide, split to correct width. Grade B - shall be manufactured from commercial print cloth. Grade C - shall be manufactured from commercial combed lawn cloth. Grade D - shall be manufactured from commercial cloth of a 4-hardness twill.	Intended Use - In the manufacture of bags for loading propellant charges.
41-C-26959A Type I Type II	(2) Singed, boiled off & mercerized.	Color (1) - standard sample available. Colorfastness - "Fair" (5600). "Good" (5660-5610-5682-5651).	(5) Tearing strength - Type I - 9 lb. min. in the warp and 8 lb. min. in the fill. Type II - 10 lb. min. in the warp and filling. (5134)	

### COTTON CLOTHS-WOVEN

NOMENCLATURE	Weight Oz./Sq. Yd.		Weave	Width Inch	Yarn Ply	Yarns Per Inch Min.		Breaking Strength Lb. Min.	Air Permea- bility	Shrink- age Max.	Seam Effic- lency	Dynamic Absorp- tion Max.	Hydro- static Pressure low range Min.	Water Permea- bility Max.	Point Value Max.
	Min	Max				(5050)	(5100)								
<u>Cloth, Batiste, Cotton, Polishing</u>															
MIL-C-40129A (OL)															
Class 1 - Rolls	-	1.9	Plain	(11) 39 1/2	1	1	90	75	45	35					30.00
Class 2 - Cut pieces	-	1.9	1 up 1 down	4	1	1	90	75	45	35					30.00
<u>Blanket, Combat Casualty</u>															
MIL-B-41805															
	9.85	-	Plain 1 up 1 down	(1)	2	2	52	40	160	110	4				
<u>Cloth, Cotton, Water Repellent</u>															
MIL-C-43033 (ORD)															
Class 1.	-	2.6		(1)			87-93	76-82	22	18					
Class 2	-	3.9		(1)			-	-	24	22					

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness tearing strength, yarn size, etc.)	NOTES  (Not Specification Requirements)
MIL-C-40129A Class 1 Class 2	(2) Singed on both sides, desized, bleached white, and mercerized.			Intended Use - For cleaning and polishing coated optics.
MIL-B-41805	Treated for fire, water, weather, and made mildew resistant.	Color - dyed in accord- ance with Type I, Class 1 of Spec. CCC-C-428.	(14)	
MIL-C-43033	(2) Unbleached & free of sizing. Calendered. Finished with a urea formaldehyde resin (paste type), plus a durable water repellent (melamine resin base) as evi- denced by a purple color after test dyeing (4.3.1.1). pH: 5.5-8.5 (2811). Acidity or alkalinity - 0.10% max. (4.3.1.8). Breaking strength loss - 25% max. (4.3.1.9).	Color - natural or as specified.		Intended Use - As cartridge cloth in ammunition.

### COTTON CLOTHS-WOVEN

NOMENCLATURE	Weight Oz./Sq. Yd.		Weave	Width Inch	Yarn Ply	Yarns Per Inch Min.		Breaking Strength Lb. Min.	Air Permea- bility	Shrink- age Max.	Seam Effici- ency	Dynamic Absorp- tion Max.	Hydro- static Pressure low range Min.	Water Permea- bility Max.	Point Value Max.	
	Min.	Max.				W	F									W
<u>Cloth, Sateen, Cotton, Flame Resistant Treated</u>																
MIL-C-43122B																
Class 1 - Natural or tinted	(min)	8.5	5-harness	(1)	1	1	80	56	110	110	5.0	2%	2%	80%	40%	30.00
Class 2 - Dyed, water repellent	(greige, sateen +30% max after fin)		(7)	(1)	1	1	80	56	110	110	5.0	2%	2%	80%	25%	30.00
<u>Cloth, Cotton, Sheeting</u>																
<u>Blotch Printed</u>																
MIL-C-43151																
	6.2	-	Plain	(1)	1	1	50	45	68	75						35.00

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, tearing strength, yarn size, etc.)	NOTES (Not Specification Requirements)
MIL-C-43122B Class 1 Class 2	(2) Singed and desized. Approved flame resistant treatment. Average flaming time - 2.0 sec. max. Average length of char - 5.0 in. max., initially & after 15 launderings (5903). Class 2 - water repellent. Spray rating - 90, 90, 80 min. (5526). pH: 5.5 min. (2811).	Color - Class 1 - natural or neutral grey tint (if flame resistant treating imparts color to cloth). Class 2 - Olive Green 107 - standard sample available (4-6). Colorfastness - standard sample available (5651 for Class 1 and 2; 5610 for Class 2).	(5) Filling effect side shall be finished & labeled as "face". Tearing strength - 6.0 lb. min. Stiffness - 0.0015 in. lb. max.	Intended Use - Class 1 - Tent liners & coveralls for explosives handlers. Class 2 - Coats and trousers for firemen.
MIL-C-43151	(2) Desized, boiled off, and scoured. Bleaching and functional finishes are prohibited. Prior to printing the cloth shall be lightly napped on one side - standard sample available for degree of nap after over-printing. Blotch printing on napped side only, using a pigment binder system. Binder shall be capable of resisting chlorine emitting agents. Degree of strike-through not to exceed standard sample.	Color - Olive Green 107, to be obtained by blotch printing on one side only. Standard sample available (4-6). Colorfastness - standard sample available for dyed side (5600-5610).		Intended Use - For outer garments to protect environmental clothing against chemical warfare agents under cold-wet and cold-dry conditions.

### COTTON CLOTHS-WOVEN

NOMENCLATURE	Weight Oz./Sq. Yd.		Weave	Width Inch	Yarn Ply	Yarns Per Inch Min.		Breaking Strength Lb. Min.	Air Permea- bility	Shrink- age Max.	Seam Effici- ency	Dynamic Absorp- tion Max.	Hydro- static Pressure low range Min.	Water Permea- bility Max.	Point Value Max.
	Min	Max				W	F								
<u>Binding, Textile, Bore</u>															
<u>Cleaning; and Swabs,</u>															
<u>Small Arms, Cleaning</u>															
MIL-B-43318															
Type I - Rolls															
(Bindings)															
Class 1 - 2 1/2" wide	4.7	5.1	Plain		1	1	43	39	40	30					
Class 2 - 4" wide	4.7	5.1	"		1	1	43	39	40	30					
Type II - Cut															
pieces (Swabs)															
Class 1 - 2" sq.	4.7	5.1	"		1	1	43	39	40	30					
Class 2 - 2-9/16" sq.	4.7	5.1	"		1	1	43	39	40	30					
Class 3 - 2.187" in diameter, cir.	4.7	5.1	"		1	1	43	39	40	30					
<u>Cloth, Cotton, Organdy</u>															
MIL-C-81252 (WF)															
	1.2	1.6	Plain				76-80	70-74	29	20					

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness tearing strength, yarn size, etc.)	NOTES (Not Specification Requirements)
MIL-B-43318 Type I Class 1 Class 2 Type II Class 1 Class 2 Class 3	Scoured, with an evenly developed napped surface on one side.	Color - natural, unbleached.		
MIL-C-81252		Color - white (natural).	(5) Tearing strength - 0.87 min. in the warp and 0.51 min in the filling.	Intended Use - As a restraining material for parts of rocket motors.



REFERENCES

COTTON CLOTHS - WOVEN

Textile Test Methods - UCC-T-191b

<u>Method</u>	<u>Title</u>
<u>Chemical</u>	
2610	Nonfibrous materials, acid method.
2611	Nonfibrous materials, enzyme method.
2810	Acidity (pH), colorimetric method.
2811	Acidity (pH), potentiometric method.
<u>Construction</u>	
5020	Width of cloth.
5030	Thickness of cloth.
5040	Weight of cloth; cut, roll, or bolt method.
5041	Weight of cloth; small specimen method.
5050	Yarns per inch in woven cloth.
<u>Mechanical</u>	
5100	Strength and elongation, breaking, of woven cloth, grab method.
5102	Strength and elongation, breaking, of woven cloth, cut strip method.
5104	Strength and elongation, breaking, of woven cloth, ravel strip method.
5110	Sevability; strength-of-seam method.
5122	Bursting strength, diaphragm.
5132	Tearing strength, pendulum method (Elmendorf).
5134	Tearing strength, tongue method.
5136	Tearing strength, trapezoid method.
5202	Stiffness, directional; cantilever bending method (Tinius Olsen).
5206	Stiffness, drape and flex; cantilever bending method (Pierce formula).
5304	Abrasion resistance; oscillatory cylinder (Wyzenbeek) method.
5308	Abrasion resistance of cloth; Uniform Abrasion (Schiefer) method.
5410	Slippage resistance of yarns in cloth.
<u>Air Permeability and Water Resistance</u>	
5450	Air permeability, calibrated orifice method (Frazier).
5500	Water resistance, dynamic absorption.
5502	Water resistance, cloth, immersion absorption.
5514	Water resistance, hydrostatic pressure, low range.
5516	Water resistance, hydrostatic pressure, water permeability.
5526	Water resistance with hydrophobic finish; spray method.
5530	Penetration resistance of cloth; feathers and down, tumbling method.
<u>Shrinkage Resistance</u>	
5550	Shrinkage in laundering; cotton, linen, and mixed cotton and linen cloth.
5556	Shrinkage in laundering; mobile laundry method.
<u>Colorfastness</u>	
5600	Chlorine bleaching; cloth.
5610	Laundering, cotton and/or linen; Launder-Ometer.
5612	Laundering, cotton and/or linen cloth; wash wheel.
5620	Dry cleaning (petroleum solvent).
5622	Wet cleaning (with dry cleaning).
5630	Water, cold.
5632	Salt water and soap.
5651	Crocking of cloth.
5660	Light; accelerated (Fade-Ometer).
5670	Weather; accelerated method (Twin Arc Weather-Ometer).
5671	Weather; accelerated method (National Weathering Unit).
5680	Perspiration; perspirometer method.
5682	Perspiration; tube method.
<u>Mildew Resistance</u>	
5750	Mildew resistance; direct inoculation, pure culture, sterile specimen method.
5760	Mildew resistance; mixed culture method.
5762	Mildew resistance; soil burial method.
<u>Deterioration</u>	
5804	Weathering; accelerated (National Weathering Unit).
<u>Fire-Resistance Thermal Tests</u>	
5902	Flame resistance; vertical.
5903	Flame resistance of cloth; modified vertical.

GENERAL NOTES

WOOL CLOTHS - WOVEN

The following parenthetical numbers are utilized throughout this section of the text as referenced notes. Upon observing these numbers, refer to this page for further information dealing with specific portions of the item.

- |                                       |   |
|---------------------------------------|---|
| (1) As specified.                     | (6) Finishing and loading materials use prohibited.               |
| (2) Width exclusive of selvage.       | (7) Preproduction sample approval.                                |
| (3) Colormatching.                    | (8) See specification for woven design and insignia requirements. |
| (4) Bid sample and laboratory report. | (9) See specification for applicable tolerances.                  |
| (5) Weave diagrams or instructions.   |   |

The specific test methods referenced in this section of the text are listed with their titles at the end of the section.

### WOOL CLOTHS-WOVEN

NOMENCLATURE	YARN				Wool Content	Width Inch	Weight Oz/Sq. Yd.	Weave	Thick-ness	Yarns Per Inch (5050)	Breaking Strength Lb. Min. (5100)	Shrink-age Max. (5556)	Point Value Max.
	Fiber	Grade U.S.D.A.	System	Ply									
<u>Bunting, Wool</u> CCC-B-801, Amd. 3	Wool		Worsted	2x2		(1)	4.0	Plain					
						Max/Min				W   F	W   F		
										32   32	35   34		

Cloth, Serge, Wool;  
Wool and Nylon  
MIL-V-823E, Amd. 2  
(See also under  
Mixed Fiber Cloths)

Type I - Wool						(2)									
Class 1 - 18 oz.	Fleece	60's	Bradford,	2x2	95%	60	- 18.0	2		68	54	110	100	4 1/2-2 1/4	10.00
Class 2 - 16 oz.	and/or	"	French or	2x1	min.	min.	- 16.0	2		70	54	100	80	4 1/2-2 1/4	10.00
Class 3 - 16 oz.	pulled	64's	American	2x2	"	"	- 16.0	4-harness		68	64	100	90	4 1/2-3 1/2	10.00
Class 5 - 15 oz.	wool	62's	"	2x2	"	"	- 15.0	right		70	56	100	80	5 1/2-3 1/2	10.00
Class 7 - 12 oz.	"	64's	"	2x2	"	"	- 12.0	twill		74	70	80	70	5 1/2-3 1/2	10.00
Class 8 - 12 oz.	"	"	"	2x2	"	"	- 12.0			70.	62	80	70	3 1/2-2 1/2	10.00
Type II - Wool and Nylon															
Class 1 - 18 oz.															
Class 2 - 16 oz.															
(See under Mixed Fiber Cloths)															

<u>Cloth, Wool,</u> <u>Gabardine (Venetian),</u> <u>13-ounce Blue 84</u> MIL-C-824	Fleece and/or pulled wool.	64's		2x2		(2)	56	(lin. yd. or 56 in.)	4/1					(5590)	
							- 13		5-harness W-faced satin 3-counter (5)	92	58	110	60	5 1/2-3 1/2	

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as testing strength, etc.)	NOTES (Not Specification Requirements)
CCC-B-801		Color (1) - standard sample available. Colorfastness - standard sample available (5651-5630-5632-5660).	Bunting shall be made with two non-raveling edges, woven single width.	
MIL-C-823E	Fulled, sheared, and otherwise finished so as to provide stability of both finish and color - std. sample available. pH: 5.5-8.5 (2811).	Color, colorants, and methods of coloring (1). Standard sample available (3). Colorfastness - standard sample available (5660-5622-5680-5651).	(4) Pre-production sample approval where specified.	Intended Use - In service, semi-dress, and dress uniforms, and functional clothing.
MIL-C-824	Scoured, closely sheared, well pressed, clear face, with a firm feel or handle - standard sample available. pH: 4.0-8.0 (2811). (6)	Color - Blue 84. Produced by a blend of wool tops dyed with vat or chrome dyes using 1 or more shades of blue with pearl (3). Colorfastness - "good" (5660-5651-5682-5622).	(7)	Intended Use - In the manufacture of clothing items for the Air Force.

## WOOL CLOTHS-WOVEN

NOMENCLATURE	YARN				Wool Content	Width Inch	Weight Oz/Sq. Yd.	Weave	Thick-ness	Yarns Per Inch Min. (5050)	Breaking Strength Lb. Min. (5100)	Shrink-ages Max. (555)	Point Value Max.
	Fiber	Grade U.S.D.A.	System	Ply									
Blanket, Bed (Wool)													Max. Min.
										W   F	W   F		
MIL-B-8447, Amd. 2													
Type I - Twill weave													
Grade A - 100% new wool													
Size 3 - 66x90"													
Color - Olive Green 118													
Grade A blankets - Warp and filling yarn from fleece and/or pulled wool from blend:													
50% (min.) 56's - 60's													
50% (max.) 44's - 60's													
Grade B - New wool & reprocessed blend													
Size 1 - 60x84"													
Color - Gray 3119													
Size 2 - 66x84"													
Color - Olive Green 118													
Size 3 - 66x90"													
Color - Olive Green 118													
Grade B blankets - Warp and filling yarn from fleece and/or pulled wool from blend:													
65% (min.) 54's - 60's													
Reprocessed wool of:													
35% (max.) 48's - 60's													
Spun on the woolen system.													
Type II - Double Woven													
Grade A - 100% new wool													
Size 3 - 66x90"													
Color - White with stripes													
untreated double blanket woven													
23.0 twill 1													
oz/lin face 2													
yd. min. twill 2													
(a) back 1													
(5)													

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as tearing strength, etc.)	NOTES (Not Specification Requirements)
MIL-B-8447 Type I Grade A Size 3 Color-118 Grade B Size 1 Color-3119 Size 2 Color-118 Size 3 Color-118 Type II Grade A Size 3 Color	Finished blanket shall be fully napped - standard sample available. Treated for resistance to felting shrinkage by an oxidation or melamine formaldehyde resin process. Process shall not increase alkali solubility of treated blanket more than 6% over the untreated blanket. Stiffness of treated blanket shall not be more than 0.011 load lb. (2800-5202). pH: 4.0-8.0 (2811).	Color - Gray, to be obtained by stock dyeing with suitable chrome dyestuffs to match Navy Shade 3119 (3). Olive Green No. 118, to be obtained by blending olive green dyed wools with white wool. Chrome acid milling or neutral dyeing presettled dyes shall be used (3). White - unbleached white (3). Maroon - Yarn used for weaving stripes for white blanket shall be chrome dyed a Maroon No. 165 (3). Standard sample available for all colors. (8) Colorfastness - Type I blankets & maroon stripes of Type II blankets - standard sample available (5660-5614-5651).	(a) Resin treatment for producing shrink resistance shall not increase the weight of the untreated blanket by more than 0.5%.	Intended Use - Type I, Grade A or B, size 3, olive green is a medical field blanket. Type I, Grade B, size 1, gray is a Navy crew blanket. Type I, Grade B, size 2, olive green is used by the Army, Navy, Air Force and Marine Corps. Type II, Grade A, size 3 is a hospital blanket.

### WOOL CLOTHS-WOVEN

NOMENCLATURE	YARN				Wool Content	Width Inch	Weight Oz/ Sq. Yd.	Weave	Thick-ness	Yarns Per Inch (6050)	Breaking Strength Lb. Min. (5100)	Shrink-age Max. (5556)	Point Value Max.		
	Fiber	Grade U.S.D.A.	System	Ply											
<u>Cloth, Wool, Velour,</u> 28 Ounces, Blue-Gr MIL-C-848, Mil. 1										Max   Min		W   F			
Type I - Virgin Wool	(a) 60% fleeces and/or pulled wool	60's	Woolen	1x1	(2) 56	28 oz/lin yd	face warp, back warp, interlaced with single filling (5)			60	36	80	40	3 1/4 - 2 1/2	
Type II - Virgin Wool & Reprocessed Wool	40% noilic (max.)	60's	Woolen	1x1	56	"								3 1/4 - 2 1/2	
<u>Cloth, Fleeces, Wool</u> 21.5 Ounces MIL-C-2049C										(2)					
	Fleeces and/or pulled wool	50's	Woolen	1x1	95% min.	59	21.5 - oz/lin yd (based on lin yd of 56 in.)	2 broken 2 twill 2-right 2-left		28	30	50	50	15.00	

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as tearing strength, etc.)	NOTES (Not Specification Requirements)
MIL-C-848 Type I Type II	Scoured, fulled, napped, and free from vegetable matter (carbonized if necessary), with a uniformly developed velour finish on the face equal to the standard sample. Standard sample for both types shall be from Type I cloth. pH: 4.0-8.0 (2810-2811). (6)	Color - color shall match blue - 85 (3) & shall be stock dyed with chrome or vat dyes. Colorfastness - std. sample available (5651-5622).	(7) (a) Type II cloth-colored noils or reprocessed wool may be used in the blend.	Intended Use - In the manufacture of clothing items for the Air Force.
MIL-C-2049C	Scoured, fulled, with both sides napped. Standard sample available. Nap fibers should offer considerable resistance to lifting with a needle (6.4). pH: 4.0 - 8.0 (2811).	Color - Olive drab No. 118, produced by blending stock dyed wools of olive green with white wool - standard sample available (3). Colorfastness - standard sample available (5680-5622).		Intended Use - In the removable liner for firemen's Olive Drab Shade No. 7 coat.

### WOOL CLOTHS-WOVEN

NOMENCLATURE	YARN				Wool Content	Width Inch	Weight Oz/Sq. Yd.		Weave	Thick- ness	Yarns Per Inch Min. (5050)		Breaking Strength Lb. Min. (5100)		Shrink- age Max. (7550)		Point Value Max.
	Fiber	Grade U.S.D.A.	System	Ply			Max	Min			W	F	W	F	W	F	
<u>Cloth, Flannel, Wool,</u> <u>10 1/2 Ounce Shrink</u> <u>Resistant</u> MIL-C-2184D	Fleece and/or pulled wool	60's	Bradford French or America:	1x1	95% min.	(2) 60	12.6	10.5	2 right 2 twill		68	68	55	55	5%-4% relaxation 4%-3% felting	10.00	
<u>Cloth, Flannel, Wool,</u> <u>Lining, 12 Ounce</u> MIL-C-3191D	Fleece and/or pulled wool	60's	Wollen	1x1	95% min.	(2) 56 min.	-	12.0	2 right 2 twill 4-harness		33	33	35	30	5%-3%	10.00	

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as tearing strength, etc.)	NOTES (Not Specification Requirements)
MIL-C-2184D	Scoured, sheared, & pressed. Standard sample available. Given an approved shrinkage control treatment by an oxidation resin or by interfacial polymerization process. Stiffness of treated cloth shall be 0.003 load lb. max. in the warp direction (5202). When oxidation method is used, the alkali solubility of the treated cloth shall not have increased over 6% (absolute) (2800). pH: 4.0-8.0 (2811).	Color (1) - standard sample available (3). Color shall be obtained by blending top dyed wool. Colorfastness - standard sample available (5660-5680-5651-5614).		Intended Use - As shirting material for both male and female personnel.
MIL-C-3191D	Scoured, fulled (carbonized if necessary, napped & sheared on the face & on the back. Standard sample available. pH: 4.0 - 8.0 (2811).	Color (1) - standard sample available (3). Colorfastness - standard sample available (5622-5680-5651).		Intended Use - In removable liners in men's and women's wool overcoats.

### WOOL CLOTHS-WOVEN

NOMENCLATURE	YARN				Wool Content	Width Inch	Weight Oz/Sq. Yd.	Weave	Thick-ness	Yarns Per Inch Min. (5050)	Breaking Strength Lb. Min. (5100)	Shrink-age Max. (5556)	Point Value Max.
	Fiber	Grade U.S.D.A.	System	Ply									
<p><u>Cloth, Barathea, Wool</u>                      MIL-C-3727C</p>													
Type I - 14.0 oz.	Fleece and/or pulled wool	70's	Bradford French or American	2x2	95% min.	(2) 60 min.	- 14.0 oz/lin yd	8-har-ness barathea (5)		80 86	70 85	4 1/2 - 3 1/2	15.00
Type III - 15.0 oz.	Fleece and/or pulled wool	70's	"	2x2	"	"	- 15.0 oz/lin yd (Based on lin yd of 56 in.)	"		85 75	125 100	4 1/2 - 3 1/2	15.00

Cloth, Elastique, Wool

MIL-C-3738D

Type I - 19 oz.	Fleece and/or pulled wool	70's	Bradford French or American	2x2	95% min.	(2) 60 min.	- 19.0 oz/lin yd	(5)		128 98	160 90	5 1/2 - 3	15.00
Type II - Class 1 - 18 oz.	"	64's	"	2x2	"	"	- 18.0 oz/lin yd	(5)		124 80	140 80	6 1/4 - 4	15.00
Type II - Class 2 - 18 oz.	"	70's	"	2x2	"	"	- 18.0 oz/lin yd	(5)		124 80	140 80	6 1/4 - 4	15.00
Type III - 16 oz.	"	70's	"	2x2	"	"	- 16.0 oz/lin yd (Based on lin yd of 56 in.)	(5)		138 96	130 70	5 1/2 - 3	15.00

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as tearing strength, etc.)	NOTES (Not Specification Requirements)
MIL-C-3727C Type I Type III	Scoured, fulled and sheared - standard sample available. pH: 5.5 - 8.0 (2811).	Color (1) - standard sample available (3). Produced by blending the proper shades of stock or top dyed wool, and obtained by the use of chrome, vat, or neutral premetallized dyes or combinations thereof. Colorfastness - standard sample available (5660-5651-5622-5680).		Intended Use - In the manufacture of uniform items.
MIL-C-3738D Type I Type II Class 1 Class 2 Type III	Face shall be clear and closely sheared - standard sample available. pH: 5.5 - 8.5 (2811).	Color (1) - standard sample available (3). Color shall be obtained by stock or top dyeing, piece dyeing will not be permitted. Colorfastness - standard sample available (5660-5651-5622-5680).		Intended Use - In the manufacture of clothing items.





### WOOL CLOTHS-WOVEN

NOMENCLATURE	YARN				Wool Content	Width Inch	Weight Oz/Sq Yd	Weave	Thick-ness	Yarns Per Inch Min. (5050)	Breaking Strength Lb. Min. (5100)	Shrink-age Max. (5556)	Point Value Max.
	Fiber	Grade U.S.D.A.	System	Ply									
<u>Cloth, Wool, Serge</u> (128 Yarns) MIL-C-15506B (8A)						Max   Min				W   F	W   F		
Type I - Unshrunk, untreated	Fleeces and/or pulled wool	62's	Krested	2x1	(2) 56	(2) 13.5   12.5	2 right twill			69   63	80   60	4% - 2 1/2%	
Type II - London shrunk untreated	"	62's	"	2x1	"	13.5   12.5	"			70   64	80   60	2% - 1%	
Type III - London water repellent treated, shrunk	"	62's	"	"	"	13.5   12.5	"			70   64	80   60	2% - 1%	
<u>Cloth, Wool, Flannel, Green</u> MIL-C-15779B (MC)	Fleeces and/or pulled wool	58's		1x1	(2) 58	10.1   9.1 oz/lin yd	2 right twill			72   66	50   40	(5590) 4% - 2%	

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as tearing strength, etc.)	NOTES (Not Specification Requirements)
MIL-C-15506B Type I Type II Type III	Type I & II - closely sheared, with a clear finish. Type I - unshrunk; Type II - London shrunk. Standard sample for hand & finish. Cloths shall contain no soaps, detergents or finishing materials that will interfere with the application or efficiency of water repellent compounds. Type III, same as Type II, but with a durable water repellent treatment. Spray rating: 90 (min) initially; 70 (min) after one dry cleaning (552%). Hydrostatic Pressure: 8 in. initial, 6 in. after one dry cleaning (551%). pH: 4.0 - 8.0 (2810-2811). (6)	Color (1) - stock or top dyed with chrome dyestuffs to match standard sample (3). Colorfastness - sample of reference available (5660-5680-5622-5651).	(7) (a) oz/lin yd. Cloth shall have a selvage of 1/4 (+1/16) in. on each side & shall include 1/4 or more white warp ends.	Intended Use - In the manufacture of uniforms for female Naval personnel.
MIL-C-15779B	Fulled and covered, napped, sheared and pressed, with the soft feel or handle characteristic of flannel. Standard sample available. pH: 4.0 - 8.0 (2810-2811).	Color - Cloth shall be stock or top dyed to match standard shade Green 2218. Green color to be produced by blending colored wools with white wool (3). Colorfastness - standard sample available (5660-5651-5622-5614-5680-562).		Intended Use - In the manufacture of shirts.

### WOOL CLOTHS-WOVEN

NOMENCLATURE	YARN				Wool Content	Width Inch	Weight Oz/Sq. Yd.	Weave	Thick-ness	Yarns Per Inch Min. (8050)	Breaking Strength Lb. Min. (5100)	Shrink-age Max. (555)	Point Value Max.
	Fiber	Grade U.S.D.A.	System	Ply									
<p><u>Cloth, Wool, Kersey;</u>  <u>17-Ounce; Green</u>  <u>MIL-C-15780B (MC)</u></p>													
Fleece and/or pulled wool.	60's	Woolen	1x1			(1) 18.0 17.0	2 broken 2 twill 4-harness 2-right, 2-left			60 58	70 54	(5558) 32-2%	
<p><u>Cloth, Melton, Wool</u>  <u>MIL-C-16291D (SA)</u>            Amd. 1</p>													
Type I - 16 oz. Blue 3313	Fleece and/or pulled wool	64's	Woolen	1x1	95% min.	(2) 56 17.0 16.0	2 right 1 twill			60 55	58 46	(5590) 4-3%	10.00
Type II - 22 oz. Class 1 - Blue 3314 Class 2 - Blue 3315 Class 3 - Blue 3327		60's	"	1x1	"	56 24.0 22.0	3 crew 1 foot			55 45	80 60	4-2%	10.00

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as tearing strength, etc.)	NOTES (Not Specification Requirements)
MIL-C-15780B	Type and character of finish shall conform to the standard sample. pH: 4.0 - 8.0 (2810-2811).	Color - cloth to be stock dyed and blended with white wools to match standard shade Green 2205 (3). Color-fastness - standard sample available (5660-5651-5622-5680-5682).		Intended Use - In the manufacture of enlisted men's garrison caps, service cap frame covers, uniform coats and trousers, and men's and women's overcoats.
MIL-C-16291D Type I Type II Class 1 Class 2 Class 3	Type and character of finish shall match standard sample. Cloth shall be scoured, fulled (carbonized if necessary), face evenly sheared and well pressed. When specified, cloth shall be treated with moth repellent in accordance with method specified by contracting officer.	Color (1) - Type I shall match Blue 3313. Type II Class 1 shall match Blue 3314; Class 2 shall match Blue 3315; Class 3 shall match Blue 3327 (3). Color shall be produced by stock dyeing with suitable chrome dyestuffs. Colorfastness - standard sample available (5614-5622-5651-5660-5680).	(7) Type II, air permeability; 20 ft. <sup>3</sup> /minute	Intended Use - In the manufacture of clothing items.

### WOOL CLOTHS-WOVEN

NOMENCLATURE	YARN				Wool Content	Width Inch	Weight Oz./Sq. Yd.		Weave	Thick-ness	Yarns Per Inch (5050)		Breaking Strength Lb. Min. (5100)		Shrink-age Max. (5556)	Point Value Max.
	Fiber	Grade U.S.D.A.	System	Ply			Max	Min			W	F	W	F		
<u>Cloth, Flannel, Wool</u> MIL-C-16291D (SA)	Fleece and/or pulled wool	60's	Woolen	1x1	95% min.	56	12.0	11.0	2 right 2 twill		56	48	35	35	(5590) 3 1/2-4%	10.00
<u>Cloth, Whipcord, Wool</u> MIL-C-17248C (SA)	Fleece and/or pulled wool	70's	Worsted	2x2	95% min.	60	-	17.0	4 1/2 right twill (j)		104	84	98	52	(5590) 4-3%	10.00
<u>Cloth, Billiard</u> MIL-C-17566A (SA)	Staple fleece and/or pulled wool	56's	Woolen	1x1		60	-	17.2	2 right 1 twill		50	40	50	45		

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as tearing strength, etc.)	NOTES (Not Specification Requirements)
MIL-C-16291D	Flannel finish, well pressed, with a lustrous face, nap and hand equal to that of standard sample. When specified, cloth shall be treated with moth repellent by a method specified by contracting officer.	Color (1) - standard sample available (3). When blue is specified, shade shall be Blue 3311; when Olive Drab, shade shall be OD 3705. Color shall be produced by stock dyeing with chrome dyestuffs. Colorfastness - standard sample available (5660-5620-5680-5614-5670-5651).	(7)	Intended Use - In the manufacture of uniforms for male Naval personnel.
MIL-C-17248C	Scoured, with hand and finish equal to approved sample. Face shall be sheared and well pressed. When specified, cloth shall be treated with moth repellent by a method specified by contracting officer. pH: 4.0 - 8.0 (2810-2811).	Color (1-3). Standard sample available. To be produced by stock or top dyeing with chrome dyestuffs. Blue shall match Blue 3354. Green shall match Green 3441. Colorfastness - standard sample available (5614-5622-5651-5660-5680).	(7) Cloth shall have a min. seam efficiency of 80% (5110).	Intended Use - In the manufacture of uniforms.
MIL-C-17566A	Finish and hand equal to standard sample. Scoured, fulled, free from vegetable matter (carbonized if necessary) and face evenly sheared.	Color - Green 3402, equal to std. shade (3). Colorfastness - standard sample available (5660-5651).	(7) Cloth shall have a selvage of 1/2 (1/16) in. on each side.	Intended Use - As table cloths.



### WOOL CLOTHS-WOVEN

NOMENCLATURE	YARN				Wool Content	Width Inch	Weight Oz/Sq Yd	Weave	Thick-ness	Yarns Per Inch Min. (8080)	Breaking Strength Lb. Min. (5100)	Shrink-age Max. (5556)	Point Value Max.		
	Fiber	Grade U.S.D.A.	System	Ply											
Cloth, Broadcloth, Wool, and Wool Synthetic MIL-C-82252 (See also under Mixed Fiber Cloths)						Max   Min				W   F	W   F				
Type I - Wool															
Class 1- 14.5 oz. Fleeced Blue and/or	64's	Woolen	1x1	95% min.	56	15.0	14.0	2 right 1 twill		54	50	45	42	(5590) 5 1/2 - 4 1/2 15.00	
Class 2- 15.5 oz. pulled Blue	70's	"	1x1	"	54	16.0	15.0	"		56	55	50	45	2 1/2 - 1 1/2 15.00	
Class 3- 16.5 oz. Blue	70's	"	1x1	"	56	17.0	16.0	"		60	58	40	35	3 1/2 - 3 1/2 15.00	
Class 4- 16.5 oz. Scarlet or Black	60's	"	1x1	"	54	17.0	16.0	"		54	54	55	45	3 1/2 - 2 1/2 15.00	
Class 5- 23.0 oz. Blue	70's	"	1x1	"	56	24.0	22.0	"		90	64	65	40	4 - 3 1/2 15.00	
														oz/lin yd	
Type II - Wool/Synthetic blend (See under Mixed Fiber Cloths)															

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as tearing strength, etc.)	NOTES (Not Specification Requirements)
MIL-C-82252 Type I Class 1 Class 2 Class 3 Class 4 Class 5 Type II	Scoured, fullied, free from vegetable matter, with a uniformly developed broadcloth finish. Finished cloth shall be pressed & have a lustrous face finish like that of the standard sample. When specified, cloth shall be treated with moth repellent in accordance with the method specified by the contracting officer. pH: 4.0 - 8.0	Color - for Type I, Classes 1,3,4 and 5, color shall be produced by stock dyeing with chrome dyestuffs to match approved std. shades (3) Class 1 - Blue 3319 Class 3 - Blue 3320 Class 4 - Scarlet 2501 or Black (1) Class 5 - Blue 3321. Type I, class 2 & Type II, class 1 shall be produced with indigo dye, Blue 2307. Colorfastness - standard sample available (5660-5662-5680-5651).	(7)	Intended Use - In service, semi-dress, and dress uniforms and functional clothing.

REFERENCES

WOOL CLOTHS - WOVEN

Textile Test Methods - CCC-T-191b

<u>Method</u>	<u>Title</u>
<u>Chemical</u>	
2800	Wool fiber damage, alkali solubility method.
2810	Acidity (pH), colorimetric method.
2811	Acidity (pH), potentiometric method.
<u>Construction</u>	
5050	Yarns per inch in woven cloth.
<u>Mechanical</u>	
5100	Strength and elongation, breaking, of woven cloth, grab method.
5202	Stiffness, directional; cantilever bending method (Timius Olsen).
<u>Air Permeability and Water Resistance</u>	
5514	Water resistance hydrostatic pressure, low range.
5526	Water resistance with hydrophobic finish; spray method.
<u>Shrinkage Resistance</u>	
5556	Shrinkage in laundering; mobile laundry method.
5558	Shrinkage, relaxation; wool cloth.
5590	Shrinkage in sponging; cloth.
<u>Colorfastness</u>	
5614	Laundering of wool, silk, rayon cloth; Launder-Ometer.
5620	Dry cleaning (petroleum solvent).
5622	Wet cleaning (with dry cleaning).
5630	Water, cold.
5632	Salt water and soap.
5651	Crocking of cloth.
5660	Light; accelerated (Fade-Ometer).
5670	Weather; accelerated method (Twin Arc Weather-Ometer).
5671	Weather; accelerated method (National Weathering Unit).
5680	Perspiration; perspirometer method.
5682	Perspiration; tube method.

GENERAL NOTES

SYNTHETIC OR MIXED SYNTHETIC CLOTHS - WOVEN

The following parenthetical numbers are utilized throughout this section of the text as referenced notes. Upon observing these numbers, refer to this page for further information dealing with specific portions of the item.

- |   |  |
|---|--|
| (1) As specified.   | (7) See specification for applicable tolerances.       |
| (2) See specification for requirements after aging, weathering, water immersion, etc. | (8) Nonfibrous, etc., restrictions.                    |
| (3) Colormatching.  | (9) Width exclusive of selvage.                        |
| (4) See specification for weave diagrams or instructions.                             | (10) Use of finishing and loading material prohibited. |
| (5) Width inclusive of selvage.   | (11) Preproduction sample.                             |
| (6) Restrictions on use of sulfur dyes.   | (12) Bid sample and laboratory report.                 |

The specific test methods referenced in this section of the text are listed with their titles at the end of the section.

## SYNTHETIC OR MIXED SYNTHETIC CLOTHS-WOVEN

NOMENCLATURE	YARN					Width Inch	Weight Oz/ Sq Yd	Weave	Yarns Per In. Min. (5050)	Breaking Strength Lb. Min. (5100)	Tearing Strength Lb (5134)	Air Perme- ability (5450)	Shrink- age Max. (5556)	Point Value Max.
	Fiber		Ply	Yarns										
	Mating Point	Type		Denier	Fila- ment									
Screening, Non- metallic, Insect L-S-125, Amd. 3(GL) (See also under Coated Cloths)			W F	W F	W F		Min Max		W F	W F	W F		W F	
Type I - Polyvinyl- idene chloride Class 1- 0.0120" diameter						(1)				Initial Bursting Strength (lb/in <sup>2</sup> ) (2)			(After heat aging)	
Size 16x16	(soft-	Poly-				(1)				160	min.		5%	
Size 18x14	ening	vinyl-				(1)				160	tensile		5%	
Size 18x18	point)	idene				(1)				165	strength		5%	
Size 20x20	140°C.	Chlor-				(1)				170	of fila-		5%	
Size 22x22	min.	ide				(1)				175	ments		5%	
Class 2- 0.0150" diameter											26,000 psi			
Size 16x16	"	"				(1)				160	"		5%	
Size 18x14						(1)				160			5%	
Size 18x18						(1)				165			5%	
Size 20x20						(1)				170			5%	
Size 22x22						(1)				175			5%	
Type II - Plastic Coated or Impreg- nated Fibrous Glass (See under Coated Cloths)														

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, etc.)	NOTES (Not Specification Requirements)
L-S-125 Type I Class 1 Size 16x16 Size 18x14 Size 18x18 Size 20x20 Size 22x22 Class 2 Size 16x16 Size 18x14 Size 18x18 Size 20x20 Size 22x22 Type II		Color - shall be natural (light straw color), alu- minum, bronze, or green No. 14036 of Fed. Std. No. 595 as specified. Colorfastness - "fair" (4.4.11).	Minimum elongation of fila- ment 20%. Resistance to water immersion: average change in length shall be 2% max. (4.4.6). Finished screening shall have a woven or mock selvage of at least 6 ends in each edge. Screen shall show no blocking in excess of Scale No. 1 (5372-4.4.9). Tension required for complete slippage of the filament shall not be less than 5 lb. (5100-4.4.13). Screening shall not burn for more than 10 sec. after removal of a match flame (4.4.15). When specified, screening shall have an incorporated fungicide. Screening shall show no evidence of fungus growth when tested (4.4.16).	Intended Use - For installa- tion in or on any dwelling, patio, screen enclosure, building of structure, for the purpose of preventing the ingress of flies, mos- quitoes, or other insects, particularly where corro- sive conditions are encountered.



**SYNTHETIC OR MIXED SYNTHETIC CLOTHS-WOVEN**

NOMENCLATURE	YARN				Width Inch	Weight Oz/ Sq Yd	Weave	Yarns Per In. Min. (5050)	Breaking Strength Lb. Min. (5100)	Tearing Strength Lb (5134)	Air Permea- bility (5450)	Shrink- age Max. (5556)	Point Value Max.	
	Fiber		Ply	Yarns										
	Melting Point	Type		Denier										Fila- ment
Net, Laundry, (Nylon) JJ-N-180d, Am. 1 (See also under Knitted Cloths)		W F	W F	W F		Min Max	W F	W F	W F		W F			

Type I - With  
grommets  
Type II - Without  
grommets

Size 1- 10x15 in.	Nylon	260	16	18	3.0	3.6	1	leno	46-	26-		
Size 2- 12x22 in.	"	260	16	18	3.0	3.6	1	weave	48	28		
Size 3- 18x30 in.	"	260	16	18	3.0	3.6		"				
Size 4- 24x36 in.	"	260	16	13	3.0	3.6		"				

Cloth, Acetate-Rayon,  
Tow Target, Rip-Stop  
Twill Weave  
MIL-C-333C

Bright  
acetate  
yarns &  
medium  
high ten-  
acity vis-  
cose rayon  
yarns.

(1) - 5.3 <sup>(a)</sup> 2 twill 148 55 65 50 5 5 5  
<sub>1</sub>  
 (2 W  
 ends  
 weaving  
 as 1) (5104)  
 (1.5 at  
 pressure  
 drop of  
 1/2 in.  
 across  
 the cloth)

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, etc.)	NOTES (Not Specification Requirements)
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JJ-N-180d Type I Type II Size 1 Size 2 Size 3 Size 4	Nylon fabric shall be scoured and heat set.	Color - Shall be white (natural).	Selvage to be used at the bottom of the net for sizes 3 & 4 bags shall be reeded alternately 4 ends & 2 ends per dent to a minimum width of 3/4 in. Selvage for the top pin edge of all sizes shall be reeded 2 ends per dent, skip 1 dent, 2 ends per dent for 2-2 1/2 in., then alternate 4 ends & 2 ends per dent to a minimum width of 3/4 in. Meshes per inch: 598-675. Bursting strength: 175 lb. min. (5120). Grommets shall conform to Type I, Class 1, Size 4 of MIL-G-16491.	Intended Use - in laundries for washing items of clothing.
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MIL-C-333C	Scoured. Cloth shall contain no sizing, lubrication, or weighting materials. Smooth, glazed surface. Cloth shall not contain chloro- form-soluble material in excess of 2% of dry weight. (2611). pH: 6.0 - 8.0 (2811).	Color (1-3). Colorfastness - "good" (5630-5632-5651-5660).	(a)The rip-stop weave shall repeat on 31 ends of bright acetate & 3 ends of medium high-tenacity viscose rayon & on 16 picks of bright acetate & 2 picks of medium high-tenacity viscose rayon. Missing rip-stop picks in the filling shall be marked in the greige state (4). Elongation: Warp - 12% max; Filling - 20% max. (5104).	Intended Use - In the manufacture of aerial tow targets.
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### SYNTHETIC OR MIXED SYNTHETIC CLOTHS-WOVEN

NOMENCLATURE	YARN					Width Inch	Weight Oz/ Sq Yd	Weave	Yarns Per In. Min.	Breaking Strength Lb. Min.	Tearing Strength Lb	Air Perme- ability	Shrink- age Max.	Point Value Max.
	Fiber		Ply	Yarns										
	Melting Point	Type		Denier	Fila- ment									
			W F	W F	W F	Min Max		W F	W F	W F		W F		
<u>Cloth, Satin, Rayon</u> <u>And Cloth, Twill,</u> <u>Rayon</u> MIL-C-368F, Amd. 1			W F	W F	W F			W F	W F	W F		W F		
Class 1 - Twill 2/1 right, 3.7 oz.	Rayon					(5) 41	3.7 - $\frac{2}{1}$		121 67	(dry) 100 50	(wet) 40 20	(5550) 6% 3%	25.00	
Class 2 - Twill 2/1 right, 4.2 oz.	"					"	4.2 - right twill		142 71	115 55	46 22	6% 3%	25.00	
Class 3 - Satin 5-harness, 5 oz.	"					"	4.5 - 5-harness satin (4)		140 67	150 55	60 22	6% 3%	25.00	

Cloth, Nylon Bunting  
And Cloth, Nylon-And  
Wool Bunting  
CCC-C-476d  
(See also under  
Mixed Fiber Cloths)

Type I - 100%  
nylon filament  
Class A - Lt. wgt.  
Class B - Hvy. wgt.

Bright	1	2	70 70	Contin-	(1)	2.7 -	Plain	106 76	125 155
high tenacity	1	1	200 or 210	uous	$\pm \frac{1}{2}$	3.6 -	"	62 50	225 152

Type II - 75% nylon  
(staple) and 25%  
wool (See under  
Mixed Fiber Cloths)

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, etc.)	NOTES (Not Specification Requirements)
MIL-C-368F Class 1 Class 2 Class 3	Natural finish. Use of resins, oils, starches, or gums in the finishing of the cloth is prohibited.	Color (1) - standard sample available (3-6). When an additive is required to fix the dyestuffs to the fibers, formaldehyde shall not be the principle fixing agent, and the additive material used shall not create an odor or cause degradation of the cloth during storage. Colorfastness - standard sample available (5680-5622-5651).		Intended Use - In the manufacture of clothing items, as lining cloth.
CCC-C-476d Type I Class A Class B Type II	Commercial-type antistatic finish.	Color (1) - standard sample available. Colors for the Flag of the United States shall be in accordance with Spec. TT-C-591 and DD-F-416 (3). Colors other than for the Flag of the United States shall match the applicable color card of sample (3). Colorfastness - standard sample available (5632-5630-5651-5660).	There shall be a plain woven selvage on each side, $\frac{1}{8}$ in. $\pm$ 1/8 in. wide, with 2 ends weaving as 1.	Intended Use - In the manufacture of various types of flags.

## SYNTHETIC OR MIXED SYNTHETIC CLOTHS-WOVEN

NOMENCLATURE	YARN					Width Inch	Weight Oz/ Sq Yd	Weave	Yarns Per In. Min. (5050)	Breaking Strength Lb. Min. (5100)	Tearing Strength Lb (5134)	Air Permea- bility (5450)	Shrink- age Max. (5556)	Point Value Max.		
	Fiber		Ply	Yarns												
	Matting Point	Type		Denier	Fila- ment											
<u>Cloth, Pressing, Nylon</u> CCC-C-482a																
Type I - Spun yarn W & F	250° ± 6°C	(a) staple or multi- fila- ment nylon (1)	2	2	-	-	(5) 54 min.	7.0	Plain	38	36	210	220	3%	2%	35.00
Type II - Fila- ment W and spun yarn F	"	"	-	2	260	bright or multi- fila- ment	"	5.6	2 right 1 twill	66	54	280	240	3%	2%	35.00
Type III - Spun yarn W & fila- ment yarn F	"	"	2	-	-	260 or multi- fila- ment	"	5.6	"	54	60	240	280	3%	2%	35.00
Type IV - Fila- ment yarn W & F	"	"	-	-	260 or 210	bright multi- filament	"	3.6	Plain	60	42	250	180	3%	2%	30.00

Cloth, Parachute,  
Synthetic-Fiber (For  
Ammunition Parachutes)  
MIL-C-498B

Type D - Nylon (0.84 oz.)	472°F	nylon- poly- amide	30	30	Multi- fila- ment	(1) ± 1/2	-	0.88	Plain	93 ± 3	40	40	3	3	(5136) 300-500	
Type E - Nylon (2.20 oz.)	472°F min.	(a)	70	70	"	"	-	2.20	"	104	91	65	65	4	3	60-100

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, etc.)	NOTES (Not Specification Requirements)
CCC-C-482a Type I Type II Type III Type IV	Cloth shall be heat treated at not less than 380°F. heat treated cloth shall be given an additional resin or other type of finish to increase the heat resistant properties. Warp and filling yarns of the finished cloth shall not slip or distort (5410). Finished cloth shall not lose more than 50% initial breaking strength after aging (5850-5100). Finished cloth shall not be heated hand iron which has not been treated with any antistick agent such as wax (4.1.2). pH: 4.5 - 8.0 (2811).	Color - Shall be the shade imparted by the finish, provided the individual piece are uniform in shade. Colorfastness - standard sample available (4.4.1).	(a) Nylon shall be a polyamide prepared from hexamethylene diamine and adipic acid or its derivatives.	Intended Use - As covers for flat oed laundry presses.
MIL-C-498B Type D Type E	(8) Scoured to remove sizing and other contaminants. Cloth shall be neat treated and may be calendared at such temperature and pressure as required to control the air permeability. pH: 5.0 - 4.5 (2811).		(a) Polyamide shall be prepared from hexamethylene diamine and adipic acid or its derivatives. Elongation: 20% min. in warp and filling (5100). (Type D only).	Intended Use - In the manufacture of ammunition and flare parachutes.

### SYNTHETIC OR MIXED SYNTHETIC CLOTHS-WOVEN

NOMENCLATURE	YARN					Width Inch	Weight Oz/ Sq Yd	Weave	Yarns Per In. Min. (5050)	Breaking Strength Lb. Min. (5100)	Tearing Strength Lb (5134)	Air Perme- bility (5450)	Shrink- age Max. (5556)		Poin- Value Max.
	Fiber		Ply	Yarns									W	F	
	Melting Point	Type		Denier	Fila- ment										
Cloth, Oxford, Nylon 3-Ounce MIL-C-508E, Amd. 1			W	F	W	F	W	F	Min	Max	W	F	W	F	

Type I - For cloth-  
ing, equipage &  
personnel armor  
Class 1 - For  
outerwear use  
Class 2 - For  
use as inner lining  
Type II - For  
coating

bright, high tenacity filament nylon	70	100	32- 34	32- 34	(1)	2.9	-	Oxford (Plain weave, 2 warp ends weaving as 1)	180	76	220	135			30.00
	70	100	"	"	(1)	2.9	-		180	76	220	135			30.00
	70	100	"	"	(1)	2.9	-		180	76	220	135			30.00

Cloth, Synthetic,  
Curtain

CCC-C-525a

Warp yarn 16/2, cut staple, copolymer  
of acrylonitrile and vinyl chloride.  
Yarn dyed.  
Fill yarn 1.2 run cut staple, poly-  
vinylidene chloride. Pigmented.

56	11.5	13.5	(4)	50	24	175	55
$\pm 1$				$\pm 1$	$\pm 1$	(2)	

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, etc.)	NOTES (Not Specification Requirements)
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MIL-C-508E  
Type I  
Class 1  
Class 2  
Type II

(8)  
Type I - cloth shall be scoured,  
heat treated with dry heat and/  
or boiling water, and lightly  
calendered. Type II - cloth  
shall be heat treated but not  
calendered. Shall contain no  
more than 0.0030% copper nor  
more than 0.0015% manganese  
(4.4.2). Finished cloth shall  
show no distortion, puckering  
or change in color, and not more  
than 2% dimensional change(4.4.1).  
pH: 5.0 - 8.5 (2511).

Color (1) - standard  
sample available (3).  
For Navy procurements  
only, Type I cloth shall  
be dyed to match Olive  
Drab, Army Shade 7 and  
shall be obtained by the  
use of nonmetallized acid,  
or disperse dyes; chrome  
and premetallized dyes  
are prohibited.  
Colorfastness - standard  
sample available.  
Type I - (5622-5614-5660-  
5651-5660).  
Type II - (5622-5614-5660-  
5651).

Intended Use - Type I, for  
equipage and personnel armor.  
Type II, for coating.

CCC-C-525a

Fire resistance: length of flame  
3.0 sec. max.; length of char 4.5  
in. max. (5902). There shall be  
no change in fire resistance  
after laundering or dry cleaning.  
Hand, drape, and stiffness of  
sample shall not change after  
testing (4.4.4).

Color (1).  
Colorfastness - no change  
(5660-5651-4.4.1-4.4.3-  
4.4.2).

Intended Use - For the fabri-  
cation of fire-resistant  
curtains.

### SYNTHETIC OR MIXED SYNTHETIC CLOTHS-WOVEN

NOMENCLATURE	YARN					Width Inch	Weight Oz/ Sq Yd	Weave	Yarns Per In. Min.	Breaking Strength Lb. Min.	Tearing Strength Lb	Air Permea- bility (5450)	Shrink- age Max. (5556)	Point Value Max.		
	Fiber		Ply	Yarns												
	Melting Point	Type		Denier	Fila- ment											
		W	F	W	F	W	F	W	F	W	F	W	F	W	F	
<u>Cloth, Twill, Nylon,</u> <u>1.6 and 3.0 Ounce</u> <u>MIL-C-577F, Am. 1</u>																
Type I- 1.6 oz.	bright filament nylon		70 ±4	70 ±4	multi- fila- ment	(1) 1/4 in. relv.	1.6	1.8	2 right 1 twill	80	80	90	90	4	4	30.00
Type II- 3.0 oz.			70 ±4	100 ±5	"	"	3.0	3.3	2 right 2 twill	165	96	180	170	6	6	35.00
<u>Cloth, Banner, Rayon</u> <u>MIL-C-606D</u>																
	cupram- monium rayon		2	2	Multi- fila- ment	(1)	5.0	-	2 right 2 twill	222	94	125	50			

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, etc.)	NOTES (Not Specification Requirements)
MIL-C-577F Type I Type II	Scoured, but not calendered. (8). Cloth shall be heat treated. After treatment, cloth shall show no appreciable distortion, puckering, or fading; dimensional change shall not exceed 2% in either warp or filling (4.3.1).	Color (1) - standard sample available (3). Colorfastness - standard sample available (5620-5614-5660-5651-5680).		Intended Use - Type I, as base fabric for coated fabrics. Type II, in cold weather items.
MIL-C-606D	Cloth shall have a hand and drape equal to the standard sample. Use of resin finishes to impart stiffness to the cloth is prohibited, unless otherwise specifically approved and authorized by the contracting officer.	Color (1) - standard sample available (3). Yarns shall be dyed prior to weaving, using azo, naphthols, or cellulosic reactive dyes as dyes; prints. Use of solution dyed cupramonium yarns in lieu of the above is permitted if the hue and brilliancy of the shade can be achieved. There must be a degree of penetration of the yarn such that the color of the cloth will be uniform throughout the cloth sample. Colorfastness - standard sample available (5620-5614-5660-5651-5680).		Intended Use - In the manufacture of various types of flags.

### SYNTHETIC OR MIXED SYNTHETIC CLOTHS-WOVEN

NOMENCLATURE	YARN					Width Inch	Weight Oz/ Sq Yd	Weave	Yarns Per In. Min. (5050)	Breaking Strength Lb. Min. (5100)	Tearing Strength Lb (5134)	Air Perme- ability (5450)	Shrink- age Max. (5556)	Point Value Max.
	Fiber		Ply	Yarns										
	Melting Point	Type		Denier	Fila- ment									
<u>Cloth, Netting, Nylon</u> MIL-C-3395E (See under Knitted Cloths)			W   F	W   F	W   F	Min   Max			W   F	W   F	W   F		W   F	
Type I - Woven	bright or semi- dull nylon		70	70	Multi- fila- ment	(1)	1.6 2.0	3 picks plain leno (4)	54- 54- 56 56	50 50			(5552) 2% 2%	30.00
Type II - Warp knitted (See under Knitted Cloths)														
<u>Cloth, Duck, Nylon</u> MIL-C-3953C						(5)								
Class 1 - Untreated	250°C High tenacity bright nylon	5 5	210 ±5%	210 ±5%	34 34	36 min.	20.5 ± 1	3/4 basket (3 ends weaving as 1, 4 picks/ shed)	62 60 1100 1100	135 135				35.00
Class 2 - Melamine resin treated	250°C poly- amide (a)	5 5	" "	" "	34 34	" "	" "		62 60 1100 1100	135 135				35.00

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, etc.)	NOTES (Not Specification Requirements)
MIL-C-3395E Type I Type II	Permanent resin finish. Character of the finished cloth shall be equal to that of the standard sample. Cloth shall be heat set and framed to appropriate dimensions, to assure the proper number of meshes/inch & the size of the meshes.	Color - Cloth shall be dyed Olive Green, Shade No. 106 (1). The use of pigmented resin emulsion finishes to provide color and finish in one operation will be permitted. Colorfastness - standard sample available (5614-5671).	Mesh size, initial: 0.035 in. max. in warp & filling. Mesh size, after 3 launderings & slippage test: 0.100 in. max. in warp & filling. Meshes/in. <sup>2</sup> : 729-784.	Intended Use - In tentage and equipment items.
MIL-C-3953C Class 1 Class 2	Class 2 - Cloth shall be impregnated with a suitable type of melamine resin, and the finished cloth shall have a stiffness of 0.4-5-0.5 in. lb. in the warp and 0.5-0.65 in. lb. in the filling. pt: 5.5 - 8.5 (2811).	Color (1) - standard sample available (3). Colorfastness - standard sample available (5614-5670).	(a) Nylon shall be prepared from hexamethylene diamine & adipic acid or its derivatives. Ultimate elongation: 10% min. in the warp and 20% min. in the filling. (5100).	Intended Use - In the manufacture of parachute equipment.

## SYNTHETIC OR MIXED SYNTHETIC CLOTHS-WOVEN

NOMENCLATURE	YARN					Width Inch	Weight Oz/ Sq Yd	Weave	Yarns Per In. Min.	Breaking Strength Lb. Min.	Tearing Strength Lb	Air Permea- bility	Shrink- age Max.	Point Value Max.
	Fiber		Ply	Yarns										
	Melting Point	Type		Denier	Fila- ment									
		W F	W F	W F	Min Max	W F	W F	W F	W F					
<p><u>Cloth, Nylon and Rayon, Spun</u>  <b>MIL-C-4072A (USAF)</b></p>														
Type I- 4.5 oz.	Type I and II:				(9) 4.5 -2	4.3 -	Oxford	200 72	150 70	55 7	10	(5552)	2% 2%	
Type II- 6.0 oz.	Warp Yarn: Nylon, continuous, bright, 70 denier, 3/4 filament (Type 100 nylon). Filling yarn: Rayon, high tenacity, long staple viscose; direct spinning from tow.					5.6 -	(2 warp ends weaving as 1)	220 57	160 125	65 16	8		2% 2%	

Cloth: Plastic, Mesh  
**MIL-C-4141A (USAF)**

Type I- 12x12 mesh	Vinylidene Chloride	Contin- uous extruded(1) monofila- ment	(1) -	13.0	Plain 1 up	12 12	(5104) 95 90
Type II- 20x20 mesh			(1) -	7.0	1 down	20 20	65 65

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, etc.)	NOTES (Not Specification Requirements)
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<p><b>MIL-C-4072A</b>                      Type I                      Type II</p>	<p>Scoured, singed, dyed &amp; given a water repellent treatment (10). Use of dvestuffs, detergents, or other chemicals which would cause deterioration in storage or cause dermatitis on prolonged skin contact is prohibited. Finished cloth shall exhibit no mark-off characteristics. Durable water repellent treatment. Use of non-durable-type water repellents such as wax or aluminum or zirconium soaps is prohibited. Spray ratings: Initial- 90, after 3 launderings- 70, after 3 dry cleanings- 70 (5526). Hydrostatic pressure: After 3 launderings- 30, after 3 drycleanings- 35 (5514).</p>	<p>Color(1) - to be obtained by acid milling &amp; selected direct or vat dyes (3).                      Colorfastness - standard sample available (5614-5620-5651-5660-5682).</p>	<p>Intended Use - In the manufacture of rainwear.</p>
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<p><b>MIL-C-4141A</b>                      Type I                      Type II</p>	<p>Color - Olive Drab to conform with Shade No. 3412 of Spec. TT-C-595.</p>	<p>Thickness: Type I- 0.040 ± 0.005 in. Type II- 0.025 ± 0.005 in. (5030). Elongation: Type I- 20% min. in W &amp; F; Type II- 20% min. in W &amp; F (5104). Well made splices showing no tails shall be permitted at any point of any individual filament, provided the number of splices does not exceed 4 in any length of 1 1/2 in. Sewage: Type I- 7/8 in. 11/32 in., with 24 ends reeled 2 ends per lens; Type II- 4 ends per dent.</p>	<p>Intended Use - Type I, in the manufacture of Radar tow targets. Type II, spring covering in Anti-"G" Suits.</p>
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### SYNTHETIC OR MIXED SYNTHETIC CLOTHS-WOVEN

NOMENCLATURE	YARN					Width Inch	Weight Oz/ Sq Yd	Weave	Yarns Per In. Min.	Breaking Strength Lb. Min.	Tearing Strength Lb.	Air Permea- bility	Shrink- age Max.	Fold Value Max.
	Fiber		Ply	Yarns										
	Melting Point	Type		Denier	Fila- ment									
									(5050)	(5100)	(5134)	(5450)	(5556)	
Cloth, Polyethylene, Leno			W   F	W   F	W   F		Min   Max		W   F	W   F	W   F		W   F	
MIL-C-4222B (ASG) Am. 2														
Type I		Poly- ethylene		(a)	36	-	7.5	3-end leno	12 11			(5104)	35 35	
Type II				Contin- uous extru- ded mono- filament	72	-	11.0	(4)	12 9				35 35	(24 ends each selv.)

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, etc.)	NOTES (Not Specification Requirements)
MIL-C-4222B Type I Type II	Use of dyestuffs, detergents, or other chemicals or finishing agents which would cause deterioration in storage is prohibited.	Color - Cloth shall be made from natural, undyed or unpigmented monofilaments unless otherwise specified by the procuring activity.	(a) Type II monofilament shall be wrapped with an aluminum foil stripping 0.03 ± 0.005 in. width & 0.0015 ± 0.0001 in. in thickness, with a min. of 20 wraps/in. of stripping around the monofilament. Elongation: 30% min. in the W; 25% min. in the F. Selvage: 11/16 in. ± 3/16 in. Tight or wavy selvages shall not be permitted. All monofilaments shall be 0.021 ± 0.002 in. in diameter (exclusive of aluminum foil). Well made splices showing a min. of tails shall be permitted at any point of any individual monofilament, provided that the number of splices shall not exceed 30 in any length of 100 yd. & that there are no more than 5 splices/100 yds. in any given monofilament.	Intended Use - in the manufacture of tow targets & equipage.



### SYNTHETIC OR MIXED SYNTHETIC CLOTHS-WOVEN

NOMENCLATURE	YARN					Width Inch	Weight Oz/ Sq Yd	Weave	Yarn Per In. Nos.	Breaking Strength Lb. Min.	Tearing Strength Lb.	Air Permea- bility	Shrink- age Max.	Point Value Max.
	Fiber		Ply	Yarns										
	Spinning Point	Type		Denier	Fila- ment									
						Min/Max								
Cloth, Synthetic Fiber, Text MIL-C-4424B (USAF)			W F	W F	W F	(1) 20.0	-	Plain 1 up 1 down	28 15	(5100) (5104)	250 100			

**Cloth, Nylon Twill**  
MIL-C-4424A (USAF)  
Amd. 4

Type I- 3.3 oz.  
(nominal weight)

Class A - Finished

natural

Class B - Water

resistant treatment -

Bright  
nylon

40- - 3.30 <sup>(a)</sup>  
41 <sub>2</sub>  
3.35 right  
twill

170	85	120	120	7	7	15	max.	2%	1 1/2%
170	85	115	115	8	8	15	max.	2%	1 1/2%

Type II- 5.4 oz.  
(Nominal weight)

Class A- Finished

natural

Class B- Water

resistant treatment -

Class C- Finished

natural - heavily

calendered

Class D- Water

resistant treatment

heavily calendered -

"	-	5.40	250	72	170	160	10	10	18	max.	2%	1 1/2%
"	-	5.50	250	72	160	155	10	10	18	max.	2%	1 1/2%
"	-	5.40	250	78	150	160	7	7	10	max.	2%	1 1/2%
"	-	5.50	250	78	140	150	9	9	10	max.	2%	1 1/2%

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, etc.)	NOTES (Not Specification Requirements)
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MIL-C-4424B	(8) pH: 5.0 - 9.0 (2811).	Color - shall be natural undyed unless otherwise specified.	Thickness: 0.039 in. min. (5030). Stiffness: 0.300- 0.750 lb. in the warp; 0.300-0.500 lb. in the filling (502).	Intended Use - As a visor stiffening material and for use in the protector pads of Anti- "G" Suits and high altitude pressure garments.
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MIL-C-4294 Type I Class A Class B Type II Class A Class B Class C Class D	All types and classes - smooth & free from wrinkles. Type I, Class B and Type II, Classes B and D: shall be given a durable water resistant treatment. Spray vating: Initial- 100; After 3 laundings or dry cleanings- 70 (5526). Type II, Class C and D: shall be heavily calendered. All types and classes - finish shall be a "permanent finish". pH: 6.0 - 8.0 (2810-2811). (8)	Color - Unless otherwise specified, cloth shall match standard shade Sage Green, No. 511 (3). Colorfastness - "good" (5620-5682-5670-5614).	(a)At the contractor's option, the weave of Type II cloth may be a 3-up, 1-down right hand twill. Ultimate elongation: all types and classes, both warp and filling - 20% min. (5100).	Intended Use - In the manufac- ture of flying clothing, as liner and exterior materials, and for cover of casualty bags.
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### SYNTHETIC OR MIXED SYNTHETIC CLOTHS-WOVEN

NOMENCLATURE	YARN					Width Inch	Weight Gz/ Sq Yd	Weave	Yarn Per In. Mils (5050)	Breaking Strength Lb. Min. (5100)	Tearing Strength Lb (5134)	Air Perme- ability (5430)	Shrink- age Max. (5556)	Point Value Max.
	Fiber		Ply	Yarns										
	Melting Point	Type		Denier	Fila- ment									
		W F	W F	W F	Min Max	W F	W F	W F	W F	W F				
Cloth, Parachute, Nylon MIL-C-7020E														
Type I- 1.1 oz. rip-stop weave	250° +6°C	(a) Poly- amide				36.5 +0.5	- 1.1	(4)	120 120	(5104) 42 42	5 5	100±20	2% 2%	
Type II- 1.6 oz. twill weave	"	"				"	- 1.6	2 Twill	120 76	50 50	5 5	130±30	2% 2%	
Type III- 1.6 oz. rip-stop weave	"	"				"	- 1.6	(4)	120 76	50 50	4 4	130±30	2% 2%	

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, etc.)	NOTES (Not Specification Requirements)
MIL-C-7020E Type I Type II Type III	(8) Type I- cloth shall be given a preliminary scour sufficient to remove sizing & other contamination at a temperature that will not cause fixation of same into cloth or result in permanent setting of the cloth. Cloth shall be dried & calendered at sufficient temperature & pressure to control air permeability. Pre-scour may be omitted & clean greige goods be subjected directly to calendering. Further wet processing of the cloth may be accomplished at a temperature in excess of 200°F in order to stabilize air permeability. Length of time required for complete setting of the cloth at this temperature shall be sufficient to shrink & set the cloth. Types II & III - above process optional. None of the types shall be bleached in any manner or process. Finish shall be permanent and stable. Finished cloth shall contain a silicone oil, evenly distributed. pH: 5.0 - 9.0 (2811).	Color- shall be natural, International Orange No. 22197, Olive Green No. 126 Sand No. 1005, conforming to a submitted standard shade (3). Colorfastness - standard sample available (5614-5620-5630-5660).	(a) Nylon shall be a bright, high tenacity, light & heat resistant polyamide prepared from hexamethylene & adipic acid or its derivatives. Yarn shall not be bleached in any manner. Thickness: Type I- 0.003 in max.; Types II & III- 0.004 in. max. (5030). Elongation, both directions; All types- 20% min. (5104). Light & heat resistance: finished cloth shall not lose more than 25% of its original strength when tested (4.4.6).	Intended Use - Primarily in the manufacture of parachutes. Also, as a base cloth for coated fabrics.

## SYNTHETIC OR MIXED SYNTHETIC CLOTHS-WOVEN

NOMENCLATURE	YARN					Width Inch	Weight Oz/ Sq Yd	Weave	Yarn Per in. Min. (5050)	Breaking Strength Lb. Min. (5100)	Tearing Strength Lb. (5134)	Air Perme- ability (5450)	Shrink- age Max.		Point Value Max.
	Fiber		Ply	Yarns									W	F	
	Starting Point	Type		Denier	Fila- ment										
<u>Cloth, Dack, Briza</u> <u>Parachute Packs</u> MIL-C-7219C			W F	W F	W F		Min Max		W F	W F	W F		W	F	
Type I- 9.5 oz.	290° ± 6°C	(a) Bright high tenacity nylon	2   3	(b)	(b) Multi- fila- ment	(1)	- 9.50	Plain 1 up 1 down	60   38	(5104) 400   300	35   45	5.0	2½	2½	
Type II- 8.75 oz.	"	(c) nylon	2   2	(b)	"	(1)	- 8.75	"	78   38	400   150	35   20	5.0	2½	2½	
Type III- 7.25 oz.	"	(a) Bright high tenacity nylon	2   2	(b)	Warp: filament Filling: staple	(1)	- 7.25	"	60   45	325   275	20   20	8.0	2½	2½	

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, etc.)	NOTES (Not Specification Requirements)
MIL-C-7219C Type I Type II Type III	Cloth shall not be bleached in any manner or process. Cloth shall be given a durable water resistant treatment. Spray rating: Initial- Type I- 80, 80, 80; Type II- 80, 80, 70; Type III- 90, 90, 80. After 3 dry cleanings: Type I- 70; Type II- 70, 70, 70; Type III- 70, 70, 70 (5526). Hydrostatic pressure: Type I- 25; Type II- 30; Type III- 25 (5514). Blocking: unless otherwise specified, there shall be no sticking of cloth to cloth. (5872).	Color - Types I & II shall match TCA Cable No. 66022, Shade S-1 (U.S. Army Olive Drab) or Olive Drab No. 106 or TCA Cable No. 70072, Indian orange (crepe side) or Orange 70072, as specified. Type II- shall match Sage Green No. 1535 or Olive Green No. 106, as specified (3). Colorfastness - standard sample available (5614-5620-5651-5660).	(11) (a) Nylon yarn shall be a light and heat resistant polyamide prepared from hexamethylene diamine & adipic acid or its derivatives. (b) Plied yarns or a single multifilament yarn of equivalent denier may be used. (c) Warp yarn shall be bright high tenacity filament; filling shall be bright or semi-dull nylon staple of such staple length and denier to conform to the requirements listed.	Intended Use - In the manufacture of parachute packs & equipment other than parachute packs.

### SYNTHETIC OR MIXED SYNTHETIC CLOTHS-WOVEN

NOMENCLATURE	YARN					Width Inch	Weight Oz/ Sq Yd	Weave	Yarns Per In. Min. (5050)	Breaking Strength Lb. Min. (5100)	Tearing Strength Lb (5134)	Air Permea- bility (5450)	Shrink- age Max. (5556)		Point Value Max.						
	Fiber		Ply	Yarns									Min	Max		W	F	W	F	W	F
	Melting Point	Type		Denier	Fila- ment																
<u>Cloth, Nylon,</u> <u>Parachute, Cargo</u> MIL-C-7350C (ASG) Amd. 1			W	F	W	F	W	F					W	F							
Type I	250°C +6°C	(a) High tenacity nylon					36 $\frac{1}{2}$ $\pm\frac{1}{2}$ $\pm\frac{1}{2}$	-	2.25 (4)	70 70	(5104) 90 90	10 10	100-150	2%	1%						
Type II								-	3.50 (4)	52 52	135 125	30 30	150-200	2%	1%						

Cloth, Nylon,  
Balistic

MIL-C-7812C (AER)

Type I- 7.5-8.5 oz. Plain weave	Nylon	7	1	210	40	34	13	(1)	7.8 8.5	Plain	38 30	800 -			3%	2%
Type II- 17-18 oz.	"	1	1	840	840	140	140	(1)	17 18	3 broken twill (3 ends weaving as 1, 3 picks in the shed)	73 68	900 800			2%	2%
Type III- 12.4-12.8 oz.	"	5	5	210	210	34	34	(1)	12.4 12.8	2x2 basket	40 40	(5102) 580 625 min.			7 $\frac{1}{2}$ %	7%

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, etc.)	NOTES (Not Specification Requirements)
MIL-C-7350C Type I Type II	(8) Permanent finish; air permeability shall not change more than 15% & thickness shall not increase more than 10% for Type I and 15% for Type II when tested (4.3.2.2). pH: 5.0 - 9.0 (2811).	Color - natural, unless otherwise specified. When color is specified, std. sample is available (3). Colored cloth shall be dyed with acetate- or acid-type dyes. Metalized or chrome-type dyes shall not be used. Colorfastness (1), except Olive Green, Shade 106, which shall be "fair" (5660) & "good" (5651).	Ultimate elongation: 25% min. for both types, W & F (5104). Thickness: Type I- 0.0060 in. max.; Type II- 0.014 in. max. (5030). Load required to separate the seam $\frac{1}{2}$ in. shall be not less than 10 psi in either the warp or filling direction (4.3.2.1).	Intended Use - In the manufacture of cargo parachute canopies.
MIL-C-7812C Type I Type II Type III	(8) Type II- cloth shall be heat set at 100 ± 1°C by passing through boiling water & allowing free relaxation to occur. After heat setting, an acrylic resin, Rohm and Haas Rhoplex E-21 or equivalent, shall be applied to one side of the cloth. Resin applied shall not be less than 3% nor more than 5% of the weight of the heat set cloth. Types I & III: No starch, resin or other stiffening ingredient shall be present in the finished cloth.	Color - color of the finished cloth shall be natural.	Thickness: Type I- 0.028-0.032 in.; Type II- 0.035-0.039 in.; Type III- none specified. Elongation: Type I- 20-30% in both W & F; Type II- 20-40% in both W & F; Type III- 25% min. in the warp and 20% min. in the filling.	Intended Use - In the manufacture of flak protective vests and curtains used in aircraft, and fragmentation protective body armor worn by Marine Corps personnel.

## SYNTHETIC OR MIXED SYNTHETIC CLOTHS-WOVEN

NOMENCLATURE	YARN					Width Inch	Weight Oz/ Sq Yd	Weave	Yarn Per in. Min. (5050)	Breaking Strength Lb. Min. (5100)	Tearing Strength Lb (5134)	Air Perme- ability (5450)	Shrink- age Max. (5556)	Point Value Max.	
	Fiber		Ply	Yarns											
	Making Point	Type		Center	Fila- ment										
Cloth, Nylon, Twill MIL-C-7978 (ANS)	Bright Nylon	1	2	210	210	3 $\frac{1}{2}$	3 $\frac{1}{2}$	Min/Max - 6.2 $\frac{2}{2}$ right I twill	60	45	350	400	25	35	W   F

Cloth, Parachute,  
Nylon, Cargo and  
Deceleration  
MIL-C-8021C

Type	oz. max.	250°C min.	(a) Nylon	1	1	36 $\frac{1}{2}$ ± $\frac{1}{2}$	-	4.75 $\frac{2}{2}$	twill	70	70	200	200	15	15	50- 90	450- 650	2%	2%	
Type I-	4.75			1	1			4.75	$\frac{2}{2}$	twill	70	70	200	200	15	15	50- 90	450- 650	2%	2%
Type II-	7			2	2			7.00	(4)	53	48	300	300	20	20	50- 90	450- 650	2%	2%	
Type IIA-	10.5			4	4			10.50	(4)	40	38	500	500	75	75	50- 90	650- 750	2%	2%	
Type III-	14			1	1			14.00	(4)	38	38	600	600	75	75	15- 55	250- 450	2%	2%	

Class 1- Air  
Permeability at  $\frac{1}{2}$  in.  
water pressure.  
Class 2- Air  
Permeability at 20 in.  
water pressure.

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, etc.)	NOTES (Not Specification Requirements)
MIL-C-7978	Natural finish (greige state).			Intended Use - In the manufac- ture of sea anchors for patrol type aircraft.

MIL-C-8021C  
Type I  
Type II  
Type IIA  
Type III  
Class 1  
Class 2

(8)  
Permanence of finish to be tested  
(4,2,4,1). Cloth thickness after  
testing shall not be more than 10%  
more than the thickness before  
testing. The average of the air  
permeability readings taken after  
testing shall be within ±15% of  
the average of the readings  
taken before testing. Cloth  
shall not be bleached in any  
manner or process.  
pH: 5.0 - 9.0.

Color - unless otherwise  
specified, color shall be  
natural. Standard sample  
available(3) for dyed  
cloths.  
Colorfastness - standard  
sample available for  
dyed cloths (5614-5620-  
5660).

(a)Nylon shall be a bright  
high tenacity, light &  
heat resistant, polyamide  
prepared from hexamethyl-  
ene diamine & adipic acid  
or its derivatives. Yarn  
shall not be bleached in  
any manner or process.  
Elongation: Types I, II,  
& III- 25% min. in both  
W & F. Type IIA- 35% min  
in both W & F (5104).  
Cloth for fabricating  
new parachutes shall  
not be more than 2 yrs.  
old from the date of  
manufacture to the date  
of delivery. Age of  
cloth for repair &  
maintenance of para-  
chutes shall be as  
specified by procuring  
activity.

Intended Use - In the manufac-  
ture of cargo & deceleration  
parachutes.

## SYNTHETIC OR MIXED SYNTHETIC CLOTHS-WOVEN

NOMENCLATURE	YARN					Width Inch	Weight Oz/ Sq Yd	Weave	Yarns Per In. Min.	Breaking Strength Lb Min.	Tearing Strength Lb	Air Perme- ability	Shrink- age Max.	Point Value Max.					
	Fiber		Ply	Yarns															
	Melting Point	Type		Denier	Fila- ment														
		W	F	W	F	W	F	W	F	W	F	W	F						
Cloth, Nylon, Dobby MIL-C-3321 (USAF)	Bright nylon						Contin- uous	(1)	3.25	2.25	(4)	175	85	(5104)	10	7	50	2 1/2	1 1/2

Cloth, Glass,  
Finished, For Poly-  
ester Resin Laminates  
MIL-C-9084B, Amd. 1  
(ASG)

	Glass yarns	Ply	Denier	Fila- ment	Width Inch	Weight Oz/ Sq Yd	Weave	Yarns Per In. Min.	Breaking Strength Lb Min.	Tearing Strength Lb	Air Perme- ability	Shrink- age Max.	Point Value Max.	Flexural Strength After Lamination (thousands of psi)	
														Standard	Net
Type I- 112		1/ 2	450	Contin- uous	(1)	1.76 2.20	Plain	39 38	0.003 - 0.005					50	45
Type II- 116		1/ 2	450		(1)	2.68 3.35	"	59 57	0.004 - 0.006					45	40
Type III- 120		1/ 2	450		(1)	2.68 3.35	Crowfoot	59 57	0.004 - 0.006					50	45
Type IV- 128		1/ 3	225		(1)	5.08 6.35	Plain	41 31	0.007 - 0.009					45	39
Type IVA- 128-150		1/ 2	150		(1)	5.08 6.35	"	41 31	0.007 - 0.009					45	39
Type V- 143		3/2 1/2	225 450		(1)	7.88 9.85	Crowfoot	48 29	0.008 - 0.012					90	78
Type VA- 143-150		2/2 1/0	150 225		(1)	7.88 9.85	"	48 29	0.008 - 0.012					90	78
Type VI- 162		2/ 5	225		(1)	10.24 12.80	Plain	27 15	0.015 - 0.019					35	30
Type VII- 164		4/ 3	225		(1)	13.92 13.65	"	19 17	0.014 - 0.017					35	30
Type VIIA- 164-150		4/ 2	150		(1)	10.92 13.65	"	19 17	0.014 - 0.017					35	30
Type VIII- 181		1/ 3	225		(1)	8.00 10.00	Satin	56 53	0.008 - 0.012					50	45
Type VIIIA- 181-150		1/ 2	150		(1)	8.00 10.00	"	56 53	0.008 - 0.012					50	45
Type IX- 182		2/ 2	225		(1)	11.20 14.00	"	59 55	0.012 - 0.015					50	45
Type IXA- 182-150		1/ 3	150		(1)	12.40 15.50	"	59 55	0.013 - 0.016					50	45
Type X- 183		3/ 2	225		(1)	14.40 18.00	"	53 47	0.018 - 0.022					45	40
Type XI- 184		4/ 3	225		(1)	21.76 27.20	"	41 35	0.026 - 0.032					45	40
Type XIA- 184-150		4/ 2	150		(1)	21.76 27.20	"	41 35	0.026 - 0.032					45	40

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, etc.)	NOTES (Not Specification Requirements)
MIL-C-3321	(8) Use of dyestuffs, detergents, or other chemicals or finishing agents which would cause deterioration in storage or cause dermatitis on prolonged intimate skin contact is prohibited. pH: 5.0 - 9.0 (2811).	Color (1). Colorfastness - "good" (5614-5620-5660-5682).	Ultimate elongation: 25% min. in both directions (5104).	Intended Use - In the construction of flying clothing.

