



# **IPC-4412B** **Amendment 1** **2014 - April**

## **Specification for Finished Fabric Woven from "E" Glass for Printed Boards**

*A standard developed by IPC*

*Association Connecting Electronics Industries*



---

**The Principles of Standardization**

In May 1995 the IPC's Technical Activities Executive Committee (TAEC) adopted Principles of Standardization as a guiding principle of IPC's standardization efforts.

**Standards Should:**

- Show relationship to Design for Manufacturability (DFM) and Design for the Environment (DFE)
- Minimize time to market
- Contain simple (simplified) language
- Just include spec information
- Focus on end product performance
- Include a feedback system on use and problems for future improvement

**Standards Should Not:**

- Inhibit innovation
- Increase time-to-market
- Keep people out
- Increase cycle time
- Tell you how to make something
- Contain anything that cannot be defended with data

**Notice**

IPC Standards and Publications are designed to serve the public interest through eliminating misunderstandings between manufacturers and purchasers, facilitating interchangeability and improvement of products, and assisting the purchaser in selecting and obtaining with minimum delay the proper product for his particular need. Existence of such Standards and Publications shall not in any respect preclude any member or nonmember of IPC from manufacturing or selling products not conforming to such Standards and Publication, nor shall the existence of such Standards and Publications preclude their voluntary use by those other than IPC members, whether the standard is to be used either domestically or internationally.

Recommended Standards and Publications are adopted by IPC without regard to whether their adoption may involve patents on articles, materials, or processes. By such action, IPC does not assume any liability to any patent owner, nor do they assume any obligation whatever to parties adopting the Recommended Standard or Publication. Users are also wholly responsible for protecting themselves against all claims of liabilities for patent infringement.

**IPC Position Statement on Specification Revision Change**

It is the position of IPC's Technical Activities Executive Committee that the use and implementation of IPC publications is voluntary and is part of a relationship entered into by customer and supplier. When an IPC publication is updated and a new revision is published, it is the opinion of the TAEC that the use of the new revision as part of an existing relationship is not automatic unless required by the contract. The TAEC recommends the use of the latest revision. Adopted October 6, 1998

**Why is there a charge for this document?**

Your purchase of this document contributes to the ongoing development of new and updated industry standards and publications. Standards allow manufacturers, customers, and suppliers to understand one another better. Standards allow manufacturers greater efficiencies when they can set up their processes to meet industry standards, allowing them to offer their customers lower costs.

IPC spends hundreds of thousands of dollars annually to support IPC's volunteers in the standards and publications development process. There are many rounds of drafts sent out for review and the committees spend hundreds of hours in review and development. IPC's staff attends and participates in committee activities, typesets and circulates document drafts, and follows all necessary procedures to qualify for ANSI approval.

IPC's membership dues have been kept low to allow as many companies as possible to participate. Therefore, the standards and publications revenue is necessary to complement dues revenue. The price schedule offers a 50% discount to IPC members. If your company buys IPC standards and publications, why not take advantage of this and the many other benefits of IPC membership as well? For more information on membership in IPC, please visit [www.ipc.org](http://www.ipc.org) or call 847/597-2872.

Thank you for your continued support.

## Specification for Finished Fabric Woven from “E” Glass for Printed Boards

Replace Table 3-3 with the following:

**Table 3-3 Bare Glass Nominal Measurements**

Yarn		Nominal Length per Unit Weight	
SI Nomenclature	US System Nomenclature	SI m/kg	US System yards/pound
4 1.32 1x0	BC 3750 1/0	755,952	375,000
4 1.65 1x0	BC 3000 1/0	604,773	300,000
4 2.20 1x0	BC 2250 1/0	453,571	225,000
4 3.31 1x0	BC 1500 1/0	302,385	150,000
4.5 2.76 1x0	C 1800 1/0	362,864	180,000
4.5 4.13 1x0	C 1200 1/0	241,905	120,000
5 2.75 1x0 <sup>1</sup>	D 1800 1/0 <sup>1</sup>	362,864	180,000
5 5.5 1x0	D 900 1/0	181,432	90,000
6 8.27 1x0	DE 600 1/0	120,955	60,000
5 11 1x0	D 450 1/0	90,716	45,000
6 16.5 1x0	DE 300 1/0	60,477	30,000
5 22 1x0	D 225 1/0	45,358	22,500
7 22 1x0	E 225 1/0	45,358	22,500
9 33 1x0	G 150 1/0 <sup>2</sup>	30,239	15,000
6 33 1x0	DE 150 1/0	30,239	15,000
7 41 1x0	E 125 1/0	25,199	12,500
7 45 1x0	E 110 1/0 <sup>3</sup>	22,175	11,000
6 49 1x0	DE 100 1/0	20,159	10,000
9 68 1x0	G 75 1/0 <sup>4</sup>	14,716	7,300
9 74 1x0	G 67 1/0	13,507	6,700
9 99 1x0	G 50 1/0 <sup>5</sup>	10,080	5,000
9 134 1x0	G 37 1/0 <sup>6</sup>	7,459	3,700

