



Designation: D 579 – 97

Standard Specification for Greige Woven Glass Fabrics¹

This standard is issued under the fixed designation D 579; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last approval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This specification covers greige fabrics woven from “E” electrical glass fiber yarns. This specification can also be applied to fabrics made of other glass fiber types as agreed upon between the purchaser and the supplier.

1.2 This specification specifies the terminology, definitions, general requirements and physical requirements for greige glass fiber fabrics. This specification permits the application of organic materials to the glass fiber yarn during manufacture that helps facilitate weaving. When used as permitted in this specification, such materials will not interfere with the intended end use requirements.

1.3 This specification shows the values in both SI units and in inch-pound units. “SI units” is the technically correct name for the system of metric units known as the International System of Units. “Inch-pound units” is the technically correct name for the customary units used in the United States. The values in SI units are provided as information only; the values stated in inch-pound units are to be regarded as standard.

NOTE 1—This specification is one of a series to provide a substitute for the following Military Specifications:

MIL-Y-1140H
MIL-C-9084C

Additional ASTM specifications in this series are currently being drafted and will appear in the *Annual Book of ASTM Standards*, as available. These are to include finished glass fabrics, glass tapes, glass sleeveings, glass yarns, glass cords, glass sewing thread, and finished laminates made from finished glass fabrics.

1.4 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 ASTM Standards:

D 123 Terminology Relating to Textiles²
D 578 Specification for Glass Fiber Strands²

¹ This specification is under the jurisdiction of ASTM Committee D-13 on Textiles and is the direct responsibility of Subcommittee D13.18 on Glass Fiber and Its Products.

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² *Annual Book of ASTM Standards*, Vol 07.01.

D 1059 Test Method for Yarn Number Based on Short-Length Specimens³
D 1423 Test Method for Twist in Yarns by the Direct-Counting Method²
D 1776 Practice for Conditioning Textiles for Testing²
D 1777 Method for Measuring Thickness of Textile Materials²
D 3773 Test Methods for Length of Woven Fabric⁴
D 3774 Test Methods for Width of Woven Fabric⁴
D 3775 Test Method for Fabric Count of Woven Fabric⁴
D 3776 Test Methods for Mass Per Unit Area (Weight) of Woven Fabric⁴
D 4029 Specification for Finished Woven Glass Fabrics⁴
D 4963 Test Method for Ignition Loss of Glass Strands and Fabrics⁴
E 171 Specification for Standard Atmospheres for Conditioning and Testing Materials⁵
2.2 *ANSI Standards:*
ANSI/ASQC Z1.4 Sampling Procedures for Inspection by Attributes⁶
2.3 *Military Standard and Specifications:*
MIL-Y-1140H Yarn, Cord, Sleeveing, Cloth and Tape-Glass⁷
MIL-C-9084C Cloth, Glass Finished for Resin Laminates⁷
2.4 *Textile Institute Documents:*
Textile Terms and Definitions⁸
Woven Cloth Construction⁸

3. Terminology

3.1 Definitions:

3.1.1 *atmosphere for testing textiles, n*—for glass, air maintained at a relative humidity of at least 48 % and no greater than 67 %, and at a temperature of at least 68°F (20°C) and no greater than 77°F (25°C).

3.1.1.1 *Discussion*—Glass textiles are used in various products such as reinforced plastics, mat-like material, tire cords, electrical insulation, etc. Each of these materials require

³ *Annual Book of ASTM Standards*, Vol 07.01.

⁴ *Annual Book of ASTM Standards*, Vol 07.02.

⁵ *Annual Book of ASTM Standards*, Vol 15.09.

⁶ Available from American National Standards Institute, 11 W. 42nd St., 13th Floor, New York, NY 10036.

⁷ Available from Standardization Documents Order Desk, Bldg. 4 Section D, 700 Robbins Ave., Philadelphia, PA 19111-5094, Attn: NPODS.

⁸ Available from the Textile Institute, 10 Blackfriars St., Manchester, M3 5DR England.

different testing atmospheres. It is the intent of this wide spread in testing atmosphere to allow testing of glass textiles in respective laboratories where end product test atmosphere requirements differ. The test atmospheres for respective products should be controlled as specified in Specification E 171. It is the opinion of Subcommittee D13.18 that the physical properties cited in respective specifications would not be affected by the range selected. In any event, the test atmosphere should be stated in the report.

3.1.2 *continuous filament yarn, n*—a yarn made of filaments that extend substantially throughout the length of the yarn.

3.1.3 *crowfoot weave, n*—a broken-twill weave one-up and three-down or three-up and one-down with two ends to the right and two ends to the left, commonly referred to as four-harness satin or broken crow.

3.1.4 *eight-harness satin, n*—a warp-faced or filling-faced weave illustrating that the entire face of the fabric surface is covered with warp or filling yarn, respectively.

3.1.4.1 *Discussion*—There are no distinguishable diagonal lines. In warp-faced fabrics warp yarns show on the face of the fabric seven out of eight adjacent yarns, and in filling-faced fabrics filling yarns show on the face of the fabric seven out of eight adjacent yarns.

3.1.5 *greige goods, n*—textile fabrics that have received no bleaching, dyeing, or finishing treatment after being produced by any textile process.

3.1.6 *leno weave, n*—a weave in which two adjacent warp yarns cross each other between the picks.

