



# AIR, TENT & TENSILE STRUCTURES

2011 Fabric Specifier's Guide

**Fabric  
STRUCTURES**  
ASSOCIATION

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# AIR, TENT & TENSILE STRUCTURES

AIR, TENT & TENSILE STRUCTURES		Acrylic (solution-dyed)		PTFE		Expanded PTFE							
Product	Tents	Sumbrella Plus	Glen Raven Custom Fabrics	Tension tents, pole tents, clearspans, tensile structures	Sefar Architecture EL-35-T1	Tension tents, pole tents, clearspans, tensile structures, extreme UV protection	Sefar Architecture EL-30-T1-UV	Tension tents, pole tents, clearspans, tensile structures	Sefar Architecture EL-55T0	Tension tents, pole tents, clearspans, tensile structures	Sefar Architecture TENARA Fabric 4T20 HF	Tension tents, pole tents, clearspans, tensile structures	Sefar Architecture TENARA Fabric 4T40 HF
Recommended Uses	Sumbrella	Sumbrella Plus	Glen Raven Custom Fabrics	Tension tents, pole tents, clearspans, tensile structures	Sefar Architecture EL-35-T1	Tension tents, pole tents, clearspans, tensile structures, extreme UV protection	Sefar Architecture EL-30-T1-UV	Tension tents, pole tents, clearspans, tensile structures	Sefar Architecture EL-55T0	Tension tents, pole tents, clearspans, tensile structures	Sefar Architecture TENARA Fabric 4T20 HF	Tension tents, pole tents, clearspans, tensile structures	Sefar Architecture TENARA Fabric 4T40 HF
Trade Name of Fabric	Sumbrella	Sumbrella Plus	Glen Raven Custom Fabrics	Tension tents, pole tents, clearspans, tensile structures	Sefar Architecture EL-35-T1	Tension tents, pole tents, clearspans, tensile structures, extreme UV protection	Sefar Architecture EL-30-T1-UV	Tension tents, pole tents, clearspans, tensile structures	Sefar Architecture EL-55T0	Tension tents, pole tents, clearspans, tensile structures	Sefar Architecture TENARA Fabric 4T20 HF	Tension tents, pole tents, clearspans, tensile structures	Sefar Architecture TENARA Fabric 4T40 HF
Trademark Holder/Supplier	Glen Raven Custom Fabrics	Glen Raven Custom Fabrics	Glen Raven Custom Fabrics	Tension tents, pole tents, clearspans, tensile structures	Sefar AG	Tension tents, pole tents, clearspans, tensile structures, extreme UV protection	Sefar AG	Tension tents, pole tents, clearspans, tensile structures	Sefar AG	Tension tents, pole tents, clearspans, tensile structures	Sefar AG	Tension tents, pole tents, clearspans, tensile structures	Sefar AG
Base Fabric	Weight	9.0 oz/yd <sup>2</sup>		Tension tents, pole tents, clearspans, tensile structures	Panama 2/2	Tension tents, pole tents, clearspans, tensile structures, extreme UV protection	Panama 2/2	Tension tents, pole tents, clearspans, tensile structures	Cross-Twill 2/2	Tension tents, pole tents, clearspans, tensile structures	Plain 1/1	Tension tents, pole tents, clearspans, tensile structures	Plain 1/1
	Weave Style	Plain	Plain	Tension tents, pole tents, clearspans, tensile structures	Panama 2/2	Tension tents, pole tents, clearspans, tensile structures, extreme UV protection	Panama 2/2	Tension tents, pole tents, clearspans, tensile structures	Plain 1/1	Tension tents, pole tents, clearspans, tensile structures	Plain 1/1	Tension tents, pole tents, clearspans, tensile structures	Plain 1/1
Coating	Yarn Count (warp, fill)	76, 36 tpi	76, 36 tpi	Tension tents, pole tents, clearspans, tensile structures		Tension tents, pole tents, clearspans, tensile structures, extreme UV protection		Tension tents, pole tents, clearspans, tensile structures		Tension tents, pole tents, clearspans, tensile structures		Tension tents, pole tents, clearspans, tensile structures	
	Weight (top, bottom)		Yes	Tension tents, pole tents, clearspans, tensile structures		Tension tents, pole tents, clearspans, tensile structures, extreme UV protection		Tension tents, pole tents, clearspans, tensile structures		Tension tents, pole tents, clearspans, tensile structures		Tension tents, pole tents, clearspans, tensile structures	