<sup>1</sup> 1/0 or 1x0 = Single yarn which has not been combined.

<sup>2</sup> In Europe, yarn used is G 146 1/0 (9 34 1x0).

<sup>3</sup> Some suppliers may use E 113 1/0 (7 44 1x0).

<sup>4</sup> The actual yardage is 14,716 m/kg [7,300 yds/lb.], but the product is designated G 75 1/0.

<sup>5</sup> In Europe, yarn used is G 49 1/0 (9 102 1x0).

<sup>6</sup> In Europe, yarn used is G 36 1/0 (9 136 1x0). This is the input yarn for glass style 7642.

Replace Table All-1 with the following:

## Appendix II Finished Fabric Glass Styles SI Units

Table All-1 Finished Fabric Glass Styles in SI Units<sup>†</sup>

Style	Fabric Count Warp x Fill (Per cm)	Yarn (SI)	Thickness (mm) (Reference Only)	Nominal Weight (g/m <sup>2</sup> )	Weight Tolerance (g/m <sup>2</sup> )	Availability <sup>†</sup>
101	29.5 x 29.5	5 2.75 1x0 5 2.75 1x0	0.024	16.3	15.2 - 17.3	1
104	23.6 x 20.5	5 5.5 1x0 5 2.75 1x0	0.028	18.6	18.0 - 19.3	1
106	22.0 x 22.0	5 5.5 1x0 5 5.5 1x0	0.033	24.4	23.4 - 25.4	1
1078	21.3 x 21.3	5 11 1x0 5 11 1x0	0.043	47.8	46.8 - 49.2	1
1080	23.6 x 18.5	5 11 1x0 5 11 1x0	0.053	46.8	45.1 - 48.5	1
1081	27.6 x 23.6	5 11 1x0 5 11 1x0	0.060	58.3	56.4 - 60.6	1
1280	23.6 x 23.6	5 11 1x0 5 11 1x0	0.056	52.9	51.5 - 54.2	1
1500	19.3 x 16.5	7 45* 1x0 7 45* 1x0	0.149	164.1	157.7 - 170.5	1
1501	18.1 x 17.7	7 45* 1x0 7 45* 1x0	0.140	165.0	158.0 - 171.0	1
1504	23.6 x 19.7	6 33 1x0 6 33 1x0	0.125	148.0	142.8 - 153.2	1
1651	20.0 x 10.8	9 33 1x0 9 74 1x0	0.135	146.2	142.1 - 150.3	1
1652	20.5 x 20.5	9 34* 1x0 9 34* 1x0	0.114	138.3	133.6 - 143.1	1
1674	15.7 x 12.6	9 34* 1x0 9 34* 1x0	0.097	96.6	92.9 - 100.4	1
1675	15.7 x 12.6	6 33 1x0 6 33 1x0	0.101	96.3	92.6 - 100.0	1
1678	15.7 x 15.7	9 34* 1x0 9 34* 1x0	0.091	103.5	102.7 - 111.6	1
2113	23.6 x 22.0	7 22 1x0 5 11 1x0	0.079	78.0	75.6 - 80.4	1
2114	22.0 x 18.9	7 22 1x0 7 22 1x0	0.084	90.9	88.5 - 93.2	1
2116	23.6 x 22.8	7 22 1x0 7 22 1x0	0.094	103.8	100.7 - 106.8	1
2117	26.0 x 21.7	7 22 1x0 7 22 1x0	0.095	108	104.8 - 111.2	1
2125	15.7 x 15.4	7 22 1x0 9 34* 1x0	0.091	87.5	82.7 - 90.9	1
2157	23.6 x 13.8	7 22 1x0 9 68 1x0	0.130	148.0	144.0 - 152.0	1
2165	23.6 x 20.5	7 22 1x0 9 34* 1x0	0.101	122.4	116.3 - 126.1	1
2166	23.6 x 15.0	7 22 1x0 9 68 1x0	0.140	155.0	150.0 - 160.0	1
2313	23.6 x 25.2	7 22 1x0 5 11 1x0	0.084	81.4	79.0 - 83.7	1
3070	27.6 x 27.6	6 16.5 1x0 6 16.5 1x0	0.078	93.6	90.9 - 96.3	1
3080	20.0 x 12.0	6 16.5 1x0 6 16.5 1x0	0.059	53.4	51.5 - 55.3	1
3313	23.6 x 24.4	6 16.5 1x0 6 16.5 1x0	0.084	81.4	79.0 - 83.7	1
7628	17.3 x 12.2	9 68 1x0 9 68 1x0	0.173	203.4	198.0 - 208.9	1
7629	17.3 x 13.4	9 68 1x0 9 68 1x0	0.180	210.0	204.5 - 215.3	1
7635	17.3 x 11.4	9 68 1x0 9 102* 1x0	0.201	232.3	226.5 - 238.0	1
7642	17.3 x 7.9	9 68 1x0 9 136* 1x0 (texturized)	0.254	227.8	221.1 - 234.7	1
108	23.6 x 18.5	5 5.5 1x2 5 5.5 1x2	0.061	47.5	46.1 - 48.8	2
1000	33.5 x 33.5	4 1.65 1x0 4 1.65 1x0	0.012	11.1	10.2 - 12.0	2
1010	38.0 x 38.0	4 1.32 1x0 4 1.32 1x0	0.011	10.1	9.4 - 11.0	2
1015	37.8 x 37.8	4 2.20 1x0 4 2.20 1x0	0.015	16.9	16.5 - 17.3	2
1017	37.4 x 37.4	4 1.65 1x0 4 1.65 1x0	0.014	12.3	11.4 - 13.2	2
1024	36.0 x 36.0	4 3.31 1x0 4 3.31 1x0	0.02	23.8	23.0 - 24.6	2
1027	29.5 x 29.5	4 3.31 1x0 4 3.31 1x0	0.019	19.9	19.0 - 20.7	2
1030	36.0 x 36.0	4.5 4.13 1x0 4.5 4.13 1x0	0.026	29.7	28.7 - 30.7	2