3.1.7 *mock leno weave, n*—a weave in which the warp yarns remain parallel but form open warp stripes by programmed interlacing of warp and filling yarns simulating a leno appearance.

3.1.8 *twelve-harness satin, n*—a weave similar to eight-harness satin except in warp-faced fabrics warp yarns show on the face of the fabric eleven out of twelve adjacent yarns and in filling-faced fabrics filling yarns show on the face eleven out of twelve adjacent yarns.

3.2 For definitions of other textile terms used in this specification, refer to Terminology D 123.

CLASSIFICATION

4. Classification

4.1 The designation of a fabric shall be by style numbers that are standard throughout the industry. Generally used style numbers are listed in numerical order in Table 1.

REQUIREMENTS

5. Material

5.1 The fiber shall be continuous filament, unless otherwise specified, free of any free alkali metal salts, such as soda or potash, and foreign particles, dirt, and other impurities.

6. Fabric Count

6.1 For fabrics listed in Table 1, the nominal fabric count shall conform to the requirements of Table 1. For fabrics not listed in Table 1, the nominal fabric count may be agreed upon between the purchaser and the supplier. The average count of warp ends shall be within two ends of the nominal count, and the average count of the filling picks shall be within two picks of the nominal count.

TABLE 1 Physical Properties of Typical "E" Glass Greige Woven Glass Fabrics

Commercial Style Designation	Fabric Count, Warp × Fill yarns/25 mm yarns/in.	Yarn Designation, ^A inch-pound units tex		Fabric Weave Type ^B	Mass per Unit Area, g/m ² oz/yd ²	Thick-ness, mm in.	Breaking Strength, min, Warp × Fill N/5 cm lbf/in.
		Warp	Filling				
100	79 × 69	EC5 5.5 1 × 0	EC5 2.75 1 × 0	plain	27	0.038	438 × 175
	80 × 70	ECD 900 1/0	ECD 1800 1/0				
101	147 × 147	EC5 2.75 1 × 0	EC5 2.75 1 × 0	plain	16.9	0.020	162 × 162
	75 × 75	ECD 1800 1/0	ECD 1800 1/0				
104	118 × 102	EC5 5.5 1 × 0	EC5 2.75 1 × 0	plain	18.6	0.028	260 × 112
	60 × 52	ECD 900 1/0	ECD 1800 1/0				
105	59 × 51	EC5 5.5 1 × 0	EC5 5.5 1 × 0	plain	25	0.038	420 × 192
	60 × 52	ECD 900 1/0	ECD 900 1/0				
106	110 × 110	EC5 5.5 1 × 0	EC5 5.5 1 × 0	plain	24.4	0.033	242 × 242
	56 × 56	D 900 1/0	D 900 1/0				
107	59 × 34	EC5 5.5 1 × 2	EC5 5.5 1 × 0	plain	35	0.043	613 × 175
	60 × 35	ECD 900 1/2	ECD 900 1/0				
108	118 × 93	EC5 5.5 1 × 2	EC5 5.5 1 × 2	plain	47.5	0.061	578 × 456
	60 × 47	D 900 1/2	D900 1/2				
112	39 × 38	EC5 11 1 × 2	EC5 11 1 × 2	plain	71	0.082	718 × 701
	40 × 39	ECD 450 1/2	ECD 450 1/2				
113	59 × 63	EC5 11 1 × 2	EC5 5.5 1 × 2	plain	83	0.076	1077 × 525
	60 × 64	ECD 450 1/2	ECD 900 1/2				
116	59 × 57	EC5 11 1 × 2	EC5 11 1 × 2	plain	107	0.089	1095 × 1051
	60 × 58	ECD 450 1/2	ECD 450 1/2				
117	53 × 38	EC5 11 1 × 2	EC5 11 1 × 2	plain	84	0.089	1007 × 727
	54 × 39	ECD 450 1/2	ECD 450 1/2				
118	89 × 59	EC5 11 1 × 2	EC5 11 1 × 2	crowfoot	136	0.127	1664 × 1226
	90 × 60	ECD 450 1/2	ECD 450 1/2				