MIL-C-9084B	Cloth shall be cleaned & shall then be treated with a finish which will produce the characteristics required by finished glass cloth in this specification, including the required performance characteristics when tested with the applicable laminating resin.	Color - the color of the finished cloth shall be uniform and shall be characteristic of the applied finish.	(a) See specification for weaves description & diagrams.	Intended Use - In fabricating polyester resin laminates for structural parts, radio & radar antenna housings, & other applications. They are specifically intended for use in fabricating laminates conforming to Spec. MIL-P-8013 and plastic sandwich materials conforming to Spec. MIL-S-9041.
Type I				
Type II				
Type III				
Type IV				
Type IVA				
Type V				
Type VA				
Type VI				
Type VII				
Type VIIA				
Type VIII				
Type VIIIA				
Type IX				
Type IXA				
Type X				
Type XI				
Type XIA				

### SYNTHETIC OR MIXED SYNTHETIC CLOTHS-WOVEN

NOMENCLATURE	YARN					Width Inch	Weight Oz/ Sq Yd	Weave	Yarns Per In. Min.	Breaking Strength Lb. Min.	Tearing Strength Lb	Air Permea- bility	Shrink- age Max.	Point Value Max.
	Fiber		Ply	Yarns										
	Matting Point	Type		Denier	Fila- ment									
						Min/Max								
<u>MIL-S-10679C</u> Class 1- Tan 125 Class 2- White 3030			W F	W F	W F			Plain	150 70	45 25				
<p>Both Classes: Warp: continuous filament, 100 denier dull acetate, 25-40 filaments. Filling: continuous filament, 100 denier dull rayon, 25-60 filaments.</p>														
<u>Cloth, Acetate, (Saponified), Rip- Stop</u> MIL-C-10772A Amd. 3								Plain (double end every 20th end, double pick every 18th pick)	126 106	95 80			3% 1%	
<p>Saponified oriented cellulose ester</p>														
<u>Cloth, Rayon</u> MIL-C-11460 (ORD) Amd. 1									70- 70- 200 140				50 ± 15	
<p>(a) Viscose rayon</p>														

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, etc.)	NOTES (Not Specification Requirements)
MIL-S-10679C Class 1 Class 2		Color - Class 1: tan 125 Class 2: White, Navy color 3030 (6). Standard samples available (3). Colorfastness - standard sample available (5651- 5614-5680-5682).		Intended Use - Scarf for use by female personnel of the Army (tan) and the Navy (white).
MIL-C-10772A	Natural finish (10).	Color - to match an appro- (11) ved standard shade of Olive Green 106, obtained by pig- mentation of the cellulose acetate solution prior to the spinning of the yarn. The pigmentation shall con- sist of carbon black & appropriate organic color pigment (3). Colorfastness - standard sample available (5660- 5651-5614-5622-5682).		Intended Use - In the manufac- ture of various types of cold climate clothing.
MIL-C-11460	Cloth shall be uniform and have no visible imperfections.(8). Acidity or alkalinity: Mineral- none; Organic- 0.10% max.	Color - natural unbleached or bleached white.	(a)The rayon shall contain no acetyl groups & not more than 0.2% sulfur.	Intended Use - For liners for recoilless cartridge cases.

### SYNTHETIC OR MIXED SYNTHETIC CLOTHS-WOVEN

NOMENCLATURE	YARN					Width Inch	Weight Oz/ Sq Yd	Weave	Yarns Per in. Min. (5050)	Breaking Strength Lb. Min. (5100)	Tearing Strength Lb (5134)	Air Perme- ability (5450)	Shrink- age Max. (5556)	Point Value Max.	
	Fiber		Ply	Yarns											
	Melting Point	Type		Denier	Fin- ment										
<u>Fabric, Glass, woven</u> MIL-F-12298A (MU)			W	F	W	F	W	F	Min	Max	W	F	W	F	
Type I- Lightweight	(a)	Fibrous	2	2	Contin-	(1)	5.37 ±10%	Plain	34	32	110	90			
Type II- Medium vgt.	"E" glass	"	3	3	uous	±1	8.90 ±10%	8- harness	57	54	145	130			
Type III-Heavy vgt.	"	"	2	2	"	"	16.75 ±10%	satin	54	48	270	250			
									±2	±2					
<u>Cloth, Ballistic,</u> <u>Nylon</u>														Undyed	
MIL-C-12369D (GL)	250°C ±6°C	(a) Bright high tenacity nylon	1050	1050	Multi- fila- ment	48- 40	14.0 +1.0 -0.5	2/2 basket (2 ends weaving as 1, 2 picks weaving as 1)	46	42	900	825	3%	2%	Natural 22.0 Lyed 18.0

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, etc.)	NOTES (Not Specification Requirements)
MIL-F-12298A Type I Type II Type III	The amount of finish on the cloth, as measured by the chrome level, shall be not less than 0.03% nor more than 0.06%.		(a) Glass yarns shall be woven to conform to the weave requirements, heat-cleaned, and then finished with a methacrylate chromic chloride finish.	Intended Use - For use with phenolic resins in preparing Belleville springs for non-metallic mines.
MIL-C-12369D	Cloth shall be scoured & heat-treated and shall be processed to meet the ballistics resistance requirements of this specification. pH: 5.0 - 8.5 (2811) (10).	Color (1) - Unless otherwise specified, cloth shall be undyed (natural). Standard sample available for colors (3), which shall be obtained by piece dyeing using neutral premetallized dyes applied at a pH value consistent with the highest temperature possible for the apparatus used. Colorfastness - standard sample available (5660).	(11) (a) Nylon shall be prepared from hexamethylene diamine and adipic acid or its derivatives. Ultimate elongation: 25% in the warp; 20% in the filling (5100). The ballistic limit V <sub>50</sub> for 12 layers of unbonded cloth shall be not less than 1225 ft/sec (4.4.1).	Intended Use - In the manufacture of body armor, helmets, and armored clothing.



## SYNTHETIC OR MIXED SYNTHETIC CLOTHS-WOVEN

NOMENCLATURE	YARN					Width Inch	Weight Oz/ Sq Yd	Weave	Yarns Per in. Min. (5050)	Breaking Strength Lb. Min. (5100)	Tearing Strength Lb (5134)	Air Permea- bility (5450)	Shrink- age Max. (5556)	Point Value Max.
	Fiber		Ply	Yarns										
	Making Point	Type		Denier	Fila- ment									
Cloth, Acrylic (For Cartridge Bags) MIL-C-12800 (ORD) Amd. 1		(a) Acrylic	W F	W F	W F	Min Max		Plain, single	50 50	40 40				

Cloth, Cartridge,  
High Capacity Direct  
Spun Viscose Rayon  
MIL-C-13540 (ORD)

(a)  
High  
tenacity  
viscose  
rayon

(1) 2.8 3.2 Plain,  
single 60- 60- 50 50  
65 65

Labels, Garment  
(Woven, Rayon)  
MIL-L-15040E

Size A- 1-5/16x3"  
Size B- 3/4 x 2"  
Size C- 2-1/4 x 4"  
Size D- 2-1/4 x 5"

Regener-  
ated  
cellu-  
lose  
(Viscose  
or Cup-  
ramonium)  
Rayon

Ground warp: 100 denier  
singles or 50 denier, 2  
ply; 14<sup>1/2</sup> ends per in. min.  
Ground filling: 75 denier  
singles, 92 picks per  
in. min. Figure filling:  
150 denier singles, 92  
picks per in. min.

Taffeta  
and  
figured

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS	NOTES
			(Such as thickness, etc.)	(Not Specification Requirements)
MIL-C-12800	(8-10) Cloth shall pass the objectionable sizing test (4.15). Cloth shall be boiled off or scoured to remove sizing materials.		(a) Yarns shall be spun from acrylonitrile polymer fibers or copolymers of acryloni- trile containing no halogens such as chlorides, bromides, fluorides, or iodides. Slippage: 10% min. in warp and filling (5100). Stretch: 10% max. in the warp and filling.	Intended Use - In the manufac- ture of cartridge bags for ammunition for 75mm. & 105mm. Howitzers. Not for use with propellants containing nitro- guanidine.
MIL-C-13540	(2) The cloth shall pass the object- ionable sizing test (4.14). pH: 5.5 - 7.7 (2-11).		(a) The warp yarns only shall be sized with gelatin applied from an aqueous bath not to exceed 165°F, containing 3% (by weight of bath) of an undegraded gel- atin and 0.25% (by weight of bath) of paranitrophenol. Slippage: warp- 135 min.; filling- 125 min. (5100). Stretch: 8.5% max. in both warp and filling (4.4).	Intended Use - In manufac- turing cartridge bags for artillery propelling charges.
MIL-L-15040E Size A Size B Size C Size D		Color - Backward & sel- vages shall be Shade Black 211 & the design & legend shall be white to match the standard sample (3-1). Design & legend (1). Colorfastness - standard sample available (5422-5600).	Selvages: Sizes A & B 100 denier singles or 50 denier 2 ply; " double ends each selvage. Sizes C & D- 12 denier singles or 50 denier 2 ply; 12 double ends each selvage.	Intended Use - In the of this item shall be will be primarily used to and the use of other type label shall also comply with the appearance of the item.

### SYNTHETIC OR MIXED SYNTHETIC CLOTHS-WOVEN

NOMENCLATURE	YARN					Width Inch	Weight Oz/ Sq Yd	Weave	Yarns Per In. Mtn.	Breaking Strength Lb. Min.	Tearing Strength Lb	Air Permea- bility	Shrink- age Max.	Point Value Max.
	Fiber		Ply	Yarns										
	Mating Point	Type		Denier	Fila- ment									
			W   F	W   F	W   F	Min   Max		W   F	W   F	W   F		W   F		
<u>Cloth, Parachute,</u> <u>240-Permeability;</u> <u>For Use with Under-</u> <u>Water Ordnance</u> MIL-C-17208A (BuOrd) Amd. 1														
Type I- Nylon Class A- 4.0 oz. High tenacity nylon Class B- 8.0 oz. Class C- 10.0 oz.														
Type II- Saponified Acetate Class A- 4.0 oz. Saponified oriented cellulose acetate Class B- 8.0 oz. Class C- 10.0 oz.														
<u>Cloth, Saran, Utility</u> <u>Bag</u> MIL-C-18449A (NAVY)														
10 mil pigmented polyvinylidene chloride Mono-filament 54 11.5 13.0 +1/4 -1/4														
(a) 4/4 double end skip twill (4) (b) 67 48 155 140														

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, etc.)	NOTES (Not Specification Requirements)
MIL-C-17208A Type I Class A Class B Class C Type II Class A Class B Class C	Smooth and even, containing no sizing, lubricating, or weighting materials. Thickness shall not increase more than 10% after testing (4.4.1). pH: 4.5 - 8.5 (2830).	Color - when color is not specified in procurement document, no coloring matter of any sort shall be added to cloth or yarn. Camouflaging (1) - std. samples or instructions. Colorfastness (5632).	Elongation: Class A, Type I- 25% min. in both directions. Type I, Classes B & C- 30% min. in both directions. Type II, Classes A, B, & C- 10% min. in both directions.	
MIL-C-18449A	Flame resistant treated - Ave. length of flame- 3 sec. max. Ave. length of char- 4.5 in. max. (5903T).	Color - Green 3428 - std. sample available (3). Colorfastness - standard sample available (5651-5660). (a)Warp: 4 ends of green & 4 ends of white with double ends of each color weaving as one. Filling: all natural color.	(11) (b)Breaking strength after heat aging- 145 lb. min. in the warp; 130 lb. min. in the filling.	Intended Use - In the manufacture of fire-resistant utility bags primarily intended for personal bunk storage in surface ships and submarines.

## SYNTHETIC OR MIXED SYNTHETIC CLOTHS-WOVEN

NOMENCLATURE	YARN					Width Inch	Weight Oz/ Sq Yd	Weave	Yarns Per In. Min. (5050)	Breaking Strength Lb. Min. (5100)	Tearing Strength Lb (5134)	Air Permea- bility (5450)	Shrink- age Max. (5556)	Point Value Max.			
	Fiber		Ply	Yarns													
	Spinning Point	Type		Denier	Fila- ment												
<u>Cloth, Twill, Nylon</u> <u>(Low Count, 3x2</u> <u>ounce)</u> MIL-C-19256B (SA)	244°C min.	Bright luster nylon	210	21	0	30	(1)	3.4	3.6	3-harness 2 right 1 twill	56	56	225	210	2%	2%	20.00

Cloth, Parachute  
(For Ring-Shot Type  
Parachutes Used in  
Underwater Ordnance)  
MIL-C-19262 (Ward)  
Amd. 2

<b>Type I- Nylon</b>	High tenacity nylon	Multi- fila- ment	40-	5.0	(4)	350	130	45	20	60±15	2%	1%
Class A- 5.0 oz.			48	8.0		560	210	70	30	60±15	2%	1%
Class B- 8.0 oz.			10.0			625	425	75	60	80±20	2%	1%
<b>Type II- Saponified Acetate</b>	Saponified oriented cellulose acetate	Conti- nuous multi- filament	40-	5.0	(4)	250	160	35	25	60±15	2%	1%
Class A- 5.0 oz.			48	8.0		400	260	55	44	60±15	2%	1%
Class B- 8.0 oz.			10.0			500	330	70	55	80±20	2%	1%
Class C- 10.0 oz.												

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS	NOTES
			(Such as thickness, etc.)	(Not Specification Requirements)

MIL-C-19256B	(8) Natural finish; not calendered. 0.003% copper max.; 0.0015% man- anese max. Cloth shall be fully heat set at 400°F. Cloth shall show no appreciable distortion or puckering, and not more than 2% dimensional change. pH: 6.0 - 10.0 (2811).	Color - cloth shall be Green 3410 - std. sample available (3). Colorfastness - standard sample available (5614- 5622-5651-5680-5660).	(11) Selvage: each selvage shall not exceed 1/4 in. Flex- stiffness: 2.5 in. 1. x 10 <sup>-4</sup> max. in the war; 1.8 in. lb. in the filling.	Intended Use - As a base material for synthetic rubber coating.
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MIL-C-19262 Type I Class A Class B Class C Type II Class A Class B Class C	Smooth and even, containing no sizing, lubricating, or weighting materials. pH: 4.5 - 8.5 (2810). Increase in thickness - 10% max. (4.4.1).	Color - when no color is specified in procurement document, no coloring matter of any sort shall be added to cloth or yarn. Camouflaging (1)- samples or instructions (1). Colorfastness - "good" (5632).	(11) All pipe-selvage edges of the cloth shall be constrained by 1 pair (min.) of leno lock- ed ends (4), each leno end to be of the same denier as the body of the cloth. Selvage width: Classes A & B: 1 1/8 in.; Class C: 1-1/8 in. Total ribbon width: (Body + 2 selvages: Classes A & B: 1 3/4 in.; Class C: 1 1/2 in. Width, separation: All classes - 1/8 in. Construction: Type I, Class A: 256 min. in both directions; Classes B & C: 204 min. in both directions; Type II, All Classes: 194 min. in both directions.	
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### SYNTHETIC OR MIXED SYNTHETIC CLOTHS-WOVEN

NOMENCLATURE	YARN					Width Inch	Weight Oz/ Sq Yd	Weave	Yarns Per In. Min.	Breaking Strength Lb. Min.	Tearing Strength Lb	Air Permes- sivity	Shrink- age Max.	Point Value Max.
	Fiber		Ply	Yarns										
	Making Point	Type		Denier	Fine- ment									
						Min/Max								
<u>Cloth, Nylon, Twill,</u> <u>Inflatable Life</u> <u>Preserver</u> MIL-C-19377A (NAVY) Amd. 1			W F	W F	W F				W F	W F	W F		W F	
	Bright high tenacity nylon		70	100	34 34	(1) 3.0 3.3 selvage: 1/2 in. max.	2 2 right twill	165 96	(5100) 180 170 (5104) 160 140 method (1)	10	10		2% 2%	
<u>Cloth, Glass, Woven</u> <u>Roving, For Plastic</u> <u>Laminate</u> MIL-C-19663B (NAVY)														
	Glass				Contin- uous	(1) 24 nominal (7)	Plain (4)	300 240 300 240 300 240 170 136						

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, etc.)	NOTES (Not Specification Requirements)
MIL-C-19377A	(8) Natural finish; may be calendered. Copper content: 0.005% max. Man- ganese Content: 0.001% max. Cloth shall contain no skin irritants. Heat set (1). pH: 6.0 - 8.0 (2810 or 2811).	Color (1) - standard samples available. Colorfastness - "good" (5614-5620-5651-5660-5680).	(11) During preparation of the warp, care should be taken not to abrade the yarn. Smooth eyelets & burnished heddles should be used. Breaking strength after 96 hours accelerated aging at 70 ± 1°C. 145 in the warp; 130 in the fill (5104); 160 in the warp; 155 in the fill (5100).	
MIL-C-19663B Style 605-308 Style 605-406 Style 605-604 Style 345-178	Finished cloth shall be free of oil spots, grease spots, and other contamination, creases, wrinkles, and other forms of permanent dis- tortion, and shall not be brittle or fused. Cloth shall have drap- ability characteristics suitable for the use intended and suffi- cient flexibility to withstand normal handling. Period of time for the resin wet-out shall be 15 min. max.	Color - characteristic of clean natural finished glass cloth.	Nominal average thickness for all styles: 0.045 in. Wet flexural strength after conditioning (4.2, 3.1.2.2 or 4.4.3.2.3) shall not be less than 80% of the dry flexural strength test value.	Intended Use - In laminated plastics for structural or semi-structural parts.

### SYNTHETIC OR MIXED SYNTHETIC CLOTHS-WOVEN

NOMENCLATURE	YARN					Width Inch	Weight Oz/ Sq Yd	Weave	Yarns Per In. Min.	Breaking Strength Lb. Min.	Tearing Strength Lb	Air Perme- ability	Shrink- age Max.	Point Value Max.	
	Fiber		Ply	Yarns											
	Spinning Point	Type		Denier	Fila- ment										
						Min Max									
<u>Cloth, Glass; Terylene, Nitrile, Glass; and Thread, Glass</u> MIL-C-20079C, Am. 1 (See also under Narrow Fabrics)															
Type I- Cloth Class 1- Satin weave, lightweight															
		Fibrous glass				Contin- uous	(1) 9.43 (untreated) 10.80 (treated)	8-harness satin	56 ±2	54 ±2	200 180 (initial) 60 60 (after heating to 900°F.)				
Class 2- Satin weave, heavyweight															
		Fibrous glass				Contin- uous	(1) 13.25 (untreated) 14.76 (treated).	4-harness (crowfoot) satin	48 ±2	32 ±2	300 225 (initial) 70 70 (after heating to 900°F.)				
Type II- Tape (See under Narrow Fabrics)															
<u>Cloth, Cartridge, Rayon</u> MIL-C-20300															
		Viscose Rayon (no acetyl groups)	275	275	120	12	(1) -	12.5	Plain or other		300	300	Maximum Stretch 12.5% 12.5%		

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, etc.)	NOTES (Not Specification Requirements)
MIL-C-20079C Type I Class 1 Class 2 Type II	Cloth shall be treated with suitable synthetic resin.			Intended Use - As a lagging material or jacket over thermal insulation.
MIL-C-20300	(8-10)		When loads equal to 35% of the breaking strength in one direction & 50% in the other direction are applied to the seams as directed (F-4d), the slippage of the yarn shall not exceed 0.25 in.	Intended Use - In the assembly of charges of propellant powder in cannon.

### SYNTHETIC OR MIXED SYNTHETIC CLOTHS-WOVEN

NOMENCLATURE	YARN				Width Inch	Weight Oz/ Sq Yd	Weave	Yarns Per in. Min. (5050)	Breaking Strength Lb. Min. (5100)	Tearing Strength Lb (5134)	Air Permea- bility (5450)	Shrink- age Max. (5556)	Point Value Max.		
	Fiber		Ply	Yarns											
	Matting Point	Type		Denier										Fila- ment	
<u>Cloth, Nylon</u> <u>Raft Bottom</u> <u>MIL-C-21103A (MR)</u>	W		F	W		F	W		F	W		F	W		F
Type I- Nylon, 2.5 oz. rip-stop twill, uncoated	Nylon 66 (polyhexa- methylene adipamide)			(1)	2.4	2.7	Plain (4 rip stop/in. 2 ends weaving as 1)	80	80	115	115	8	8		
Type II- Nylon 5.5 oz., plain weave, uncoated	"			(1)	5.5	0.5	Plain	22	22	225	225	45	38		
<u>Cloth, Nylon, Ribbed,</u> <u>Aircraft Upholstery</u> <u>MIL-C-21318A (MR)</u>	Nylon polyamide (polyhexa- methylene adipamide)			(1)	9.0	11.0	Rib weave (4)	88	36	350	225	20	30	3%	2%

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, etc.)	NOTES (Not Specification Requirements)
MIL-C-21108A Type I Type II			Thickness: Type II - 0.015 in, max.	Intended Use - For coating with a natural rubber compound for use in the manufacture of raft bottoms & associated items. Type I is used to make raft bottom cloth for one-man life rafts. Type II is used to make raft bottom cloth for multi-place life rafts.
MIL-C-21318A	Cloth shall be finished without the addition of materials that will increase the flammability of the cloth.	Color - to match TCA Cable No. 70072 (crepe side), Indian Orange, or TCA Cable No. 70153 (crepe side), Steel Grey (1). Cloth shall be dyed with acetate or acid dyes. Met- allized or chrome dyes shall not be used. Yarn or piece dyeing is acceptable. Colorfastness "good" (5614-5660).	Thickness: 0.036 in. min. Flame resistance: Ave. length of char- 5.5 in. max. in the warp (5902).	Intended Use - In the fabri- cation of aircraft upholstery.

### SYNTHETIC OR MIXED SYNTHETIC CLOTHS-WOVEN

NOMENCLATURE	YARN					Width Inch	Weight Oz/ Sq Yd	Weave	Yarn Per In. Min. (5050)	Breaking Strength Lb. Min. (5100)	Tearing Strength Lb (5134)	Air Permea- bility (5450)	Shrink- age Max. (5556)	Perf Value Max.
	Fiber		Ply	Yarns										
	Melting Point	Type		Denier	Fila- ment									
<u>Cloth, Nylon, Plain Weave, 1/2 0202 MIL-C-21842 (AM) Amd. 1</u>			W F	W F	W F	Min Max		W F	W F	W F		W F		
	High tenacity nylon		40 70	13 3*	(1)	1.1 1.3	Plain 1/1	117 52	(5104) 50 50			2% 1 1/2%		
<u>Cloth, Modacrylic, Felt MIL-C-21841 (S&amp;A)</u>		(a)				(5) 38 min.	6.0±0.5	Plain	85 48	185 85		20	2% 2%	
		Copolymer 2 2 of acrylonitrile & vinyl chloride												
<u>Cloth, Plain Weave, Polyester and Rayon MIL-C-21844 (S&amp;A)</u>						(9) 60	4.2 4.9	Plain	70 56	90 70		135	2 1/2% 2 1/2%	30.00
		55(±3)% polyester 45(±3)% rayon	1 1											

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, etc.)	NOTES (Not Specification Requirements)
MIL-C-21482	(8) Natural finish; not calendered. Copper content: 0.005% max. Manganese content: 0.001% max. pH: 6.0 - 10.0 (2811).	Color - Unless otherwise specified, color shall be natural.	Selvages shall be 1/4" max.	Intended Use - As a base cloth for coated cloth tape to be used in the repair & construction of airship envelopes.
MIL-C-21841	Boiled off & finished to produce a cloth of maximum tightness. Heat stabilized to provide minimum shrinkage in laundering & tumbler drying. Treated with an organic resinous durable water repellent compound. Spray rating: Initial- 100; After 4 accelerated launderings- 70 (5526).	Color - natural.	Selvages shall be 1/4 in. (+1/16) on each side. (a) Material shall be 40 (±2)% acrylic & 60 (±2)% vinyl chloride. The filling shall be spun from high shrink staple. Flex stiffness: 8.0 in. lb. x 10 <sup>-4</sup> max. in both warp & filling. (11)	Intended Use - In the fabrication of permeable peroxide fuel handlers clothing.
MIL-C-21844A	(8)	Color - shall be Blue 3330- std. sample available (3). Polyester component may be dyed using disperse, disperse-developed or azo dyes. Rayon component may be pigmented prior to spinning or may be dyed. (6) Colorfastness - standard sample available (5614-5680-5651).	(11)	Intended Use - In submarine coveralls worn by male Navy personnel.

### SYNTHETIC OR MIXED SYNTHETIC CLOTHS-WOVEN

NOMENCLATURE	YARN					Width Inch	Weight Oz/ Sq Yd	Weave	Yarns Per In. Min.	Breaking Strength Lb. Min.	Tearing Strength Lb	Air Perme- bility	Shrink- age Max.	Point Value Max.	
	Fiber		Ply	Yarns											
	Matting Point	Type		Denier	Fila- ment										
			W F	W F	W F	Min Max		W F	W F	W F		W F			
<u>Cloth, Nylon, Taffeta</u> (2.0 Ounce) MIL-C-21852 (S&A)	244°C. min.	semi- dull Nylon	70	70	Contin- uous	(1) 2.0 2.3	Taffeta (plain)	106 92	110 95	1650 1350 grams		2%	2%		
<u>Cloth, Bunting, Acrylic</u> MIL-C-22775A	(a)	semi- dull acrylic	2	2	3	3	(1) 4.9 -	Plain	30 30	95 100		250	4%	3%	35.00

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS	NOTES
			(Such as thickness, etc.)	(Not Specification Requirements)
MIL-C-21852	(8) Natural finish; not calendered. Copper content: 0.001% max. Man- ganese content: 0.005% max. Heat set at 400°F min. No appreciable change in color, distortion, or puckering; 2% max. dimensional change in either warp or filling (4.4.3).	Color - Green 3406 - stan- dard sample available (3). Colorfastness - standard sample available (5614- 5651-5680-5620-5660).	(11) Flax stiffness: 1.5 in. lb. x 10 <sup>-4</sup> in the warp; 0.5 in. lb. x 10 <sup>-4</sup> in the filling.	Intended Use - With or without coating, for special purpose clothing worn by Navy personnel.
MIL-C-22775A	(8-10) Natural finish, equal to the standard sample.	Color (i) - to match std. shades (3). Colorfastness - standard sample available (5651- 5610-5670-AATCC/106-1962).	(11) (a) 2 in. min. staple length. Selvage shall be 1/4 (±1/16) in. Fiber shall be capable of being dyed with basic dyestuffs.	Intended Use - Primarily in the manufacture of signal flags.



## SYNTHETIC OR MIXED SYNTHETIC CLOTHS-WOVEN

NOMENCLATURE	YARN					Width Inch	Weight Oz/ Sq Yd	Weave	Yarns Per in. Min. (5050)	Breaking Strength Lb. Min. (5100)	Tearing Strength Lb (5134)	Air Permea- bility (5480)	Shrink- age Max. (5536)	Point Value Max.
	Fiber		Ply	Yarns										
	Melting Point	Type		Denier	Fila- ment									
Cloth, Synthetic, With Heat Resistant MIL-C-23882 (USAF) Am. 1			W F	W F	W F	Min Max		W F	W F	W F		W F		

Type I- 3.0 oz.	High strength aromatic polyamide melt-resistant	100 100	50 50	(1)	3.0	-	2/2 right twill	108 106	(510 <sup>b</sup> ) 130 110	18	12	20-40	(5532) 2% 2%
Type II- 4.0 oz.		200 200	100 100	(1)	4.0	-		74 72	170 150	24	24	40-60	2% 2%

Cloth, Nylon, Mbr- quietette, Parachute MIL-C-26643 (USAF)	250°C ± 6°C	(a) Polyamide	70 70	3/4 3/4	(1)	-	0.9 4 end lano (4) repeating x 2 picks	52 34	(510 <sup>b</sup> ) 35 25	3	3	1600- 1750	1 1/2 1 1/2
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Cloth, Parachute, Nylon, Aromatic, Nonmelting MIL-C-38351 (USAF)	(a)													
Type I														Thickness (in. max.)
Class 1- 4.7 oz.	Nonmelting aromatic polyamide	1 1	200 200	±15 ±15	(1)	-	4.7 2/2 right twill	74 74	190 190	14	14	40-70	0.011	20.00
Class 2- 6.5 oz.		2 2	" "	" "	(1)	-	6.5 (4)	53 48	265 265	20	20	50-80	0.022	20.00
Class 3- 12.0 oz.		5 5	" "	" "	(1)	-	12.0 (4)	38 38	425 425	75	75	40-80	0.032	20.00
Type II														
Class 1- 7.0 oz.		2 2	" "	" "	(1)	-	7.0 Plain (1/1)	60 45	285 245	20	20	8 max.	0.015	20.00
Class 2- 18.0 oz. resin treated		5 5	" "	" "	(1)	-	18.0 3/4 basket	59 60	950 950				0.036	20.00

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, etc.)	NOTES (Not Specification Requirements)
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MIL-C-23882 Type I Type II	(B) Cloth shall be given a scour sufficient to remove sizing & other contaminants without permanently setting the cloth. Cloth shall then be dried.	Color - Shall be orange or olive green (1). Color shall be obtained by the utilization of solution-dyed yarns. Colorfastness - "good" (5614).	Seam efficiency: 75% min. (5110). Stiffness: 0.010 lbs. max. in W & F (5202). Flame resistance: Flame time- 0 sec. max. Glow-time- 10 sec. max. Ave. Length of char- 4 in. max. (5903). Melt drop- no melting. Resistance to abrasion: 11,000 cycles to failure, min. (5308).	Intended Use - In the fabrication of lightweight flight clothing.
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MIL-C-26643	Finished with a resin treatment to impart firmness. Permanent finish: air permeability shall not change more than 10%; thickness shall not change more than 10%. pH: 5.0 - 9.0 (2811).	Color - shall be natural.	(a)Yarn shall be prepared from hexamethylene diamine and adipic acid or its derivatives. Thickness: 0.0062 in. max.	Intended Use - In the vanes & cones of pilot parachutes. Also intended for future application in canopy inversion barrier.
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MIL-C-38351 Type I Class 1 Class 2 Class 3 Type II Class 1 Class 2	Type II, Class 2: Cloth shall be impregnated with resin, so that the finished cloth shall have a stiffness of 0.45-0.65 in. lb. in the warp & of 0.65-0.85 in. lb. in the filling (5202). pH: 5.0 - 9.0 (2811).	Color - shall be natural.	(a)Yarn shall not carbonize at a temperature below 800°F (4.4.3). Ultimate elongation: Type I, Class 1- 30% min.; Class 2- 25% min.; Class 3- 15% min.; Type II, Class 1- 40% min. in the warp & 30% min. in the filling (5104).	Intended Use - In the manufacture of parachute canopies, packs, and pack stiffeners.
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### SYNTHETIC OR MIXED SYNTHETIC CLOTHS-WOVEN

NOMENCLATURE	YARN					Width Inch	Weight Oz/ Sq Yd	Weave	Yarns Per In. Min. (5050)	Breaking Strength Lb. Min. (5100)	Tearing Strength Lb (5134)	Air Permea- bility (5450)	Shrink- age Max. (5556)	Point Value Max.
	Fiber		Ply	Yarns										
	Melting Point	Type		Denier	Fila- ment									
<u>Cloth, Acrylic-Rayon</u> <u>(For Cartridge Bags)</u> MIL-C-40070 (OR)		W   F	W   F	W   F	Min   Max			W   F	W   F	W   F		W   F		
Class 1- Breaking Strength: 60 lb.	(a)	Acrylic- viscose rayon			(1)	4.75 5.25	Plain- single (1 end/dent)	35 35	60 60					
Class 2- Breaking Strength: 80 lb.					(1)	5.75 6.25	2/1 twill	34 34	80 80					
Class 3- Breaking Strength: 125 lb.					(1)	8.75 9.25	2/1 twill	45 45	125 125					
Class 4- Breaking Strength: 170 lb.					(1)	11.0 11.5	2/2 basket	48 48	170 170					

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, etc.)	NOTES (Not Specification Requirements)
MIL-C-40070 Class 1 Class 2 Class 3 Class 4	(8) Cloth shall be finished with a starch size. Finished cloth shall not contain more than 10% starch (4.3.2.1.2). Acidity: 0.1% max. Alkalinity: 0.1% max. (4.3.2.4). Cloth shall contain no halogens (4.3.2.5). pH: 5.0 - 9.0 (4.3.2.2).		(11) (a) Acrylic fiber content shall be 50-60% (4.3.2.1.3). Slippage value: all classes- 60 min. (5100). Stretch: all classes- 10% max. (5100).	Intended Use - In the manu- facture of cartridge bags for artillery ammunition. Cloth is not for use with propellants containing nitroguanidins.

### SYNTHETIC OR MIXED SYNTHETIC CLOTHS-WOVEN

NOMENCLATURE	YARN					Width inch	Weight Oz/ Sq Yd	Weave	Yarns Per in. Min. (5050)	Breaking Strength Lb. Min. (5100)	Tearing Strength Lb (5134)	Air Permea- bility (5450)	Shrink- age Max. (5556)	Point Value Max.
	Fiber		Ply	Yarns										
	Spinning Point	Type		Denier	Fila- ment									
<u>Cloth, Gabardine, Polyester and Rayon MIL-C-41820B</u>		W F	W F	W F	Min Max			W F	W F	W F		W F		
Type I- 6.0 oz. (bleached white)	(a) Polyeth- ylene	2	2		(1) 6.0 -	$\frac{2}{1}$		110 52	210 90			2½% 1½%	40.00	
Type II- 6.4 oz. (Dyed)	glycol tereph- thalate	2	2		(1) 6.4 -	right twill		110 6.	210 105			2½% 1½%	35.00	
Type III- 8.0 oz. (Bleached white or dyed)	& rayon staple	2	2		(1) 8.0 -			92 42	280 120			2½% 1½%	white- 40.00 dye- 35.00	

Class 1- Bleached  
white  
Class 2- Dyed

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, etc.)	NOTES (Not Specific Requirements)
MIL-C-41820B Type I Type II Type III Class 1 Class 2	(8) Types I & III cloth shall be scour- ed, heat set & bleached or dyed, to provide a finish equal to that of the standard sample. Type II, Class 2 shall be scoured, heat set, dyed & resin treated at a time & temperature that will insure adequate curing of the resin. pH: 6.0 - 8.0 (2811).	Color - Types I & III, Class 1 cloth shall be bleached white - std. sample available. Color shall be obtained with a chemical bleach, prefer- ably hydrogen peroxide or peroxygen chemicals. Chemical bleach may be supplemented with a fluo- rescent violet fluorescing brig- htener. Types II & III, Class 2 cloth shall be dyed - std. sample avail- able (3). Rayon component may be pigmented prior to spinning or may be dyed using fast organic dyes (6). Colorfastness - standard sample available. Type I & Type III, Class 1, no discoloration in light (4,4). Type II and Type III, Class 2 (5660- 5614-5680-5651).	(a) Use of optically bright- ened polyester fiber is permitted for Type I & Type III, Class 1. Unless otherwise specified, the use of optically bright- ened fiber for Type II & Type III, Class 2 is pro- hibited. Polyester fiber content: 65-75%. Seam efficiency: 85% min. (5110).	Intended Use - In the manufac- ture of clothing items.

### SYNTHETIC OR MIXED SYNTHETIC CLOTHS-WOVEN

NOMENCLATURE	YARN					Width Inch	Weight Oz/ Sq Yd	Weave	Yarns Per In. Min. (5050)	Breaking Strength Lb. Min. (5100)	Tearing Strength Lb (5134)	Air Permes- bility (5450)	Shrink- age Max. (5556)	Point Value Max.
	Fiber		Ply	Yarns										
	Melting Point	Type		Denier	Fila- ment									
Cloth, Plain Weave, Nylon; Water Repel- lent OG-106 MIL-C-43128A			W F	W F	W F		Min Max		W F	W F	W F		W F	
	Bright high tenacity nylon		210 ±5%	210 ±5%	Multi- fil- ment	(1)	3.8 4.8	Plain	80 56	275 225		2.0	3% 2%	40.00
Cloth, Spacer (Treated) MIL-C-43204														
	Polyethylene	Diameter	0.010 ± 0.001		(9)	60 min.	9.5 11.5	(4)	20 (W 1) 19 (W 2)	110 200				
	Polypropylene	Diameter	0.010 ± 0.001						27 (W 3) 70 (F)					

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, etc.)	NOTES (Not Specification Requirements)
MIL-C-43128A	(8) Scoured, heat treated & calendered. Water repellent treatment of aluminum salts of saturated carboxylic acid (such as formate, acetate, palmitate, or stearate), zirconium salts of such saturated carboxylic acids, or a combination of both, mixed with refined vegetable and mineral waxes, titanate esters, or a combination of both. The product shall be applied either in the form of an aqueous emulsion or in the form of a water free solvent solution to effect the deposit of not more than 6% on the weight of the finished cloth. Spray rating: 90, 90, 80 (5526). pH: 5.5 - 8.5 (2811).	Color - of the dyed & finished cloth shall be OG-106 and shall match the standard sample (3). Colorfastness - standard sample available (5671-5613).	(11) Stiffness: 0.005 lb. max. in the warp; 0.004 lb. max. in the filling (5202). Seam efficiency: 85% min. (5110).	Intended Use - In the rucksack (Lightweight), the jungle hammock and the carrying case for the collapsible canteen.
MIL-C-43204	(8)	Color - (1).	(11-12). Thickness: Initial 0.2 min., Compressed, 0.075 min., After Comp, 0.18 min. Dimensional stability. Change Max. W- 4%, F- 2%.	Intended Use- Spacer fabric in equipage items.

## SYNTHETIC OR MIXED SYNTHETIC CLOTHS-WOVEN

NOMENCLATURE	YARN					Width Inch	Weight Oz/ Sq Yd	Weave	Yarns Per In. Min. (5050)	Breaking Strength Lb. Min. (5100)	Tearing Strength Lb (5134)	Air Permea- bility (5450)	Shrink- age Max. (5556)	Point Value Max.
	Fiber		Ply	Yarns										
	Melting Point	Type		Denier	Fila- ment									
<u>Cloth, Cartridge, Polyester-Viscose Rayon (For Cartridge Bags)</u> MIL-C-43153 (M)		W   F	W   F	W   F		Min   Max		W   F	W   F	W   F		W   F		
Class 1 - Breaking Strength: 90 lb.	Polyester- viscose rayon				(1)	4.75 5.25	Plain- single	35 35	90 90					
Class 2 - Breaking Strength: 125 lb.	(Polyethylene- terephthalate & viscose rayon blend)				(1)	5.75 6.25	twill 2/1	35 35	125 125					
Class 3 - Breaking Strength: 175 lb.					(1)	8.75 9.25	twill 2/1	45 45	175 175					
Class 4 - Breaking Strength: 200 lb.					(1)	10.75 11.25	basket 2/2	50 50	200 200					
<u>Cloth, Spun Viscose Rayon, Resin Impregnated</u> MIL-C-43157 (M)														
Class 1 - Lighter wgt.	Viscose rayon, spun				(1)	2.80 3.20	Plain	48 48	35 35					
Class 2 - Heavier wgt.					(1)	6.75 7.25	Single	35 35	85 85					
Class 3 - Scarlet colored					(1)	6.75 7.25	(1 end in dent)	35 35	85 65					
<u>Cloth, Plain Weave, Acrylic</u> MIL-C-43234 (GL)														
	Acrylic, 1	1	3 denier per filament		(1)	4.8 -	Plain	40 34	75 55			(5552) 4 1/2 3 1/2	35.00	
	cut staple													

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, etc.)	NOTES (Not Specification Requirements)
MIL-C-43153 Class 1 Class 2 Class 3 Class 4	(8) Acidity: 0.1% max. Alkalinity: 0.1% max. (4.3.5). pH: 5.0 - 9.0 (4.3.3).	Color (1).	Slippage value: All classes - 60 min. (4.3.10). Stretch: All classes - 10% max. (4.3.11).	Intended Use - In the manufac- ture of cartridge bags for artillery ammunition.
MIL-C-43157 Class 1 Class 2 Class 3	Cloth shall be finished with a urea formaldehyde resin (past type) plus a durable water repul- sion (melamine resin base). Loss of breaking strength of the impregnated cloth conditioned in dinitrogen tetroxide shall be 10% max. Spray rating: 70 (5526). pH: 5.5 - 7.5 (2811).	Color - Class 1 or 2: color shall be natural unless otherwise spec- ified. When color is specified, dye or tint shall be fugitive. Class 3: color shall be scarlet.	Slippage: min. value of 60 (4.3.4). Stretch: 10% max. (4.3.5).	Intended Use - In the manufac- ture of cartridge bags for artillery propelling charges.
MIL-C-43234	Lightly napped on one side. Degree of character and finish of the cloth shall be equal to the standard sample.	Color - Shall be Olive Green 106 (3). Colorfastness - standard sample available (5610- 5651-5680).		Intended Use - As a component of an insulating cap.

### SYNTHETIC OR MIXED SYNTHETIC CLOTHS-WOVEN

NOMENCLATURE	YARN					Width Inch	Weight Oz/ Sq Yd	Weave	Yarns Per in. Min. (5050)	Breaking Strength Lb. Min. (5100)	Tearing Strength Lb (5134)	Air Permea- bility (5450)	Shrink- age Max. (5556)	Point Value Max.
	Fiber		Ply	Yarns										
	Melting Point	Type		Denier	Fila- ment									
<u>Cloth, Pile, Acrylic,</u> <u>Fiber Pile</u> MIL-C-43251			W F	W F	W F		Min Max		W F	W F	W F		W F	
Pile- acrylic staple. Backing- blend of cellulose acetate & triacetate staples			3			(1)	11.5 13.5	10 wales  20 courses						
<u>Cloth, Plain Weave,</u> <u>Nylon-Cloth, Plain</u> <u>Weave, Polyester</u> MIL-C-43286														
Type I - Polyester 4.0 oz.	Bright,	2	2	220	220	Multi- or the equiv- alent	(1) 4.0 -	Plain 1 up 1 down	32	32	200	200		25.00
Type II - Nylon 5.0 oz.	Bright			840	840	Multi- fila- ment	(1) 5.0 -	"	22	22	275	275		25.00

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, etc.)	NOTES (Not Specification Requirements)
MIL-C-43251	Open and sheared. Pile height 13/32 in. ± 1/32 in. pH: 5.5 - 8.0	Color - Green 252 (3). Colorfastness - Standard sample. If none avail- able follow 5614.	(11) Triacetate 45% min.	Intended Use - Lining components in canteen cover. Acrylic type resin used for bonding or anti- curl agent permitted.
MIL-C-43286 Type I Type II	(8) Scoured and heat treated. Finished cloth shall show no appreciable distortion or puckering, and no dimensional change greater than 3% in the warp, 3% in the dia- gonal direction, and 2% in the filling. pH: 5.0 - 8.5 (2811).			Intended Use - As base materials for coated cloths to be utilized in the manufacture of air supported shelters.

### SYNTHETIC OR MIXED SYNTHETIC CLOTHS-WOVEN

NOMENCLATURE	YARN					Width Inch	Weight Oz/ Sq Yd	Weave	Yarn Per In. Min.	Breaking Strength Lb. Min.	Tearing Strength Lb	Air Permea- bility	Shrink- age Max.	Point Value Max.
	Fiber		Ply	Yarns										
	Matting Point	Type		Denier	Fila- ment									
			W F	W F	W F	Min Max		W F	W F	W F		W F		
<u>Cloth, Plain Weave,</u> <u>Polyester, Low Air</u> <u>Permeability</u> MIL-C-43347A	Polyethylene glycol terephthalate, bright high tenacity, multifilament.					(5) 41	8.5 -	Plain (or 2 ends weaving as 1)	64 43 (or 128 for the warp in the alter- nate weave)	475 540	25 30	2.0 (at 6" of water)		30.00
<u>Cloth, Duck,</u> <u>Nylon 13-Ounce</u> MIL-C-43375A (GL)	(a)	3-ply Bright or single high equivalent tenacity nylon	840	420	Multi- fila- ment	(1)	12.5 -	Plain 1 up 1 down	56 28	800 700		3.0		35.00
<u>Cloth, Flannel,</u> <u>Acrylic, Rayon</u> <u>and Acetate</u> MIL-C-43462 (GL)		Blend of semi- dull acrylic, dull rayon and dull acetate staples.	single	3			min. 4.5 - 1.4 (9)	2 up 2 down right twill	66 54	70 50			min. 3.5 2.5	25.00

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, etc)	NOTES (Not Specification Requirements)
MIL-C-43347A	(8) Cloth shall be scoured, high temperature heat set, calendered, and water repellent treated with a silicone emulsion, to result in a finish equal in character to the standard sample. Spray rating: 90, 90, 90 (5526).	Color - Color shall be natural.	(11)	Intended Use - In the manufacture of air supported tents.
MIL-C-43375A	Scoured, dyed, and heat set. pH: 5.0 - 8.5 (2811).	Color (1) - Standard sample available (3). Colorfastness - standard sample available (5614-5660).	(a) Yarn shall be a polyamide prepared from hexamethylene diamine and adipic acid or its derivatives.	Intended Use - In collapsible canteen covers.
MIL-C-43462	(8) Cloth shall be scoured.	Color (1) - Standard sample (3). Colorfastness - Standard samples available. If no standard sample, follow (5560-5614-5680-5556).	Resultant blend min. 50% acrylic fiber. Fabric character must match standard sample. Seam efficiency 90% min.	Intended Use - Manufacture of scarves for female personnel.

### SYNTHETIC OR MIXED SYNTHETIC CLOTHS-WOVEN

NOMENCLATURE	YARN				Width Inch	Weight Oz/ Sq Yd	Weave	Yarns Per In. Min. (5050)	Breaking Strength Lb. Min. (5100)	Tearing Strength Lb (5134)	Air Permes- bility (3450)	Shrink- age Max. (5556)	Point Value Max.	
	Fiber		Ply	Yarns										
	Melting Point	Type		Denier										Fila- ment
Cloth, Silica, Phenolic Impregnated MIL-C-81251 (WP)		W F	W F	W F	Min Max		W F	W F	W F		W F			
Silica cloth conforming to OS 9349, Type II, except that it shall contain a min. of 96% silica, and a phenolic resin conforming to MIL-R-9299, Type II, Class 2.														

Cloth, Nylon MIL-C-81268 (WP)	Poly- vinyl Chloride	210 210	1.55 2.00	Plain	22 ~ 24	65 65
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NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, etc.)	NOTES (Not Specification Requirements)
MIL-C-81251	Uncured resin-impregnated cloth shall contain 28 ± 3% resin solids by weight. Uncured resin-impregnated cloth shall contain 4-7% volatile matter by weight. Uncured resin-impregnated cloth shall have a resin flow of 15-21%.		(11) Cured cloth shall have a min. ave. flexural strength of 19000 psi at 75±5°F. No individual value shall be below 18000 psi (method 1031 of Std. 406). Cured cloth shall have a min. ave. tensile strength of 12000 psi at 75±5°F. No individual value shall fall below 11000 psi (method 1011 of Std. 406). Cured cloth shall have a min. specific gravity of 1.67 (method 5011 of Std. 406).	Intended Use - In rocket motors.
MIL-C-81268 (WP)			(11) Elongation: 35% max. Thickness: 0.006-0.009 in.	Intended Use - As a wrapper for the external surface of propellant grain in rocket motors.



**SYNTHETIC OR MIXED SYNTHETIC CLOTHS-WOVEN**

NOMENCLATURE	YARN					Width Inch	Weight Oz/ Sq Yd	Weave	Yarn Per In. Min. (5050)	Breaking Strength Lb. Min. (5100)	Tearing Strength Lb (5134)	Air Permea- bility (5450)	Shrink- age Max. (5556)	Point Value Max.
	Fiber		Ply	Yarns										
	Melting Point	Type		Denier	Fila- ment									
Cloth, Herringbone Twill, Polyamide, High Temperature Resistant MIL-C-81280A (WP)			W   F	W   F	W   F		Min/Max		W   F	W   F	W   F		V   F	
Type I- 3.3 oz.		High temperature aromatic polyamide melt-resistant				(5)	45 3.3 3.8	Broken herring- bone twill (4)	107 75	90 60	6 5	200	2% 1 1/2%	(5552)
Type II- 5.0 oz.							45 5.0 5.5		94 76	130 100	16 10	100	2% 2%	

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, etc.)	NOTES (Not Specification Requirements)
MIL-C-81280A (WP) (8) Type I Type II	Cloth shall be desized and scoured, without permanently setting the cloth, and an anti-static finish added. Cloth shall be heat-set at 500°F. for 15 sec. (min.) and shall be well singed on both sides. Flame resistance: Flaming time- both types: 2 sec. max. Glow time- both types: 25 sec. max. Average length of char- Type I: 3.5 in. max.; Type II: 2.5 in. max. (5903T).	Color - Cloth shall be Green to match Navy Shade No. 3433. Color shall be obtained by the use of solution-dyed fibers.	Seam efficiency: 80% min. (5110).	Intended Use - In the fabrication of lightweight flight clothing.

REFERENCES

SYNTHETIC OR MIXED SYNTHETIC CLOTHES - WOVEN

Textile Test Methods - CSC-T-191b

<u>Method</u>	<u>Title</u>
<u>Chemical</u>	
2611	Nonfibrous materials, enzyme method.
2810	Acidity (pH), colorimetric method.
2811	Acidity (pH), potentiometric method.
<u>Construction</u>	
5020	Width of cloth.
5050	Yarns per inch in woven cloth.
5030	Thickness of cloth.
<u>Mechanical</u>	
5100	Strength and elongation, breaking, of woven cloth, grab method.
5104	Strength and elongation, breaking, of woven cloth, ravel strip method.
5110	Sevability; strength-of-seam method.
5120	Bursting strength, ball method.
5122	Bursting strength, diaphragm.
5134	Tearing strength, tongue method.
5136	Tearing strength, trapezoid method.
5202	Stiffness, directional, cantilever bending method (Timius Olsen).
5308	Abrasion Resistance of Cloth; Uniform Abrasion (Schiefer) method.
5410	Slippage resistance of yarns in cloth.
<u>Air Permeability and Water Resistance</u>	
5450	Air permeability, calibrated orifice method (Frazier).
5514	Water resistance, hydrostatic pressure, low range.
5526	Water resistance, with hydrophobic finish, spray method.
<u>Shrinkage Resistance</u>	
5550	Shrinkage in laundering; cotton, linen, and mixed cotton and linen cloth.
5552	Shrinkage in laundering; cloth other than cotton and linen.
5555	Shrinkage in laundering; mobile laundry method.
<u>Colorfastness</u>	
5614	Laundering of wool, silk, rayon cloth; Launder-Ometer.
5620	Dry cleaning (petroleum solvent).
5622	Wet cleaning (with dry cleaning).
5630	Water, cold.
5632	Salt water and soap.
5651	Crocking of cloth.
5660	Light; accelerated (Fade-Ometer).
5670	Weather; accelerated method (Twin Arc Weather-Ometer).
5671	Weather; accelerated method (National Weathering Unit).
5680	Perspiration; perspirometer method.
5682	Perspiration; tube method.
<u>Deterioration Tests</u>	
5850	Aging; accelerated oven method.
5852	Aging; accelerated oxygen method.
5872	Temperature, high; blocking.
<u>Fire-Resistance Thermal Tests</u>	
5902	Flame resistance; vertical.
5903	Flame resistance of cloth; modified vertical.
5910	Burning rate of cloth; 30° angle.

GENERAL NOTES

MIXED FIBER CLOTHS - WOVEN

The following parenthetical numbers are utilized throughout this section of the text as referenced notes. Upon observing these numbers, refer to this page for further information dealing with specific portions of the item.

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|--|--|
| (1) As specified.                            | (6) Markings, insignia, etc.           |
| (2) Reprocessed, reused, noils, roving, etc. | (7) Preproduction sample.              |
| (3) Colormatching.                           | (8) Sulfur dyes.                       |
| (4) Nonfibrous, etc., restrictions.          | (9) Width exclusive of selvage.        |
| (5) Weave instructions or pattern.           | (10) Bid sample and laboratory report. |
|  | (11) Width inclusive of selvage.       |

The specific test methods referenced in this section of the text are listed with their titles at the end of the section.

MIXED FIBER CLOTHS-WOVEN

NOMENCLATURE	Fiber Content	Ply	Woolen Yarns		Synthetic Yarns		Width Inch	Weight Oz/ Sq Yd	Weave	Yarns Per In. Min.	Breaking Strength Lb. Min.	Tearing Strength Lb.	Air Permeability	Shrinkage Max.	Faint Value Max.
			Gross USDA	System	Denier	Filament									

Bedsread, Cotton or Cotton/Rayon Blend DD-B-151e (See also under Cotton Cloths)		W	F	W	F	W	F	Min/Max	W	F	W	F	W	F	
Type I- Crinkle	Cotton or blend of	1	1	See under Cotton Cloths for all other requirements.											
Type II- Minky	50(±5)% cotton &	1	1												
Type III- Herringbone stripe	50(±5)% high wet-strength modulus-type rayon (Type IV cords-all cotton)	1	1												

Cloth, Interlining, Cotton Warp, and Spun Hair-Wool Filling  
MIL-C-297D

Type	Wgt.	Fiber	Ply	System	Denier	Filament	Width	Weight	Weave	Yarns	Breaking	Tearing	Air	Shrinkage	Faint	
Type I- Med. vgt.	Cotton warp,	1	1	Worsted	(1)	7.0	8.0	Plain	44	38	50	45	(5555) Freshrun	3%	1%	40.00
Type II- Hvy. vgt.	goat-hair & staple	"	"	"	(1)	8.0	9.0	"	44	38	50	45	3%	1%	40.00	
Type III- Lt. vgt.	wool (2) filling	"	"	"	(1)	5.0	6.0	"	44	40	50	38	3%	1%	40.00	

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as Thickness, Water Repellency, etc.)	NOTES (Not Specification Requirements)
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DD-B-151e see under Cotton Cloths for all requirements, notes, etc.  
Type I  
Type II  
Type III  
Type IV

MIL-C-297D (4)  
Type I  
Type II  
Type III

Color - Warp shall be unbleached natural. Filling shall be the natural color of the hair and wool.

Stiffness (measured parallel with the filling):  
Type I- 0.011 load lb. min.  
Type II- 0.016 " (5202).  
Type III- 0.005 " (5202).  
Animal fiber content: 50% min. (2100).

Intended Use - As an interlining in clothing items.

### MIXED FIBER CLOTHS-WOVEN

NOMENCLATURE	Fiber Content	Ply	Woolen Yarns		Synthetic Yarns		Wt/ft Inch	Weight Oz/Sq Yd	Weave	Yarns Per In. Min.	Breaking Strength Lb. Min.	Tearing Strength Lb.	Air Permeability	Shrinkage Max.	Point Value Max.
			Grade USDA	System	Denier	Filament									
<p><u>Blanket, Bed (Other than All Wool)</u>                      DDD-B-421e                      (See also under Cotton Cloths)</p> <p>Type I- All Cotton                      (See Cotton Cloths)</p> <p>Type II- Cotton                      W, wool F                      Class 1- Twill (Double filling)                      Size 1- 60x80 in. 20% cotton 44's min.                      Size 2- 66x90 in. 80% wool min.                      Size 3- 72x90 in. &amp;/or repro-                      Size 4- 66x84 in. ceased wool (99% wool)</p> <p>Type III- Blended                      Nylon-wool-rayon-cotton and other fibers                      Class 1- Twill (Double filling)                      Size 1- 60x80 in. 80% min. wool 44's min.                      Size 2- 66x90 in. &amp;/or reprocessed                      Size 3- 72x90 in. wool, 10% min.                      Size 4- 66x84 in. nylon, 10% max. rayon, cotton &amp; other fibers (50% of wool, max., reprocessed)</p>															
		W F			W F	W F	Min/Max			W F	W F	W F		W F	
							(lb.)								
							(blanket)								(5552)
							3.3 3.45	(5)	52 40	38 36					10% 10%
							4.1 4.3	(5)	52 40	38 36					10% 10%
							4.4 4.6	(5)	52 40	38 36					10% 10%
							3.8 4.0	(5)	52 40	38 35					10% 10%
							(lb.)								
							3.3 3.4	(5)	22 20	35 30					10% 10%
							4.1 4.4	(5)	22 20	35 30					10% 10%
							4.4 4.6	(5)	22 20	35 30					10% 10%
							3.8 4.0	(5)	22 20	35 30					10% 10%

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as Thickness, Water Repellency, etc.)	NOTES (Not Specification Requirements)
DDD-B-421e Type I Type II Class 1 Size 1 Size 2 Size 3 Size 4 Type III Class 1 Size 1 Size 2 Size 3 Size 4	(4) All types - finished equal to the standard sample with respect to nap and hand. The napped fibers shall offer considerable resistance to lifting with a needle.	Color (1) - When white is specified, color shall be unbleached white consistent with the natural color of the specified fibers. Wool shall be selected to avoid the presence of black fibers. Black fiber content shall be no greater than that of the standard sample. Std. sample available for all other colors specified (3). Colorfastness - standard sample available (5651-5614). (6)	Intended Use - As bed coverings.	

### MIXED FIBER CLOTHS-WOVEN

NOMENCLATURE	Fiber Content	Ply	Woolen Yarns		Synthetic Yarns		Width Inch	Weight Oz/Sq Yd	Weave	Yarns Per In. Min.	Breaking Strength Lb. Min.	Tearing Strength Lb.	Air Permeability	Shrinkage Max.	Fiber Value Max.
			Grade USDA	System	Denier	Filament									
<u>Scarfs, Chaplains'</u> MIL-S-422B			W	F	W	F		Min/Max		W	F	W	F	W	F
Type I- Scarf, Chaplain's, Christian Faith (Army)	(a) Bengaline rayon warp; cotton filling	- 2				Multi-filament		7.0	Plain	140 25	100 100				
Type II- Scarf, Chaplain's, Jewish Faith (Army)		- 2						7.0	"	140 25	100 100				
Type II- Scarf, Chaplain's, Christian Faith (Air Force)		- 2						7.0	"	140 25	100 100				
Type IV- Scarf, Chaplain's, Jewish Faith (Air Force)		- 2						7.0	"	140 25	100 100				

Cloth, Nylon Bunting and Cloth, Nylon-and-Wool Bunting

CCC-C-476d  
(See also under Synthetic Cloths)

Type I- 100% Nylon filament (See Synthetic Cloths)

Type II- 75% Nylon staple (staple) 25% Wool nylon & fleece &/or pulled wool (2)	2	2	44's Bradford French or American	(1)	4.8 - ± 1/2	Plain	32 30	115 100
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NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as Thickness, Water Repellency, etc.)	NOTES (Not Specification Requirements)
MIL-C-422B Type I Type II Type III Type IV		Color - Type I: Black (Cable No. 65018); Type II: Bleached white; Types III & IV: Silver Grey (Cable No. 65008). Standard samples available for all shades (3-8). Colorfastness- standard sample available (5622-5680-5651-5660). (6)	(7) (a) Rayon shall be high luster, regenerated cellulose type, of the viscose or cupramonium process.	Guide sample available.
CCC-C-476d Type I Type II	Crabbed, sheared on both sides, and given a commercial anti-static finish.	Color (1)- Colors specified for the American Flag shall be in accordance with requirements specified in DDD-F-416. Standard sample available for other colors specified (3). Colorfastness - standard sample available (5632-5630-5651-5660).	There shall be a plain woven selvage on each side, 1/4 in (+1/8 in.) wide, with 2 ends weaving as 1.	Intended Use - Primarily in the manufacture of various types of flags.

### MIXED FIBER CLOTHS-WOVEN

NOMENCLATURE	Fiber Content	Ply	Woolen Yarns		Synthetic Yarns		Width Inch	Weight Oz./ Sq Yd	Weave	Yarns Per In. Min.	Breaking Strength Lb. Min.	Tearing Strength Lb.	Air Permeability	Shrinkage Max.	Point Value Max.	
			Grade USDA	System	Denier	Filament										
<u>Cloth, Pile, Alpaca; and Cloth, Pile, Wool</u> MIL-C-483B																
			W F	W F	W F		Min/Max			Dacking File	W F Filling	W F	W F Pile length (in.)	W F Animal Fiber %age		
Type I- Cloth, wool, pile, double face, 5/16 in.	Ground or backing yarns (vary or filling); cotton. Pile Yarns: wool; 50's-56's; 2-ply; Bradford, French, or American System.					(9) 5 1/2 min.	15.0	Modified "W" weave (5)	38	19	32	65	50	5/16 (5/32 ea. face)	60	
Type II- Cloth, wool, pile, double face, 1/2 in.						"	20.5	"	38	19	36	60	70	1/2 (1/2 ea. face)	60	
Type VII- Cloth, alpaca, pile, single face, 1/2 in.	Ground or backing yarns: Same as for I and II. Pile yarns: alpaca; 56's min.; 2-ply; Bradford, French, or American System.					"	19.0	Fast pile (5)	5 1/2	18	46	60	90	1/2	55	
Type IX- Cloth, wool, pile, double face, 1/4 in.	Ground and filling yarns: Same as for I and II. Pile yarns: same as for I and II.					"	14.0	Modified "W" weave (5)	38	19	32	65	50	1/2 (1/8 each face)	60	

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as Thickness, Water Repellency, etc.)	NOTES (Not Specification Requirements)
MIL-C-483B Type I Type II Type VII Type IX	(4) Pile shall be tigered, so that pile tufts are open to within 1/8 in. of the ground cloth and in an upright position. Pile shall be vacuumed to remove loose fibers. Cloth shall show no more than a trace of loose fibers or compound when shaken vigorously over a smooth black surface. Cloth shall have a properly applied silico fluoride moth repellent treatment. Animal fiber shall have 0.4 - 0.7% fluorine (4.4.1). pH: 3.3 - 4.5 (2811).	Color - Type VII: natural. (7) Types I, II & IX: natural or dyed(1). Standard sample available for dyed (3). Color to be obtained by chrome or neutral premetallized dyestuffs by piece, stock, or yarn methods. Colorfastness - standard sample available (5651-5614-5622-5690).		Intended Use - As a protective lining for cold climate clothing, and to be used in the manufacture of winter flying clothing.

### MIXED FIBER CLOTHS-WOVEN

NOMENCLATURE	Fiber Content	Ply	Woolen Yarns		Synthetic Yarns		Width Inch	Weight Oz/Sq Yd	Weave	Yarns Per In. Min.	Breaking Strength Lb. Min.	Tearing Strength Lb.	Air Permeability	Shrinkage Max.	Point Value Max.
			Grade USDA	System	Denier	Filament									
Towel or Dishcloth (Crash, Cotton, and Cotton and Linen-Mixed); Cloth, Crash, Cotton		W F			W F	W F		Min/Max		W F	W F	W F		W F	
DDD-T-511c (See also under Cotton Cloths)															
Type I- Towel or dishcloth Class 1- Cotton warp and linen filling (unbleached)	Cotton & Linen							17	6.0 min.	Plain	28	22	45	35	40.00
Class 2- All Cotton (bleached) (See under Cotton Cloths)															
Type II- Cloth, crash, cotton (bleached) (See under Cotton Cloths)															

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as Thickness, Water Repellency, etc.)	NOTES (Not Specification Requirements)
DDD-T-511c Type I Class 1 Class 2 Type II	(4) Type I, Class 1 towels shall be scoured and unbleached.	When specified, towels shall have woven, colored stripes, 3/16 - 5/16 in. wide, located 7/16 - 9/16 in. from each selvage edge. Colorfastness - stripes shall show "good" fastness (5600-5610).	The height of the rise of the colored water shall be a min. of 6 cm. in 5 min. in both warp and fill.	



**MIXED FIBER CLOTHS-WOVEN**

NOMENCLATURE	Fiber Content	Ply	Woolen Yarns		Synthetic Yarns		Width Inch	Weight Oz/ Sq Yd	Weave	Yarns Per In. Min.	Breaking Strength Lb. Min.	Tearing Strength Lb.	Abr. Resistance	Shrinkage Max.	Point Value Max.
			Grade USDA	System	Denier	Filament									
Cloth, Serge, Wool; Wool and Nylon MIL-C-823E, Amd. 2 (See also under Wool Cloths)		W F			W F	W F		Min/Max		W F	W F	W F		W F	

Type I- Wool  
(See Wool Cloths)

Type II- Wool and nylon Class 1- 18 oz. Class 2- 16 oz.	83% w'n. fleece &/or pulled wool & 15% min. nylon top or cut tow (2) wool content 95% of wool used.	2 1	60's Bradford				(9) 60 18.0 -	4-harness	66 52	135 120				(5558) 4% 2 1/2%	10.00
		2 1	60's French or American				min. 16.0 - (5 1/4" lin yd)	2 right 2 twill	70 5 1/2	120 110				4% 2 1/2%	10.00

Cloth, Fleece, Cotton

Warp and Wool-Nylon

Filling: Lining.

15-Oz. Shrink

Resistant

MIL-C-2069D (GL)	Filling: 2 1 (a) Woolen Fleece &/or pulled wool (80% min) & staple nylon (10-20%)(2) Warp: cotton						(9) 56 15.0 16.5 2' right min. (5 1/4" lin yd)		36 36	40 30				(5558) 5% 4% (5554) 4% 3%	15.00
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NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as Thickness, Water Repellency, etc)	NOTES (Not Specification Requirements)
MIL-C-823E Type I Type II Class 1 Class 2	Fullled and sheared and otherwise finished to give stability of color and finish. Type and character of finish shall conform to that of standard sample. Supplier shall obtain approval for finish prior to production. pH: 5.5 - 8.5 (2811).	Color - Color, types of colorants, and methods of coloring (1). Standard samples available (3). Speck dyeing prohibited. Army Green 44 to be produced by blending dyed wool top. Unless otherwise authorized, piece dyeing is prohibited. Colorfastness - standard sample available (5660-5622-5680-5651).	(7)(10).	Intended Use - In service, semi-dress, and dress uniforms and functional clothing used by the DOD.
MIL-C-2069D	Fullled and napped on face and back to equal standard sample. Napped fibers shall offer considerable resistance to lifting with a needle. Treated for resistance to felting shrinkage by an approved oxidation or resin process. When oxidation process for shrinkage resistance is used, alkali solubility of treated cloth shall not increase more than 5% (2800). pH: 4.0 - 8.0 (2811).	Color - Shall be Olive Green 104 - standard sample available (3-8). Colorfastness - standard sample available (5614-5680-5651).	(7) Wool blend. (a) 40% min. - 56's 40% max. - 50's 20% max. - 48's (reprocessed)	Intended Use - For the lining for the fur ruffed hood.

### MIXED FIBER CLOTHS-WOVEN

NOMENCLATURE	Fiber Content	Ply	Woolen Yarns		Synthetic Yarns		Width Inch	Weight Oz/Sq Yd	Weave	Yarns Per In. Min.	Breaking Strength Lb. Min.	Tearing Strength Lb.	Air Permeability	Shrinkage Max.	Point Value Max.
			Grade USDA	System	Denier	Filament									
<u>Cloth, Nylon and Cotton, Interwoven</u> MIL-C-4487 (USAF)	Cotton & 2 bright high tenacity nylon	W F			W F	W F	Min/Max			W F	W F (5104)	W F		W F	
			70	100	Contin-uous	(9) - 40 min.	4.5 (5)			184 82 (nylon: 92, cotton: 92)	110 110	8 -	40-110	4% 2% (5552)	

Cloth, Cotton Back Rayon Twill  
MIL-C-5645, Amd. 1

NOMENCLATURE	Fiber Content	Ply	Woolen Yarns	Synthetic Yarns	Width Inch	Weight Oz/Sq Yd	Weave	Yarns Per In. Min.	Breaking Strength Lb. Min.	Tearing Strength Lb.	Air Permeability	Shrinkage	
												3-laundry	3-clean
(a) Type I- High tenacity rayon warp	Cotton & bright viscose process rayon	2 or 3			40 1/2	8.5 9.25	3 I warp faced twill	240 62	185 90	6 5	17	5% 2%	3% 2%
Type II- Semi-high tenacity rayon warp	"	"			"	8.5 9.25	"	240 62	150 90	5 5	17	5% 2%	3% 2%
Type III- Regular rayon warp	"	"			"	8.5 9.25	"	240 62	130 90	4 1/2 5	17	5% 2%	3% 2%

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as Thickness, Water Repellency, etc.)	NOTES (Not Specification Requirements)
MIL-C-4487 (USAF)	Use of finishing or loading materials to increase weight or breaking strength is prohibited. Use of dyestuffs, detergents, or other chemicals or finishing agents which would cause deterioration in storage or dermatitis on skin contact is prohibited. pH: 4.0 - 8.0 (2811).	Color - Sage Green 518 unless otherwise specified (8). Colorfastness - "good" (5614-5651-5660-5682).		Intended Use - In the manufacture of special flying clothing.
MIL-C-5645 Type I Type II Type III	(4) Cloth shall be given a suitable, durable water repellent treatment. Spray rating: Initial- 80; After 3 launderings - 65; After 3 dry cleanings - 65 (5526). Hydrostatic water repellency: Initial - 25 cm.; After 3 launderings - 17 cm.; After 3 dry cleanings - 25 cm.	Color (1) - To be obtained with vat dyes. Colorfastness - "good" (5660-5682-5610-5632-5620-5651-5680-5682).	(a)Unless otherwise specified. Type II shall be furnished.	Intended Use - In the fabrication of flight garments.

### MIXED FIBER CLOTHS-WOVEN

NOMENCLATURE	Fiber Content	Ply	Woolen Yarns		Synthetic Yarns		Width Inch	Weight Oz/Sq Yd	Weave	Yarns Per In. Min.	Breaking Strength Lb. Min.	Tearing Strength Lb.	Air Permeability	Shrinkage Max.	Fiber Value Max.
			Grade	System	Count	Filament									
			USDA												
Cloth, Taffeta, Nylon Face Wool Back and Cloth, Satin, Rayon Face Wool Back MIL-C-8797A (ASG)		W F			W F	W F	Min/Max			W F	W F	W F		W F	

Type I- Nylon face	30% min. fleece or pulled wool (2) & bright polyamide of hexamethylene diamine & adipic acid or its derivatives. Melting point: 482°±10°F.	64's	Contin-uous	(1)	6.5±.5	Nylon face: special taf-feta weave with 2 fill-ings (5). Face: 100% nylon. Fill: wool, inserted so that face is not affected & back surface is all wool.	(a)	220	220	5	8		10.00
Type II- Rayon face	30% min. fleece or pulled wool (2) & bright viscose rayon of commercial quality.	64's	Contin-uous	(1)	9.1±1	(5) Face: rayon. Fill: wool, inserted so that face is not affected & back surface is all wool.	(a)	180	70	3	3		10.00

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as Thickness, Water Repellency, etc.)	NOTES (Not Specification Requirements)
MIL-C-8797A (ASG) Type I Type II	(4) Cloth shall be uniformly napped on wool-backed side to provide a finish equal to the standard sample. Type I shall be given a water resistant treatment. Spray rating: 70, 70, 70 (5526). Rain penetration: 0.5 gas. (max.) (5522). pH: 4.5 - 9.0 (2811).	Color (1) - Standard samples available (3-8). Colorfastness - standard sample available (5630-5632-5622-5651-5660-5680).	(7) (a) Yarns/Inch: Type I- nylon warp: 168; Nylon fill: 64; Wool fill: 64. Type II- Rayon warp: 320; Rayon fill: 76; wool fill: 76. Sevability: 70% min. (5110).	Intended Use - In the fabrication of flight clothing and uniform clothing. They are used in the clothing as outer surface, lining, and pocketing.

### MIXED FIBER CLOTHS-WOVEN

NOMENCLATURE	Fiber Content	Ply	Woolen Yarns		Synthetic Yarns		Width Inch	Weight Oz/Sq Yd	Weave	Yarns Per In. Min.	Breaking Strength Lb. Min.	Tearing Strength Lb.	Air Permeability	Shrinkage Max.	Point Value Max.
			Grade USOA	System	Denier	Filament									
<u>Cloth, Flannel, Wool and Nylon, 16-Oz., Shrink Resistant</u>															
MIL-C-11065D (GL)	45% min. fleeces &/or pulled wool 10% min. staple nyl: 40% max. wool noils (2).	1 1	new: Woolen 62's noils 60's				(9) 56 min.	16.0 - 2 2	broken twill (2 ends right, 2 ends left)	38 33	50 40			(5558) 5% 5% (5554) 5% 3% (Felting Shrinkage)	10.00

Scarf, Warmer:

MIL-S-17868A (MC)	(a) wool: 64's Worsted Cotton & 2 flax &/or cotton: pulled wool ?						5.0 - 2 2	right twill (3 cotton ends on each edge)	28 25 30 15					5% 5%	
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NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as Thickness, Water Repellency, etc.)	NOTES (Not Specification Requirements)
MIL-C-11065D	Cloth shall be fulled (wool stock carbonized if necessary), napped and cropped. Finished cloth shall have uniformly developed closely cropped finish, with the same degree of soft hand, drape, and character of finish on the face and back as the standard sample. Approved shrinkage control treatment for felting shrinkage, by an oxidation, resin, or by interfacial polymerization process. When resin or interfacial polymerization are used, stiffness shall be 0.011 lb. max. in the warp. When oxidation is used, alkali solubility shall not increase more than 6%. pH: 4.0 - 8.0 (2811).	Color - Shall be Olive Green 103 and shall be obtained by blending chrome or neutral premetallized dyed wool and nylon. Speck and piece dyeing are prohibited.(3) Colorfastness - standard sample available (5660-5622-5680-5614-5651).		Intended Use - As shirting material for male military personnel, as a component of the cold-wet and cold-dry uniform for temperate and cold areas.
MIL-S-17868A	Type and character of finish shall conform to the standard sample. pH: 4.0 - 8.0 (2310).	Color - Shall be red to match standard sample (3). Yarn shall be dyed. Colorfastness - "fair" (5614-5682-5622-5651-5660).	(a) Cotton yarn for scarp edges shall have sufficient strength to maintain selvages in their proper alignment without fraying or slipping.	Intended Use - Scarf for use by female personnel of the U.S. Marine Corps. Guide sample available.

**MIXED FIBER CLOTHS-WOVEN**

NOMENCLATURE	Fiber Content	Ply	Woolen Yarns		Synthetic Yarns		Width Inch	Weight Oz/Sq Yd	Weave	Yarns Per In. Min.	Breaking Strength Lb. Min.	Tearing Strength Lb.	Air Permeability	Shrinkage Max.	Point Value Max.
			Grade USDA	System	Denier	Filament									
<p><u>Cloth, Tropical:</u>  <u>Wool; Polyester/Wool</u>                      MIL-C-21115E (OL)                      Amd. 1 (See also under Wool Cloths)</p> <p>Type I- Wool                      (See Wool Cloths)</p> <p>Type III- Polyester-wool blend</p> <p>(a)                      55-40% polyester                      40% min. fleece &amp;/or pulled wool</p>															
		W F			W F	W F	Min/Max			W F	W F	W F		W F	
							(9)								except M-1 - 12.00 M-1 15.00
		2 2	64's	Bradford French or American	3 3		60 min.	9.0+0.5 (oz/54" lin yd)	Plain	54 42	100 80				
<p><u>Cloth, Sateen, Cotton</u>  <u>Warp and Nylon Filling</u>                      MIL-C-21848A (8A)</p> <p>Warp: 1 3                      cotton                      Fill: dull nylon. Min. m.p.: 244°C</p>															
							(1)	9.2 -	5-barness satin (5)	85 54	140 300				(5550) 2 2 30.00

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as Thickness, Water Repellency, etc.)	NOTES (Not Specification Requirements)
MIL-C-21115E Type I Type II	Cloth shall be scoured, brushed, sheared, and singed, pressed and decatized to equal standard sample. Cloth shall show no more creping after shrinkage test than standard sample. Cloth shall show no more pilling than standard sample. pH: 5.5 - 8.5 (2811).	Color (1) - standard sample available. Color shall be obtained by blending top dyed wool with stock, top or towed dyed polyester, with wool and polyester fibers dyed separately, then blended. Pigmented fibers may be used instead of dyed as long as color is equal to that of standard sample. Monotone shade shall present a solid appearance with no more heatheriness than standard sample. (3) Colorfastness - standard sample available (5622-5651-5660-5680).	(a) Polyester shall be semi-dull, made from polyethylene glycol terephthalate, either homopolymer or modified polymer appropriate. Min. avg. fiber length: 3 in.	Intended Use - In the manufacture of shirts, coats, and trousers for officers and enlisted personnel.
MIL-C-21848A	(4)	Color - Shall match Green 3423 (3) - standard sample available (8). Colorfastness - standard sample available (5651-5660-5610-5680).	(7)	Intended Use - In clothing items for use by Navy personnel.

### MIXED FIBER CLOTHS-WOVEN

NOMENCLATURE	Fiber Content	Ply	Woolen Yarns		Synthetic Yarns		Width Inch	Weight Oz/ Sq Yd	Weave	Yarns Per In. Min.	Breaking Strength Lb. Min.	Tearing Strength Lb.	Air Permeability	Shrinkage Max.	Point Value Max.	
			Grade USDA	System	Denier	Filament										
Cloth, Polyester and Cotton Twill MIL-C-21851 (8A)																
	65(±2)% polyethylene glycol terephthalate, 35(±2)% cotton.	1 1					(9) 45 min.	5.2 -	2 right 1 twill	127 58	190 70			35	2% 2%	30.00

Cloth, Broadcloth, Polyester and Cotton;  
 Cloth, Poplin, Polyester and Cotton  
 MIL-C-21881B (8A)

**Type I- Broadcloth**

Class 1- Khaki 5714	65(±2)% polyester	1 1				(9) 42 min.	3.2 3.7	Plain	120 70	80 36						Preshrunk 1% 1% 30.00
Class 2- White 3024	35(±2)% cotton	1 1	1.5 &/cr			3.0	3.2 3.7	"	120 70	80 36						1% 1% 30.00
Type II- Poplin Class 1- Khaki 3715 Class 2- White 3013																
Class 1- Khaki 3715		1 1				"	4.2 4.7	"	100 40	100 40						1% 1% 30.00
Class 2- White 3013		1 1				"	4.2 4.7	"	100 40	100 40						1% 1% 30.00

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as Thickness, Water Repellency, etc.)	NOTES (Not Specification Requirements)
MIL-C-21851	(4)	Color - Cloth shall be dyed to match Blue 3329 (3-8). Standard sample. Colorfastness - standard sample available (5610-5680-5651).	(7) Original stiffness shall not be more than 3.0 x 10 <sup>-4</sup> in-lb. (geometric means) and shall not be less than 0.9 x 10 <sup>-4</sup> in-lb. after 1 laundering.	Intended Use - In the manufacture of submarine overalls worn by male Navy personnel.
MIL-C-21881B	(4)	Color (1-8-3). When Khaki 3714 or 3715 is specified, cotton fibers shall be vat dyed and polyester fibers shall be dyed with suitable fast dye. When White 3024 or 3013 is specified, cloth shall be bleached and tinted with Vat Blue 6, C.I. No. 69825/6 to match standard sample. Colorfastness - standard sample available for dyed cloth (5660-5610-5680-5600-5651).	(7) Swan efficiency: 80% min. (5110).	Intended Use - For use in shirts and boxer style drawers worn by Navy personnel.