Style	Fabric Count Warp x Fill (Per cm)	Yarn (SI)	Thickness (mm) (Reference Only)	Nominal Weight (g/m <sup>2</sup> )	Weight Tolerance (g/m <sup>2</sup> )	Availability <sup>‡</sup>
1035	26.0 x 26.8	5 5.5 1x0 5 5.5 1x0	0.028	30.0	27.2 - 32.6	2
1037	27.6 x 28.7	4.5 4.1 1x0 4.5 4.1 1x0	0.027	23.0	22.2 - 24.1	2
1065	22.0 x 22.0	5 11 1x0 5 5.5 1x0	0.053	37.3	35.6 - 39.0	2
1067	27.6 x 27.6	5 5.5 1x0 5 5.5 1x0	0.035	30.7	29.5 - 31.9	2
1087	27.4 x 26.8	5 11 1x0 5 11 1x0	0.055	62	60.0 - 64.0	2
1634	20.0 x 12.0	9 33 1x0 9 33 1x0	0.095	105.4	101.6 - 109.2	2
1647	20.0 x 12.0	9 33 1x0 7 44 1x0	0.105	120.5	116.1 - 124.9	2
1649	20.0 x 15.0	9 33 1x0 7 44 1x0	0.120	135.9	130.9 - 140.8	2
1657	20.0 x 11.6	9 33 1x0 9 74 1x0	0.150	154.2	149.9 - 158.5	2
1697	17.3 x 15.0	9 34* 1x0 9 34* 1x0	0.092	111.2	105.1 - 113.9	2
2013	18.4 x 17.6	7 22 1x0 7 22 1x0	0.070	81.0	79.0 - 83.0	2
2112	15.7 x 15.4	7 22 1x0 7 22 1x0	0.081	69.0	67.0 - 71.0	2
2118	26.0 x 24.8	7 22 1x0 7 22 1x0	0.092	111.7	108.3 - 115.2	2
2150	19.1 x 18.9	5 22 1x0 5 22 1x0	0.075	87.0	85.0 - 89.0	2
2319 <sup>Δ</sup>	23.6 x 19.3	7 22 1x0 7 22 1x0	0.086	92.2	89.5 - 94.9	2
3113	20.0 x 12.0	7 22 1x0 9 33 1x0	0.081	84.8	82.2 - 87.4	2
3323	23.6 x 18.1	6 16.5 1x0 7 22 1x0	0.086	81.3	78.0 - 84.0	2
6060	23.6 x 23.6	6 8.27 1x0 6 8.27 1x0	0.048	39.0	37.6 - 40.3	2
7196	17.3 x 13.0	9 74 1x0 9 74 1x0	0.200	230.0	223.0 - 237.0	2
7624	17.3 x 9.4	9 68 1x0 9 68 1x0	0.163	184.4	179.0 - 190.0	2
7640	17.3 x 13.4	9 68 1x0 9 102* 1x0	0.249	258.0	250.0 - 266.0	2
7652	12.6 x 12.6	9 102* 1x0 9 102* 1x0	0.220	257.7	249.2 - 266.2	2
7667	17.3 x 12.2	9 74 1x0 9 74 1x0	0.185	220.0	215.0 - 225.0	2
7669	17.3 x 12.2	9 68 1x0 9 74 1x0	0.178	209.0	203.0 - 215.0	2
7688	17.3 x 13.8	9 68 1x0 9 74 1x0	0.190	220.0	214.0 - 226.0	2
112	15.7 x 15.4	5 11 1x2 5 11 1x2	0.092	70.5	68.5 - 72.6	3
113	23.6 x 25.2	5 11 1x2 5 .5 1x2	0.086	81.0	78.7 - 83.4	3
116	23.6 x 22.8	5 11 1x2 5 11 1x2	0.102	105.0	101.7 - 107.8	3
119	21.3 x 19.7	5 11 1x2 5 11 1x2	0.091	91.8	89.2 - 94.6	3
1012	27.6 x 27.6	4 2.20 1x0 4 2.20 1x0	0.018	12.3	11.8 - 12.8	3
1020	21.7 x 21.7	4.5 2.76 1x0 4.5 2.76 1x0	0.025	12.2	11.5 - 12.8	3
1044	17.3 x 17.3	6 51 1x0 6 51 1x0	0.142	171.0	166.0 - 176.0	3
1047	18.5 x 18.5	6 51 1x0 6 51 1x0	0.147	184.0	179.0 - 189.0	3
1070	23.6 x 13.8	5 11 1x0 5 5.5 1x0	0.046	34.2	32.8 - 35.6	3
1116	23.6 x 22.8	5 22 1x0 5 22 1x0	0.089	104.0	100.7 - 106.8	3
1165	23.6 x 20.5	5 11 1x2 9 34* 1x0	0.101	123.0	116.9 - 127.8	3
1180	23.6 x 19.7	5 11 1x0 5 11 1x0	0.058	49.0	47.5 - 50.5	3
1316	24.0 x 24.0	5 22 1x0 5 22 1x0	0.102	108.0	105.0 - 111.0	3
1502	20.5 x 19.7	7 42 1x0 7 42 1x0	0.150	162.0	156.3 - 167.7	3
1503	25.2 x 18.1	6 33 1x0 6 33 1x0	0.135	148.0	142.8 - 153.2	3
1676	22.0 x 18.9	6 33 1x0 6 33 1x0	0.122	138.0	132.0 - 143.0	3
2119	21.3 x 19.7	7 22 1x0 7 22 1x0	0.086	90.2	87.5 - 92.9	3
2316	24.0 x 24.0	7 22 1x0 7 22 1x0	0.096	106.0	103.0 - 109.0	3
3132	23.6 x 23.6	5 11 1x0 7 22 1x0	0.071	79.0	76.0 - 82.0	3
7627	17.3 x 11.8	9 68 1x0 9 68 1x0	0.165	199.0	193.0 - 205.0	3