TABLE 1 *Continued*

Commercial Style Designation	Fabric Count, Warp × Fill yarns/25 mm yarns/in.	Yarn Designation, ^A inch-pound units tex		Fabric Weave Type ^B	Mass per Unit Area, g/m ² oz/yd ²	Thick-ness, mm in.	Breaking Strength, min, Warp × Fill N/5 cm lbf/in.
		Warp	Filling				
119	53 × 49	EC5 11 1 × 2	EC5 11 1 × 2	plain	95	0.086	963 × 876
	54 × 50	ECD 450 1/2	ECD 450 1/2		2.80	0.0034	110 × 100
120	59 × 57	EC5 11 1 × 2	EC5 11 1 × 2	crowfoot	107	0.089	1095 × 1051
	60 × 58	ECD 450 1/2	ECD 450 1/2		3.16	0.0035	125 × 120
125	35 × 33	EC5 11 2 × 2	EC5 11 2 × 2	plain	127	0.127	1313 × 1226
	36 × 34	ECD 450 2/2	ECD 450 2/2		3.75	0.0050	150 × 140
126	33 × 31	EC5 11 3 × 2	EC5 11 3 × 2	plain	180	0.178	1970 × 1751
	34 × 32	ECD 450 3/2	ECD 450 3/2		5.30	0.0070	225 × 200
127	41 × 31	EC5 11 3 × 2	EC5 11 3 × 2	plain	203	0.191	2189 × 1751
	42 × 32	ECD 450 3/2	ECD 450 3/2		6.00	0.0075	250 × 200
128	41 × 31	EC7 22 1 × 3	EC7 22 1 × 3	plain	201	0.165	2189 × 1751
	42 × 32	ECE 225 1/3	ECE 225 1/3		5.94	0.0065	250 × 200
132	47 × 31	EC9 33 2 × 2	EC9 33 2 × 2	crowfoot	441	0.406	5254 × 3503
	48 × 32	ECG 150 2/2	ECG 150 2/2		13.00	0.0160	600 × 400
138	63 × 59	EC5 11 2 × 2	EC5 11 2 × 2	crowfoot	227	0.178	2277 × 2145
	64 × 60	ECD 450 2/2	ECD 450 2/2		6.70	0.0070	260 × 245
139	63 × 55	EC7 22 1 × 2	EC7 22 1 × 2	crowfoot	217	0.178	2277 × 2014
	64 × 56	ECE 225 1/2	ECE 225 1/2		6.41	0.0070	260 × 230
141	31 × 21	EC7 22 3 × 2	EC7 22 3 × 2	plain	297	0.279	3503 × 2539
	32 × 21	ECE 225 3/2	ECE 225 3/2		8.75	0.0110	400 × 290
143	48 × 30	EC7 22 3 × 2	EC5 11 1 × 2	crowfoot	297	0.229	5254 × 5254
	49 × 30	ECE 225 3/2	ECD 450 1/2		8.75	0.0090	600 × 600
162	28 × 16	EC7 22 2 × 5	EC7 22 2 × 5	plain	400	0.381	3940 × 3065
	28 × 16	ECE 225 2/5	ECE 225 2/5		11.80	0.0150	450 × 350
164	20 × 18	EC7 22 4 × 3	EC7 22 4 × 3	plain	429	0.406	4378 × 3940
	20 × 18	ECE 225 4/3	ECE 225 4/3		12.65	0.0160	500 × 450
166	59 × 57	EC5 11 1 × 2	EC5 22 1 × 0	plain	105	0.0889	1313 × 1576
	60 × 58	ECD 450 1/2	ECD 225 1/0		3.10	0.0035	150 × 180
181	56 × 53	EC7 22 1 × 3	EC7 22 1 × 3	8-H satin	302	0.203	3065 × 2890
	57 × 54	ECE 225 1/3	ECE 225 1/3		8.90	0.0080	350 × 330
182	59 × 55	EC7 22 2 × 2	EC7 22 2 × 2	8-H satin	424	0.343	3853 × 3503
	60 × 56	ECE 225 2/2	ECE 225 2/2		12.50	0.0135	440 × 400
183	53 × 47	EC7 22 3 × 2	EC7 22 3 × 2	8-H satin	559	0.425	5692 × 5166
	54 × 48	ECE 225 3/2	ECE 225 3/2		16.50	0.0170	650 × 590
184	41 × 35	EC7 22 4 × 3	EC7 22 4 × 3	8-H satin	881	0.686	8318 × 7005
	42 × 36	ECE 225 4/3	ECE 225 4/3		26.00	0.0270	950 × 800
190	20 × 10	EC7 22 1 × 3	EC7 22 1 × 3	leno	83	0.152	806 × 508
	20 × 10	ECE 225 1/3	ECE 225 1/3		2.45	0.0060	92 × 58
191	20 × 10	EC7 22 1 × 2	EC7 22 1 × 2	leno	54	0.127	543 × 350
	20 × 10	ECE 225 1/2	ECE 225 1/2		1.60	0.0050	62 × 40
248	26 × 20	CD7 71R 1 × 2	CD7 71R 1 × 2	plain	264	0.305	999 × 981
	26 × 20	CSE 70/2R	CSE 70/2R		7.81	0.012	114 × 112
261	20 × 14	CD7 124R 1 × 2	CD7 124R 1 × 2	plain	348	0.381	1480 × 1051
	20 × 14	CSE 40/2R	CSE 40/2R		10.3	0.015	169 × 120
294	16 × 16	CD7 198R 1 × 2	CD7 198R 1 × 2	plain	496	0.584	1542 × 1770
	16 × 16	CSE 25/2	CSE 25/2		14.7	0.023	176 × 202
325	89 × 43	EC5 5.5 1 × 0	EC5 2.75 1 × 0	plain	23.8	0.030	525 × 88
	90 × 44	ECD 900 1/0	ECD 1800 1/0		0.70	0.0012	60 × 10
341	30 × 48	EC5 11 1 × 2	EC7 22 3 × 2	crowfoot	298	0.228	525 × 5254
	30 × 49	ECD 450 1/2	ECE 225 3/2		8.78	0.0090	60 × 600
401	53 × 51	EC6 33 1 × 2	EC6 33 1 × 2	crowfoot	281	0.203	3065 × 2846
	54 × 52	ECDE 150 1/2	ECDE 150 1/2		8.30	0.0080	350 × 325
1042	87 × 43	EC5 5.5 1 × 0	EC5 2.75 1 × 0	plain	25	0.033	525 × 88
	88 × 44	ECD 900 1/0	ECD 1800 1/0		0.74	0.0013	60 × 10
1047	92 × 92	EC6 51 1 × 0	EC6 51 1 × 0	plain	184.4	0.147	1638 × 1638
	47 × 47	DE 100 1/0	DE 100 1/0		5.44	0.0058	188 × 188
1070	59 × 34	EC5 11 1 × 0	EC5 5.5 1 × 0	plain	35.9	0.048	613 × 175
	60 × 35	ECD 450 1/0	ECD 900 1/0		1.06	0.0019	70 × 20
1080	59 × 46	EC5 11 1 × 0	ECD 450 1/0	plain	48.5	0.051	613 × 350
	60 × 47	ECD 450 1/0	EC5 11 1 × 0		1.43	0.0020	70 × 40
1116	59 × 57	EC5 22 1 × 0	EC5 22 1 × 0	plain	104.0	0.089	1226 × 1182
	60 × 58	ECD 225 1/0	ECD 225 1/0		1.38	0.0035	140 × 135
1125	39 × 38	EC5 11 1 × 2	EC9 33 1 × 0	plain	89	0.089	788 × 1138
	40 × 39	ECD 450 1/2	ECG 150 1/0		2.62	0.0035	90 × 130
1165	59 × 51	EC5 11 1 × 2	EC9 33 1 × 0	plain	125	0.107	1095 × 1226
	60 × 52	ECD 450 1/2	ECG 150 1/0		3.70	0.0042	125 × 140
1185	89 × 45	EC5 11 1 × 2	EC9 33 1 × 0	crowfoot	143	0.132	1664 × 1226
	90 × 45	ECD 450 1/2	ECG 150 1/0		4.23	0.0052	190 × 140