### MIXED FIBER CLOTHS-WOVEN

NOMENCLATURE	Fiber Content	Ply	Woolen Yarns		Synthetic Yarns		Width Inch	Weight Oz/Sq Yd	Weave	Yarns Per In. Min.	Breaking Strength Lb. Min.	Tearing Strength Lb.	Air Permeability	Shrinkage Max.	Folb Value Max.	
			Grade USDA	System	Denier	Filament										
		W	F	W	F	W	F	Min/Max	W	F	W	F	W	F		
<u>Cloth, Satin</u> <u>Rayon Warp and Cotton Filling</u> MIL-C-21883A (SA)		Cotton & bright viscose rayon	-	1	300	-	Con- tin- uous	(9) 41 min.	7.9 8.5	5-harness satin (5)	144 56	275 70		8%	3%	30.00
<u>Cloth, Polyester Fiber, Cotton</u> MIL-C-22148 (MC)		(a) 35(+2)% cotton 65(+2)% semi-dull polyester	1	1	3	3	(1)	2.9	Plain	92 80	45 40		(5552) Preshrunk 1% 1%			

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as Thickness, Water Repellency, etc.)	NOTES (Not Specification Requirements)
MIL-C-21883A	(4) Cloth shall have a natural finish. It shall be desized and finished with minimal warpwise tension. Use of finishing or loading materials to increase weight or breaking strength is prohibited.	Color (1) - To match specified Navy Shades (3). Cotton yarn shall be unbleached and undyed. Rayon warp yarn shall be "solution dyed" with coloring pigments introduced into the viscose solution before yarn is spun. White yarn shall be bright, unpigmented. Colorfastness - standard sample available (5610-5660).	(7) Selvage shall be 3/8 (±1/16) in. wide and may be made from white or colored yarn.	Intended Use - In the manufacture of identification garments worn by aircraft carrier flight deck personnel.
MIL-C-22148	(4) Cloth shall not show pilling tendencies to exceed 1 pill/sq.in. Cloth shall be heat set to show no distortion and remain dimensionally stable when pressed with a flat iron at 300°(+15°)F.	Color - Shall be White M410 or Green M230 (1) and shall match approved shade sample (3). Colorfastness - "good" (5600-5651-5622-5614-5660-5682).	(7) (a) Polyester fiber shall be polyethylene glycol terephthalate, with a staple length of 1½ in. min.	Intended Use - In the manufacture of shirtwaists worn by female personnel of the Marine Corps.

### MIXED FIBER CLOTHS-WOVEN

NOMENCLATURE	Fiber Content	Ply	Woolen Yarns		Synthetic Yarns		Width Inch	Weight Oz/Sq Yd	Weave	Yarns Per In. Min.	Breaking Strength Lb. Min.	Tearing Strength Lb.	Air Permeability	Shrinkage Max.	Point Value Max.
			Grade USDA	System	Denier	Filament									
							Min/Max								
<u>Cloth, Cotton and Polyester Fiber, For Summer Uniforms</u> MIL-C-27353 (USAF) And. 1															
Type I- Plain weave	(a) 50-55% polyester & 45-50% cotton	1 1			3 3		(1) 4.3 4.7		Plain (1/1)	64 49	60 50	8 5½	100	1½ 1½	30.00
Type II- Twill weave		1 1			3 3		(1) 6.3 6.7		2 right I twill	100 55	105 65	3 7	30	1½ 1½	30.00
<u>Cloth, Broadcloth (End-and-End)</u> Polyester and Cotton MIL-C-38419 (USAF)															
	(a) 65% min. polyester & cotton 30% min.	1 1			1.5 1.5		(1) 3.2 3.7		(b) Plain	100 64	70 52			(5552) 1½ 1½	25.00

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as Thickness, Water Repellency, etc.)	NOTES (Not Specification Requirements)
MIL-C-27353 Type I Type II	(4) Before dyeing, cloth shall be de-sized, scoured, and mercerized to give a lustrous finish. Type I cloth shall be brushed (not napped) to raise surface fibers on both sides, heat set and singed. Type II cloth shall have warp twill face brushed (not napped), then singed, and filling face heat set, then singed without brushing.	Color - Shall be USAF 1505 tan shade (r other colors as specified. Standard samples available (3). Cloth shall be piece dyed. Vat dyes shall be used for cotton fibers and suitable, compatible dye-stuffs for the polyester (8). Fiber shade differences shall not be evident in the blend. Colorfastness - "good" (5660-5610-5600-5622-5651)	(7) (a) Polyester shall be of terephthalic acid and ethylene glycol, 1½ in. staple length, with a min. fiber tenacity of 3.5 grams per denier (at 60% elongation/min.) and a min. melting point of 232°C. Sevability: "good". Seam efficiency: 90% (5110).	Intended Use - In the fabrication of summer uniforms.
MIL-C-38419	(4) Cloth shall be scoured, singed, stabilized and mercerized for a smooth, lustrous finish equal to that of the standard sample.	Color - Cloth shall match approved standard shade USAF Blue 1550 (3-8). Colorfastness - standard sample available (5660-5680-5651-AATCC, Type IV).	(7) (a) Polyester fiber shall be polyethylene glycol terephthalate. (b) Cloth shall be in an end-and-end construction, with alternating warp ends in blue and white. Blue ends shall be solid color and white ends and all picks shall be clean white, bleached to attain min. Munsell neutral color rating of 8.5 (AATCC). Seam efficiency: 90% (5110).	Intended Use - In the manufacture of shirts and shirtwaists worn by Air Force personnel.



### MIXED FIBER CLOTHS-WOVEN

NOMENCLATURE	Fiber Content	Ply	Woolen Yarns		Synthetic Yarns		Width Inch	Weight Oz/Sq Yd	Weave	Yarns Per In. Min.	Breaking Strength	Tearing Strength	Air Permeability	Shrinkage	Point Value
			Grade USDA	System	Denier	Filament					(5050)	(5100)	(5134)	(5450)	(5556)
<p><u>Cloth, Corded</u>  <u>Polyester-Cotton</u>  <u>Warp and Polyester</u>  <u>Filling</u></p>															
MIL-C-40052C	(a) Cotton & semi-dull polyester	1 1 &3 &2			75% 150 Multi-3 or 70 ment 25% 70 ment 1.5(4%)	45 min.	(11)	4.3 -	Plain	56 28	64 500 300			(5552) 2% 2%	25.00
<p><u>Cloth, Duck;</u>  <u>Cotton and Nylon</u></p>															
MIL-C-41836A (OL) Amd. 1	45-50% Cotton & 55% max. semi-dull nylon	3 3					(1)	14.5 -	Plain	46 26	425 300		3.0		35.00

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as Thickness, Water Repellency, etc)	NOTES (Not Specification Requirements)
MIL-C-40052C	(4)	Color (1) - standard sample available (3). Color of ground warp shall be obtained by yarn or piece dyeing. Polyester shall be natural color (8). Colorfastness - standard sample available (5614-5651-5660-5680).	(a) Polyester shall be polyethylene glycol terephthalate. Warp yarn shall have a min. staple length of 1 1/2 in.	Intended Use - In women's summer uniforms.
MIL-C-41836A	Cloth shall be mildew resistant treated with copper 8-quinolinolate, so that treated cloth contains 0.04-0.15% copper as metal from 8-quinolinolate (2050 or 2051).	Color (1) - standard sample available (3). Use of disperse dyes on the nylon is prohibited (8). Colorfastness - standard sample available (5671).	(7)	Intended Use - In the manufacture of tropical combat boots.

### MIXED FIBER CLOTHS-WOVEN

NOMENCLATURE	Fiber Content	Ply	Woolen Yarns		Synthetic Yarns		Width Inch	Weight Oz/ Sq Yd	Weave	Yarns Per In. Min.	Breaking Strength Lb. Min.	Tearing Strength Lb.	Air Permeability	Shrinkage Max.	Point Value Max.													
			Grade USDA	System	Denier	Filament																						
<table style="width: 100%; border: none;"> <tr> <td style="width: 15%;"></td> <td style="width: 15%; text-align: center;">W   F</td> <td style="width: 15%;"></td> <td style="width: 15%; text-align: center;">W   F</td> <td style="width: 15%; text-align: center;">W   F</td> <td style="width: 15%;"></td> <td style="width: 15%; text-align: center;">Min/Max</td> <td style="width: 15%;"></td> <td style="width: 15%; text-align: center;">W   F</td> <td style="width: 15%; text-align: center;">W   F</td> <td style="width: 15%; text-align: center;">W   F</td> <td style="width: 15%;"></td> <td style="width: 15%; text-align: center;">W   F</td> </tr> </table>																	W   F		W   F	W   F		Min/Max		W   F	W   F	W   F		W   F
	W   F		W   F	W   F		Min/Max		W   F	W   F	W   F		W   F																
<p><u>Cloth, Wind Resistant System, Cotton and Nylon</u>                      MIL-C-43191</p>	(a) 50% (-5%) Cotton & 50% (+5%) nylon	1 1			2-3 2-3	(1) 8.5 9.0	5-harness sateen (5)	126 72	180 180	(5132) 6 6	7.0	(5550) 2% 2%	30.00															

Cloth, Broadcloth, Wool, and Wool Synthetic  
 MIL-C-82252  
 (See also under Wool Cloths)

Type I- Wool  
 (See Wool Cloths)

Type II- Synthetic Wool

Class 1- 15.5 oz., Blue	8 3/4 min.	1 1	70's Woolen	(9) 5 1/4 min.	15.0 16.0	2 right twill	56 55 50 45		(5590) 2% 1 3/4%	15.00
Class 2- 16.5 oz., Scarlet	and/or pulled wool & 17% max. synthetic fiber (1).	1 1	60's "	"	15.0 17.0	"	54 54 55 45		3 3/4% 2 1/2%	15.00

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as Thickness, Water Repellency, etc.)	NOTES (Not Specification Requirements)
MIL-C-43191	(4) Cloth shall be finished with filling effect side as face. Cloth shall be singed, desized, mercerized, dyed, & given an approved Quaryl-type water repellent treatment. Spray rating: 90, 90, 80 (5526). Hydraulic Pressure, min. avg: Initial- 35; After 3 launderings: 30 min. (5514). Dynamic absorption: Initial- 20 max.; After 15 launderings- 20 max. (5500). pH: 6.5 - 8.5 (2811).	Color - Shall be Olive Green 107 - standard sample available (3-8). Colorfastness - standard sample available (5660-5610-5651-5680-5600).	(7) (a)Nylon shall be semi-dull, high tenacity, high modulus staple, made from hexamethylene diamine and adipic acid, with a melting point of 250 (+6°)C. Use of nylon waste is prohibited. Filling effect side shall be identified by stamping "face" on that side at the end of the roll. Seam efficiency: 80% (5110).	Intended Use - In clothing where a high degree of wind resistance and thermal resistance is of prime importance.
MIL-C-252 Type II Class 1 Class 2	Cloth shall be scoured, fulled, free from vegetable matter, with a uniformly developed broadcloth finish. Cloth shall be pressed and have a lustrous face finish equal to that of the standard sample. When specified, cloth shall be moth repellent treated in accordance with the method specified by the contracting officer. pH: 4.0 - 8.0.	Color - Class 1 shall be dyed with indigo dye to match standard sample of Blue 2307(3). Class 2 cloth shall be stock dyed with suitable chrome dyestuffs to match standard sample of Scarlet 2501 (3). Colorfastness - standard sample available (5660-5622-5680-5651).	(7)	Intended Use - In service, semi-dress, and dress uniforms and functional clothing.

REFERENCES

MIXED FIBER CLOTHES - WOVEN

Textile Test Methods - CCC-T-191b

<u>Method</u>	<u>Title</u>
<u>Chemical</u>	
2050	Copper content of textiles, Electrolytic method.
2051	Copper content of textiles, Polarographic method.
2100	Wool content, acid method.
2800	Wool fiber damage, alkali solubility method.
2810	Acidity (pH), colorimetric method.
2811	Acidity (pH), potentiometric method.
<u>Construction</u>	
5040	Weight of cloth; cut, roll or bolt method.
5050	Yarns per inch in woven cloth.
<u>Mechanical</u>	
5100	Strength and elongation, breaking, of woven cloth, grab method.
5104	Strength and elongation, breaking, of woven cloth, ravel strip method.
5110	Sevability; strength-of-seam method.
5132	Tearing strength, pendulum method (Elmendorf).
5134	Tearing strength, tongue method.
5202	Stiffness, directional; cantilever bending method (Tinius Olsen).
5206	Stiffness, drape and flax; cantilever bending method (Pierce formula).
<u>Air Permeability and Water Resistance</u>	
5450	Air permeability, calibrated orifice method (Frazier).
5500	Water resistance, dynamic absorption.
5514	Water resistance, hydrostatic pressure, low range.
5526	Water resistance with hydrophobic finish; spray method.
<u>Colorfastness</u>	
5600	Chlorine bleaching; cloth.
5610	Laundering, cotton and/or linen; Launder-Ometer.
5614	Laundering of wool, silk, rayon cloth; Launder-Ometer.
5622	Wet cleaning (with dry cleaning).
5630	Water, cold.
5632	Salt water and soap.
5651	Crocking of cloth.
5660	Light, accelerated (Fade-Ometer).
5670	Weather; accelerated method (Twin Arc Weather-Ometer).
5680	Perspiration; perspirometer method.
5682	Perspiration; tube method.

GENERAL NOTES

COATED CLOTHS

The following parenthetical numbers are utilized throughout this section of the text as referenced notes. Upon observing these numbers, refer to this page for further information dealing with specific portions of the item.

- |                                 |  |
|---------------------------------|--|
| (1) As specified.               | (5) Bid sample and laboratory report.  |
| (2) Width exclusive of selvage. | (6) Nonfibrous, etc., restrictions.    |
| (3) Colormatching.              | (7) Width inclusive of selvage.        |
| (4) Preproduction.              | (8) Weave diagram and/or instructions. |

The specific test methods referenced in this section of the text are listed with their titles at the end of the section.

### COATED CLOTHS

NOMENCLATURE	Base Cloth Specifications	Type of Coating Compound	Overall Weight		Width Inch	Breaking Strength Lb. Min.	Tearing Strength Lb.	Hydrostatic Pressure High (5512)	Flame Resistance (5903)		Flexibility Cm. Max. Warp (5204)	Bursting Strength Pk. (5122)	Adhesion lb/2" wide (5970)	Blocking Scale rating (5872)
			Oz/Sq Yd	(5041)					After Flame length sec. Min.	Char Flame length Max.				
Fabrics, Upholstery CCC-F-66a, Amd. 3			Min	Max		W	F	W	F	W	F	70°F	-40°F	
<b>Type I- Flat Cloths</b>														
1. Brocattelle	Warp & filling:		16.0 per	(1)										
2. Damask	cotton, linen, ray-		12.0 lin.	"										
3. Matelasse	on, nylon, polyester		22.0 yd.	"										
4. Tapestry	or any mixture there-		20.0 (5/4"	"										
5. Novelty cloth	of. Nylon &/or poly-		20.0 wide)	"										
	ester: 50% max.													
<b>Type II- Loop pile cloths</b>														
6. Plain rib frieze	Face warp: 50/min.	Stuffer ends on	29.0 (un-	(1)										
7. Plain frieze	with the balance	backs or coating	cont-	"										
8. Pattern frieze	rayon. Stuffer,	of min. 1.8 oz.	ed)	"										
	ground & fill:	synthetic resin,												
	cotton &/or	natural or syn-												
	rayon.	thetic-rubber												
		latex/lin. yd.												
		(5/4")												
<b>Type III- Cut pile cloths</b>														
9. Mohair velvet	Weave: 4-pick W	--	25.0	(1)										
10. Mohair velvet	mohair pile	2.5 oz. min. syn-	19.0	"										
	Weave: 2-pick V	thetic latex/lin.												
	mohair pile	yd. (5/4").												
11. Velour	Weave: 2-pick V	--	22.0	"										
	cotton pile													

(Continued)

NOMENCLATURE	COATING	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, Shrinkage, etc.)	NOTES (Not Specification Requirements)
CCC-F-66a				
Type I				
1.		Color (1).		
2.		Colorfastness - "fair"		
3.		(5660, for 40 hours).		
4.				
5.				
Type II				
6.	Loop pile cloths shall	Color (1).		
7.	be guaranteed resis-	Colorfastness - "fair"		
8.	tant to moths & other	(5660, for 40 hours).		
	insects for 5 yrs. min.			
	Moth-resistant compound			
	shall be nontoxic and			
	nonirritant.			
Type III				
9.	Mohair velvets shall be	Color (1).		
10.	guaranteed moth-resis-	Colorfastness - "fair"		
11.	tant for 5 yrs. min.	(5660, for 40 hours).		
	Compound used shall be			
	nontoxic & nonirritant.			

(Continued)

### COATED CLOTHS

NOMENCLATURE	Base Cloth Specifications	Type of Coating Compound	Overall Weight Oz/Sq Yd (5041)	Width Inch	Breaking Strength	Tearing Strength	Hydrostatic Pressure High (5512)	Flame Resistance (5903)		Flexibility Cr. Max. Wcrp (5204)	Bursting Strength	Adhesion lb/2" wide	Block-ing Scale rating
					Lb. Min. (5100)	Lb. (5132)		After Flame sec min	Char length Max" (5122)		Min (5122)	5970	5872
Fabrics, Upholstery CCC-F-66a, Am. 3 (Cont'd)				Min	Max	W	F	W	F	W	F	70°F	-40°F
Type IV- Misc. Cloths						Yarns/Inch							
						W	F	W	F				
12. Dobby	Face warp: wool &/ or mohair. Back warp & fill: cotton &/ or rayon.	Back coated with min. 1.8 oz. of synthetic resin, natural, or synthetic-rubber latex/lin yd (54")	19 (un-coated) per lin. yd. (54")	(1)	18	24							
13. Dobby (novelty)	Face: 30% min. wool &/ or mohair; balance rayon. Backing: cotton &/ or rayon.	"	23.5 "	(1)	12½	9½							
14. Rough texture (plain or print)	100% cotton; twisted 2-ply; vat dyes		15 per lin. yd. (54")	(1)	32	32							
15. Cretonne (printed)	100% cotton; vat dyes		10 "	(1)	60	50							
16. Friezette	100% cotton		15 "	(1)	80	30							
17. Mohair satin (plain or print)	Warp: cotton. Filling: 25% min. mohair or wool; balance rayon.		14 "	(1)	66	60							
18. Duck (dyed or print)	Not less than 2-ply cotton, vat dyed colors, mildew resistant & water-repellent treated.		12 "	(1)	50	40							

NOMENCLATURE	COATING	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, Shrinkage, etc.)	NOTES (Not Specification Requirements)
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CCC-F-66a (Cont'd) Cloths Nos. 12, 13 & 17 shall be guaranteed Color (1).  
 Type IV Colorfastness - "fair"  
 12. resistant to moths & (5660 for 40 hours).  
 13. other insects for 5  
 14. yrs. min. Moth-resis-  
 15. tant compound shall be  
 16. nontoxic & nonirritant.  
 17.  
 18.

## COATED CLOTHS

NOMENCLATURE	Base Cloth Specifications	Type of Coating Compound	Overall Weight Oz/Sq Yd (5041)	Width Inch	Breaking Strength	Tearing Strength	Hydrostatic Pressure (5012)	Flame Resistance (5903)		Flexibility Cn. Max. Warp (5204)	Bursting Strength	Adhesion lb/2" wide (5970)	Blocking Scale rating (5872)
					Lb. Min. (5100)	Lb. (5132)		After Flame length sec. Min.	Char length Max. "		70°F		
<b>Screening, Non-metallic, Insect</b> L-8-125, Amd. 3 (GL) (See also under Synthetic Cloths)													
Type I- Polyvinylidene chloride (See Synthetic Cloths)													
Type II- Plastic coated or impregnated fibrous glass Class 1- 0.0115" dia.													
					(1)			10			(a)		No. 1
Size 16x16			Compound of polymerized or copolymerized virgin vinyl chloride resin, plasticized with phosphate or phthalate ester plasticizers exclusively. Pigmented.		"			10			-		"
Size 18x14					"			10			90		"
Size 18x16					"			10			105		"
Size 18x18					"			10			150		"
Size 20x20					"			10			160		"
Size 22x22					"			10					"
Class 2- 0.0130" dia.													
Size 16x16					(1)			10			180		No. 1
Size 18x14					"			10			180		"
Size 18x16					"			10			-		"
Size 18x18					"			10			200		"
Size 20x20					"			10			250		"
Size 22x22					"			10			275		"

NOMENCLATURE	COATING	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, Shrinkage, etc.)	NOTES (Not Specification Requirements)
L-8-125		Color shall be integrally incorporated in the plastic coating. Aluminum shall fall between color Nos. 36492 and 36173 of Fed. Std. No. 595. Colorfastness - "fair" (Fed. Std. No. 141, method 6151).	(a) See specification for requirements after heat aging, accelerated weathering, and water immersion. Tensile strength of filaments: 125,000 psi (4.4.5). Elongation of filaments: 3% max. Filament slippage resistance: Class 1- 2.5 lb. min.; Class 2- 5.0 lb. Filaments shall remain intact after 10 sec. contact with the end of a lighted cigarette. Woven or mock selvage on each edge, of at least 6 ends/edge. Splices shall be well made, show no tails, and be 1 in. max. long. Knots are not permitted. No. of splices shall not exceed 1/sq. ft. or 15 per roll.	Intended Use - For installation in or on any dwelling, patio, screen enclosure, building, or structure, for the purpose of preventing the ingress of flies, mosquitoes, or other insects, particularly where corrosive conditions are encountered.
Type I				
Type II				
Class 1				
Size 16x16				
Size 18x14				
Size 18x16				
Size 18x18				
Size 20x20				
Size 22x22				
Class 2				
Size 16x16				
Size 18x14				
Size 18x16				
Size 18x18				
Size 20x20				
Size 22x22				

### COATED CLOTHS

NOMENCLATURE	Base Cloth Specifications	Type of Coating Compound	Overall Weight Oz/Sq Yd		Width Inch	Breaking Strength Lb. Min.		Tearing Strength Lb.	Hydrostatic Pressure High (5512)	Flame Resistance (5903)		Flexibility Cm. Max. Warp (5204)	Bursting Strength Pt. Min. (5122)	Adhesion lb/2" wide (5970)	Blocking Score rating (5872)
			Min	Max		W	F			W	F				
<b>Wall Covering, Vinyl Coated</b> CCC-W-408															
Type I- Lgt. Duty	Cotton cloth, non-woven fiberglass, asbestos, or other suitable materials.	Virgin polymerized or copolymerized vinyl-chloride resin, plasticized with phosphate or phthalate ester plasticizers exclusively & shall be integrally pigmented. When necessary, cloth shall be top-coated in the same manner.	7.0 -	(1)	40	30	14	12	20	3	3	4½	4½		No. 2
Type II- Med. Duty			13.0 -	"	50	55	25	25	50	3	3	4½	4½		"
Type III- Hvy. Duty			22.0 -	"	100	95	80	50	100	3	3	4½	4½		"
Class 1- Regular finish Class 2- Mildew resistant															
<b>Cloth, Coated (Table and Shelf)</b> CCC-C-417c, Amd. 1 Cotton															
		Synthetic resin; 6.25 - pigmented	54	±2	30	22									No. 1

NOMENCLATURE	COATING	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, Shrinkage, etc.)	NOTES (Not Specification Requirements)
CCC-W-408 Type I Type II Type III Class 1 Class 2	Base cloth for Class 2 shall be mildew-resistant treated (5762). Coating compound shall be applied to one side of base cloth to form continuous film. Grain shall conform to that of standard sample.	Color (1) - standard sample available. Colorfastness (5660).	(4-5). Breaking strength after soil burial: 80% of initial (5762). Shrinkage: All types, warp- 2% max. Types I & II, fill-1% max. Type III, fill- 1½% max. (4.4.4). No evidence of cracking, stiffening, flaking, or separation of coating from backing at 20°F. (4.4.5). Cloth shall not become stiff or brittle, soft or tacky, discolored or show loss of grain after heat aging (5831). Crocking resistance - "good" (5651).	Intended Use - Type I; as a maintenance-free covering for areas not subjected to abrasion or wear traffic, and for ceiling. Type II; for general use in areas where there is average traffic and scuffing. Type II; only as wainscot or lower wall protection for areas exposed to damage by moveable equipment or to abusive conditions such as exist in hospitals.
CCC-C-417c	Cloth shall be coated on one side. Coated cloth shall have glazed or satin finish, without pattern.	Color (1) - to match White No. 70001, Green 70167, Red 70042, or Yellow 70205 (3). Colorfastness - "good" (5651-5660). Red shall show "fair" in 5660.	Cloth shall show no cracking or flaking (4.3.1). Cloth shall be nontoxic to personnel.	Intended Use - For table and shelf covers.



### COATED CLOTHS

NOMENCLATURE	Base Cloth Specifications	Type of Coating Compound	Overall Weight Oz/Sq Yd (5041)	Width Inch	Breaking Strength Lb. Min. (5100)	Tearing Strength Lb. (5:32)	Hydrostatic Pressure High (5512)	Flame Resistance (5903)		Flexibility Cm. Max. Wav (5204)	Bursting Strength Pts. Min. (5122)	Adhesion lb/2" wide (5970)	Blocking Scale rating (5872)
								After Flame length sec. min.	Char length Max"				
Cloth, Coated (Rubber and Plastic) and Plastic Sheeting for Hospital Use ZZ-C-450b													
			Min   Max		W   F	W   F		W   F	W   F	70°F - 40°F			

Type I- Cotton or synthetic cloth (rubber coated both sides)	Woven cotton or synthetic fiber.	Natural or synthetic rubber or a mixture of the two; pigmented	(1)	50	50	25 lb. 5 min.					7.0 min.
Type II- Cotton or synthetic cloth (vinyl coated both sides)	"	Vinyl-chloride polymer or copolymer, plasticized; pigmented	(1)	50	50	25 lb. 5 min.					7.0 min.
Type III- Plastic unsupported film (sheeting) Class 1- 0.004" thick Class 2- 0.006" thick		Film shall conform to Type I, class 2 of L-P-375, except that plasticizers other than phosphate and phthalate may be used.	(2)			200 200 (lb/in. of thickness)					
Color 1- Clear (Types II & III only) Color 2- Black (All Types) Color 3- White (All Types) Color 4- Maroon (All Types)											

NOMENCLATURE	COATING	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, Shrinkage, etc.)	NOTES (Not Specification Requirements)
ZZ-C-450b Type I Type II Type III Class 1 Class 2 Color 1 Color 2 Color 3 Color 4	Type I- Uniformly coated on both sides and dusted with talc. Coated cloth shall be vulcanized. Type II- Uniformly coated on both sides. Type III- Sheeting shall be constructed from unsupported film.	Color (1) - to match cable number of Fed. Std. 595 or approved color standard (3).	(4) Thickness: Types I & II: 0.013-0.018 in. (5030). Cloth shall show no softening, tackiness, hardening, peeling, or blistering when exposed to phenol. Type III shall not decrease in weight more than 4%. "Good" fastness to crocking. Same after exposure to alcohol. Type I shall show the same results when exposed to accelerated vring. Volatility: Type II- 5% max. Type III, Class 1- 7 1/4%; Class 2- 9% max. Types I & II shall show no softening, tackiness, hardening, peeling, or blistering during steam sterilization. "Good" fastness to crocking.	Intended Use - For the protection of mattresses on hospital beds.

### COATED CLOTHS

NOMENCLATURE	Base Cloth Specifications	Type of Coating Compound	Overall Weight Oz/Sq Yd		Width Inch	Breaking Strength Lb. Min.	Tearing Strength Lb.	Hydrostatic Pressure High (5512)	Flame Resistance (5903)		Flex. bility Cm. Max. Warp (5204)	Bursting Strength Pt. Min (5122)	Adhesion lb/2" wide (5970)	Block-ing Scale rating (5872)
			(5041)	(5100)					(5132)	After Flame length sec. min				
			Min	Max	W	F	W	F	W	F	W	F	70°F	-40°F

Cloth, Glass, Coated, (For Mem-brane Waterproofing and Built-Up Roofing  
HH-C-466b

Glass fiber. Thread count: 10-24 yarns per inch in both warp and fill. Uniform resin coating compatible with asphalt or coal-tar base compounds.

1.5 5.2 36 75 75  
(+1 1/2 - 1/2)

Cloth shall also be available in widths from 2-1/2 in. in increments of 1 inch.

NOMENCLATURE	COATING	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, Shrinkage, etc.)	NOTES (Not Specification Requirements)
HH-C-466b	Glass fiber shall be acid resisting, shall not rot or decay and shall show min. capillary and wicking action.		Mock or woven selvage on each side (or one of each on either) or no selvage at all. Selvages shall be 1/8 - 1/2 in. wide. Cloth shall not crack (4.4.1). Weight of dry base cloth: 1.2-2.4 oz. Weight of organic coating: ratio of coating to cloth - 0.593-1.00. Volatile matter content: 3.8% max.	Intended Use - In membrane waterproofing and built-up roofing.





### COATED CLOTHS

NOMENCLATURE	Base Cloth Specifications	Type of Coating Compound	Overall Weight Oz/Sq Yd		Width Inch	Breaking Strength Lb. Min.		Tearing Strength Lb.	Hydrostatic Pressure High (5512)	Flame Resistance (5203)		Flexibility Cm. Max. Warp (5204)	Bursting Strength Pts. Min. (5222)	Adhesion lb/2" wide (5270)	Blocking Scale rating (5272)
			Min	Max		W	F			W	F				
Cloth, Coated; Pyroxylin Coated CCC-C-501b															
Type I- (coated on one side)															
Class 1- 6.3 oz. Cloth, cotton, sheeting, conforming to Type VII, Class 1 of CCC-C-432. (1) that cloth shall be de-sized and secured (6), and requirements for shrinkage & breaking strength shall not apply.															
Class 2- 7.7 oz. Cloth, cotton, print conforming to Type II, Class 1 of CCC-C-432. See above for specifications & class.															
Class 3- 12.0 oz. Cotton sateen, de-sized & secured (6). Warp flush side shall be the face. Yarns/inch: 96 in the warp; 64 in the fill.															
Type II- (coated on both sides)															
Class 1- 15.5 oz. " " " 15.5 " 110 100 "															

NOMENCLATURE	COATING	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, Shrinkage, etc.)	NOTES (Not Specification Requirements)
CCC-C-501b Type I Class 1 Class 2 Class 3 Type II Class 1	Type I- Coating shall be applied to face side of base cloth only. There shall be no striking through of coating to the back of the cloth. Grain shall match grain std. Type II- Coating shall be applied equally to both sides of base cloth. Grain shall match grain standard.	Color - Type I, Classes 1 & 2, unless otherwise specified, color shall be natural. When color is specified, cloth shall be dyed in accordance with CCC-C-432. Color shall match approved standard shade (3). Type I, Class 3, color shall be dyed as specified in CCC-C-432. (3). Standard samples available. Type II, Base cloth shall be undyed (greige).	(4) Flexing resistance: no evidence of ink penetration through the coating of all Types and Classes (4.4.1). "Good" fastness to crocking in all Types & Classes (5651).	Intended Use - In the manufacture of footwear components and other similar items.

### COATED CLOTHS

NOMENCLATURE	Base Cloth Specifications	Type of Coating Compound	Overall Weight Oz/Sq Yd (5041)	Width Inch	Breaking Strength Lb. Min. (5120)	Tearing Strength Lb. (5132)	Hydrostatic Pressure High (5512)	Flame Resistance (5903)		Flexibility Cm Max. Warp (5204)	Bursting Strength Pts. Min. (5122)	Adhesion lb/2" wide (5970)	Blocking Scale (5872)	
								After Flame Length Min	Char Length Max					
				Min	Max	V	F	W	F	W	F	70°F	-40°F	
Cloth, Coated, Window Shade CCC-C-521c, Amd. 1	Commercial window shade griage goods. Yarns/inch: for widths up to 63 in. 68 in warp & fill; for widths 63 in. and over 56 in the warp, 52 in the fill.	Impregnating compound shall be polymerized or copolymerized vinyl chloride resin, plasticized with phosphate or phthalate ester plasticizers; exclusively pigmented. No starches, dextrines or other water soluble sizing or filling compounds, or water soluble flame retardants shall be used.	4.8 -	(1)	30	40	12	10	2	2	5½	5½	17-23	No. 2

NOMENCLATURE	COATING	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, Shrinkage, etc.)	NOTES (Not Specification Requirements)
CCC-C-521c	Both sides of base cloth shall be impregnated. When window shade is specified for blackout purposes, the diffuse luminous transmission of a single layer of cloth shall average no more than 0.001 of 1%. No area of the cloth shall transmit more than 0.003 of 1%. The cloth shall have no pinholes or streaks.	Color - Shade shall be furnished in the following solid colors or 2 color combinations (dark on one side & light on the reverse side)(1): Black white, green, light ecru, dark ecru; green/white, green/light ecru; green/dark ecru. Standard samples available. Colorfastness - "good" (5560), "pass" (bleeding and streaking - 4.4.1).	(4) Resistance to cracking: "pass".	Intended Use - Used in the manufacture of Window Shades in accordance with Fed. Spec. DD-S-251.

### COATED CLOTHS

NOMENCLATURE	Base Cloth Specifications	Type of Coating Compound	Overall Weight Oz/Sq Yd (5041)	Width Inch	Breaking Strength Lb. Min. (5100)	Tearing Strength Lb. (5132)	Hydrostatic Pressure High (55:2)	Flame Resistance (5903)		Flexibility Cm. Max. Warp (5204)	Bursting Strength lb/2" wide (5122)	Blocking Scale rating (5872)
								After Flame length sec. min.	Char. Max"			
Plastic Sheet; Polyethylene, Laminated, Nylon Reinforced L-P-00524 (GSA-FSS)												
				Min   Max	W   F	W   F	W   F	W   F	70°F - 40°F			
Type I- Regular duty						(ASTM D) (1922-61T)		Peel strength 1-inch strip lb., min. room temp. -20°F				
50 in. x 100, 200 yd.	Non-woven nylon 66 (polyamide type 66)	polyethylene bonded with elastomeric base adhesive. See Type I of L-P-378.	50	50	100	100	3.25	4.50	no peel	90		
50 in. x 100, 200 yd.	multifilament yarn, 100 denier, min.		50	50	100	100	3.25	4.50		77		
50 in. x 100, 200 yd.	Yarn to be arranged so that there will be 20 yarns/lin. ft.		50	50	100	100	4.00	7.00		80		
50 in. x 100, 200 yd.	min. in both width and length directions.		50	50	100	100	4.00	7.00		85		
(Rolls)												
Type II- Heavy duty												
Class 1- Without grommets												
Class 2- With grommets												
6x8 ft.	"	High density polyethylene bonded with elastomeric base adhesive. See ASTM D2103-62T.	6 ft.	10 ft.	100	100	5.00	6.00		90		
10x12 ft.			10 ft.	12 ft.	100	100	5.00	6.00		90		
12x12 ft.			12 ft.	12 ft.	100	100	5.00	6.00		90		
12x15 ft.			12 ft.	12 ft.	100	100	5.00	6.00		90		
16x16 ft.			16 ft.	16 ft.	100	100	5.00	6.00		90		
20x20 ft.			20 ft.	20 ft.	100	100	5.00	6.00		90		
(flat sheets)												
(after tear started)												

NOMENCLATURE	COATING	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, Shrinkage, etc.)	NOTES (Not Specification Requirements)
L-P-00524 Type I 50 in. x 100 50 in. x 100 50 in. x 100 50 in. x 100 Type II Class 1 Class 2	Material shall be a 3-ply laminate formed by bonding nylon yarn between 2 sheets of polyethylene. Each ply of polyethylene shall be 0.0015 in. min. thick. There shall be some slippage of the nylon yarn when laminate is subjected to a tearing stress.	Color - Clear both sides. Black both sides. White both sides. Black & white reversible	Seam shear strength, 1 in. seam, room temperature, lb. min.: Type I 12 lb.; Type II- 16 lb. (ASTM D 1683-59T). Folding endurance (1 kg tension) cycles, min.: 30 x 10 <sup>-4</sup> (UU-P-31). Type II, Class 2 sheet shall be provided with metal grommets of Type I, Class 1 of MIL-G-16491. They shall be placed 3 ft. apart & not less than 1/4 in. from the edge at the sheet periphery. They shall be clinched tightly & installed in prepunched holes without cutting the cloth. Force to pull out grommets: 95 lb. min., Type II. (Fed. Std. No. 406, Method 1013, procedure A).	Intended Use - As protective covers for supplies loaded on railroad flat cars & open trailers, as a tarpaulin, as water barrier membrane in construction operation, as pit liner during evacuation work, & as a blanket for curing highway concrete. They are used as painter's drop cloth and vehicle covers also.

### COATED CLOTHS

NOMENCLATURE	Base Cloth Specifications	Type of Coating Compound	Overall Weight Oz/ Sq Yd		Width Inch	Breaking Strength Lb. Min.	Tearing Strength Lb.	Hydrostatic Pressure High (5512)	Flame Resistance (5903)		Flexibility Cm. Max. Warp (5204)	Bursting Strength Pts. Min. (5122)	Adhesion lb/2" wide (5970)	Blocking Scale rating (5872)
			(5041)	(5100)					(5132)	After Flame length sec Min				
<u>Cloth, Tracing</u> CCC-C-531e			Min	Max		W	F	W	F	W	F	W	F	
								Opacity, %, max. Initial After Acc. Aging						
Type I- For ink work	Plain weave cloth. Woven of cleaned yarns. Free from knots, floats, unsightly slubs and misweaves. Yarns/ inch: 90 min. in the warp; 85 min. in the filling. resistant)	Applied to give a clean, complete, even, and unbroken surface, free from tears, holes, pin-holes, wrinkles, or creases.	65	45		65	45	40		36		48		
Type II- For pencil work						65	45	40				48		
Type III- For both ink & pencil work (& moisture-resistant)						65	45	40				48		no cutting by pencil; no flaking after rubbing.

NOMENCLATURE	COATING	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, Shrinkage, etc.)	NOTES (Not Specification Requirements)
CCC-C-531e Type I Type II Type III	Type I: highly glazed on one side & matte on the other. Ink shall adhere uniformly to matte side, & lines drawn shall show no spreading or feathering. Matte side shall also show satisfactory erasing. Type II: high glazed on one side & matte on the other. Matte side shall have suitable "tooth" for pencil work & erasing without smudging. Type III: matte surface on one or both sides (1). Ink: lines shall lose no density where tape is applied & tape shall come off clean without removing coating. Lines shall not smear, & erase easily without damaging coating. Pencil: no smudging. Shall leave no ghost or trace of lines when erased. Typing: typed characters shall be clear & distinct, & erase easily.	Color - Cloth shall be white or blue (uniform bluish tint) (1), each of a shade which will give satisfactory performance and conform to standard commercial practice.	Cloth shall be furnished in sheets & rolls (1). No appreciable yellowing, discoloration or change in appearance of the cloth that would cause the printing time to have to be increased on the diazo or blue-printing machine after exposure to accelerated aging & ultraviolet radiation. Heat resistance: there shall be no tackiness or sticking of the cloth. Type III: Water resistance- no stretching, wrinkling, deterioration, water spots, or opaque marks.	Intended Use - Type I: for preparation of ink drawings of the finest character, and for photolithographs and blueprints of the maximum degree of legibility may be made. Type II: for the preparation of fine architectural and similar type drawings in pencil, using the matte side only, and from which good blueprints may be made. Type III: for the preparation of fine ink or pencil drawings from which photolithographs and blueprints of a high degree of legibility may be made. This type of cloth shall be used when a water-resistant quality is desired.



## COATED CLOTHS

NOMENCLATURE	Base Cloth Specifications	Type of Coating Compound	Overall Weight Oz/Sq Yd		Width Inch	Breaking Strength Lb. Min.	Tearing Strength Lb.	Hydrostatic Pressure High (5512)	Flame Resistance (5903)		Flexibility Cm. Max. Warp (5204)	Bursting Strength Pt. Min. (5122)	Adhesion lb/2" wide (5970)	Blocking Scale rating (5372)
			(5041)	(5100)					(5132)	After Flame sec min				
Cloth; Tracing, Printed CCC-C-536			Min	Max		W	F	W	F	W	F			

<p>Type I- Profile cloth</p> <p>Type II- Cross section cloth</p> <p>Type III- Logarithmic cloth</p> <p>Type IV- Plan profile cloth</p>	<p>Plain weave cotton, free from excessive number of imperfections of manufacture.</p>	<p>Applied to produce even, unbroken surfaces free from pinholes and other defects. Coating should permit use of drawing ink thereon, after 1 application of Fuller's earth or similar medium, without allowing ink to penetrate cloth.</p>
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NOMENCLATURE	COATING	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, Shrinkage, etc.)	NOTES (Not Specification Requirements)
CCC-C-536 Type I Type II Type III Type IV	Highly glazed surface on one side, and dull finish on the other. Cloth shall have a bluish tinge, be highly transparent, and the dull side shall be capable of one complete erasure of black water-proof drawing ink lines and the redrawing of another set of lines on the same surface area without detrimental change in the character and quality of the lines or surface of the cloth.	Color: (1).	Printing: to be done by the use of rollers or plates as the case may require. Printing shall be done on glazed side of cloth. Rulings: shall be commercially standard according to type.	

### COATED CLOTHS

NOMENCLATURE	Base Cloth Specifications	Type of Coating Compound	Overall Weight Oz/Sq Yd		Width Inch	Breaking Strength Lb. Min.	Tearing Strength Lb.	Hydrostatic Pressure High (5512)	Flame Resistance (5903)		Flexibility Cr. Max. Warp (5204)	Bursting Strength Pts. Min. (5122)	Adhesion lb/2" wide (5970)	Blocking Scale rating (5872)
			(5041)	(5100)					(5132)	After Flame sec. min.				
<u>Cloth, Laminated.</u> Cotton; Rubber or Synthetic Rubber <u>Coated, Double Texture</u> MIL-C-678A			Min	Max		W	F	W	F	W	F	W	F	70°F - 40°F
Type I- Print to Print	Outer cloth shall conform to Type IV, Class 2, & inner cloth shall conform to Type III, Class 2 of MIL-C-299 (6). Copper content: 0.003% max. Manganese content: 0.0015% max.	Natural or synthetic rubber. Reclaimed rubber shall not be used. Base cloths shall be combined back to back with coating between the plies, then vulcanized. Face of the cloth shall be free from coating.	11.0	(7) min.	35	100	60	40	25	80 (initial) 40 (after strength of coating) 40 (after low temp. resistance)	13.0 14.0 (after heat treatment)	10 (Initial) 8 (After water spray) 7.5 (After acc. aging)		
Type II- Twill to sateen	Outer & inner cloth shall conform to: Outer 2/1 rt. twill Inner 5-harness fill. sateen		11.5	(1)	85	80	55	50	40 (initial) 20 (after low temp. resistance)			14		
Weight max.	3.2	3.3												
Breaking- W	50	28												
F	38	50												
Yarns/in- W	70	56												
F	66	38												
Tearing- W	30	55												
F	25	48												

(6) Manganese & copper: same as for Type I.

NOMENCLATURE	COATING	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, Shrinkage, etc.)	NOTES (Not Specification Requirements)
MIL-C-678A Type I Type II	When specified, cloth shall be made mildew resistant by impregnation with 1.35±.25% 2,2 methylene (bis-4-chlorophenol), (dihydroxychlorodiphenylmethane) using 2 bath aqueous or solvent application. Treated cloth shall not lose more than 10% of breaking strength in the warp. Type I: base cloth shall be given a suitable water repellent finish.	Color - Cloth shall be vat dyed Green OG 107 - standard sample shade available (2). Colorfastness - "good" (5651-5660-5610-5600-5630-5682).	(4) Water absorption: Type I- 0.30 grams max.	Intended Use - In the manufacture of wet weather clothing.

### COATED CLOTHS

NOMENCLATURE	Base Cloth Specifications	Type of Coating Compound	Overall Weight Oz/Sq Yd		Width Inch	Breaking Strength Lb. Min.		Tearing Strength Lb.		Hydrostatic Pressure High (5512)	Flame Resistance (5903)		Flexibility Co. Max. Warp (5204)	Bursting Strength Pts. Min (5122)	Adhesion lb/2" wide (5970)	Blocking Scale rating (5872)
			Min	Max		W	F	W	F		W	F				
Artificial Leather, Cloth, Coated, Vinyl Resin, (Upholstery) CCC-A-700e								(5136)								
Class 1- 15.0 oz/sq yd.	Option "a" sateen- 1.32 yd/lb. Option "b" sateen- 1.21 yd/lb.	When treatment (b) is not specified: virgin vinyl chloride polymer or virgin vinyl chloride acetate co-polymer. Materials containing mercurial compounds or water soluble ingredients shall not be used. When treatment (b) is specified: coating compound shall conform to CCC-D-950, 3.2.3.1, when inhibitor (e) is used. When other inhibitors listed in CCC-D-950 are used coating compound shall conform to 3.2.3.1, and, in addition, only phosphate or phthalate ester plasticizers shall be used.	15.0	-	50	125	100	7	8	70				8	No. 3	
Class 2- 18.0 oz/sq yd.	Option "a" sateen- 1.12 yd/lb. Option "b" sateen- 1.02 yd/lb.		18.0	-	50	140	130	8	9	100				8	No. 3	
Class 3- 20.0 oz/sq yd.	Option "a" broken twill- 1.14 yd/lb. Option "b" broken twill- 1.05 yd/lb.	20.0	-	50	120	120	8	9	100				8	No. 3		
Class 4- 25.0 oz/sq yd.	Knitted- 6.70 oz.	25.0	-	54	110	100	20	20	100				8	No. 3		
Class 5- 29.0 oz/sq yd.	Chafer duck- 11.65	29.0	-	54	140	140	16	16	100				8	No. 3		
Class 6- 40.5 oz/sq yd.	Chafer duck- 11.65	40.5	-	54	140	140	18	18	100				8	No. 3		
Class 7- 18.0 oz/sq yd.	Knitted- 5.20 oz.	18.0	-	54	80	70	13	12	100				8	No. 3		
Class 8- 10.5 oz/sq yd.	Grade B airplane cloth- 2.05 yd/lb.	10.5	-	56	80	70	3.5	3.5	70				8	No. 3		

(Continued)

NOMENCLATURE	COATING	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, Shrinkage, etc.)	NOTES (Not Specification Requirements)
CCC-A-700e Class 1 Class 2 Class 3 Class 4 Class 5 Class 6 Class 7 Class 8 (Continued)	Coated cloth shall be a base cloth coated on the face side. Grain shall match approved grain std.	Color - Shall match applicable color number of Fed. Std. 595 or other color standard or standard sample for color specified (1-3). Colorfastness - "good" (5651).	(4) Abrasion resistance: no visual loose fibers of base cloth shall be exposed in the center 1 in. of the abraded portion. Accelerated weathering (200 hours): no appreciable fading, discoloration, exudation, development of tackiness, or stiffness. Elongation: Class 4 & 7: 5% min. in the wales; 25% min. in the courses. Cold resistance at -20° + 2°F: coating shall not crack through the base cloth (5874). Plasticizer loss (max.), activated carbon extraction: Classes 1-7 - 8%; Class 8 - 12%.	Intended Use - Classes 1 & 8: for applications where there is no great stress on the coated cloth; such as for flat upholstery (slit seats and other padded applications), headlinings, slipcovers, door panels, weather stripping, velting, and miscellaneous applications where properties of coating & decorative values are principal considerations. Class 2: for medium spring upholstery applications. Classes 3, 4, 5 and 7: for deep spring construction. Class 6: for exceptionally heavy-duty rugged service such as used in buses. (Deep spring construction is spring construction of a depth greater than 3 in.

### COATED CLOTHS

NOMENCLATURE	Base Cloth Specifications	Type of Coating Compound	Overall Weight Oz/Sq Yd		Width Inch	Breaking Strength Lb. Min.	Tearing Strength Lb.	Hydrostatic Pressure High (5512)	Flame Resistance (5903)		Flexibility Cm. Max. Warp (5204)	Bursting Strength Pt. Min. (5122)	Adhesion lb/2" wide (5970)	Blocking Scale rating (5872)
			(5041)	(5100)					(5132)	After Flame High sec. min.				
Artificial Leather, Cloth, Coated, Vinyl Resin, (Upholstery)			Min	Max		W	F	W	F	W	F	W	F	
CCC-A-700e (Cont'd)														

**Treatments:**

**a. Fire resistant**

(1) Regular

after accelerated aging shall be not less than 75%.

2 2 3 3

(2) Special

initial (coated) after leaching resistance & accelerated aging shall not be less than 75% initial (coated).

(after leaching)  
2 2 3 3

**b. Mildew resistant**

Base cloth or coating compound shall be treated with 1 of the inhibitors listed in CCC-D-950. When coating is treated, treatment shall be limited to inhibitor (e) (solubilized copper 8-quinolinolate). Amount of fungicide shall be based on total ave. weight of treated base cloth for base cloth treatment and on nonvolatile content of coating for coating treatment.

**c. Oil resistant**

NOMENCLATURE	COATING	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, Shrinkage, etc.)	NOTES (Not Specification Requirements)
CCC-A-700e (Cont'd) Treatments:	Reverse side of fire resistant treated coated cloth may be flash coated with the same coating compound used on the face.			Intended Use - For use in special installations (a). For use in unusually damp climates (b). For use where exposed to solvents and oil (c).
a.				
(1) (2)				
b.	Weight of flash coating may not exceed 0.5 oz/sq yd. and shall be exclusive of min. coating weight listed.			
c.				

### COATED CLOTHS

NOMENCLATURE	Base Cloth Specifications	Type of Coating Compound	Overall Weight Oz/Sq Yd (5041)	Width Inch	Breaking Strength	Tearing Strength	Hydrostatic Pressure High (5512)	Flame Resistance (5903)		Flexibility Cm. Max. Warp (5204)	Bursting Strength Pts. Min. (5122)	Adhesion lb/2" wide (5970)	Blocking Scale rating (5872)
					Lb. Min. (5100)	Lb. (5132)		After Flame length sec. min.	Char length Max"				
<u>Duck; Cotton, Enamelled</u> CCC-D-741, Amd. 1 Cotton duck, double-filling (2-ply); Yarns/inch; 84(+1) in the warp; 28(+1) in the fill. Warp: singles, Fill: 2-ply.													
			Min   Max		W   F	W   F		W   F	W   F	70°F   40°F			
			22	50	120	70							
			(50") min. lin yd										

Cloth, (Cotton Duck), Laminated, Synthetic Rubber Impregnated, Oil Resistant  
MIL-C-362B

Cotton, 8.0 oz/sq yd. min. Warp count (unvulcanized): 50 ± 1 threads/inch; fill count: 40 ± 2 threads/inch (unvulcanized).

Synthetic rubber of either of 2 classes: Class 1 - compounds utilizing chloroprene as the basic material. Class 2 - compounds utilizing a copolymer product of butadiene & acrylonitrile as the basic material.

(1)

NOMENCLATURE	COATING	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, Shrinkage, etc.)	NOTES (Not Specification Requirements)
CCC-D-741	Coated on one side. Flexible without breaking enamel.	Color (1).	Permeability: hydrostatic range 0 - 20 in. in 10 min. Cloth shall be thoroughly oxidized to prevent spontaneous combustion.	

MIL-C-362B

Form Sheets, strips, or cut or molded items (1). See specification for applicable tolerances. Density: 67 lb/cu ft. min. See specification for load deflection limits and permanent set. Oil resistance: there shall be no delamination (4.4.5.2). The volume shall not swell more than 25% (4.4.5.2). There shall be no fungus growth (4.4.6).

Intended Use - For vibration attenuation.

### COATED CLOTHS

NOMENCLATURE	Base Cloth Specifications	Type of Coating Compound	Overall Weight Oz/Sq Yd		Width Inch	Breaking Strength Lb. Min.		Tearing Strength Lb.		Hydrostatic Pressure High (5512)	Flame Resistance (5903)		Flexibility Con. Max. Warp (5204)	Bursting Strength Pth. Min. (5122)	Adhesion lb/2" wide (5970)	Blocking Scale rating (5872)
			Min	Max		W	F	W	F		After Flame sec min	Char length Max "				
<u>Paulin, Waterproof, Special Purpose, 10 Feet Long by 8 Feet Wide</u> MIL-P-1956B																
Class 1- Stitched and sealed seams	Cotton sheeting cloth, coating quality, Type VIII, Class 1 of Spec. CCC-C-432.	Compound for coating cloth & strapping material shall be synthetic rubber (except that use of natural rubber is permissible in anchor coat), plasticized & pigmented. Reclaimed rubber shall not be used.	12.5	16.0		(lot ave.) 65 55		25	20	(lot ave.) 30 (initial) 30		(lot ave.) 11	(lot ave.) 6			No. 3
Class 2- Single stitched, laid in cement & strapped seams			12.5	16.0		65	55	25	20	(after low temp. resistance) 30 (after weatherometer) 30 (after strength of coating)		(after heat treatment) 11 (after water leaching)	(after water spray) 5			No. 3
Class 3- Ceasnted seams			12.5	16.0		65	55	25	20	30						No. 3

NOMENCLATURE	COATING	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, Shrinkage, etc.)	NOTES (Not Specification Requirements)
MIL-P-1956B Class 1 Class 2 Class 3	Base cloth shall be coated on both sides with $8 \pm 1$ oz/sq yd. of coating compound. Face shall be coated with $6 \pm \frac{1}{2}$ oz. of coating compound per sq. yd. Reverse shall contain balance of coating. After vulcanization, cloth shall be free from pinholes and shall contain no more than 5 windows/lin yd.	Color - Shall be CG-207 and shall match standard sample for shade.	(4) Abrasion: no loose fibers of base cloth shall be exposed in center 1 in. of abraded portion (4.4.5). Cloth and al. sealed seams shall be dusted with whitening, talc, or other finely divided mineral material which does not support mildew growth, to prevent blocking.	Intended Use - As protective coverings for signal equipment.

### COATED CLOTHS

NOMENCLATURE	Base Cloth Specifications	Type of Coating Compound	Overall Weight Oz/Sq Yd (5041)	Width Inch	Breaking Strength Lb. Min. (5100)	Tearing Strength Lb. (5132)	Hydrostatic Pressure High (5512)	Flame Resistance (5903)		Flexibility Cm. Max. Warp (5204)	Bursting Strength P <sub>1</sub> in. (5122)	Adhesion lb/2" wide (5970)	Blocking Scale (5872)
								After Flame length sec. min.	Char length Max"				
<u>Bag, Waterproof, Clothing</u> MIL-C-3108D (GL) Am. 1			Min	Max.	W	F	W	F	W	F	70°F	-40°F	
Class 1- Stitched & sealed seams	Shall be Type V, VI, VII, or VIII; Class 2; water repellent & mildew resistant	Synthetic rubber, pigmented to produce Olive Green 207, except that natural rubber is permissible in the anchor coat. Use of reclaimed rubber is prohibited.	7.5	12.0	40	45	800	640	(initial) 30 (after low temp. augmenting resistance)	8	8.5	8	No. 2
Class 2- Stitched shingled, laid in cement & strapped seams	treated coating quality cotton sheeting, conforming to Spec. CCC-C-432, except that soil burial test for mildew resistance is not required.		7.5	12.0	40	45		30 (after weather resistance)	30 (after strength of coating)	8.5 (after heat treatment)	6.5		No. 2
Class 3- Cemented seams			7.5	12.0	40	45	"	30 (after solvent resistance)		"	"		No. 2
<u>Cloth, Coated, Cotton (Creped, Phenolic Resin Treated)</u> MIL-C-3154			Cotton sheeting (40"- 3.75- 48 x 40 grey goods)										Thermosetting phenolic resin

NOMENCLATURE	COATING	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, Shrinkage, etc.)	NOTES (Not Specification Requirements)
MIL-C-3108D Class 1 Class 2 Class 3	Coated on one side. Coated side dusted with whiting, talc, or other finely divided mineral material that does not support mildew growth to produce a uniform dull finish. To match standard sample in finish. After curing, coated cloth shall be free from pinholes & shall contain no more than 5 windows/lin yd.	Color - Shall be Olive Green No. 107 (base cloth) and Olive Green No. 207 (coating).	(4) Low temperature resistance: "pass" (4.4.2). Water resistance, spray method: "pass" (4.4.5). Water resistance: "pass" (4.4.3). Strength of coating: "pass" (4.4.4). Water resistance (spray absorption method): 20% max. (4.4.14).	Intended Use - For carrying rations, extra clothing, & personal effects that must be protected from moisture. Also as a carrying bag in conjunction with bag, sleeping, arctic & bag, sleeping, mountain. Bag is not constructed to withstand rough use or handling.
MIL-C-3154	Creped after resin treatment to increase number of picks & ends per inch not less than 15% of original construction of untreated cloth.	Color (1).	Resin content: Rools- 43 ± 2%; individual test specimens: 43 ± 5% (4.4.2). Volatile content: 6-7% ave. (4.5).	Intended Use - In the fabrication of givies for certain types of fuses.

### COATED CLOTHS

NOMENCLATURE	Base Cloth Specifications	Type of Coating Compound	Overall Weight Oz/Sq Yd		Width Inch	Breaking Strength Lb. Min.	Tearing Strength Lb.	Hydrostatic Pressure High (5512)	Flame Resistance (5903)		Flexibility Cm. Max. Warp (5204)	Bursting Strength Pts. (5122)	Adhesion lb/2" wide (5970)	Blocking Scale rating (5872)
			(5041)	(5041)					After Flame length sec Min	Char Max"				
Ponton Float (18-Fon. with Emergency Kit and Carrying Case)			Min	Max		W	F		W	F	70°F			-40°F

MIL-P-3671, Amd. 1 Cotton duck. Air chamber cutting discards may be used for chafing strips, repair kit pocket, & D-ring & lifting handle patches. Air chamber cloth- Yarns/inch: 18-22 in the warp; 18-23 in the fill. Weight: 17.25 - 19.8 oz. Breaking strength: 290 in warp and fill. Weave: approximately square. Bulkhead cloth- Yarns/inch: 31 in the warp; 26 in the fill. Weight: 105 oz. min. Breaking strength: 145 in the warp; 125 in the fill. Weave: approximately square.

60% neoprene by volume. Balance shall be softeners, curing agents, antioxidants & reinforcing material.

NOMENCLATURE	COATING	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, Shrinkage, etc.)	NOTES (Not Specification Requirements)
MIL-P-3671	(a) Cloth shall be passed through a friction calender and given 2 friction passes on each side. It shall then be calender-coated each side with a coat gaging between 0.010-0.012 in. for air chamber cloth & 0.008 in. for bulkhead cloth. or (b) Cloth shall be dipped in a dispersion of neoprene latex & water & run through a drier. It shall be frictioned each side & calender-coated each side with a coating gaging between 0.010-0.012 in. for air chamber cloth & 0.008 in. for bulkhead cloth.	Color - Color of finished float shall be that formed by finishing compound.	Production test model to be approved. Coating compound- Tensile strength: 1800 psi min. Elongation: 500% min. Shall show no loss of tensile strength after 24 hours accelerated weathering. Max. loss of 10% tensile strength after 96 hours accelerated aging. Water absorption shall be held to a minimum. After fabrication, floats shall be vulcanized in a pressure-type oven or in a mold.	Intended Use - As a floating support for a division floating bridge.



### COATED CLOTHS

NOMENCLATURE	Base Cloth Specifications	Type of Coating Compound	Overall Weight Oz / Sq Yd		Width inch	Breaking Strength Lb. Min.		Tearing Strength Lb.		Hydrostatic Pressure High (5512)	Flame Resistance (5903)		Flexibility Cn. Max. Warp (5204)	Bursting Strength (5122)	Adhesion lb/2" wide (5970)	Block-ing Scale rating (5872)
			Min	Max		W	F	W	F		After Flame length sec min	Char length Max"				
Cloth, Coated and Laminated, Chloroprene on Nylon MIL-C-5302B																
Type I- Single ply, one side coated	Rip-stop nylon, conforming to Spec. MIL-C-7020, Type I, except that specified air permeability, permanence of finish, and oven aging shall not be required.	Suitably compounded chloroprene rubber. Coating compound shall not contain ingredients known to promote skin irritations or have a detrimental effect on nylon.	3.00 +0.35	36 ±1/2	45	45	2.5	2.5	50							(5950) 3
Type IA- Single ply, both sides coated			4.00 +0.25	36 ±1/2	55	55	2.0	1.5	50							3
Type II- Double ply, laminated, one side coated			5.25 +0.4	36 ±1/2	90	90	4.0	4.0	80							3

NOMENCLATURE	COATING	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, Shrinkage, etc.)	NOTES (Not Specification Requirements)
MIL-C-5302B Type I Type IA Type II	Type I- coated on one side. Type IA- coated on both sides. Type II- 2 layers of base cloth, laminated, and coated on one side.	Color - Types I & II- unless otherwise specified, color shall match Orange Yellow color No. 13538 of Fed. Std. No. 555. Type IA shall be Black and shall match color No. 37038 of Fed. Std. No. 595.	Finished cloth shall not crack or flake when tested at -67° ± 2°F. Finished cloth shall not block, become tacky, or show signs of exudation when tested at 170° ± 2°F. (4.2.3.1 & 4.2.3.2). Flexibility- "pass" (4.2.3.3).	Intended Use - In the manufacture of anti-exposure coveralls for flying personnel.

### COATED CLOTHS

NOMENCLATURE	Base Cloth Specifications	Type of Coating Compound	Overall Weight Oz/Sq Yd		Width Inch	Breaking Strength Lb. Min.	Tearing Strength Lb.	Hydrostatic Pressure High (5512)	Flame Resistance (5903)		Flexibility Cm. Max. Warp (5204)	Bursting Strength Pts. Min. (5122)	Adhesion lb/2" wide (5970)	Blocking Scale rating (5872)
			(5041)	(5042)					After Flame (sec. min)	Char Length (Max")				
			Min	Max		W	F	W	F	70°F	40°F			

Cloth, Laminated and Tape, Coated Cloth, Natural Rubber on Cotton, Pneumatic Flotation Equipment  
MIL-C-6819C

Variety N- Two ply laminated cloth, 11.2 oz/sq yd.	Plain woven cotton cloth conforming to Spec. MIL-C-6320 Class 1 or 2 (1). Defect shall be market with single strand thread, which shall be visible after coating. Any defects shall permit uniformity of coating on the spreading machine.	Min. of 80% new plantation natural rubber by volume. Balance shall be softeners, curing agents, anti-oxidants and reinforcing materials. Pigmented, 100% of the pigment shall pass through a standard 325 mesh screen. Compounds shall not be injurious to base cloth, or contain ingredients which would bloom to the surface or adversely affect finished cloth. Compound shall cure properly & provide proofing films insoluble in water. Tensile strength-Initial: 2400 psi min. After heat aging: 45 max. Elongation: 500 min. (initial); 25 max. after heat aging.	10.3	12.1	(1)	80	80	(initial)	76	76	(after heat aging)	76	76	(after Weatherometer-100 hours)	5	No. 2
Variety O- Two ply laminated cloth, 18.8 oz/sq yd.			17.4	20.2	(1)	290	290	(initial)	280	280	(after heat aging)	260	260	(after Weatherometer-500 hours)	5	No. 2
Variety R- Coated cloth tape, 7.7 oz/sq yd.			7.0	8.3	(1)									5		

NOMENCLATURE	COATING	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, Shrinkage, etc.)	NOTES (Not Specification Requirements)
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MIL-C-6819C Variety N Variety O Variety R	Foundation compound, compatible with base cloth & coating compound shall be applied to base cloth to achieve required adhesion. Coating compound shall then be applied by a spread coating operation. Rubber coating shall be applied in sequence of operations, so that both sides of each cloth ply shall be coated & laminated. Pigment shall be incorporated in outermost coatings. Cloths shall be cured. Cured laminated cloths may be lightly dusted with talc or zinc stearate. Coated tape shall not be dusted. Tape shall have coating of high natural content rubber stock (pure gum rubber) calendered on one side. Coating shall not be fully cured. Protected by suitable liner. Edges of tape shall be smooth.	Color (1)- Usual colors chosen: Color No. 33538 Yellow (usually on straight ply side); Color No. 36231 Gray (usually on bias ply side); Color No. 35109 Blue (usually on bias ply side). Pure gum rubber coating of tape, which is not fully cured, shall not be pigmented. Opposite sides shall match one of above colors.	See specification for construction and weight distribution table. Material offered for acceptance shall not be more than 90 days old. Laminated cloths- Cloths shall not have become stiff & brittle or soft & tacky after heat aging (5850). Cloths shall not become discolored or brittle after weatherometer exposure (5804). Slight blooming shall be permissible in exposed Variety N. Cloths shall show no signs of cracking after low temperature exposure (4.6.11). Cloths shall not become tacky or adhere to themselves after high temperature exposure (4.6.12). Permeability to hydrogen: Initial: 8 l/m max.; after weathering: 10 l/m max.; after low temp: 10 l/m max.; after high temp: 10 l/m max. Permeability to helium (same conditions): 5.0; 6.3; 6.3; 6.3. No air leakage under pressure (4.6.13).	Intended Use - In the manufacture of pneumatic life rafts, airplane flotation equipment and similar equipment.
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### COATED CLOTHS

NOMENCLATURE	Base Cloth Specifications	Type of Coating Compound	Overall Weight Oz/Sq Yd (5041)	Width Inch	Breaking Strength Lb. Min. (5100)	Tearing Strength Lb. (5132)	Hydrostatic Pressure High (5512)	Flame Resistance (5903)		Flexibility Cm. Max. Warp (3204)	Bursting Strength Pt. Min. (5122)	Adhesion lb/2" wide (5970)	Blocking Score (5872)
								After Flame sec	Char Length in				
Cloth, Coated, Synthetic and Fibrous Glass MIL-C-7514A (USAF) Amd. 1													
			Min   Max		W   F	W   F		W   F	W   F	70°F	-40°F		
Type I- Cloth, glass vinyl coated (non-porous)	Types I & III: continuous multi-filament glass. Type II: copolymer of vinyl chloride and acrylonitrile. Plain (1/1) weave.	Suitable compound- ed vinyl resin, properly plasticized & pigmented.	7.0 ±0.5	(1)	130	110	(5134) 3 3	2 2	2.3 2.3	2.3			
Type II- Cloth, vinyl resin, vinyl coated (non-porous)	"	"	7.0 ±0.5	(1)	130	110	3 3	2 2	2.3 2.3	2.3			
Type III- Cloth, glass, vinyl coated (porous)	"	"	5.5 ±0.5	(1)	180	175	5 5	2 2	2.3 2.3	2.3			
								3 3					

NOMENCLATURE	COATING	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, Shrinkage, etc.)	NOTES (Not Specification Requirements)
MIL-C-7514A Type I Type II Type III	Coating shall be applied to both sides of cloth, so that no bare threads show & it thoroughly impregnates the base cloth. Unless otherwise specified, coating applied to Types I & II shall be heavier on the face than on the back. Waterproofness: Types I & II shall show no signs of leakage through the unabrased portion, & no more than 5 ml. of water shall pass through the abrased portion (5516).	Color (1) - Shall be incorporated in the coating material. Colorfastness - Type III: "good" (5660-5651); "fair" (5651-wet).	Type III: Thread count: 35 yarns/in. in the warp; 30 yarns/in. in the fill. Air permeability: 150-225 ft <sup>3</sup> /min/ft <sup>2</sup> . All types: Coating shall not crack, break, or become tacky. (4.5.2). Cloth shall not crack upon creasing in the presence of aromatic hydrocarbon-fluid (4.5.3). Cloth shall be non-corrosive to aluminum (4.5.4). Abrasion resistance: 500 cycles (min) shall be required to rupture 1 thread of base cloth (5306). Color of cloth shall not change in cleaning & cleaned area shall exhibit no tackiness (4.5.9). Cloth shall not lose more than 15% of its original breaking strength & shall not crack when folded sharply upon itself or show signs of blooming or material color change after exposure to heat & light after accelerated weathering (4.5.6).	Intended Use - In the manufacture of aircraft insulation & acoustical & sound proofing blankets.

### COATED CLOTHS

NOMENCLATURE	Base Cloth Specifications	Type of Coating Compound	Overall Weight Oz/Sq Yd		Width Inch	Breaking Strength Lb. Min.		Tearing Strength Lb.		Hydrostatic Pressure High (5512)	Flame Resistance (5903)		Flexibility Cm. Max. Warp (5204)	Bursting Strength Pts. Min (5122)	Adhesion lb/2" wide (5970)	Blocking Scale rating (5872)	
			(5041)	(5041)		(5100)	(5132)	After Flame (sec min)	Char length (Max")		W	F					W
Cloth, Coated, Asbestos MIL-C-763B (ASG)			Min	Max		W	F	W	F		W	F	W	F			
Type I- Plain	Yarn, with min. asbestos content of 75%. Asbestos made from commercial grade chrysotile asbestos. No filling material except organic fiber. Weight: Type I- 29 + 2 oz/sq yd; Type II- 30 + 2 oz/sq yd. Yarns/inch: Type I- 20 in the warp & 10 in the fill; Type II: 14 in the warp & fill. Type II: each yarn shall have a single brass wire insert. Wire shall be drawn from alloy conforming to composition B (70% copper, 30% zinc) of Spec. QQ-W-321. Diameter shall be 0.008 ± 0.001 in.	Suitably compounded chloroprene polymer.	4.5	-	36	215	120	17	12		0	0	0	0	260	9	No blocking
Type II- Reinforced with wire		"	4.75	-	36	165	150	16	12		0	0	0	0	210	9	No blocking

NOMENCLATURE	COATING	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, Shrinkage, etc.)	NOTES (Not Specification Requirements)
MIL-C-763TB Type I Type II	Coating shall be applied & vulcanized on both sides, approximately equal thickness on each side & sufficiently thick to insure nonfraying of asbestos cloth. Surface of coated cloth may have a slightly pebbled grain.	Color - Shall be Black & shall be an approximate match to Shade No. 514 of ANA bulletin No. 157. An inorganic powder which is applied to the surface & which can be removed by rubbing with a damp cloth shall not be cause for rejection.	Thickness: 0.060 - 0.080 in. Coating shall not crack or flake off in low temperatures (5874). Finished coating shall not crack in heat (4.6.3.2).	Intended Use - As fire seals, gaskets, and other applications where a flexible material, highly resistant to elevated temperatures and flame, is required.

### COATED CLOTHS

NOMENCLATURE	Base Cloth Specifications	Type of Coating Compound	Overall Weight Oz/Sq Yd		Width Inch	Breaking Strength Lb. Min.		Tearing Strength Lb.		Hydrostatic Pressure High		Flame Resistance (5903)		Flexibility Cm. Max. Warp	Bursting Strength Pt. Min.	Adhesion lb/2" wide	Blocking Scale rating
			(5041)	(5041)		(5100)	(5132)	(5512)	(5512)	After Flame length sec min	Char length Max"	(5204)	(5122)				
			Min	Max		W	F	W	F	W	F	W	F	70°F	-40°F		
Cloth, Coated, Cotton, Twill Weave, 1 Side Vinyl Resin Coated MIL-C-7642 (USAF) Amd. 2																	
Type I- Aluminum color coating	Greige undyed cotton twill, napped on one side. Weave: 3/1	Vinyl resin compounded with pigments.	14.0	16.0	(1)	130	90	6	6								No blocking
Type II- Olive drab color coating	right hand twill with 2 warp ends weaving as 1.		14.0	16.0	(1)	130	90	6	6								No blocking

NOMENCLATURE	COATING	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, Shrinkage, etc.)	NOTES (Not Specification Requirements)
MIL-C-7642 Type I Type II	Coating shall be applied to unnaped side. Use of dyestuffs, detergents, or other chemicals or finishing agents which would cause deterioration in storage or dermatitis on prolonged intimate skin contact is prohibited. pH: 6.0 - 8.0 (2811).	Color - Type I: Aluminum (to produce bright reflectance, equal to standard sample). Type II: Olive Drab (to match shade 34087 of Fed. Std. 595).	Coating shall not crack or become soft or tacky in the presence of aromatic hydrocarbon (4.5.3). Min. 2000 wear cycles shall be required to wear 1/16 in. hole in coating (5306). Coating shall not crack or break (4.5.2). Cloth shall contain no materials or impurities that would cause crazing or discoloration of transparent molded plastic sheet. Cloth shall show no signs of cracking or blooming and shall lose not more than 10% of breaking strength after accelerated weathering (4.5.5). Tolerance $\pm 3/4$ " on 36" or less width. Tolerance $\pm 1/4$ " greater than 36".	Intended Use - In the fabrication of covers for molded plastic parts such as aircraft turrets, canopies, and equipment items.

### COATED CLOTHS

NOMENCLATURE	Base Cloth Specifications	Type of Coating Compound	Overall Weight Oz/Sq Yd		Width Inch	Breaking Strength Lb. Min.	Tearing Strength Lb.	Hydrostatic Pressure High (5512)	Flame Resistance (5903)		Flexibility Cm. Max. Warp (5204)	Bursting Strength Ph. (5122)	Adhesion lb/2" wide (5970)	Blocking Scale rating (5872)
			(5041)	(5041)					After Flame (sec min)	Char length Max"				
			Min	Max		W	F	W	F	W	F	70°F	-40°F	
Cloth, Coated, Rubber, Nylon Base MIL-C-7966A, Amd. 1														
Variety S- Spray shield cloth 3 oz/sq yd.	Variety S: rip-stop woven nylon conforming to Type I of Spec. MIL-C-7020, except that colorfastness, air permeability, & permanence of finish requirements need not apply. Silicone oil shall not be used on the cloth.	New plantation natural or synthetic rubber.	-	3.0	(1) 50	50	450	350	15	(initial) 12 (after cold effect test)		1.5	No. 2	
Variety P- Paulin, bright, high tenacity cloth, 6.75 oz/sq yd.	multifilament polyamide from hexamethylene diamine and adipic acid or its derivatives). Weave: warp face 4/1 5-harness satin with a counter of 3. Weight: 3.5 oz/sq yd. max. Suggested thread count: 174 x 86 or 177 x 89.	"	-	6.75	(1) 200	150	2000	1000	15	(initial) 12 (after cold effect test) 12 (after abrasion)		3	No. 2	

NOMENCLATURE	COATING	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, Shrinkage, etc.)	NOTES (Not Specification Requirements)
MIL-C-7966A Variety S Variety P	Uniform coating of 2 or more layers of rubber shall cover back of base cloth. An adhesive may be used to obtain required coating adhesion. Anti-oxidant may be incorporated in rubber to retard aging effects. No materials injurious to cloth or which might be water soluble after vulcanization shall be used. Fillers and vulcanizers shall be sufficiently fine so that a uniform product will be produced. Compound should cure properly and provide proofing films suitable for retaining water. Potability of water coming in contact with coating shall not be affected. P: 6.5 - 8.0	Color - Base cloth: Variety S- Cloth shall be yarn or piece dyed. Face shall be a daylight fluorescent red conforming to spectrophotometric requirements in the Spec. Variety P- same. Finished cloth: surface of rubber shall be pigmented to match lusterless (blue) color No. 35042 of Fed. Std. 595.	Time elapsed from date of application of coating (stamped at end of roll) and date of delivery shall not be more than 10 weeks. Cloth shall not crack or flake when subjected to cold effect (4.7.6.1). Cloth shall not crack when folded sharply on itself, and coating shall show good colorfastness after accelerated weathering (4.7.6). Sewing qualities shall be such that there shall be no excessive needle gumming, needle breakage, or thread breakage during sewing (4.7.9).	Intended Use - Variety S: in the manufacture of spray shields for PK-2 pararafts covered by MIL-K-8664 (Aer). Variety P: in the manufacture of life raft paulins covered by MIL-P-7967 (Aer).

### COATED CLOTHS

NOMENCLATURE	Base Cloth Specifications	Type of Coating Compound	Overall Weight Oz/Sq Yd (5041)	Width Inch	Breaking Strength Lb. Min. (5100)	Tearing Strength Lb. (5132)	Hydrostatic Pressure High (5512)	Flame Resistance (5903)		Flexibility Con. Max. Warp (5204)	Bursting Strength Pts./In. (5122)	Adhesion lb/2" wide (5970)	Blocking Scalting (5872)
								After Flame High sec	Char Length Max. in				
			Min	Max	W	F	W	F	W	F	70°F	-40°F	
<b>Cloth, Coated, Nylon, Rubber Coated, Fuel-Resistant MIL-C-3068B (ASG)</b>													
Type I- Cured Base cloth- Type II of MIL-C-7020 Gages: 0.010" 0.013" 0.017" 0.020"	Types I & III: Type II of MIL-C-7020 except that air permeability and permanence of finish requirements shall not apply.	Cured rubber shall not blister or crack: Original-hardness- Type I: 35 ± 5 pts.; Type II: 60 ± 5 pts; Type III: 45 ± 5 pts. Tensile strength- 1000 psi; 1500 psi; 1200 psi. Elongation- 700% min; 400% min; 500% min. After air aging (change)- hardness- -10% ± 15% ± 10% max. Tensile strength: -35% -15% -30% max. Elongation: -50% -60% -60% max. After Type I fluid aging- Tensile strength: +20%; +25%; +10% change. Elongation: +10%; +15%; +10% max. Change. Volume swell: -15%; -10%; -10% max. See spec. for changes after Type III fluid aging.		36 min.							125 4 (initial) lb/in 125 (after air aging) 125 (after fluid aging)		
Type II- Cured Base cloth- Table I Gages: 0.025" 0.050"	Type II: Thickness- 0.013 ± 0.002 in. weight- 5.5 ± 0.5 oz/yd <sup>2</sup> . Breaking strength: 300 lb. in warp & fill. Tear strength: 20 lb. in warp & fill. Thread count: 90 yarns/inch in warp & fill.			36 min.							500 4 (initial) lb/in 500 (after air aging) 500 (after fluid aging)		
Type III- Uncured Base cloth- Type II of MIL-C-7020 Gages: 0.012" 0.018"				36 min.							125 4 (initial) lb/in 125 (after air aging) 125 (after fluid aging)		

NOMENCLATURE	COATING	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, Shrinkage, etc.)	NOTES (Not Specification Requirements)
MIL-C-3068B Type I Type II Type III	Cloth shall be coated on both sides. Cloth shall not be injurious to any surface with which it should come into contact. It shall be free from pinholes and other defects which might adversely affect the serviceability of the finished product.	Color - Unless otherwise specified, color shall be Black.	Coated cloth shall not break, crack, or separate from its backing when flexed after low temperature exposure. See spec. for table of low-temperature flexibility conditioning. Rate of diffusion of Type III fuel of spec. MIL-S-3136 through cloth shall not exceed 2 fluid oz/sq ft per 24 hours.	Intended Use - As fuel metering diaphragms on aeronautical equipment, or any other application where a fuel-resistant, rubber-coated cloth is necessary.