Style	Fabric Count Warp x Fill (Per cm)	Yarn (SI)	Thickness (mm) (Reference Only)	Nominal Weight (g/m <sup>2</sup> )	Weight Tolerance (g/m <sup>2</sup> )	Availability <sup>‡</sup>
7637	17.3 x 8.7	9 68 1x0 9 136* 1x0	0.224	228.0	221.0 - 235.0	3
7650	17.3 x 9.1	9 68 1x0 9 102* 1x0	0.190	208.0	201.0 - 214.0	3
7660	11.8 x 11.8	9 68 1x0 9 68 1x0	0.150	160.4	156.0 - 164.0	3

<sup>†</sup>This table is sorted by 'Availability', and then by 'Style'.

<sup>\*</sup>When the US system is primary, the following four yarn replacements are used: 9 33 in lieu of 9 34, 7 44 in lieu of 7 45, 9 99 in lieu of 9 102 and 9 134 in lieu of 9 136. The nominal weights may vary (see Table 3-3 and its associated footnotes).

<sup>‡</sup>Availability Status

1. generally available
2. limited availability
3. inactive styles

<sup>^</sup>Style 2319 last appeared as SI units of measure in IPC-EG-140 (March 1988). The SI metrics above, were taken from values in IPC-EG-140, Appendix III.

Replace Table All-2 with the following:

## Appendix II Finished Fabric Glass Styles US System

Table All-2 Finished Fabric Glass Styles for US System<sup>†</sup>

Style	Fabric Count Warp x Fill [Per inch]	Yarn [US System]	Thickness (mils) (Reference Only)	Nominal Weight [OSY]	Weight Tolerance [OSY]	Availability <sup>†</sup>
101	75 x 75	D1800 1/0 X D1800 1/0	0.96	0.48	0.45 - 0.51	1
104	60 x 52	D900 1/0 X D1800 1/0	1.1	0.55	0.53 - 0.57	1
106	56 x 56	D900 1/0 X D900 1/0	1.3	0.72	0.69 - 0.75	1
1078	54 x 54	D450 1/0 X D450 1/0	1.7	1.41	1.38 - 1.45	1
1080	60 x 47	D450 1/0 X D450 1/0	2.1	1.38	1.33 - 1.43	1
1081	70 x 60	D450 1/0 X D450 1/0	2.4	1.72	1.66 - 1.78	1
1280	60 x 60	D450 1/0 X D450 1/0	2.2	1.55	1.49 - 1.61	1
1500	49 x 42	E110* 1/0 X E110* 1/0	5.9	4.84	4.65 - 5.03	1