TABLE 1 *Continued*

Commercial Style Designation	Fabric Count, Warp × Fill yarns/25 mm yarns/in.	Yarn Designation, ^A inch-pound units tex		Fabric Weave Type ^B	Mass per Unit Area, g/m ² oz/yd ²	Thick-ness, mm in.	Breaking Strength, min, Warp × Fill N/5 cm lbf/in.
		Warp	Filling				
1257	59 × 45	EC5 11 1 × 2	EC5 11 1 × 2	plain	97	0.089	1138 × 876
	60 × 46	ECD 450 1/2	ECD 450 1/2		2.85	0.0035	130 × 100
1316	60 × 60	EC5 22 1 × 0	EC5 22 1 × 0	plain	108	0.1016	1226 × 1226
	61 × 61	ECD 225 1/0	ECD 225 1/0		3.18	0.0040	140 × 135
1500	16 × 14	EC9 33 4 × 2	EC9 33 4 × 2	plain	327	0.356	3503 × 3065
	16 × 14	ECG 150 4/2	ECG 150 4/2		9.66	0.014	400 × 350
1505	10 × 10	EC9 33 4 × 3	EC9 33 4 × 3	plain	327	0.457	3240 × 3240
	10 × 10	ECG 150 4/3	ECG 150 4/3		9.65	0.018	370 × 370
1510	31 × 29	EC9 33 1 × 2	EC9 33 1 × 2	plain	166	0.114	1707 × 1576
	32 × 29	ECG 150 1/2	ECG 150 1/2		4.90	0.0045	195 × 180
1520	18 × 17	EC9 33 3 × 2	EC9 33 3 × 2	plain	292	0.305	2890 × 2890
	18 × 17	ECG 150 3/2	ECG 150 3/2		8.60	0.012	330 × 330
1523	27 × 19	EC9 33 3 × 2	EC9 33 3 × 2	plain	390	0.356	4597 × 3284
	28 × 20	ECG 150 3/2	ECG 150 3/2		11.50	0.014	525 × 375
1526	33 × 31	EC9 33 1 × 2	EC9 33 1 × 2	plain	180	0.152	1970 × 1751
	34 × 32	ECG 150 1/2	ECG 150 1/2		5.30	0.0060	225 × 200
1527	17 × 17	EC9 33 3 × 3	EC9 33 3 × 3	plain	417	0.381	4115 × 4115
	17 × 17	ECG 150 3/3	ECG 150 3/3		12.30	0.0150	470 × 470
1528	41 × 31	EC9 33 1 × 2	EC9 33 1 × 2	plain	201	0.165	2189 × 1751
	42 × 32	ECG 150 1/2	ECG 150 1/2		5.94	0.0065	250 × 200
1532	16 × 14	EC9 33 3 × 2	EC9 33 3 × 2	plain	247	0.279	2627 × 2277
	16 × 14	ECG 150 3/2	ECG 150 3/2		7.30	0.0110	300 × 260
1533	18 × 18	EC9 33 2 × 2	EC9 33 2 × 2	plain	197	0.216	1926 × 1926
	18 × 18	ECG 150 2/2	ECG 150 2/2		5.80	0.0085	220 × 220
1534	16 × 14	EC9 33 4 × 2	EC9 33 4 × 3	plain	407	0.406	3503 × 4553
	16 × 14	ECG 150 4/2	ECG 150 4/3		12.00	0.0160	400 × 520
1539	38 × 28	EC9 33 1 × 2	EC9 33 1 × 2	plain	185	0.165	2102 × 1489
	39 × 28	ECG 150 1/2	ECG 150 1/2		5.45	0.0065	240 × 170
1543	48 × 30	EC9 33 2 × 2	EC5 22 1 × 0	crowfoot	288	0.203	5254 × 525
	49 × 30	ECG 150 2/2	ECD 225 1/0		8.50	0.0080	600 × 60
1557	56 × 30	EC9 33 1 × 2	EC7 22 1 × 0	crowfoot	184	0.140	3065 × 525
	57 × 30	ECG 150 1/2	ECE 225 1/0		5.42	0.0055	350 × 60
1561	16 × 14	EC9 33 3 × 3	EC9 33 3 × 3	plain	373	0.406	3852 × 3371
	16 × 14	ECG 150 3/3	ECG 150 3/3		11.00	0.0160	440 × 385
1562	30 × 16	EC9 33 1 × 0	EC9 33 1 × 0	leno	62	0.114	657 × 438
	30 × 16	ECG 150 1/0	ECG 150 1/0		1.82	0.0045	75 × 50
1564	20 × 18	EC9 33 4 × 2	EC9 33 4 × 2	plain	424	0.356	4378 × 3940
	20 × 18	ECG 150 4/2	ECG 150 4/2		12.50	0.0140	500 × 450
1581	56 × 53	EC9 33 1 × 2	EC9 33 1 × 2	8-H satin	302	0.203	3065 × 2890
	57 × 54	ECG 150 1/2	ECG 150 1/2		8.90	0.0080	350 × 330
1582	59 × 55	EC9 33 1 × 3	EC9 33 1 × 3	8-H satin	471	0.340	4597 × 4378
	60 × 56	ECG 150 1/3	ECG 150 1/3		13.90	0.0134	525 × 500
1583	53 × 47	EC9 33 2 × 2	EC9 33 2 × 2	8-H satin	546	0.406	5692 × 5166
	54 × 48	ECG 150 2/2	ECG 150 2/2		16.10	0.0160	650 × 590
1584	43 × 35	EC9 33 4 × 2	EC9 33 4 × 2	8-H satin	864	0.648	8318 × 7005
	44 × 35	ECG 150 4/2	ECG 150 4/2		25.50	0.0255	950 × 800
1585	63 × 20	EC9 33 4 × 2	EC9 33 3 × 2	8-H satin	864	0.610	13134 × 3284
	64 × 20	ECG 150 4/2	ECG 150 3/2		25.50	0.0240	1500 × 375
1587	39 × 21	EC9 33 4 × 2	EC9 33 4 × 2	mock leno	678	0.749	8318 × 4553
	40 × 21	ECG 150 4/2	ECG 150 4/2		20.00	0.0295	950 × 520
1588	41 × 35	EC9 33 4 × 4	EC9 33 4 × 4	12-H satin	1798	1.143	14010 × 11033
	42 × 36	ECG 150 4/4	ECG 150 4/4		53.00	0.0450	1600 × 1260
1589	13 × 12	EC9 33 4 × 3	EC9 33 4 × 3	plain	414	0.406	4378 × 3984
	13 × 12	ECG 150 4/3	ECG 150 4/3		12.20	0.0160	500 × 455
1590	10 × 5	EC9 33 4 × 3	EC9 33 4 × 5	leno	302	0.508	2890 × 2714
	10 × 5	ECG 150 4/3	ECG 150 4/5		8.90	0.0200	330 × 310
1610	31 × 28	EC9 33 1 × 0	EC9 33 1 × 0	plain	83	0.097	1007 × 876
	32 × 28	ECG 150 1/0	ECG 150 1/0		2.45	0.0038	115 × 100
1620	20 × 20	EC9 33 1 × 0	EC9 33 1 × 0	plain	54	0.076	701 × 613
	20 × 20	ECG 150 1/0	ECG 150 1/0		1.60	0.0030	80 × 70
1621	30 × 14	EC9 33 1 × 0	EC9 33 1 × 2	leno	79	0.127	657 × 744
	30 × 14	ECG 150 1/0	ECG 150 1/2		2.33	0.0050	75 × 85
1643	55 × 47	EC6 33 1 × 0	EC6 33 1/0	crowfoot	141	0.1194	1926 × 1489
	56 × 48	ECDE 150 1 × 0	ECDE 150 1/0		4.16	0.0047	220 × 170
1652	102 × 102	EC6 33 1 × 0	EC6 33 1 × 0	plain	136.9	0.114	1591 × 1591
	52 × 52	DE 150 1/0	DE 150 1/0		4.04	0.0045	182 × 182
1658	20 × 10	EC9 33 1 × 0	EC9 66 1 × 0	plain	54	0.102	701 × 613
	20 × 10	ECG 150 1/0	ECG 75 1/0		1.60	0.0040	80 × 70