### COATED CLOTHS

NOMENCLATURE	Base Cloth Specifications	Type of Coating Compound	Overall Weight Oz/Sq Yd		Width In.	Breaking Strength Lb. Min.	Tearing Strength Lb.	Hydrostatic Pressure High (5512)	Flame Resistance (5903)		Flexibility Cr. Max. Warp (5204)	Bursting Strength Pt. Min. (5122)	Adhesion lb/2" wide (5970)	Blocking Scale rating (5872)
			(5041)	(5100)					(5132)	After Flame sec min				

Cloth, Coated, Nylon Twill, Vinyl Coated Both Sides  
MIL-C-8077

			Min	Max		W	F	W	F	W	F	70°F	40°F	
	Nylon; 2/1 twill. Weight: 1.6 oz. max. Thickness: 0.0042 in. max. Breaking strength: 50 lb/in in warp and fill. Tearing strength: 4 lb. min. in warp and fill. Ultimate elongation: 14% in warp and fill. pH: 5.0 - 9.0	Suitably compounded polymer or copolymer vinyl resin.	3.25	36	60	60	2	3						

Cloth, Coated, Nylon, Buna N Coated, 1 Side  
MIL-C-8135A (88A)

			12.7	38	450	350	20	20					12 No blocking
	Nylon; polyamide from hexamethylene diamine & adipic acid or its derivatives. Melting pt: 482° + 10°F. Weave: plain (1/1). Weight: 7.25 oz/yd <sup>2</sup> max. Yarn ply: 2x2. Yarns/inch: 60 in the warp; 45 in the fill. Breaking strength: 325 in the warp; 275 in the fill. Tearing strength: 20 in the warp and fill. Shrinkage: 2% max. in warp & fill.	Buna N synthetic rubber.											

NOMENCLATURE	COATING	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, Shrinkage, etc.)	NOTES (Not Specification Requirements)
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MIL-C-8077	Cloth shall be evenly and entirely coated on both sides. Use of detergents, dyestuffs, or other chemicals or finishing agents which would cause deterioration in storage or dermatitis on prolonged skin contact is prohibited.	Color - Unless otherwise specified, color shall be Blue on one side and Yellow on the other to match approved standard shades.	Flexibility: acute angle formed by coated cloth and the horizontal shall be not less than 80°. Cloth shall not flake or crack at temperatures of -65°F. Cloth shall not show tackiness, blistering, or softening after 24 hours at 160°F. Cloth shall be impervious to water under static head of 20½ in. for at least an hour.	Intended Use - In the construction of spray shields for life rafts.
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MIL-C-8135A	(6) Cloth shall be evenly & entirely coated on 1 side. pH: 5.0 - 9.0 (2811).	Color - Base cloth shall be natural in color, unless otherwise specified. Color of coating shall be Black.	Thickness: 0.0155±0.0015 in. Elongation: 35% min. in the warp; 30% min. in the fill. Cloth shall not crack or flake at low temperatures (4.3.2.4). Cloth shall show no tackiness, blistering, or softening at high temperatures (4.3.2.5). Cloth shall retain 95% min. of breaking strength after accelerated aging & coating shall show no signs of blooming, blistering or cracking (5804). Cloth shall show no signs of leakage through unabraded portion and not more than 5 ml. of water shall pass through abraded portion (4.3.2.6).	Intended Use - In the manufacture of survival containers.
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### COATED CLOTHS

NOMENCLATURE	Base Cloth Specifications	Type of Coating Compound	Overall Weight Oz/Sq Yd (5041)		Width Inch	Breaking Strength Lb. Min. (5100)		Tearing Strength Lb. (5132)	Hydrostatic Pressure High (5512)	Flame Resistance (5903)		Flexibility Co. Max. Warp (5204)	Bursting Strength Min. (5122)	Adhesion lb/2" wide (5970)	Blocking Scale (5872)	
			Min	Max		W	F			W	F					After Flame length sec
Cloth, Asbestos, Glass, Cotton, Aluminized MIL-C-8240B (USAF)																
Type I- 9.2 oz.	Type I: 55% min. asbestos; 18% max. cotton; 27% min. glass. Fill- 2-ply, 1 end asbestos-cotton yarn (Underwriter's grade) & 1 end continuous-filament glass yarn.	Aluminum	11	± 2	(1)	90	70	(5134)	-	6						No blocking
Type II- 10.0 oz.	Type II: 53% min. asbestos; 16% max. cotton; 31% min. glass. Fill: 3-ply, 1 end asbestos cotton yarn (Underwriter's grade) & 2 ends continuous-filament glass yarn. Both Types: Warp-100% continuous-filament glass yarns. Weave: 2/1 right twill.	Aluminum	12	± 2	(1)	90	95	-	6							No blocking

NOMENCLATURE	COATING	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, Shrinkage, etc.)	NOTES (Not Specification Requirements)
MIL-C-8240B Type I Type II	Coating shall be directly adhered to warp face of base cloth by an adhesive. After application, coat shall have a smooth and highly reflective finish.		Cloth shall not crack at low temperatures (4.5.3.1). Flexibility: cloth shall show no signs of cracking (4.5.3.2). Coating shall show no signs of separation from base cloth (4.5.3.3). Metalized coating shall not crack, flake, blister, or peel during or after preflex, exposure to the globar, or the postflex (4.5.3.4). Yarns/ inch: Type I- 60 in the warp; 40 in the fill; Type II- 60 in the warp; 32 in the fill.	Intended Use - In the manufacture of protective clothing used in fire fighting garments.

### COATED CLOTHS

NOMENCLATURE	Base Cloth Specifications	Type of Coating Compound	Overall Weight Oz/Sq Yd		Width Inch	Breaking Strength Lb. Min.	Tearing Strength Lb.	Hydrostatic Pressure High (5512)	Flame Resistance (5903)		Flexibility Cr. Max. Warp (5204)	Bursting Strength (5122)	Adhesion lb/2" wide (5970)	Blocking Scale rating (5872)
			Min	Max					After Flame acc. min	Char length Max"				

<u>Cloth, Laminated, Sateen, Rubberized</u> MIL-C-907A (GL)	Cotton, 5-harness sateen conforming to MIL-C-10296. Filling effect side shall be the face.	Natural or synthetic rubber or mixture of both. Pigmented. Reclaimed rubber shall not be used.	23.5	1.5	(1)	190	140	7.5	5.0	40	(-65°F)	7	(initial)	5	(after acc. aging)	(min. warp only)
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Cloth, Laminated and Coated for Waterproof Containers  
MIL-C-10351B (GL)

<b>Type I- Throat cloth, 2-ply</b>	Type I: nylon twill, conforming to Type I of MIL-C-577.	Natural or synthetic rubber or mixture of both. Pigmented. Reclaimed rubber shall not be used.	8.0	12.5	(1)	90	90	576	384	100	(-65°F)	15	20	6	No. 1	(initial)	5	(after weather-ometer)	(after weather.)	(after low temps.)
<b>Type II- Body cloth, 2-ply</b>	Type II: nylon twill, conforming to Type II of MIL-C-577.	"	10.5	14.5	(1)	180	170	1024	640	175		17	21	6	No. 1	(initial)	6	(after weather-ometer)	(after weather.)	(after low temps.)

NOMENCLATURE	COATING	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, Shrinkage, etc.)	NOTES (Not Specification Requirements)
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MIL-C-9074B	3 layers of sateen shall be joined back to back with rubber compound between the plies. Cloth shall then be vulcanized. No strike-through of compound to either outside surface of cloth.	Color - Base cloth: color suitable for complying with color requirement for laminated cloth. Laminated cloth: CG-107, unless otherwise specified. Standard sample available (3).	(4) Both selvages shall be trimmed to give straight, uniform, fully laminated edges.	Intended Use - In the manufacture of waterproof covers for electronic equipment. Also intended for use with drafting and duplicating equipment set for packing and storing of duplicator film.
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MIL-C-10351B Type I Type II	Laminated coated cloth shall be 2-ply with rubber coating applied to both outside surfaces in equal amounts. Cloth shall then be vulcanized.	Color - Base cloth: any color. Coated cloth: unless otherwise specified color shall be Black.	(4) Cloth shall not become stiff & brittle or soft & tacky after weather-ometer (5804). Coating shall not crack or flake at low temperatures (5874). Abrasion resistance: no visible loose fibers in center 1 in. of abraded portion (5304). Both selvages shall be trimmed to give straight, uniform, fully laminated edges.	Intended Use - In the manufacture of Bag, Waterproof, General Purpose No. 160A.
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### COATED CLOTHS

NOMENCLATURE	Base Cloth Specifications	Type of Coating Compound	Overall Weight Oz/Sq Yd (5041)		Width Inch	Breaking Strength Lb. Min. (5100)		Tearing Strength Lb. (5132)		Hydrostatic Pressure High (5512)	Flame Resistance (5903)		Flexibility Con. Max. Warp (5204)	Bursting Strength (5122)	Adhesion lb/2" wide (5970)	Blocking (5872)	
			Min	Max		W	F	W	F		After Flame (sec min)	Char length (in)					70°F
<u>Mattress, Pneumatic</u> MIL-W-10747E						W	F	W	F		W	F					
						(5102)											
Class 1- Cemented seams, I-beam construction	Plain weave nylon; 70 denier, multifilament, semi-full, in warp & filling. Cloth shall not be calendered & shall have a permanent finish. It shall be heat set to prevent distortion. Weight: 2.0-2.3 oz. Yarns/inch: 106 in the warp; 92 in the fill. Breaking strength: 80 lb. in the warp; 60 lb. in the fill. Tearing strength: 3.5 lb. in the warp; 3.0 lb. in the fill. Shrinkage: 2% max. in the warp; 1.5% max. in the fill. Chloroform extract: 1% max. Copper content: 0.003% max. Manganese content: 0.0015% max. pH: 5.0 - 8.5.	Natural or synthetic rubber or mixture of both. Pigmented & heat-vulcanized. Re-claimed rubber shall not be used.	8.0	11.5	90	65	640	512	No	(grams) leakage			6	12	6	No. 1	
Class 2- Molded seams, C-beam construction			8.0	11.5	90	65	640	512	No	(grams) leakage			8	12	6	No. 1	

NOMENCLATURE	COATING	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, Shrinkage, etc.)	NOTES (Not Specification Requirements)
MIL-C-10747E Class 1 Class 2	Compound shall be applied to both sides of base cloth, & shall be distributed so that one side will have 1 1/2 (1 1/4) oz/sq yd. & the other side will have the remainder. Coating shall be vulcanized and free from pinholes, windows, or other defects which might affect serviceability. Lightly coated, (Olive Green) surface shall have a dull finish produced by an inert mineral dusting powder.	Color - Base cloth: white. Coated cloth: coating on heavily coated side, which is to be on the inside of the mattress, shall be colored Black throughout. Surface color of lightly coated side shall correspond to Olive Green 207.	(4) Abrasion resistance: no visible loose fibers of the base cloth shall be exposed in the center 1 in. of the abraded portion (5304). No cracking, flaking, or peeling of the coating at low temperatures (5874). Cloth shall not become stiff and brittle or soft and tacky and there shall be no flaking, cracking, or peeling of coating after accelerated aging (5852).	Intended Use - In conjunction with arctic and mountain sleeping bags.

### COATED CLOTHS

NOMENCLATURE	Base Cloth Specifications	Type of Coating Compound	Overall Weight Oz/Sq Yd		Width Inch	Breaking Strength Lb. Min.	Tearing Strength Lb.	Hydrostatic Pressure High (5512)	Flame Resistance (5903)		Flexibility Cm. Max. Warp (5204)	Bursting Strength Pts. Min. (5122)	Adhesion lb/2" wide (5970)	Blocking Scale rating (5872)
			Min	Max					After Flame sec min	Char length Max"				
<u>Cloth, Coated, Glass, Silicone Rubber-Coated</u> MIL-C-10797B (GL)	Glass cloth conforming to Class C, Form 4, Cloth No. 126 of MIL-Y-1140.	Composition of a silicone rubber suitable compound. Pigmented.	18.0 21.0	36 min.	36 140 120	120 (5102)	6000 6000	180 (initial)	13 13 170 13 13	13 13 (after acc. weather.)	11.5 12.5 (75°F) (-60°F)	12.5 (-60°F)	No. 3	

NOMENCLATURE	COATING	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, Shrinkage, etc.)	NOTES (Not Specification Requirements)
MIL-C-10797B	Cloth shall be coated on both sides with equal amounts of compound. Coated cloth shall be vulcanized.	Color - Color of coated cloth shall be Olive Drab 209. Standard sample available (3).	(4) Stiffness after heat stability: 15.0 cm. Abrasion resistance: coating shall not be worn through to base cloth (4.4.2).	Intended Use - In the manufacture of stovepipe shields for tentage.

## COATED CLOTHS

NOMENCLATURE	Base Cloth Specifications	Type of Coating Compound	Overall Weight Oz./Sq Yd		Width Inch	Breaking Strength Lb. Min.		Tearing Strength Lb.		Hydrostatic Pressure High (5512)	Flame Resistance (5903)		Flexibility Cm. Max. Warp (5204)	Bursting Strength Pk./Sq. In. (5122)	Adhesion lb./2" wide (5570)	Blocking Scale rating (5672)
			(5041)	(5041)		(5100)	(5132)	(5132)	(5132)		After Flame sec min	Char length Max"				
			Min	Max		W	F	W	F		W	F	70°F	40°F		
Cloth, Coated, Cotton, Vinyl Coated, Fire and Mildew Resistant MIL-C-10799E																
<b>Type I- Coated cloth</b>																
Class 1- Plain weave 7.0-8.5 oz																
Plain weave cotton, 4½ oz., MIL-C-9231 Type I.																
Olive drab shades; virgin vinyl chloride polymer or virgin vinyl chloride acetate copolymer. Fungicides or flame inhibitors containing mercurial compounds or water soluble ingredients shall not be used.																
(5134) 7.0 8.5 (1) 80 80 2 2 72 72 (after weather-ometer)																
Class 2- Basket weave 9.0-11.0 oz																
Basket weave (4x4) cotton, 4½ oz., MIL-C-9231 Type II.																
Other shades: Same requirements as for Olive drab shades, but only phosphate & phthalate ester plasticizers shall be used when base cloth is treated with inhibitor																
(5132) 9.0 11.0 (1) 80 80 10 10 72 72 (after weather-ometer)																
<b>Type II- Coated duck</b>																
Class 1- Army duck, cotton, plied 15.5-18.5 oz																
Cotton army duck, 9.85 oz., CCC-C-419, Type III.																
Other shades: Same requirements as for Olive drab shades, but only phosphate & phthalate ester plasticizers shall be used when base cloth is treated with inhibitor																
(5134) 15.5 18.5 (1) 160 110 75 60 112 77 (after weather-ometer)																
Class 3- Army duck, cotton, plied yarns, 12.0-15.0 oz																
Cotton army duck, 8.25 oz., CCC-C-419, Type III.																
Other shades: Same requirements as for Olive drab shades, but only phosphate & phthalate ester plasticizers shall be used when base cloth is treated with inhibitor																
(5134) 12.0 15.0 (1) 125 120 3 3 88 84 (after weather-ometer)																
Class 4- Army duck, cotton, plied yarns, 18.0-21.0 oz																
Cotton army duck, 12.29 oz., CCC-C-419, Type III.																
Other shades: Same requirements as for Olive drab shades, but only phosphate & phthalate ester plasticizers shall be used when base cloth is treated with inhibitor																
(5134) 18.0 21.0 (1) 210 130 5 5 147 91 (after weather-ometer)																
Class 5- Army duck, cotton, plied yarns, 22.0-25.0 oz																
Cotton army duck, 14.77 oz., CCC-C-419, Type III																
Other shades: Same requirements as for Olive drab shades, but only phosphate & phthalate ester plasticizers shall be used when base cloth is treated with inhibitor																
(5134) 22.0 25.0 (1) 235 175 5 5 165 123 (after weather-ometer)																

NOMENCLATURE	COATING	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, Shrinkage, etc.)	NOTES (Not Specification Requirements)
MIL-C-10799E	Either base cloth or coating compound shall be treated with solubilized copper-8-quinolinolate evenly dispersed, to deposit min. 0.18% copper as metal from copper-8-quinolinolate to max. 0.23% copper as metal from copper-8-quinolinolate. Amount of fungicide shall be based on total ave. weight of treated base cloth or on non-volatile content of coating (whichever is treated). This treatment can only be used for shades other than Olive drab when supplier can, in so doing, meet requirements for color and colorfastness. If copper-8-quinolinolate is not used as inhibitor, cloth prior to coating shall be treated with inhibitor (a) of CCC-D-950. Back shall be coated only enough to meet requirements for water absorption. Calendar coating with preformed film not permitted.	Color (1) - Shall match applicable color number of Fed. Std. No. 595 or shall match the approved color standard for color specified (3). Aluminized coating where required shall contain sufficient aluminized pigment to produce a bright reflecting surface equal to the standard sample.	(4-5) Hydrostatic resistance after abrasion: seepage of water shall not exceed 5 ml. through abraded portion. Unabraded portion shall show no signs of leakage. Cloth shall show no cracking, flaking, or separation of coating from cloth at low temperatures. After immersion in aromatic fuel, cloth shall show no cracking, flaking, or separation of coating from cloth, and when subjected to static head of 30 in. of water for 10 min., seepage shall not exceed 5 ml. Type II cloth shall show no seepage of oil through cloth. After weatherometer exposure, cloth shall show no cracking or crazing when folded sharply on itself. Color shall not be appreciably changed. Type II: resistance to water absorption: 5% max. Type II, Class 1: "good" resistance to wet and dry cracking.	Intended Use - Type I: in the manufacture of airplane wing covers, engine covers, shelters, and items having similar applications. Type II: in the insulated frame-type tent, recognition panels and floor covers where water, oil, and gasoline-proof material is required; also for carrying cases for liferafts, liferaft equipment and similar items.

### COATED CLOTHS

NOMENCLATURE	Base Cloth Specifications	Type of Coating Compound	Overall Weight: Oz/Sq Yd		Width Inch	Breaking Strength Lb. Min.	Tearing Strength Lb.	Hydrostatic Pressure High (5112)	Flame Resistance (5903)		Flexibility Cm. Max. Warp (5204)	Bursting Strength Pt. Min. (5122)	Adhesion lb/2" wide (5970)	Blocking Score rating (5872)	
			(5041)	(5100)					(5132)	(5512)					After Flame length sec. min.
			Min	Max		W	F	W	F	W	F	70°F	-40°F		
<u>Pouch, Human Remains</u> MIL-P-10808C Flat duck, 7.26 oz. conforming to Type II of CCC-C-443, except that it shall contain no more than 3% starch and protein content including chloroform-soluble and water-soluble materials. Mildew resistant treated with Class D treatment, using inhibitor "e" or "g" of CCC-D-950. pH: 5.5 - 8.5			20	23		110	70	1280	1600	1.0				6	No. 3
						(5102)		(grams)	(initial)					(initial)	
									(after low temp resistance)					5.5	(after boiling)

Cloth, Laminated:  
Cotton, Balloon,  
3 Ply, Air Retain-  
ing Chloroprene

MIL-C-11390C (GL) Balloon cotton cloth conforming to Type HH of MIL-C-12318, except copper content: 0.003% max; and manganese content: 0.0015 max.	Compound shall contain chloroprene rubber. No natural rubber shall be used. Up to 20% of other elastomers (such as SBR) may be added to facilitate processing. Use of reclaimed rubber prohibited.	18.5 + 1 min.	39	80	75	(initial)	90%	90%	(of initial, after acc. aging)				4.5	(lb/in)
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NOMENCLATURE	COATING	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, Shrinkage, etc.)	NOTES (Not Specification Requirements)
MIL-P-10808C	Coating shall be applied in equal quantities on both sides of the cloth.	Color - Coated cloth shall be Olive Green 207. Standard sample available.	(4)	Intended Use - In the transport and burial of human remains in the field.
MIL-C-11390C	Cloth shall be coated on both sides & shall be laminated. Sections of biased cloth shall overlap 3/4 in. Coated and laminated cloth shall be fully vulcanized. It shall be dusted on both sides with whiting, talc, or other finely divided mineral material which does not support mildew growth.		(4) Permeability: 6.0 L./sq. M. (max) in 24 hours (5640). Cloth shall not become stiff or brittle or soft and tacky or show other signs of improper vulcanization after accelerated weathering (4.4.3).	Intended Use - In the fabrication of decoy targets and as an air retaining repair material for pneumatic targets. It is a component of SC 1080-93-CL-204, Repair Equipment, Pneumatic Target.

## COATED CLOTHS

NOMENCLATURE	Base Cloth Specifications	Type of Coating Compound	Overall Weight: Oz/Sq Yd (5041)	Width Inch	Breaking Strength	Tearing Strength	Hydrostatic Pressure High (5512)	Flame Resistance (5903)		Flexibility Cm. Max. Warp (5204)	Bursting Strength	Adhesion lb/2" wide (5970)	Blocking Score rating (5872)	
					(5100)	(5132)		After Flame length sec. min.	Char Max. (5222)		(5122)			
<u>Cloth, Coated: Butyl</u> <u>Coated, Toxicological Agents Protective</u> MIL-C-12189, Amd. 1														
			Min	Max	W	F	W	F	W	F	70°F	-40°F		

Type I- Cotton airplane cloth Class 1- Coated both sides  Class 2- Coated one side	Type I: mercerized cotton airplane cloth conforming to MIL-C-5646 except that length of roll, length of cut, & compatibility with dope shall not apply and cloth shall be singed. Copper content: 0.003% max. Manganese content: 0.0015% max. Class 2 shall be mildew proofed by application of 2,2' Methylene-bis (4 chlorophenol) to effect a deposition of the inhibitor on the cloth of 1.35 ± 0.25% based on weight of treated cloth.	Composition of butyl rubber. No natural rubber, reclaimed rubber, or synthetic rubber other than butyl shall be used.	11.0 13.5	(1) 80 (initial) 60 (after weatherometer)	80 (initial) 60 (after weatherometer)	20 (initial) 20 (after strength of coat.) 120 (after cold crack)	140 (initial) 120 (after strength of coat.) 120 (after cold crack)	9	5.5	No. 2
		"	8.0 10.0	(1) 80 (initial) 60 (after weatherometer)	80 (initial) 60 (after weatherometer)	20 (initial) 20 (after strength of coat.) 110 (after cold crack)	140 (initial) 120 (after strength of coat.) 110 (after cold crack)	8	5.0	No. 2

(Continued)

NOMENCLATURE	COATING	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, Shrinkage, etc.)	NOTES (Not Specification Requirements)
MIL-C-12189 Type I Class 1 Class 2 (Continued)	Class 1- Compound shall be applied both sides of cloth, after which cloth shall be fully vulcanized. One side shall have 65-75% of coating; the other side shall have the balance. Coated cloth shall be dusted on both sides with whitening, talc, or other finely divided mineral material which does not support mildew growth.  Class 2- Compound shall be applied to one side only. Coated cloth shall then be fully vulcanized. There shall be no striking through of the coating to the uncoated side. Coated cloth shall be dusted on coated side only with whitening, talc, or other finely divided mineral material which does not support mildew growth.	Color - Base cloth: Class 2 shall match CG-107 (3). Coated cloth: Both classes shall match CG-177 (3). Colorfastness - After weatherometer and decontamination (from toxicological agents), color of coated cloth shall not be changed appreciably when compared with an unexposed specimen of the same sample. Standard sample available for shade.	(4-5) Abrasion resistance: no loose fibers shall be exposed in the abraded portion (5302). Solvent resistance: cloth shall not become stiff and brittle or soft and tacky or show other signs of improper vulcanization. Resistance to toxicological agents - minutes min.: Initial- Mustard H: Class 1-100; Class 2-30. GB; Class 1-200; Class 2-30. After weatherometer- Mustard H: Class 1-75; Class 2-30. GB; 150; 70. After decontamination- Mustard H: Class 1-75; Class 2-30. GB; Class 1-150; Class 2-30. Breaking strength after decontamination: Class 1-60 lb. min. in warp and fill. Class 2-40 lb. min. in warp and fill. Coated cloth shall be essentially odorless.	Intended Use - In the fabrication of impermeable clothing affording protection against toxicological agents. Class 2, which affords less protection against penetration of toxicological agents, is for the fabrication of items assembled with unstrapped sewed seams.

### COATED CLOTHS

NOMENCLATURE	Base Cloth Specifications	Type of Coating Compound	Overall Weight Oz/ Sq Yd (5041)	Width Inch	Breaking Strength	Tearing Strength	Hydrostatic Pressure High (5512)	Flame Resistance (5903)		Flexibility Cm. Max. Warp (5204)	Bursting Strength Pts. Min. (5122)	Adhesion lb/2" wide (5970)	Blocking Scale (5872)
					Lb. Min. (5100)	Lb. (5132)		After Flame length sec. Min.	Char length Max. (5204)				
<b>Cloth, Coated: Butyl Coated, Toxicological Agents Protective MIL-C-12189, Amd. 1 (Cont'd)</b>													
<b>Type II- Cotton sheeting</b>													
Class 1- Coated both sides	Cotton sheeting conforming to Type VI, Class 2, coating quality, of CCC-C-432, except cloth shall be undyed.	Composition of butyl rubber. No natural rubber, reclaimed rubber, or synthetic rubber other than butyl shall be used.	13.5 16.0	(1)	50 45 (initial) (after weatherometer)	22 20 (initial) (after strength of coat)	80 (initial) 60 (after cold crack)	W F	W F	70°F-40°F	9.5	5.5	No. 2
Class 2- Coated one side	Cotton sheeting conforming to Type VI, Class 2, coating quality, mildew resistant of CCC-C-432.	"	9.0 11.0	(1)	50 45 (initial) (after weatherometer)	30 21 (initial) (after strength of coat)	80 (initial) 60 (after cold crack)	W F	W F	70°F-40°F	8.5	5.0	No. 2
<b>Type III- Nylon twill</b>													
Class 1- Coated both sides	Nylon twill conforming Type I of MIL-C-577. Cloth shall be heat set.	"	8.5 11.0	(1)	90 90 (initial) (after weatherometer)	20 20 (initial) (after strength of coat)	150 (initial) 120 (after cold crack)	W F	W F	70°F-40°F	7.5	4.0	No. 2

NOMENCLATURE	COATING	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, Shrinkage, etc.)	NOTES (Not Specification Requirements)
MIL-C-12189 (Cont'd) Type II Class 1 Class 2 Type III Class 1	Class 1- Compound shall be applied to both sides of cloth, after which cloth shall be fully vulcanized. One side shall have 65-75% of coating; the other side shall have the balance. Coated cloth shall be dusted on both sides with whitening, talc, or other finely divided mineral material which does not support mildew growth. Class 2- Compound shall be applied to one side only. Coated cloth shall then be fully vulcanized. There shall be no striking through of the coating to the uncoated side. Coated cloth shall be dusted on coated side only with whitening, talc, or other finely divided mineral material which does not support mildew growth.	Color - Base cloth: Type II, Class 1 & Type III shall be undyed. Type II, Class 2 shall be dyed to match OG-107 (3). Coated cloth: All types and classes shall match OD-177 (3). Standard sample available. Colorfastness: After weatherometer and decontamination (from toxicological agents), coated cloth shall not be changed in color when compared to an unexposed specimen of the same sample.	(4-5) Abrasion resistance: no loose fibers shall be exposed in the abraded portion (5302). Solvent resistance: cloth shall not become stiff and brittle or soft and tacky or show other signs of improper vulcanization. Resistance to toxicological agents- minutes min.: Initial- Mustard H: Type II, Class 1- 100; Class 2- 30; Type III- 100. GB: Type II, Class 1- 209; Class 2- 30; Type III- 200. After weatherometer- Mustard H: Type II, Class 1- 75; Class 2- 30; Type III- 75. GB: Type II, Class 1- 150; Class 2- 30; Type III- 150. After decontamination- Mustard H: Type II, Class 1- 75; Class 2- 30; Type III- 75. GB: Type II, Class 1- 150; Class 2- 30; Type III- 150. Coated cloth shall be essentially odorless.	Intended Use - In the fabrication of impermeable clothing affording protection against toxicological agents. Types II and III are alternate cloths for use when Type I cloth is not available. Class 2, which affords less protection against penetration of toxicological agents, is for the fabrication of items assembled with unstrapped sewed seams.



### COATED CLOTHS

NOMENCLATURE	Base Cloth Specifications	Type of Coating Compound	Overall Weight Oz/Sq Yd (5041)	Width Inch	Breaking Strength	Tearing Strength	Hydrostatic Pressure High (5512)	Flame Resistance (5903)		Flexibility Cm. Max. Warp (5204)	Bursting Strength Pts. Min. (5122)	Adhesion lb/2" wide (5970)	Blocking Score rating (5872)
					Lb. Min. (5100)	Lb. (5132)		After Flame sec. Min.	Char length Max. (5132)				
Cloth, Coated, Butyl Rubber MIL-C-13621 (CmlC)	Single ply, uniform evenly woven silk or nylon.	Butyl rubber (GR-I). No natural, or synthetic rubber other than GR-I shall be used. Talc shall be used to prevent adhesion in rolls of uncured cloth and to produce dull gloss surface during cure. Talc shall be used to prevent adhesion in rolls of cured cloth when packaged.	Min   Max - 3.2 (exclusive of weight of talc)		W   F 10   10 (initial)	W   F 150   150 (initial)	No leakage up to 20 psi. (after decontamination)	W   F 70°F   40°F					

Cloth, Cotton, Laminated, Waterproof and Gasoline and Grease Resistant

MIL-C-13695 (ORD)	One layer #8 in. No. 8 cotton duck conforming to Type I of CCC-D-771. One layer cotton sheeting conforming to Class A of CCC-S-291.	Synthetic rubber adhesive compound having no adverse effect on cotton.	28.5   30.0 min. (i.e. 48" greige with 1% shrink. in treatment)	(5102) 47 200 220	(5136) (a) 40   40	No leakage up to 100 psi	see table in spec.	W   F 4   3
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NOMENCLATURE	COATING	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, Shrinkage, etc.)	NOTES (Not Specification Requirements)
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MIL-C-13621	Same amount of compound shall be applied to both sides of base cloth. Surface of coated cloth shall be smooth, uniform, and free of breaks, blisters, wrinkles, holes, torn selvage or damage.	Color (1).	Thickness: 0.003 - 0.005 in. Liquid mustard resistance: Initial- 10 min.; after aging- 10 min. (min.); after decontamination- 10 min. (min.) Coated cloth shall be essentially odorless. Coated cloth shall not be tacky before or after aging and decontamination. Resistance to other vesicant agents: (1).	Intended Use - As a diaphragm material in optical gas mask diaphragm angle tubes.
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MIL-C-13695	Adhesive shall be applied at min. rate of 1.0 lb./sq yd of laminated cloth. Amount of adhesive in excess of min. shall not cause max. permissible weight of finished laminate cloth to be exceeded. Cloth shall be treated for mildew resistance by Type II process of Spec. AK-1-47.	Color - Color of finished laminated cloth shall be Olive Drab No. 1. Color shall be imparted by dyeing grey cloth with at dyer in accordance with Type I process (solid color) of MIL-P-300.	(a) water permeability: After high temperature exposure- no leakage up to 90 psi (4.4, 8.8). After soaking in gasoline: no leakage up to 90 psi (4.4, 8.8). Resistance to grease: adhesive strength shall be 1 lb. min. (4.4, 8.8). Mildew resistance (4.4, 10).	Intended Use - In fabricating envelopes and covers for protection of ordnance material in under-water fording and landing operations.
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### COATED CLOTHS

NOMENCLATURE	Base Cloth Specifications	Type of Coating Compound	Overall Weight Oz/Sq Yd		Width Inch	Breaking Strength Lb. Min.	Tearing Strength Lb.	Hydrostatic Pressure High (5512)	Flame Resistance (5903)		Flexibility Cm. Max. Warp (5204)	Bursting Strength Pk. Min. (5122)	Adhesion lb/2" wide (5970)	Blocking Scale rating (5872)	
			(5041)	(5100)					(5132)	After Flame length sec min					Char length Max" (5122)
			Min	Max		W	F	W	F	W	F	70°F	40°F		
Cloth, Coated, Nylon, Polyvinyl Butyral MIL-C-14366B	Warp yarn: semidull 40x2 denier, 13 filament nylon. 6-8 turns "Z". Filling yarn: bright, 70x3 denier, 32-34 filament nylon. 2-3 turns "Z". Use of relaxed filling yarn is mandatory to minimize pirm taper barre. Weave: 2/1 right twill. Each selvage shall have 3/4" ends, weaving 2 as 1. Weight: 1.5±0.1 oz/sq yd. Yarns/in.: 116 in the warp; 76 in the fill. Breaking strength: 50 lb. min. in the warp and fill. Shrinkage: 2% max. in the warp; 1% max. in the fill. Heat set prior to dyeing. Dyed with special nylon dyes or other dyes that will show no more striation in finished coated cloth than standard sample. (6) pH: 5.0 - 8.5	Thermosetting virgin polyvinyl butyral, plasticized with phosphate or phthalate ester plasticizers exclusively. Pigmented.	-	3.5	(1)	50	50	30	30	40 (initial) 20 (after strength of coating) 30 (after water immersion) 30 (after low temp resistance) Pass (after abrasion resistance)	6	7	(+30°F)	6 (initial) 4 (after water immersion)	No. 2

NOMENCLATURE	COATING	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, Shrinkage, etc.)	NOTES (Not Specification Requirements)
MIL-C-14366B	Coated on reverse side of cloth only, then thermoset. There shall be no strike through of coating to face of cloth. Coated side shall have uniform finish and be dusted with powdered mica not coarser than 160 mesh. Reverse side of cloth shall be the side with twill line running from right to left.	Color - Base cloth: Color shall be such that after coating, finished coated cloth shall match standard shade sample on the uncoated side (shade Taupe 179 or Blue 1157, as specified)(3). Coated cloth: face side shall match standard sample in luster and color (Taupe shade 179 or Blue shade 1157, as specified)(3). Colorfastness - standard sample available (5660-5614).	(4-5) Water wicking: 1/4 in. max. (4.4.10).	Intended Use - In the manufacture of the Raincoat, Men's Lightweight, Taupe 179 and Blue 1157.

### COATED CLOTHS

NOMENCLATURE	Base Cloth Specifications	Type of Coating Compound	Overall Weight Oz/Sq Yd. (5041)		Width Inch	Breaking Strength Lb. Min. (5100)		Tearing Strength Lb. (5132)		Hydrostatic Pressure High (5512)	Flame Resistance (5903)		Flexibility Cm. Max. Warp (5204)	Bursting Strength lb/2" wide (5122)	Adhesion lb/2" wide (5970)	Blocking Scale rating (5872)	
			Min	Max		W	F	W	F		W	F					70°F
<p><u>Cloth, Coated, Polychloroprene: (For Pneumatic Floating Equipment) MIL-C-14505B</u></p>																	
<p>Coating Thickness (mils min.)      Permeability L/sq M/24 hours</p> <p>Side A      Side B      (max)      W      F</p>																	
Class 3- Single ply cloth 11.5 oz	High tenacity, improved heat & light resistant, heat set and scoured nylon cloth. Cloth shall be impregnated with a primer prior to coating to insure the adhesive bond to coating compound. See spec. for detailed base cloth requirements.	Compound shall contain not less than 60% by volume of chloroprene. Compound shall contain no materials injurious to nylon, which will result in a waxy finish, or which are water-soluble. See spec. for detailed coating requirements.	-	11.5	153	135	8	8	(5134)	3.3	3.3	-	-	8	8	(initial)	60% 60%
<p>(after oven aging)      (after water resistance)</p> <p>85% 85%</p> <p>(after acc. weathering)</p>																	
Class 4- Single ply cloth 31.0 oz	"	"	-	31.0	350	335	30	30	6.0	6.0	3.0	20	20	(initial)	60% 60%	(after water resistance)	
<p>(after oven aging)      (after water resistance)</p> <p>85% 85%</p> <p>(after acc. weathering)</p>																	
Class 6- Single ply cloth 44.0 oz (Continued)	"	"	-	44.0	400	400	50	50	10.0	10.0	2.0	40	40	(initial)	60% 60%	(after water resistance)	
<p>(after oven aging)      (after water resistance)</p> <p>85% 85%</p> <p>(after acc. weathering)</p>																	

NOMENCLATURE	COATING	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, Shrinkage, etc.)	NOTES (Not Specification Requirements)
MIL-C-14505B Class 3 Class 4 Class 6 (Continued)	Primed nylon cloth shall be coated. Thickness of coating is exclusive of thickness of primer. Coating shall be applied by either the spreader or the calender process. Cloth shall be vulcanized during fabrication of pneumatic floating equipment.	Color - Base cloth shall be unbleached. Coated cloth: compatible coloring agent shall be added to coating compound to make finished color Black.	No cracking or flaking at low temperatures (5874). Porosity: Classes 4 and 6- no leaks (ASTM D751, method B).	Intended Use - In the fabrication of pneumatic flotation equipment.

### COATED CLOTHS

NOMENCLATURE	Base Cloth Specifications	Type of Coating Compound	Overall Weight Oz/Sq Yd (5041)	Width Inch	Breaking Strength	Tearing Strength	Hydrostatic Pressure High (5512)	Flame Resistance (5903)		Flexibility Cm. Max. Warp (5204)	Bursting Strength	Adhesion lb/2" wide	Blocking Scale rating
					Lb. Min. (5100)	Lb. (5132)		After Flame (sec min)	Char length (Max")		Ply (5122)	5970	5872
			Min   Max		W   F	W   F		W   F	W   F	70°F - 40°F			
Cloth, Coated, Polychloroprene: (For Pneumatic Floating Equipment) MIL-C-14505B (Cont'd)													
								Coating Thickness (mils min.)		Permeability L/sq ft/24 hours (max)			
Class 7- Single ply cloth 60.0 oz	See p. 154 for base cloth requirements.	See p. 154 for coating compound requirements.	- 60.0		650 650 (initial) 85% 85% (after oven aging) 85% 85% (after acc. weathering)	70 70 (5134)		Side A 16.0	Side B 16.0	2.0	40 40 (initial) 60% 60% (after water resistance)	W F	40 40
Class 10- Pile cloth 40.5 oz.			- 40.5		100 150 (initial) 85% 85% (after oxygen bomb aging)	7 10	11.0	11.0		3.0	10 10 (initial) 50% 60% (after water resistance)		
Class 11- Single ply cloth 14.0 oz			- 14.0		225 180 (initial) 85% 85% (after oven aging) 85% 85% (after acc. weathering)	8 8	3.5	3.5		2.0	12 12 (initial) 60% 60% (after water resistance)		

NOMENCLATURE	COATING	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, Shrinkage, etc.)	NOTES (Not Specification Requirements)
MIL-C-14505B (Cont'd) Class 7 Class 10 Class 11	See p. 154 for coating requirements.	See p. 154 for color requirements.	No cracking or flaking at low temperature (5874). Porosity: Classes 7, 10 and 11- no leaks (ASTM D751, Method B).	Intended Use - In the fabrication of pneumatic floating equipment.

### COATED CLOTHS

NOMENCLATURE	Base Cloth Specifications	Type of Coating Compound	Overall Weight Oz/Sq Yd (5041)	Width Inch	Breaking Strength	Tearing Strength	Hydrostatic Pressure High (5512)	Flame Resistance (5903)		Flexibility Cm. Max. Werp (5204)	Bursting Strength Pts. Min. (5122)	Adhesion lb/2" wide (5970)	Blocking Scale rating (5872)
					(5100)	(5132)		After Flame Length Sec. Min.	Char Length Max"				
			Min   Max		W   F	W   F	W   F	W   F	W   F	70°F   40°F			
<b>Tape, Coated-Cloth, Polychloroprene</b> <b>MIL-T-14517 (CE)</b>			6.22   6.88	1-5/8							1b/1"		
<p>Balloon cloth conforming to MIL-C-12318 Type III. Cloth shall be mildew resistant. Fungitoxic compound shall be compatible with cloth and coating. No copper fungitoxic compound shall be used.</p> <p>Polychloroprene spread compound &amp; uncured polychloroprene compounds shall contain not less than 60% (by volume) of chloroprene. They shall be compatible. Uncured compound shall be compounded to vulcanize or cure by migration of accelerator from polychloroprene cement conforming to MIL-C-5540, Type II. Spread compound shall have min. tensile strength of 1600 psi and min. ultimate elongation of 300%. Loss of tensile strength shall not exceed 10% after acc. aging &amp; after acc. weathering.</p>													

NOMENCLATURE	COATING	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, Shrinkage, etc.)	NOTES (Not Specification Requirements)
MIL-T-14517	Balloon cloth shall be spread coated with polychloroprene spread compound on both sides then cured. One side shall then be spread coated with uncured polychloroprene compound. Not less than 3 spreader coats/oz/sq yd of polychloroprene compound shall be applied. A binder coat may be included between the cured & uncured coats of polychloroprene compound. Curing with soapstone shall not be permitted. Tape shall not be overcured.		Tape shall be rolled with an interliner of holland cloth to prevent adhesion between cured & uncured polychloroprene surfaces. Ingredients such as soapstone, talc, paraffin, or similar materials which will immediately or latently affect the strength and adhesion of the tape shall not be imbedded in the surface of the balloon cloth.	Intended Use - In the seams of air-retaining cloth conforming to MIL-C-11390. Tape is cured by activation with a neoprene cement conforming to Type II of MIL-C-5540.

### COATED CLOTHS

NOMENCLATURE	Base Cloth Specifications	Type of Coating Compound	Overall Weight Oz/Sq Yd		Width Inch	Breaking Strength Lb. Min.		Tearing Strength Lb.	Hydrostatic Pressure High (5512)	Flame Resistance (5903)		Flexibility Cm. Max. Warp (5204)	Durability Strength Min (5122)	Adhesion lb/2" wide (5970)	Moching Scale rating (5872)
			(5041)	(5100)		(5132)	After Flame (500)			Char length Max (500)	W/F				
Cloth, Coated, Fire Resistant, Berth and Bedding Cover MIL-C-15104C (SHIPS) Amd. 1			Min	Max		W	F	W	F	W	F	W	F		
Type I-Submarine berths	Flame and mildew resistant cotton.	Noninflammable. Shall render finished cloth soft & pliable, shall be nonirritating to the skin, and shall not produce toxic products of combustion.	24	26	54	140	120			No leakage	2 2 3 3			4	No. 2
					5 1/2	(initial)	75% 75%			100 psi	(after water extraction)	2 2 3 3			
							(after aging)				(after scrubbing)				
Type II- Bedding covers	"	"	14	18	50-	135	100			No leakage	2 2 3 3			-	No. 2
					5 1/2	(initial)	75% 75%			100 psi	(after water extraction)	2 2 3 3			
							(after aging)				(after scrubbing)				

NOMENCLATURE	COATING	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, Shrinkage, etc.)	NOTES (Not Specification Requirements)
MIL-C-15104C Type I Type II	Texture of Type I to equal that of standard sample. Texture shall be like that of smooth finished, top grain upholstery leather.	Color - Type I: Light Green equal to standard sample. Type II: Coating shall be Green 14062 of Fed. Std. No. 595.	Coating shall not crack at low temperatures (4.4.4). Coating shall not be visibly affected by salt water (4.4.5). Cloth shall show no discoloration or embrittlement in light aging (5660). Mildew resistance: after water extraction and scrubbing, there shall be no mildew growth. Breaking strength shall not decrease more than 15%. There shall be no evidence of blooming, mottling, or discoloration after heat aging. Volatility: loss of weight of coated cloth not to exceed 8%. Plasticizer extraction not to exceed 10% of weight of coated cloth. Flexibility: Type I - soft and pliable for handling and sewing. Shall not crack after heat & light. Type II: Coating shall not crack down to base cloth (4.4.1). Type I: Abrasion resistance - pattern of coating shall not be obliterated after 5000 double rubs. Abraded specimen shall show no leakage. Resistance to gasoline and oil.	Intended Use - For submarine bunk covers and bedding covers.

### COATED CLOTHS

NOMENCLATURE	Base Cloth Specifications	Type of Coating Compound	Overall Weight Oz/Sq Yd (5041)		Width Inch	Breaking Strength Lb. Min. (5100)		Tearing Strength Lb. (5132)	Hydrostatic Pressure High (5512)	Flame Resistance (5903)		Flexibility Cm. Max. Warp (5204)	Bursting Strength (5122)	Adhesion lb/2" wide (5970)	Blocking Scale rating (5872)
			Min	Max		W	F			W	F				

<p><u>Cloth, Coated, and Webbing, Inflatable Boat and Miscellaneous Use</u></p> <p>MIL-C-17415E (SHIPS) Amd. 1</p>																
Type I- 5.0 oz.	High tenacity, improved heat & light resistant nylon. Heat set and cured. Breaking strength: warp-40; fill-40. Weight: 1.00 oz. (max). pH: 5 - 8.	Synthetic rubber: 60-75% polymerized chloroprene. Tensile strength: 1800 psi (min.) Elongation: 500% min. No materials which would result in a waxy finish or be water soluble shall be used. After being cured and exposed to acc. light shall retain min. 75% tensile strength.	4.7	5.6	(1)	50	50	(5134)								
Type II																
Class A- 8.5 oz.	Nylon (see above). Weight: 2.5 oz max.		8.0	9.0	(1)				100					5	No. 2	
Class B- 6.8 oz.	Breaking strength: W-150; F-140.		6.3	7.8	(1)	180	165	8 8	100					5	No. 2	
Class C- 20.5 oz.			19	22	(1)				100					5	No. 2	
Type III- 7.6 oz.	Cotton. Singed. Weight: 2.10 oz. max. Breaking strength: warp & fill: 40. pH: 6.5 - 7.6.		7.2	8.0	(1)				100					5	No. 2	
Type IV																
Class A- 15.0 oz.	Cotton. Singed. Weight: 4.5 oz max. Breaking strength: W & F: 80. pH: 6.5 - 7.6.	Natural rubber. 78% (by volume) min. new plantation rubber. See physical & material requirements of synthetic.	14.0	15.0	(1)					11.8				5	No. 2	
Class B- 10.0 oz	"	Synthetic.	9.5	10.5	(1)					11.8				5	No. 2	

NOMENCLATURE	COATING	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, Shrinkage, etc.)	NOTES (Not Specification Requirements)
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MIL-C-17415E	Base cloth may be treated before coating with an adhesive compound or a dip treatment to insure adhesion of coating compound if desired. Coatings shall be applied by spreader or calender processes.	Color - Base cloth shall be unbleached. Coated cloth, unless otherwise specified, color shall be that which naturally evolves as a result of compounding ingredients. Type II, Class B color shall be Sea Rescue Orange or a close match.	Coating shall show no signs of becoming stiff & brittle or soft and tacky after accelerated aging. Loss in tensile strength shall not exceed 15% for cloths coated with natural rubber of 10% for cloths coated with synthetic rubber (5852). Synthetic rubber coating shall not crack when bent after accelerated weathering (see spec. for table of loss of tensile strength (5804). Cloth shall not crack at low temperatures (5074).	Intended Use - In finished inflatable boats and accessories.
Type I				
Type II				
Class A				
Class B				
Class C				
Type III				
Type IV				
Class A				
Class B				
(Continued)				



### COATED CLOTHS

NOMENCLATURE	Base Cloth Specifications	Type of Coating Compound	Overall Weight Oz/Sq Yd		Width Inch	Breaking Strength Lb. Min.		Tearing Strength Lb.	Hydrostatic Pressure High (5512)	Flame Resistance (5903)		Flexibility Cm. Max. Warp (5204)	Bursting Strength Pt. Min. (5122)	Adhesion lb/2" wide (5170)	Blocking Score rating (5872)
			(5041) Min	(5041) Max		(5100) W	(5100) F			(5132) W	(5132) F				
Cloth, Coated, and Webbing, Inflatable Boat and Miscellaneous Use (Cont'd) MIL-C-17415E (SHIPS) Amd. 1															
Type V-	23.4 oz. Nylon (see p. 158). Weight: 5.4 oz max. Breaking strength: Warp & Fill: 300.	Synthetic (see p. 158).	22.2	24.6	(1)	350	350	(5134) 25	25	100	Permeability (L. max.)			min. 15	No. 2
Type VI-	21.5 oz. Nylon: 2 nylon cloths joined 2-3" apart by 30 pile yarns/in <sup>2</sup> min. W: 2-ply, 70 den. F: singles, 210 den. Pile W: 2-ply, 70 den. or singles, 210 den. Weight: 8.50 oz max.	"	18.5	20.5	(1)	110	180	7	13		2.0			8	No. 2
Type VII	Class A- 30.0 oz Cotton (see p. 158). Weight: 7.50. Break- ing strength: 150- W; 145- F.	Natural (see p. 158). Synthetic (see p. 158).	28.5	31.5	(1)	165	160	4	4		2.0			10	No. 2
	Class B- 32.0 oz ing strength: 150- W; 145- F.	Synthetic (see p. 158).	28.5	35.0	(1)	165	160	4	4		2.0			15	No. 2
Type VIII	Class A- 6.5 oz. Nylon (see Type I)	Natural (see p. 158).	6.2	6.8	(1)						11.8			5	No. 2
	Class B- 6.5 oz. Nylon (see Type I)	Synthetic (see p. 158).	6.2	6.8	(1)						11.8			5	No. 2

NOMENCLATURE	COATING	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, Shrinkage, etc.)	NOTES (Not Specification Requirements)
MIL-C-17415E Type V Type VI Type VII Class A Class B Type VII Class A Class B (Cont'd)	See page 158 for additional information.			

### COATED CLOTHS

NOMENCLATURE	Base Cloth Specifications	Type of Coating Compound	Overall Weight Oz/Sq Yd (5041)		Width Inch	Breaking Strength Lb. Min. (5100)		Tearing Strength Lb. (5132)	Hydrostatic Pressure High (5512)	Flame Resistance (5903)		Flexibility Cm. Max. Warp (5204)	Bursting Strength Pt. Min. (5122)	Adhesion lb/2" wide (5970)	Blocking Scale rating (5872)
			Min	Max		W	F			W	F				
Cloth, Coated, and Webbing, Inflatable Boat and Miscellaneous Use (Continued) MIL-C-17415E (SHIPS) Am. 1															
(5134)															
										Permeability (L. max.)					
Type IX															
Class A- 30.4 oz Nylon (see Type V)			Synthetic (see p. 158.)		28.5	31.5	(1)	360	360	21	21	2.0		12 No. 2	
Class B- 33.4 oz "			Natural (see p. 158.)		30.0	34.0	(1)	360	360	15	15	2.0		8 No. 2	
Type X- 31.5 oz Nylon (See Type VI)			Synthetic (see p. 158.)		27.8	30.8	(1)					2.0		8 No. 2	
Type XI- 35.5 oz "			"		31.8	35.2	(1)					2.0		8 No. 2	
Type XII-45.1 oz Nylon (pile cloth): 2 nylon cloths joined 2-2 1/2" apart by 30 pile yarns/in <sup>2</sup> min. See Type VI for ply & denier. Wgt: 8.20.			"		42.0	46.0	(1)					2.0		8 No. 2	
Type XIII-12.1 oz Nylon (see p. 158) Weight: 3.10. Breaking strength: 195 in warp & fill.			"		11.5	12.7	(1)	225	225	12	12	11.8		8 No. 2	

NOMENCLATURE	COATING	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, Shrinkage, etc.)	NOTES (Not Specification Requirements)
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MIL-C-17415E  
 Type IX See page 158 for additional information.  
 Class A  
 Class B  
 Type X  
 Type XI  
 Type XII  
 Type XIII  
 Type XIII

## COATED CLOTHS

NOMENCLATURE	Base Cloth Specifications	Type of Coating Compound	Overall Weight Oz/Sq Yd (5041)	Width Inch	Breaking Strength	Tearing Strength	Hydrostatic Pressure High (5512)	Flame Resistance (5903)		Flexibility Cm. Max. Warp (5204)	Bursting Strength lb/2" Dia. (5122)	Adhesion lb/2" wide (5970)	Blocking Scale rating (5972)
					(5100)	(5132)		After Flame sec. Min.	Char Length Max. "				
				Min   Max	W   F	W   F	W   F	W   F	70°F - 40°F				
Cloth, Coated, and Webbing Inflatable Boat and Miscellaneous Use (Continued) MIL-C-17415E (SHIPS) Amd. 1													
Type XIV	45.3 oz Nylon (see p. 158). Weight: 13.3 oz max. Breaking strength: 600 in warp & fill.	Synthetic (see p. 158).	43.3 47.3	(1)	600 600	60 60	(5134)	Permeability (L. max.) 2.0				(min.) 12	No. 2
Type XV	Webbing, 3 in. wide, undyed. Nylon webbing. To conform to MIL-W-17337, except that it shall be undyed. Weight: 2.2 oz/11 in. yd. max. Breaking strength: (full width)- 3000 lb.	Synthetic (see p. 158). Friction or spread coated to protect against sunlight aging and provide a base for cement.			3 3000	(full width)							No. 2
Type XVI	Class A- 24.5 oz Nylon (see p. 158). Weight: 4.8 oz max.	Synthetic (see p. 158).	22.0 27.0	(1)	300 300	16 16		2.0				16	No. 2
	Class B- 24.5 oz "	Natural (see p. 158).	22.0 27.0	(1)	300 300	16 16		2.0				8	No. 2
Type XVII	40.5 oz Nylon (see p. 158). Weight: 8.5 oz max. Breaking strength: 400 in warp & fill.	Synthetic (see p. 158).	38.0 42.0	(1)	400 400	25 25		2.0				16	No. 2

NOMENCLATURE	COATING	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, shrinkage, etc.)	NOTES (Not Specification Requirements)
MIL-C-17415E (Cont'd)				
Type XIV	See page 158 for additional information.			
Type XV	Webbing shall be friction or spread coated to protect against sunlight aging and to provide a base for cement. Coating shall be no less than 1 mil. thick.	Color - Base cloth shall be undyed. Coated cloth: see p. 158.		
Type XVI	See page 158 for additional information.			
Class A				
Class B				
Type XVII				

### COATED CLOTHS

NOMENCLATURE	Base Cloth Specifications	Type of Coating Compound	Overall Weight Oz/Sq Yd (5041)		Width Inch	Breaking Strength Lb. Min. (5100)	Tearing Strength Lb. (5132)	Hydrostatic Pressure High (5512)	Flame Resistance (5903)		Flexibility Cm. Max. Warp (5204)	Bursting Strength Pt. Min. (5122)	Adhesion lb/2" wide (5970)	Blocking Scale (5872)
			Min	Max					After Flame length sec min	Char length Max"				
<p><u>Cloth, Coated and Tape, Coated Chloroprene on Nylon, Pneumatic Life Preserver MIL-C-19002B, Amd. 2</u></p>														
Type I- Coated cloth (one side)	Nylon twill conforming to MIL-C-19377 (Aer). For flagging of defects a single thread shall be used that will not increase thickness of cloth in order to maintain uniformity of coating on spreading machine. Marking shall be such that it is visible after coating. Tape shall be cut in bias direction.	At least 60% polychloroprene. Remainder of compound shall be softeners, curing agents, antioxidants, and reinforcing materials. Pigmented. Compound shall be compatible with base cloth and contain no waxes or other ingredients that may bloom to the surface to adversely affect coating adhesion and cement-ability of finished cloth. Compound shall be water insoluble after curing. See spec. for table of physical properties of cured compound.	7.0	7.7	(1)	180	170					10 (lb/in)	No. 2	
Type II- Coated cloth tape (both sides)			13.3	15.8	(1)	180	170						10 (lb/in)	No. 2
Type III- Coated cloth tape (one side - uncured)			9.3	11.5	1 or 3/4	180	170						10 (lb/in)	No. 2
Type IV- Coated cloth tape (both sides - uncured)			15.6	19.6	1 or 3/4	180	170						10 (lb/in)	No. 2

NOMENCLATURE	COATING	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, Shrinkage, etc.)	NOTES (Not Specification Requirements)
MIL-C-19002B Type I Type II Type III	After application of foundation coat compatible with base cloth and compound to produce adhesion, cloth shall be coated by a spread coat operation. No strike through to uncoated side shall be permitted. Tapes: Types II & IV shall be coated on both sides & Type III shall be coated on one side. One side of Type II, the coated side of Type III, and both sides of Type IV shall have a surface coating of high polychloroprene content stock which may be uncured or partially cured (1). Shall be compatible with cured coated cloth and shall be protected by a suitable liner which may be separated without affecting adhesion and cement-ability of tape. Coated cloth shall be cured. Cured coating may be lightly dusted with talc or zinc stearate.	Color - Base cloth: base cloth for life preserver shall be dyed. Base cloth for Types II & IV tapes shall be dyed or undyed as specified. Coated cloth: coating shall be suitably pigmented during compounding process so that cured coating and base cloth shall have a uniform color.	(4) Material for acceptance shall have been manufactured no more than 4 weeks before release for shipment. Coating shall not become stiff or brittle or soft and tacky after accelerated aging. Breaking strength shall be no less than 160 lb. in the warp and 155 lb. in the fill. Elongation shall be a min. of 22% (5850 and 5852). After accelerated weathering, breaking strength shall not be less than 155 in the fill and 160 in the warp, and min. elongation shall be 22% (5104). Permeability of coated cloth to hydrogen shall not exceed 5 L/M <sup>2</sup> in 24 hours or its equivalent using helium. Cloth shall show no signs of air leakage at a pressure of 10 lb/in <sup>2</sup> for 5 min. (4.4, 5.13). Cloth shall not crack when folded on itself after low temp. (5874).	Intended Use - In the manufacture of components of pneumatic life preservers.

### COATED CLOTHS

NOMENCLATURE	Base Cloth Specifications	Type of Coating Compound	Overall Weight Oz/Sq Yd (5041)		Width inch	Breaking Strength Lb. Min. (5100)		Tearing Strength Lb. (5132)		Hydrostatic Pressure High (5512)	Flame Resistance (5903)		Flexibility Cm. Max. Werp (5204)	Bursting Strength Pk. (5122)	Adhesion lb/2" wide (5970)	Blocking Scale rating (5872)
			Min	Max		W	F	W	F		After Flame length sec min	Char Flame length Max"				
Cloth, Coated (For Aircraft Protectors) MIL-C-19524 (AER) Amd. 2	Base cloth shall have fiber, weave and construction appropriate to coated cloth requirements.	Suitably compounded polymer or copolymer ethylene resins.	4.0	9.0	36 ±1	65	65	15	15	16 hours	(5514)	(5910) ½ min. (min) to consume		200		

NOMENCLATURE	COATING	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, Shrinkage, etc.)	NOTES (Not Specification Requirements)
MIL-C-19524	Coating shall be applied to both surfaces.	Color (1).	Cloth shall be nonirritating to skin. Odor shall not be obnoxious. Strength across seam shall be not less than 75 lb. Coating shall not separate from base cloth, flake, delaminate, or form bubbles or craters (4.5.4). Ice-repellent properties (4.5.5). Mildew resistance: cloth shall not lose more than 10% of breaking strength (4.5.6). After exposure to lubricating oil and hydraulic fluids, cloth shall show no loss of water resistance, nor more than 10% loss of breaking strength (4.5.7). After exposure to ultra-violet radiation, cloth shall not lose more than 25% of breaking strength, shall show no embrittlement, delamination or other defects, and shall not cause deleterious effects to painted surfaces. Cloth shall not crack, delaminate, or develop pinholes at low temps. (4.5.9) or rupture or tear (4.5.10). Cloth shall separate readily and not rupture or delaminate at high temp. (4.5.11). No embrittlement, delamination, lessening of ice-repellent properties or other defects after acc. aging (4.5.12).	Intended Use: - In the manufacture of protectors (covers) to be used to cover aircraft parts (wings, tail group, helicopter rotor parts, etc.) in a standby condition, which are exposed to adverse weather conditions of ice, snow, frost, etc.

### COATED CLOTHS

NOMENCLATURE	Base Cloth Specifications	Type of Coating Compound	Overall Weight Oz/Sq Yd		Width Inch	Breaking Strength Lb. Min.	Tearing Strength Lb.	Hydrostatic Pressure High (5512)	Flame Resistance (5803)		Flexibility Cm. Max. Warp (5204)	Seal Strength (5122)	Adhesion 1/2" wide (5970)	Blocking Scale rating (5872)
			Min	Max					After Flame (sec)	Char Length (in)				
Cloth, Coated; Non-Slip Table Covering MIL-C-19635 (CG) Amd. 1	Osnaburg, plain weave. Yarns/inch: 32 in the warp; 24 in the fill.	Chemically-blown sponge rubber of natural or synthetic rubber or a compound thereof. Neoprene coating .005 - .010 in thickness. 3-coat application is normally needed to achieve thickness. Rubber shall be of a soft, flame resistant quality, with an adhesive rind or surface, homogeneous in character and free from any defect which may affect its appearance or impair its serviceability.	1.06	1.09	25	25			W/F	W/F	70°F	-40°F		

NOMENCLATURE	COATING	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, Shrinkage, etc.)	NOTES (Not Specification Requirements)
MIL-C-19635	Undersurface shall consist of a layer of sponge rubber. One fold of cloth shall be firmly imbedded & keyed to rubber layer, but shall not show through at any point. Exposed side of cloth backing shall be finished with neoprene coating to form the upper surface of the cloth. Neoprene coating shall permit the imprint of the backing cloth to show and produce a somewhat rough, slip-resistant effect. Neoprene surface shall be non-porous and shall have a continuous skin free from blow holes. It shall be sufficiently non-slip to hold table-wear in place at an angle of 35°. Rubber under side shall be capable of adhering to the surface of a table without the use of clips, etc., at a 35° angle. Neoprene surface shall be capable of being cleaned with soap, water & bristle brush of stains of coffee, ketchup, egg, butter, and other commonly used foods.	Color - Upper surface: unless otherwise specified, neoprene coated upper surface shall be Green to match Color No. 14260 of Fed. Std. No. 595. Under surface: unless otherwise specified, color of sponge rubber under surface may be at the option of the manufacturer.	Rubber shall be free from objectionable odor under ordinary service conditions. Cloth shall not become sticky or crack when bent back on itself after aging. Cloth shall be flame resistant. Cloth shall be capable of being rolled or folded for storage without cracking or delamination. Table covering shall show no evidence of separation into distinct layers or laminations when subjected to ordinary usage.	Intended Use - To be placed directly on standard mess tables during rough weather, to retain dishes and miscellaneous table-wear in place without the use of fiddle boards. It is not intended to be used as a matting underlay for other types of table covers used in normal weather.

### COATED CLOTHS

NOMENCLATURE	Base Cloth Specifications	Type of Coating Compound	Overall Weight Oz./Sq Yd		Width Inch	Breaking Strength Lb. Min.	Tearing Strength Lb.	Hydrostatic Pressure High (5512)	Flame Resistance (5903)		Flexibility Cm. Max. Warp (5204)	Bursting Strength P <sub>1</sub> Min (5122)	Adhesion lb/2" wide (5970)	Blocking Soak rating (5972)
			Min	Max					W/F	W/F				
<p><u>Cloth, Coated (Nylon Taffeta)</u> MIL-C-19699A (SA) And. 1</p>														
	Cloth, nylon, taffeta (2.0 oz.) conforming to MIL-C-21852.	Properly plasticized chloroprene rubber, free from objectionable odor.	4.7 ± 0.5	(1)	110	95	850	650	80		2.5	8.0	10	
									(grams) (initial) See spec. for requirements after testing.					
<p><u>Cloth, Coated (Nylon Twill, Low Count)</u> MIL-C-19759A (SA)</p>														
	Type I- 7.5 oz. coated one side	Cloth, nylon twill low count 3.5 oz., conforming to MIL-C-19256. Face shall be identified by twill line running from lower left to upper right.	7.5 ± 0.5	(1)	225	210	4500	3800	100		9.0	25.0	10	
	Type II- 9.0 oz. coated both sides		9.0 ± 0.5	(1)	225	210	3400	3000	100		14.0	35.0	10	
									(grams) (initial) See spec. for requirements after testing.					

NOMENCLATURE	COATING	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, Shrinkage, etc.)	NOTES (Not Specification Requirements)
MIL-C-19699A		Color - Coating shall be pigmented Black. Standard sample available.	(4) Coated cloth shall show no tackiness, exudation, or loss of flexibility at high temps. (5850). Cloth shall be free from objectionable odor.	Intended Use - In the manufacture of special purpose clothing worn by Navy personnel.
MIL-C-19759A Type I Type II	Coated cloth shall be flexible, free from tackiness, and resistant to abrasion and scratching. Type I shall be coated on back only with app. 4.0 oz. of compound. Type II shall be coated on back with app. 4.0 oz. of compound, and on the face with app. 1.5 oz. of coating.	Color - Type I: coating shall be pigmented Black. There shall be no change in shade on the face of the cloth. Type II: Coating of back shall be pigmented Green to approximate shade of basic cloth. Standard samples available for both types.		Intended Use - Type I: in the fabrication on special cold weather clothing items. Type II: in the fabrication of the submarine deck exposure suit and wet weather clothing items.

### COATED CLOTHS

NOMENCLATURE	Base Cloth Specifications	Type of Coating Compound	Overall Weight Oz/Sq Yd (5041)		Width Inch	Breaking Strength Lb. Min. (5100)		Tearing Strength Lb. (5132)		Hydrostatic Pressure High (5512)	Flame Resistance (5903)		Flexibility Cm. Max. Warp (5204)	Bursting Strength Pt./In. (5122)	Adhesion lb/2" wide (5970)	Blocking Scale rating (5872)
			Min	Max		W	F	W	F		W	F				
<p>Cloth, Coated, Nylon, Waterproof MIL-C-20696A, Amd. 2</p> <p>Type I- Nylon, 2.3 oz (nominal) uncoated.</p> <p>Class 1- Base cloth coated with chloroprene. Bright high tenacity filament nylon. Plain weave. Weight: 2.3 x 0.2 oz. Yarns/Inch: 38 in warp and fill. Breaking strength: 115 lb. in warp and fill.</p> <p>Class 2- Base cloth coated with vinyl chloride polymer or copolymer. Virgin polymer or copolymer of vinyl chloride resin.</p> <p>Class 3- Base cloth coated with chloroprene containing fire retardant. Chloroprene rubber containing an evenly dispersed fire inhibitor. Up to 20% other elastomers (such as SHR) may be added.</p>																
			7.0	9.0	39	120	100	12	10				7-10	12	10	No. 3
						(5102) (5134)										
						min. (initial) or 80% 80% (1)(after weatherometer)										
			8.0	10.0	39	120	100	12	10				7-10	13	10	No. 3
						min. (initial) or 80% 80% (1)(after weatherometer)										
			9.5	11.5	39	120	100	12	10	10	10	3.5	7-10	12	10	No. 3
						min. (initial) or 80% 80% (1)(after weatherometer)				(each)						
						(-10°F)										
						(-40°F)										

NOMENCLATURE	COATING	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, Shrinkage, etc.)	NOTES (Not Specification Requirements)
MIL-C-20696A Type I Class 1 Class 2 Class 3 (Continued)	Coating shall be applied to both sides of base cloth. Face side shall receive a heavier coating than back, except for Type II, Class 2, which may have a balanced or unbalanced coating as specified. Classes 1 and 3 coated cloths shall be fully vulcanized and dusted with whiting, talc, or other finely divided mineral material which does not support mildew growth. Plasticizers for Class 2 shall be limited to phosphate and phthalate esters exclusively.	Color - Coated cloth shall match applicable cable color number of Fed. Std. No. 595 or approved color standard for color specified (3). Colorfastness - no change after acc. weathering (3.4.5).	(4-5). Types I & II, Class 1 & 3: shall not become stiff or brittle or soft or tacky after acc. aging (5852). Hydrostatic resistance: no leakage before or after abrasion (5516 & 4.4.2.1). Oil resistance: no seepage (4.4.3). Resistance to aromatic hydrocarbons: no cracking (4.4.4). Cloth shall show no cracking or crazing when folded sharply on itself after acc. weathering. Folded cloth shall show no signs of blooming or chalking (3.4.5). Selvages may be trimmed after coating.	Intended Use - In the fabrication of wing covers, engine covers, shelters, gun and vehicle covers, and equipage items.



### COATED CLOTHS

NOMENCLATURE	Base Cloth Specifications	Type of Coating Compound	Overall Weight Oz/Sq Yd		Width Inch	Breaking Strength Lb. Min.		Tearing Strength Lb.		Hydrostatic Pressure High (5512)	Flame Resistance (5903)		Flexibility Cm. Max. Warp (5204)	Bursting Strength Pts. Min. (5122)	Adhesion lb/2" wide (5970)	Blocking Scale rating (5872)
			(5041)			(5100)	(5132)	After Flame length sec. min.	Char length Max. (5204)		W F	W F				
Cloth, Coated, Nylon, Waterproof MIL-C-20696A Amd. 2, (Cont'd)																
Type II- Nylon 5.1 oz (nominal) uncoated																
Class 1- Base cloth coated with chloroprene.																
Bright high tenacity filament nylon. Plain weave. Weight: 5.1±0.3 oz. Yarns/Inch: 22 in. the warp; 21 in the fill. Breaking strength: 225 ir warp and fill.																
Class 1 p. 166. 15 17 39 325 260 45 38 min. (initial) or 80% 80% (1)(after weatherometer)																
Class 2- Base cloth coated with vinyl chloride polymer or copolymer.																
Class 2 p. 166. 17 19 39 325 260 45 38 min. (initial) or 80% 80% (1)(after weatherometer)																
Class 3- Base cloth coated with chloroprene containing fire retardant.																
Class 3 p. 166. 17 19 39 325 260 45 38 min. (initial) or 80% 80% (1)(after weatherometer)																

NOMENCLATURE	COATING	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, Shrinkage, etc.)	NOTES (Not Specification Requirements)
MIL-C-20696A Type II Class 1 Class 2 Class 3 (Cont'd)	See page 166.	See page 166.	See p. 166. Type II, Class 2: in warp direction, flame shall not traverse entire length of specimen within 42 sec. of start of burner flame (5903-T).	See p. 166.

### COATED CLOTHS

NOMENCLATURE	Base Cloth Specifications	Type of Coating Compound	Overall Weight		Width Inch	Breaking Strength Lb. Min.	Tearing Strength Lb.	Hydrostatic Pressure High (5512)	Flame Resistance (5903)		Flexibility Cm. Max. Warp (5204)	Bursting Strength Pt. Min. (5122)	Adhesion lb/2" wide (5970)	Blocking Scale rating (5872)
			Oz/Sq Yd (5041)						After Flame (sec. min.)	Char Length (Max.)				
Cloth, Coated, Raft Bottom MIL-C-21109A (WEP)			Min	Max		W	F	W	F	W	F	70°F	-40°F	
Type I- 7.0 oz.	Nylon conforming to MIL-C-21108, Type I.	Natural rubber- not less than 80% by volume new plantation rubber. Containing softeners, curing agents, anti-oxidants, and reinforcing materials. Outer coating shall be pigmented. Fineness that 100% of pigment shall pass through 325 mesh screen. Coatings shall not be injurious to base cloth and contain no ingredients which might bloom to the surface of adversely affect coated cloth. Shall cure properly & be water insoluble (water extractable matter: 1% of vgt. max.). Compound shall be cured in sheet form. See spec. for table of physical properties of coating compound.	6.3	7.0	(1)	150	140 (initial) 90% 90% (after heat aging)	50 (initial) 50 (after heat aging)						7.0 No. 2
Type II- 14.0 oz.	Nylon conforming to MIL-C-21108, Type II.	Natural rubber- not less than 80% by volume new plantation rubber. Containing softeners, curing agents, anti-oxidants, and reinforcing materials. Outer coating shall be pigmented. Fineness that 100% of pigment shall pass through 325 mesh screen. Coatings shall not be injurious to base cloth and contain no ingredients which might bloom to the surface of adversely affect coated cloth. Shall cure properly & be water insoluble (water extractable matter: 1% of vgt. max.). Compound shall be cured in sheet form. See spec. for table of physical properties of coating compound.	13.3	14.5	(1)	300	300 (initial) 90% 90% (after heat aging)	100 (initial) 100 (after heat aging)						7.0 No. 2

NOMENCLATURE	COATING	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, Shrinkage, etc.)	NOTES (Not Specification Requirements)
MIL-C-21109A Type I Type II	Foundation coating compatible with base cloth & remainder of coating compound shall be applied to achieve required adhesion. Coating compound shall then be applied by spread coating operation. Compound shall be applied in sequence of operations so that both sides shall be coated and built up in accordance with spec. Pigment shall be incorporated in outermost coating. Coating shall be cured. Cured coated cloth may be lightly dusted with talc of zinc stearate.	Color - Unless otherwise specified, uniform permanent color of finished coated cloth shall be an app. match to color number 33538 lusterless Yellow of Fed. Std. 595.	Cloth shall be from current production and not more than 90 days old prior to release for shipment. Cloth shall not become stiff and brittle or soft and tacky after heat aging (4.6.9). Cloth shall show no signs of cracking when folded after exposure to low temps. (4.6.10).	Intended Use - In the manufacture of life raft bottoms. Type I is for one-man rafts, cylinder carriers, oral inflation valve pockets, sea anchor moorings, and accessory patches used in the manufacture of pararafts and packet rafts. Type II is for the multi-place life raft bottoms.

### COATED CLOTHS

NOMENCLATURE	Base Cloth Specifications	Type of Coating Compound	Overall Weight Oz/Sq Yd		Width Inch	Breaking Strength Lb. Min.		Tearing Strength Lb.		Hydrostatic Pressure High (5512)	Flame Resistance (5903)		Flexibility Cm. Max. Warp (5204)	Bursting Strength P <sub>100</sub> (5122)	Adhesion lb/2" wide (5970)	Blocking Soda rating (5872)
			(5041)	(5100)		(5132)	After Flame length sec. Min.	Char Max.	W/F		W/F	70°F				
Cloth, Laminated, ZPG and ZPG W Type Airship Envelope MIL-C-21189 (AER) Amd. 1	Dacron (polyester fiber). Cloth shall be heat set so that shrinkage shall be no greater than 1.5% in both warp and fill. Max. chloroform extractable matter shall be 1.5%. pH: 6.5 - 8.0 (2811).	Not less than 75% by volume chloroprene. Outer coat shall contain not less than 75% by volume chlorosulfonated polyethylene. Balance shall be softeners, curing agents, antioxidants, and reinforcing materials. Chlorosulfonated polyethylene shall contain aluminum pigment conforming to TT-A-468, Types I or II, Class A. Compounds shall contain no waxes or ingredients that may bloom to the surface to affect coating adhesion or cementability. Water insoluble after curing and shall not irritate skin or detrimentally affect dacron. Cured in sheet form. See spec. for table of physical properties of coating compd.	Min	Max	40	W	F	W	F	600	W/F	W/F	70°F	-40°F	10	No. 1

NOMENCLATURE	COATING	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, Shrinkage, etc.)	NOTES (Not Specification Requirements)
MIL-C-21289	Laminated cloth shall consist of 2 plies of dacron (polyester fiber) cloth bonded & coated uniformly with chloroprene base compound on outer sides of cloth. Laminated cloth shall have additional coating of aluminized-chlorosulfonated polyethylene on one (outer) side of laminated cloth.	Color - Unless otherwise specified, color shall be aluminized.	(4) No more than 4 weeks shall elapse from time of curing to date of delivery of coated cloth. Ultimate elongation- Initial: 30% max. in warp and fill for straight ply; 35% max. for warp and fill for bias ply (5102). See spec. for requirements after testing. Permeability to hydrogen- Without tension- Initial: 2.5 L/sq M/24 hours max. At bias seam- Initial: 2.5 L/sq M/24 hours max.; Under tension- Initial: 2.5 L/sq M/24 hours max. (5460). See spec. for requirements after testing. Adhesion between plies - Initial: 7.5 lb/in min.; After creasing: 7.5 lb/in min. (5950). Cylinder elongation: 1% max. in the warp (10.2.6). Aluminized laminated cloth, after treatment with aluminum base wash coat, shall show total reflectance of not less than 50%. Bias seam: 3/4 in. min. Free from ragged and uneven edges and from loose threads imbedded in coating compound. Coating shall be applied uniformly throughout.	Intended Use - In the manufacture of airship envelopes.

### COATED CLOTHS

NOMENCLATURE	Base Cloth Specifications	Type of Coating Compound	Overall Weight Oz/Sq Yd (5041)		Width Inch	Breaking Strength Lb. Min. (5100)		Tearing Strength Lb. (5132)		Hydrostatic Pressure High (5512)	Flame Resistance (5903)		Flexibility Con. Max. Warp (5204)	Bursting Strength Pt. Min. (5122)	Adhesion lb/2" wide (5970)	Blocking Scale rating (5872)			
			Min	Max		W	F	W	F		W	F					W	F	70°F
Dunnage Mattress, Pneumatic, Cargo Shoring MIL-D-21857A	Casing base cloth shall be nylon duck. Yarn: 210 den. 32-35 filament, bright high tenacity polyamide of hexamethylene diamine & adipic acid or its derivatives; 5-ply (6). Weave: 2/2 basket (2 ends weaving at 1 and 2 picks/shed). Weight: 13.0±0.3 oz. Yarns/inch: 40 min. in warp and fill. Breaking strength: 675 lb. min. in the warp; 650 lb. min. in the fill. Elongation: 20% min. in warp and fill. Non-fibrous material: 2% of dry weight of cloth. pH: 5 - 9.	Chloroprene synthetic rubber. Pigmented.	40	50		675	650	90	90			W	F	W	F	70°F	-40°F	35	No. 1 min.

NOMENCLATURE	COATING	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, Shrinkage, etc.)	NOTES (Not Specification Requirements)
MIL-D-21857A	Uncoated cloth shall be thoroughly scoured and heat treated to impart stability, so that the cloth shall not shrink more than 3% in the warp or 2% in the fill. Coating compound shall be uniformly applied so that one side shall have a min. coating of 19.0 oz/sq yd. and the other side shall have a min. coating of 9.0 oz/sq yd. Coated cloth shall be heat-vulcanized.	Color - Uncoated cloth shall have a natural color evolving from processing. Color of all rubber components shall be black.	(4) See spec. for requirements for strapping, thread, webbing, bladder, valve chain, and closure rod. Abrasion: cloth shall be tested for 20,000 cycles without tearing through (5032). Permeability: the dunnage unit shall show no more than a 0.2 lb. pressure loss after 24 hours of testing (4.4.2.1).	Intended Use - The dunnage unit is a special design, highly resilient, light weight inflatable air mattress used for tightening and cushioning loads, absorbing impact shocks, and reducing load vibration during common carrier transit. The dunnage unit is intended to replace timber shoring and is capable of being placed in position and inflated by one man. Dunnage units are capable of multiple usage to restrain palletized loads, large boxes, and irregularly shaped commodity containers. Dunnage units may be used singly or in series to fill voids as determined by load spacing in the carrier.