	UV topcoat material			Tension tents, pole tents, clearspans, tensile structures	Fluoropolymer	Tension tents, pole tents, clearspans, tensile structures, extreme UV protection	Fluoropolymer - SPF 45+	Tension tents, pole tents, clearspans, tensile structures	Fluoropolymer	Tension tents, pole tents, clearspans, tensile structures	Fluoropolymer	Tension tents, pole tents, clearspans, tensile structures	Fluoropolymer
Life Expectancy in years	UV topcoat weight			Tension tents, pole tents, clearspans, tensile structures		Tension tents, pole tents, clearspans, tensile structures, extreme UV protection		Tension tents, pole tents, clearspans, tensile structures		Tension tents, pole tents, clearspans, tensile structures		Tension tents, pole tents, clearspans, tensile structures	
	Life Expectancy in years	10+ Years	5+ Years	Tension tents, pole tents, clearspans, tensile structures	20+ Years	Tension tents, pole tents, clearspans, tensile structures, extreme UV protection	20+ Years	Tension tents, pole tents, clearspans, tensile structures	20+ Years	Tension tents, pole tents, clearspans, tensile structures	25+ Years	Tension tents, pole tents, clearspans, tensile structures	25+ Years
Warranty, duration in years	Warranty, duration in years	10 years, limited	5 years	Tension tents, pole tents, clearspans, tensile structures	10 Years	Tension tents, pole tents, clearspans, tensile structures, extreme UV protection	10 Years	Tension tents, pole tents, clearspans, tensile structures	10 Years	Tension tents, pole tents, clearspans, tensile structures	15 years	Tension tents, pole tents, clearspans, tensile structures	15 years
	Test Method	ASTM D3776	ASTM D3776-96	Tension tents, pole tents, clearspans, tensile structures		Tension tents, pole tents, clearspans, tensile structures, extreme UV protection		Tension tents, pole tents, clearspans, tensile structures		Tension tents, pole tents, clearspans, tensile structures	ASTM D4851	Tension tents, pole tents, clearspans, tensile structures	ASTM D4851
Finished Fabric	Thickness			Tension tents, pole tents, clearspans, tensile structures	0.29 mm; 0.011 in	Tension tents, pole tents, clearspans, tensile structures, extreme UV protection	0.29 mm; 0.011 in	Tension tents, pole tents, clearspans, tensile structures	0.19 mm; 0.008 in	Tension tents, pole tents, clearspans, tensile structures	0.55 mm; 0.022 in	Tension tents, pole tents, clearspans, tensile structures	0.55 mm; 0.022 in
	Weight	9.0 oz/yd <sup>2</sup>	10.4 oz/yd <sup>2</sup>	Tension tents, pole tents, clearspans, tensile structures	320 g/m <sup>2</sup>	Tension tents, pole tents, clearspans, tensile structures, extreme UV protection	330 g/m <sup>2</sup>	Tension tents, pole tents, clearspans, tensile structures	250 g/m <sup>2</sup>	Tension tents, pole tents, clearspans, tensile structures	1080 g/m <sup>2</sup> ; 31.9 oz/yd <sup>2</sup>	Tension tents, pole tents, clearspans, tensile structures	1080 g/m <sup>2</sup> ; 31.9 oz/yd <sup>2</sup>
Roll width, usable	Roll width, usable	46, 60 in	60 in	Tension tents, pole tents, clearspans, tensile structures	1.6 m, 63 in	Tension tents, pole tents, clearspans, tensile structures, extreme UV protection	1.6 m, 63 in	Tension tents, pole tents, clearspans, tensile structures	1.6 m, 63 in	Tension tents, pole tents, clearspans, tensile structures	1.575 m; 62 in	Tension tents, pole tents, clearspans, tensile structures	1.575 m; 62 in
	Warp, fill	12, 8 lb/in	14, 8 lb/in	Tension tents, pole tents, clearspans, tensile structures		Tension tents, pole tents, clearspans, tensile structures, extreme UV protection		Tension tents, pole tents, clearspans, tensile structures		Tension tents, pole tents, clearspans, tensile structures		Tension tents, pole tents, clearspans, tensile structures	
Tongue tear	Test Method	ASTM 2261-96	ASTM 2261-96	Tension tents, pole tents, clearspans, tensile structures		Tension tents, pole tents, clearspans, tensile structures, extreme UV protection		Tension tents, pole tents, clearspans, tensile structures		Tension tents, pole tents, clearspans, tensile structures		Tension tents, pole tents, clearspans, tensile structures	