1501	46 x 45	E110* 1/0 X E110* 1/0	5.5	4.86	4.67 - 5.05	1
1504	60 x 50	DE150 1/0 X DE150 1/0	4.9	4.36	4.21 - 4.51	1
1651	51 x 27	G150* 1/0 X G67 1/0	5.3	4.31	4.19 - 4.43	1
1652	52 x 52	G150* 1/0 X G150* 1/0	4.5	4.09	3.94 - 4.30	1
1674	40 x 32	G150* 1/0 X G150* 1/0	3.8	2.82	2.74 - 2.98	1
1675	40 x 32	DE150 1/0 X DE150 1/0	4.0	2.84	2.73 - 2.95	1
1678	40 x 40	G150* 1/0 X G150* 1/0	3.6	3.12	3.03 - 3.29	1
2113	60 x 56	E225 1/0 X D450 1/0	3.1	2.30	2.23 - 2.37	1
2114	56 x 48	E225 1/0 X E225 1/0	3.3	2.69	2.62 - 2.76	1
2116	60 x 58	E225 1/0 X E225 1/0	3.7	3.06	2.97 - 3.15	1
2117	66 x 55	E225 1/0 X E225 1/0	3.7	3.18	3.08 - 3.27	1
2125	40 x 39	E225 1/0 X G150* 1/0	3.6	2.54	2.44 - 2.68	1
2157	60 X 35	E225 1/0 X G75 1/0	5.1	4.36	4.18 - 4.54	1
2165	60 x 52	E-225 1/0 X G150* 1/0	4.0	3.55	3.43 - 3.72	1
2166	60 X 38	E225 1/0 X G75 1/0	5.5	4.60	4.41 - 4.79	1
2313	60 x 64	E225 1/0 X D450 1/0	3.3	2.40	2.33 - 2.47	1
3070	70 x 70	DE300 1/0 X DE300 1/0	3.1	2.76	2.68 - 2.84	1
3080	51 x 30	DE300 1/0 X DE300 1/0	2.3	1.57	1.52 - 1.63	1
3313	60 x 62	DE300 1/0 X DE300 1/0	3.3	2.40	2.33 - 2.47	1
7628	44 x 31	G75 1/0 X G75 1/0	6.8	6.00	5.84 - 6.16	1
7629	44 x 34	G75 1/0 X G75 1/0	7.1	6.19	6.03 - 6.35	1
7635	44 x 29	G75 1/0 X G50* 1/0	7.9	6.85	6.68 - 7.02	1
7642	44 x 20	G75 1/0 X G37* 1/0 (texturized)	10.0	6.72	6.52 - 6.92	1
108	60 x 47	D900 1/2 X D900 1/2	2.4	1.40	1.36 - 1.44	2
1000	85 x 85	BC3000 1/0 X BC3000 1/0	0.47	0.33	0.30 - 0.36	2
1010	96.5 x 96.5	BC3750 1/0 X BC3750 1/0	0.45	0.30	0.28 - 0.32	2
1015	96 x 96	BC2250 1/0 x BC2250 1/0	0.59	0.50	0.48 - 0.52	2
1017	95 x 95	BC3000 1/0 X BC3000 1/0	0.53	0.36	0.34 - 0.39	2
1024	91 x 91	BC1500 1/0 x BC1500 1/0	0.79	0.70	0.68 - 0.73	2
1027	75 x 75	BC1500 1/0 X BC1500 1/0	0.75	0.59	0.56 - 0.62	2
1030	91 x 91	C1200 1/0 x C1200 1/0	1.02	0.88	0.85 - 0.91	2