### COATED CLOTHS

NOMENCLATURE	Base Cloth Specifications	Type of Coating Compound	Overall Weight Oz/Sq Yd (5041)	Width Inch	Breaking Strength	Tearing Strength	Hydrostatic Pressure High (5512)	Flame Resistance (5903)		Flexibility Cm. Max. Warp (5204)	Bursting Strength Pk. (5122)	Adhesion lb/2" wide (5970)	Blocking Scale rating (5372)
					Lb. Min. (5100)	Lb. (5132)		After Flame "sec min"	Char length "Max"				
			Min	Max	W	F	W	F	W	F	70°F	40°F	
Cloth, Coated (Neoprene, Asbestos, Glass, Cotton; Aluminized) MIL-C-21890 (NAVY)				19.0	(1)	90	70		30	2	2	1.5	1.5
Warp: 100% continuous filament glass fiber. Filling: 2-ply; one end of asbestos-cotton blend (Underwriter's Grade); one end of continuous filament glass fiber. Weight: 11.8 oz max. Weave: 2/1 right twill. Yarns/inch: 60 in the warp; 38 in the fill. Breaking strength: 90 lb. in the warp; 70 lb. in the fill. Tearing strength: 6 lb. in the fill. Fiber content: 55% asbestos; 27% glass 18% cotton.					Black neoprene rubber with flameproofing additives. Pure aluminum.				(initial) 25 (after stretching)				

NOMENCLATURE	COATING	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, Shrinkage, etc.)	NOTES (Not Specification Requirements)
MIL-C-21890	Neoprene coating applied to back of cloth. Coated cloth shall be fully vulcanized. No strike through of coating to uncoated side. Cloth may be dusted on coated side to prevent blocking. Weight of coating: 16.0 oz/sq yd max. Aluminum coating shall be applied to cloth face to produce smooth, highly reflective surface. Aluminum film shall not crack, flake, blister, or peel during or after preflex, exposure to the globe, or postflex (4.4.2). Cloth may be untreated for not more than 1/2 in. from each selvage edge.	Color - Neoprene coating shall be Black. Aluminum surface shall match Navy shade aluminum 3900.	(4) There shall be no evidence of cracking on either side after exposure to low temps. (5874). No blocking on either side; no visible loss of reflectance on aluminum side at high temps. (5872). Neoprene coating shall not tear or delaminate (5872). Aluminum coating shall not separate from base cloth (4.4.3). Flexibility: no cracks or separations on either side (4.4.1).	Intended Use - In the manufacture or protective clothing for fire fighters' outfits and other heat protective, proximity garments.

### COATED CLOTHS

NOMENCLATURE	Base Cloth Specifications	Type of Coating Compound	Overall Weight Oz/Sq Yd		Width Inch	Breaking Strength Lb. Min.	Tearing Strength Lb.	Hydrostatic Pressure High (5512)	Flame Resistance (5903)		Flexibility Cm. Max. Warp (5204)	Bursting Strength (5122)	Adhesion lb/2" wide (5970)	Blocking Score rating (5872)		
			Min	Max					After Flame sec. min	Char Length Max. "						
Cloth, Laminated, Rubber on Nylon, Inflatable Floor MIL-C-22427 (MFP)	Yarn: bright commercial nylon polyamide of polyhexamethylene adipamide. Pile cloth shall consist of 2 nylon cloths joined by a min. of 30 pile yarn/sq in so that cloths are spaced a min. of 1 in. apart after heat setting. Wgt: 7.0±0.5 oz. Yarns/in: 50±2 in. warp and fill; 30 in pile. Height of pile: 1 in. Yarn size: warp-2-ply 70 den.; fill-singles 210 den.; pile-2-ply 70 den. or singles, 210 den. Weave: face & back-plain; Pile thread: fast pile or W. Cover cloth shall be nylon, 1.0± 0.1 oz. plain weave. 90±2 yarns/in. warp & fill. Breaking strength: 40 warp and fill. Calendered, scoured, heat set. (6). pH: 6 - 8.	Coating & laminating compound shall be 80% by volume min. neoprene rubber. Balance of softeners, curing agents, antioxidants, & reinforcing materials. Pigmented. Pigment of fineness to pass through 325 mesh screen. Foundation coat & rubber shall not injure base cloth or contain ingredients which would bloom to the surface or affect coating adhesion or bondability of finished cloth. No rubber substitutes shall be used & anti-oxidant used must retard aging in service. Compound shall be cured in sheets.	30	32	(1)	2500	2500	(initial)	85%	85%	(after heat aging)	7	No. 2	(initial)	6	(after heat aging)

NOMENCLATURE	COATING	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, Shrinkage, etc.)	NOTES (Not Specification Requirements)
MIL-C-22427	Coating shall be applied with a spreader, using multilayer application technique. Foundation coating shall be applied to base cloth to insure required adhesion. Rubber coating shall be applied to each side of pile cloth. On top of coating on each surface shall be applied the nylon cloth, to which, in turn, shall be applied the natural rubber. Pigment shall be incorporated in outer-most coatings. Laminated cloth shall be cured, and cured cloth may then be dusted with talc or zinc stearate.	Color - Color of finished laminated cloth shall be uniform and an app. match to color number 33538 lusterless Yellow of Fed. Std. 595.	(a) Method No. 4111 of Fed. Std. 601. Cloth shall be a max. of 4 weeks of age at time of release for shipping. Permeability to hydrogen: 4 L/M <sup>2</sup> . Permeability to helium: 2.5 L/M <sup>2</sup> (see spec. for requirements after exposure to high and low temps.) Cloth shall show no signs of cracking after exposure to low temps (4.5.10). Folded cloth shall not be tacky or adhere to itself after exposure to high temps. (4.5.11). Coating shall not become stiff and brittle or soft and tacky after heat aging. Adhesion between plies and coating shall be not less than 6. Breaking strength shall be at least 85% of original (4.5.12). Cloth shall show no signs of air leakage at a pressure of 5 lb/in <sup>2</sup> for 5 min. (4.5.13). Elongation: Initial- 500%. After heat aging- 75% of original. Free sulfur: 0.2% max. Hardness, Shore durometer: 50 ± 5.	Intended Use - In the manufacture of the MK 12A-1 inflatable floor for life rafts.

COATED CLOTHS

NOMENCLATURE	Base Cloth Specifications	Type of Coating Compound	Overall Weight Oz/Sq Yd (5041)		Width Inch	Breaking Strength Lb. Min. (5100)	Tearing Strength Lb. (5132)	Hydrostatic Pressure High (5512)	Flame Resistance (5903)		Flexibility Co. Max. Warp (5204)	Bursting Strength Pts. Min. (5122)	Adhesion lb/2" wide (5970)	Blocking Scale rating (5672)	
			Min	Max					After Flame 99°C Min	Char Length Max"					W/F
Cloth, Nylon, Marquisette; Metalized MIL-C-22156 (ARP)	Bright nylon Reverse Doupe weave. Warp: singles, 260 den., 17 filament. Fill: 2-ply, 260 den., 17 filament.	Metalizing: silver. Protective coating: polymer or copolymer of vinyl chloride or vinyl chloride-acetate resin. Plasticized & pigmented.	8.0	0.5	46	140	150	11	20	W/F	W/F	70°F	-40°F	W 3.5	P 5.0

NOMENCLATURE	COATING	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, Shrinkage, etc.)	NOTES (Not Specification Requirements)
MIL-C-22156	Base cloth shall be metalized to produce a max. resistance of 10 ohms/sq ft. Outside protective coating shall be applied to form an envelope around yarns in both warp and fill directions, thereby leaving the interstices substantially open. Radar reflecting surface shall be produced (4.4.8).	Color - Color of finished cloth shall be white.	Selva shall be double density 1 1/2 in. wide woven on each edge. Three 1 in. double density reinforcing strips shall be woven in, equally spaced in width of the cloth. Yarns/in: 40 in the warp; 22 in the fill. Flame resistance: no less than 2 min. to consume (5910). Air permeability: 950 CFM/sq ft. min., .5 in. water pressure drop (5450). Open area: 99.9%. No cracking at low temps. (4.4.5). No cracking or flaking at exposure to hydrocarbon fluid (4.4.6). No adhesion of surfaces at high temps.	Intended Use - In the manufacture of radar reflective tow targets and equipage.

### COATED CLOTHS

NOMENCLATURE	Base Cloth Specifications	Type of Coating Compound	Overall Weight Oz / Sq Yd		Width Inch	Breaking Strength	Tearing Strength	Hydrostatic Pressure High	Flame Resistance (5903)		Flexibility Cm. Max. Warp	Bursting Strength Pt. Min.	Adhesion lb/2" wide	Blocking Scale rating
			(5041)	(5100)		(5132)	(5512)		After Flame length sec. Min.	Char length Max"				
Cloth, Coated; Fire, Water, Mildew and Weather Resistant MIL-C-22524A (SHIPS) Amd. 1			Min   Max	W   F	W   F	W   F	W   F	70°F - 40°F						
Class 1- 12±10% oz.	Nylon	Of a character that finished cloth will be suitably resistant to fire, water, mildew & will not deteriorate when used outdoors. It shall not be hygroscopic or cause dermatitis when cloth to which it has been applied is handled. Finished cloth shall not exert any corrosive action on metallic grommets.	12±10%	(1)	180	160	7	6	250	5	5	5	12	No. 2
Class 2- 15±10% oz.	"		15±10%	(1)	300	260	12	10	250	5	5	5	12	No. 2
Class 3- 18±10% oz.	"		18±10%	(1)	300	300	30	25	250	5	5	5	12	No. 2

NOMENCLATURE	COATING	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, Shrinkage, etc.)	NOTES (Not Specification Requirements)
MIL-C-22524A Class 1 Class 2 Class 3		Color (1). Colorfastness- "fair" to light (5660).	Mildew resistance: cloth shall show no more than traces of surface growth and lose no more than 15% of strength due to mildew attack. Cloth shall show the same water resistance after weathering, and the same flame and mildew resistance after weathering and water leaching. No cracking or flaking at low temps. initially and after weathering (5874). Flexibility: bending moment of 0.0200 in-lb. max. initially; of 0.150 in-lb. after heat aging; and of 0.1000 in-lb. max. after exposure to low temp. (5202-5870). Shrinkage: 3% in each direction after heat aging (5870). Cloth shall not lose more than 25% of breaking and tearing strength after weathering. No cracking or flaking of coating after exposure to ozone (4.4.1).	Intended Use - In the manufacture of various covers and awning providing protection under varying climatic conditions during prolonged outdoor use.



### COATED CLOTHS

NOMENCLATURE	Base Cloth Specifications	Type of Coating Compound	Overall Weight Oz/Sq Yd		Width Inch	Breaking Strength Lb. Min.	Tearing Strength l.b.	Hydrostatic Pressure High	Flame Resistance (5903)		Flexibility Cm. Max. Warp	Bursting Strength l.b./2" Dia	Adhesion lb/2" wide	Blocking Scale rating
			(5041)	(5100)					(5132)	(5512)				

<u>Cloth, Coated, Glass, Vinyl Coated, Fused and Flame Resistant</u> MIL-C-22787 (SA) Am. 1	Cloth, glass conforming to Class C, for 4, Fiber D, cloth n. 126 of MIL-Y-1140.	Flexible high-polymer vinyl resin. Flame resistant. Pigmented.	11	14	30	205	185	200	2	2	3	3	12	No. 3		
			Min	Max		W	F	W	F	W	F	W	F	70°F	-40°F	
			(2)						(initial)							
									(after cold crack)							
									(after heat aging)							

<u>Cloth, Coated, Nylon, Copolymer of Butadiene and Acrylonitrile (Rubber)</u> MIL-C-22916 (MC)	Nylon 66 (polyhexamethylene adipamide). W: semi-dull, 40 den., 13 filament. F: bright 70 den., 34 filament. Relaxed filling yarn mandatory in order to minimize pirn taper barre. Weight: 1.4-1.6 oz. Yarns/Inch: 116 W; 76F. Breaking strength: 50. Weave: 2/1 right twill. Selvages composed of 3/4-4 ends, weaving 2 as 1. Feet shrunk & dyed. Shrinkage: 2% max. W, 1% max. F.	Rubber copolymer of butadiene and acrylonitrile, plasticized with phosphate or phthalate ester plasticizers. Pigmented.	-	4.8	(1)	50	50	17	17	65				No. 2
									(see spec. for requirements after testing)					

NOMENCLATURE	COATING	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, Shrinkage, etc.)	NOTES (Not Specification Requirements)
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MIL-C-22787	Base cloth shall be impregnated with coating, applied equally and uniformly to both sides.	Color-Coating shall be pigmented to match Green N. 34079 of Fed. Std. 595.	(4) Thickness: 0.02 in. max. Shall not become soft, tacky, stiff or brittle after acc. weathering (5804). Cloth shall not curl, become stiff, or crack on bending after exposure to hydrocarbon test fluid or hydraulic oil (4.5.1-4.5.2).	Intended Use - As a covering for detachable compartments.
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MIL-C-22916	Cloth shall be coated on reverse side only and then cured. Uniform finish. Coated side shall be dusted with a micaceous talc of 98/100 mesh to prevent blocking. Reverse side shall be side with the twill line running up from right to left. No strike through of coating to uncoated side of cloth.	Color - Base cloth: cloth shall be dyed with special nylon dyes or other dyes that will show no more striation in finished coated cloth than standard sample. Cloth shall match standard sample Green 2200 (3). Coated cloth: cloth shall match standard shade sample Green 2200 in luster and color (3). Colorfastness - Uncoated side shall be equal to standard coated sample.	(4) All selvages shall be trimmed from coated cloth.	Intended Use - In the manufacture of rainwear.
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### COATED CLOTHS

NOMENCLATURE	Base Cloth Specifications	Type of Coating Compound	Overall Weight Oz/Sq Yd (5041)		Width Inch	Breaking Strength Lb. Min. (5100)	Tearing Strength Lb. (5132)	Hydrostatic Pressure High (5512)	Flame Resistance (5903)		Flexibility Cm. Max. Warp (5204)	Bursting Strength Pts. Min. (5122)	Adhesion lb/2" wide (5970)	Blocking Scale rating (5872)
			Min	Max					After Flame length sec min	Char length Max"				
<p><u>Cloth, Laminated, and Tape, Coated Cloth, Natural Rubber on Nylon</u> MIL-C-23070 (WRP) A-1. 1</p>														
Variety C-Laminated cloth	Cloth shall conform to: MIL-C-19377 & MIL-C-7020, Type II, except that it need not conform to air permeability and permanence of finish requirements. Any defect shall be marked with a single strand thread which shall not increase cloth thickness, and, when coated, shall allow uniformity of coating on spreading machine. Thread shall be visible after coating.	Not less than 80% by volume of raw plantation natural rubber. Balance shall be softeners, curing agents, antioxidants, & reinforcing materials. Compound for outer coatings shall be pigmented. Pigment shall pass through 325 mesh screen. Compounds shall not be injurious to base cloth & shall contain no ingredients which would bloom to the surface or affect properties of cloth. Compounds shall be such that they will cure properly and provide proofing films insoluble to water. See spec. for table of physical properties of cured coating compound.	-	12.5	(1)	300	250					7	No. 2	
Variety T-Coated cloth tape			-	7.0	(1)							5		

NOMENCLATURE	COATING	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, Shrinkage, etc.)	NOTES (Not Specification Requirements)
MIL-C-23070 Variety C Variety T	Foundation coating compatible with base cloth and remainder of coating shall be applied to achieve adhesion. Coating shall be applied to base cloth by spread coating operation. Compound shall be applied in sequence of operations so that both sides of each cloth ply shall be coated and laminated. Pigment shall be incorporated in outermost coatings. Laminated cloth shall be cured. Cured laminated cloth may be lightly dusted with talc or zinc stearate.	Color - Base cloth shall be undyed. Coated cloth: finished cloth and tape (1). Usual color selected is Color No. 33538 Yellow (usually on straight ply side) of Fed. Std. 595. Normally, pure gum rubber coating of cloth tape, which is not fully cured, shall not be pigmented. Opposite side shall match selected color.	Cloth & tape shall not be more than 90 days old prior to date of release for shipment. Laminated cloth: Cloth shall not become soft and tacky or stiff and brittle after heat aging (4.6.9). Cloth shall not become discolored, brittle, or show signs of blooming after weatherometer (4.6.10). Cloth shall show no signs of cracking after exposure to low temps. (4.6.11). Cloth shall not become tacky or adhere to itself after exposure to high temps. (4.6.12). Permeability to hydrogen: Initial- 4 L/M <sup>2</sup> /24 hours. See spec. for requirements after testing (5460). No air leakage under pressure (4.6.13). Coated cloth tape: Edges of tape shall be smooth, not pinked. Tape shall not be dusted. Calendered uncured gum coating side of tape shall be protected by a suitable liner which shall be capable of separation without affecting adhesion or cementability of cloth. Permeability to helium: 2.5 L/M <sup>2</sup> /24 hrs. See spec. for requirements after testing (5460).	Intended Use - In inflatable life rafts.

## COATED CLOTHS

NOMENCLATURE	Base Cloth Specifications	Type of Coating Compound	Overall Weight		Width Inch	Breaking Strength Lb. Min.	Tearing Strength Lb.	Hydrostatic Pressure High (5512)	Flame Resistance (5903)		Flexibility Cm. Max. Warp (3204)	Bursting Strength lb/2" dia. (5122)	Adhesion lb/2" wide (5970)	Blocking (5872)
			Oz/Sq Yd (504!)	Min					Max	After Flame Test (sec Min)				
Cloth, Coated and Laminated, Polychloroprene on Nylon, and Tape, Polychloroprene, Unsupported MIL-C-23926 (WEP) Amd. 1														
Type I- Cloth, coated, rubber, knitted stretch nylon.	Plain Jersey circular knit made of stretch nylon yarns. Yarn shall be nylon	Not less than 60% by volume of polychloroprene. Balance shall be softeners, curing agents, anti-oxidants, and reinforcing materials. Coated shall be natural color or pigmented. Coating compound shall be compatible with base cloth & contain no waxes or other ingredients that may bloom to the surface to adversely affect coating adhesion or cementability. Ingredients of compound shall be water soluble after curing.	-	19.0	(1)	90	45							8
Type II- Cloth, laminated, rubber, neck and wrist seal.	polyamide of polyhexamethylene adipamide. Tape shall be made of polychloroprene.		-	24.0	(1)	90	45							8
Type III- Tape, rubber, unsupported. Class 1- Pressure sensitive tape.  Class 2- Non-pressure sensitive tape.								(1)						
Type IV- Cloth, coated, rubber, knitted stretch nylon, uncured, semi-cured.			-	23.0	(1)	90	45							8

NOMENCLATURE	COATING	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, Shrinkage, etc.)	NOTES (Not Specification Requirements)
MIL-C-23926 Type I Type II Type III Class 1 Class 2 Type IV	After application of a foundation coat which must be compatible with base cloth & remainder of compound, coating compound shall be applied by spreader or calender coating operation. Coating shall be applied to one surface, side with smooth surface to provide best coating adhesion on Types I & IV, and applied between 2 cloths of Type II. Cloth shall be cured. Cured coating may be lightly dusted with talc or zinc stearate. Type IV cloth shall be uncured or partially cured (1).	Color - Base cloth: dyed (1). Coating: coating shall be natural color or pigmented during compounding so that cured compound and base cloth shall have matching color. Tape (1).	Elongation at break, 2 in. wide strip, Types I, II and IV: 100% min. in the wales; 250% min. in the courses. Coating thickness: Types I & II- 0.012 in. min.; Type IV- 0.016 in. min. Modulus at 75% elongation: Types I & II- load required to maintain 75% elongation on 2 in. wide specimen, in course direction, after specimen has been stretched 150%, shall not exceed 3.0 lb. (4.4.8). Resistance to flexing: Types I and II shall show no tears in coating, no separation of coating from cloth, and no leakage of water (4.4.9). Types I, II & IV shall not crack or leak water after exposure to low temps. (4.4.10). After being stretched to 100% for 16 hours, tension set of Types I, II, and IV shall not exceed 13% when examined 3 hours later (4.4.11). Class 1 tape shall have surface coating of polychloroprene, uncured or partially cured, covered with protective liner; cured side lightly dusted with talc. Class 2 tape: same cure as coated cloth; one side with protective liner; other side dusted with talc.	Intended Use - In the fabrication of insulation garment and continuous-wear anti-exposure coveralls designated as Mark 5.

### COATED CLOTHS

NOMENCLATURE	Base Cloth Specifications	Type of Coating Compound	Overall Weight Oz/Sq Yd		Width Inch	Breaking Strength Lb. Min.		Tearing Strength Lb.	Hydrostatic Pressure High (5512)	Flame Resistance (5903)		Flexibility Con. Max. Warp (5204)	Bursting Strength Pt. Min (5122)	Adhesion lb/2" wide (5970)	Blocking Scale rating (5872)
			Min	Max		W	F			W	F				
Cloth, Nylon, Metalized MIL-C-25694A (USAF) Amd. 1	Marquisette woven from 260 den., 17 filament high tenacity nylon. Yarn shall be a polyamide from hexamethylene diamine & adipic acid or its derivatives. It shall have a melting point of 250°-6°C. Weight: 3.25 oz max. Yarns/Inch: 40 in the warp; 22 in the fill. Ply: 1x2. Thickness: 0.0170 in. max. Breaking strength: 100 in the warp; 125 in the fill. Tearing strength: 8 in warp and fill. Air permeability: 3850-4000 ft <sup>3</sup> /min/ft <sup>2</sup> at 5 in. Weave: 4-end leno, repeating on 2 picks (8). (6). Double density selvage, 1 in. min. woven each side. Permanent finish: air permeability shall not change more than 15%; thickness more than 10%; and cloth shrinkage shall be 2% min. in the warp and 1% min. in the fill. pH: 5.0 - 9.0.	Metallic silver -	4.0	(1)	100	125	8	8	(5104)	(5134)	W/F	W/F	70°F	40°F	

NOMENCLATURE	COATING	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, Shrinkage, etc.)	NOTES (Not Specification Requirements)
MIL-C-25694A	Base cloth shall be equally and uniformly metalized on each side to provide radar reflectivity. Metalizing shall be such to withstand normal folding and handling of cloth without excessive transfer to the hands.	Color - Base cloth; shall be natural in color.	Air permeability: 3750-3900 ft <sup>3</sup> /min/ft <sup>2</sup> at 5 in. (5450). Metalized cloth shall not crack or flake after exposure to low temps. (4.3.2.3). Cloth shall show no greater resistance to electricity than 10 ohms (4.3.2.4).	Intended Use - In the manufacture of aerial banner type tow targets.

### COATED CLOTHS

NOMENCLATURE	Base Cloth Specifications	Type of Coating Compound	Overall Weight Oz/Sq Yd (5041)	Width Inch	Breaking Strength	Tearing Strength	Hydrostatic Pressure High (5512)	Flame Resistance (5903)		Flexibility Cm. Max. Warp (5204)	Bursting Strength Pt. Min (5122)	Adhesion lb/2" wide (5970)	Blocking Scale rating (5872)		
					Lb. Min. (5100)	Lb. (5132)		After Flame length sec Min	Char length Max"						
			Min	Max	W	F	W	F	W	F	70°F	-40°F			
Cloth, Coated, Nylon, Chloroprene-Coated MIL-C-26712A (ASG) Amd. 1	210 den., 4-ply or 840 den., singles, continuous filament, high tenacity nylon polyamide of poly- hexamethylene adip- amide. It shall have a melting point of 482 <sup>o</sup> -10 <sup>o</sup> F. Weight: 8.50 oz. max. Yarns/Inch: 34 in the warp; 30 in the fill. Breaking strength: 425 in the warp; 375 in the fill. Weave: plain.	Not less than 60% chloroprene by volume. Balance shall be softeners, curing agents, anti-oxidants, & reinforcing mat- erials. Pigmented in compounding process. Pigment shall contain no waxes or other ingredients that may bloom to the surface and ad- versely affect coating adhesion and cementability. Coating shall not contain any ingre- dients known to promote skin irri- tation or to have detrimental effect on nylon.	41.0	1.5	(1)	575	525	(initial)	90%	90%	(after aging)	10	(initial)	3	(after aging)

NOMENCLATURE	COATING	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, Shrinkage, etc.)	NOTES (Not Specification Requirements)
MIL-C-26712A	Coating shall be applied equally to both sides of cloth.	Color - Unless otherwise specified, color of finished cloth shall be Black.	Thickness: 0.045±0.003 in. No blocking (5872). Cloth shall not crack at low temps. (4.3.2.3).	Intended Use - In aircraft pneumatic lifting bags.

### COATED CLOTHS

NOMENCLATURE	Base Cloth Specifications	Type of Coating Compound	Overall Weight Oz/Sq Yd (5041)	Width Inch	Breaking Strength Lb. Min. (5100)	Tearing Strength Lb. (5132)	Hydrostatic Pressure High (5512)	Flame Resistance (5903)		Flexibility Cm. Max. Warp (5204)	Bursting Strength Pts. Min. (5122)	Adhesion lb/2" wide (5970)	Blocking Scale rating (5872)
								After Flame sec min	Char Length Max"				
<u>Cloth, Coated; and Tape, Rubber Coating on Nylon, For Pneumatic Life Rafts</u> MIL-C-27258 (USAF)				Min	Max	W	F	W	F	W	F	70°F	-40°F
Type I- Tube fabric, 13.0 oz. max.	3.0 oz. Nylon, MIL-C-19377 (straight). 1.6 oz. Nylon, MIL-C-7020, Type II, (bias); except that silicone oil shall not be used and requirements for permanence and stability of finish shall not apply.	80% min. by volume neoprene plantation rubber. Suitably compounded & properly vulcanized so that max. life under service conditions be obtained. No materials injurious to cloth or water soluble after vulcanization shall be used. No fillers, processes, or any material which would tend to decrease life of the cloth shall be used. Cured in sheet form. See spec. for table of physical properties of compound.	13.0	40	300	250						14 (initial) 8 (after air aging)	
Type II- Tape fabric, 7.0 oz. max. (to be cut in bias tape 2" wide)	1.6 oz. Nylon, MIL-C-7020, Type II (see restrictions above).		0.85	2 +1/8	100							10 (initial) 7 (after oxygen aging)	
Type III- Floor fabric, 13.0 oz. max.	5.5 oz. Nylon, MIL-C-20696, Type II.		13.0	40	335	280		100				18	

NOMENCLATURE	COATING	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, Shrinkage, etc.)	NOTES (Not Specification Requirements)
MIL-C-27258 Type I Type II Type III	Cloth shall be spreader coated, using no fewer than 5 coats/oz. of rubber/sq yd of surface covered. Rubber film shall be divided equally between plies that are doubled together. Cloth shall be cured in a liner of closely woven cloth of high thread count. Soapstone liners shall not be used.	Color - Unless otherwise specified, color of finished cloth and tape shall be Orange-Yellow conforming to color No. 33538 of Fed. Std. 595. Color pigment shall be incorporated in coating compound and shall be permanent for life of cloth. Pigment shall be of fineness to pass through standard 325 mesh screen.	Types I & III: Cloth shall not be tacky after air aging (4.3.2.3). Cloth shall show no blocking (5872). Cloth shall not crack or flake at low temps. (4.3.2.2). Type I: Helium permeability: Initial- 5.0 L/M <sup>2</sup> /24 hrs. max.; After aging: 7.0 L/M <sup>2</sup> /24 hrs. max. Elongation: Initial- 25%; After acc. weathering- 22%; After oxygen aging- 25%.	Intended Use - In the fabrication of pneumatic life rafts. Specifically intended for use in fabrication of Type F-2R, twenty-man, pneumatic life raft. Rubberized floor cloth should be used for all patches or pockets attached to raft.

### COATED CLOTHS

NOMENCLATURE	Base Cloth Specifications	Type of Coating Compound	Overall Weight Oz/Sq Yd		Width Inch	Breaking Strength Lb. Min.	Tearing Strength Lb.	Hydrostatic Pressure High (5512)	Flame Resistance (5903)		Flexibility Cm. Max. Warp (5204)	Bursting Strength (5122)	Adhesion lb/Z <sup>2</sup> wide (5970)	Stocking Scale rating (5872)
			Min	Max					After Flame sec. min	Char. Length Max. "				

Cloth, Coated, Glass, Aluminum Face, Silicone Rubber Back

MIL-C-27347 (USAF) 100% continuous filament glass yarns. Weight: 3.5 +0.5 oz. Thickness: 0.009 in. max. Weave: Crowfoot satin. Yarns/Inch: 64 in the warp; 60 in the fill. Breaking strength: 130 lb. in the warp; 90 lb. in the fill.

Silicone rubber. Vacuum distilled aluminum.

Min Max W F W F (5134)  
16+2 (1) 150 150 3 3

W/F W/F 70°F -40°F

Cloth, Coated, Butyl, Polyamide, Normelt, Fuel and Oxidizer Resistant

MIL-C-38149 (USAF) Normelt, high strength polyamide. Melting point: over 800°F. Weave: 2/2 basket. Weight: 0.009 in. max. Yarns/Inch: 64 in warp and fill. Breaking strength: 185 in warp and fill.

Butyl rubber composition. Pigmented.

(7) (5134)  
15 17 39 185 185 8 8  
min. (initial) 75% 75%  
(after weathering)

15 15 3 3

8.25 No. 3

NOMENCLATURE	COATING	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, Shrinkage, etc.)	NOTES (Not Specification Requirements)
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MIL-C-27347  
Base cloth shall be evenly and uniformly coated on one surface with silicone rubber. On opposite surface shall be a highly reflective layer of aluminum, directly adhered to warp face by means of a curable, highly flexible, solvent resistant adhesive bonding composition.

Neither coating shall show evidence of cracking, stiffening, flaking, or separation in cold crack (4.6.1.1). Thickness: 0.015+ 0.0015 in. There shall be no evidence of blocking (5872). Stiffness: 0.0130 in-lb max. (5202). Thermal radiation resistance: no direct thermal transmission; no visible damage; no visible light transmission (4.6.1.2). Flame resistance: Flame time- 10 sec. max.; Glow time- 2 sec. max. (5902).

Intended Use - As a thermal curtain to protect personnel and equipment while exposed to high intensity thermal radiation for a brief period of time.

MIL-C-38149  
Coating shall be applied evenly to both sides of base cloth, after which cloth shall be fully cured.

Color - Coating shall be pigmented a tan color. Both sides of coated cloth shall match standard shade.

(4)  
Thickness: 0.017 in max. Abrasion resistance: 300 cycles min. (5306). No visible cracking or flaking after exposure to low temps. (5874). After glow: 20 sec. max. Toxic gas permeability: Fuel- 0.01 mg/in<sup>2</sup> (max. leakage) (4.6.3). Oxidizer- 0.01 mg/in<sup>2</sup> (max leakage) (4.6.5). Coated cloth shall be essentially odorless (4.5.2).

Intended Use - In the fabrication of missile fueler's protective clothing.

### COATED CLOTHS

NOMENCLATURE	Base Cloth Specifications	Type of Coating Compound	Overall Weight Oz/Sq Yd		Width Inch	Breaking Strength Lb. Min.		Tearing Strength Lb.		Hydrostatic Pressure High (5512)	Flame Resistance (5903)		Flexibility Cm. Max. Warp (5204)	Bursting Strength Pt. Min (5122)	Adhesion lb/2" wide (5970)	Blocking Scale rating (4172)
			(5041)	(5041)		(5100)	(5100)	(5132)	(5132)		After Flame sec. Min	Char length Max"				
			Min	Max		W	F	W	F		W	F	70°F	-40°F		
Cloth, Coated, Nylon, Vinyl Coated MIL-C-40039B	Nylon twill, 1.6 oz., heat set, conforming to Type I of MIL-C-577.	Polymerized or copolymerized virgin vinyl chloride resin, plasticized with phosphate or phthalate ester plasticizers exclusively. Pigmented.	6.0	7.3	(1)	90	80	24	18	40 (initial) 20 (after strength of coat.) 20 (after water immersion)			8		6 (initial) 5 (after water immersion)	No. 3

NOMENCLATURE	COATING	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, Shrinkage, etc.)	NOTES (Not Specification Requirements)
MIL-C-40039B	Base cloth shall be coated on both sides. One side shall be more lightly coated than the other. Lighter coating shall be on face side of cloth. Face side shall be side with twill line running from lower left to upper right. At least one coat of coating compound shall be applied directly to each side of cloth.	Color - Color of coated cloth shall be GG-207 and shall match standard sample for shade and luster(3).	(4-5) Cloth shall exhibit no softness, tackiness, stiffness, or brittleness after weathering (4.4.9). Cloth shall not leak (4.4.5). Abrasion resistance: no loose fibers of base cloth shall be exposed in center 1 in. of abraded portion (4.4.8). There shall be no cracking, flaking, or separation of coating from base cloth after exposure to low temps. (4.4.6).	Intended Use - In the manufacture of the Poncho, Lightweight, With Hood.



### COATED CLOTHS

NOMENCLATURE	Base Cloth Specifications	Type of Coating Compound	Overall Weight Oz/Sq Yd (5041)	Width Inch	Breaking Strength	Tearing Strength	Hydrostatic Pressure High (5512)	Flame Resistance (5903)		Flexibility Coe. Max. Warp (5204)	Bursting Strength (5122)	Adhesion lb/2" wide rating (5970)	Blocking Scale (5872)
					Lb. Min. (5100)	Lb. (5132)		After Flame length sec. min.	Char length Max. "				
			Min/Max		W/F	W/F	W/F	W/F	70°F-40°F				
Cloth, Laminated, Fabric, Air-Retaining Mattress MIL-C-40056 (CB)	Cloth shall be free of all sizing & foreign matter. Air mattress cover cloth 30 den., type 300, high tenacity nylon yarn. Weave: plain 1/4 rip-stop. Yarns/Inch: 105 in warp and fill. Breaking strength: 45 lb. in warp and fill. Tearing strength: 3 lb. in warp and fill. No splices permitted. Air-mattress cloth: 2 backings of plain weave cloth of 75 ends/inch of 70 den. 2-ply, type 300 high tenacity nylon yarn in the warp and 40 picks of 210 den. type 300 yarn in the fill. Joined by 30-32 pile threads/sq in, included as warp yarns in plain weave of both backings. Pile threads of equal length throughout. One length without splices/unit package.	Polychloroprene. Not less than 60% by volume of chloroprene. Balance shall be only softeners, curing agents, antioxidants, and reinforcing materials and shall pass through a 100-mesh sieve conforming to RR-S-366. Water absorption shall be held to a min. Tensile strength: 1800 psi. Elongation: 500% min. Loss of tensile strength and elongation shall not exceed 10% after acc. aging of 96 hrs. or acc. weathering of 100 hrs.	23.40	(7) 57 (air mattress cloth) (8) 53 (cover cloth)	125	150	6	10				4.5 (1b/1")	

NOMENCLATURE	COATING	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, Shrinkage, etc.)	NOTES (Not Specification Requirements)
MIL-C-40056	Cloth shall consist of air mattress cloth sandwiched between 2 plies of cover cloth. See spec. for details of construction. Compound shall be applied at the rate of not less than 7 spreader coats for each oz. of compound/sq yd of cloth. Tolerances: +5% for each weight of coating compound & for each weight of finished cloth. Cloth shall be cured to have a smooth, even finish. Curing in soapstone will not be permitted. Proofed cloth shall not be over-cured or show expressive watermarks. Ingredients such as soapstone, talc, paraffin, etc., which will affect strength of cemented seams or joints shall not be embedded in surface of cloth. Compound, outside proofing, or cloth shall be treated to avoid formation of or neutralize any acid which might deteriorate strength or service life of cloth.	Color - When specified, compound for outside or exposed coatings shall have a compatible coloring agent added. Color shall match Olive Drab Color 7 in conformance to MIL-D-504, and shall have an infrared reflectance of 18.0-5.0% in both spectral regions.	Air mattress cloth shall have a 2 in. selva on each side. Cloth shall not crack when folded on itself at low temps. (4.4.3.3). Permeability of each side of cloth to hydrogen shall not be more than 6 L/M <sup>2</sup> /24 hrs.	Intended Use - In the manufacture of pneumatic structures.

### COATED CLOTHS

NOMENCLATURE	Base Cloth Specifications	Type of Coating Compound	Overall Weight Oz/Sq Yd (5041)		Width Inch	Breaking Strength Lb. Min. (5100)		Tearing Strength Lb. (5132)		Hydrostatic Pressure High (5512)	Flame Resistance (5903)		Flexibility Con. Max. Worp (5204)	Bursting Strength Pt. Min. (5122)	Adhesion lb/2" wide (5970)	Blocking Scale rating (5872)		
			Min	Max		W	F	W	F		W	F					W	F
<p>Cloth, Laminated, Vinyl-Nylon, High Strength, Flexible MIL-C-43006B, Add. 1</p>																		
Type I- Heavy duty Class 1- Regular Class 2- Special	Open mesh woven nylon cloth.	Vinyl film shall conform to requirements of Type II of L-P-375. Plasticizers other than those specified may be used subject to the approval of the contracting officer.	17.1	19.8	50	295	295	93	93	425	5	5	4.5	4.5	14	20	25	No. 3
						(5134)												
						(initial)												
						177 177												
						(after abrasion)												
						162 162												
						(after acc. weathering)												
Type II- Medium duty Class 1- Regular Class 2- Special			9.0	11.0	54	90	90	32	32	200	5	5	7	7	9	15	20	No. 3
						(initial)												
						45 45		20 20										
						(after abrasion)												
						49 49												
						(after acc. weathering)												
Type III- Light duty Class 1- Regular Class 2- Special			5.4	6.6	54	75	75	28	28	175	5	5	7	7	8.5	11	15	No. 3
						(initial)												
						23 23		15 15										
						(after abrasion)												
						41 41												
						(after acc. weathering)												

NOMENCLATURE	COATING	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, Shrinkage, etc.)	NOTES (Not Specification Requirements)
MIL-C-43006B Type I Class 1 Class 2 Type II Class 1 Class 2 Type III Class 1 Class 2	Laminated cloth shall consist of the open mesh nylon cloth laminated between 2 layers of vinyl film. Finished cloth shall have one comparatively smooth side. The other side shall be rough, in that the areas located over the points at which the yarns cross will be raised, while areas between yarns will be depressed. Smooth side shall be face side.	Color - Finished cloth shall be natural color of vinyl film or shall match applicable color number of Fed. Std. No. 595, or shall match an approved color standard for color specified (3).	(4-5)	Intended Use - For general use in the fabrication of protective covers. It may be reinforced for such items as truck covers or tarpaulins made of this material, but does not cover the articles themselves. Cloth provides high tear strength. Design concepts should include, however, means of securing end items to minimize excessive wind whip.

### COATED CLOTHS

NOMENCLATURE	Base Cloth Specifications	Type of Coating Compound	Overall Weight Oz/Sq Yd (5041)		Width Inch	Breaking Strength Lb. Min. (5100)		Tearing Strength Lb. (5132)		Hydrostatic Pressure High (5512)	Flame Resistance (5903)		Flexibility Cm. Max. Warp (5204)	Bursting Strength Pt./In. (5122)	Adhesion lb/2" wide (5970)	Blocking Score rating (5872)	
			Min	Max		W	F	W	F		W	F					W
Cloth, Coated, Cotton, Resin Modified Butyl Coated, Acid and Fuel Resistant MIL-C-43062A	Mercerized cotton airplane cloth conforming to MIL-C-5646. Cloth shall not contain more than 0.003% copper and 0.0015% manganese.	Resin modified butyl rubber. Pigmented.	10.0	11.0	80	80	960	960	80	80	7.5	8.0	7	No. 1			

NOMENCLATURE	COATING	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, Shrinkage, etc.)	NOTES (Not Specification Requirements)
MIL-C-43062A	Base cloth shall be coated on both sides. Approximately 25% of coating shall be applied to one side & the balance to the other side. After coating, cloth shall be dusted on both sides with whiting, talc, or other finely divided mineral material which does not support mildew growth to produce a dull, uniform finish.	Color - Coating compound shall be pigmented Black.	(4-5) Nitric acid surface tack, rating: No. II (4.4.5.5). Abrasion resistance: no visible loose fibers of base cloth shall be exposed in center 1 in. of abraded portion (4.4.3). Fuel resistance: no cracking, stiffening, flaking, or separation of coating from base cloth (4.3.2). Cloth shall not become soft and tacky or stiff and brittle after acc. weathering (4.4.4). Acid resistance: no evidence of cracking, stiffening, flaking, separation of coating from base cloth or change in color of indicator paper (4.4.5.3). Vulcanized coated cloth shall be free of objectionable odor. Odors normally attributed to modified butyl rubber shall not be regarded as objectionable. (4.4.6).	Intended Use - For the manufacture of protective clothing which is resistant to rocket fuels and oxidizers and suitable for use at low temperatures. Protective clothing shall be assembled using vulcanized coated cloth and vulcanized after assembly of clothing.

### COATED CLOTHS

NOMENCLATURE	Base Cloth Specifications	Type of Coating Compound	Overall Weight Oz./ Sq Yd		Width Inch	Breaking Strength Lb. Min.	Tearing Strength Lb.	Hydrostatic Pressure High (5512)	Flame Resistance (5903)		Flexibility Cm. Max. Warp (5204)	Bursting Strength Pt. Min (5122)	Adhesions lb/2" wide (5970)	Blocking (5872)
			(5041)	(5100)					(5132)	After Flame (sec min)				
			Min	Max		W	F	W	F	W	F	70°F	-40°F	

Cloth, Coated, Nylon,  
Vinyl Coated (For Air  
Supported Shelters)

ML-C-43086, Amd. 1

Cloth shall be either: Type I: continuous multifilament bright high tenacity nylon. 2/2 basket weave. Yarns for warp and fill shall be 84x20 denier. Weight: 5.5-6.0 oz. Yarns/inch: 24 in the warp; 26 in the fill. Breaking strength: 275 in warp and fill. Type II: continuous multifilament bright high tenacity nylon. Modified oxford weave in which 2 ends, weaving as 1, alternate across warp with 2 ends weaving plain. Warp yarns shall be 84x20 den., and fill yarns shall be 1680 +80 den. Weight: 5.5 - 6.0 oz. Yarns/inch: 24 x 13. Breaking strength: 275. pH: 5.0 - 6.5.

Virgin vinyl chloride or vinyl chloride-acrylate copolymer plasticized with phthalate or phosphate ester plasticizers exclusively. Pigmented.

19 21 (1) 300 300 (initial) 80% 80% (after acc. weather.) (5102) (5134) 300 5 5

10 No. 3 (dry) 8 (wet)

NOMENCLATURE	COATING	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, Shrinkage, etc.)	NOTES (Not Specification Requirements)
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ML-C-43086

Cloth shall be coated on both sides. Face of cloth shall be coated with 8.0-9.0 oz/sq yd. of coating, and back shall be coated with 5.0-6.0 oz/sq yd of coating.

Color - Finished cloth shall be white in color to match color 17855 of Fed. Std. 595. Colorfastness - There shall be no appreciable change in color after acc. weathering (4.4.7).

(4-5) There shall be no cracking at -10°F (4.4.3). Oil resistance: no leakage (4.4.4). Aromatic carbon resistance: no cracking (4.4.5). Cloth shall not crack when folded sharply on itself or show any signs of blooming or bleeding after acc. weathering (4.4.6.1).

Intended Use - In the fabrication of Tent, Air Supported, for Track and Acquisition Radar (Conus) and for other air supported shelters where intended use does not involve erecting and striking at temperatures below minus 10°F.

### COATED CLOTHS

NOMENCLATURE	Base Cloth Specifications	Type of Coating Compound	Overall Weight Oz/Sq Yd		Width Inch	Breaking Strength Lb. Min.		Tearing Strength Lb.		Hydrostatic Pressure High (5512)	Flame Resistance (5903)		Flexibility Con. Max. Warp (5204)	Bursting Strength (5122)	Arrestion lb/2" wide (5270)	Block-ing Scale rating (5672)		
			Min	Max		W	F	W	F		W	F					70°F	40°F
Cloth, Coated (Chloroprene Base Coated, Chlorosul- phonated Polyethylene Top Coated) MIL-C-43285 (GL)																		
Type I- Cloth, Polyester	Polyester conforming to Type I of MIL-C-43286.	Black base coating & green & white undercoating shall be chloroprene rubber plasticized only with phthalate or phosphate ester plasticizers. Pigmented. An organic isocyanate may be added to black base coating to achieve required adhesion.	13.0	15.0	(1)	160	160	3500	3000	200	3	3	4.5	4.5	13	20	16 (dry) 12 (wet)	No. 2
Class 1- Olive Green face, Black back.																		
Class 2- White face, Black back.																		
Class 3- Olive Green face, White back.																		
Type II- Cloth, Nylon	Nylon conforming to Type II of MIL-C-43286.	Black base coating to achieve required adhesion. Green and white top coating shall be chlorosulphonated polyethylene plasticized only with phthalate & phosphate ester plasticizers. Pigmented.	13.0	16.0	(1)	275	275	10000	10000	200					13	20	16 (dry) 12 (wet)	No. 2
Class 1- Olive Green face, Black back.																		
Class 2- White face, Black back.																		
Class 3- Olive Green face, White back.																		

NOMENCLATURE	COATING	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, Shrinkage, etc.)	NOTES (Not Specification Requirements)
MIL-C-43285 Type I Class 1 Class 2 Class 3 Type II Class 1 Class 2 Class 3	Class 1 cloth shall be coated in the sequence: (a)Each side coated with 2+.25 oz/sq yd of black base coating. (b)Face side coated with 2.7+.5 oz/sq yd of green undercoating. (c)Face side top coated with 2.25+.5 oz/sq yd of green top coating. Class 2 cloth shall be coated in the sequence: (a)Each side coated with 2+.25 oz/sq yd of black base coating. (b)Face side coated with 2.7+.5 oz/sq yd of white undercoating. (c)Face side top coated with 2.25+.5, -.25 oz/sq yd white top coat. Class 3 shall be coated in the sequence: (a)Each side coated with 2+.25 oz/sq yd black base. (b)Face coated with 2.7+.5 oz/sq yd of green undercoating. (Continued)	Color - Black base coat shall be pigmented a suitable shade of black. Green undercoating shall be pigmented to match Olive Green 207. White undercoating shall be pigmented to match color number 37875 of Fed. Std. 595. Green top coating shall be pigmented to match Olive Green 207. White top coating shall be pigmented to match color number 37875 of Fed. Std. 595. Standard samples available for all shades (3).	(4-5) (a)See spec. for requirements after testing. Coated cloth shall not become stiff, brittle, soft, or tacky, and there shall be no cracking or crazing when flat or folded sharply on itself by hand, face out, after acc. weathering. In addition, there shall be no appreciable change of color or exudation of plasticizer. (4.4.1.2).	Intended Use - In the manufacture of air supported shelter tents. Air supported shelter is constructed with 2 layers as follows: Class 1 cloth is used for the outer layer, and the Olive Green coated side of the cloth is exposed on the outside of the shelter. Class 2 cloth is used for the inner layer and the white coated side of the cloth is exposed on the inside of the shelter. Class 3 cloth is used for end closure areas.

### COATED CLOTHS

NOMENCLATURE	Base Cloth Specification	Type of Coating Compound	Overall Weight Oz/Sq Yd (5041)	Width Inch	Breaking Strength	Tearing Strength	Hydrostatic Pressure High (5512)	Flame Resistance (5903)		Flexibility Co. Max. Warp (5204)	Bursting Strength (5122)	Adhesion lb/2" wide (5970)	Blocking Soles rating (5872)
					Lb. M.A. (5100)	Lb. (5132)		After Flame length sec. Min. W F	Char length Max. W F				
Cloth, Coated (Chlorosulfonate Base) Coated, Chlorosulfonate Resisting Polyethylene (50 Control) MIL-C-43285 (AL) (Continued)			Min Max		W F	W F	W F	W F	W F	70°F-40°F			

NOMENCLATURE	COATING	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, Shrinkage, etc.)	NOTES (Not Specification Requirements)
MIL-C-43285 (Cont'd)	(c)Face side top coated with 2.25+.5 oz/sq yd green top coating. (d)Back side coated with 1.25+.25 oz/sq yd of white undercoating. (e)Back side top coated with 1.25+.5 -.25 oz/sq yd white top coating.			
All types and classes shall be dusted after coating and before vulcanizing with whiting, talc, or other finely divided mineral material which does not support mildew growth.				

## COATED CLOTHS

NOMENCLATURE	Base Cloth Specifications	Type of Coating Compound	Overall Weight Oz/Sq Yd		Width Inch	Breaking Strength Lb. Min.		Tearing Strength Lb.		Hydrostatic Pressure High (5512)	Flame Resistance (9903)		Flexibility Con. Max. Warp (5204)	Surfing Strength Min. (5122)	Adhesion 1/2" wide (5670)	Blocking Seal rating (5672)		
			(5041) Min	(5041) Max		(5100) W	(5100) F	(5132) W	(5132) F		After Flame (5512) W	Char Length (5512) F					70°F W	40°F W
<u>Cloth, Coated, Cotton, Vinyl Chloride or Chloroprene Coated</u> MIL-C-43410	Cotton silesia conforming to Type I of MIL-C-326. Requirement for seam efficiency shall not apply. Cloth to be coated with chloroprene rubber shall have a copper content of not more than 0.003% and a manganese content of not more than 0.0015%. pH: not less than 5.5.	Polymerized or copolymerized vinyl vinyl chloride resin or chloroprene rubber. Vinyl compounds shall be plasticized with phosphate or phthalate ester plasticizers exclusively. All compounds shall be pigmented. Chlorinated paraffins and polychlorinated polyphenyls may be used as flame inhibitors. Use of water soluble ingredients and reclaimed rubber is prohibited.	12.0	14.0	(1)	50	50	480	480	40	2	2	3.5	3.5	12	15	8	No. 2
											(0°)							
											(initial)							
											2 2 5.0 5.0							
											(after acc. weathering)							

NOMENCLATURE	COATING	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, Shrinkage, etc.)	NOTES (Not Specification Requirements)
MIL-C-43410	Cloth shall be coated on both sides. One side shall be coated with no more of coating compound than is necessary to meet water absorption requirement. Remainder shall be used on the other side. Coated cloth shall be fused or vulcanized as applicable. When chloroprene rubber is used, coated cloth shall be dusted on both sides with whiting, talc, or other finely divided mineral matter that does not support mildew growth.	Color - Base cloth: color shall be natural. Coated cloth: color shall be 0G-207. Standard sample available (3).	(4) Coating shall show no indications of cracking, flaking, or separation from base cloth after acc. weathering. Chloroprene coated cloth shall not become soft and tacky or stiff and brittle after acc. aging (5852). Water absorption of both types: 1% max (5504).	Intended Use - In the manufacture of clothing to be used by fire fighting personnel.

### COATED CLOTHS

NOMENCLATURE	Base Cloth Specifications	Type of Coating Compound	Overall Weight Oz/Sq Yd (5041)	Width Inch	Breaking Strength	Tearing Strength	Hydrostatic Pressure High (5512)	Flame Resistance (5003)		Flexibility Cn. Max. Warp (5204)	Bursting Strength Ft. Lbs. (5122)	Adhesion lb/2" wide (5970)	Stocking Scale rating (5872)
					Lb. Min. (5100)	Lb. (5132)		After Char Flame length sec (5512)	Char Max. (5512)				
			Min   Max		W   F	W   F		W   F	W   F	70°F   40°F			
Cloth, Silica, Phenolic Impregnated MIL-C-81251 (W/F)	Silica cloth conforming to CS 9349, Type II, except that it shall contain a min. of 96% silica.	Phenolic resin conforming to MIL-R-9299, Type II, Class 2.											

NOMENCLATURE	COATING	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, Shrinkage, etc.)	NOTES (Not Specification Requirements)
MIL-C-81251			(4) Uncured resin-impregnated cloth shall contain 28-3% resin solids by weight. Uncured resin-impregnated cloth shall contain 4-7% volatile matter by weight. Uncured resin-impregnated cloth shall have a resin flow of 15-21%. Cured cloth shall have a min. ave. flexural strength of 19000 psi at 75±5°F. No individual value shall be below 13000 psi (method 1031 of Fed. Std. 406). Cured cloth shall have min. ave. tensile strength of 12000 psi at 75±5°F. No individual value shall be below 11000 psi (method 1011 of Fed. Std. 406). Cured cloth shall have a min. specific gravity of 1.67 (method 5011 of Fed. Std. 406).	Inte led Use - In rocket motors.



## COATED CLOTHS

NOMENCLATURE	Base Cloth Specifications	Type of Coating Compound	Overall Weight Oz/Sq Yd		Width Inch	Breaking Strength Lb. Min.	Tearing Strength Lb.	Hydrostatic Pressure High (5512)	Resistant (59)		Flexibility Cm. Max. Warp (5204)	Bursting Strength Lb. (5122)	Adhesion 1/2" wide (5870)	Blocking Scale (5872)
			Min	Max					W/F	W/F				

Cloth, Coated, Asbestos and Cotton, Herringbone Twill, Aluminized

MIL-C-82249A

Woven from yarns of blend of asbestos & cotton (Underwriter's Grade). Weight: 18.0-20.5 oz. Yarns/Inch: 33-37 in the warp; 24-29 in the fill. Weave: 3/1 herringbone twill reversing on 15 ends. Asbestos content: 80% min.

Vacuum deposited aluminum.  
- 24.0 (1) 105 78 9 6 1 - .5 - No. 1

Cloth, Coated, Glass, Chloroprene Coated

MIL-C-82254

Glass cloth conforming to Class C, form 4, Fiber D, Cloth No. 116 of MIL-Y-1140.

Chloroprene rubber, plasticized. Pigmented.

(7)  
24.0 28.0 38 min. 120 120 2700 1100 250 (grams) (initial) 200 (after weatherometer)

5 No. 3

NOMENCLATURE	COATING	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, Shrinkage, etc.)	NOTES (Not Specification Requirements)
MIL-C-82249A	Coating shall be applied to face of cloth (warp flush side) by means of a suitable adhesive. Resulting film shall have a highly reflective surface and shall be abrasion resistant.		(4) Stiffness, Bending moment: 0.055 in-lb. max. in warp and fill (5202). There shall be no separation of coating from base cloth (4.4.3). Coating shall not crack at low temps. (4.4.2). Reflectivity after abrasion: No visual discoloration of blotting paper; no evidence of flaking of coating (4.4.1).	Intended Use - In the manufacture of protective clothing for fire-fighters and other heat protective, proximity garments.
MIL-C-82254	Compound shall be applied equally & uniformly to both sides of cloth. Coated cloth shall be cured. After vulcanizing, cloth shall be dusted with whiting, talc, other finely divided mineral material which does not support mildew growth.	Color - Coated cloth shall match Black Number 7000 of Fed. Std. 195 or shall match approved color standard (3).	(4) Thickness: 0.022-0.026 in. Selvage edges may be trimmed, provided cloth meets specified width.	Intended Use - In the manufacture of protective coverings and items having similar uses. Cloth is not intended for use in wearing apparel or other items which may come in frequent or prolonged intimate contact with skin.

### COATED CLOTHS

NOMENCLATURE	Base Cloth Specifications	Type of Coating Compound	Overall Weight Oz./sq Yd.		Width Inch	Breaking Strength Lb. Min.	Tearing Strength Lb.	Hydrostatic Pressure High (5512)	Flame Resistance (3903)		Flexibility Cm. Max. Warp (5204)	Bursting Strength Pts. Min. (5122)	Adhesion R/2" wide (5970)	Stocking Soles rating (5872)
			(5041)	(5100)					(5132)	After Flame Test (5512)				
			Min	Max		W	F	W	F	W	F	70°F	40°F	
<b>Cloth, Coated, Synthetic Rubber (Nitrile and Polychloroprene MIL-C-82255 (NAVY))</b>														
Type I- Cloth, Nylon, Flat Knit, Polychloroprene Coated.	Nylon, flat knit. Weight: 6.5-1.0 oz/sq yd.	Polychloroprene rubber. No natural rubber, reclaimed rubber, or synthetic rubber other than polychloroprene shall be used. Plasticized. Pigmented.	- 19.0 (1)						70 (initial) 65 (after weatherometer)			(5120) 100	5	No. 3
Type II- Cloth, Cotton, Duck, Polychloroprene Coated.	Cotton duck conforming to Type I, No. 10, hard texture of CCC-C-419.	Polychloroprene rubber other than polychloroprene shall be used. Plasticized. Pigmented.	49.0	59.0	(1)	245	160	4000	2500	250 (initial) 250 (after weatherometer)			5	No. 3
Type III- Cloth, Cotton, Duck, Nitrile Coated.	Cotton duck conforming to Type I, No. 10, hard texture of CCC-C-419.	Nitrile rubber. No natural, reclaimed, or synthetic rubber other than nitrile shall be used. Plasticized. Pigmented.	- 43.0 (1)			245	160	4200	3000	250 (initial) 200 (after weatherometer)			5	No. 3
Type IV- Cloth, Cotton, Airplane, Polychloroprene Coated.	Cotton airplane cloth conforming to MIL-C-5646, except requirements for length of roll, cut, and dope shall not apply.	Polychloroprene rubber. See above.	24.5	29.5	(1)	90	90	900	800	150 (initial) 150 (after weatherometer)			5	No. 3

NOMENCLATURE	COATING	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as thickness, Shrinkage, etc.)	NOTES (Not Specification Requirements)
MIL-C-82255 Type I Type II Type III Type IV	Coating shall be applied equally and uniformly to both sides. Coated cloth shall be cured. After vulcanizing, cloth shall be dusted with whiting, talc, or other finely divided mineral material which does not support mildew growth.	Color - Coated cloth shall match Black number 27038 of Fed. Std. 595 or the approved color standard (3).	(4) Thickness- Type I- 0.021 in max. Type II: 0.047-0.053 in. Type III: 0.038-0.062 in. Type IV: 0.023-0.027 in. The selvage edges may be trimmed, provided cloth meets specified width.	Intended Use - As a protective covering and repairing fuel cells.

REFERENCES

COATED CLOTHS

Textile Test Methods - CCC-T-191b

<u>Method</u>	<u>Title</u>
<u>Chemical</u>	
2811	Acidity (pH), Potentiometric method.
<u>Construction</u>	
5030	Weight of cloth.
5041	Weight of cloth; small specimen method.
<u>Mechanical</u>	
5100	Strength and elongation, breaking, of woven cloth, grab method.
5102	Strength and elongation, breaking, of woven cloth, cut strip method.
5104	Strength and elongation, breaking, of woven cloth, ravel strip method.
5120	Bursting strength, ball method.
5122	Bursting strength, diaphragm.
5132	Tearing strength, pendulum method (Elmendorf).
5134	Tearing strength, tongue method.
5136	Tearing strength, trapezoid method.
5202	Stiffness, direct; all; cantilever bending method (Tinius Olsen).
5204	Stiffness, directional; self-weighting cantilever method (Clark).
5304	Abrasion resistance; oscillatory cylinder (Wyzenbeek) method.
5306	Abrasion resistance of cloth, rotary platform, double head (Taber) method.
<u>Air Permeability and Water Resistance</u>	
5450	Air permeability, calibrated orifice method (Frazier).
5504	Water resistance, (coated cloth) spray absorption.
5512	Water resistance, (coated cloth) hydrostatic pressure, high range.
5516	Water resistance, hydrostatic pressure, water permeability.
<u>Shrinkage Resistance</u>	
5552	Shrinkage in laundering; cloth other than cotton and linen.
<u>Colorfastness</u>	
5614	Laundering of wool, silk, rayon cloth; Launder-Ometer.
5630	Water, cold.
5651	Crocking of cloth.
5660	Light; accelerated (Fade-Ometer).
<u>Mildew Resistance</u>	
5762	Mildew resistance; soil burial method.
<u>Deterioration Tests</u>	
5804	Weathering; accelerated (National Weather Unit).
5831	Leaching; minimum exposure.
5850	Aging; accelerated oven method.
5852	Aging; accelerated oxygen method.
5870	Flexibility after heat.
5872	Temperature, high; blocking.
5874	Temperature, low; coated cloth.
<u>Fire-Resistance Thermal Tests</u>	
5903	Flame resistance of cloth; modified vertical.
5910	Burning rate of cloth; 30° angle.
<u>Adhesion, Coated Cloths</u>	
5950	Adhesion, plied (double texture) cloths.
5970	Adhesion of coating; solvent method.

GENERAL NOTES

CORDAGE

The following parenthetical numbers are utilized throughout this section of the text as referenced notes. Upon observing these numbers, refer to this page for further information dealing with specific portions of the item.

- |                           |   |
|---------------------------|---|
| (1) As specified.         | (4) Sulfur dyes.  |
| (2) Preproduction sample. | (5) Nonfibrous, extractable matter, chloroform soluble. |
| (3) Colormatching.        | (6) See specification for applicable tolerances.        |

The specific test methods referenced in this section of the text are listed with their titles at the end of the section.

### CORDAGE

NOMENCLATURE	Commercial Number or Size	Circumference Inches	Diameter Inches	Number of Strands (Carriers) Min.	Length Per Lb. Min.	Hardness		Breaking Strength Lb. Min. (4102)	Elongation % Max. (4102)	Water Absorption (4502)	Ends per Carrier Min.	Picks per Inch Min.
						Min.	Max.					
<u>Laces, Footwear, Cotton</u>								W	F			
V-L-51b												
Type I- Mercerized		Width (+1/32")										
Class A	54/2	7/32	44					70			2	32
Class B	50/2	7/32	64					70			1	38
Class C	40/2	7/32	44					70			2	26
Type II- Soft fin.												
Class A	20/2	8/32	32					120			2	16
Class B	20/2	11/32	44					150			2	16
Type III- Glazed fin.												
Class A	20/2	8/32	32					120			2	16
Class B	20/2	11/32	44					150			2	16
Type IV- Waxed fin.												
Class A	24/2	7/32	40					110			2	22
Class B	26/2	7/32	44					110			2	22
Class C	30/2	7/32	48					110			2	24
Class D	28/2	10/32	44					110			2	16
	30/2											

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS	NOTES
			(Such as core requirements, etc.)	(Not Specification Requirements)
V-L-51b	Type I laces shall have a smooth and silky luster.	Color (1-4), Standard sample available (5).	(2)	Intended Use - In footwear and other items.
Type I	Type II laces shall have a soft finish. Type III laces shall have a glazed, smooth glossy finish. Type IV laces shall be waxed by immersion in a molten wax solution.	Colorfastness - standard sample available (4620).	The braid for the laces shall be tubular braided without a core using 2 over and under braiding. Braid shall be pressed flat.	
Class A	Wax shall thoroughly saturate and be evenly distributed.			
Class B	After waxing, laces shall increase in weight not less than 17.5 nor more than 33.5%.			
Type III	Finished lace shall contain a min. of 0.04% to a max. of 0.09% metallic copper as copper-8-quinolinolate. See spec. for types of waxes and wax solution amounts.			
Class A	pH: (All types and classes) 4.0 - 8.0 (2811).			
Class B				
Class C				
Class D				

### CORDAGE

NOMENCLATURE	Commercial Number or Size	Circumference Inches	Diameter Inches	Number of Strands (Carriers) Min.	Length Per Lb. Min.	Hardness		Breaking Strength Lb. Min. (4102)	Elongation % Max. (4102)	Water Absorption (4502)	Ends Per Carrier Min.	Picks Per Inch Min.
						Min.	Max.					
<u>Laces, Footwear, Nylon</u> V-L-61d						Min.	Max.	W	F			
Type I- Spun nylon		Width (+1/32")										
Class 1- 7/32" wide, flat		7/32		44				95			1	33
Class 2- 10/32" wide, flat		10/32		44				175			2	26
Type II- Bulked filament nylon												
Class 1- 3/32" diameter, round			3/32 (±1/32)	16				100			3	28
Class 2- 8/32" wide, flat		8/32		44 (carriers braiding in pairs)				190			2	17

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS	NOTES
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V-L-61d Type I Class 1 Class 2 Type II Class 1 Class 2		Color (1). Standard sample available (3). Colorfastness - standard sample available (.680).	Nylon for Type I, Classes 1 and 2 shall be spun from nylon staple and twisted into 2-ply yarn. Nylon for Type II, Classes 1 and 2 shall be a 210 denier filament yarn which shall be spun increased to 210 denier by air spinning. Braid shall be tubular braided without a core, 2 over and 2 under, except for Type II, Class 2 which shall braid 1 pair over and 1 pair under. Type I, Classes 1 and 2, and Type II, Class 2 braid shall be prepared flat. Type II, Class 1 braid shall not be prepared and shall be round.	Intended Use - On various types of footwear.
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## CORDAGE

NOMENCLATURE	Commercial Number or Size	Circumference Inches	Diameter Inches	Number of Strands (Carriers) Min.	Length Per Lb. Min.	Hardness		Breaking Strength Lb. Min. (4102)	Elongation % Max. (4102)	Water Absorption (4502)	Ends Per Carrier	Picks Per Inch Min.
						Min	Max.					
<u>Halyards, Signal, Braided, Treated</u> MIL-H-266C, Amd. 1						W F						
Type I- Cotton		( $\pm 1/8"$ )										
Class 1- Without core												
3/4"		3/4		8	35'			500			4	2-3/4
1"		1		8	23'			750			6	2-1/2
Class 2- With core												
1-1/4"		1-1/4		12	19'			675	45% max.		23	2-1/4

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS	NOTES
			Such as core requirements, etc.)	(Not Specification Requirements)
MIL-H-266C Type I Class 1 Class 2	(5) Class 1 halyards shall be mildew resistant treated with copper-8-quinolinolate conforming to T-T-616. Class 2 halyards shall be mildew resistant treated with copper-9-quinolinolate conforming to T-T-616. They shall be a water resistant treated with a solution of amorphous wax or paraffin wax, mineral oil, asphalt, pigments (when required), and a volatile solvent. Use of gilsonite, petrolatum or equivalent products is permitted. Halyards shall not produce oily stains (4.2.5.5). Use of casein, glue, gum, starch, dextrin, water-soluble materials, paint dryers, resin or vegetable oils, oxidizing oils or resins modified with such oils or finishing or loading materials to specifically increase weight or breaking strength is prohibited.	Color - Shall be that naturally resulting from the treatment.	Class 1 halyards shall be braided without core from a min. of 9-ply cotton yarn. Class 2 halyards shall be firmly braided around a cotton core from a min. of 3-ply cotton yarn. Number of strands in core: 23. Class 2 halyards may be braided with 18 carriers with 15 ends per carrier.	

### CORDAGE

NOMENCLATURE	Commercial Number or Size	Circumference inches	Diameter inches	Number of Strands (Carriers) Min.	Length Per Lb. Min.	Hardness		Breaking Strength Lb. Min. (4102)	Elongation % Max. (4102)	Water Absorption (4502)	Ends Per Carrier	Picks Per Inch Min.	
						Min	Max.						
<b>Laces, Leggings</b>					<b>Weight/144 yds.</b>		<b>W/F</b>						
MIL-L-596C (8A)					9 or 16				70		8 or 3		8 or 16
		3/32 ± 1/64		16		21-24 oz.							
<b>Lines: Shot (For Line-Throwing-Guns)</b>													
T-L-411a													
(+ 1/64)													
Length/ lb. min.													
Elongation Strand Load Lb.													
Type I- Flax-Cable laid													
Class 1- Natural													
1/8 175' 350 15 3 260													
7/32 75' 700 15 3 520													
9/32 45' 1150 15 3 850													
Type II- Nylon-Braided with core													
Class 1- Natural													
1/16 570' 230 32 - 180													
13/64 100' 1200 30 - 300													
Class 2- Waxed													
3/32 400' 415 15 8 370													

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS	NOTES
MIL-L-396C	(5) Laces shall be smoothly finished and polished.	Color - White 3041 or Khaki 3727 (1). Standard samples available (3). Khaki laces shall be yarn dyed with vat dyes. ( ) Yarns of white laces shall be fully bleached. Bleaching agents may be used. Colorfastness - Khaki laces: standard sample available (4630-4650-4670).	(2) Yarns shall be 2-ply cotton. Laces shall be firmly & uniformly braided without a core. When braiding with 9 carriers, weave shall be over 2 and under 1 (sash cord weave), and when braiding with 16 carriers, weave shall be over 2 and under 2.	Intended Use - As a closure for leggings worn by personnel of the Navy and Coast Guard.
T-L-411a	(5) Class 1 line shall have a soft natural finish. Class 2 line shall have a waxed finish.	Color - Unless otherwise specified, color shall be natural. When specific color is required, color shall be as specified. Standard sample available (3). Colorfastness - standard sample available for dyed line (4671).	Type I line shall be fabricated from flax fiber. Type II line shall be fabricated from nylon fiber having a min. melting point of 244°C. Loss in breaking strength after heat aging shall not exceed 10% of initial (4102).	Intended Use - In the operation of line throwing guns.



### CORDAGE

NOMENCLATURE	Commercial Number or Size	Circumference Inches	Diameter Inches	Number of Strands (Carriers) Min.	Length Per Lb. Min.	Hardness		Breaking Strength Lb. Min. (4102)	Elongation % Max. (4102)	Water Absorption (4502)	Yarns Wgt. of Core in Carrier of Total Wgt. Cord	
						Min.	Max.				Min.	Max.
<u>Cords, Cotton; General and Special Purpose, Sash and Venetian Blind</u> T-C-571d						W/F						
						No. of Core Yarns						
Type I- General purpose and sash cord (dyed and undyed)					Class 1 Classes 2 & 3			Class 1 Classes 2 & 3				
Class 1- Natural fin.			(+1/64)									
Class 2- Polished fin.												
Class 3- Water & mildew resistant fin.												
Sizes:	4		1/8	9	201'	171'		100	10	8	4	5
	5		5/32	9	100'	85'		160			4	5
	6		3/16	12	66'	55'		240			4	5
	7		7/32	12	54'	45'		300			5	5
	8		1/4	12	44'	37'		370			6	5
	10		5/16	18	27'	23'		560			10	10
	12		3/8	18	20'	17'		720			12	12
	16		1/2	18	11.7'	10'		1250			14	14
Type III- Venetian blind cord (dyed and undyed)			9/64	8			2	175		45% max.	6	
Type IV- Special purpose cord (natural or bleached)												
Class 4- Polished and water resistant			5/32	12	8.3'		5.3 ply	180	7	8% max.	5, 3 ply	
Type V- Mail bag lacing cord												
Class 5- Special polished finish			0.167-0.180	12	90.0'		5	240	13.5			

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS		NOTES
			(Such as core requirements, etc.)	(Not Specification Requirements)	
T-C-571d	(5)				
Type I	Class 1- Natural finish, in which no consistency or luster other than that inherent within the cotton cloth is required. Class 2- Polished finish cord shall have a lustrous, smooth-dressed surface with no protruding fibers. All finishing and glazing materials shall be added after braiding. Class 3- Mildew resistant treated with copper-8-quinolinolate in conformance with T-T-614. It shall be water resistant treated with a solution of amorphous wax or paraffin wax, mineral oil, asphalt, pigments (when required) and a volatile solvent. Use of pilsenite, petrolatum or equivalents will be permitted. Class 4- water resistant treated, which will also produce a smooth, lustrous surface with no protruding fibers. Class 5- given a Class 2 polished finish. Core yarns shall be impregnated with a 20% aqueous polyvinyl acetate.	Color - Types I & V, Classes 1, 2, 3 & 5: Unless otherwise specified cord shall be natural, unbleached. For specific color is required, it shall be obtained by yarn dyeing & shall match standard sample. Class 3: Unless otherwise specified, color of Class 3 cord shall be that imparted by treatment. When a shade is specified, it shall be obtained by yarn dyeing and shall match standard sample. Type III: Unless otherwise specified, color for Type III shall be off-white app. matching color No. 13690 of Fed. Std. 595. Type IV- Color shall be natural (bleached yarn is acceptable). Colorfastness- To be specified in applicable item specifications or in contract or order.	Cord shall consist of cotton yarns firmly and evenly braided around a cotton core. Types I and V shall be a solid braid weave. Yarn strand in jacket for Type V: 5. After water absorption, the thickness increase of Type I, Class 3 shall not be more than 10%. Elongation after water immersion of Type IV shall be not more than 1%. Use of casein, glue, gum, starch, dextrin, water-soluble materials, paint dryers, resin or vegetable oils, oxidizing oils or resins modified with such oils is prohibited with the exception of materials necessary for polishing Class 2 cord.	Intended Use - Type I, Sizes 6, 7, 8 and 10 are intended for use with pulleys (See spec. for sizes of pulleys and max. loads). Type I, Class 1, Size 6 is intended for clotheslines. Type I, Class 3 cord is recommended for outdoor use. Type J cord may also be used for tent ropes, awning line, truck rope, lashing, elevator gate cord, and for overhead doors. Type IV, Class 4 (special purpose cord) is used for medical applications for applying traction in fracture frames.	
Class 1					
Class 2					
Class 3					
Type III					
Type IV					
Class 4					
Type V					
Class 5					

## CORDAGE

NOMENCLATURE	Commercial Number or Size	Circumference Inches	Diameter Inches	Number of Strands (Carriers) Min.	Length Per Lb. Min.	Hardness		Breaking Strength Lb. Min. (4102)	Elongation % Max. (4102)	Water Absorption (4502)
						Min	Max.			
Rope; Cotton T-R-00571b										

Class 1- Natural  
Class 2- Mildew  
Resistant Treated

Sizes:	(nominal)			
	3/8		200'	120
	5/8		90'	250
	3/4		52'	420
	1-1/8		23 1/2'	890
	1-1/2		13 1/2'	1450
	2-1/4		6'	3100
	3		3 1/2'	5100

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as core requirements, etc.)	NOTES (Not Specification Requirements)
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T-R-00571b Class 1 Class 2	(5) Class 1 rope shall be natural. Class 2 rope shall be mildew resistant treated with copper-8-quinolinolate conforming to the requirements of T-T-616, except that the permissible copper content shall be 0.13-0.40% copper as copper-8-quinolinolate.	Color - Unless otherwise specified color of the rope prior to treatment shall be natural. After treatment, the shade imparted by the treatment will be acceptable.		
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## CORDAGE

NOMENCLATURE	Commercial Number or Size	Circumference Inches	Diameter Inches	Number of Strands (Carriers) Min.	Length Per Lb. Min.	Hardness		Breaking Strength Lb. Min. (4102)	Elongation % Max. (4102)	Water Absorption (4502)
						Min.	Max.			
Cords, Yarns and Monofilaments Organic Synthetic Fiber MIL-C-572E, Amd. 2						Min.	Max.	W	F	

TYT: P- Polyamide.

Type SAR- Saponified acetate rayon (Forms C and Y only).

Type VC- Copolymer of vinylidene chloride and vinyl chloride (Form MF only).

Type PVCA- Polyvinyl chloride and its copolymers (Form MF only).

Type AR- Cellulose acetate (Forms C and Y only).

Type VCP- Viscose rayon (Forms C and Y only).

Type CTA- Cellulose triacetate (Forms C and Y only).

Form C- Cordage.  
Form Y- Yarns.  
Form MF- Monofilaments.

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS	NOTES
			(Such as core requirements, etc.)	(Not Specification Requirements)

MIL-C-572E  
Type P  
Type SAR  
Type VC  
Type PVCA  
Type AP  
Type VCP  
Type CTA  
Form C  
Form Y  
Form MF

Color - Unless otherwise specified, color shall be natural.

Material shall consist of a suitable synthetic properly formulated with plasticizers pigment, lubricants, or other materials as may be necessary to conform to the specification. See spec. for table of property values of synthetic-fiber electrical insulation.

Intended Use- Type P: For applications requiring high tenacity, moisture resistance, and recovery. It is employed in lieu of silk in fiber sizes of magnet wire and cable applications. Should not be used outdoors. Type SAR: for applications requiring a very high dry tenacity and heat resistance. Type VC: For applications requiring a relatively high tenacity and very high moisture resistance. Type PVCA: For cordage applications requiring a high degree of elongation and good elastic recovery. Type AR: For applications not requiring high tenacity, but where use may be made of its dyeing properties, sea-water resistance, and thermoplastic properties. Type VCP: for applications requiring high tenacity and ability to take high degree of twist. Type CTA: where high electrical resistivity and high moisture resistance are required.

## CORDAGE

NOMENCLATURE	Commercial Number or Size	Circumference inches	Diameter inches	Number of Strands (Carriers) Min.	Length Per Lb. Min.	Hardness	Breaking Strength	Elongation	Water Absorption		
							Lb. Min.	% Max.			
							(4102)	(4102)	(4502)		
Rope, Jute T-R-592a							Min	Max.	W	F	
(nominal)(Approx.)											
Type I- Pure jute rope											
Type II- Mixed jute rope											
Class 1- Natural											
Class 2- Mildew resistant treated											
Sizes:											
		5/8	3/16	6	66.6'		270	243			
		3/4	1/4	6	50.0'		360	324			
	1	5/16	3/8	9	34.5'		600	540			
	1-1/8	3/8	1/2	12	24.4'		810	729			
	1-1/4	7/16	5/8	15	19.0'		1050	945			
	1-1/2	1/2	3/4	21	13.3'		1590	1431			
	1-3/4	9/16	7/8		9.61'		2070	1863			
	2	5/8	1		7.5'		2640	2376			
	2-1/4	3/4	1-1/16		6.0'		3240	2916			
	2-1/2	13/16	1-1/8		5.13'		3900	3510			
	2-3/4	7/8	1-1/4		4.45'		4620	4158			
	3	1	1-1/2		3.71'		5400	4860			
	3-1/4	1-1/16	1-3/4		3.20'		6300	5620			
	3-1/2	1-1/8	2		2.78'		7200	6480			
	3-3/4	1-1/4	2-1/8		2.40'		8100	7290			
	4	1-5/16	2-1/4		2.09'		9000	8100			
	4-1/2	1-1/2	2-3/8		1.67'		11100	10000			
	5	1-5/8	2-1/2		1.34'		13500	12150			
	5-1/2	1-3/4	3		1.12'		15900	14300			
	6	2	3-1/2		0.93'		18600	16700			

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS		NOTES
			(Such as core requirements, etc.)	(Not Specification Requirements)	
T-R-592a Type I Type II Class 1 Class 2	(5) Class 1 rope shall be natural. Class 2 rope shall be mildew resistant treated with copper-8-quinolinolate. Treatment shall conform to the requirements of T-T-616, except that the permissible copper content shall be 0.15-0.40% copper as copper-8-quinolinolate.	Color of the untreated rope is natural. Natural shade imparted by mildew resistant treatment will be acceptable.	For Type I, no other fiber than jute ( <i>Corchorus capsularis</i> , or <i>Corchorus olitorus</i> ) shall be used. Type II fiber shall consist of jute which may be blended with other bast oristle fiber or both. Rope shall be 3-strand unless otherwise specified.		