<b>Trapezoidal tear</b>	Warp, fill		30 N/5cm	30 N/5cm			798, 752 N; 179, 169 lbs	798, 752 N; 179, 169 lbs	ASTM D4851	ASTM D4851
	Test Method		DIN 53859-5	DIN 53859-5						
<b>Grab tensile</b>	Warp, fill	286, 180 Lbf	2000, 1800 N/5cm; 228, 205.2 lb/in	2000, 2050 N/5cm; 228, 229 lb/in	4100, 4000 N/5cm; 457, 456 lb/in	1500, 1600 N/5cm; 171, 182 lb/in				
	Test Method	ASTM D5034-95	EN ISO 13934-1	EN ISO 13934-1	EN ISO 13934-1	EN ISO 13934-1				
<b>Strip tensile</b>	Warp, fill						4000, 4000 N/5cm; 456, 456 lb/in	4000, 4000 N/5cm; 456, 456 lb/in	ASTM D4851	ASTM D4851
	Test Method									
<b>Adhesion</b>	Warp, fill									
	Test Method									
<b>Hydrostatic resistance</b>	Warp, fill	45 cm hydros								
	Test Method	AATCC 127-1998								
<b>Cold crack</b>	Warp, fill	Pass								
	Test Method	ASTM B751-06								
<b>Burning Characteristics-Test method</b>										
<b>Light Values-Test method</b>										
<b>Transmission, reflectance, absorption</b>										
<b>Seams (recommended style)</b>										
<b>Construction method</b>										
<b>Useful temperature range</b>										

# AIR, TENT & TENSILE STRUCTURES

Product		Fiberglass										
Recommended Uses		Tensile structures, façade covers, ceilings	Tensile structures, façade covers, ceilings	Tensile structures, façade covers, ceilings	Tensile structures, façade covers, ceilings	Tensile structures, façade covers, ceilings	Tensile structures, façade covers, ceilings	Tensile structures, façade covers, ceilings	Tensile structures, façade covers, ceilings	Tensile structures, façade covers, ceilings	Interior ceilings, curtains, shade structures	Interior and exterior ceilings, curtains, shade structures
Trade Name of Fabric		Atex 2000TRL	Atex 3000 Silver Aero	Atex 3000TRL	Atex 5000 Aero	Atex 5000TRL	Atex 8000TRL	Atex Screen 300	Atex Screen 800			
Trademark Holder/Supplier		P-D Interglas Technologies	P-D Interglas Technologies	P-D Interglas Technologies	P-D Interglas Technologies	P-D Interglas Technologies	P-D Interglas Technologies	P-D Interglas Technologies	P-D Interglas Technologies	P-D Interglas Technologies	P-D Interglas Technologies	P-D Interglas Technologies
Base Fabric		Weight	10.0 oz/yd <sup>2</sup>	10.0 oz/yd <sup>2</sup>	20.2 oz/yd <sup>2</sup>	20.2 oz/yd <sup>2</sup>	32.4 oz/yd <sup>2</sup>	8.7 oz/yd <sup>2</sup>	18.0 oz/yd <sup>2</sup>			
		Weave Style	Plain	Plain	Plain	Plain	Plain	Plain	Plain	Plain	Plain	Plain
Coating		Yarn Count (warp, fill)	32, 29 tpi	32, 29 tpi	21, 18 tpi	21, 18 tpi	34, 30 tpi	32, 21 tpi	19, 19 tpi			
		Weight (top, bottom)	5.0 oz/yd <sup>2</sup>	10.5 oz/yd <sup>2</sup>	7.5 oz/yd <sup>2</sup>	20.1 oz/yd <sup>2</sup>	14.2 oz/yd <sup>2</sup>	12.4 oz/yd <sup>2</sup>	.9 oz/yd <sup>2</sup>	5.0 oz/yd <sup>2</sup>		
Life Expectancy in years		UV topcoat material										
		UV topcoat weight										
Warranty, duration in years		25+Years	25+Years	25+Years	25+Years	25+Years	25+Years	25+Years	25+Years	25+Years	25+Years	25+Years
Finished Fabric		Test Method	ASTM D4851	ASTM D4851	ASTM D4851	ASTM D4851	ASTM D4851	ASTM D4851	ASTM D4851	ASTM D4851	ASTM D4851	ASTM D4851
Roll width, usable		Thickness	0.009 in	0.018 in	0.035 in	0.032 in	0.049 in	0.024 in	0.047 in			
		Weight	10.9 oz/yd <sup>2</sup>	20.5 oz/yd <sup>2</sup>	175 oz/yd <sup>2</sup>	40.3 oz/yd <sup>2</sup>	34.4 oz/yd <sup>2</sup>	44.8 oz/yd <sup>2</sup>	9.6 oz/yd <sup>2</sup>	23.0 oz/yd <sup>2</sup>		
Tongue tear		Warp, fill	80 or 120 in	80 or 120 in	80 or 120 in	80 or 120 in	80 or 120 in	80 or 120 in	80 in	80 in	80 in	80 in
		Test Method										