TABLE 1 *Continued*

Commercial Style Designation	Fabric Count, Warp × Fill yarns/25 mm yarns/in.	Yarn Designation, ^A inch-pound units tex		Fabric Weave Type ^B	Mass per Unit Area, g/m ² oz/yd ²	Thick-ness, mm in.	Breaking Strength, min, Warp × Fill N/5 cm lbf/in.
		Warp	Filling				
1659	20 × 10	EC9 33 1 × 0	EC9 68 1 × 0	leno	54	0.0107	569 × 744
	20 × 10	ECG 150 1/0	ECG 75 1/0		1.60	0.0042	65 × 70
1660	59 × 12	EC9 33 1 × 0	EC9 33 1 × 0	plain	96	0.127	1620 × 219
	60 × 12	ECG 150 1/0	ECG 150 1/0		2.84	0.0050	185 × 25
1667	59 × 12	EC9 33 1 × 0	EC5 5.5 1 × 0	plain	85	0.076	1620 × 61
	60 × 12	ECG 150 1/0	ECD 900 1/0		2.50	0.0030	185 × 7
1674	39 × 31	EC9 33 1 × 0	EC9 33 1 × 0	plain	96.5	0.109	1226 × 832
	40 × 32	ECG 150 1/0	ECG 150 1/0		2.85	0.0043	140 × 95
1675	39 × 31	EC6 33 1 × 0	EC6 33 1 × 0	plain	96.5	0.109	1226 × 832
	40 × 32	ECDE 150 1/0	ECDE 150 1/0		2.85	0.0043	140 × 95
1676	55 × 47	EC6 33 1 × 0	EC6 33 1 × 0	plain	139	0.122	1707 × 1313
	56 × 48	ECDE 150 1/0	ECDE 150 1/0		4.10	0.0048	195 × 150
1677	39 × 39	EC6 33 1 × 0	EC6 33 1 × 0	plain	109	0.114	1226 × 1138
	40 × 40	ECDE 150 1/0	ECDE 150 1/0		3.21	0.0045	140 × 130
1678	79 × 79	EC9 33 1 × 0	EC9 33 1 × 0	plain	105.8	0.091	1051 × 1051
	40 × 40	G 150 1/0	G 150 1/0		3.12	0.0036	120 × 120
1680	71 × 69	EC6 33 1 × 0	EC6 33 1 × 0	8-H satin	189	0.158	2207 × 2146
	72 × 70	ECDE 150 1/0	ECDE 150 1/0		5.61	0.0062	252 × 245
1681	55 × 35	EC6 33 1 × 0	EC6 33 1 × 0	plain	122	0.119	1707 × 963
	56 × 36	ECDE 150 1/0	ECDE 150 1/0		3.60	0.0047	195 × 110
1687	39 × 41	EC9 33 1 × 0	EC9 33 1 × 0	plain	111.5	0.1067	1664 × 1532
	40 × 42	ECG 150 1/0	ECG 150 1/0		3.29	0.0042	190 × 175
1800	16 × 14	EC13 275 1 × 0	EC13 275 1 × 0	plain	326	0.330	3940 × 3065
	16 × 14	ECK 18 1/0	ECK 18 1/0		9.60	0.0130	450 × 350
1874	43 × 34	EC13 275 1 × 0	EC13 275 1 × 0	8-H satin	884	0.8307	9369 × 8625
	44 × 35	ECK 18 1/0	ECG 37 1/2		26.08	0.0245	1070 × 985
1884	43 × 34	EC13 275 1 × 0	EC13 275 1 × 0	8-H satin	860	0.670	8318 × 7005
	44 × 35	ECK 18 1/0	ECK 18 1/0		24.50	0.0260	950 × 800
1887	39 × 20	EC13 275 1 × 0	EC13 275 1 × 0	mock leno	715	0.0749	8318 × 4553
	40 × 21	ECK 18 1/0	ECK 18 1/0		21.10	0.0295	960 × 520
2112	39 × 38	EC7 22 1 × 0	EC5 22 1 × 0	plain	71.2	0.086	788 × 701
	40 × 39	ECE 225 1/0	ECD 225 1/0		2.10	0.0034	90 × 80