### CORDAGE

NOMENCLATURE	Commercial Number or Size	Circumference Inches	Diameter Inches	Number of Strands (Carriers) Min.	Length Per Lb. Min.	Hardness		Breaking Strength Lb. Min. (4102)	Elongation % Max. (4102)	Water Absorption (4502)	
						Min	Max.				
Rope, Manila and Sisal T-R-605b, Amd. 1						W   F					
Type M- Manila (Musa textilis) Class 1- "Becker" rope value Class 2- "Non-Becker" rope value Type S- Sisal (Agave sicalana) Sizes:											
		(nominal)	(approx)					Manila	Sisal		
	5/8	3/16	6	66.0'	450	360					
	3/4	1/4	6	50.0'	450	450					
1	1-1/8	5/16	9	44.5'	1400	700					
	1-1/4	3/8	12	24.0'	1450	1400					
	1-1/4	7/16	15	19.0'	1400	1400					
	1-1/2	1/2	21	13.0'	2150	2150					
	1-3/4	9/16	21	9.71'	2450	2150					
2	2	5/8	24	7.50'	3450	2550					
	2-1/4	3/4	24	6.00'	5400	4300					
	2-1/2	13/16	24	5.13'	5500	5000					
	2-3/4	7/8	24	4.45'	700	6150					
3	3	1	24	3.71'	2000	1700					
	3-1/4	1-1/16	24	3.00'	1950	1500					
	3-1/2	1-1/8	24	2.78'	1700	1500					
	3-3/4	1-1/4	24	2.60'	1500	1300					
4	4	1-5/16	24	2.00'	1500	1200					
	4-1/2	1-1/2	24	1.71'	1500	1400					
	5	1-5/8	24	1.50'	2200	1800					
	5-1/2	1-3/4	24	1.35'	2650	2100					
5	5	2	24	1.00'	1800	2400					
	7	2-1/4	24	1.00'	1400	2000					
	8	2-5/8	24	1.00'	5000	4100					
	9	3	24	1.00'	6000	5100					
	10	3-1/4	24	1.00'	7000	6100					
	11	3-5/8	24	1.00'	8000	6800					
	12	4	24	1.00'	10000	8400					
Manila Hard-lay rope, 3-strand - Sizes:											
	3-1/2	1-1/4	24	2.00'	1100						
	4	1-5/16	24	1.80'	1400						

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS	NOTES
			(Such as core requirements, etc.)	(Not Specification Requirements)

T-R-605b Type M Class 1 Class 2 Type S	Manila and sisal rope require mildew resistant treatment shall be treated in accordance with T-T-11.		Type M rope shall be made from Musa textilis fiber. Type M, Class 1 rope shall have a "Becker" value of not less than 45 for rope 1/2" - 1 1/2". In all strands used and for larger than rope 1-1/4" and larger in circumference. Type S rope shall be made from Agave sicalana fiber. When treated with mildew resistant treatment, the rope shall be of a color similar to that of untreated rope. The rope shall be of a color similar to that of untreated rope. The rope shall be of a color similar to that of untreated rope. The rope shall be of a color similar to that of untreated rope.	
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### CORDAGE

NOMENCLATURE	Commercial Number or Size	Circumference Inches	Diameter Inches	Number of Strands (Carriers) Max.	Length Per Lb. Min.	Hardness		Breaking Strength Lb. Min. (4102)	Elongation % Max. (4102)	Water Absorption (4502)
						Min.	Max.			
<b>Rope, Yarn, and Twine; Hemp</b>						Min   Max.		W   F		
T-R-00675a (Army-GMC)										
Type I- Rope, hemp, tarred.										
Class 1- Ratline										
Sizes:										
		(6)								
		3/4		6		33.3'		600		
		1		9		23.8'		900		
		1-1/8		12		17.3'		1400		4106
		1-1/4		15		13.3'		1800		
		1-3/8		18		11.3'		2100		
		1-1/2		21		10.0'		2400		
Class 2- Seizing										
Sizes:										
		1/2		4		63.2'		365		
		5/8		6		50.0'		560		
		7/8		9		36.4'		700		4106
		1		12		28.6'		955		
Type II- Twine, hemp, polished, stainless										
Sizes:										
		12				1710.0'		31		
		18				950.0'		49		
		24				855.0'		67		
		36				570.0'		105		
		48				427.0'		145		
		60				290.0'		190		
Type III- Yarn, hemp, unfinished										
Sizes:										
		1				350.0'		180		
		2				430.0'		145		
		3				490.0'		120		
		4				600.0'		95		

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS	NOTES
			(Such as core requirements, etc.)	(Not Specification Requirements)
T-R-00675a	Type I rope shall be tarred with pine tar. Tar shall be uniformly distributed throughout and shall not impart excessive stickiness to the rope. Extractable matter: 10-22%. Type II twine shall be polished and stainless. Type III yarn shall be stainless.		Rope, yarn, and twine shall be made from hemp (Cannabis sativa) flax, or a combination of flax & ramie fiber. Type I rope shall be 3-strand except for Class 2, No. 1 rope, which shall be 2-strand. Type II twine shall be of plied yarn.	

### CORDAGE

NOMENCLATURE	Commercial Number or Size	Circumference Inches	Diameter Inches	Number of Strands (Carriers) Min.	Length Per Lb. Min.	Hardness		Breaking Strength Lb. Min. (4102)	Elongation % Max. (4102)	Water Absorption (4502)
						Min	Max.			
Rope, Yarn, and Twine; Hemp (Continued) T-1-00675a (Army-QMC)						W/F				
Type IV- Yarn, plied, hemp tarred										
Class 1- Marline										
Types: Navy						180.0'		175		
Commc.						220.0'		160		
Medium						360.0'		105		
Class 2- Spun yarn										
Types: 2-ply						120.0'		215		
3-ply						85.0'		305		
Class 3- Houseline										
Types: Houseline						160.0'		170		
Navy houseline						120.0'		225		
Class 4- Roundline						90.0'		300		

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as core requirements, etc.)	NOTES (Not Specification Requirements)
T-1-00675a (Cont'd) Type IV Class 1 Class 2 Class 3 Class 4	Type IV yarn shall be tarred (See Type 1).			Type IV: Marline shall be 2-ply. Type IV, Class 3 yarn shall be 3-ply. Type IV, Class 4 yarn shall be 3-ply.

## CORDAGE

NOMENCLATURE	Commercial Number or Size	Circumference Inches	Diameter Inches	Number of Strands (Carriers) Min.	Length Per Lb. Min.	Hardness	Breaking Strength Lb. Min. (4102)	Elongation % Max. (4102)	Water Absorption (4502)
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Twine, Impregnated, Lacing and Tying (For Use in Electrical and Electronic Equipment)  
MIL-T-713C

Min | Max.    W | F

Type N, waxed-  
Vegetable fiber  
Class 1  
Class 2  
Class 3

				300'			70	15	
				450'			48	15	
				600'			32	15	

Type P, unwaxed-  
Polyamide (nylon)  
Class 1  
Class 2  
Class 3

				650'			70	20	
				950'			48	20	
				1400'			32	20	

Type P, waxed-  
Polyamide (nylon)  
Class 1  
Class 2  
Class 3

				550'			70	20	
				750'			48	20	
				1100'			32	20	

Type SAR- Sapon-  
ified acetate  
Class 1  
Class 2  
Class 3

				650'			70	5	
				910'			48	5	
				1280'			32	5	

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as core requirements, etc.)	NOTES (Not Specification Requirements)
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MIL-T-713C

Type N  
Class 1  
Class 2  
Class 3  
Type P (unwaxed)  
Class 1  
Class 2  
Class 3  
Type P (waxed)  
Class 1  
Class 2  
Class 3  
Type SAR  
Class 1  
Class 2  
Class 3

Type N shall be uniformly mildew resistant and micro-crystalline wax treated. Mildew resistant treatment shall conform to Type I, Class 2 inhibitor of MIL-T-3570 and may be applied with wax treatment. Treatment utilized shall not contain copper or mercury. Wax content: 10-25%. Type P waxed twine shall be uniformly treated with a microcrystalline fungicidal wax. Treatment shall not contain copper or mercury. Wax content: 20-30%. No mildew growth on surface (4.5.3).

Color - Unless otherwise specified, color shall be the natural unbleached color of the fiber & as naturally resulting from the treatment.

Type N shall be made from cotton, flax, soft hemp, flax and soft hemp, or flax and ramie fiber. It shall be constructed of singles yarn. Type N twine shall not deflect more than 1/8 in. (4.5.2). Fiber of Type P, unwaxed and Type P, waxed shall conform to Type I, Form C of MIL-C-572. The yarns shall be continuous filament. Fiber of Type SAR twine shall conform to Type SAR, Form C of MIL-C-572. The yarns shall be continuous filament.

Intended Use- Type N: For use where it is desired that heat have no effect on strength or elongation, and where a relatively stiff twine is required. Type P twine is a strong, lightweight twine suitable for applications at relatively high humidity. Type SAR is a strong, lightweight twine suitable for applications where high temperatures and humidities are not encountered. Has a min. stretch under tension.



### CORDAGE

NOMENCLATURE	Commercial Number or Size	Circumference inches	Diameter inches	Number of Strands (Carriers) Min.	Length Per Lb. Min.	Hardness	Breaking Strength Lb. Min. (4102)	Elongation % Max. (4102)	Water Absorption (4502)
<u>Twine, Cotton, Wrapping</u> T-T-871d						Min   Max.	W   F		
Type I- Natural									
Type II- Mildew resistant									
Class 1- Copper-8-quinolinolate									
Class 2- 2,2, methylenebis-(4-chlorophenol)									
Sizes (Plies):									
	3				6000'		5.5		
	4				4500'		8		
	5				3600'		10		
	6				3000'		12		
	8				2250'		16		
	12				1500'		24		
	16				1125'		32		
	20				900'		40		
	24				750'		48		

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as core requirements, etc.)	NOTES (Not Specification Requirements)
T-T-871d Type I Type II Class 1 Class 2	(5) Type I twine shall have a natural finish. Type II, Class 1 twine shall be mildew resistant treated with copper-8-quinolinolate in accordance with Type I, Class 1 of MIL-T-3520. Type II, Class 2 twine shall be mildew resistant treated with 2,2 methylenebis-(4-chlorophenol) in accordance with Type I, Class 2 treatment of MIL-T-3520.	Color- Unless otherwise specified, twine shall be furnished in natural color. Color of treated twine shall be that imparted by treatment to natural colored twine.		Intended Use - For general purpose use.

### CORDAGE

NOMENCLATURE	Commercial Number or Size	Circumference Inches	Diameter Inches	Number of Strands (Carriers) Min.	Length Per Lb. Min.	Hardness		Breaking Strength Lb. Min. (4102)	Elongation % Max. (4102)	Water Absorption (4502)	Plies Per Strand
						Min	Max.				
<u>Twine, Cotton, Seize</u>											
T-881c											
Type I- Natural											
Type II- Mildew Resistant											
Size (Number):											
	6				3000'			12			2
	9				2055'			18			3
	12				1545'			24			4
	15				1245'			30			5
	18				1020'			35			6
	24				780'			45			8
	30				600'			60			10
	36				510'			70			12
	48				375'			86			16
	72				255'			124			24
	84				210'			140			28
	96				175'			156			32
	108				165'			172			36
	120				150'			188			40
	144				135'			214			48
	168				105'			238			56

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as core requirements, etc.)	NOTES (Not Specification Requirements)
T-881c Type I Type II	(5) Type I shall have a natural finish. Type II twine shall be mildew resistant treated in accordance with Type I, Class 1 treatment of MIL-T-3530.	Color - Unless otherwise specified, color of twine shall be natural. Color of Type II shall be that imparted by mildew resistant treatment on natural colored twine.		Intended Use - For general purpose use.

### CORDAGE

NOMENCLATURE	Commercial Number or Size	Circumference Inches	Diameter Inches	Number of Strands (Carriers) Min.	Length Per Lb. Min.	Hardness		Breaking Strength Lb. Min. (4102)	Elongation % Max. (4102)	Water Absorption (4502)	Ply	
						Min	Max.					
<u>Twine, Linen</u>						W   F						
T-T-891c												
Type I- Natural finish, fine twine					2280'			35			3	
Plies: 3					1710'			50			4	
4					1368'			65			5	
5												
Type II- Natural finish, mildew resistant, fine twine					2280'			35			3	
Plies: 3					1710'			50			4	
4					1368'			65			5	
5												
Type III- Polished finish, fine twine					3000'			29			2	
Type IV- Polished finish, mildew resistant, fine twine					3000'			29			2	
Type V- Natural finish rope twine				4	120'			325			2	
Type VI- Natural finish, mildew resistant, rope twine				3	120'			325			2	
Type VII- Natural finish twine					300'			170			5	
Type VIII- Natural finish, mildew resistant twine					300'			170			5	

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS	NOTES
			(Such as core requirements, etc.)	(Not Specification Requirements)
T-T-891c Type I Type II Type III Type IV Type V Type VI Type VII Type VIII	Type I shall have a natural finish. Type II shall be mildew resistant treated in accordance with Type I, Class 1 of MIL-T-530. Type III twine shall be polished and have a lustrous, smooth dressed surface. Type IV twine shall be polished and shall be mildew resistant in accordance with Type I, Class 1 of MIL-T-530. Type V shall have a natural finish. Type VI twine shall be mildew resistant treated in accordance with T-T-16. Type VII twine shall have a natural finish. Type VIII twine shall be mildew resistant treated in accordance with Type I, Class 1 of MIL-T-530.	Color- Unless otherwise specified, color shall be natural. When mildew resistant twine is specified, color shall be that imparted by the treatment to natural colored twine.		Intended Use- For sails, baling, mattress stitching, and wrapping.

### CORDAGE

NOMENCLATURE	Commercial Number or Size	Circumference inches	Diameter inches	Number of Strands (Carriers) Min.	Length Per Lb. Min.	Hardness		Tensile Strength Lb. Min. (4102)	Elongation % Max. (4102)	Water Absorption (4502)
						Min.	Max.			
<del>Twine, Jute</del> T-R-911d, Am. 2										
Type I- Natural fin.										
Size No.										
	1				1710'				20	
	2				1140'				32	
	3				855'				43	
	4				685'				54	
	5				570'				65	
	6				285'				125	
	7				170'				210	
	7A				140'				260	
	8				105'				335	
	9				85'				420	
Type II- Polished fin.										
Size No.										
	1				1620'				25	
	2				1080'				40	
	3				800'				55	
	4				590'				75	
	5				440'				100	
	6				350'				125	
	6A				195'				155	
	7				140'				215	
	8				110'				270	
	9				85'				350	

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS	NOTES
			(Such as core requirements, etc.)	(Not Specification Requirements)
T-R-911d Type I Type II	Type I twine shall have a natural finish. Type II polished twine shall have a smooth dressed surface.	Color - Twine shall be natural.	Twine shall be made of jute (Corchorus Olitorius or Corchorus Capsularis of both) or kenaf (Hibiscus Cannabinus). Twine shall be stainless when tested (4.2.5.1). Twine shall be not less than 2-ply.	Intended Use - For wrapping purposes.

### CORDAGE

NOMENCLATURE	Commercial Number or Size	Circumference inches	Diameter inches	Number of Strands (Carriers) Min.	Length Per Lb. Min.	Hardness		Breaking Strength Lb. Min. (4102)	Elongation % Max. (4102)	Water Absorption (4502)	Fly
						Min	Max.				
<u>Twine, Cotton, Mattress</u> T-T-931b						1575'		W F 32			6
<u>Lines, Cotton, Braided</u> <u>Lead Lines and Taffrail</u> <u>Log Line</u> MII-L-1145C											
		3/4 (±1/8)		12	60'			220			14

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS	NOTES
			(Such as core requirements, etc.)	(Not Specification Requirements)
T-T-931b	Twine shall have a waxed polished finish and smooth dressed surface.	Color- Unless otherwise specified, color shall be natural or tan.		Intended Use- For tufting mattresses by hand or machine.
MII-L-1145C	(5) Use of casien glue, starch, dextrin, water-soluble materials, paint dryers, resin or vegetable oils, oxidizing oils or resins modified with such oils to specifically effect breaking strength or length per pound is prohibited.	Color- Unless otherwise specified, color of the line shall be natural.	Lines shall be evenly braided around a cotton core.	Intended Use- As lead or taffrail log lines.

### CORDAGE

NOMENCLATURE	Commercial Number or Size	Circumference inches	Diameter inches	Number of Strands (Carriers) Min.	Length Per Lb. Min.	Hardness		Breaking Strength Lb. Min. (4102)	Elongation % Max. (4102)	Water Absorption (4502)	Yarns Per Strand Min.
						Min	Max.				
<b>Rope, Tent-Lay</b> MIL-R-1670C		(Nominal)		(b)	(a)			W/F (4106)			
<b>Type I- Rope, Manila, Tent-Lay</b>		3/4		3	55.55'			630			2
	1			3	38.46'			1030			3
	1-1/8			3	27.02'			1410			4
	1-1/2			3	14.70'			2720			7
	2			3	8.33'			4360			7
	2-1/4			3	6.66'			5560			7
	3			3	4.11'			9260			7
	3-3/4			3	2.65'			13900			7
<b>Type II- Rope, Sisal, Tent-Lay</b>		3/4		3	55.55'			500			2
	1			3	38.46'			830			3
	1-1/8			3	27.02'			1130			4
	1-1/2			3	14.70'			2170			7
	2			3	8.33'			3500			7
	2-1/4			3	6.66'			4450			7
<b>Type III- Rope, Jute, Tent-Lay</b>		3/4		3	50.00'			480		25%	2
	1			3	34.48'			750		25%	3
	1-1/8			3	24.39'			1000		25%	4
	1-1/2			3	13.33'			1630		25%	7
	2			3	7.51'			2520		25%	7
	2-1/4			3	5.98'			3320		25%	7
<b>Type IV- Rope, Cotton, Tent-Lay</b>		5/8		3	71.42'			250		35%	2
	3/4			3	43.47'			400		35%	2
	1			3	27.77'			630		35%	3
	1-1/8			3	18.86'			850		35%	4
	1-1/2			3	11.49'			1400		35%	7
	2			3	6.49'			2300		35%	7
	2-1/4			3	5.10'			3000		35%	7
Class 1- Natural Class 2- Mildew Resistant treated											

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS	NOTES
			(Such as core requirements, etc.)	(Not Specification Requirements)
MIL-R-1670C Type I Type II Type III Type IV Class 1 Class 2	(5) Class 1 rope shall have a natural finish. Class 2 rope shall be mildew resistant treated with copper-8-quinolinolate to conform with T-T-616. Use of finishing or loading materials to increase weight or strength is prohibited.	Color- Unless otherwise specified, color of the rope shall be natural. Color of treated rope shall be that imparted by the treatment to natural colored rope.	(a) A 5% minus tolerance on min. length per pound is allowed for Class 2 treated rope. (b) When specified, 4-strand rope shall be furnished. It shall be not more than 7% heavier than 3-strand rope of the same type and class, and shall have at least 95% of the strength required for the 3-strand rope. Type I rope shall be made from no other fiber than manila hemp (Abaca or Musa). Type II rope shall be made from no other fiber than sisal (Agave sisalana). Type III rope shall be made from no other fiber than jute (Corchorus capsularis) or Corchorus olitorius). Type IV rope shall be made from no other fiber than cotton. Stained or tinged cotton is acceptable.	

### CORDAGE

NOMENCLATURE	Commercial Number or Size	Circumference Inches	Diameter Inches	Number of Strands (Carriers) Min.	Length Per Lb. Min.	Hardness		Breaking Strength Lb. Min. (4102)	Elongation % Max. (4102)	Water Absorption (4502)
						Min	Max.			
Rope, Nylon, Climbing Type MIL-R-1688C		(±1/8)			(a)			W F (4106)	(4106)	
		3/4		3	47.0'	20 ± 5%		1300 (initial) 90% (after aging)	35%	
		1-1/8		3	23.0'	20 ± 5%		3150 (initial) 90% (after aging)	35%	
		1-1/4		3	17.0'	20 ± 5%		4500 (initial) 90% (after aging)	35%	

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS	NOTES
			(Such as core requirements, etc.)	(Not Specification Requirements)
MIL-R-1688C	(5) No extraneous weighting material shall be added.	Color- Unless otherwise specified, rope shall be dyed Olive Drab No. 7 to match standard sample (3). Colorfastness- standard sample available (4671).	(2) Rope shall be made from 6 denier, bright, virgin, continuous filament nylon, with a min. of 6.5 grams/denier strength. Nylon shall be a long chain polymer of hexamethylene diamine and adipic acid or a long chain polymer of epsilon amino caproic acid. Mixtures of nylon fiber types in any one rope shall be prohibited. (a) A minus tolerance or 10% is allowed for dyed rope.	Intended Use- For mountaineering operations.

### CORDAGE

NOMENCLATURE	Commercial Number or Size	Circumference inches	Diameter inches	Number of Strands (Carriers) Min.	Length Per Lb. Min.	Hardness		Breaking Strength Lb. Min. (4102)	Elongation % Max. (4102)	Water Absorption (4502)	Fly
						Min	Max.				
<u>Twine, Linen (Waxed and Blocking)</u> MIL-T-2520B								W   F			
Type I- Waxed					2235' 1110' 510'			32 60 120			6 12 27
Type II- Blocking	20 28		(+0.0005) 0.1050 0.1250	4 4	210' 150'			230 300			5 7
<u>Cord, Linen, Shock Absorber Serving Use</u> MIL-C-2522C, Amd. 1											
				8	570'			75			1

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS		NOTES
			(Such as core requirements, etc.)	(Not Specification Requirements)	
MIL-T-2520B Type I Type II	(5) Type I twine shall be waxed and mildew resistant treated in accordance with Type I, Class 2 inhibitor of MIL-T-3530. Inhibitor may be applied with wax or prior to waxing. Type II twine shall have hard polished surface. pH: 5.5 - 7.5 (2811).	Color- Unless otherwise specified, color shall be natural.	Twine shall be made from flax fiber.		Intended Use - In serving and whipping rope ends and splices, and for aircraft rigging.
MIL-C-2522C	(5) Cord shall be waxed. Wax content determined by following chloroform-soluble method in 2611.	Color- Unless otherwise specified, color shall be natural.	Cord shall be made from flax fiber. It shall be braided around a core. No. of core yarns: 4. Picks/Inch: 9 min.		Intended Use - For serving the ends of shock absorber cord and other aerial equipment.



### CORDAGE

NOMENCLATURE	Commercial Number or Size	Circumference Inches	Diameter Inches	Number of Strands (Carriers) Min.	Length Per Lb. Min.	Hardness		Breaking Strength Lb. Min. (4102)	Elongation % Max. (4102)	Water Absorption (4502)	Fly	Picks Per Inch
						Min	Max.					
Cord, Rayon, Without Core, Braided MIL-C-4232B								W F				
Type I				16	126'			400	(min.) 14%		1	9-10
Type II				16	60'			1000	12%		1	5-5½
Type III				16	39'			1500	-		1	3½-4

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as core requirements, etc.)	NOTES (Not Specification Requirements)
MIL-C-4232B Type I Type II Type III	No chemical finishes or treatments shall be applied to specifically increase weight or breaking strength.	Color- Unless otherwise specified, cord shall be natural color or methyl orange (tinted) to match standard sample.	Yarn shall be high tenacity viscose rayon, 3.0 - 4.8 grams per denier. Denier of basic yarn shall be 1100 min. In manufacture, not more than 1 carrier end shall be allowed to run off per 50 ft. of cord. When carrier ends run off, they shall be spliced or knotted (i.e. knots tied in a series) a distance of 5-10 in. in length. When knotting procedure is used, the ends of the knots shall be sheared off adjacent to the surface of the yarn.	Intended Use- As suspension lines of cargo parachutes and in other aerial delivery applications.

### CORDAGE

NOMENCLATURE	Commercial Number or Size	Circumference Inches	Diameter Inches	Number of Strands (Carriers) Min.	Length Per Lb. Min.	Hardness	Breaking Strength	Elongation	Water Absorption	Denier	Fly	
							Lb. Min.	% Max.	(4502)			
							(4102)	(4102)	(4502)			
<b>Cord, Nylon</b>							Min	Max.	W	F	Core Sleeve C S	
<b>MIL-C-5040C</b>							No. of Yarns		(min)	Picks/Inch Sleeve		
							Core					
Type I		Ends/Carrier 1 or 2	32 or 16	1050'	4-7	100	30	26-28	210	70	3 3	
Type IA (Coreless)		1	16	1050'	-	100	30	"	-	210	- 3	
Type II		1	32 or 36	315'	4-7	375	30	"	210	210	*5 3	
Type III		1	32 or 36	225'	7-9	550	30	"	210	210	**3 *5 3	
Type IV		1	32, 36, 44	165'	11	750	30	"	210	210	**3 *5 3	

\*- First  
\*\*- Final

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS	NOTES
			(Such as core requirements, etc.)	(Not Specification Requirements)
MIL-C-5040C	(5)	Color- Unless otherwise specified, color of the cord shall be natural. When colored cord is specified, cord shall be yarn dyed to match an approved standard shade of Olive Drab No. 7 (3). Sleeve yarns shall be dyed before braiding. Colorfastness- standard sample available (4660-4614-4620). See spec. for instructions for type identification by color marking. Yarns shall not be subjected to any type of bleaching process.	Core yarns shall be shrunk for . in. of 60 min. at 93.3° ±2.8°C., and shall be dried at a temp. not to exceed 93.3°C. before manufacture of the core. No oil shall be added to the yarn. Sleeve yarns shall be shrunk for a min. of 30 min. at a temp. of 71.1° ±2.8°C., after which they shall be dried at a temp. not to exceed 71.1°C. before braiding. No oil shall be added to the yarn. Yarns shall not be stretched. Nylon shall be bright high-tenacity light and heat resistant polyamide of hexamethylene diamine and adipic acid or its derivatives. Melting point shall be 250° ±6°C. Splicing of core yarns is permissible, providing overlap is between 5-10 in. Cord shall not lose more than 25% of original breaking strength after exposure to heat and light (4.4.4-4.4.5). Cord shall not be more than 2 years old from date of manufacture to date of delivery.	Intended Use- As parachute suspension lines.

### CORDAGE

NOMENCLATURE	Commercial Number or Size	Circumference Inches	Diameter Inches	Number of Strands (Carriers) Min.	Length Per Lb. Min.	Hardness		Breaking Strength Lb. Min. (4102)	Elongation % Max. (4102)	Water Absorption (4502)	Ply	Picks Per Inch Min.
						Min	Max.					
Cord, Cotton, Braided, Prewaxed MIL-C-5649B (ASG) Amd. 1						310 yd.		W   F			3	10

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS	NOTES
			(Such as core requirements, etc.)	(Not Specification Requirements)
MIL-C-549B	Cord shall be thoroughly impregnated with a wax which shall not have a detrimental effect on doped cloths. Weight of wax: 10-25% of conditioned weight of finished unwaxed cord. Use of detergents or other chemicals or finishing agents which would cause deterioration in storage is prohibited.	Color- Cord shall be natural, unbleached white.	Yarn shall be made from combed peeler cotton or its equivalent. Cord shall be braided and shall have not less than 16-ends of 3-ply cotton.	Intended Use- In lacing the cloth on airplane fuselages.

### CORDAGE

NOMENCLATURE	Commercial Number or Size	Circumference inches	Diameter inches	Number of Strands (Carriers) Min.	Length Per Lb. Min.	Hardness		Breaking Strength Lb. Min. (4102)	Elongation % Max. (4102)	Water Absorption (4502)	No. of Ends in Braid	
						Min	Max.				Inner	Outer
<u>Cord, Elastic, Exerciser and Shock Absorber for Aeronautical Use</u> MIL-C-5651B								W/F				
		(Outside)			Weight per 100' (lb. max.)				Drift (max)	Set (max)		
Type I- Straight cord with double braided cover (shock-absorbing)		1/4			2.4			120	140	10%	16	24
		3/8			5.5			300	140	10%	24	40
		1/2			9.0			400	140	10%	32	60
		5/8			14.0			500	140	10%	48	60
		3/4			22.0			1000	120	10%	60	60
Type II- Endless ring (Dungee) with double braided cover (shock-absorbing)		1/4									32	32
		3/8									48	48
		7/16									48	48
		1/2									48	48
		9/16									48	48
		5/8									48	48
		11/16									48	48
		3/4									48	48
		13/16									60	60
Type III- Straight cord with single braided cover (exerciser cord)		3/16			1.3			45	200	10%	5%	32
		5/16			3.1			75	200	10%	5%	32

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as core requirements, etc.)	NOTES (Not Specification Requirements)
MIL-C-5651B Type I Type II Type III	Strands shall be thoroughly treated with soapstone or talc to prevent them from adhering to each other in the finished cord.	Color- Types I & II: both inner & outer braids shall be natural in color. Type III: color shall be as specified. See spec. for instructions on color marking.	(2-6) Yarns shall be cotton. Ends shall be made from natural rubber compound, cis-1,4 polyisoprene rubber compound, or a mixture thereof. Cord shall be made of multiple strands encased within double or single layers of cotton braid. Strands shall be continuous throughout the length of the cord and shall be a uniform size in a given cord. Types I & II: outer braid shall consist of polished ply yarns. Inner braid consist of polished (soft) ply yarns. For all types: braid shall be tight and prevent dirt from entering between the threads at 100% elongation. Cord shall be no more than 6 months old from manufacture to delivery date. Low temp. set: Type I- 10% max.; Type III- 5% max. Flexing cycles (min): Type I, most sizes- 5x10 <sup>4</sup> ; Type II, 3/4 in.- 1x10 <sup>4</sup> ; Type III- 1.5x10 <sup>4</sup> . See spec. for properties after aging.	Intended Use- Types I & II: Shock mount installations. Type III: opening elastic on parachute packs, camera or instrument cradle mounts, airship valve control lines, and where a shock-absorbing cord of low initial tension is required.

### CORDAGE

NOMENCLATURE	Commercial Number or Size	Circumference Inches	Diameter Inches	Number of Strands (Carriers) Min.	Length Per Lb. Min.	Hardness		Breaking Strength Lb. Min. (4102)	Elongation % Max. (4102)	Water Absorption (4502)	Yarn Ply	Yarn Denier
						Min	Max.					
Cord, Nylon, Coreless MIL-C-7515C, Amd. 1								W/F				
	Picks Per Inch	End Per Carrier	Total Ends						(min)			
Type I	11.5-13	3	48	16	330'			400	20		3	210
Type Ia	13-13.5	2	32	16	441'			400	20		2	840
Type II	10-11.5	3	48	16	255'			550	20		1	840
Type III	8.5-10	6	96	16	150'			750	20		3	210
Type IV	7-8.5	6	96	16	120'			1000			1	840
Type V	6.5-8	9	144	16	75'			1500			1	840
Type VI	4.5-6	12	192	16	60'			2000			1	840
Type VII	4.5-6	14	224	16	45'			2400			1	840
Type VIII	5.5-7	12	288	24	36'			3000			1	840
Type IX	5.5-7	12	384	32	27'			4000			1	840
Type X	4.5-6	16	512	32	22.5'			5000			1	840
Type XI	14-15.5	7	112	16	480'			300	20		1	210
Type XII	4-5	16	576	36	12'			10000			7	210
Type XIIa	4-5	18	576	32	12'			10000			7	210

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS	NOTES
			(Such as core requirements, etc.)	(Not Specification Requirements)
MIL-C-7515C Type I Type Ia Type II Type III Type IV Type V Type VI Type VII Type VIII Type IX Type X Type XI Type XII Type XIIa	(5)	Color- Unless otherwise specified, cord shall be yarn or piece dyed to match an approved shade of Olive Drab No. 7, except for Type XI, which shall be color coded in 7 continuous alternate 1000 ft. lengths of natural white and black, beginning with natural white. Dyeing of cord in skeins is prohibited (3). Colorfastness- standard sample available (460-461).	Nylon yarn used in the cord shall be bright, high-tenacity, heat and light resistant polyamide from hexamethylene diamine & adipic acid or its derivatives. It shall have a melting point of 250°-260°C. In manufacture, no more than 1 carrier end shall be allowed to be run off per 50 ft. of cord. When carrier ends run off, they shall be spliced or knotted (3-5 knots tied in a series) a distance of 5-10 in. in length. When knotting procedure is used, ends of knots shall be sheared off adjacent to the surface of the yarn.	Intended Use- In personnel and cargo type parachutes. Type Ia cord is intended for use in lowcost parachutes. Type XI is for use as tow cables.

## CORDAGE

NOMENCLATURE	Commercial Number or Size	Circumference Inches	Diameter Inches	Number of Strands (Carriers)	Length Per Lb. Min.	Hardness		Breaking Strength Lb. Min. (4102)	Elongation % Max. (4102)	Water Absorption (4502)	Fly Lender	
						Min	Max.				W	F
Cord, Nylon, Braided, Tubular, Spliceable MIL-C-17183A (NORd)												
	(A) Pick/Inch		Ends/Carrier						(min.)			
Type I	17		4	16	900 yds.			50	20		1	70
Type II	16		3	16	400 "			100	20		1	210
Type III	14.5		(a)	16	225 "			200	20		3	210
Type IV	13		(b)	16	150 "			300	20		3	210
Type V	12		8	16	110 "			400	20		3	210
Type VI	11		3	16	90 "			500	20		4	210
Type VII	9.5		6	16	50 "			750	20		3	210
Type VIII	8.5		6	16	40 "			1000	20		4	210
Type IX	7.5		7	16	35 "			1250	20		3	210
Type X	7		9	16	30 "			1500	20		4	210
Type XI	6.5		10	16	25 "			1750	20		4	210
Type XII	6		12	16	20 "			2000	20		4	210
Type XIII	5.5		13	16	17 "			2250	20		4	210
Type XIV	5.25		14	16	15 "			2500	20		4	210
Type XV	7		12	24	12 "			3000	20		4	210
Type XVI	6.5		14	24	10 "			3500	20		4	210
Type XVII	6.25		4	24	9 "			4000	20		4	240
Type XVIII	6		(c)	24	8 "			4500	20		4	240
Type XIX	5.5		5	24	7 "			5000	20		4	240
Type XX	5.25		(d)	24	6 "			5500	20		4	240
Type XXI	5		6	24	5 "			6000	20		4	240

- (a) 8 carriers of 1 end, 8 of 2 ends, alternately.  
 (b) 8 carriers of 2 ends, 3 of 3 ends, alternately.  
 (c) 12 carriers of 4 ends, 12 of 5 ends, alternately.  
 (d) 12 carriers of 5 ends, 12 of 6 ends, alternately.

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS	NOTES
			(Such as core requirements, etc.)	(Not Specification Requirements)
MIL-C-17183A				
Type I		Color- Unless otherwise specified, color shall be natural. When colored cord is specified, the yarn shall be dyed before weaving or the cord shall be dyed under uniform tension throughout (c).	Cord shall be made from high-tensile, bright nylon. Fiber shall be a polyamide of hexamethylene diamine and adipic acid. (All No. of pick per inch shall not vary by more than 10%. Cord shall be braided on a 16-carrier braiding machine for Type I through Type XIV cords, and on a 24-carrier braiding machine for Type XV through XXI. The machine shall be regulated to give a 2 over, 2 under conventional 1/16. See spec. for information on inspection.	Intended Use- For tele-cable splicing.
Type II				
Type III				
Type IV				
Type V				
Type VI				
Type VII				
Type VIII				
Type IX				
Type X				
Type XI				
Type XII				
Type XIII				
Type XIV				
Type XV				
Type XVI				
Type XVII				
Type XVIII				
Type XIX				
Type XX				
Type XXI				

### CORDAGE

NOMENCLATURE	Commercial Number or Size	Circumference Inches	Diameter Inches	Number of Strands (Carriers) Min.	Length Per Lb. Min.	Hardness D.		Breaking Strength Lb. Min. (4102)	Elongation % Max. (4102)	Water Absorption (4502)	Denier
						Min.	Max.				
Rope, Nylon MIL-R-17343C, Amd. 1								W/F			
		(6)			(At Load P)			(4106)			
		(At Load P)	(Approx.)								
822		5/8	3/16		100'	5	25	1000	55		2500-8000
		3/4	1/4		66'	5	25	1500	55		2500-8000
	1	5/16			36'	5	25	2500	55		2500-8000
	1-1/8	3/8			28.5'	5	25	3000	55		2500-8000
	1-1/4	7/16			20'	5	25	4500	55		2500-8000
	1-1/2	1/2			16.5'	5	25	5500	55		2500-8000
	1-3/4	9/16			12.5'	5	25	7000	55		7500-10000
	2	5/8			9.7'	5	25	8400	55		7500-10000
	2-1/4	3/4			7.2'	5	25	11500	55		7500-10000
	2-1/2	13/16			6.2'	5	25	14000	55		7500-10000
	2-3/4	15/16			5.0'	5	25	16000	55		10000-15000
	3	1			4.1'	20	100	22000	55		10000-15000
	3-1/2	1-1/8			3.0'	20	100	28500	55		15000-16000
	3-3/4	1-1/4			2.6'	20	100	33000	55		15000-16000
	4	1-5/16			2.3'	20	100	37500	55		15000-16000
	4-1/2	1-1/2			1.8'	20	100	46000	55		15000-16000
	5	1-5/8			1.5'	20	100	57000	55		15000-16000
	5-1/2	1-3/4			1.25'	20	100	68000	55		15000-16000
	6	2			1.60'	20	100	81000	55		15000-16000
	6-1/2	2-1/8			.90'	20	100	90000	55		15000-16000
	7	2-1/4			.71'	20	100	110000	55		15000 min.
	8	2-5/8			.55'	20	100	137000	55		"
	9	3			.43'	20	100	170000	55		"
	10	3-1/4			.34'	20	100	200000	55		"
	11	3-5/8			.285'	20	100	240000	55		"
	12	4			.24'	20	100	280000	55		"

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS	NOTES
			(Such as core requirements, etc.)	(Not Specification Requirements)
MIL-R-17343C	(5) No extraneous weighting material shall be added.	Color- Unless otherwise specified rope shall be natural in color. When color is specified, rope shall be dyed to match approved standard shade of Olive Drab No. 7 (3). Colorfastness- standard sample available (4671).	Moisture content of the rope shall not exceed 5%. Finished ropes shall be spliceable and shall not develop yarn displacement or strand cockles in splicing test. Rope shall be made from bright virgin, continuous-filament nylon fiber of at least 6 denier size, having at least 6.5 gram per denier strength. Nylon shall be a long chain polymer of hexamethylene diamine and adipic acid, or a long chain polymer of epsilon amino caproic acid. Mixtures of nylon fiber types shall not be used in any 1 rope. Ropes shall be made from 3 strands of balanced 3-ply yarns.	Intended Use- For general purpose uses where high strength or stretch is required as in mooring, towing, and hoisting operations.

### CORDAGE

NOMENCLATURE	Commercial Number or Size	Circumference Inches	Diameter Inches	Number of Strands (Carriers) Min.	Length Per Lb. Min.	Hardness	Breaking Strength	Elongation	Water Absorption		
							Lb. Min.	% Max.			
							(4102)	(4102)	(4502)		
<b>Rope, Polypropylene</b>							Min   Max.	W   F			
<b>MIL-R-24049A</b>							(6)				
		(At Load P)(Approx.)		(At Load P)							
<b>Sizes:</b>		5/8	3/16	118.0'		700					
		3/4	1/4	83.5'		1000					
1		5/16	3/8	47.0'		1700					
1-1/8		3/8	7/16	36.1'		2150					
1-1/4		1/2	9/16	30.0'		2500					
1-1/2		5/8	11/16	21.0'		3700					
1-3/4		3/4	13/16	15.8'		4800					
2		7/8	1 1/16	12.0'		6000					
2-1/4		1	1 1/8	9.1'		7000					
2-1/2		1 1/8	1 1/4	7.6'		9000					
2-3/4		1 1/4	1 1/2	6.35'		11000					
3		1 1/2	1 3/4	5.20'		13000					
3-1/2		1 3/4	2	3.80'		16500					
3-3/4		2	2 1/4	3.30'		19500					
4		2 1/4	2 3/4	2.92'		21500					
4-1/2		2 3/4	3	2.28'		26000					
5		3	3 1/4	1.90'		32000					
5-1/2		3 1/4	3 3/4	1.58'		38000					
6		3 3/4	4	1.26'		44000					
6-1/2		4	4 1/4	1.10'		50000					
7		4 1/4	4 3/4	.90'		60000					
8		4 3/4	5	.70'		75000					
9		5	5 1/4	.545'		94000					
10		5 1/4	5 3/4	.430'		115000					

Type I- Low elongation rope  
 Type II- High elongation rope

(a)  
 35  
 35

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS	NOTES
			(Such as core requirements, etc.)	(Not Specification Requirements)
MIL-R-24049A Type I Type II	(5)	Color- Unless otherwise specified, color shall match an approved standard shade of Olive Drab No. 7 (3). Colorfastness- standard sample available (4671).	(2) (a) Load elongation curve drawn autographically shall not exhibit evidence of changes in load applications greater than 5% of the load weighed at the instant of change. Changes due to splice slippage are not considered. Finished ropes shall be spliceable and shall not develop yarn displacement or strand cockles in testing. Materials used for the rope shall be virgin continuous mono-filament polypropylene, ranging in size from 100-600 denier per filament. Fiber shall have at least 6 grams per denier strength. Softening point of at least 300°F. Specific gravity of no greater than 0.91. Fiber shall contain adequate heat and ultraviolet light stabilizers. Ropes shall be made of 3 strands.	Intended Use- For various Military uses where high strength, lightweight, and floatability are required, as in mooring, towing, and hoisting operations.



### CORDAGE

NOMENCLATURE	Commercial Number or Size	Circumference Inches	Diameter Inches	Number of Strands (Carriers) Min.	Length Per Lb. Min.	Hardness		Breaking Strength Lb. Min. (4102)	Elongation % Max. (4102)	Water Absorption (4502)	Picks Per Inch	Yarns Per Carrier
						Min.	Max.					
Rope, Nylon, Double-Braided MIL-R-24050 (SHIPS)						W/F						
Sizes:	(6)	(Nominal)			(At Load P)				(a)			Cover (min)
	1	3/4	1/4	16	60'			1650	40		8.00	2
	1-1/8	5/16	3/8	16	36'			2750	40		6.20	2
	1-1/4	3/8	1/2	16	30'			3300	40		5.65	2
	1-1/2	7/16	5/8	16	20'			5000	40		4.60	2
	1-3/4	1/2	3/4	16	15'			6650	40		4.00	2
	2	9/16	7/8	16	12'			8300	40		3.60	2
	2-1/4	5/8	1	20	9'			11000	40		3.50	2
	2-1/2	3/4	1-1/8	20	6.6'			15000	40		3.10	2
	2-3/4	13/16	1-1/4	20	5.7'			17500	40		2.85	2
	3	15/16	1-1/2	20	4.8'			20800	40		2.60	2
	3-1/2	1	1-5/8	24	4.0'			25000	40		2.35	2
	3-3/4	1-1/8	1-3/4	24	2.8'			35000	40		2.40	2
	4	1-1/4	1-7/8	24	2.5'			40000	40		2.25	2
	4-1/2	1-5/16	2	24	2.2'			45000	40		2.10	2
	5	1-1/2	2-1/8	24	1.6'			60000	40		1.85	2
	5-1/2	1-5/8	2-1/4	24	1.43'			70000	40		1.70	2
	6	1-3/4	2-3/8	24	1.11'			90000	40		1.50	2
	6-1/2	2	2-1/2	24	1.00'			100000	40		1.40	2
	6-3/4	2-1/8	2-3/4	24	0.83'			120000	40		1.30	2

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as core requirements, etc.)	NOTES (Not Specification Requirements)
MIL-R-24050	(5) No extraneous weighting material shall be added to the rope.		(a) Load elongation curve, drawn autographically, shall not exhibit evidence of changes in load applications greater than 5% of the load weighed at the instant of change. Inner and outer braids shall be made from bright, white, virgin continuous-filament nylon fiber of at least 10 denier size, having at least 6.5 grams per denier strength. Nylon shall be a long chain polymer of hexamethylene diamine and adipic acid or a long chain polymer of epsilon amine caproic acid. Mixtures of nylon types shall not be employed in finished rope or component braid. Ropes shall be double braided. A cover shall be braided over an inner core, both hollow. Heat setting will not be permitted. Core carriers: 8 min. Core yarns/carrier: 3/4-3 in. - 2; 3-1/2 - 1-1/2 in. - 3. Loss in strength after heat setting shall not be more than 10% (4,2,5,3,2). Moisture content shall not exceed 5% (2600).	Intended Use- For general purpose uses where high strength and low elongation are required.

### CORDAGE

NOMENCLATURE	Commercial Number or Size	Circumference Inches	Diameter Inches	Number of Strands (Carriers) Min.	Length Per Lb. Min.	Hardness		Breaking Strength Lb. Min. (4102)	Elongation % Max. (4102)	Water Absorption (4502)
						Min	Max.			
<u>Rope, Polyester</u> MIL-R-30500A		(6)			(At Load P)			W/F		
Size:		(At Load P)						(4106)	(a)	
	5/8			3	84.0'	5	25	800	35%	
	3/4			3	57.0'	5	25	1200	35%	
	1			3	30.0'	5	25	2500	35%	
	1-1/2			3	13.0'	5	25	5000	35%	
	2			3	8.0'	5	25	8000	35%	
	2-1/2			3	5.3'	5	25	13000	35%	
	3			3	3.5'	20	100	18500	35%	
	3-1/2			3	2.5'	20	100	25000	35%	
	4			3	2.0'	20	100	31000	35%	
	5			3	1.3'	20	100	48000	35%	
	6			3	0.90'	20	100	68000	35%	
	7			3	0.66'	20	100	88000	35%	
	8			3	0.50'	20	100	110000	35%	
	9			3	0.40'	20	100	140000	35%	
	10			3	0.33'	20	100	165000	35%	

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS	NOTES
			(Such as core requirements, etc.)	(Not Specification Requirements)
MIL-R-30500A	(5) No extraneous weighting material shall be added.	Color- Unless otherwise specified, color of the finished rope shall be natural. When colored rope is specified, rope shall be dyed to match an approved standard shade of Olive Drab No. 7 (5). Colorfastness- standard sample available (4671).	(2) (a) Load elongation curve, drawn autographically, shall not exhibit evidence of changes in load applications greater than 5% of load weighed at the instant of change. Changes due to splice slippage shall not be considered. Material shall be bright, virgin, continuous multi-filament fiber of ethylene terephthalate polymer. Rope shall be of 3 strands. Moisture content: 2% max. Rope shall be spliceable and shall not develop yarn displacement or strand cockles in testing (4.2.5.7).	Intended Use- For general purpose uses.

### CORDAGE

NOMENCLATURE	Commercial Number or Size	Circumference Inches	Diameter Inches	Number of Strands (Carriers) Min.	Length Per Lb. Min.	Hardness	Breaking Strength Lb. Min.		Elongation % Max.	Water Absorption
							(4102)	(4502)		
<u>Cord, Acrylic, Lacing</u> (For Assembly of Propelling Charges) MIL-C-40088 (ORD)							Min	Max.	W	F
Type 1									20	
Type 2									30	
Type 3									90	
Type 4									100	
<u>Rope, Nylon (Spun Yarn)</u> MIL-R-43161		3/4+1/8			47'		(4106) 850 (initial) 90% (after heat aging)	(4106) 35%		

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as core requirements, etc.)	NOTES (Not Specification Requirements)
MIL-C-40088 Type 1 Type 2 Type 3 Type 4	Acidity or alkalinity: no more than 0.1% as acetic acid and not more than 0.1% as sodium carbonate (4.6.1.1.2). Ash content: not more than 1.0% (4.6.1.2). There shall be no halogens in the cord (4.6.1.3). pH: 5.0 - 9.0 (4.6.1.1.1).	Color- Unless otherwise specified, color shall be natural. If color is specified, it shall be obtained by "dope" dyeing (the color being added to the acrylic polymer mix prior to spinning the filaments) or by conventional dyeing as specified by contracting officer.	(2) Cord shall be made from 99% min. acrylic fiber. Breaks in ends or plies shall be joined by knots. Ave. no. of full knots (a knot in the entire cord) shall be not more than 1 for every 2 oz. of cord.	Intended Use- In the assembly of propelling charges. It is not for use with propellants containing nitroguanidine.
MIL-R-43161	(5) No extraneous weighting material shall be added.	Color- Shall be Olive Drab No. 7. Standard sample available (3). Colorfastness- standard sample available (4671).	Rope shall be made from bright, virgin, spun staple nylon. It shall be of 3-strand construction, have a firm lay with a high degree of resistance to back turning (nubbing or kinking in the strand) upon removal of afterturn form rope. Rope shall be not more than 2 years old from date of manufacture to date of delivery. Moisture content shall not exceed 5%.	Intended Use- For lacing ponton floats.

### CORDAGE

NOMENCLATURE	Commercial Number or Size	Circumference inches	Diameter inches	Number of Strands (Carriers) Min.	Length Per Lb. Min.	Hardness		Breaking Strength Lb. Min. (4102)	Elongation % Max. (4102)	Water Absorption (4502)
						Min	Max.			
<b>Cord, Polyester, Solid Braid</b> MIL-C-43256, Amd. 2 (GL)								W	F	
Sizes:		(+1/64)								
		3/32		8	360'			205	20%	
		1/8		9	220'			310	20%	
		5/32		12	140'			400	20%	
		3/16		12	99'			540	20%	
		7/32		12	71'			725	20%	
		1/4		12	53'			945	20%	
		5/16		12	34'			1575	20%	
		3/8		12	25'			1925	20%	
		1/2		12	14'			2950	20%	
<b>Cord, Linen, (Plumb-Bob Use)</b> MIL-C-43258		0.050		8	1350'			48		

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS	NOTES
			(Such as core requirements, etc.)	(Not Specification Requirements)
MIL-C-43256	(5) No extraneous weighting material shall be added.	Color- Unless otherwise specified, color of cord shall be natural. When colored cord is specified cord shall be dyed to match standard sample (3). Colorfastness- standard sample available (4671).	(2) The yarn used in the fabrication of the cord shall be a high tenacity multi-filament, plied or singles polyester yarn. When dyed cord is specified, the shade shall be obtained by yarn dyeing or piece dyeing and subsequently processed to stabilize the yarn or cord. The character of the cord shall be equal to standard samples for roundness and firmness.	Intended Use- In tentage, equipage, and other items.
MIL-C-43258	(5) Cord shall have a smooth dressed surface with a hard polished finish. pH: 5.5 - 7.5 (2811).	Color- Color of cord shall be natural.	Cord shall be made from flax fiber.	Intended Use- For plumb-bob use on surveying equipment.

### CORDAGE

NOMENCLATURE	Commercial Number or Size	Circumference Inches	Diameter Inches	Number of Strands (Carriers) Min.	Length Per Lb. Min.	Hardness		Breaking Strength Lb. Min. (4102)	Elongation % Max. (4102)	Water Absorption (4502)	Picks Per Inch Min.	Elastic Strands Min.
						Min.	Max.					
<u>Cord, Elastic, Cotton</u> MIL-C-43303, Amd. 1						Min   Max.		W   F				
	Yarn Counts +2 Cover      CoFd											
Class 1- General purpose	20/2	20/1	3/16-1/32	16 of 1 end/carrier or 8 of 2 ends/carrier.	0.18 oz/lin yd.				117-143		26	7
Class 2- Special purpose	20/2	20/1	3/16-1/32						117-143 (initial) 80% (after acc. aging) 80% (after low temps.)		26	7

Cord, Nylon, Solid  
Braid, General Purpose  
MIL-C-43307, Amd. 1

Sizes:	(+1/64)					
	3/32	9	380'		250	
	1/8	9	220'		400	
	5/32	12	144'		540	
	3/16	12	99'		720	
	7/32	12	72'		900	
	1/4	12	57'		1100	
	5/16	12 or 18	36'		1900	
	3/8	12 or 18	24'		2700	

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS	NOTES
			(Such as core requirements, etc.)	(Not Specification Requirements)
MIL-C-43303 Class 1 Class 2		Color- natural or dyed (1). When dyed is specified, cotton yarn shall be dyed before braiding. (3-4). Standard sample available. Colorfastness- standard sample available (5600).	Elastic strands shall be made of compounded natural rubber, synthetic rubber, or a mixture thereof. Rubber gage shall be .36 (max. fineness). Core shall be composed of 7 ends of rubber wrapped first with 4 ends of 20/1 cotton yarn, and top wrapped with 1 end of 20/1 cotton yarn. Braid cover shall be braided over the core with the carriers braiding in pairs in a basket weave formation. Class 2: Initial permanent set- 8.0% max. After acc. aging, change in permanent set shall be no more than 20% (3.5.3.4-3.5.2.5).	Intended Use- As a drawcord in the man's field coat, vesicant gas protective coat, cold weather overalls for mechanics, traffic control ensemble, man's parka, rucksack cover, and fragmentation protective body armor.
MIL-C-43307		Color- Unless otherwise specified, color shall be natural. When specific color is required, it shall be as specified, and shall match standard sample (3). Colorfastness- standard sample available (4671).	Yarn shall be bright, high tenacity multi-filament nylon. Cord shall be of solid braid construction.	Intended Use- In miscellaneous tentage and equipment application.

## CORDAGE

NOMENCLATURE	Commercial Number or Size	Circumference Inches	Diameter Inches	Number of Strands (Carriers) Min.	Length Per Lb. Min.	Hardness	Breaking Strength	Elongation	Water Absorption	Width Inch (+10%)	Thickness Inch (+0.003)		
							Lb. Min.	% Max.	(4502)				
<b>Tape: Impregnated, Lacing and Tying MIL-T-43435</b>							Min   Max.	W   F					
		Length/Pound Finish											
		A	B	C	E								
<b>Type I- Polyamide Nylon</b>													
Sizes:		1	400	300	350	325	135	40	.225	.014			
		2	700	500	600	550	80	40	.125	.012			
		3	1000	800	900	850	50	40	.090	.012			
		4	2000	1500	1800	1650	25	40	.062	.012			
		5	3200	2400	2800	2600	15	40	.050	.012			
<b>Type II- Polyester</b>													
Sizes:		1		B	C	E	135	40	.225	.014			
		2		200	250	225	80	40	.125	.012			
		3		400	450	425	50	40	.090	.012			
		4		800	900	900	25	40	.062	.012			
		5		950	1100	1000	15	40	.050	.012			
<b>Type III- Tetrafluorocarbon</b>													
Sizes:		2	A	C				30	30	.120	.011		
		4	350	300				15	30	.065	.011		
		5	650	550				10	30	.025	.011		
<b>Type IV- Glass</b>													
Sizes:		1		D	E				200	5	.225	.016	
		2		150	145				100	5	.125	.016	
		3		400	375				75	5	.090	.016	
		4		600	575				50	5	.062	.016	
		5		900	875				-	-	.050	.016	
<b>Type V- Polyamide Nylon heat-resistant</b>													
Sizes:		1	A	C	F				85	40	.225	.014	
		2	450	400	400				50	40	.125	.012	
		3	800	700	700				35	40	.090	.012	
		4	1150	1000	1000				25	40	.062	.008	
(Continued)		4	1550	1300	1300								

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS	NOTES
			(Such as core requirements, etc.)	(Not Specification Requirements)

MIL-T-43435 Type I Type II Type III Type IV Type V (Continued)	All tape finishes shall contain no copper, mercury, or compounds of copper and mercury. All finishes shall be able to be used freely in contact with insulated cable or wire.	Color- Unless otherwise specified, color shall be natural.	Type I yarn shall be a high tenacity, continuous filament nylon. Type II yarn used shall be a high tenacity continuous filament polyester. Type III yarn shall be a continuous filament tetrafluorocarbon. Type IV yarn shall be an electrical grade, continuous filament, glass, having high insulation resistance, high dielectric strength, high resistance to aging, and low moisture pickup. Material shall be free from any free alkali metal oxides, such as soda or potash, and from foreign particles, dirt or other impurities. Type V yarn shall be an electrical grade, continuous filament, non-melting, aromatic polyamide, having high temperature resistance, high dielectric strength, and high resistance to aging. Yarn shall be substantially free from sizing, loading, and other adulterants.	Intended Use- For lacing and tying telephone switchboard cable forms, hookup wires, cable ends, aircraft cable bundles, electrical and electronic equipment, and electrical wire-harness assemblies.
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### CORDAGE

NOMENCLATURE	Commercial Number or Size	Circumference inches	Diameter inches	Number of Strands (Carriers) Min.	Length Per Lb. Min.	Hardness	Breaking Strength Lb. Min. (4102)	Elongation % Max. (4102)	Water Absorption (4502)
Tape: Impregnated, Lacing and Tying MIL-T-43435 (Cont'd)							Min   Max.	W   F	

Finish A- Natural.  
 Finish B- Wax impregnated.  
 Finish C- Synthetic rubber including elastomer coatings.  
 Finish D- Tetrafluorocarbon coating.  
 Finish E- Vinyl chloride or vinyl chloride-acetate copolymer coating.  
 Finish F- Silicone resin impregnated.

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as core requirements, etc.)	NOTES (Not Specification Requirements)
MIL-T-43435 (Cont'd) Finish A Finish B Finish C Finish D Finish E Finish F	Finish A tape shall have a natural finish. Finish B tape shall be uniformly treated with micro-crystalline fungicide wax. Wax content: 15-32%. Finish C tape shall be uniformly impregnated with a synthetic rubber finish. Rubber content: 7-17%. Finish D tape yarns shall be uniformly impregnated with tetrafluorocarbon coating before braiding. Tetrafluorocarbon content: 10-20%. Finish E tape shall be uniformly coated with virgin vinyl chloride or vinyl chloride-acetate copolymers plasticized with phosphate or ester plasticizers exclusively. Coating content: 15-30%. Finish F tapes shall be uniformly impregnated with silicone resin. Resin content: 7-17%.		All tapes shall be braided in a flat braid construction. No tape shall show visible fungus growth on the surface of test specimens (4.2.5.3). Finish C, E, and F tapes: Stress applied to a specimen by joining 2 ends of the braided tape with a square knot shall result in breakage rather than in slippage or pulling out of the knot (4.2.5.4). Finish C, D, E, and F tapes: no visible damage or removal of coatings after blocking test (4.2.5.5). Finish C, D, E, and F tapes: no stiffness, brittleness, softness or tackiness after accelerated aging (5852).	

### CORDAGE

NOMENCLATURE	Commercial Number or Size	Circumference Inches	Diameter Inches	Number of Strands (Carriers) Min	Length Per Lb. Min.	Hardness		Breaking Strength Lb. Min. (4102)	Elongation % Max. (4102)	Water Absorption (4502)	Picks Per Inch Denier Ply		
						Min	Max.				W	F	
Cord, Polyamide, High Temperature Resistant MIL-C-81104 (WSP)				16, 1 end per carrier	350'			100	30		26-28	200	3

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS	NOTES
			(Such as core requirements, etc.)	(Not Specification Requirements)
MIL-C-81104		Color- Unless otherwise specified, color shall be Olive Green. Color shall be obtained by utilization of solution-dyeing.	Yarn shall be a high strength, aromatic polyamide, and shall not melt.	Intended Use- In the construction of anti-G coveralls, Mark 2A, and related clothing.



REFERENCES

CORDAGE

Textile Test Methods - CCC-T-191b

<u>Method</u>	<u>Title</u>
	<u>Chemical</u>
2811	Acidity (pH), potentiometric method.
	<u>Mechanical</u>
4102	Strength and elongation, breaking small cords; single strand.
4106	Strength, breaking, heavy cordage (tape).
	<u>Air Permeability and Water Resistance</u>
4502	Water absorption; thread, cord, braid, immersion method.
	<u>Colorfastness</u>
4614	Colorfastness to laundering; wool, silk and rayon yarn, thread and cordage; Launder-Ometer method.
4630	Colorfastness to water; yarn, thread, cordage.
4650	Crocking resistance; yarn, thread, cordage.
4660	Colorfastness to light; yarn, thread, cordage; accelerated method (Fade-Ometer).
4670	Colorfastness to weather; yarn, thread, cordage; accelerated method (Twin Arc Weather-Ometer).
4671	Colorfastness to weather of yarn, accelerated method (National Weathering Unit).
5600	Chlorine bleaching; cloth.
	<u>Deterioration Test</u>
5852	Aging; accelerated oxygen method.

GENERAL NOTES

KNITTED CLOTHS

The following parenthetical numbers are utilized throughout this section of the text as referenced notes. Upon observing these numbers, refer to this page for further information dealing with specific portions of the item.

- |                           |                                     |
|---------------------------|-------------------------------------|
| (1) As specified.         | (4) Sulfur dyes.                    |
| (2) Preproduction sample. | (5) Nonfibrous, etc., restrictions. |
| (3) Colormatching.        | (6) Knitting instructions.          |

The specific test methods referenced in this section of the text are listed with their titles at the end of the section.

### KNITTED CLOTHS

NOMENCLATURE	YARN				Type of Knit	Yarns Per Inch Min. (5070)	Width Inch	Weight Oz/Sq Yd (5041)	Thick-ness Inch (5030)	Bursting Strength Lb. Min. (5120)	Air Permea-bility (5450)	Shrinkage and Elongation % Max (5556)
	Fiber	Yarn Number	Ply	Denier								
Net, Laundry (Nylon) JJ-N-180d, Amd. 2 (See also under Synthetic Cloths)			W   C   S	W   C   S		W   C		Min   Max				W   C

Type I- With grommets

Type II- Without "

Size 1- 10x15 in.	Nylon:	260 260	Warp	9.0	9.6	220
Size 2- 12x22 in.	Bright,	260 260	"	9.0	9.6	220
Size 3- 18x30 in.	high-	260 260	"	9.0	9.6	220
Size 4- 24x36 in.	tenacity	260 260	"	9.0	9.6	220

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as Stretch, etc.)	NOTES (Not Specification Requirements)
JJ-N-180d Type I Type II Size 1 Size 2 Size 3 Size 4	Cloth shall be scoured and heat set.	Color- Cloth shall be white (natural).	Yarn shall be 16-18 filament. Brass grommets shall conform to Type I, Class 1, Size 4 of V-T-295. Meshes/sq in.: 1 -22.	Intended Use- In the form of a bag for washing items of clothing in a laundry.

### KNITTED CLOTHS

NOMENCLATURE	YARN				Type of Knit	Yarns Per Inch Min. (5070)	Width Inch	Weight Oz/Sq Yd (5041)	Thick-ness Inch (5030)	Bursting Strength Lb. Min. (5120)	Air Permeability (5450)	Shrinkage and Elongation % Max (5556)
	Fiber	Yarn Number	Ply	Denier								

Stockinet, Surgical JJ-S-746a  
W | C | S W | C | S W | C Min | Max W | C

<b>Type I- Rib knit</b> unbleached (Natural color) or bleached Sizes: 3 in. wide 4 in. wide 6 in. wide 8 in. wide 9 in. wide 10 in. wide 12 in. wide 20 in. wide	12/1 or 14/1 or 16/1	Rib knit seamless or circular in contin- uous tube of cloth.	<table style="font-size: small;"> <tr><th>Ribs</th><th>Loops</th></tr> <tr><td>16</td><td>24</td></tr> <tr><td>16</td><td>24</td></tr> <tr><td>16</td><td>24</td></tr> <tr><td>16</td><td>24</td></tr> <tr><td>16</td><td>24</td></tr> <tr><td>16</td><td>24</td></tr> <tr><td>16</td><td>24</td></tr> <tr><td>16</td><td>24</td></tr> </table>	Ribs	Loops	16	24	16	24	16	24	16	24	16	24	16	24	16	24	16	24	<table style="font-size: small;"> <tr><th colspan="2">(per lin yd)</th></tr> <tr><td>3</td><td>1.25</td></tr> <tr><td>4</td><td>1.50</td></tr> <tr><td>6</td><td>2.50</td></tr> <tr><td>8</td><td>3.00</td></tr> <tr><td>9</td><td>3.50</td></tr> <tr><td>10</td><td>4.00</td></tr> <tr><td>12</td><td>4.50</td></tr> <tr><td>20</td><td>8.00</td></tr> </table>	(per lin yd)		3	1.25	4	1.50	6	2.50	8	3.00	9	3.50	10	4.00	12	4.50	20	8.00	115 115 115 115 115 115 115 115	<table style="font-size: small;"> <tr><th colspan="2">(+15%)</th></tr> <tr><th>Ribs</th><th>Loops</th></tr> <tr><td>75</td><td>300</td></tr> <tr><td>75</td><td>300</td></tr> <tr><td>75</td><td>300</td></tr> <tr><td>75</td><td>300</td></tr> <tr><td>75</td><td>300</td></tr> <tr><td>75</td><td>300</td></tr> <tr><td>75</td><td>300</td></tr> </table>	(+15%)		Ribs	Loops	75	300	75	300	75	300	75	300	75	300	75	300	75	300
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<b>Type II- Plain or flat knit, olive drab</b> Sizes: 13-14 in. wide 50-54 in. wide	24/1 or 26/1 or 28/1	Plain knit on a cir- cular or flat ma- chine.	<table style="font-size: small;"> <tr><th>Ribs</th><th>Loops</th></tr> <tr><td>24</td><td>36</td></tr> <tr><td>24</td><td>36</td></tr> </table>	Ribs	Loops	24	36	24	36	<table style="font-size: small;"> <tr><th colspan="2">(per sq yd)</th></tr> <tr><td>13-14</td><td>4.4</td></tr> <tr><td>50-54</td><td>4.4</td></tr> </table>	(per sq yd)		13-14	4.4	50-54	4.4	75 75																																											
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NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as Stretch, etc.)	NOTES (Not Specification Requirements)
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JJ-S-746a Type I Type II		Color- Type I: unbleached (natural color) or bleached. Type II: Olive Drab. Stock, yarn, or piece dyed. (4). Colorfastness- Type II: "good" (5672-5651).		Intended Use- In the treatment of fractures and wounds.
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### KNITTED CLOTHS

NOMENCLATURE	YARN				Type of Knit	Yarns Per Inch Min. (5070)	Width Inch	Weight Oz/Sq Yd (5041)	Thick-ness Inch (5030)	Bursting Strength Lb. Min. (5120)	Air Permeability (5450)	Shrinkage and Elongation % Max (5556)
	Fiber	Yarn Number	Ply	Denier								
<u>Scarf, Neckwear, Wool</u>												
MIL-S-2063E												
Class 1- Olive Green 208	Fleece and/or pulled wool:		2 2		Flat Jersey, tube, made on a circular machine using 2 ends per feed.	8 10	9 $\frac{1}{2}$			60		13 13
Class 2- Gray 1155	56's worsted.		2 2									
Class 3- Navy Blue 3345			2 2									
<u>Cloth, Netting, Nylon</u>												
MIL-C-3395E												
(See also under Synthetic Cloths)												
Type I- Woven (See Synthetics)												
Type II- Warp knitted	Bright or semi-dull multi-filament nylon.		70 70		Warp knit (6).		(1)		2.0			2 2

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as Stretch, etc.)	NOTES (Not Specification Requirements)
MIL-S-2063E Class 1 Class 2 Class 3	(5) Face of the cloth shall have a lightly brushed finish.	Color (1)- Standard sample available (3). Colorfastness- standard sample available (5651-5614-5660-5680).	Wool shall be treated for resistance to felting shrinkage in stock, top, yarn or cloth by controlled oxidation process approved by procuring activity. Process shall not increase alkali solubility more than 6% (absolute).	Intended Use- As neck scarves for personnel of the Department of Defense.
MIL-C-3395E Type I Type II	Cloth shall be given a permanent resin finish & character of finished cloth shall be equal to standard sample. To insure proper number of meshes/inch and the size of meshes, cloth shall be heat set and framed to size.	Color- Cloth shall be dyed Olive Green No. 106. Standard sample available (3). Use of pigmented and resin emulsion finishes to provide color & finish in one operation will be permitted. Colorfastness- standard sample available (5614-5671).	Breaking strength: 50 lb. min. (5100). Mesh size- Initial: 0.035 in. max. After 3 launderings and slippage tests: 0.100 in. max. Meshes per sq in: 500-635.	Intended Use- In tentage and equipage items.

### KNITTED CLOTHS

NOMENCLATURE	YARN				Type of Knit	Yarns Per Inch Min. (5070)	Width Inch	Weight Oz / Sq Yd (5041)	Thick-ness Inch (5030)	Bursting Strength Lb. Min. (5120)	Air Permeability (5450)	Shrinkage and Elongation % Max (5556)
	Fiber	Yarn Number	Ply	Denier								
Cloth, Synthetic Norton, Knitted MIL-C-6590 (USAF) Amd. 1												
Type I- 100% Acrylonitrile Copolymer, Pile Fiber	Cotton ground											
Type II- 100% Acrylonitrile Copolymer Vinyl Chloride, Pile Fiber	Acrylonitrile copolymer											
Type III- 100% Acrylic, Pile Fiber	Acrylic											

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as Stretch, etc.)	NOTES (Not Specification Requirements)
MIL-C-6590 Type I Type II	Use of dyestuffs, detergents, or other chemicals or finishing agents which would cause deterioration in storage or cause dermatitis on prolonged intimate skin contact is prohibited.	Color- Unless otherwise specified, color shall be Sage Green 530. Colorfastness- "good" (5620-5660-5651).	Pile height: $\frac{1}{2}$ +1/16 in. Pile recovery: 85% after 1 minute; 95% after 4 hours (4.5.2). Backing material shall show no signs of blocking (5872). Backing material shall not crack or break when tested for flexibility (4.5.3). Backing compound shall consist of a neoprene latex, a suitable plasticizer and a suitable cellulose flock, to form a flexible backing.	Intended Use- In the manufacture of clothing items.

### KNITTED CLOTHS

NOMENCLATURE	YARN				Type of Knit	Yarns Per Inch Min. (5070)	Width Inch	Weight Oz/Sq Yd (5041)	Thick-ness Incht (5030)	Bursting Strength Lb. Min. (5120)	Air Permeability (5450)	Shrinkage and Elongation % Max (5556)		
	Fiber	Yarn Number	Ply	Denier										
<u>Cloth, Rayon, Knitted</u> MIL-C-8065 (UAF) Amd. 1	W   C   S   W   C   S				Milanese knit (6).	46-	44-	(1)	4.75	5.25	(5122) 80	35	60-	
						50	48		Min   Max				80	W   C
<u>Cloth, Knitted, Cotton</u> MIL-C-12836A (MU)	Cotton				Jersey knit, tubular	19	22	32	10.5	-	90	85-100		
						± 1								
<u>Cloth, Knitted, Nylon, Pile</u> MIL-C-17155C (SA)	Semi-dull; dull or bright filament nylon, regular tenacity.				Face Back 200 70 or 210	28	28	(1)	9.5±0.5		(0.1 psi) 0.175 (1.1 psi) 0.125	100	(Shrinkage) 8 5 (Elongation) 130% (course)	
										210				

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as Stretch, etc.)	NOTES (Not Specification Requirements)
MIL-C-8065	(5) Use of dyestuffs, detergents, or other chemicals or finishing agents which would cause deterioration in storage or dermatitis on skin contact is prohibited. pH: 5.0 - 9.0 (2811).	Color (1-3). Colorfastness- "good" (5682-5620-5622-5614-5651).		Intended Use- In the manufacture of glove inserts.
MIL-C-12836A	Cloth shall be well napped on one side.	Color - Shall be Olive Drab Shade No. 7 (4). Colorfastness- "good" (5630).	(2)	Intended Use- As a filter material in dust respirators.
MIL-C-17155C	Cloth shall be slit, dyed and napped. Nap shall be completely disoriented, well tigered and have a uniform density. Finish shall be equal to finish of the standard sample.	Color- Shall be Green 3405. Standard sample available (3). Colorfastness- standard sample available (5610-5622-5651-5680).	Yarns shall consist of 30-40 continuous filaments.	Intended Use- As a lining material for cold weather clothing.

## KNITTED CLOTHS

NOMENCLATURE	YARN				Type of Knit	Yarns Per Inch Min. (5070)	Width Inch	Weight Oz/Sq Yd (5041)	Thick-ness Inch (5030)	Bursting Strength Lb. Min. (5120)	Air Permeability (5450)	Shrinkage and Elongation % Max (5556)
	Fiber	Yarn Number	Ply	Denier								
<u>Cloth, Knitted, Cotton (Waffle Type)</u> MIL-C-17157C (SA) Cotton 20's      1   1      Waffle effect (6)      (1)      11.0 ± 1.0      0.08 (0.1 psi)      160      12   12												
<u>Cloth, Knitted, Wool and Cotton Fleece</u> MIL-C-17238B Cotton & fleece and/or pulled wool, 50's      Cotton: 1 or 2 Wool: 1      2 ends of cotton knit as 1; 2 ends of wool tucked as 1. Cotton back; napped wool face.      18.5- 21.5   17- 23      (1)      17.5   20.5      0.24 (0.1 psi)      65      -   95												
<u>Cloth, Dacron, Frit</u> MIL-C-21286 (AER) Ami. 1      Dacron      Circular pile knit      30   30      54 ±      7.5 ± 0.2      0.15 (0.1 psi)      (unloading at 0.1 psi)      (5552)      1.5   1.5												

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as Stretch, etc.)	NOTES (Not Specification Requirements)
MIL-C-17157C	(5) Cloth shall be scoured (not bleached), rinsed and finished to produce a clean, soft, lofty cloth in a state suitable for underwear.	Color- Cloth shall be natural (undyed and unbleached).	(2)	Intended Use- In the manufacture of cold weather underwear (drawers and undershirts) worn by military personnel.
MIL-C-17238B	Cloth shall be scoured (not bleached) and evenly napped to form a disoriented pile on the face.	Color- Shall be natural (undyed and unbleached).	(2) Cloth shall have a min. of 65% wool and a max. of 35% cotton.	Intended Use- In insulated cold weather boots worn by military personnel.
MIL-C-21286	Cloth shall be evenly napped on both sides to produce a uniform thickness throughout. Finished cloth shall be soft, flexible, and free from sizing and finishing materials.	Color- Unless otherwise specified, color of cloth shall be natural (undyed).	Breaking strength: 50 lb. min. in warp & courses (5100). Flammability of the cloth shall be "Normal" as defined in Commercial Std. CS191-53.	Intended Use- In the fabrication of winter flight clothing.



### KNITTED CLOTHS

NOMENCLATURE	YARN				Type of Knit	Yarns Per Inch Min. (5070)	Width Inch	Weight Oz/Sq Yd		Thick-ness Inch (5030)	Bursting Strength Lb. Min. (5120)	Air Permeability (5450)	Shrinkage and Elongation % Max (5556)	
	Fiber	Yarn Number	Ply	Denier				Min	Max				W	C
Cloth, Knitted, Cotton (Circular, Waffle Type) MIL-C-22781 (BA)	Cotton		1	1	Waffle (6)		(1)	11.5 ± 1		0.10 (0.1 psi) 0.07 (1.1 psi)	65		12	12

Cloth, Knitted,  
Cotton, Simplex  
MIL-C-40004A

Type I	(5550)
Class 1- White 3028 Cotton	18-line 60 42 36 9.5 - 130 10 3
Class 2- Gray 1164 "	Atlas pat- 60 42 min. 9.5 - 130 10 3
Class 3- Gray 1163 "	tern with 60 42 9.5 - 130 10 3
Class 4- Seal brown 105 "	non-revel- 60 42 9.5 - 130 10 3
Class 5- Gray beige 270 "	ing edges. 60 42 9.5 - 130 10 3
Class 6- Black 3226 "	60 42 9.5 - 130 10 3
Type II (lighter weight cloth)	66 40 7.5 - 120 10 3

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as Stretch, etc.)	NOTES (Not Specification Requirements)
MIL-C-22781	(5) Cloth shall be scoured (not bleached), rinsed, and finished to produce a clean, soft, lofty material in a relaxed state suitable for manufacture of underwear. Resins, sizing, or loading material shall not be used to increase weight or to control dimensional stability. Cloth shall be evenly rapped on both sides and shall match standard sample for finish.	Color- Cloth shall be natural (undyed and unbleached) and shall match standard sample.	(2)	Intended Use- In the manufacture of cold weather underwear (drawers and undershirts) worn by military personnel.
MIL-C-40004A	(5) Type I Cloth shall be sueded on both sides and have a suppleness equal to the standard sample. pH: 5.0 - 8.5 (2811).	Color (1)- Standard sample available (564). When White is specified, cloth shall be bleached and tinted with Vat Blue 6, CI 69825/6. Colorfastness- standard sample available (5614-5651-5680).	(2) Type I- Stretch: 15% max. in the length; 40-60% in the width (4.4.2.1). Type II- Stretch: 20% max. in length; 60-80% in width.	Intended Use- In the fabrication of gloves, scarves, and lining of protective headgear, and earphones and other personal equipment.

### KNITTED CLOTHS

NOMENCLATURE	YARN				Type of Knit	Yarns Per Inch Min. (5070)	Width Inch	Weight Oz/Sq Yd (5041)	Thick-ness Inch (5030)	Bursting Strength Lb. Min. (5120)	Air Permeability (5450)	Shrinkage and Elongation % Max (5556)
	Fiber	Yarn Number	Ply	Denier								
<u>Cloth, Nylon, Knitted, Raschel</u> MIL-C-41831	Bright high tenacity filament nylon				Raschel (6)	20 28	35 min.	10.5 -		200		1 1
<u>Cloth, Knitted, Nylon, Tubular, Stretch Type</u> MIL-C-43247 (GL)	Stretch nylon yarn				Interlock	28 40	(1)	10.5 ± 0.5		200		30-45-50 65
<u>Cloth, Pile, Acrylic Fiber Pile</u> MIL-C-43251	File: Acrylic fiber. Backing: blend of cellulose & triacetate. Triacetate content: 45% min.				File: 3 Circular knit (6)			(1) 11.5 13.5				

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as Stretch, etc.)	NOTES (Not Specification Requirements)
MIL-C-41831	Cloth shall be heat set and resin treated using a thermo-setting resin to provide stiffness. Stiffness- Initial: min. of 0.300 load-lb. parallel to the wales and 0.200 across the wales. After 3 launderings: min. of 0.175 parallel to the wales and 0.150 across the wales.	Color- Shall be Olive Green 106. Standard sample available (3). Colorfastness- standard sample available (5614-5651-5680).		Intended Use- As the front stiffener in field, hot weather baseball caps.
MIL-C-43247	Cloth shall be scoured, dyed, and heat set.	Color- Cloth shall be Olive Green 106. Standard sample available (3). Colorfastness- standard sample available (5610-5651-5680).	Recovery after elongation: to within 1/4 in. of original measurements.	Intended Use- In the manufacture of insulated caps for helmet liners.
MIL-C-43251	Cloth shall be opened & sheared. Pile height shall be 13/32±1/32. Pile characteristics shall be equal to those of standard sample. An acrylic type resin applied to the back of the cloth as an anticurl or bonding agent will be permitted. pH: 5.5 - 8.0 (2811).	Color- Shall be Green 252. Standard sample available (3). Dullness (lack of lustre) shall approximate that of standard sample. Colorfastness- standard sample available (5614).	(2)	Intended Use- As the lining component in canteen covers.

### KNITTED CLOTHS

NOMENCLATURE	YARN				Type of Knit	Yarns Per Inch Min. (5070)	Width Inch	Weight Oz / Sq Yd (5041)		Thick-ness Inch (5030)	Bursting Strength Lb. Min. (5120)	Air Permeability (5450)	Shrinkage and Elongation % Max (5556)	
	Fiber	Yarn Number	Ply	Denier				Min	Max				W	C
<u>Cloth, Knitted, Nylon;</u> <u>Tricot</u> <u>MIL-C-43352, Amd. 1</u> <u>(GL)</u>														
Class 1- Untreated	Mono-filament			15 15	Mesh type		(1)	0.5	0.1		19			
Class 2- Resin treated	semi-dull normal tenacity nylon.			15 15	Mesh type		(1)	0.5	0.1		19			
<u>Cloth, Knitted,</u> <u>Nylon/Triacetate,</u> <u>Tricot, OG-106</u> <u>MIL-C-43358</u>														
	Back bar: multifilament semi-dull normal tenacity nylon Front bar: 20 filament triacetate.			Back bar: 40 Front bar: 75	Warp knitted so that triacetate yarn will be run in to produce a long float.	47	(1)	5.0	6.5	min. 0.065	45		3	4

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as Stretch, etc.)	NOTES (Not Specification Requirements)
MIL-C-43352 Class 1 Class 2	Class 1 cloth shall be scoured. Class 2 cloth shall be given a permanent resin finish. Character of finish shall equal that of standard sample. Both classes shall be framed and heat set to assure proper number of meshes/inch and the size of the meshes.	Color- Class 1: Shall be Olive Green 106. Standard sample available (3). Class 2: Shall be Black 221. Standard sample available (3). Colorfastness- standard sample available (5614-5680).	Mesher per inch- Width: 19-21; Length: 27-29.	Intended Use- As a component of the medical kit used by military personnel and as a component of the head net.
MIL-C-43358	Cloth shall be scoured and heat set. The long floats on reverse side of cloth shall be napped and sheared to produce a uniform density of pile throughout. Character of napped surface shall be equal to that of standard sample. (5)	Color- Shall be OG 106. (2) Standard sample available (3). Colorfastness- standard sample available (5614-5680).		Intended Use- As the basic material for the Shirt, Sleeping, Man's, Nylon/Triacetate, Tricot Knit, OG 106.