<b>Trapezoidal tear</b>	Warp, fill	80, 90 lb/in	80, 70 lb/in	90, 90 lb/in	90, 90 lb/in	90, 90 lb/in	115, 115 lb/in	63, 56 lb/in	145, 145 lb/in
	Test Method	ASTM D4851	ASTM D4851	ASTM D4851	ASTM D4851	ASTM D4851	ASTM D4851	ASTM D4851	ASTM D4851
<b>Grab tensile</b>	Warp, fill								
	Test Method								
<b>Strip tensile</b>	Warp, fill	285, 200 lb/in	400, 345 lb/in	570, 570 lb/in	570, 570 lb/in	570, 570 lb/in	915, 915 lb/in	570, 285 lb/in	910, 800 lb/in
	Test Method	ASTM D4851	ASTM D4851	ASTM D4851	ASTM D4851	ASTM D4851	ASTM D4851	ASTM D4851	ASTM D4851
<b>Adhesion</b>	Warp, fill								
	Test Method								
<b>Hydrostatic resistance</b>	Warp, fill								
	Test Method								
<b>Cold crack</b>	Warp, fill								
	Test Method								
<b>Burning Characteristics-Test method</b>		ASTM E84, ASTM E108, ASTM E136, NFPA 701, BS 476, DIN 4102	ASTM E84, ASTM E108, ASTM E136, NFPA 701, BS 476, DIN 4102	ASTM E84, ASTM E108, ASTM E136, NFPA 701, BS 476, DIN 4102	ASTM E84, ASTM E108, ASTM E136, NFPA 701, BS 476, DIN 4102	ASTM E84, ASTM E108, ASTM E136, NFPA 701, BS 476, DIN 4102	ASTM E136, BS 476, DIN 4102	Non combustible	Non combustible
<b>Light Values-Test method</b>		DIN EN 410	DIN EN 410	DIN EN 410	DIN EN 410	DIN EN 410	DIN EN 410		
<b>Transmission, reflectance, absorption</b>		42%, 52%, 6%	0%, 43%, 57%	18.4%, 68.4%, 13.2%	38.4%, 43.9%, 17.7%	18.4%, 68.4%, 13.2%	12.6%, 69.8%, 17.6%	19% open surface area	19% open surface area
<b>Seams (recommended style)</b>		Lap	Lap	Lap	Lap	Lap	Lap	Lap	Lap
<b>Construction method</b>		Heatseal or Sew	Heatseal or Sew	Heatseal or Sew	Heatseal or Sew	Heatseal or Sew	Heatseal or Sew	Heatseal or Sew	Heatseal or Sew
<b>Useful temperature range</b>		-58 F - 400 F	-58 F - 400 F	-58 F - 400 F	-58 F - 400 F	-58 F - 400 F	-58 F - 400 F	-58 F - 400 F	-58 F - 400 F