2113	59 × 55	EC7 22 1 × 0	EC5 11 1 × 0	plain	80.7	0.081	1226 × 525
	60 × 56	ECE 225 1/0	ECD 450 1/0		2.38	0.0032	140 × 60
2116	59 × 57	EC7 22 1 × 0	EC5 22 1 × 0	plain	109	0.102	1095 × 1051
	60 × 58	ECE 225 1/0	ECD 225 1/0		3.20	0.0040	125 × 120
2119	53 × 49	EC7 22 1 × 0	EC6 22 1 × 0	plain	90.2	0.086	1489 × 1357
	54 × 50	ECE 225 1/0	ECE 225 1/0		2.66	0.0034	170 × 155
2120	59 × 57	EC7 22 1 × 0	EC6 22 1 × 0	crowfoot	107	0.102	1095 × 1051
	60 × 58	ECE 225 1/0	ECE 225 1/0		3.16	0.0040	125 × 120
2125	39 × 38	EC7 22 1 × 0	EC9 33 1 × 0	plain	88.8	0.094	788 × 1138
	40 × 39	ECE 225 1/0	ECG 150 1/0		2.62	0.0037	90 × 130
2165	59 × 51	EC7 22 1 × 0	EC9 33 1 × 0	plain	125	0.114	1095 × 1226
	60 × 52	ECE 225 1/0	ECG 150 1/0		3.70	0.0045	125 × 140
2218	89 × 59	EC7 22 1 × 0	EC6 22 1 × 0	crowfoot	138	0.0127	1664 × 1776
	90 × 60	ECE 225 1/0	ECE 225 1/0		4.06	0.005	190 × 140
2225	35 × 33	EC7 22 1 × 2	EC6 22 1 × 2	plain	127	0.0127	1402 × 1313
	36 × 34	ECE 225 1/2	ECE 225 1/2		3.75	0.005	160 × 150
2238	63 × 59	EC7 22 1 × 2	EC6 22 1 × 2	crowfoot	231	0.0178	2802 × 2452
	64 × 60	ECE 225 1/2	ECE 225 1/2		6.80	0.007	320 × 280
2313	59 × 63	EC7 22 1 × 0	EC511 1 × 0	plain	80.5	0.084	1182 × 701
	60 × 64	ECE 225 1/0	ECD 450 1/0		2.38	0.0033	135 × 80
2316	60 × 60	EC7 22 1 × 0	EC6 22 1 × 0	plain	108	0.1016	1226 × 1226
	61 × 61	ECE 225 1/0	ECE 225 1/0		3.18	0.0040	140 × 140
2319	59 × 45	EC7 22 1 × 0	EC6 22 1 × 0	plain	93.2	0.089	1226 × 940
	60 × 46	ECE 225 1/0	ECE 225 1/0		2.75	0.0035	140 × 140
2500	16 × 16	EC10 190 1 × 0	EC10 190 1 × 0	leno	255	0.4572	3502 × 3459
	16 × 16	ECH 25 1/0	ECH 25 1/0		7.52	0.0180	400 × 395
2523	28 × 20	EC10 198 1 × 0	EC10 198 1 × 0	plain	390	0.3277	5079 × 3371
	28 × 20	ECH 25 1/0	ECH 25 1/0		11.50	0.0129	580 × 385
2532	16 × 14	EC10 198 1 × 0	EC10 198 1 × 0	plain	246	0.254	2627 × 2452
	16 × 14	ECH 25 1/0	ECH 25 1/0		7.25	0.0100	300 × 280
3070	138 × 138	EC6 17.5 1 × 0	EC6 17.5	plain	93.6	0.078	1104 × 1104
	70 × 70	DE 300 1/0	DE 300 1/0		2.76	0.0031	133 × 133
3313	118 × 122	EC6 17.5 1 × 0	EC6 17.5	plain	80.5	0.084	944 × 976
	60 × 62	DE 300 1/0	DE 300 1/0		2.38	0.0033	114 × 118
3700	15 × 14	EC9 134 1 × 2	EC9 134 1 × 2	plain	311	0.3124	3240 × 2890
	15 × 14	ECG 37 1/2	ECG 37 1/2		9.18	0.0123	370 × 330