REFERENCES

KNITTED CLOTHS

Textile Test Methods - CCC-T-191b

<u>Method</u>	<u>Title</u>
	<u>Chemical</u>
2811	Acidity (pH), Potentiometric method.
	<u>Construction</u>
5030	Thickness of cloth.
5041	Weight of cloth; small specimen method.
5070	Wales and courses in knit cloth.
	<u>Mechanical</u>
5100	Strength and elongation, breaking, grab method.
5120	Bursting strength, ball method.
	<u>Air Permeability and Water Resistance</u>
5450	Air permeability, calibrated orifice method (Frazier).
	<u>Shrinkage Resistance</u>
5550	Shrinkage in laundering; cotton, linen, and mixed cotton and linen cloth.
5556	Shrinkage in laundering; mobile laundry method.
	<u>Colorfastness</u>
5600	Chlorine bleaching; cloth.
5610	Laundering; cotton and/or linen; Launder-Ometer.
5614	Laundering of wool, silk, rayon cloth; Launder-Ometer.
5620	Dry cleaning (petroleum solvent).
5622	Wet cleaning (with dry cleaning).
5630	Water, cold.
5651	Crocking of cloth.
5660	Light; accelerated (Fade-Ometer).
5671	Weather; accelerated method (National Weathering Unit).
5672	Weather; natural weather method.
5680	Perspiration; perspirometer method.
5682	Perspiration; tube method.

GENERAL NOTES

NARROW FABRICS

The following parenthetical numbers are utilized throughout this section of the text as referenced notes. Upon observing these numbers, refer to this page for further information dealing with specific portions of the item.

- |  |   |
|--|---|
| (1) As specified.                                | (5) Nonfibrous and extractable matter restrictions. |
| (2) Preproduction sample.                        | (6) Restrictions on sulfur dyes.                    |
| (3) Colormatching.                               | (7) Bid sample and laboratory report.               |
| (4) See specification for applicable tolerances. |   |

The specific test methods referenced in this section of the text are listed with their titles at the end of the section.

### NARROW FABRICS

NOMENCLATURE	Yarn Number	Fiber	Weight		Width Inch	Warp Yarns - Full Width				Picks Per Inch	Breaking Strength Lb. Min. (5100)	Elongation % Max. (5100)	Thick-ness Inch (5030)	Yarn Counts and Ply ±5.0%		
			Min.	Max.		Total (min)	Face	Binder	Stuffer (Min)					Warp	Fill	
<u>Tape, Textile; Cotton, General Purpose (Unbleached, Bleached, or Dyed DDD-T-86e</u>																
Type I- Stay bindings, herringbone twill weave																
		Cotton			(4)										(varp)	
		Cotton			1/4	28				38	25			40/2	60/2	
		Cotton			3/8	36				38	30			or	or	
		Cotton			7/16	44				38	35			20/1	30/1	
		Cotton			1/2	52				38	42			"	"	
		Cotton			5/8	60				38	50			"	"	
		Cotton			11/16	68				38	58			"	"	
		Cotton			3/4	76				38	65			"	"	
		Cotton			13/16	84				38	72			"	"	
		Cotton			7/8	92				38	80			"	"	
		Cotton			1	100				38	85			"	"	
		Cotton			1-1/16	108				38	90			"	"	
		Cotton			1-1/8	116				38	95			"	"	
		Cotton			1-1/4	132				38	115			"	"	
		Cotton			1-1/2	164				38	130			"	"	
Type II- Other bindings herringbone twill weave (Continued)																
		Cotton			3/16	32 <sup>1</sup>				58	22			60/2	60/2	
		Cotton			1/2	74 <sup>2</sup>				70	50			"	30/1	
		Cotton			5/8	94 <sup>3</sup>				70	60			"	or 60/2	

1. 8 ends left- 16 ends right- 8 ends left.
2. 20 ends left- 34 ends right- 20 ends left.
3. 22 ends left- 50 ends right- 22 ends left.

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as Weave, Ends/Carrier, etc.)	NOTES (Not Specification Requirements)
DDD-T-86e Type I Type II (Cont'd)	(5)	Color- Tape shall be unbleached, bleached, or dyed as specified. Std. samples available (3-6). Colored tape shall be stock, yarn, or piece dyed. Colorfastness (1). Standard samples available. If no requirements are stated elsewhere, the following shall hold (5600-5610-5622-5651-5660-5671-5680).	When specified, Classes 1, 2, and 3 shall be preshrunk, & shall not shrink more than 4% in the warp (4.3.2). Weave - Type I: a 2/2 single or multiple herringbone twill with 1 or more reversals of the twill across the width of the tape. Tape shall have a woven edge on both sides. Weave - Type II: shall be the same as for Type I. Tape shall have a woven edge on both sides.	Intended Use- As bindings in the fabrication of clothing and other textile items.

### NARROW FABRICS

NOMENCLATURE	Yarn Number	Fiber	Weight		Width Inch	Warp Yarns - Full Width				Picks Per Inch	Breaking Strength Lb. Min. (5100)	Elongation % Max. (5100)	Thickness Inch (5030)	Yarn Counts and Fly $\pm 5.0\%$
			Min	Max		Total (min)	Face & Back	Binder	Stuffer (Min)					
<u>Type, Textile;</u> <u>Cotton, General</u> <u>Purpose (Unbleached, Bleached, or Dyed)</u> DDD-T-86e (Cont'd)														
Type III- Bindings, plain weave		Cotton			(4)						(warp)			
		Cotton			3/16	13	28	14				24/2	30/1	
		Cotton			1/4	17	28	18				"	or	
		Cotton			3/8	25	28	24				"	60/2	
		Cotton			1/2	34	28	35				"	"	
		Cotton			9/16	35	28	36				"	"	
		Cotton			1	65	28	65				"	"	
Class 1- Unbleached Class 2- Bleached Class 3- Dyed														

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as Weave, Ends/Carrier, etc.)	NOTES (Not Specification Requirements)
DDD-T-86e (Cont'd) Type III Class 1 Class 2 Class 3	See p. 245 for additional information.		Weave - Type III: shall be plain. Tape shall have a woven edge on each side.	

### NARROW FABRICS

NOMENCLATURE	Yarn Number			Fiber	Weight	Width Inch	Warp Yarns - Full Width			Picks Per Inch	Breaking Strength Lb. Min. (5100)	Elonga- tion % Max. (5100)	Thick- ness Inch (5030)	
	Warp	Fill	Stuffer				Min	Max	Total					Face & Back
Tape, Non-Woven (Parallel-Yarn Flat Strip) DDD-T-90b														
Class 1- 0.0045 in. thick Sizes:				Any synthetic and/or natural fiber			-2 (+1/32) (+ any)				(5102)		(+0.0005)	
						3/16	16					16		0.0045
						1/4	21					21		0.0045
						5/16	27					27		0.0045
						3/8	32					32		0.0045
						1/2	46					46		0.0045
						5/8	56					60		0.0045
						3/4	73					73		0.0045
						1	97					97		0.0045
Class 2- 0.006 in. thick Sizes:														
						5/16	17					21		0.006
						1/4	23					28		0.006
						5/16	30					35		0.006
						3/8	37					43		0.006
						1/2	48					55		0.006
					5/8	58					70		0.006	
					3/4	75					85		0.006	
					1	100					115		0.006	
Class 3- C.010 in. thick Sizes:														
					5/16	16					65		0.01	
					3/8	21					93		0.01	
					1/2	27					124		0.01	
					5/8	33					155		0.01	
					3/4	40					186		0.01	
					1	53					248		0.01	

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as Weave, Ends/ Carrier, etc.)	NOTES (Not Specification Requirements)
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DDD-T-90b Class 1 Class 2 Class 3		Color- Unless a specific color is stated in the invitation for bids, tape shall be white, natural, or any color. Colorfastness- "fair" (5651). When water resistant binding agent is specified, also "fair" for 5630. Dyed tape shall be uniform in color.	Tape shall be a flat strip of closely paralleled yarns bonded by a suitable binding agent. If a water resistant binding agent is required, it shall be so specified in the invitation to bid. Bonding material shall be a suitable adhesive of any suitable backing or coating substance. When specified in the invitation for bids, tape shall be printed on one or both sides in black or colored ink, any lettering, insignia, or serial number.	Intended Use- Primarily for tying packages, identification purposes, and as a removal strip in packaging.
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### NARROW FABRICS

NOMENCLATURE	Yarn Number	Fiber	Weight		Width Inch	Warp Yarns - Full Width			Picks Per Inch	Breaking Strength Lb. Min (5100)	Elongation % Max (5100)	Thickness Inch (5030)
			oz/sq yd			Total	Face & Back	Stuffer				
<b>Type, Textile, Cotton, Bias-Cut</b> <b>DDD-T-140</b>												
Type I- Cambric		Cotton	2.7	-	(1)	64			55			
Type II- Percale		Cotton	3.0	-	(1)	85			72			
Type III- Sateen		Cotton	2.8	-	(1)	88			140			
Type IV- Twill		Cotton	4.0	-	(1)	76			114			
Class 1- Bleached Class 2- Dyed												

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as Weave, Ends/Carrier, etc.)	NOTES (Not Specification Requirements)
DDD-T-140 Type I Type II Type III Type IV Class 1 Class 2	Type I cloth shall contain enough sizing to produce a cambric finish.	Color (1-6), Standard samples available (3). Colorfastness- Standard samples available (5610-5600-5622-5651-5660-5680 or 5682).	Weaves - Types I and II: plain; Type III: Sateen; Type IV: 1/2 twill.	Intended Use- Primarily for the binding of seams in wearing apparel.

### NARROW FABRICS

NOMENCLATURE	Yarn Number	Fiber	Weight		Width Inch	Warp Yarns - Full Width				Picks Per Inch	Breaking Strength Lb. Min. (5100)	Elongation % Max. (5100)	Thickness Inch (5030)	Elastic Strands	
			Oz./lin	yd		Total	Face & Back	Binder	Stuffer					Gage	Weave No.
Webbing, Textile, Warp/Fill/Stuffer (Cotton, Elastic) JJ-W-155d, Am. 1															
Type I - Woven	(+2 counts)				(4)	(elastic)									
Class 1	20/2 24/2	Cotton	0.28	-	1/2	7	18	-	-	50	50%	0.045-0.060	36	2	
Class 2	24/2 24/2	Cotton	0.30	-	1/2	8	21	-	6	100	50%	0.042 min.	30	1	
Class 3	24/2 24/2	Cotton	0.43	-	3/4	11	30	-	9	100	50%	0.042 min.	30	1	
Class 4	24/2 24/2	Cotton	0.50	-	7/8	13	36	-	11	100	50%	0.042 min.	30	1	
Class 5	20/2 24/2	Cotton	0.45	-	7/8	12	33	-	-	50	50%	0.045-0.060	36	2	
Class 6	20/2 24/2	Cotton	0.50	-	1	13	36	-	-	50	50%	0.045-0.060	36	2	
Class 7	24/2 24/2	Cotton	0.57	-	1	15	42	-	13	100	50%	0.042 min.	30	1	
Class 8	24/2 20/2	Cotton	0.54	-	1-1/4	14	26	-	-	52	50%	0.050-0.065	50	4	
Class 9	20/2 20/2	Cotton	0.62	-	1-1/4	14	28	24	-	60	50%	-	36	3	
Class 10	16/2 12/1	Cotton	0.65	-	1-1/2	17	26	11	-	70	50%	0.050 min.	44	3	
Class 11	24/2 24/2	Cotton	0.85	-	1-1/2	26	100	-	24	96	40%	0.038 min.	30	1	
Class 12	24/2 24/2	Cotton	0.87	-	1-1/2	23	66	-	21	100	50%	0.043 min.	30	1	
Class 13	12/2 12/1	Cotton	0.95	-	1-3/4	19	54	-	-	40	50%	0.048 min.	36	2	
Class 14	12/2 12/1	Cotton	1.25	-	2	22	63	-	-	40	50%	0.048 min.	36	2	
Class 15	24/2 20/2	Cotton	1.28	-	3	22	42	-	-	52	50%	0.049 min.	50	4	
Class 16	24/2 20/2	Cotton	2.60	-	6	42	82	-	-	52	50%	0.049 min.	50	4	
Class 17	40/2 30/2	Cotton	3.30	-	5	113	885	216	-	84	40%	0.058 min.	42	5	
Class 18	40/2 30/2	Cotton	4.50	-	7	157	1237	304	-	84	40%	0.058 min.	45	5	
Class 19	40/2 30/2	Cotton	6.70	-	10	221	1749	432	-	84	40%	0.058 min.	42	5	
Class 20	20/2 20/2	Cotton	0.55	-	1/2	28	53	7	6	60	50%	0.09 min.	30	6	
Class 21	20/2 20/2	Cotton	1.40	-	1	28	171	13	12	90	40%	0.09 min.	30	6	
Class 22	20/2+ 12/2 12/2	Cotton	1.50	-	1-1/2	19	153	36	17	60	40%	0.09 min.	30	6	
Class 23	20/2 20/2	Cotton	2.07	-	1-1/2	42	253	20	19	90	40%	0.09 min.	30	6	
Class 24	20/2+ 12/2 24/2	Cotton	2.10	-	1-1/2	44	182	40	38	86	40%	0.09 min.	30	6	
Class 25	20/2 20/2	Cotton	2.66	-	2	56	342	26	24	90	40%	0.09 min.	30	6	
Class 26	30/2 24/2	Cotton	0.43	-	5/8	12	46	-	10	96	50%	0.053 min.	28	1	

(Continued)

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as Weave, Ends/Carrier, etc.)	NOTES (Not Specification Requirements)
JJ-W-155d Type I Class 1 Class 2 Class 3 Class 4 Class 5 Class 6 Class 7 Class 8 Class 9 Class 10 Class 11 Class 12 Class 13 Class 14 Class 15 Class 16 Class 17 Class 18 Class 19 Class 20 Class 21 Class 22 Class 23 Class 24 Class 25 Class 26 (Continued)	Unless otherwise specified, Classes 1, 20 & 26 shall be water repellent and mildew resistant treated. Class 5 shall be mildew resistant treated. Mildew resistant treatment shall be with 2,2' methylenebis-(4-chlorophenol) so that concentration of the inhibitor deposited on the webbing shall be 1.35 + 0.25%. Inhibitor shall be applied from a two bath aqueous emulsion. Water repellent treated shall be obtained by the use of a wax or metallic salt wax compound. As a result of the treatment, dynamic absorption shall not be more than 40% (5500).	Color- Classes 1-8, 10-12, 14, 20, 22, 24, and 26 shall be unbleached, bleached, or dyed as specified. Class 9 shall be bleached. Classes 13, 15, and 16 shall be unbleached. Classes 17-19 shall be dyed Tea Rose. Classes 21, 23, and 25 shall be dyed Gray. Standard samples available (3). For dyed webbing, yarns shall be vat dyed before weaving (6). Colorfastness- standard samples available. For dyed webbings of Classes 1, 5, 6, 8-11, and 13-26 (5610-5671). For Classes 2, 3, 4, 7, and 12 (5610-5660).	Elastic strands for all webbing except Class 5 shall be made from compounded natural rubber. Class 5 shall be made from natural rubber. When a core is covered, it shall be wrapped with multiple ends of cotton yarns. See spec. for special directions for weaves 1-6. See spec. for initial tension requirements to be met by all Classes. After acc. aging, tension of all webbings except Class 5 shall change not more than 20% (4.3.2.1). Tension for Class 5 shall not change more than 10% (4.3.2.2). Permanent set of all webbing shall not exceed 8% initially. Change in set shall not be more than 20% after acc. aging. (4.3.4.2 for all Classes except Class 5; 4.3.4.3 for Class 5). Change in set of Class 5 after low temperatures shall be not more than 35% (4.3.4.4). Elongation of all Classes except Class 5, after low temps. shall be not less than 10% (4.3.5.1). For Class 5, 50% min. (4.3.5.2). *Synthetic rubber may also be allowed.	Intended Use- Class 1, 6 and 9: used by the Chemical Corps. Class 1: also used in fabrication of various types of Army goggles. Class 5: used by Chemical Corps in one type of protective mask, head harness. Class 9: used in boxer shorts. Class 14: used in Navy swim trunks. Class 17, 18, 19, 21, 23 and 25 (untreated): used in medical installations for construction of orthopedic appliances. Class 20: used in the fabrication of helmet, camouflage, bands.

### NARROW FABRICS

NOMENCLATURE	Yarn Number	Fiber	Weight		Width Inch	Warp Yarns - Full Width			Picks Per Inch	Breaking Strength Lb. Min. (5100)	Elongation % Max. (5100)	Thickness Inch (5030)	Elastic Strand Gage Weave Number	
			oz/lin yd	Min		Max	Total	Face & Back						Binder
Webbing, Textile, Warp   Fill   Stuffer (Cotton, Elastic) JJ-W-155A, Amd. 1 (Cont'd)														
Type II- Braided (+2 counts)							(4) (carrier)	(-elastic)						
Class 1	20/2	Cotton	0.16	-	5/16	17	8		68	50%	0.035-0.050	42	7	
Class 2	20/2	Cotton	0.20	-	3/8	25	12		68	50%	0.035-0.050	42	7	
Class 3	20/2	Cotton	0.24	-	1/2	33	16		68	50%	0.035-0.050	42	7	

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as Weave, Ends/Carrier, etc.)	NOTES (Not Specification Requirements)
JJ-W-155a (Cont'd) Type II Class 1 Class 2 Class 3		Color- Classes 1-3 shall be unbleached, bleached, or dyed as specified. Standard samples available (3). For dyed webbing, yarns shall be vat dyed before weaving (6). Colorfastness- Standard samples available. For Classes 1 and 2 (5610-5660). For Class 3 (5610-5671).	Class 5 shall meet all requirements for tension before and after aging, elongation, and all permanent set, after being boiled (4.3.6). Type II- Elastic strands shall be made from natural and/or synthetic rubber. When a core is covered, it shall be wrapped with multiple ends of cotton yarns. Weave No. 7 shall be plain, 2 over and 2 under. See spec. for initial tension requirements to be met by all Classes. Tension shall not change more than 20% after acc. aging (4.3.2.1). Permanent set shall not exceed 8% initially. After acc. aging, set shall not change more than 20% (4.3.4.2). Elongation shall not be less than 10% after low temps. (4.3.5.1).	Intended Use- All Classes are used by the Chemical Corps.

### NARROW FABRICS

NOMENCLATURE	Yarn Number	Fiber	Weight		Width inch ( $\pm$ 1/32)	Warp Yarns - Full Width				Picks Per Inch	Breaking Strength Lb. Min. (5100)	Elongo- tion % Max. (5100)	Thick- ness Inch (5030)	No. Of		
			oz/144 yd			Total	Face	Binder	Stuffer					Ends Per Carrier	Ends Core	
Braid, Textile (Cotton, Tubular)		Warp	Fill	Stuffer	Min	Max	Total	Face	Binder	Stuffer	Ply (4102) Braid Core					
MIL-B-371C, Asst. 2																
Type I- With core		Cotton	14.0	-	4/32 (dia)	16				16	60	2	3	1	10	
Type II- With core		Cotton	28.0	-	5/32 "	8				10	75	2	3	8	8	
Type III- Flat		Cotton	16.5	-	6/32 "	24				22	75	2	-	2	-	
Type IV- Solid		Cotton	21.0	-	4/32 (dia)	8				10	80	3		2		
Type V- Solid		Cotton	26.0	-	6/32 (dia)	8				8	100	4		2		
Type VI- Solid		Cotton	25.0	-	4/32 (dia)	8				8	100	2		6		
Type VII- Flat		Cotton	25.0	-	11/32 "	4				22	140	2		2		

Class 1- Natural finish.  
 Class 2- Water-repellent finish.  
 Class 3- Water and mildew resistant finish (Copper-3-quinolinolate).  
 Class 4- Water and mildew resistant finish 2,2' Methylenebis-(4-chlorophenyl).

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as Weave, Ends/Carrier, etc.)	NOTES (Not Specification Requirements)
MIL-B-371C Type I Type II Type III Type IV Type V Type VI Type VII Class 1 Class 2 Class 3 Class 4	Class 1: natural finish. Class 2: water repellent treated with metallic salt wax emulsions. After treatment, dynamic absorption shall be not more than 40% (4500). Class 3: water repellent treated in the same manner as Class 2, and mildew resistant treated in accordance with Type I, Class 1 of MIL-T-3530. Class 4: water repellent treated in the same manner as Class 2, and mildew resistant treated in accordance with Type I, Class 2 of MIL-T-3530.	Color (1-6). Standard samples available (3). Colorfastness- Standard samples available. Class 1: (4660-4610-4600). Class 2: (4660-4610). Class 3: (4660-4610). Class 4: (4600-4610).	(2) Types I, II, IV, V and VI shall be braided with a basket type braiding. Type III and VII shall be braided with a plain type braiding. A loss in breaking strength, based on the min. specified for untreated braid shall be permitted for the applicable Class as follows: Class 2: 15%. Classes 3 and 4: 20% (includes loss for water repellent and mildew treatment).	Intended Use- For use with various items of clothing as a tie-cord or lacing cord.

### NARROW FABRICS

NOMENCLATURE	Yarn Number	Fiber	Weight		Width Inch	Warp Yarns - Full Width				Picks Per Inch	Breaking Strength Lb. Min. (5100)	Elongation % Max. (5100)	Thickness Inch (5030)
			Min	Max		Total	Face	Binder	Stuffer				
<b>Cloth, Thread, and Tape; Asbestos</b> SS-C-466e See also under Natural Fibers Other than Cotton or Wool  Form I- Cloth  Form II- Thread, sewing, reinforced with wire  Form III- Thread, sewing, without wire  Form IV- Tape Grade U.G.- 80% asbestos Style 1- Plain weave													
		Asbestor			(1)	16+1					8+1		

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as Weave, Ends/Carrier, etc.)	NOTES (Not Specification Requirements)
SS-C-466e Form I Form II Form III Form IV			Tape shall contain not less than 80% asbestos. It shall be made of good-quality chrysotile asbestos and organic fiber. Hygroscopic moisture shall not exceed 5% (4.4.1.1). Warp yarn shall be 10-cut and filling shall be 10-cut, 2-ply. Tape shall have woven selvaqe edges.	Intended Use- Tape shall be used as the jacketing material over insulation where the temperature of the insulated surface is more than 125°F (52°C), except that it is not intended to be used on fittings or flanges, or where it will be in contact with heated metal.

## NARROW FABRICS

NOMENCLATURE	Yarn Number	Fiber	Weight		Width Inch	Warp Yarns - Full Width			Picks Per Inch	Breaking Strength Lb. Min. (5100)	Elongation % Max. (5100)	Thick-ness Inch (5030)
			Min	Max		Total	Face & Back	Binder				

Webbing and Tape, Warp, Fill, Stuffer  
 Textile, Cotton,  
 General Purpose  
 Natural or in Colors  
 MIL-W-530D, Amend. 2

Type I- Lightweight tape (+3%) (a)		(varp)										
Sizes:	16/2 16/2	Cotton	0.15	-	3/8	37	7	46	50			
	16/2 16/2	Cotton	0.20	-	1/2	49	10	46	70			
	16/2 16/2	Cotton	0.25	-	5/8	61	13	46	85			
	16/2 16/2	Cotton	0.30	-	3/4	69	15	46	100			
	16/2 16/2	Cotton	0.35	-	7/8	77	17	46	115			
	16/2 16/2	Cotton	0.40	-	1	89	20	46	130			
	16/2 16/2	Cotton	0.45	-	1-1/8	97	22	46	145			
	16/2 16/2	Cotton	0.50	-	1-1/4	109	25	46	165			
	16/2 16/2	Cotton	0.60	-	1-1/2	129	30	46	190			
	16/2 16/2	Cotton	0.80	-	2	169	40	46	250			
	16/2 16/2	Cotton	1.00	-	2-1/2	209	50	46	300			
	16/2 16/2	Cotton	1.20	-	3	249	60	46	360			

Type Ia- Extra Lightweight tape	20/2 20/2	Cotton	0.45	-	2	159	-	32	235			
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Type II- Medium weight webbing (hard texture)		(full width)										
Sizes:	16/2 16/2	Cotton	0.20	-	3/8	48		40	100			
	8/4 8/4	Cotton	0.32	-	1/2	24		14	160			
	8/4 8/4	Cotton	0.40	-	5/8	30		14	200			
	8/4 8/4	Cotton	0.48	-	3/4	36		14	235			
	8/4 8/4	Cotton	0.65	-	1	48		14	315			
	8/4 8/4	Cotton	0.81	-	1-1/4	60		14	385			
	8/4 8/4	Cotton	0.97	-	1-1/2	72		14	460			
	8/4 8/4	Cotton	1.30	-	2	96		14	585			
	8/4 3/4	Cotton	1.78	-	2-3/4	132		14	760			
	8/4 8/4	Cotton	1.95	-	3	144		14	810			

(Continued)

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as Weave, Ends/Carrier, etc.)	NOTES (Not Specification Requirements)
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MIL-W-530D Type I Type Ia Type II (Continued)	(5) Classes 1a, 1b, 2a, 4, 7 and 8 webbing or tape shall have a water repellent finish, consisting of aluminum salts of saturated carboxylic acid (such as formate, acetate, palmitate, or stearate) mixed with refined mineral and vegetable waxes. Product shall be applied either in the form of an aqueous emulsion or of a water-free solvent solution, to effect the deposit of not more than 6% on the weight of the finished cloth. Dynamic absorption of treated cloth shall be no more than 40% (5500). Classes 1b and 4 webbing or tape shall be mildew resistant treated with an even deposit of 0.13-0.40% copper as metal from copper-8-quinolinolate. See spec. for method of application.	Color- Webbing & tape shall be unbleached, bleached white, dyed Olive Drab 7, Black, or other color as specified. Standard samples available (3). Dyed webbing or tape shall be stock or yarn dyed, except Types I, Ia & IIa, which may be piece dyed. Only those warps of stock or yarn dyed webbing specifically listed as "stuffer warps" may, if properly covered, be undyed. When Classes 4, 7 and 8 are required, shade of dyed webbing or tape prior to application of finish shall, unless otherwise specified, match standard sample. Unless specifically authorized by contracting officer, use of coloring matter as a component of the finish is not permitted.	(2-7). (a) Two or more plied yarns of equal yarn size, weaving as 1 may be substituted for the yarn sizes shown, providing that the single equivalent count of the yarns is equal to the yarn sizes specified, and providing that the min. weight, equivalent texture, and min. breaking strengths are not reduced. Weave for Type Ia shall be plain. See spec. for special instructions and/or diagrams for all other weaves.	Intended Use- In the manufacture of tentage, clothing, and equipment items. Class 7 webbing or tape is specified when intended for end use in contact with natural or synthetic rubber. Type VI webbing is used as understraps in the manufacture of prosthetic appliances and for lamp wicks.
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### NARROW FABRICS

NOMENCLATURE	Yarn Number	Fiber	Weight		Width inch	Warp Yarns - Full Width			Picks Per Inch	Breaking Strength Lb. Min. (5100)	Elongation % Max. (5100)	Thickness inch (5030)
			Min	Max		Total	Face & Back	Binder				
webbing and tape, Textile, Cotton, General Purpose, Natural or in Colors MIL-W-530D, Amd. 2 (Cont'd)												
Type II- Medium weight webbing (hard texture)												
Sizes: (Cont'd)	8/4	8/4	Cotton	2.43	-	3-3/4	180			14	(Per Inch)	315
	8/4	8/4	Cotton	3.25	-	5	240			14	(Per Inch)	315
	8/4	8/4	Cotton	3.65	-	5-5/8	270			14	(Per Inch)	315
Type IIa- Medium weight webbing (soft texture)												
	12/2	12/2	8/3 Cotton	0.25	-	3/8	41	5	10	36		130
	12/2	12/2	8/3 Cotton	0.33	-	1/2	47	6	12	36		160
	12/2	12/2	8/3 Cotton	0.41	-	5/8	53	7	14	36		195
	12/2	12/2	8/3 Cotton	0.49	-	3/4	55	9	18	36		230
	12/2	12/2	8/3 Cotton	0.65	-	1	83	12	24	36		300
	12/2	12/2	8/3 Cotton	0.81	-	1-1/4	101	15	30	36		370
	12/2	12/2	8/3 Cotton	0.97	-	1-1/2	119	18	36	36		440
	12/2	12/2	8/3 Cotton	1.30	-	2	155	24	48	36		580
	12/2	12/2	8/3 Cotton	1.47	-	2-1/4	173	27	54	36		645
Type IIb- Medium hvy.wgt. webbing												
	8/4	10/3	Cotton	0.60	-	5/8	49	5		24		310
	8/4	10/3	Cotton	0.72	-	3/4	57	6		24		365
	8/4	10/3	Cotton	0.96	-	1	73	8		24		475
	8/4	10/3	Cotton	1.20	-	1-1/4	89	10		24		590
	8/4	10/3	Cotton	1.44	-	1-1/2	105	12		24		700
	8/4	10/3	Cotton	1.92	-	2	137	16		24		925
	8/4	10/3	Cotton	2.25	-	2-1/4	161	19		24		1050
	8/4	10/3	Cotton	2.88	-	3	201	24		24		1375

(Continued)

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as Weave, Ends/Carrier, etc.)	NOTES (Not Specification Requirements)
MIL-W-530D (Cont'd) Type IIa Type IIb (Continued)	Classes 1a, 2a, and 7 webbing or tape shall be mildew resistant treated with 1.1-1.6% of 2,2' methylenebis-(4-chlorophenol). See spec. for method of application. pH: Classes 1a, 1b, 2a, 4, 7 and 8 shall be 5.5 - 8.5.	Dyed webbing or tape shall show good dye penetration and dye shall be completely oxidized. Webbing or tape shall be well soaped and washed after dyeing(6). Colorfastness- Class 3: standard sample available (5651-5671). In addition, Class 3, Type I shall show fastness to (5600-5610). Classes 4 & 7: standard sample available (5651-5671). In addition, Classes 4 & 7, Type I shall show fastness to (5600-5610). Class 8: standard sample available (5651-5671-5600-5610).		

### NARROW FABRICS

NOMENCLATURE	Yarn Number	Fiber	Weight	Width inch	Warp Yarns - Full Width				Picks Per Inch	Breaking Strength Lb. Min. (5100)	Elongation % Max. (5100)	Thick-ness Inch (5030)
					Min	Max	Total	Face & Back				
Webbing and Tape, Warp, Fill, Stuffer Textile, Cotton, General Purpose, Natural or in Colors MIL-W-530D, Amend. 2 (Cont'd)												
(+3%)												
Type III- Heavy-weight webbing	3/4	8/4 8/4	Cotton	1.00	-	5/8	57	5	12	24	(varp)	
	8/4	8/4 4/4	Cotton	1.20	-	3/4	65	6	14	24	380	
	8/4	8/4 8/4	Cotton	1.33	-	1	81	8	18	24	460	
	8/4	8/4 8/4	Cotton	1.50	-	1-1/4	89	10	11	24	550	
	8/4	8/4 4/4	Cotton	2.00	-	1-1/4	97	10	22	24	650	
	8/4	8/4 4/4	Cotton	2.40	-	1-1/2	113	12	26	24	720	
	8/4	8/4 8/4	Cotton	2.65	-	2	145	16	34	24	860	
	8/4	8/4 4/4	Cotton	4.00	-	2-1/2	177	20	42	24	1100	
	8/4	8/4 4/4	Cotton	4.80	-	3	209	24	50	24	1360	
Type IV- Webbing Special Use	8/4	8/4	Cotton	0.90	-	5/8	48	7		40	255	
	8/4	8/4	Cotton	1.90	-	1-1/4	94	15		46	500	0.135 max.
	10/5	10/5	Cotton	2.25	-	1-3/8	119	18		40	800	
	8/4	8/4 8/4	Cotton	3.40	-	2-1/4	167	16	99	28	1200	
	8/4	8/7	Cotton	4.30	-	2-1/4	196	32		38	1100	0.135-0.155
Type V- Webbing multiple weave	12/3	12/3	Cotton	2.75	-	(+1/32) 1-3/4	333			100	1000	1/8±1/64
Type VI- Webbing special (appliances and wicks) (Continued)	5/2	10/2	Cotton	0.53	-	(+1/16) 1	49	11		18	350	0.080±0.005

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as Weave, Ends/Carrier, etc.)	NOTES (Not Specification Requirements)
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MIL-W-530D (Cont'd) For additional information see page 254.

Type III  
Type IV  
Type V  
Type VI  
(Continued)



### NARROW FABRICS

NOMENCLATURE	Yarn Number		Fiber	Weight oz/gross yd	Width Inch	Warp Yarns - Full Width			Picks Per Inch	Breaking Strength Lb. Min. (5100)	Face Stuffer (5100)	Thick- ness Inch (5030)	Ends Per Carrier Line Min.	
	Warp	Fill				Stuffer	Face	Binder					Stuffer	Carrier
<u>Braid, Textile (Nylon, Mohair, and Cotton: Mohair and Cotton) (Flat)</u> MIL-B-593C														
Type I- Mohair outer covering Class 1- 3/3 plain stitch (Hercules)														
No. of Carriers														
Sizes:	Cotton	Cotton &	45	-	3/4	16/3			26	110		49	2	8
	40/2	Mohair:	62	-	1	24/3			26	170		73	2	12
	Mohair	28's,	78	-	1-1/2	32/2			26	190		97	2	16
	2/28	worsted.	100	-	1-3/4	44/2			26	220		133	2	22
			110	-	2	48/2			24	300		145	2	24
			166	-	2-1/2	48/3			19	360		145	5	24
			182	-	3	48/4			19	390		145	5	24
Class 2- 8/8 basket or diamond stitch														
			112	-	1-3/4	32/2			8	230		66	4	16
Class 3- 2/2 plain stitch														
Sizes:	Cotton													
	40/2	or 20/2												
	Mohair		24	-	1/2	12/2 or 4			21	60		25	2	6
	2/28		34	-	3/4	16/2 or 4			21	80		33	2	8
			68	-	1-1/2	32/2 or 4			21	150		65	2	16
			90	-	1-3/4	32/4			18	200		65	2	16
Type II- Nylon & mohair outer covering, 2/2 plain stitch														
Sizes:	Cotton	Cotton,												
	40/2	Mohair: 23's												
	Mohair	worsted &												
	2/28	Nylon: con-												
		tinuous fila-												
		ment 210 den.	25	-	1/4	6/6			23	40		13	2	3
		34 filament.	68	-	1/2	12/6			22	80		25	2	6
			85	-	1-1/2	32/6			22	210		65	2	16
				-	2	40/6			22	265		81	2	20

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as Weave, Ends/Carrier, etc.)	NOTES (Not Specification Requirements)
MIL-B-593C Type I Class 1 Class 2 Class 3 Type II	Finished braid shall be singed (in either yarn or braid).	Color (1-6). Standard sample available (3). Colorfastness- Standard sample available (5622-5651-5660-5680-5682).	Type I braid shall be made with a cotton warp with a mohair outer covering. Type II braid shall be made with a cotton warp with a nylon-mohair outer covering. Shrinkage- Type I, Class 3: shall not shrink more than 2% length (5558).	Intended Use- To designate rank on military uniforms.

### NARROW FABRICS

NOMENCLATURE	Yarn Number	Fiber	Weight		Width Inch	Warp Yarns - Full Width			Picks Per Inch	Breaking Strength Lb. Min. (5100)	Elongation % Max. (5100)	Thickness Inch (5030)
			Oz./Lin Yd			Total	Face & Back	Binder				
<u>Tape, Insulating (Electrical) Linen-Finish, Plain</u> MIL-T-638A	Warp	Fill	Stuffer	Min	Max							
	(5)					(4)						
	30/1	38/1	Cotton			1/2	36		35	15		0.005
	30/1	30/1	Cotton			3/4	56		35	25		0.005
	20/1	30/1	Cotton			1/4	18		35	15		0.007
	20/1	30/1	Cotton			1/2	36		35	25		0.007
	20/1	30/1	Cotton			3/4	56		35	30		0.007
	20/1	30/1	Cotton	1			72		35	40		0.007
	20/1	30/1	Cotton	1-1/2			108		35	60		0.007

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as Weave, Ends/Carrier, etc.)	NOTES (Not Specification Requirements)
MIL-T-638A	(5) Tape shall be unbleached, and no finish shall be applied other than calendering. Tape shall have smooth, even surface commonly known as linen-finish. pH: 5.0 - 9.0 (2811).		Weave shall be plain, with woven selvages on each side.	Intended Use- Tape is Class O insulation, for use in cables and similar items, with continuous operating temp. limit of 90°C., and, in general, is used when combined with a liquid dielectric to form Class A insulation with a continuous operating temp. limit of 105°C.

## NARROW FABRICS

NOMENCLATURE	Yarn Number	Fiber	Weight		Width inch	Warp Yarns - Full Width	Picks Per Inch	Breaking Strength Lb. Min. (5100)	Elongation % Max. (5100)	Thickness inch (5030)	Number of Carriers
			oz/gross yd	Min/Max							
<div style="display: flex; justify-content: space-between; font-size: small;"> <span>Braid, Textile, Cord - Base MIL-B-1667D</span> <span>Warp/Fill/Stuffer</span> <span>Min/Max</span> <span>Total/Face &amp; Back</span> <span>Spacers</span> </div>											
Class 1- General Officers, Army	28/2-32/2	Cotton, continuous filament, regenerated rayon of 150*7.5 den. & 2* filament min. or 300*15 den. & 4* filament min. & non-tarnishable metallic silver color cellophane: 0.020 in. wide & 6500 yds/lb.	22.0	-	3/16-1/4	Cover: 4(150 denier) or 3(300 denier) Flat braid: 12(1 carrier) 12(25 carrier)	Cover: 26(150 denier) or 23(300 denier) Flat braid: 26				Cover: 19 Flat Braid: 21-25 (For All Classes)
Class 2- Officers Army			22.0	-	3/16-1/4	Cover: 4(150 denier) or 3(300 denier) Flat braid: 12(1 carrier) 12(25 carrier)	Cover: 26(150 denier) or 23(300 denier) Flat braid: 26				
Class 3- Warrant Officers, Army			22.0	-	3/16-1/4	Cover: 4(150 denier) or 3(300 denier) Flat braid: 12(1 carrier) 12(25 carrier)	Cover: 26(150 denier) or 23(300 denier) Flat braid: 26				
Class 4- Enlisted Men, Army			22.0	-	3/16-1/4	Cover: 4(150 denier) or 3(300 denier) Flat braid: 12(1 carrier) 12(25 carrier)	Cover: 26(150 denier) or 23(300 denier) Flat braid: 26				
Class 5- General Officers, Air Force			22.0	-	3/16-1/4	Cover: 4(150 denier) or 3(300 denier) Flat braid: 12(1 carrier) 12(25 carrier)	Cover: 26(150 denier) or 23(300 denier) Flat braid: 26				
Class 6- Officers, Air Force			22.0	-	3/16-1/4	Cover: 4(150 denier) or 3(300 denier) Flat braid: 12(1 carrier) 12(25 carrier)	Cover: 26(150 denier) or 23(300 denier) Flat braid: 26				
Class 7- Airmen, Air Force			22.0	-	3/16-1/4	Cover: 4(150 denier) or 3(300 denier) Flat braid: 12(1 carrier) 12(25 carrier)	Cover: 26(150 denier) or 23(300 denier) Flat braid: 26				

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as Weave, Ends/Carrier, etc.)	NOTES (Not Specification Requirements)
MIL-B-1667D Class 1 Class 2 Class 3 Class 4 Class 5 Class 6 Class 7		Color (1). Standard samples available (3-6). Colorfastness- Standard sample available (4660-4622-5651-4660).	(2) Flat braid section and cord section shall be braided together in one operation on a cord-edge braider. Cord section shall consist of a cord cover braided around a cotton core. Width of finished cord section shall be 3/32-1/8 in. Core shall be 4 cotton stuffer yarns. Each yarn shall be a 20/3/4 ply cord with permissible + or - count on the singles yarn. Classes 1, 4 and 7: cord cover shall be braided with 1 color of rayon yarn. Class 2: cord cover shall be braided using 14 carriers of black rayon yarn & 5 carriers of black rayon yarn equally spaced. Class 3: cord cover shall be braided using 14 carriers of black rayon yarn & 5 carriers of silver grey rayon equally spaced. Class 5: Cord cover shall be braided using metallized silver color cellophane (1 end/carrier, 21 picks/in.) Class 6: Cord cover shall be braided using 9 carrier cellophane, of remaining 10 carriers with every other carrier out, 5 carriers blue rayon.	Intended Use- On garrison caps worn by personnel of the Departments of the Army and the Air Force.

### NARROW FABRICS

NOMENCLATURE	Yarn Number	Fiber	Weight		Width inch	Warp Yarns - Full Width			Picks Per Inch	Breaking Strength Lb. Min. (5100)	Elonga- tion % Max. (5100)	Thick- ness Inch (5030)
			oz/gross yd			Total	Face & Deck	Binder				
Tape, Textile, Nylon, Woven, White or Dyed MIL-T-2283D	Warp/FIN	Stuffer	Min	Max	(+1/16) (-1/32)							
		210 (+5%)	9.0	-	1/2	65			40	90		
		den., bright	11.0	-	5/8	79			40	140		
		high ten-	13.5	-	3/4	95			40	190		
		acity poly-	17.0	-	1	127			40	240		
		amide of	22.0	-	1-1/4	157			40	265		
	hexamethy-	26.0	-	1-1/2	187			40	290			
	lene dia-											
	mine & adi-											
	pic acid or											
	its deriva-											
	tives											

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as Weave, Ends/ Carrier, etc.)	NOTES (Not Specification Requirements)
MIL-T-2283D		Color- Natural (white) or dyed as specified. Standard samples available (3). Colorfastness- Standard sample available for dyed tape (5622-5614- 5660).	Tape shall have a plain weave with woven selvages on both edges.	Intended Use- In the fabrication of clothing and individual equipment.

### NARROW FABRICS

NOMENCLATURE	Yarn Number	Fiber	Weight oz/lin yd	Width inch	Warp Yarns - Full Width				Picks Per inch	Breaking Strength Lb. Mir	Age- on Max.	Thick- ness inch	No. of Single Yarns for Final Plied Yarn (min.)	
					Total	Face	Binder	Stuffer						
Webbing, Textile, Warp, Fill, Stuffer Woven Nylon MIL-W-4088E (GL) And. #3 Denier & Filament 96H F													(4)	V B F
Types: I	420/68	840/140	Bright,	- 0.28	9/16	92				34	500	0.025-.040	1 - 1	
Ia	420/68	840/140	high ten-	- 0.32	3/4	108				36	600	0.025-.035	1 - 1	
II	420/68	840/140	acity, heat	- 0.42	1	134				34	670	0.025-.040	1 - 1	
III	420/68	840/140	& light	- 0.52	1-1/4	168				34	800	0.025-.040	1 - 1	
IV	420/68	840/140	resistant	- 1.20	3	400				34	1800	0.025-.040	1 - 1	
VI	840/140	840/140	polyamide	- 1.15	1-23/32	114				21	2500	0.030-.090	2 - 2	
VII	840/140	840/140	of hexame-	- 2.35	1-23/32	229	27			24	5500	0.060-.100	2 1 2	
VIII	840/140	840/140	thylene	- 1.60	1-23/32	166				18	3600	0.040-.070	2 - 2	
VIIIa	840/140	840/140	diamine &	- 2.80	3	280				18	6300	0.040-.070	2 - 2	
IX	840/140	840/140	adipic acid	- 4.00	3	257				28	9000	0.065-.100	3 2 2	
X	840/140	840/140	or its deri-	- 3.70	1-23/32	257	31			22	8700	0.110-.140	3 1 2	
XII	420/68	840/140	vatives.	- 0.85	1-23/32	266				34	1200	0.025-.040	1 - 1	
XIII	840/140	840/140	Melting	- 2.90	1-23/32	281	34			24	6500	0.030-.120	2 1 2	
XIV	210/34	210/34	Point: 482°	- 0.80	1/2	91				36	1200	0.070-.100	7 - 7	
XV	210/34	210/34	F. min. (5)	- 1.25	2	88				15	1500	0.035-.050	10 - 10	
XVI	840/140	840/140		- 2.00	1-23/32	198				17	4500	0.045-.080	2 - 2	
XVII	840/140	840/140		- 1.15	1	114				15	2500	0.045-.070	2 - 2	
XVIII	840/140	840/140		- 2.05	1	260				18	6000	0.100-.160	2 - 2	
XIX	840/140	840/140		- 4.10	1-3/4	280				18	10000	0.105-.130	3 - 2	
XX	840/140	210/34		- 3.25	1	162	26			19	9000	0.190-.235	5 1 10	
XXI	210/34	210/34		- 1.70	1-1/4	260				25	3600	0.065-.085	5 - 10	
XXII	260/17	840/140		- 3.50	1-23/32	259				18	7300	0.090-.120	10 - 2	
XXIII	840/140	840/140		- 3.70	1-1/8	324	27			15	12000	0.200-.300	3 2 3	
XXIV	840/140	840/140		- 2.25	1-15/16	244				17	5500	0.055-.075	2 - 3	
XXV	840/140	840/140		- 1.50	1	169	20			22	4500	0.090-.125	2 1 2	
XXVI	840/140	840/140		- 4.90	1-3/4	235				16	15000	0.170-.200	5 - 3	

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as Weave, Ends/ Carrier, etc.)	NOTES (Not Specification Requirements)
MIL-W-4088E				
Type I		Color (1). Standard sample available (3).	Type XXII webbing shall retain not less than 95% of original breaking strength when abraded (4.5.1). Weave- Types I, Ia, II, III, IV, VI, VIII, VIIIa, XII, XV, XVI, and XVII: weave shall be 2 up, 2 down herringbone twill and 1 reversal at center of webbing. Types VII, IX, X, XIII, and XXV: weave shall be a double plain weave with a single filling. Separate binder warp ends shall weave 2 up, 2 down, 1 end as 1. All other warp yarns shall weave 2 ends as 1 except that the edge warp yarns shall weave 1 end as 1 not exceeding 8 ends on one selvage & 9 on the other. Types XX, XXIII, and XXII: See spec. for diagrams. Types XIV, XVIII, XIX, and XXI: a 5 up, 1 down, 1 up, 5 down herringbone twill with 1 reversal in center. See diagram. Type XXIV: 2 up, 2 down herringbone twill with 3 reversals. See diagram. Type XXVI: See spec.	Intended Use- In parachutes and their accessories, tow target reinforcement, safety belts, bomb hoists and slings, tie-down equipment, and over-run barriers.
Type Ia		When dyeing is required, webbing shall be yarn or piece dyed using dispersed, acid, metallized, or chrome dyes.		
Type II		Colorfastness- Standard sample available (5660-5614). See spec. for instructions on colored identification yarns.		
Type III				
Type IV				
Type VI				
Type VII				
Type VIII				
Type VIIIa				
Type IX				
Type X				
Type XII				
Type XIII				
Type XIV				
Type XV				
Type XVI				
Type XVII				
Type XVIII				
Type XIX				
Type XX				
Type XXI				
Type XXII				
Type XXIII				
Type XXIV				
Type XXV				
Type XXVI				

### NARROW FABRICS

NOMENCLATURE	Yarn Number	Fiber	Weight Oz/Yd	Width Inch	Warp Yarns - Full Width			Picks Per Inch	Breaking Strength Lb. Wt. (5100)	Elonga- tion % Max. (5100)	Thick- ness Inch (5030)	Shrinkage (Warp)
					Total	Face & Back	Slender & Stuffer					
Webbing, Textile, Warp, FMI, Stuffer Woven, Cotton and Rayon MIL-W-4576 (USAF) And. 2												
			(±0.025)	(±1/32)								
Type I		Warp: con- tinuous filament viscose rayon Fill: cotton, 8-ply	0.125	5/8	106			30	50		0.015- 0.020	2% max.
Type II			0.175	7/8	148			30	70		0.015- 0.020	2% max.

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as Weave, Ends/ Carrier, etc.)	NOTES (Not Specification Requirements)
MIL-W-4576 Type I Type II	(5) Use of dyestuffs, detergents, or other chemicals or finish- ing agents which would cause deterioration in storage or cause dermatitis on prolonged intimate skin contact is pro- hibited. pH: 5.0 - 9.0 (2811).	Color (1-6). Colorfastness- "good" (5614-5651-5620-5660- 5682).	Weave shall be plain, 1 up, 1 down.	Intended Use- In the construction of flying clothing.

## NARROW FABRICS

NOMENCLATURE	Yarn Number	Fiber	Weight		Width Inch	Warp Yarns - Full Width				Picks Per Inch	Breaking Strength Lb. Min. (5100)	Elongation % Max. (5100)	Thickness Inch (5030)	Denier		
			Oz/yd			Total	Face & Back	Slender	Stuffer							
Tape, Textile and Webbing, Textile, Reinforcing, Nylon		Warp	Fill	Stuffer	Min	Max	Total	Face & Back	Slender	Stuffer				V	F	B
MIL-T-5038D						(+1/32)										
Type II- Tape, herringbone twill weave		Bright, high tenacity, neat & light resistant			- 0.40	1	96				40	900	18	0.025-	840	210
					- 0.60	1-1/2	144				40	1300	18	0.035	840	210
					- 0.80	2	192				40	1700	18	"	840	210
Type III- Tape, plain weave		polyamide			- 0.12	3/8	74				33	200	18	0.015-	210	420
		of polyhexamethylene			- 0.15	1/2	100				33	250	18	0.025	210	420
					- 0.20	3/4	150				33	400	18	"	210	420
					- 0.30	1	200				33	525	18	"	210	420
		adipic acid or its derivatives.			- 0.40	1-1/2	300				33	900	18	"	210	420
Type IV- Webbing, plain weave		Melting point: 250°C min.			- 0.35	1/2	99	8			48	550	18	0.030-	420	420
					- 0.40	5/8	123	10			48	625	18	0.040	420	420
					- 0.50	1	197	16			48	1000	18	"	420	420
					- 0.60	1-1/8	221	18			48	1100	18	"	420	420
					- 0.75	1-1/2	293	24			48	1500	18	"	420	420
Type V- Tape, herringbone twill weave					- 0.20	9/16	42				32	500	18	0.020-0.030	840	420
Type VI- Tape, herringbone twill weave					- 0.20	3/4	150				38	425	18	0.020-0.030	210	420

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as Weave, Ends/Carrier, etc.)	NOTES (Not Specification Requirements)
MIL-T-5038D Type II Type III Type IV Type V Type VI	(5) pH: 5.0 - 8.5 (2811).	Color- Types II, III, IV and V: color shall be natural unless otherwise specified. Type VI: (1). Standard samples available (3). Colored tape and webbing shall be yarn or piece dyed. Colorfastness- Standard sample available (5614).	Tape or webbing shall not lose more than 25% of original breaking strength on exposure to light and heat (4.3.2-4.3.3). See spec. for weave instructions.	Intended Use- For binding & reinforcing applications in parachute packs and similar purposes and for equipage.

### NARROW FABRICS

NOMENCLATURE	Yarn Number	Fiber	Weight		Width Inch	Warp Yarns - Full Width			Picks Per Inch	Breaking Strength Lb. Min. (5100)	Elonga- tion % Max. (5100)	Thick- ness Inch (5030)		
			Lin	Yd/Lb		Total	Face B	Binder					Stuffer	
<b>Types and Weaves:</b> Textile Rayon MIL-T-5237C														
Type I- Flat weave tape		Bright, multifila- ment vis- cose rayon	200 -	(4)		48			36	50				
			100 -	9/16		94							36	100
			80 -	1-1/8		116							30	140
Type Ia- Flat weave webbing		Fill: 5 den. min.	100 -	3/8		30			36	160				
			40 -	9/16		280							21	500
			32 -	1		90							36	500
			15 -	1-5/8		136							36	750
Type II- Tubular weave webbing			125 -	1/8		23			24	150				
			100 -	3/16		30							30	200
			40 -	1/2		81							30	500
			40 -	9/16		81							30	500
			23 -	5/8		130							52	900

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as Weave, Ends/ Carrier, etc.)	NOTES (Not Specification Requirements)
MIL-T-5237C Type I Type Ia Type II	(5) Tape or webbing shall have a smooth even finish. pH: 5.5 - 8.5 (2811).	Color- Unless otherwise specified, color shall be the natural white of the finished rayon yarn. Colorfastness- "good" (4630). When specified, tape or webbing shall contain 1 end of warp yarn dyed Red to match Cable No. 70180 and woven into the center of the face of tape or webbing. Use of solution dyed yarn is permissible.	See spec. for weave instru- ctions.	Intended Use- In the manufacture of parachute canopies for bombs.



## NARROW FABRICS

NOMENCLATURE	Yarn Number	Fiber	Weight		Width Inch	Warp Yarns - Full Width			Picks Per Inch	Breaking Strength Lb. Min. (5100)	Elongation % Max. (5100)	Thickness Inch (5030)	Denier	
			yd/lb			Total	Face & Back	Slinder					Stuffer	V
<p><b>MIL-T-5608F (ASO)</b></p> <p><i>Tape, Parachute Canopy, Textile, Nylon</i></p>														
Class A- Extra lightweight		Class A:		(4)		Sel-								
Types: I		Semi-dull				vage								
II		normal ten-		1300	-	72	12	140	13	13		20	40	
III		acity light		875	-	104	12	140	18	18		20	40	
IV		resistant		440	-	237	32	140	43	18		20	40	
V		nylon.		260	-	352	32	140	65	18		20	40	
				165	-	537	32	-	96	18		20	40	
Class B- Lightweight		Classes B, C, D & E:												
Types: I		bright		970	-	86	12	118	22	18		30	40	
II		high ten-		650	-	126	12	118	33	18		30	40	
III		acity, heat		360	-	237	32	118	70	18		30	40	
IV		& light		210	-	352	32	118	120	18		30	40	
V		resistant		120	-	651	32	-	200	18		30	40	
VI		nylon.		50	-	1616	32	-	100	18		30	40	
				(1b/in) (5104)										
Class C- Medium weight		All Classes:												
Types: I		polyamide												
II		of hexame-		770	-	100	12	82	39	22		40	40	
III		thylene di-		520	-	148	12	82	58	22		40	40	
IV		amine & adi-		335	-	227	32	82	90	22		40	40	
V		pic acid or		160	-	457	32	82	185	22		40	40	
(Continued)		its deriva-		100	-	757	32	80	300	22		40	40	
		tives. Melt-												
		ing point:												
		250±6°C.												

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as Weave, Ends/Carrier, etc.)	NOTES (Not Specification Requirements)
MIL-T-5608F Class A Class B Class C (Continued)	Yarn of tape shall not be bleached in any manner or process. pH: 5.0 - 9.0 (2810).	Color- Unless otherwise specified, color shall be natural, except for Class B, Type VI, which shall be dyed international orange, color No. 12197 of Fed. Std. No. 595, and Class C, Type V, which shall be yarn or piece dyed yellow, Air Force color No. 1365 (3). Colorfastness- Standard sample available (5660-5651).	Weave: Unless otherwise specified, weave of body of cloth shall be a conventional 2-up, and 2-down right-hand twill, except that for Class E, Type VI, warp ends shall weave 2 ends as 1. Unless otherwise specified, selvage weave for Classes A, B, and C shall be a double weave of conventional hatband type. For Classes D and E, there shall be no additional selvage ends. Air Permeability: Class A, Type V; Class B, Types V and VI; and Class C, Type V- 150±30 cfm/sq ft. Finished tape shall not lose more than 25% of its original strength when exposed to heat and light (4.2.3.2.1 - 4.2.3.2.2).	Intended Use- In the fabrication of parachutes of tape-type construction known as "ribbon parachutes".

### NARROW FABRICS

NOMENCLATURE	Yarn Number	Fiber	Weight		Width Inch	Warp Yarns - Full Width				Picks Per Inch	Breaking Strength Lb. Min. (5100)	Elongation % Max. (5100)	Thick-ness Inch (5030)	Denier		
			yd/lb			Total	Faces	Binder	Stuffer					W	F	
<u>Taps, Parachute Canopy, Textile, Nylon</u> MIL-T-5608 (ASG) (Cont'd)																
			Min	Max												
Class D- Heavy weight					(4)											
Types: I		See p. 265.	80	-	1.250	94	0			52	280	18		210	210/2	
II			45	-	2.000	154	0			52	460	18		210	210/2	
Class E- Extra heavy-weight																
Types: I		See p. 265.	50	-	1.250	240	0			36	650	18		210	210/2	
II			30	-	2.000	378	0			36	1000	18		210	210/2	
III			22	-	2.000	280/1	0			36	1500	-		420	420	
IV			17	-	2.000	378/1	0			36	2000	-		420	420	
V			13	-	2.000	260	0			26	3000	-		840/1	840/1	
VI			11	-	2.000	350	0			24	4000	-		840/1	420/1	

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as Weave, Ends/Carrier, etc.)	NOTES (Not Specification Requirements)
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MIL-T-5608F  
 (Cont'd)  
 Class D  
 Class E

For additional information see page 265.

### NARROW FABRICS

NOMENCLATURE	Yarn Number	Fiber	Weight		Width Inch	Warp Yarns - Full Width			Picks Per Inch	Breaking Strength Lb. Min. (5100)	Elongation % Max. (5100)	Thickness (50)
			oz/yd			Total	Face & Back	Binder				
Webbing, Textile, Warp		Fill	Stuffer		Min	Max						
Nylon, Tubular												
MIL-W-0056257 (GL)						(+1/16)						Max.
Sizes:		Bright, high tenacity, heat & light resistant polyamide of hexamethylene diamine & adipic acid or its derivatives.	-	0.50	1/2	111			26	1000		0.090
		Melting point: 482°F. min.	-	0.60	9/16	137			26	1500		0.090
		Singles yarn, 840 denier	-	0.70	5/8	81			26	1250		0.100
		+5%, 140 filament.	-	1.05	3/4	109			26	2300		0.120
			-	1.70	1	159			26	4000		0.120

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as Weave, Ends/Carrier, etc.)	NOTE (Not Specification)
MIL-W-0056257		Color- Except for identification yarns (see spec.) webbing shall be furnished in natural and Yellow No. 1365 as specified. Standard samples available (3). When dyed webbing is required, webbing shall be piece dyed. Colorfastness- Standard sample available for dyed webbing (5660-5614). Webbing shall not be bleached in any manner or process.	Weave shall be tubular, plain, 1-up and 1-down. Residual shrinkage of natural and dyed webbing shall be no more than 2% (4.3.4). Webbing shall lose no more than 25% of original breaking strength when exposed to heat and light (4.3.2-4.3.3).	Intended Use- For parachute construction

### NARROW FABRICS

NOMENCLATURE	Yarn Number	Fiber	Weight		Width Inch	Warp Yarns - Full Width			Picks Per Inch	Breaking Strength Lb. Min. (5100)	Elongation % Max. (5100)	Thickness Inch (5030)	Yarn Ply Min.	
			oz./lin yd			Total	Face & Back	Binder					Stuffer	W
Tape and Webbing, Warp, FMI, Stuffer Textile, Cotton Reinforcing, Woven MIL-A-5661C (+1/32)														
Type I- Plain Sizes:		Cotton	-	0.11	1/4	7			20	80		4	2	
			-	0.15	3/8	10			20	120		4	2	
			-	0.22	1/2	14			20	150		4	2	
			-	0.28	5/8	18			20	170		4	2	
			-	0.33	3/4	22			20	200		4	2	
			-	0.47	1	30			20	250		4	2	
Type II- Double herringbone Sizes:		Cotton	-	0.15	1/2	142			48	110		2	2	
			-	0.22	3/4	212			48	165		2	2	
			-	0.29	1	284			48	220		2	2	
			-	0.36	1-1/4	356			48	275		2	2	
			-	0.43	1-1/2	426			48	330		2	2	
			-	0.50	1-3/4	496			48	375		2	2	
			-	0.57	2	568			48	425		2	2	
Type III- Twill Sizes:		Cotton	-	0.10	1/2	64			60	45		2	1	
			-	0.12	5/8	85			60	55		2	1	
			-	0.14	3/4	96			60	75		2	1	
Type V- Plain (Transverse cord) Sizes:		Cotton	-	0.65	1	48			16	350		4	4	
			-	1.30	2	96			16	650		4	4	
Type VI- Nonelastic Sizes:		Cotton	-	0.23	5/8	-	95	22	37	46	80			See spec.
			-	0.98	1	-	112	50	31	52	375			See spec.

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as Weave, Ends/Carrier, etc.)	NOTES (Not Specification Requirements)
MIL-A-5661C Type I Type II Type III Type V Type VI	(5) Type I tape and webbing shall be compatible with aircraft dope. Dope shall dry within 45 min. and show no signs of cracking and peeling when applied to finished tape and webbing as specified in 4.4.7. pH: 6.0 - 8.0 (2811).	Color- Unless otherwise specified, color for all Types shall be natural (unbleached). When an Olive Drab color is specified, it shall match TCA Cable No. 66022, Shade S-1 (U.S. Army Olive Drab). Colorfastness- "good" (5651-5630-5632-5660).	Weaves- Type I: Plain (1-up 1-down). Type II: 2-up, 2-down herringbone twill weave, having 3 reversals of twill, 1 at center & 1 on each side of center midway between center & edge. All ends shall be woven singly in the warp. Type III: a 2-up, 2-down twill with reversal at 1/4 and 3/4 of the width. Type V: Plain, with 2 warp yarns weaving as 1, except that at the selvage there shall be 3 warp yarns weaving singly. Type VI: Weave known commercially as "nonelastic." See spec. for diagram.	Intended Use- Type I: For reinforcing tape on cloth under lacing cords of airfoil sections. Types II, III, V and VI: For building and reinforcing applications in parachute packs.

## NARROW FABRICS

NOMENCLATURE	Yarn Number	Fiber	Weight		Width Inch	Warp Yarns - Full Width	Picks Per Inch	Breaking Strength Lb. Min.  (5100)	Elongation % Max.  (5100)	Thick- ness Inch  (5030)
			oz/lin yd							
Webbing, Textile, Elastic, Cotton MIL-W-5664B		Warp	Fill	Stuffer	Min	Max	Total	Face & Back	Binder	Stuffer
Class 1		Cotton	-	0.28	(4) 3/8					.016-.046
			-	0.38	1/2					.016-.046
			-	0.53	3/4					.016-.046
			-	0.55	7/8					.016-.046
			-	0.73	1					.016-.046
			-	1.00	1-1/2					.016-.046
			-	1.60	2					.031-.061
			-	2.00	2-1/2					.031-.061
Class 2		Cotton	-	2.30	1-1/2					.094-.156
Class 3		Cotton	-	2.35	1-1/2					.094-.156

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as Weave, Ends/ Carrier, etc.)	NOTES (Not Specification Requirements)
MIL-W-5664B Class 1 Class 2 Class 3	pH: 6.0 - 9.0 (2811).	Color- Webbing shall be yarn or piece dyed. Class 1: Natural or dyed (1). If Sage Green is specified, webbing shall be dyed to match shade sample for Sage Green color No. 531. When natural is specified, webbing shall be unbleached. Class 2: Natural or dyed (1). When specified, face shall be black & back white. Black shall conform to TCA Cable No. 66507 shade G (Black), and white shall conform to TCA Cable No. 70001 white (crepe side). Sage Green Color No. 531. Class 3: Unless otherwise specified, shall match TCA Cable No. 66022 shade S-1, U.S. Army Olive Drab. Sage Green shall match shade sample for Sage Green No. 531. Colorfastness- "good" (5651-5660-5630).	See spec. for amount of load to produce 50% elongation & for low temperature elongation resistance. Drift of load on webbing, elongated & maintained at 50% elongation for 4 hours, shall be not more than 20% (4.6.2). After webbing has been elongated and maintained at 50% elongation for 10 min, and then allowed to rest for 10 min., the webbing tension set (change in length of sample) shall be not more than 5%. Same requirement shall hold after heat aging.	Intended Use- Class 1: For headbands for aviator's face masks and goggles, parachute packs and harnesses, service cap covers, gloves, waist bands, and for harness elastic on gas mask face pieces. Class 2: For suspenders. Class 3: For parachute packs and rip-cord grip pocket for parachutes.

## NARROW FABRICS

NOMENCLATURE	Yarn Number	Fiber	Weight		Width Inch	Warp Yarns - Full Width			Picks Per Inch	Breaking Strength Lb. Min. (5100)	Elongation % Max. (5100)	Thickness Inch (5030)	Fly of Warp Ends Min.
			oz/yd			Total	Face	Binder					
MIL-W-5665E, Amd. 1													
Webbing, Textile, Warp, Fill, Stuffer Cotton Warp MIL-W-5665E, Amd. 1													
Class 1A- Undyed & not fungus proofed		Warp: Cotton			(4)								
Class 1B- Undyed & fungus proofed		Fill: For Types I-VII, IX, XII, XIII, XVII, XVIII, and XIX-											
Class 2A- Dyed & not fungus proofed		Cotton. For Types VIII, XV, and XVI-											
Class 2B- Dyed & fungus proofed		bright, high tenacity, heat & light resistant											
Class 3- Resin dyed & fungus proofed during dyeing		polyamide of hexamethylene diamine & adipic acid or its derivatives.											
Types: I		Unbleached.	-	0.40	9/16	68			20	350	.040-.050	4	
II			-	0.75	1	122			20	575	.040-.050	4	
III			-	0.90	1-1/4	158			20	750	.040-.050	4	
IV			-	2.50	3	200			16	1900	.050-.100	3	
V			-	4.30	5	350			16	3100	.050-.100	3	
VI			-	2.10	1-3/4	116			11	1800	.070-.090	5	
VII			-	3.00	1-3/4	122			24	2600	.140-.170	7	
VIII			-	3.00	1-3/4	132			10	2900	.075-.095	7	
IX			-	4.65	3	175			12	4500	.090-.115	6	
X			-	3.50	1-3/4	160			20	5000	.130-.150	6	
XII			-	1.25	1-3/4	220			20	1000	.040-.050	4	
XIII			-	3.40	1-3/4	126			11	3400	.100-.130	6	
XV			-	3.50	1-3/4	150			20	4500	.130-.150	6	
XVI			-	2.60	1-3/4	124			10	2700	.095-.115	7	
XVII			-	1.25	1	70			11	1000	.075-.095	5	
XVIII			-	1.40	2-1/2	270			20	1250	.050-.060	4	
XIX	11/9 10/4 8/7		3.68	-	2	-	139	33	21	2500	.130+.01	-	

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as Weave, Ends/Carrier, etc.)	NOTES (Not Specification Requirements)
MIL-W-5665E	(5)	Color- Webbing shall be natural, dyed Olive Drab No. 7, or other color as specified. Standard samples available (3). Classes 2A & 2B: Oil dyeing is prohibited (5). Shade of dyed webbing prior to application of finish shall match standard sample. Class 3: Resin dyed with fungus resistant treatment added during dyeing process. Dyed and finished webbing shall match standard sample. Colorfastness- Classes 1A, 1B, 2A & 2B: standard sample available (5651-5660). Class 3: standard sample available (5651-5671-5630). See spec. for instructions on colored marking threads.	Shrinkage of finished webbing shall not exceed 12.5% (4.3.1). Weave- Types VII & X: See spec. for diagram. Weave for Type XIX shall consist of a face warp & a back warp bound together by a binder warp & a filling. Face warp shall weave plain, with the picks that show on the face, and the back warp shall weave plain with the picks that show on the back. Binder warp ends shall weave over 2 and under 2. Weave for all other types: 2-up, 2-down herringbone twill with 1 twill reversal in the center of the webbing.	Intended Use- In cargo parachute harnesses & packs, cargo drop kits, cargo tie down lines, hoists and slings, life raft belts and crew bunk safety belts. Copper-8-quinolinolate is to be used in fungus proofing of webbing intended for equipment subject to considerable ground contact under conditions of actual use, and where color is not of primary importance. It is not to be used on webbing in contact with natural rubber materials. 2,2' methylene-bis-(4-chlorophenol) is to be used where color is of prime importance or where webbing may be in contact with natural rubber materials.
Class 1A	Webbing shall be subjected only to light spring calendaring to smooth out surface. Class 1B, 2B & 3 shall be treated with either copper-8-quinolinolate or 2,2' methylene-bis-(4-chlorophenol) mildew inhibitor agents as specified. Copper-8-quinolinolate: Webbing shall be mildew resistant treated by evenly depositing within the webbing a min. of 0.13% to a max. of 0.40% copper as metal from copper-8-quinolinolate, using method of application outlined in spec. 2,2' methylene-bis-(4-chlorophenol): Webbing shall be treated to resist mildew with 1.1-1.6% of 2,2' methylene-bis-(4-chlorophenol), using method of application outlined in spec. pH: For Classes 1B, 2B & 3: 5.5 - 8.5 (2811).			
Class 1B				
Class 2A				
Class 2B				
Class 3				
Type I				
Type II				
Type III				
Type IV				
Type V				
Type VI				
Type VII				
Type VIII				
Type IX				
Type X				
Type XII				
Type XIII				
Type XV				
Type XVI				
Type XVII				
Type XVIII				
Type XIX				

### NARROW FABRICS

NOMENCLATURE	Yarn Number	Fiber	Weight		Width Inch	Warp Yarns - Full Width				Picks Per Inch	Breaking Strength Lb. Min. (5100)	Elongation % Max. (5100)	Thickness Inch (5030)	Yarn Ply	
			oz/lin yd			Total	Face & Back	Binder	Stuffer					W	F
Tape, Textile, Nylon, Parachute, Construction MIL-T-6134B															
Type I		Nylon (a)	-	0.40	1	206				44	525	16	0.025-.045	1	4
Type II		Nylon (a)	-	0.145	1	104				58	300	14	0.010-.030	1	2

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as Weave, Ends/Carrier, etc.)	NOTES (Not Specification Requirements)
MIL-T-6134B Type I Type II		Color- Unless otherwise specified, color for both Types shall be natural, except for identification yarns for Type I. If color is specified, specific colorfastness requirements shall be as specified by procuring activity.	(a) Polyamide of hexamethylene diamine & adipic acid or its derivatives. Melting point: 250+6°C. Warp: 210 denier, high tenacity, bright filament. Fill: Spun nylon of 20/4 for Type I, and 60/2 for Type II (+5%). Weave- Type I: Tubular, plain weave. Warp ends wry weave 2 ends as 1, or 1 end as 1. Type II: 2-up, 2-down herringbone twill, with 1 reversal in the middle. Tape shall have a woven selvage.	Intended Use- In the manufacture of parachutes. Type I: In skirt bands for parachutes. Type II: for reinforcing bands on parachutes.

### NARROW FABRICS

NOMENCLATURE	Yarn Number	Fiber	Weight		Width Inch	Warp Yarns - Full Width			Picks Per Inch	Breaking Strength Lb. Min. (5100)	Elongation % Max. (5100)	Thickness Inch (5030)	Yarn Ply		
			oz./yd			Total	Faces & Back	Stuffer					W	F	B
Webbing, Textile, Warp/Fill/Stuffer Nylon, Latex Impregnated MIL-W-8630C, Amd. 2													(4)		
Types: I		Bright nylon. All Type but IV: 210 den. 3/4 filament. Type IV: 840 den. 140 filament. All yarn shall be sunlight resistant type.	- 2.40 (initial) - 2.65 (impregnated)	1-15/16	200				22	5300	.075-.095	10	-	6	
II			- 2.25 (initial) - 2.45 (impregnated)	1-15/16	196				17	5500	.055-.075	10	-	10	
III			- 4.20 (initial) - 4.60 (impregnated)	3		309	37		28	8200	.080-.100	10	7	10	
IV			- 5.10 (initial) - 5.60 (impregnated)	1-15/16		246	40		21	13000	.170-.180	5	4	10	
V			- 2.90 (initial) - 3.20 (impregnated)	1-23/32		225	29		22	6500	.080-.100	10	4	7	
VI			- 3.70 (initial) - 4.05 (impregnated)	1-23/32		305	37		22	8700	.110-.130	10	4	10	
VII			- 1.70 (initial) - 1.90 (impregnated)	1-23/32	132				18	3600	.055-.080	10	-	10	

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as Weave, Ends/Carrier, etc.)	NOTES (Not Specification Requirements)
MIL-W-8630C Type I Type II Type III Type IV Type V Type VI Type VII	(5) Webbing shall be impregnated with a suitable natural rubber latex compound containing the necessary curatives & antioxidants. Webbing shall be saturated by total immersion in a latex bath for a period of time sufficient to allow penetration to the core of the web. Excess may be removed by suitable devices. Totally impregnated webbing shall then be properly dried and vulcanized to develop max. physical properties. Use of any dyestuffs, detergents, curative methods, impregnating compounds, or other chemical or finishing agents which are known to cause deterioration in storage or cause dermatitis on prolonged intimate skin contact or increase the flammability of the webbing is prohibited.	Color- Unless otherwise specified, color of Types I & II shall match TCA Cable No. 16522 Cinder Gray. Other Types shall match TCA Cable No. 66022, Shade S-1 (U.S. Army Olive Drab). Webbing shall be uniformly dyed before any finishing agent is applied, and before impregnation. Color penetration shall be good in both warp & fill. Metallized or chrome dyes shall not be used. Colorfastness- "good" (5660-5614).	See spec. for weave instructions. Webbing shall lose not more than 5% of original strength after abrasion (4.5.2.4). Breaking strength of impregnated webbing shall not be less than 80% of unexposed untreated webbing after exposure to acc. weathering (4.5.2.5). Webbing shall display no appreciable stiffening or change in pliability when subjected to low temps. (4.5.2.6). Webbing shall lose no more than 5% of original breaking strength after acc. oven aging. After cooling, aged webbing shall display no stickiness or gumming (5850).	Intended Use- In the manufacture or aircraft tie-down and armament-handling equipment, and other safety devices.



### NARROW FABRICS

NOMENCLATURE	Yarn Number	Fiber	Weight		Width inch	Warp Yarns - Full Width				Picks Per Inch	Breaking Strength Lb. Min. (5100)	Elongation % Max. (5100)	Thickness inch (5030)
			oz/lin yd	Min		Max	Total	Face	Binder				
<u>Webbing, Textile, Warp</u> <u>Cotton, Stow-Loop</u> MIL-W-9406 (DEAF)		Cotton	8.19	9.0	3-1/2 (+ 1/8)					Back	1100		.085+.015

<u>Tape, Textile,</u>													
<u>1-Inch</u>													
MIL-T-10372A (MU)	26/2 30/2	Cotton	0.20	-	1 (+1/16)	114					46	(5102) 140	

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as Weave, Ends/Carrier, etc.)	NOTES (Not Specification Requirements)
MIL-W-9406	Use of dyestuffs, detergents, or other chemical or finishing agents which would cause deterioration or affect color in storage or cause dermatitis on prolonged intimate skin contact is prohibited.	Color- Color of webbing and loops shall be natural, except for 1 binder thread, which shall be black (6). Colorfastness- "good" (5651).	See spec. for weave diagrams.	Intended Use- In the manufacture of troop-type parachute packs.
MIL-T-10372A		Color- Shall be Olive Drab shade No. 7 (6).	(2) Weave shall be a 4-harness herringbone twill, 2/2, with 5 divisions alternating to the right and to the left. Cloth shall be mildew resistant and non-toxic on the skin.	Intended Use- For use with the ABC-M dust respirator.

### NARROW FABRICS

NOMENCLATURE	Yarn Number	Fiber	Weight		Warp Yarns - Full Width			Picks Per Inch	Breaking Strength Lb. Min. (5100)	Elongation % Max. (5100)	Thickness Inch (5070)
			oz./lin yd		Total	Face & Back	Binder				
Webbing, Textile, Warp/Fill/Stuffer Woven, Low Elongation MIL-W-10828C (OL) Amd. 1											
Type I- Low strength	12/3	Cotton & continuous filament saponified acetate stuffer of 270 denier, 9 ply.	(±5%) 1.00	(±1/16) 1.0	Body 78	Edges 18	14	15	56	600	8 at 600 lb.
Type II- High strength	12/3		2.05	1.5	120	18	21	88	56	2000	8 at 2000 lb.
Type III- Super strength	12/3		3.40	1.5	120	18	21	196	84	5000	8 at 5000 lb.
Class 1- Undyed Class 2- Undyed, water repellent & mildew resistant finish. Class 3- Dyed, water repellent & mildew resistant finish.											

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as Weave, Ends/Carrier, etc.)	NOTES (Not Specification Requirements)
MIL-W-10828C Type I Type II Type III Class 1 Class 2 Class 3	(5) Class 2 & 3 webbings shall be water repellent & mildew resistant treated. The water repellent shall consist of aluminum salts of saturated carboxylic acid (such as formate, acetate, palmitate, or stearate) mixed with refined mineral and vegetable waxes. Product shall be applied either as an aqueous emulsion or as a water-free solvent solution. Dynamic absorption of treated webbing: 40% max. Mildew resistant treatment shall be through an even depositing of 0.3-0.40% copper as metal from copper-8-quinolinolate, by the method outlined in the spec. Webbing shall be dried after finishing with sufficient tension for elongation. pH: Classes 2 & 3: 5.5 - 8.5 (2811).	Color- Unless otherwise specified, color of Class 3 webbing shall be Olive Drab No. 7, and the color of finished webbing shall match standard sample (3). Color of Class 2 webbing may deviate from natural by that degree imposed by the finishes. Class 3 webbing shall be stock or yarn dyed. Only those warps specifically listed as "stuffer warps" may, if properly covered, be undyed. Good dye penetration. Webbing shall be soaped & washed after dyeing (6). Colorfastness- Standard sample available. Class 2: (5651). Class 3: (5651-5671).	(2-7). See spec. for weave diagrams.	Intended Use- As framing in manufacturing of tents and liners, and backs for packboards, and other special applications requiring low elongation webbings.

## NARROW FABRICS

NOMENCLATURE	Yarn Number	Fiber	Weight		Width inch	Warp Yarns - Full Width			Picks Per Inch	Breaking Strength Lb. Min. (5100)	Elonga- tion % Max. (5100)	Thick- ness inch (5030)
			oz/lin yd	Min		Max	Total	Face				
<u>Tape, Textile,</u> <u>Cotton For Bandoleers</u> MIL-T-13452A (ORD)												
		Cotton	0.35	0.39	1-3/8 (-1/8) (no +)				8		185 warp 66 fill	

Webbing, Woven,

Nylon

MIL-W-17337A (NAVY)

Sizes:

		Min	Max	Woven Tubular					
Bright,	-	0.71	1	119	96	22	48	1200	
high ten-	-	1.07	1-1/2	179	144	34	48	1800	
acity, con-	-	1.42	2	239	192	46	48	2200	
tinuous fila-	-	2.2	3	356	288	68	48	3200	

ment nylon,  
840 denier.