Style	Fabric Count Warp x Fill [Per inch]	Yarn [US System]	Thickness (mils) (Reference Only)	Nominal Weight [OSY]	Weight Tolerance [OSY]	Availability <sup>‡</sup>
1035	66 x 68	D900 1/0 X D900 1/0	1.1	0.88	0.80 - 0.96	2
1037	70 X 73	C1200 1/0 X C1200 1/0	1.1	0.68	0.65 - 0.71	2
1065	56 x 56	D450 1/0 X D9001/0	2.1	1.08	1.03 - 1.13	2
1067	70 X 70	D900 1/0 X D900 1/0	1.4	0.91	0.87 - 0.94	2
1087	69.5 x 68.0	D450 1/0 x D450 1/0	2.2	1.83	1.77 - 1.89	2
1634	51 x 30	G150* 1/0 X G150* 1/0	3.7	3.11	3.00 - 3.22	2
1647	51 x 30	G150* 1/0 X E110* 1/0	4.1	3.55	3.42 - 3.68	2
1649	51 x 38	G150* 1/0 X E110* 1/0	4.7	4.01	3.86 - 4.15	2
1657	51 x 29	G150* 1/0 X G67 1/0	5.9	4.55	4.42 - 4.67	2
1697	44 x 38	G150* 1/0 X G150* 1/0	3.7	3.15	3.04 - 3.36	2
2013	47 x 45	E225 1/0 X E225 1/0	2.76	2.39	2.33 - 2.45	2
2112	40 x 39	E225 1/0 X E225 1/0	3.2	2.04	1.98 - 2.10	2
2118	66 x 63	E225 1/0 x E225 1/0	3.6	3.29	3.19 - 3.39	2
2150	48.5 x 48.0	D225 1/0 x D225 1/0	3.0	2.56	2.51 - 2.62	2
2319 <sup>Δ</sup>	60 x 49	E225 1/0 X E225 1/0	3.4	2.72	2.64 - 2.80	2
3113	51 x 30	E225 1/0 X G150* 1/0	3.2	2.50	2.42 - 2.58	2
3323	60 x 46	DE300 1/0 X E225 1/0	3.4	2.40	2.31 - 2.49	2
6060	60 x 60	DE600 1/0 X DE600 1/0	1.9	1.15	1.11 - 1.19	2
7196	44 x 33	G67 1/0 X G67 1/0	7.9	6.72	6.52 - 6.92	2
7624	44 x 24	G75 1/0 X G75 1/0	6.4	5.44	5.28 - 5.60	2
7640	44 x 34	G75 1/0 X G50* 1/0	9.8	7.60	7.34 - 7.86	2
7652	32 x 32	G50* 1/0 X G50* 1/0	8.7	7.60	7.35 - 7.85	2
7667	44 x 31	G67 1/0 X G67 1/0	7.2	6.54	6.37 - 6.71	2
7669	44 x 31	G75 1/0 X G67 1/0	7.0	6.17	5.98 - 6.35	2
7688	44 x 35	G75 1/0 X G67 1/0	7.5	6.49	6.30 - 6.68	2
112	40 x 39	D450 1/2 X D450 1/2	3.6	2.08	2.02 - 2.14	3
113	60 x 64	D450 1/2 X D900 1/2	3.4	2.39	2.32 - 2.46	3
116	60 x 58	D450 1/2 X D450 1/2	4.0	3.09	3.00 - 3.18	3
119	54 x 50	D450 1/2 X D450 1/2	3.6	2.71	2.63 - 2.79	3