TABLE 1 *Continued*

Commercial Style Designation	Fabric Count, Warp × Fill yarns/25 mm yarns/in.	Yarn Designation, ^A inch-pound units tex		Fabric Weave Type ^B	Mass per Unit Area, g/m ² oz/yd ²	Thick-ness, mm in.	Breaking Strength, min, Warp × Fill N/5 cm lbf/in.
		Warp	Filling				
3701	12 × 6	EC9 134 1 × 0	EC9 134 1 × 0	leno	134.6	0.2438	1401 × 1357
	12 × 6	ECG 37 1/0	ECG 37 1/0		3.97	0.0096	160 × 155
3732	47 × 31	EC9 134 1 × 0	EC9 134 1 × 0	crowfoot	427	0.345	4816 × 3503
	48 × 32	ECG 37 1/0	ECG 37 1/0		12.60	0.0135	550 × 400
3733	18 × 18	EC9 134 1 × 0	EC9 134 1 × 0	plain	197	0.203	2189 × 1751
	18 × 18	ECG 37 1/0	ECG 37 1/0		5.8	0.0080	250 × 200
3734	47 × 31	EC 6134 1 × 0	EC 6134 1 × 0	crowfoot	432	0.3658	5254 × 3590
	48 × 32	ECDE 37 1/0	ECDE 37 1/0		12.74	0.0144	600 × 410
3743	48 × 30	EC9 134 1 × 0	EC7 22 1 × 0	crowfoot	286	0.203	5254 × 525
	49 × 30	ECG 37 1/0	ECE 225 1/0		8.45	0.0080	600 × 60
3744	28 × 14	EC9 134 1 × 2	EC9 134 1 × 4	2 end plain	610	0.508	5998 × 5998
	28 × 14	ECG 37 1/2	ECG 37 1/4		18.00	0.0200	688 × 688
3745	27 × 28	EC9 134 1 × 0	EC9 134 1 × 2	2 pk. plain	593	0.4699	5692 × 5911
	27 × 28	ECG 37 1/2	ECG 37 1/2		17.50	0.185	650 × 675
3783	53 × 47	EC9 134 1 × 0	EC9 134 1 × 0	8-H satin	576	0.3937	5692 × 5512
	54 × 48	ECG 37 1/2	ECG 37 1/2		16.99	0.0155	650 × 630
3784	43 × 34	EC9 134 1 × 0	EC9 134 1 × 0	8-H satin	901	0.6096	7881 × 7005
	44 × 35	ECG 37 1/2	ECG 37 1/2		26.57	0.0240	900 × 800
3787	39 × 21	EC9 134 1 × 2	EC9 134 1 × 2	mock leno	695	0.761	6567 × 3940
	40 × 21	ECG 37 1/2	ECG 37 1/2		20.50	0.0300	750 × 450
3788	41 × 35	EC9 134 1 × 4	EC9 134 1 × 4	12-H satin	1856	1.1557	13397 × 11121
	42 × 36	ECG 37 1/4	ECG 37 1/4		54.75	0.0455	1530 × 1270
5020	18 × 18	EC9 99 1 × 2	EC9 99 1 × 2	plain	294	0.305	2890 × 2890
	18 × 18	ECG 50 1/2	ECG 50 1/2		8.68	0.0120	330 × 330
5023	48 × 30	EC9 99 1 × 2	EC9 99 1 × 2	crowfoot	288	0.203	5254 × 525
	49 × 30	ECG 50 1/2	ECG 50 1/2		8.50	0.0080	600 × 60
5027	17 × 17	EC9 99 1 × 3	EC9 99 1 × 3	plain	417	0.318	4115 × 4115
	17 × 17	ECG 50 1/3	ECG 50 1/3		12.30	0.0150	470 × 470
5032	16 × 14	EC9 99 1 × 2	EC9 99 1 × 2	plain	2.45	0.254	2677 × 2277
	16 × 14	ECG 50 1/2	ECG 50 1/2		7.23	0.0100	300 × 260
5082	59 × 55	EC9 99 1 × 0	EC9 99 1/0	8-H satin	471	0.340	4597 × 4378