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as Weave, Ends/ Carrier, etc.)	NOTES (Not Specification Requirements)
MIL-T-13452A	(5) Chloride content: no more than 0.020%. pH: 7.0 - 8.0 (2810).	Color- Shall be Olive Drab No. 7, and shall be produced by vat dyes to match approved standard shade (3-6). Chromium salts shall not be used for oxidation of vat dyestuffs. Colorfastness- Standard sample available (5651- 5610-5600-5660).	Weave: Unless otherwise spec- ified, weave shall be 2/2 herringbone twill.	Intended Use- In making bando- leers for small arms ammunition.
MIL-W-17337A	(5) No extraneous weighting material shall be added to the webbing.	Color- Unless otherwise specified, webbing shall be dyed Orange-Yellow conforming to shade No. 33538 of Fed. Std. 595 or Dark gray conforming to dry standard color chip of MIL-P-699 (1-3). Colorfastness- Standard sample available (5651- 5660-5610).	(2) Weave: Webbing shall be of tubular construction, with a 1-up and 1-down weave, with the exception of the binder ends, which shall be evenly spaced across the width of the webbing and shall be woven plain, 2 ends weaving as 1.	Intended Use- In the manufacture of life preservers and other equipment.

### NARROW FABRICS

NOMENCLATURE	Yarn Number	Fiber	Weight		Width Inch	Warp Yarns - Full Width				Picks Per Inch	Breaking Strength Lb. Min. (5100)	Elongo- tion % Max. (5100)	Thick- ness Inch (5030)
			oz/lin yd			Total	Face & Back	Binder	Stuffer				
<u>Tape, Nylon;</u> <u>Elastic; 1/2"-Inch</u> <u>MIL-T-17964A (MC)</u>													
		200/3 <sup>4</sup> or 210/3 <sup>4</sup> den. nylon & 37 gauge extru- ded natural rounded rubber.	0.5	-	1 (+ 1/16) (- 1/32)	65	32 min.			69±5		(4121 of 601) 130	
<u>Webbing, Textile;</u> <u>Knitted, Nylon;</u> <u>Elastic 1/4"-</u> <u>Inch-Width</u> <u>MIL-W-17965A (MC)</u>													
		50 gauge ex- truded natural round rubber elastic wrapped with 70 & 200 den. nylon. Knitting yarns: 210 den. nylon.	2.2	2.6	1/4 (±1/8)	Wales 22 (±2)				Ribs 19±2		(4121 of 601) 200 (±.003)	0.038 (±.003)

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as Weave, Ends/ Carrier, etc.)	NOTES (Not Specification Requirements)
MIL-T-17964A		Color- Unless otherwise specified, color shall be Olive Drab No. 7. Colorfastness- "good" (5651-5622-5660-5682).	(2) Tape shall be made on a carrier braider. Ends per carrier: 2 min. Weave: 2/2.	Intended Use- For use on Marine Corps clothing and equipage items.
MIL-W-17965A		Color- Unless otherwise specified, color shall be Olive Drab No. 7. Colorfastness- "good" (5651-5622-5660-5682).	(2) Total sewing sections (warp): 6 min. No. of ends per sewing section: 6 min. Knitted webbing shall have a transverse web of interlocking and interconnecting warp and filling yarns with a selvage at each edge. Laid-in elastic warps shall consist of a rubber core wrapped first with 2-ply, 70 denier nylon, and then wrapped with single ply, 200 denier nylon.	Intended Use- On Marine Corps clothing and equipage items.

## NARROW FABRICS

NOMENCLATURE	Yarn Number	Fiber	Weight		Width Inch	Warp Yarns - Full Width				Picks Per Inch	Breaking Strength Lb. Min. (5100)	Elongation % Max. (5100)	Thickness Inch (5030)
			oz./yd	Min/Max		Total	Face & Back	Binder	Stuffer				
<p><u>Cloth, Glass; Tape, Textile, Glass; and Thread, Glass</u></p> <p>MIL-C-20079C, Amd. 1 (See also under Synthetic Cloths)</p> <p>Type I- Cloth (See Synthetic Cloths)</p> <p>Type II- Tape</p> <p>Class 1- Plain weave, untreated</p> <p style="margin-left: 150px;">Continuous filament fibrous glass</p> <p style="margin-left: 150px;">(+10%) (untreated)</p> <p style="margin-left: 150px;">5.80</p> <p style="margin-left: 150px;">(1)</p> <p style="margin-left: 150px;">42+2</p> <p style="margin-left: 150px;">32+2</p> <p style="margin-left: 150px;">(5104) 150 (initial) 40 (after heating)</p> <p>Class 2- Plain weave, treated</p> <p style="margin-left: 150px;">5.80 (untreated)</p> <p style="margin-left: 150px;">7.05 (treated)</p> <p style="margin-left: 150px;">(1)</p> <p style="margin-left: 150px;">42+2</p> <p style="margin-left: 150px;">32+2</p> <p style="margin-left: 150px;">150 (initial) 40 (after heating)</p> <p>Class 3- Knitted, untreated</p> <p style="margin-left: 150px;">11.25</p> <p style="margin-left: 150px;">(1)</p> <p style="margin-left: 150px;">10+2</p> <p style="margin-left: 150px;">22+2</p> <p style="margin-left: 150px;">15 (initial) 9 (after heating)</p> <p>Type III- Thread</p> <p>Class 1- Medium weight sewing</p> <p style="margin-left: 150px;">(yards/lb)</p> <p style="margin-left: 150px;">640</p> <p style="margin-left: 150px;">48</p> <p>Class 2- Heavy weight sewing</p> <p style="margin-left: 150px;">350</p> <p style="margin-left: 150px;">75</p>													

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as Weave, Ends/Carrier, etc.)	NOTES (Not Specification Requirements)
MIL-C-20079C Type I Type II Class 1 Class 2 Class 3 Type III Class 1 Class 2	Unless otherwise specified, Class 2 tape shall be treated with a suitable synthetic resin.		Weave: Class 1 and Class 2 tape shall be plain woven. Ends shall be properly interlocked with picks to insure that there shall be no raveling of tape edges. Class 3 tape shall be knitted. Wales shall be properly interlocked with courses to insure that there shall be no raveling of tape edges. Construction of tape shall be such that there shall be no distortion of the tape such as curling.	Intended Use- As a lagging material or jacket over thermal insulation.

## NARROW FABRICS

NOMENCLATURE	Yarn Number	Fiber	Weight		Width Inch	Warp Yarns - Full Width			Picks Per Inch	Breaking Strength Lb. Min. (5100)	Elongation % Max. (5100)	Thick-ness Inch (5030)	Fly	
			oz/lin yd			Total	Face & Back	Binder					Stuffer	W

Webbing, Textile,  
Nylon-Pneumatic  
Life Preserver  
MIL-W-21733 (AMR)

Warp	Fill	Stuffer	Min	Max	Total	Face & Back	Binder	Stuffer	Picks Per Inch	Breaking Strength Lb. Min. (5100)	Elongation % Max. (5100)	Thick-ness Inch (5030)	W	F
Type I- Harness webbing	210/4	210/4	binder	1.07	1-1/2 (+1/15)	178	144	34	48	1800				
Type II- Accessory webbing	210/2	210/4	Bright, high tenacity, 210 den. nylon. Melting Point: 250+6°C.	0.40	1 (+1/32)	100	100		40	575				

Webbing, Nylon,  
Slotted (For Cargo Ships)  
MIL-W-23223 (SHIP6)

Type	Fiber	Weight	Width Inch	Total	Picks Per Inch	Breaking Strength Lb. Min. (initial)	Elongation % Max. (initial)	Thick-ness Inch (initial)	W	F
Type I	840 denier ultra-violet resistant, high tenacity	2.3	1-3/4 (+1/16)	280	24+1	6000 (initial)	90% (after abrasion)	0.080-0.110	2	2
Type II	continuous filament nylon.	1.7	1-1/4	200	24+1	4500 (initial)	90% (after abrasion)	0.080-0.110	2	2
Type III		1.28	1	160	24+1	3500 (initial)	90% (after abrasion)	0.075-0.100	2	2

Class A- Anti-static treated.  
Class D- Standard treated.

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as Weave, Ends/Carrier, etc.)	NOTES (Not Specification Requirements)
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MIL-W-21733 Type I Type II		Color- Unless otherwise specified, color shall be Orange Yellow to match TCA Cable No. 70068, Spanish Yellow (crepe side). Colorfastness- "good" (5660).	Weave- Type I: A double plain weave, 1 end as 1 with a single filling. Binders shall be drawn to weave in groups of 2. See spec. for instructions. Type II: 2-up and 2-down herringbone twill with 1 reversal in center.	Intended Use- In the manufacture of various pneumatic life preservers.
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MIL-W-23223 Type I Type II Type III Class A Class B	Unless otherwise specified, webbing shall be impregnated with a suitable polychloroprene compound containing the necessary curatives, pigments, acid acceptors, flameproofing compounds, and antioxidants. A deposit of not less than 3% solids shall be made. If anti-static webbing is required, conductive rubber latex impregnation shall be used in lieu of polychloroprene. Anti-static treatment shall increase weight of webbing by 7-14%. Yarn shall be substantially free from sizing, loading, or other adulterants.	Color- Webbing (excluding markers, web insertions, and anti-static treated webbing) shall be Olive Drab. The anti-static treated webbing shall result in a charcoal color from the treatment with conductive rubber latex so that it is readily identifiable. Yarn shall be yarn or piece dyed with acetate dyes. Olive Drab color dyes are not required in anti-static treated. Metallized or chrome dyes shall not be used. Colorfastness- "fair" (5600-5614).	Weave: A double plain weave with filling acting as binder. Shall have integrally woven slots. See diagram. See spec. for length & spacing of slots. Webbing shall not stiffen at low temps (4,5,2). See spec. for weight of polypropylene rubber to be used. Use of dyes, detergents, or other chemical or finishing agents which would cause deterioration in storage, cause dermatitis on prolonged skin contact, or increase the flammability of the webbing is prohibited.	Intended Use- In fabrication of cargo slings.
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### NARROW FABRICS

NOMENCLATURE	Yarn Number	Fiber	Weight		Width Inch	Warp Yarns - Full Width	Picks Per Inch	Breaking Strength Lb. Min. (5100)	Elongation % Max. (5100)	Thickness Inch (5030)	Fly	
			Oz/Yd								V	F
Webbing, Textile, Dacron MIL-W-25339 (USAF)			Min	Max		Total	Face & Back					
					(4)							
Types: I		220 denier continuous filament	- 1.30	1-23/32		108		18	1800	.040-.050	7	9
II		high tenacity type 5100 dacron	- 1.80	1		120		20	3000	.110-.140	10	10
III			- 3.75	1-23/32		320		20	8700	.125-.145	10	9
IV			- 4.55	2		346		18	9700	.110-.130	10	10

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as Weave, Ends/Carrier, etc.)	NOTES (Not Specification Requirements)
MIL-W-25339 Type I Type II Type III Type IV	(5) Finished webbing shall be heat relaxed at a temp. in excess of 350°F. in such a manner that no more than 2% shrinkage occurs in testing. (4.3.2.1). pH: 5.0 - 9.0 (2611).	Color- Shall be natural. See spec. for instructions on identification yarns.	Weave- Type I: a 2-up, 2-down herringbone twill with 1 reversal at the center of the webbing. Types II, III, IV: See spec. for diagram.	Intended Use- In the fabrication of parachutes for use where exposure to high temp. conditions is anticipated.

### NARROW FABRICS

NOMENCLATURE	Yarn Number	Fiber	Weight		Width Inch	Warp Yarns - Full Width			Picks Per Inch	Breaking Strength Lb. Min. (5100)	Elongation % Max. (5100)	Thickness Inch (5030)	Ply		
			Min	Max		Total	Face & Back	Binder					Stuffer	W	F
Webbing, Textile Polyester, Low Elongation MIL-W-25361A															
Type I- Untreated		Warp & fill for V & VI 1100 den. semi-dull or bright high tenacity polyester - polyethylene glycol terephthalate. Melting point: 250°+5°C. Fill for I, II, III and IV: spun nylon 15/3+3% on the cotton system.	- 1.65	1-23/32	154				19	3600	18 (2500 lb)	.050-.065	2	-	3
Type II- Untreated			- 2.10	1-23/32	216				23	6000	13 (3000 lb) 17.5 (5400 lb)	.060-.080	2	-	3
Type III- Untreated			- 2.50	1-23/32	256				23	7000	12 (3000 lb) 17.5 (6300 lb)	.075-.090	2	-	3
Type IV- Untreated			- 3.75	3	346				32	8700	12 (3000 lb) 18.5 (7830 lb)	.065-.090	2	-	3
Type V- Latex treated			- 3.90	1-3/4	362				22	10000 (initial) 9000 (after abrasion) 95% (after acc. aging)	9 (3000 lb) 16 (9000 lb)	.110-.130	2	-	2
Type VI- Latex Treated			- 7.50	1-3/4	449	37			17	15000 (initial) 13500 (after abrasion) 95% (after acc. aging)	7.5 (3000 lb) 17.5 (13500 lb)	.215-.235	3	2	2

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as Weave, Ends/Carrier, etc.)	NOTES (Not Specification Requirements)
MIL-W-25361A Type I Type II Type III Type IV Type V Type VI	(5) Types I, II, III and IV webbing shall be untreated. Types V & VI shall be treated with a natural rubber latex. They shall be impregnated with a natural rubber latex containing the necessary curatives and antioxidants. Webbing shall be saturated by total immersion in a latex bath for a period of time sufficient to allow penetration to the core, and the excess shall then be removed to permit conformance to finished weight requirements. Webbing shall then be dried and vulcanized. pH: 5.0 - 8.5 (2811).	Color- Types I, II, III & IV shall be natural white or shall match standard sample for Air Force shade Sea Green No. 1001 or Olive Drab No. 7 (3). Types V and VI shall be Olive Drab No. 7 (3). Colorfastness- Standard sample available (5651).	See spec. for weave diagrams and instructions. Types V & VI shall show no evidence of stickiness or gumminess after acc. aging (5850). Types V & VI shall show a change in pliability of no more than +20% after low temps. and a further change of no more than +20% after acc. aging. (5206-5850).	Intended Use- In aircraft safety belts and restraining harnesses. Type VI webbing is intended for use as slings for heavy rockets and rocket warheads.



## NARROW FABRICS

NOMENCLATURE	Yarn Number	Fiber	Weight		Width Inch	Warp Weave - Full Width			Picks Per Inch	Breaking Strength Lb. Min.  (5100)	Elonga- tion % Max.  (5100)	Thick- ness Inch  (5030)	Fly	
			Min	Max		Total	Face & Back	Binder					Stuffer	W
<u>Tape, Textile,</u> <u>Nylon, Loop</u> MIL-T-26089 (USAF) Am. 1		210 denier bright 3/4 filament high ten- acity poly- amide of hexamethy- lene & adi- pic acid or its deriva- tives. Melt- ing point: 482°±10°F.	- 67	5/16 (tape & cord)	76	38 & 37			60	(4102) 175		0.030- 0.040 (exclusive of cord)	1	3
<u>Tape, Textile,</u> <u>Nylon, For Ring-</u> <u>Slot Parachutes</u> MIL-T-27736 (USAF)		840 denier 140 filament ultraviolet resistant nylon poly- amide of hexamethy- lene diamine & adipic acid or its derivatives. Melting point: 250°±6°C.	- 3.5	11 (oz/lin (+1/4) yd)	48			36	(5104) 625 (warp) 450 (fill)					

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as Weave, Ends/ Carrier, etc.)	NOTES (Not Specification Requirements)
MIL-T-26089	(5) pH: 5 - 9 (2811).	Color - Tape shall match Air Force Sage Green shade No. 520 (3). Colorfastness- "good" (5651-5614-5660-5682).	Loop cord shall be manufactured in such a manner that the core yarns are held firmly in place to prevent puckering of core yarns when released from stress. See spec. for sleeve, core, and cord requirements. Weave: see spec. for diagram.	Intended Use- In flight clothing as a lacing tape.
MIL-T-27736	Finished tape shall be smooth and even, and shall contain no sizing, lubricating or weighting materials. Finish shall be permanent. Thickness shall not increase more than 10%, and cloth shall not shrink more than 5% in warp and fill (4.3.2.1). pH: 4.5 - 8.5 (2811).	Color- Shall be natural only.	Weave: See spec. for diagram. Selvage width: 1-1/8 ± 1/16 in. Breaking strength (warp) of selvage width: 900 lb. Air permeability: 70 ± 20 ft <sup>3</sup> /min/ ft <sup>2</sup> of cloth body.	Intended Use- In the fabrication of ring-slot parachutes. Existing narrow fabric looms may be used to weave the tape by folding over a 5-1/2 in. width on the loom that will unfold to an 11 in. finished tape off the loom.

### NARROW FABRICS

NOMENCLATURE	Yarn Number	Fiber	Weight	Width Inch	Warp Yarns - Full Width	Picks Per Inch	Breaking Strength Lb. Min.	Elongation % Max.	Thickness Inch	Ply
			Min Max		Total Face Binder Stuffer & Back		(5100)	(5100)	(5030)	

Tape, Textile, Nylon, Aromatic, Nonmelting, Parachute  
Cane

MIL-T-38377 (USAF)	(Yds/Lb)	(+0.0625)	Selvage							W	P
Type I	100	-	2	258	32	70	300 (initial) 85% (aged)	12		1	1
Type II	30	-	2	450	-	36	1000 (initial) 85% (aged)	12		1	2
Type III	12	-	2	320	-	26	3000 (initial) 85% (aged)	-		4	4

Braid, Textile, Cord-Edge, Polyester  
Fiber

MIL-B-40092A	(a)	(Ounces/ gross yds)	No. of Carriers		Ends/Carrier min.
	60/4 or 30/2 Cotton & multifila- ment polyester conforming to Type I, Class 1 of V-T-285.	20 - 3/32-1/8 (cover)	19 min. (cover)	25 (cover)	3 (cover)
		3/16-1/4 (flat braid)	21-25 (flat braid)	25 (flat braid)	2 (flat braid)

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as Weave, Ends/ Carrier, etc.)	NOTES (Not Specification Requirements)
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MIL-T-38377 Type I Type II Type III		Color- Shall be natural.	Weave- Body weave: A conven- tional 2-up and 2-down right- hand twill. Selvage: Type I shall be a double plain weave of a conventional hatband type. Types II and III shall have no additional selvage ends. Type I: Air permeability shall be 75±20 ft <sup>3</sup> /min/ft <sup>2</sup> .	Intended Use- For use in the fabrication of parachute cano- pies of tape-type construction known as ribbon parachutes.
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MIL-B-40092A		Color- (1-6). Standard samples available (3). Colorfastness- Standard sample available (4614- 4680-4660-5651).	(2) (a)Cover: 70 denier, 3 ply (letter size A). Core: 220 denier, 3 ply, plied 3 times (number size 3). Flat braid and core sections shall be braided together in 1 opera- tion on a cord-edge braider. Cord section shall consist of a cover braided around a core of stuffer yarns. Flat section shall be reinforced with cotton yarns.	Intended Use- As piping on clothing.
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### NARROW FABRICS

NOMENCLATURE	Yarn Number	Fiber	Weight		Width Inch	Warp Yarns - Full Width				Picks Per Inch	Breaking Strength Lb. Min. (5100)	Elongation % Max. (5100)	Thickness Inch (5030)	Fly			
			Min	Max		Total	Face	Binder	Stuffer					W	F	B	
Braid, Textile, For Cap Covers MIL-B-41803		Mercerized Cotton	70	-	1-3/4 min.	40/6	6			26	200						

**Webbing, Textile, Nylon**  
MIL-W-43042 (ORD)

		(oz/lin yd)											
Type I- 0.065 in. nominal thickness	Continuous filament												
Sizes:	bright high tenacity	- 0.40	1/2	49	5	24	550	0.050-	4	8	4		
	nylon polyamide of hexamethylene diamine & adipic acid or its derivatives.	- 0.60	3/4	73	8	24	800	0.079	4	8	4		
		- 0.80	1	97	11	24	1100	"	4	6	4		
Type II- 0.090 in. nominal thickness													
Sizes:		- 1.20	3/4	109	13	24	2500	0.080-	8	8	3		
		- 1.25	7/8	127	15	24	3000	0.100	8	8	3		
		- 1.30	1	143	17	24	3400	"	8	8	3		
		- 2.00	1-1/2	213	26	24	5000	"	8	8	3		
		- 2.80	2	287	35	24	6700	"	8	8	3		
		- 3.20	2-1/2	359	44	24	8200	"	8	8	3		
		- 3.90	3	431	53	24	10000	"	8	8	3		

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as Weave, Ends/Carrier, etc.)	NOTES (Not Specification Requirements)
MIL-B-41803		Color (1). Standard sample available (3). For white, cotton shall be bleached. Colorfastness- standard sample available (4614-4600-4622-4660).	(2) No. of lines: 20 No. of carriers: 81; 2 ends per carrier. Braiding Type 2/2 plain. Shrinkage: 3% max. in the warp (5550).	Intended Use- As a component of cap covers used by military personnel.
MIL-W-43042 Type I Type II	(5) pH: 5 - 9 (2811).	Color- Unless otherwise specified, webbing shall be piece dyed with acetate or acid type dyes of color Olive Drab No. 34087 of Fed. Std. 595. Metallized or chrome dyes shall not be used. Colorfastness- "fair" (5662).	(2-7). Weave: Webbing shall be composed of 2 ground warps (face and back), 1 binder warp, and 1 filling. Face warp shall weave plain (1 end as 1), with picks that show on face, and the back warp shall weave plain (1 end as 1), with picks that show on back. Binder warp shall weave plain throughout.	Intended Use- For manufacturing carrying straps for fire control instruments.

### NARROW FABRICS

NOMENCLATURE	Yarn Number	Fiber	Weight		Width Inch	Warp Yarns - Full Width				Picks Per Inch	Breaking Strength Lb. Min. (5100)	Elongation % Max. (5100)	Thick-ness Inch (5030)	Fly	
			Min	Max		Total	Face & Back	Binder	Stuffer					W	F
<u>Tape, Textile, Polyamide, High Temperature Resistant, Loop</u> MIL-T-81116 (WRPS)															
		High strength aromatic polyamide, non-melting, 200 denier.	- 67	(yds/lb)	5/16 (tape & cord) 7/16 (tape & cord loop)	76	38 (face) 37 (back)	Cord 1		60	(4102) 375			1	3
<u>Webbing, Cotton, 1.2 Oz., Bleached 2 Inch (USMA)</u> P/Des 295 (Superseding MIL-W-1643)															
	16/3 16/3/4 - Cotton		1.2	-	(+1/16) (-1/32) 2	192				22	400				

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as Weave, Ends/Carrier, etc.)	NOTES (Not Specification Requirements)
MIL-T-81116		Color- Shall be Olive Green. Color shall be obtained by the utilization of solution dyeing.	Loop cord shall be constructed in such a manner and with such a yarn tension that core yarns are held firmly in place to prevent puckering of core yarns when released from stress. Weave- See spec. for diagram. See spec. for requirements for sleeve, core, and cord.	Intended Use- As a lacing tape in the anti-G coveralls, Mark 2A, and related clothing.
P/Des 295	(5)	Color- Fully bleached and may be supplemented with fluorescent optical brighteners.	See spec. for weave instructions.	Intended Use- In the manufacture of equipage.

REFERENCES

NARROW FABRICS

Textile Test Methods - CCC-T-191b

<u>Method</u>	<u>Title</u>
<u>Chemical</u>	
2610	Acidity (pH), colorimetric method.
2811	Acidity (pH), potentiometric method.
<u>Construction</u>	
5030	Thickness of cloth.
<u>Mechanical</u>	
4102	Strength and elongation, breaking; small cords, single strand.
5100	Strength and elongation, breaking, of woven cloth, grab method.
5104	Strength and elongation, breaking, of woven cloth, ravel strip method.
5202	Stiffness, directional; cantilever bending method (Timius Olsen).
5206	Stiffness, drage and flax; cantilever bending method (Pierce formula).
<u>Air Permeability and Water Resistance</u>	
4500	Water absorption; sewing thread; dynamic method.
5200	Water resistance, dynamic absorption.
<u>Shrinkage Resistance</u>	
5550	Shrinkage in laundering; cotton, linen, and mixed cotton and linen cloth.
5558	Shrinkage, relaxation; wool cloth.
<u>Colorfastness</u>	
4600	Colorfastness to chlorine bleaching; cotton yarn, thread and cordage.
4610	Colorfastness to laundering; cotton and linen yarn, thread and cordage; Launder-Ometer Method.
4614	Colorfastness to laundering; wool, silk and rayon yarn, thread and cordage; Launder-Ometer Method.
4622	Colorfastness to wet cleaning (associated with dry cleaning); yarn, thread, cordage.
4630	Colorfastness to water; yarn, thread, cordage.
4660	Colorfastness to light; yarn, thread, cordage; accelerated method (Fade-Ometer).
4680	Colorfastness to perspiration; yarn, thread, cordage; perspirometer method.
5600	Chlorine bleaching; cloth.
5610	Laundering, cotton and/or linen; Launder-Ometer.
5620	Dry cleaning (petroleum solvent).
5622	Wet cleaning (with dry cleaning).
5630	Water, cold.
5632	Salt water and soap.
5651	Crocking of cloth.
5660	Light; accelerated (Fade-Ometer).
5662	Light; natural light method.
5671	Weather; accelerated method (National Weathering Unit).
5680	Perspiration; perspirometer method.
5682	Perspiration; tube method.
<u>Mildew Resistance</u>	
5762	Mildew resistance; soil burial method.
<u>Deterioration Test</u>	
5850	Aging; accelerated oven method.

### NATURAL FIBERS OTHER THAN COTTON AND WOOL

NOMENCLATURE	Weight Oz/Sq Yd		Weave	Width Inch	Yarn Ply	Yarns Per Inch Min.	Breaking Strength Lb. Min.	Air Permea- bility	Shrink- age Max.	Dynamic Absorption Max.	Hydro- static Pressure Low Range Min.	Water Permea- bility Max.	Point Value Max.
	Min	Max											
<b>Cloth, Thread, and Tape; Asbestos</b> SS-C-466e (See also under Narrow Fabrics)													
Form I- Cloth Grade U.G.- 80% asbestos, blue stripes													
	(+7%)					(+1)							
Style 1- plain weave, reg. wgt.	2.25 lb.		Plain	(1)		18	9	90	40				
Style 2- plain weave, lt. wgt.	1.40 lb.		Plain	(2)		19	10	80	40				
Style 3- plain weave, special wgt. No. 1 construction.	0.75 lb.		Plain	(1)		21	17	40	30				
Style 4- plain weave, special wgt. No. 2 construction.	1.05 lb.		Plain	(1)		20	15	65	40				
Style 5- plain weave, combination asbestos & glass, (asbestos yarn & glass filament yarn plied together) No. 3 construction.	1.10 lb.		Plain	(1)		13	9	90	70				
Style 6- plain weave, combination asbestos & glass, (asbestos yarn & glass filament yarn plied together) No. 4 construction.	1.40 lb.		Plain	(1)		18	9	90	40				
(Continued)													

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as Thickness, Tearing Strength, etc.)	NOTES (Not Specification Requirements)
SS-C-466e Form I Style 1 Style 2 Style 3 Style 4 Style 5 Style 6 (Continued)	Cloth may be finished to provide qualities and characteristics such as lint free, brushed, and filled, calendered, napped, dry-woven, or wet woven, providing tensile and construction qualities are maintained as specified.		Asbestos cloth, thread, and tape shall be made of good-quality chrysotile asbestos and organic fiber. Hygroscopic moisture shall not exceed 5% (4.4.1.1). Cloth shall be woven with single or plied yarns. Grade U.G. cloth shall contain no less than 80% asbestos. A blue marker thread shall be woven into each sel- vage.	Intended Use- Form I, Grade U.G.: For use as jacketing material over insulation where the temperature of the insulated surface is more than 125°F (52°C), except that it is not to be used on fittings and flanges, nor where it will be in contact with heated metal.



### NATURAL FIBERS OTHER THAN COTTON AND WOOL

NOMENCLATURE	Weight Oz/Sq Yd	Weave	Width Inch	Yarn Ply	Yarns Per Inch Min. (5050)	Breaking Strength Lb. Min. (5100)	Air Permea- bility (5450)	Shrink- age Max. (5550)	Dynamic Absorption Max. (5500)	Hydro- static Pressure Low Range Min.	Water Permea- bility Max. (5516)	Faint Value Max.
<u>Cloth, Thread, and Tape; Asbestos</u> SS-C-466e (Cont'd)	Min   Max			W   F	W   F	W   F		W   F				

Form II- Thread,  
sewing, reinforced  
with wire

(4.4.2.1)

Form III- Thread,  
sewing, without  
wire

450 yds/  
lb. min.

2 2  
max.

4

Form IV- Tape  
(See Narrow Fabrics)

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as Thickness, Tearing Strength, etc.)	NOTES (Not Specification Requirements)
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SS-C-466e (Cont'd)  
Form II  
Form III  
Form IV

For additional information see p. 287.

Form II, thread, sewing, reinforced with wire- strands shall be composed of 3 nickel-copper wires, each of which shall have asbestos yarn spun around it, twisted together to definitely interlock the asbestos and wire. Each yarn shall be 10-cut and shall contain not less than 58% nickel and shall be 0.008 +0.001 in. in diameter.  
Form III, thread, sewing, without wire- thread shall be made from yarn not heavier than 10-cut, 2-ply, and shall contain not less than 75% asbestos. One pound of thread shall provide not less than 450 yards.



### NATURAL FIBERS OTHER THAN COTTON AND WOOL

NOMENCLATURE	Weight Oz/Sq Yd		Weave	Width Inch	Yarn Ply	Yarns Per Inch Min.		Breaking Strength Lb. Min.	Air Permea- bility	Shrink- age Max.	Dynamic Absorption Max.	Hydro- static Pressure Low Range Min.	Water Permea- bility Max.	Point Value Max.
	Min	Max				(5050)	(5100)							
Cloth, Burlap, Jute (Or Kenaf)						W F	W F	W F		W F				
CCC-C-467b	(+5% tol.)													
Class 1- 7.5 oz.	6.7		Plain,	40			8-11	8-11						
Class 2- 8.0 oz.	7.2		modified	min.			9-12	8-11						
Class 3-10.0 oz.	9.0		plain, or	inc.			11-13	10-12						
Class 4-12.0 oz.	10.8		3-leaf twill.	of selvage			11-13	11-13						

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS (Such as Thickness, Tearing Strength, etc.)	NOTES (Not Specification Requirements)
CCC-C-467b Class 1 Class 2 Class 3 Class 4			Cloth shall be made of jute or kenaf, or any combination thereof, at the option of the supplier. Selvages shall be firm and straight, and may contain cotton yarn.	Intended Use- Burlap cloth is intended for use in equipment, covering of baled material, camouflage materials, sand bags, and overwrapping of textile products when packed for delivery. Jute is defined as the best fiber obtained from various species of Corchorus. Kenaf is defined as the best fiber obtained from Hibiscus Cannabinus.

GENERAL NOTES

NON-WOVEN TEXTILE MATERIALS

The following parenthetical numbers are utilized throughout this section of the text as referenced notes. Upon observing these numbers, refer to this page for further information dealing with specific portions of the item.

- |   |  |
|---|--|
| (1) As specified.                                       | (6) Pre-award sample and laboratory report.                  |
| (2) Preproduction sample.                               | (7) Bid sample and laboratory report.                        |
| (3) Color matching.                                     | (8) See specification for weave diagram and/or instructions. |
| (4) See specification for instructions on construction. | (9) Sulfur dyed.   |
| (5) Nonfibrous and extractable matter.                  |  |

The specific test methods referenced in this section of the text are listed with their titles at the end of the section.

### NON-WOVEN TEXTILE MATERIALS

NOMENCLATURE	Fiber	Weight Oz/Sq Yd		Width Inch	Breaking Strength Min.  (5100)	Tensile Strength Min.  (5100)	Splitting Resistance	Thickness Inch	Water Absorption
		Min	Max						
<u>Rag, Wiping, Cotton</u> DD-R-30b					L   W				
Class 1- Unused fabrics.	Woven or knitted cotton fabrics. Class 1 shall consist of clean mill ends, mill remnants, or both. Rags shall be soft and absorbent, free from dust and abrasive material. Class 2 shall consist of fabrics reclaimed principally from household articles, none of which has been used for wiping rag purposes, and shall be soft and absorbent. Both Classes: Heavily napped fabrics, mesh fabrics, fabrics woven with hard twisted yarn, & starched or stiffened fabrics are not acceptable. U.S. Flags or Flags of other Nations, or remnants thereof are strictly prohibited.	(a)							
Grade A- White only		2.0	6.0	See spec. for requirements of area.					Water & oil shall be absorbed into cloths within 30 sec. (4.3.3).
Grade B		2.0	12.0						
Class 2- Reclaimed fabrics.		2.0	6.0	"					
Grade A- White only	2.0	12.0							

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS	NOTES (Not Specification Requirements)
DD-R-30b Class 1 Grade A Grade B Class 2 Grade A Grade B			(a) At least 35% of the weight in each inspection lot of Grade B fabrics shall consist of wiping rags weighing between 2.0-5.0 oz/sq yd. Class 2 wiping rags shall be thoroughly washed, rinsed, and sterilized. This processing shall be done within the United States, its possessions, or Puerto Rico. All Classes and Grades of wiping rags shall have a moisture content of no greater than 10% (4.3.3.2).	Intended Use- In wiping oil and grease from machinery and for miscellaneous cleaning.

### NON-WOVEN TEXTILE MATERIALS

NOMENCLATURE	Fiber	Weight Oz/Sq Yd	Width Inch	Breaking Strength Min. (5100)	Tensile Strength Min. (5100)	Splitting Resistance	Thickness Inch	Water Absorption	Bursting Strength Min. Lb. (dry)	
<b>Cloth, Cleaning, Nonwoven Fabric CCC-C-46a (GL) And. 1</b>		Min   Max		L   W						
				Weaker Direction	Comb. Total Ave., Both	Tear Strength min. (dry)	Stiffness max. In. Lb. Stiffer Weaker Direction Direction			
Type I- Untreated	Fibers & yarns shall be of vegetable, animal or synthetic origin, & the fibers or combination of fibers & yarns shall be in a planar assembly held together by a binder. When yarns are used, they shall be no more than 2" long. Binder shall be odorless & stable. Use of water-soluble plasticizer materials in Type I cloth shall not exceed 5% by weight.	1.26	2.40	(1)	-	-	-	-	(water)	
Class 1- Lt. duty		1.26	1.94	(1)	-	-	-	-	350% min. 12	
Class 2- Med. duty									by weight 17	
Class 4- Extra heavy duty			3.50	4.00	(1)	14 (dry)	22 0.4	0.012	0.0085	2 sec. max. (oil) -
Class 5- Med. extra hvy. duty			1.75	2.25	(1)	7 3 (dry) (wet)	15 6	0.006	0.002	275% min. by weight Classes 1 & 2: 30 sec max. Classes 4 & 5: 8 sec.
Type II- 011 treated Class 5- Med. extra hvy. duty		2.00	2.76	(1)	3 (dry)	6	0.4	0.003	0.001	<u>Elongation</u> 40% min (dry) weaker direction

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS	NOTES (Not Specification Requirements)
CCC-C-46a Type I Class 1 Class 2 Class 4 Class 5 Type II Class 5	Oil used for treating Type II, Class 5 cloth shall be a standard grade mineral-oil emulsion with an unobjectionable odor, having a non-tendency to sour or mildew after impregnation of the cloth. It shall be of a viscosity suitable for impregnating nonwoven cloth for polishing and cleaning purposes without harmful effects to the surfaces to which it is applied. Oil shall be nontoxic. Shall constitute 12-17% by weight. The bonded finished of Type I cloth shall be free from blocking (4.4), and shall not become brittle. Type II shall have a soft hand.	Color- Shall be unbleached, white or a dyed white or a dyed color as specified. When the following colors are specified, they shall approximate the following color numbers of Fed. Std. No. 595. White- 37886; Tan- 23594; Yellow- 23793; Red- 21150; Unbleached- 37855. Colorfastness- When a dyed color is specified, cloth shall show "fair" fastness (5651-5630).	(2) Cloth shall be in the form of either cut size-sheets or full-width rolls or bolts as specified. Finished cloth shall be essentially lintless when used in wet or dry condition. Class 1 cloth shall not be seriously affected by carbon tetrachloride, turpentine, and stoddard solvent (5508). Type I, Classes 4 & 5 shall not lose more than 2% in weight by extraction when immersed in a hydrocarbon fuel, and the cloths shall show no tackiness, appreciable stiffness, surface gelling, or other tactually observable effect (4.4.2). Cloths shall be free from objectionable odor. Type II, Class 5: The max. confidence limit (arithmetic mean), dirt pick-up efficiency shall average not less than 21% based on weight of cloth before soiling (4.4.3). Type I, Class 4: When specified by procurement officer, cloth shall be prewashed to remove any existing impregnated detergent, and the procurement officer shall state the percentage of allowable residual soluble materials acceptable.	Intended Use- Type I, Class 1: for dusting, wiping, washing, and polishing. Type I, Class 2: for survey markers. Type I, Classes 4 and 5: for use in industrial type wiping operations. Type II, Class 5: for dusting and floor wiping operations. Cloths are not intended for use where high-abrasive qualities of cloth are required. Type I, Class 5 cloth may be used to produce Class 5, Type II cloth.

### NON-WOVEN TEXTILE MATERIALS

NOMENCLATURE	Fiber	Weight Oz/Sq Yd	Width Inch	Breaking Strength Min. (5100)	Tensile Strength Min. (5100)	Splitting Resistance	Thickness Inch	Water Absorption
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<u>Pad, Ironing Board, Cotton</u> DDD-P-55a	Cotton. Card sliver shall be used to form the base material.	16.0 -	15½ (head) 4½ (taper)	(4104) 200 (ave.) 190 (ind. test)				
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<u>Padding, Cotton, Stitched Rowing</u> CCC-P-86c								
Type I- 1/4 in. thick (com.)	Cotton	1b. 1.0 -	(min.) 54 or 90					
Type II- 5/8 in. thick (com.)	Cotton	1b. 1b. 2.0 2.5	74					

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS	NOTES (Not Specification Requirements)
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DDD-P-55a			(4) Strands per inch, card sliver: 5 min. Rows per inch, warpwise stitching: 3 min.	
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CCC-P-86c Type I Type II			(4)	Intended Use- Primarily for use on flatwork ironers and pressing machines.
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### NON-WOVEN TEXTILE MATERIALS

NOMENCLATURE	Fiber	Weight Oz/Sq Yd	Width Inch	Breaking Strength Min. (5100)	Tensile Strength Min. (5100)	Splitting Resistance	Thickness Inch	Water Absorption
<u>Waste, Matted, Yarns,</u> <u>(Cotton, Colored)</u> DDD-W-101b		Min   Max		L   W				Water & oil shall be ab- sorbed with- in 30 sec.

Cotton yarns or a mixture of cotton and rayon yarns. 20%±5% of the yarns shall be min. 20 in. long, & not more than 5% shall be less than 3 in. 40% max. shall be fine undyed soft spun yarns. 20%±2½% shall be slasher yarns. 40% max. shall be fine dyed soft spun yarns. 20%±2% of nonbright rayon yarns may be used in lieu of same quantity of cotton by weight. Yarns shall be free from excessive lint and hard-twisted string, shredded rag, premachined stock, soiled or oily stock, crepe yarn, lustrous rayon, yarns of more than 3-ply, dark colored yarns, fly sweepings, and dirt or other foreign matter.

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS	NOTES (Not Specification Requirements)
DDW-W-101b	(5) Waste shall be machined twice to produce a uniformly mixed product with regard to color and length of yarns. White and colored waste shall be properly floor mixed by spreading each bale of stock material on a laying pile in successive layers, so that a portion cut from the edge of the pile to put through the machines will have its proper proportion of every bale of stock material used in the manufacture of the waste. All spools, needles, metal clips, etc. shall be removed. Tare content: 6%. Moisture content: 6.5%.			Intended Use- In wiping and and packing in journals.

### NON-WOVEN TEXTILE MATERIALS

NOMENCLATURE	Fiber	Weight Oz/Sq Yd		Width Inch	Breaking Strength Min.		Tensile Strength Min.	Splitting Resistance	Thickness Inch	Water Absorption	
		Min	Max		L	W					
<u>Felt Sheet (Hair) and Felt Roll (Hair)</u> C-F-202c								(nominal)			
Type I- Flaten or needle loom pro- cess, without backing.	Washed cattle hair. Felt shall contain no less than 95% cattle hair, except for the cloth reinforcement material for Types II, III, and V.	16	22						1/8		
		23	31						3/16		
		29	41							1/4	
		50	62							1/2	
		70	88							3/4	
		90	120							1	
		112	148							1-1/4	
Type II- Punched or needle loom processes, with tobacco cloth center reinforce- ment.		16	22						1/8		
		23	31						3/16		
		29	41							1/4	
		50	62							1/2	
		70	88							3/4	
		90	120							1	
		112	148							1-1/4	
Type III- Punched or needle loom processes, with tobacco cloth center reinforcement (break- ing strength require- ment)		18	24	30	30				1/8		
		25	33	30	30				3/16		
		31	42	30	30					1/4	
		52	64	30	30					1/2	
		72	90	30	30					3/4	
		92	124	30	30					1	
		114	150	30	30					1-1/4	
(Continued)		137	179	30	30				1-1/2		
		158	206	30	30				1-3/4		
		182	236	30	30				2		

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS	NOTES (Not Specification Requirements)
C-F-202c Type I Type II Type III (Continued)	When specified, felt shall be mildew resistant treated in accordance with MIL-T-2312. Requirements for organic acidity, alkalinity, and mineral acidity shall not apply to mildew resistant treated.	Color- Unless otherwise specified, felt shall be natural. The color result- ing from the cattle hair used shall be acceptable.	(2-4). When specified, Types I, II, III, and V felt shall show an organic acidity of not greater than 0.2% (4.4.2). When spec- ified, Types I, II, III, and V felt shall have a pH of 7.0 + 1.0 (2811). Type IV: Shall show no sign of cracking. This requirement shall not apply to 1/8 thick (4.4.3). Class 1 felt shall show an organic acidity not exceeding 0.2%. Class 2 show a pH of 7.0 + 1.0.	Intended Use- Type I: For insulation where the temp- erature will not be higher than 120°F. For cushion- ing, packing, padding, & crating where breaking strength is not important. Type II: For use as a cushion material in pack- ing, padding, and crating, where a moderate breaking strength is required. Type III: For use as a cushion material for packing and crating where a high breaking strength is required, such as cush- ioning against shock. It may also be used for insulating purposes. Type IV: For packing, padding, and crating where a firm and semi-hard material is required. Other appli- cations are: Polishing, resistance to impact, bumpers & vibration cushioning. Type V: For use as a soft, springy cushion under carpets and rugs.

### NON-WOVEN TEXTILE MATERIALS

NOMENCLATURE	Fiber	Weight Oz/Sq Yd		Width Inch	Breaking Strength Min.  (5100)	Tensile Strength Min.  (5100)	Splitting Resistance	Thickness Inch	Water Absorption
		Min	Max						
<u>Felt Sheet (Hair) and Felt Roll (Hair)</u> C-F-202c (Cont'd)		(nominal)							
Type IV- Felted & fulled process		27	35				-	1/8	
Class 1- Untreated		40	52				4 lb.	3/16	
Class 2- Neutralized		54	70				4 lb.	1/4	
		67	87				4 lb.	5/16	
		81	125				4 lb.	3/8	
		108	140				4 lb.	1/2	
		162	210				4 lb.	3/4	
		216	280				4 lb.	1	
Type V- Felted process, burlap core		29	35					3/16	
		36	44					1/4	
		43	53					3/8	
		57	71					1/2	

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS	NOTES (Not Specification Requirements)
C-F-202c (Cont'd) Type IV Class 1 Class 2 Type V	For additional information see p. 296.			



### NON-WOVEN TEXTILE MATERIALS

NOMENCLATURE	Fiber	Weight Oz/Sq Yd		Width Inch	Breaking Strength Min. (5100)	Tensile Strength Min. (5100)	Splitting Resistance (lb/2")	Thickness Inch (Nominal)	Water Absorption	Wool Fiber Con- tent	Ash Con- tent Max.
		Min	Max								
Felt, Sheet, Wool, Pressed C-F-206b, Amd. 1		(lbs.)		(min.)		(psi)					
					L   W						
Type I- Mechanical- roll felts	Fleece, pulled wool, wool noil, reprocessed wool, reused wool or a combination thereof.										
18R		2.15	2.35	60		600	35	1/8		95%	1 1/2%
		3.23	3.53	60		600	35	3/16		95%	1 1/2%
		4.30	4.70	60		600	35	1/4		95%	1 1/2%
		5.38	5.88	60		500	35	5/16		95%	1 1/2%
		6.45	7.05	60		600	35	3/8		95%	1 1/2%
		8.60	9.40	60		600	35	1/2		95%	1 1/2%
16R		0.712	0.788	60 or 72		500	-	3/64		95%	1 1/2%
1X		0.937	1.013	60 or 72		500		1/16		95%	1 1/2%
		1.162	1.238	60 or 72		500		5/64		95%	1 1/2%
		1.387	1.463	60 or 72		500		3/32		95%	1 1/2%
16R		0.712	0.788	60 or 72		300		3/64		92%	2 1/2%
3X		0.937	1.013	60 or 72		300		1/16		92%	2 1/2%
(Continued)		1.162	1.238	60 or 72		300		5/64		92%	2 1/2%
		1.387	1.463	60 or 72		300		3/32		92%	2 1/2%

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS	NOTES (Not Specification Requirements)
C-F-206b Type I 18R 16R 1X 16R 3X (Continued)	Amunition felt: (5) Organic acidity of extract calculated as acetic acid shall not exceed 0.12%. When spec- ified, the felt shall be given a mildew resistant treatment in accordance with MIL-T-2312. When specified, felt shall be given a properly applied sili- cofluoride moth-repellent treatment in order that the felt will leave 0.5 - 0.85% by weight of silicofluoride as a nonsubliming silicofluo- ride. pH: 7.0 ± 1.0.	Color- 18R- White, 16R 1X- White, 3X- Gray.	(6)	Intended Use (suggested)- 18R: For use where a hard, high grade felt possessing long wearing properties is desired, 16R1X; For ball & roller bearing oil retainer washers and small dust ex- cluding washers. Also for mechanical purposes where an accurate, thin, smooth, high-grade felt is required. 16R3X: For the same purposes as 16R1X, but in installations where tolerances & length of life are not as important. Also for thin cut parts such as gaskets and liners.

### NON-WOVEN TEXTILE MATERIALS

NOMENCLATURE	Fiber	Weight Oz/Sq Yd		Width Inch	Breaking Strength Min. (5100)	Tensile Strength Min. (5100)	Splitting Resistance	Thickness Inch	Water Absorption	Wool Fiber Con- tent	Ash Con- tent Max.	
		Min	Max									
Felt, Sheet, Wool, Pressed C-V-206b (Cont'd)					L   W							
Type I- Mechanical roll felts		(lbs.)		(min.)	(psi)	(lb/2")	(Nominal)					
16R1		0.95	1.05	60		500	33	1/16		95%	1%	
		1.90	2.10	60		500	33	1/8		95%	1%	
		2.85	3.15	60		500	33	3/16		95%	1%	
		3.80	4.20	60		500	33	1/4		95%	1%	
		4.75	5.25	60		500	33	5/16		95%	1%	
		5.70	6.30	60		500	33	3/8		95%	1%	
		7.60	8.40	60		500	33	1/2		95%	1%	
		9.50	10.50	60		500	33	5/8		95%	1%	
		11.40	12.60	60		500	33	3/4		95%	1%	
		13.30	14.70	60		500	33	7/8		95%	1%	
		15.20	16.80	60		500	33	1		95%	1%	
	16R2 (Continued)		0.95	1.05	60		500	28	1/16		95%	2%
			1.90	2.10	60		500	28	1/8		95%	2%
		2.85	3.15	60		500	28	3/16		95%	2%	
		3.80	4.20	60		500	28	1/4		95%	2%	
		4.75	5.25	60		500	28	5/16		95%	2%	
		5.70	6.30	60		500	28	3/8		95%	2%	
		7.60	8.40	60		500	28	1/2		95%	2%	
		9.50	10.50	60		500	28	5/8		95%	2%	
		11.40	12.60	60		500	28	3/4		95%	2%	
		13.30	14.70	60		500	28	7/8		95%	2%	
		15.20	16.80	60		500	28	1		95%	2%	

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS	NOTES (Not Specification Requirements)
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C-V-206b (Cont'd) Type I 16R1 16R2 (Continued)		Color- 16R1- White. 16R2- Any, except gray or black.	(6)	Intended Use (suggested)- 16R1: For oil retention in installations where the felt is not compressed, for feed- ing low viscosity or light oil, and where unusual stre- ngth and hardness are required. Washer; bushings; wicks; ink rolls and pads; door bumpers; polishing blocks; wheels & pads; grommets; window channels; resilient mount- ings, anti-vibration and dampening pads; and parts where wear & resistance to abrasion are required; are typical uses. 16R2: For vi- bration mountings, oil and grease shields, and the same general purposes as 16R1, where a felt of slightly lower quality is satisfactory.
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### NON-WOVEN TEXTILE MATERIALS

NOMENCLATURE	Fiber	Weight Oz/Sq Yd		Width Inch	Breaking Strength Min. (5100)	Tensile Strength Min. (5100)	Splitting Resistance	Thickness Inch	Water Absorption	Wool Fiber Con- tent	Ash Con- tent Max.
		Min	Max								
<b>Felt, Sheet, Wool, Fused</b> <b>C-F-206b (Cont'd)</b>											
<b>Type I- Mechanical roll felts</b>											
		(lbs.)		(in.)	(psi)	(lb/2")	(in. final)				
16R3		1.90	2.10	60	400	22	1/8	90%	2 1/2%		
		2.85	3.15	60	400	22	3/16	90%	2 1/2%		
		3.80	4.19	60	400	22	1/4	90%	2 1/2%		
		4.75	5.24	60	400	22	5/16	90%	2 1/2%		
		5.70	6.29	60	400	22	3/8	90%	2 1/2%		
		6.65	7.24	60	400	22	1/2	90%	2 1/2%		
		7.60	8.19	60	400	22	5/8	90%	2 1/2%		
		8.55	9.14	60	400	22	3/4	90%	2 1/2%		
		9.50	10.09	60	400	22	7/8	90%	2 1/2%		
		10.45	11.04	60	400	22	1	90%	2 1/2%		
		11.40	11.99	60	400	22					
		12.35	12.94	60	400	22					
	12R3X		0.712	0.788	60 or 72	200	-	1/16	75%	3%	
		1.087	1.163	60 or 72	200		3/32	75%	3%		
12R1 (Continued)		1.45	1.61	60 or 72	400	18	1/8	95%	2%		
		2.17	2.41	60 or 72	400	18	3/16	95%	2%		
		2.90	3.22	60 or 72	400	18	1/4	95%	2%		
		3.62	4.02	60 or 72	400	18	5/16	95%	2%		
		4.35	4.83	60 or 72	400	18	3/8	95%	2%		
		5.08	5.64	60 or 72	400	18	1/2	95%	2%		
		5.81	6.46	60 or 72	400	18	5/8	95%	2%		
		6.54	7.27	60 or 72	400	18	3/4	95%	2%		
		7.27	8.09	60 or 72	400	18	7/8	95%	2%		
		8.00	8.91	60 or 72	400	18	1	95%	2%		

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS	NOTES (Not Specification Requirements)
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C-F-206b (Cont'd) Type I 16R3 12R3X 12R1 (Continued)		Color- 16R3- Gray. 12R3X- Gray or Black. 12R1- White.	(6) (a) Felt for ammunition of 1/16 and 3/32 in. thickness shall have a min. tensile strength of 125 psi.	Intended Use (suggested)- 16R3: For ammunition compon- ents. For aircraft applica- tions; between rocker arm covers of engines, ring cowlings, radio cushion strips retaining and feed- ing oil under difficult conditions, washings & bushings. 12R3X: For anti- squeak strips and for lining when cemented to fiber board or metal panels. 12R1: For dust shields, wipers, grease retainer wash- ers, wicks, vibration mount- ings, and uses where a resilient felt is required.
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### NON-WOVEN TEXTILE MATERIALS

NOMENCLATURE	Fiber	Weight		Width Inch	Breaking Strength Min. (5100)	Tensile Strength Min. (5100)	Spitting Resistance	Thickness Inch	Water Absorption	Wool Fiber Con- tent	Ash Con- tent
		Oz/Sq Yd									
Felt, Sheet, Wool, Pressed (Cont'd) C-F-206b		Min   Max		L   W							
		(lbs.)		(min.)		(psi)	(lb/2")	(nominal)			
Type I- Mechanical- roll felts											
12R2											
		1.45	1.61	60		275	16	1/8		92%	2%
		2.17	2.41	60		275	16	3/16		92%	2%
		2.90	3.22	60		275	16	1/4		92%	2%
		3.62	4.02	60		275	16	5/16		92%	2%
		4.35	4.83	60		275	16	3/8		92%	2%
		5.80	6.44	60		275	16	1/2		92%	2%
		7.25	8.05	60		275	16	5/8		92%	2%
		8.70	9.66	60		275	16	3/4		92%	2%
		10.15	11.27	60		275	16	7/8		92%	2%
		11.60	12.88	60		275	16	1		92%	2%
12R3											
(Continued)											
		1.45	1.61	72		250	12	1/8		80%	3%
		2.17	2.41	72		250	12	3/16		80%	3%
		2.90	3.22	72		250	12	1/4		80%	3%
		3.62	4.02	72		250	12	5/16		80%	3%
		4.35	4.83	72		250	12	3/8		80%	3%
		5.80	6.44	72		250	12	1/2		80%	3%
		7.25	8.05	72		250	12	5/8		80%	3%
		8.70	9.66	72		250	12	3/4		80%	3%
		10.15	11.27	72		250	12	7/8		80%	3%
		11.60	12.88	72		250	12	1		80%	3%

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS	NOTES (Not Specification Requirements)
C-F-206b (Cont'd) Type I 12R2 12R3 (Continued)		Color- 12R2- Gray. 12R3- Gray.	(6)	Intended Use (suggested)- 12R2 and 12R3: For dust shields, grease retainer washers, wicks, vibration mountings, and uses where a resilient felt is required.

### NON-WOVEN TEXTILE MATERIALS

NOMENCLATURE	Fiber	Weight Oz/3q Yd		Width Inch	Breaking Strength Min. (5100)	Tensile Strength Min. (5100)	Splitting Resistance (lbs/2")	Thickness Inch (nominal)	Water Absorption	Wool Fiber Con- tent	Ash Con- tent Max.
		Min	Max								
Felt, Short, Wool, Pressed (Cont'd) C-F-206b											
Type I- Mechanical- wool felts		(lbs.)	(min.)			(psi)					
9R1		0.60 0.98	0.70 1.14	72		225	8	1/16 1/8		95%	2 1/2%
9R2		1.47 1.96	1.71 2.28	72		200	6	3/16 1/4		92%	3%
9R3		2.45 2.94	2.85 3.42	72		100	3	5/16 3/8		85%	3 1/2%
9R4		3.92 4.90	4.56 5.70	72		75	2	1/2 5/8		75%	3 1/2%
9R5		5.88 6.86 7.84 15.68	6.84 7.98 9.12 18.24	72		75	2	3/4 7/8 1 2		55%	4%
8R5 (Continued)		0.81 1.62 2.43 3.24 4.86 6.48	0.99 1.98 2.97 3.96 5.94 7.92	72 or 36 72 or 36 72 or 36 72 or 36 72 or 36 72 or 36				1/8 1/4 3/8 1/2 3/4 1		45% 45% 45% 45% 45% 45%	5% 5% 5% 5% 5% 5%

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS	NOTES (Not Specification Requirements)
C-F-206b (Cont'd) Type I 9R1 9R2 9R3 9R4 9R5 8R5 (Continued)	9R1-9R5: The felt shall be mildew treated according to MIL-T-2312, except that complete penetration of the treatment shall not be required, and that the contractors shall certify the amount and kind of inhibitor which was applied.	Color- 9R1- White. 9R2- Gray. 9R3- Gray. 9R4- Gray. 9R5- Gray. 8R5- Gray.	(6)	Intended Use (suggested)- 9R1, 9R2, and 9R3: for grease and oil retention where the felt is confined and compressed in assembly. Also recommended for dust shields under less severe operating conditions, where 12R1, 12R2, and 12R3 are not required. 9R4 and 9R5: for sound deadening, chassis strips, spacers, dust shields, pedal pads, dash liners, and for mechanical purposes where abrasion and wear are not important factors. 8R5: for packing and padding when held in place between other materials. This grade should not be used for mechanical purposes.

### NON-WOVEN TEXTILE MATERIALS

NOMENCLATURE	Fiber	Weight Oz/Sq Yd		Width inch	Breaking Strength Min. (5100)	Tensile Strength Min. (5100)	Splitting Resistance (lb/2")	Thickness inch (nominal)	Water Absorption	Wool Fiber Con- tent	Ash Con- tent Max.	
		Min	Max (lbs.)									
<b>Felt, Sheet, Wool, Pressed (Cont'd)</b> C-F-206b				L   W		(psi)			(Water Swell Max.)	(min)		
Type II- Sheet felt	Fleace, pulled wool, wool noil, reprocessed wool, reused wool, or a combination thereof. Grades of wool: Class 1: Fine Spanish or its equivalent, com- posed of white wool, U.S. Standard 62's or finer; scoured, car- bonized, dusted, neu- tralized, depitched, and depainted.	2.80	3.20			400	18	1/4	20%	95%	1 1/2%	
12-8		4.20	4.80			300	16	3/8	25%	95%	1 1/2%	
1		5.60	6.40			8.50	9.50	1/2	30%	95%	2%	
2		7.05	7.95			9.95	11.05	3/4	30%	95%	2%	
3		8.50	9.50			11.40	12.60	7/8	30%	95%	2 1/2%	
4		14.30	15.70			17.20	18.80	1	30%	95%	2 1/2%	
16-8		20.10	21.90			23.00	25.00	1-1/4	30%	95%	2 1/2%	
1		28.95	31.05			28.95	31.05	1-1/2	30%	95%	2 1/2%	
2		34.90	37.10			28.95	31.05	2	30%	95%	2 1/2%	
3						28.95	31.05	2-1/2	30%	95%	2 1/2%	
4						28.95	31.05	3	30%	95%	2 1/2%	
16-8		Class 2: Spanish, or its equivalent, com- posed of white wools, U.S. Standard 58's or finer; scoured, car- bonized, dusted, and neutralized.	1.90	2.10			500	32	1/8	25%	95%	1 1/2%
1			2.85	3.15			400	28	3/16	30%	95%	1 1/2%
2			3.70	4.30			400	22	1/4	35%	95%	2%
3			5.60	6.40			9.40	10.60	3/8	35%	95%	2%
4			7.50	8.50			11.30	12.70	1/2	35%	95%	2 1/2%
(Continued)	13.25		14.75			13.25	14.75	5/8	35%	95%	2 1/2%	
	15.20		16.80			15.20	16.80	3/4	35%	95%	2 1/2%	
	19.10		20.90			19.10	20.90	7/8	35%	95%	2 1/2%	
	23.00		25.00			23.00	25.00	1	35%	95%	2 1/2%	
	26.90		29.10			26.90	29.10	1-1/4	35%	95%	2 1/2%	
	38.80		33.20			38.80	33.20	1-1/2	35%	95%	2 1/2%	
	38.75		41.25			38.75	41.25	2	35%	95%	2 1/2%	
	46.70		49.30			46.70	49.30	2-1/2	35%	95%	2 1/2%	
						46.70	49.30	3	35%	95%	2 1/2%	

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS	NOTES (Not Specification Requirements)
C-F-206b (Cont'd)			(6)	Intended Use (suggested)- 16S: For use as medium den- sity polishing wheels and buffs for precious metal and plastic polishing, rough optical polishing, metal viping, drum beaters; also drilled wicks, bearing seals, shoe rolls (shank), fluid transfer rolls, oil and fluid wicks, grease and oil retaining washers, ink roll- ers, vibration and shock mountings, bumpers, plugs, glass channels. 12-S: For use as soft density polish- ing wheels and buffs for polishing plastic, polishing and viping brass; also for piano wedge, surgical pads, punched wicks, dampeners, absorbent pads, oil and fluid retainers, fluid transfer rolls, bearing seals, washers, wicks, shin and spacer pads, shoe insoles, dust shields, anti-vibration pad.
Type II		Color- 12-S 1- White,		
12-S		2- White, 3- White,		
1		4- White. 16-S 1- White,		
2		2- White, 3- White,		
3		4- White. Other colors		
4		are manufactured on		
16-S		order.		
1				
2				
3				
4				
(Continued)				

### NON-WOVEN TEXTILE MATERIALS

NOMENCLATURE	Fiber	Weight Oz/Sq Yd		Width Inch	Breaking Strength Min. (5100)	Tensile Strength Min. (5100)	Splitting Resistance (lb/2")	Thickness Inch (nominal)	Water Absorption (min)	Wool Fiber Con- tent	Ash Con- tent Max.
		Min	Max								
<b>Felt, Sheet, Wool Frosted (Cont'd) C-F-206b</b>		(lbs.)		L   W		(psi)	(lb/2")	(Water Thickness Swell Max.)			
Type II- Sheet felt 20-S	Class 4; Coarse Mexi- can, or its equiva- lent, composed of wool, 60% U.S. Standard 50's or finer, and 40% U.S. Standard 44's or finer.										
1		2.20	2.80		600	44	1/8	30%	95%	1 1/2%	
		3.40	4.10				3/16				
2		4.60	5.40		500	40	1/4	40%	95%	1 1/2%	
		7.00	8.00				3/8				
3		9.40	10.60		400	36	1/2	50%	95%	2%	
		11.80	13.20				5/8				
4		14.20	15.80		300	32	3/4	50%	95%	2 1/2%	
		16.60	18.40				7/8				
		19.00	21.00				1				
		23.90	26.10				1-1/4				
		28.80	31.20				1-1/2				
		33.70	36.30				1-3/4				
		38.60	41.40				2				
		48.55	51.45				2-1/2				
		58.50	60.50				3				
26-S											
1		2.85	3.65		600	48	1/8	40%	95%	1 1/2%	
		4.40	5.40				3/16				
2		5.90	7.10		500	46	1/4	50%	95%	1 1/2%	
	8.95	10.55				3/8					
3	12.00	14.00		400	40	1/2	60%	95%	2%		
	15.15	17.35				5/8					
4	18.30	20.70		400	30	3/4	60%	95%	2 1/2%		
(Continued)	21.45	24.05				7/8					
	24.60	27.40				1					
	31.00	34.00				1-1/4					
	37.40	40.60				1-1/2					
	43.80	47.20				1-3/4					
	50.20	53.80				2					

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS	NOTES (Not Specification Requirements)
C-F-206b (Cont'd) Type II 20-S 1 2 3 4 26-S 1 2 3 4 (Continued)		Color- 20-S 1-White, 2- White, 3- White, 4- White. 26-S 1- White, 2- White, 3- White, 4- White. Other colors manufactured on order.	(6)	Intended Use (suggested)- 20-S: For use as medium-hard density polishing wheels and buffs for polishing lenses, mirrors, and glass, marble and granite; also for fluid transfer rolls, ink rolls, (securing), furniture rub- bing, rough metal polishing, metal wiping, drilled wicks, bearing seal washers, stamp pads, cushioning under sand paper. 26-S: For use as hard density polishing wheels for glass sheet, glassware, ophthalmic lense polishing, metal and metall- ographic polishing, wood polishing and furniture rubbing; also for block cutters, print rolls, cash carrier heads, points for making pens, casters, boot and shoe soles, artificial limbs.

### NON-WOVEN TEXTILE MATERIALS

NOMENCLATURE	Fiber	Weight Oz/Sq Yd		Width Inch	Breaking Strength Min. (5100)	Tensile Strength Min. (5100)	Splitting Resistance (lb/2")	Thickness Inch (nominal)	Water Absorption	Wool Fiber Con- tent	Ash Con- tent Max.
		Min	Max								
Felt, Sheet, Wool, Pressed (Cont'd) C-F-206b					L   W				(Water Thickness Swell Max.)	(min)	
Type II- Sheet felt 32-S		(lbs.)				(psi)					
1		3.50	4.50			600	50	1/8	50%	95%	1 1/2%
2		5.25	6.75			500	48	3/16	60%	95%	1 1/2%
3		7.00	9.00			400	46	1/4	70%	95%	2%
4		10.90	13.10			400	40	3/8	70%	95%	2 1/2%
		14.80	17.20					1/2			
		18.70	21.30					5/8			
		22.60	25.40					3/4			
		26.50	29.50					7/8			
		30.40	33.60					1			
		38.30	41.70					1-1/8			
		46.20	49.80					1-1/2			
		54.10	57.90					2-3/4			
		62.00	66.00					2			
Type III- Roll-felt (apparel & decora- tive)		(oz)		(min)							Wool Grade Min.
11A2	Fleece, pulled wool, wool noil, reprocessed wool, reused wool or a combination thereof.	2.92	3.15	80	-			0.030		20%	48's
11A1		2.92	3.15	80	-			0.030		20%	48's
10A2		5.75	6.25	72	8			0.065		45%	48's
10A1 (Continued)		5.75	6.25	72	10			0.065		35%	48's

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS	NOTES (Not Specification Requirements)
C-F-206b (Cont'd) Type II 32-S 1 2 3 4 Type III 11A2 11A1 10A2 10A1 (Continued)		Color- 32-S 1- White, 2- White, 3- White, 4- White. Other colors manufactured on order. 11A2- Gray. 11A1- White. 10A2- Gray. 10A1- White.	(6)	Intended Use (suggested)- 32-S: For use as extra-hard density polishing wheels and buffs in dental, jewelry, glass, and lapidary polish- ing; also hard washers, bumpers, and casters. 11A1 and 11A2: For use in fronts of coats to give required fullness and drape to outer fabrics. 10A1 and 10A2: For use as a lining material in outer wear gar- ments. Also as a lining on inside of shoe tongues, gen- erally white in color. Backing for household ob- jects to prevent scratching or marking furniture.



### NON-WOVEN TEXTILE MATERIALS

NOMENCLATURE	Fiber	Weight Oz/Sq Yd		Width Inch	Breaking Strength Min. (5100)	Tensile Strength Min. (5100)	Spitting Resistance	Thickness Inch	Water Absorption	Wool	Wool
		Min	Max							Fiber Con- tent	Grade Min.
Felt, Sheet, Wool, Pressed (Cont'd) C-F-206b		(min)			L   W						
Type III- Roll-felt (apparel & decora- tive)							(nominal)				
9A2		6.75	7.25	72	10			0.075	45%	48's	
8A1		7.50	8.50	72	30			0.040	95%	58's	
7A1		9.25	10.75	60	45			0.040	95%	62's	
6A1		11.00	13.00	72	30			0.063	95%	62's	
5A1		(lbs.)									
		0.94	1.06	72				0.125	35%	56's	
		1.88	2.13	72				0.250	35%	56's	
		2.75	3.25	72				0.375	35%	56's	
4A1		3.75	4.25	72				0.500	35%	56's	
		0.50	0.56	36	20			0.063	50%	56's	
		1.00	1.12	72	45			0.125	50%	56's	
3A1		2.875	3.125		175			0.375	50%	56's	
		6.50	7.80	60x40 sheets				0.250	95%	56's	

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS	NOTES (Not Specification Requirements)
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C-F-206b (Cont'd)			(6)	
Type III		Color- 9A2- Gray. 8A1- White & all colors. 7A1- White & all colors. 6A1- White & all colors. 5A1- White. 4A1- White. 3A1- Gray.		Intended Use (suggested)- 9A2: For use as lining mat- erial in outer wear garments. 8A1: For use as undercollar cloth and in face mask. 7A1: For use in garment decora- tion, and as background for embroidered designed hat bodies. 6A1: For use in gar- ment decoration and in mili- tary insignia; for face masks and auto flags. 5A1: For use as padding on ortho- pedic and truss appliances, and as athletic equipment padding. 4A1: Can be pulled down in layers to graduated thicknesses needed for medi- cal requirements. 3A1: For use in footwear, boots, etc., as lining or inserts.
9A2				
8A1				
7A1				
6A1				
5A1				
4A1				
3A1				

## NON-WOVEN TEXTILE MATERIALS

NOMENCLATURE	Fiber	Weight Oz/Sq Yd	Width Inch	Breaking Strength Min.  (5100)	Tensile Strength Min.  (5100)	Splitting Resistance	Thickness Inch	Water Absorption
		Min   Max		L   W				

Felt, Cattlehair or Wool: Mildew Resistant, and Moisture Resistant, Treated  
MIL-F-2312C, Amd. 1

Type I- Mildew resistant

Type II- Moisture resistant

Type III- Mildew resistant and moisture resistant

Felts shall be in accordance with those of the applicable felt spec. C-F-202 or C-F-206, as specified.

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS	NOTES (Not Specification Requirements)
MIL-F-2312C Type I Type II Type III	(5) Type I: Unless otherwise specified, felt shall be treated with 2,2' methylenebis-(4-chlorophenol) or salicylanilide. Felt shall be well penetrated by inhibiting agent, and there shall be no noticeable crystallization of the inhibitor on the felt surface. Finished felt shall contain 1-2% of 2,2' methylenebis-(4-chlorophenol) or 0.5-1% of salicylanilide. Type II: Unless otherwise specified, felt shall be treated with a wax or metallic-salt wax compound or emulsion. The treated felt shall show no more than a 50% increase in weight. Type III: Felt shall be treated with a combination of Type I and Type II treatments. Types II and III treated felt shall be allowed to reach equilibrium prior to testing for moisture resistance.	Color- When undyed felt is specified, color of the treated felt may deviate from the natural state to that degree imposed by the color of the treating agent used. Color of dyed felt, prior to the application of the finish shall, unless specified otherwise, match the standard sample. When dyed felt is specified, the color of the treated felt shall be that resulting from the combination of the base color and the color imparted by the finishing compound.	(7) A plus tolerance of 7% in weight shall be allowed for the Types I, II, and III treated felt based on the max. specified for the untreated felt.	

### NON-WOVEN TEXTILE MATERIALS

NOMENCLATURE	Fiber	Weight Oz/Sq Yd	Width Inch	Breaking Strength Min.  (5100)	Tensile Strength Min.  (5100)	Spitting Resistance	Thickness Inch	Water Absorption	Wool Content Min.
<u>Yarn, Wool</u> NIL-Y-16654C		Min   Max		L   W					
Type I- White or dyed	Fleece wool, pulled wool, or any combination thereof not lower in grade than 56's US Standard. Use of noils or laps is prohibited. Yarn shall be spun on combed system from combed top on either the Bradford, French, or American system. Yarn shall be not finer than 8's 4-ply or coarser than 7's 4-ply. Twist shall be soft, with 5 (+5%) turns per inch in the single yarn & 2 (+5%) turns per inch in ply yarns.								95%
Type II- Natural									95%

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS	NOTES (Not Specification Requirements)
NIL-Y-16654C		Color- Type I: (1)- Standard sample available (3). When white is specified, the yarn shall be bleached using hydrogen peroxide. Unless otherwise specified, white yarn shall not be treated with an optical bleach. In the event, however, than an optical bleach is specified, or permitted, it shall be so selected that the finished yarn shows no discoloration (4660). Type II: Shall be natural, undyed, unbleached, and not chemically processed. Colorfastness- Type I: Standard sample available (4660-4614).		Intended Use- Type I: For hand weaving and textile work in occupational therapy. Type II: For lubricating purposes.

### NON-WOVEN TEXTILE MATERIALS

NOMENCLATURE	Fiber	Weight Oz/Sq Yd	Width Inch	Breaking Strength Min.  (5100)	Tensile Strength Min.  (5100)	Splitting Resistance	Thickness Inch	Water Absorption
MIL-Y-16698B	Cotton. Yarn shall be carpet wavy 8/4 ply $\pm$ 3%, 6-7 $\frac{1}{2}$ turns per in. of "8" twist in the ply.	Min   Max		L   W (4100) (Plied)				

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS	NOTES (Not Specification Requirements)
MIL-Y-16698B		Color- Shall be natural, bleached white, or color, as specified, and shall conform to the approved shade standard (3). When white is specified, the yarn shall be bleached using a peroxide type bleach. No tinting is permissible, and the use of optical bleaches is not permitted. When natural is specified, the yarn shall be a natural shade (9). Colorfastness- Standard sample available (4610).		Intended Use- For hand weaving in occupational therapy.

### NON-WOVEN TEXTILE MATERIALS

NOMENCLATURE	Fiber	Weight Oz/Sq Yd		Width Inch	Breaking Strength Min.  (5100)	Tensile Strength Min.  (5100)	Splitting Resistance	Thickness Inch	Water Absorption	Compress- ibility Min.
		Min	Max							
<b>Felt, Sheet, Wool, Compound Impregnated, Chock Padding</b>		(lbs.)			L (4.4.7) (lbs/2")			Increase (max.)		(a)
MIL-F-17057A (WEP)	Carrier shall be wool	0.80	1.40	(1)	15			(nominal)		50%
	felt sheet conforming	1.45	2.20	(1)	30					50%
	to Type I, classifi-	2.25	2.95	(1)	45					50%
	cation CR5 of C-F-206.	3.00	3.80	(1)	60					50%
										39%

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS	NOTES (Not Specification Requirements)
MIL-F-17057A	<p>Carrier shall be impregnated with a nondrying, nonoxidizing, water resistant, fungus resistant, anticorrosive, chromated compound with a min. softening point of 165°F (74°C). The fungus resistant agent (which may be impregnated separately) shall be copper-8-quinolinolate, applied in solubilized or emulsion form, to provide a concentration of 0.15±.05% copper in the dry treated materials. The impregnated felt sheet shall be coated on 1 side only with adhesive of the solvent-activated or of the pressure sensitive type. The adhesive shall provide the required bond without the use of auxiliary stapling. Impregnating compound to carrier weight ratio shall be not less than 0.40. Impregnated felt sheet shall show no evidence of extrusion of impregnating compound (4.4.15).</p>		<p>(a)After acc. aging test. Impregnated felt sheet shall not become hardened or impaired in a manner that would affect its serviceability after acc. aging (4.4.10). Corrosion protection: Impregnated felt sheet shall allow no corrosion of the metallic surfaces with which it is in contact (4.4.12). Impregnated felt sheet shall remain pliable without breaking or delaminating (4.4.13). Impregnated felt sheet shall show no visible evidence of fungus growth (4.4.14). Impregnated felt sheet shall have no detrimental effect on painted or lacquered surfaces (4.4.16). Adhesive bond between impregnated felt sheet and surface to which it is applied shall be greater than the cohesive strength of the impregnated felt sheet (4.4.17).</p>	<p>Intended Use- To be applied to chock surfaces in such a way that, interposed between the chock and the part to be supported, it affords padding and anticorrosive protection.</p>

### NON-WOVEN TEXTILE MATERIALS

NOMENCLATURE	Fiber	Weight Oz/Sq Yd	Width Inch	Breaking Strength Min.  (5100)	Tensile Strength Min.  (5100)	Spitting Resistance	Thickness Inch	Water Absorption
<u>Padding and Cover Set, Asbestos, Flatwork Ironer Roll</u> MIL-P-13219		Min   Max		L   W				
Padding	A felted, woven, or knitted material of min. of 75% asbestos. Balance shall be cotton, a synthetic, or a mixture of cotton and a synthetic.		Sufficient for 1 wrap around the roll.				Such a thickness that when binder, padding, & cover are installed on roll, caliper of entire assembly shall meet max. limits recommended by manufacturer of flatwork ironer.	
Binder	Uncoated asbestos. See above for fiber content.			71	123			
Liner	Woven asbestos cloth. See above for fiber content.		Sufficient to wrap once around the roll.					
Cover	Woven asbestos cloth. Min. 80% asbestos. Balance as above. Coated or impregnated with thermosetting resin. Shall not stain or mar appearance of articles processed through ironer.			190	152 (initial) 50% 50% (after heat aging)			

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS	NOTES  (Not Specification Requirements)
MIL-P-13219				Intended Use- For covering 2, 4, 6, and 8 roll flatwork ironers.

### NON-WOVEN TEXTILE MATERIALS

NOMENCLATURE	Fiber	Weight Oz/Sq Yd		Width Inch	Breaking Strength Min. (5100)	Tensile Strength Min. (5100)	Splitting Resistance	Thickness Inch	Water Absorption	Compre- ssion Deform- Resil- ation ience
		Min	Max							
<u>Pad, Lithographic Plate Solution</u> MIL-P-43296 (OL)		Ave: 23 gr.		L   W Pad: 4x3-3/4 +1/4		30 sec. max. for complete subersion of the pad.				
<u>Felt, Sheet, Nylon, Non-Woven (Needle Punched)</u> MIL-F-43310				(min)					(max.)	
Type I	Nylon. Use of regen- erated or reprocessed nylon is prohibited. Melting point: 250°C. +6°C.	13.0	-	5 1/2	10	10	0.130	32%	70%	
Type II		18.0	-	5 1/2	10	10	0.180	32%	70%	
Type III		29.0	-	5 1/2	40	40	0.310	32%	70%	

NOMENCLATURE	FINISH	SHADE AND COLORFASTNESS	OTHER REQUIREMENTS	NOTES (Not Specification Requirements)
MIL-P-43296	(5) When sample is tested for dextrin or starch, no blue or violet color shall develop (4.2.2). pH: 5.0 - 8.0 (2811).			Intended Use- As applicators or wipes for lithographic, off-set, and/or duplicating plates.
MIL-F-43310 Type I Type II Type III	The staple or felt shall be heat treated. Finished felt shall show a dimensional change of not more than 3% in either length or width (4.4.4).	Color- Shall be natural.	Finished felt shall lose not more than 50% of its breaking strength after acc. aging (4.4.3).	Intended Use- As padding for laundry presses.

REFERENCES

NON-WOVEN TEXTILE MATERIALS

Textile Test Methods - CCC-T-191b

<u>Method</u>	<u>Title</u>
	<u>Chemical</u>
2811	Acidity (pH), Potentiometric method.
	<u>Mechanical</u>
4100	Strength and elongation, breaking; yarn; single strand.
4104	Strength, breaking yarn and thread skein.
5100	Strength and elongation, breaking, of woven cloth, grab method.
	<u>Air Permeability and Water Resistance</u>
5508	Dry cleaning solvent resistance of water-resistant finish, tumble jar.
	<u>Colorfastness</u>
4610	Colorfastness to laundering; cotton and linen yarn, thread and cordage.
4614	Colorfastness to laundering; wool, silk, and rayon yarn, thread, and cordage; Launder-Ometer method.
4660	Colorfastness to light; yarn, thread, cordage; accelerated method (Fade-Ometer).
5630	Water, cold.
5651	Crocking of cloth.



Unclassified

Security Classification

**DOCUMENT CONTROL DATA - R & D**

*(Security classification of title, body of abstract and indexing annotation must be entered when the overall report is classified)*

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<b>13. ABSTRACT</b>  Specification requirements for military fabrics and related military textile materials such as felts and cordage are summarized in tables which give details for yarn, texture, finish and key performance parameters. Included are finishing, after-treatment specifications and test methods.  This report brings up-to-date and adds to the data contained in Textile Series Report No. 102 dated December 1957 (Revised).			

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14. KEY WORDS	LINK A		LINK B		LINK C	
	ROLE	WT	ROLE	WT	ROLE	WT
Performance	8					
Parameters	8					
Test methods	8					
Texture	8					
Finishes and finishing	8					
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AD 658048

SUPPLEMENT  
SUMMARY OF SPECIFICATION REQUIREMENTS  
FOR MILITARY FABRICS

AD-658048, Technical Report 68-9-CM  
TS-102 (Revised), dated July 1967

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