1012	70 x 70	BC2250 1/0 X BC2250 1/0	0.71	0.36	0.34 - 0.38	3
1020	55 x 55	C1800 1/0 X C1800 1/0	0.98	0.36	0.34 - 0.38	3
1044	44 x 44	DE100 1/0 X DE100 1/0	5.6	5.05	4.90 - 5.20	3
1047	47 x 47	DE100 1/0 X DE100 1/0	5.8	5.44	5.28 - 5.60	3
1070	60 x 35	D450 1/0 X D900 1/0	1.8	1.01	0.97 - 1.05	3
1116	60 x 58	D225 1/0 X D225 1/0	3.5	3.06	2.97 - 3.15	3
1165	60 x 52	D450 1/2 X G150* 1/0	4.0	3.57	3.43 - 3.77	3
1180	60 x 50	D450 1/0 X D450 1/0	2.3	1.44	1.40 - 1.48	3
1316	61 x 61	D225 1/0 X D225 1/0	4.0	3.18	3.10 - 3.26	3
1502	52 x 50	E125 1/0 X E125 1/0	5.9	4.78	4.61 - 4.95	3
1503	64 x 46	DE150 1/0 X DE150 1/0	5.3	4.36	4.21 - 4.51	3
1676	56 x 48	DE150 1/0 X DE150 1/0	4.6	4.06	3.90 - 4.22	3
2119	54 x 50	E225 1/0 X E225 1/0	3.4	2.66	2.58 - 2.74	3
2316	61 x 61	E225 1/0 X E225 1/0	3.8	3.13	3.04 - 3.22	3
3132	60 x 60	D450 1/0 X E225 1/0	2.8	2.32	2.24 - 2.40	3
7627	44 x 30	G75 1/0 X G75 1/0	6.5	5.87	5.70 - 6.02	3



Style	Fabric Count Warp x Fill [Per inch]	Yarn [US System]	Thickness (mils) (Reference Only)	Nominal Weight [OSY]	Weight Tolerance [OSY]	Availability <sup>‡</sup>
7637	44 x 22	G75 1/0 X G37* 1/0	8.8	6.73	6.53 - 6.93	3
7650	44 x 23	G75 1/0 X G50* 1/0	7.5	6.12	5.93 - 6.31	3
7660	30 x 30	G75 1/0 X G75 1/0	5.9	4.73	4.61 - 4.85	3

<sup>†</sup>This table is sorted by 'Availability', and then by 'Style'.

<sup>\*</sup>When SI units are primary, the following four yarn replacements are used: G146 in lieu of G150, E113 in lieu of E110, G49 in lieu of G50 and G36 in lieu of G37. The nominal weights may vary (see Table 3-3 and its associated footnotes).

<sup>‡</sup>Availability Status

1. generally available
2. limited availability
3. inactive styles

<sup>^</sup>Style 2319 only appeared in IPC-4412 in this Table II-2 (US System) in the IPC-4412 Original Release (March 2002) and forward.