	60 × 56	ECG 50 1/0	ECG 50 1/0		13.90	0.0134	525 × 500
6060	118 × 118	EC6 8.75 1 × 0	EC6 8.75 1 × 0	plain	39.0	0.048	472 × 472
	60 × 60	DE 600 1/0	G75 1/0		1.15	0.0019	57 × 57
7500	16 × 14	EC9 68 2 × 2	EC9 68 2 × 2	plain	325	0.356	3503 × 3065
	16 × 14	ECG 75 2/2	ECG 75 2/2		9.60	0.0140	400 × 350
7520	18 × 18	EC9 68 1 × 3	EC9 68 1 × 3	plain	294	0.305	2890 × 2890
	18 × 18	ECG 75 1/3	ECG 75 1/3		8.68	0.0120	330 × 330
7532	16 × 14	EC9 68 1 × 3	EC9 68 1 × 3	plain	245	0.254	2627 × 2277
	16 × 14	ECG 75 1/3	ECG 75 1/3		7.23	0.0100	300 × 260
7533	18 × 18	EC9 68 1 × 2	EC9 68 1 × 2	plain	196	0.203	1926 × 1926
	18 × 18	ECG 75 1/2	ECG 75 1/2		5.79	0.0080	220 × 220
7539	38 × 28	EC9 68 1 × 0	EC9 68 1 × 0	plain	1.80	0.178	2102 × 1489
	39 × 28	ECG 75 1/0	ECG 75 1/0		5.30	0.0070	240 × 170
7543	48 × 30	EC9 68 1 × 2	EC7 22 1 × 0	crowfoot	288	0.203	5254 × 525
	49 × 30	ECG 75 1/2	ECE 225 1/0		8.50	0.0080	600 × 60
7544	28 × 14	EC9 68 2 × 2	EC9 68 2 × 4	2-end plain	610	0.508	5998 × 5998
	28 × 14	ECG 75 2/2	ECG 75 2/4		18.00	0.0200	685 × 685
7557	56 × 30	EC9 68 1 × 0	EC7 22 1 × 0	crowfoot	184	0.140	3065 × 525
	57 × 30	ECG 75 1/0	ECE 225 1/0		5.42	0.0055	350 × 60
7581	56 × 63	EC9 68 1 × 0	EC9 68 1 × 0	8-H satin	302	0.203	3055 × 2890
	57 × 54	ECG 75 1/0	ECG 75 1/0		8.90	0.0080	350 × 330
7583	53 × 47	EC9 68 1 × 0	EC9 68 1 × 2	8-H satin	546	0.406	5692 × 5166
	54 × 48	ECG 75 1/2	ECG 75 1/2		16.10	0.0146	650 × 590
7585	63 × 20	EC9 68 2 × 2	EC9 68 1 × 3	8-H satin	864	0.610	13134 × 3284
	64 × 20	ECG 75 2/2	ECG 75 1/3		25.50	0.0240	1500 × 375
7587	39 × 21	EC9 68 2 × 2	EC9 68 2 × 2	mock leno	695	0.761	6567 × 3940
	40 × 21	ECG 75 2/2	ECG 75 2/2		20.50	0.0300	750 × 450
7626	33 × 31	EC9 68 1 × 0	EC9 68 1 × 0	plain	183	0.168	1970 × 1751
	34 × 32	ECG 75 1/0	ECG 75 1/0		5.40	0.0066	225 × 200
7627	87 × 59	EC9 68 1 × 0	EC9 68 1 × 0	plain	199.0	0.165	2210 × 1499
	44 × 30	G75 1/0	G75 1/0		5.87	0.0065	251 × 171
7628	43 × 31	EC9 68 1 × 0	EC9 68 1 × 0	plain	201	0.178	2189 × 1751
	44 × 32	ECG 75 1/0	ECG 75 1/0		5.94	0.0070	250 × 200
7629	43 × 33	EC9 68 1 × 0	EC9 68 1 × 0	plain	213.0	0.0180	2189 × 1989
	44 × 34	ECG 75 1/0	ECG 75 1/0		6.19	0.0071	250 × 2105
7635	86 × 57	EC9 68 1 × 0	EC9 100 1 × 0	plain	230.9	0.196	2184 × 2508
	44 × 29	G75 1/0	G 50 1/0		6.81	0.0077	251 × 290