# AIR, TENT & TENSILE STRUCTURES

Product		Fiberglass, continued					Fiberglass, PTFE coated			
Recommended Uses		Air tents, frame tents, suspension tents	Air tents, frame tents, suspension tents	Air tents, frame tents, suspension tents	Air tents, frame tents, suspension tents	Air tents, frame tents, suspension tents	Tensile structures	Tensile structures	Tensile structures	
Trade Name of Fabric		Skytop FGT-1000	Skytop FGT-250	Skytop FGT-250B	Skytop FGT-600	Skytop FGT-600	Duraskin B 18039	Duraskin B 18059	Duraskin B 18089	
Trademark Holder/Supplier		Chukoh Chemical Industries Ltd	Chukoh Chemical Industries Ltd	Chukoh Chemical Industries Ltd	Chukoh Chemical Industries Ltd	Chukoh Chemical Industries Ltd	Verseidag Indutex	Verseidag Indutex	Verseidag Indutex	
Base Fabric		Weight	660 g/sqm	305 g/sqm	135 g/sqm	400 g/sqm	365 g/m <sup>2</sup> ; 10.77 oz/yd <sup>2</sup>	635 g/m <sup>2</sup>	180 g/m <sup>2</sup> ; 5.31 oz/yd <sup>2</sup>	
		Weave Style	Plain	Plain	Plain	Plain	Plain	L 1/1	L 1/1	L 1/1
Coating		Yarn Count (warp, fill)	20, 19 tpi	32, 22 tpi	28, 22 tpi	26, 21 tpi	25, 19 tpi	4080 dtex, 1360 dtex	2040 dtex, 2040 dtex	
		Weight (top, bottom)						218, 218 g/m <sup>2</sup> ; 6.4, 6.4 oz/yd <sup>2</sup>	458, 458 g/m <sup>2</sup> ; 13.3, 13.3 oz/yd <sup>2</sup>	355, 355 g/m <sup>2</sup> ; 10.47, 10.47 oz/yd <sup>2</sup>
Life Expectancy in years		UV topcoat material								
		UV topcoat weight								
Warranty, duration in years		25+Years	25+Years	25+Years	25+Years	25+Years	20-30 Years	20-30 Years	20-30 Years	
Finished Fabric		Test Method	Project specific	Project specific	Project specific	Project specific	10 Years	10 Years	10 Years	
		Thickness	JIS K 6404-2	JIS K 6404-2	JIS K 6404-2	JIS K 6404-2	JIS K 6404-2	0.2 mm; 0.18 in		
		Weight	1.00 mm	.35 mm	.23 mm	.80 mm	.80 mm	800 g/m <sup>2</sup> ; 24 oz/yd <sup>2</sup>	46 oz/yd <sup>2</sup>	34 oz/yd <sup>2</sup>
Tongue tear		Roll width, usable	1700 g/sqm	500 g/sqm	250 g/sqm	1300 g/sqm	1300 g/sqm	200 cm; 78 in	480 cm; 189 in	
		Warp, fill	3800 mm	2500 mm	2500 mm	3800 mm	3800 mm			
		Test Method								

<b>Trapezoidal tear</b>	Warp, fill	500, 600 N	250, 200 N	100, 100 N	300, 300 N	350, 400 N	300, 300 N; 67, 67 lb/in	500, 500 N; 112, 112 lb/in	500, 500 N; 112, 112 lb/in
	Test Method	JIS L 1096	JIS L 1096	JIS L 1096	JIS L 1096	JIS L 1096			
<b>Grab tensile</b>	Warp, fill								
	Test Method								
<b>Strip tensile</b>	Warp, fill	6200, 5400 N/3cm	2900, 2000 N/3cm	1400, 1200 N/3cm	4200, 3500 N/3cm	4700, 4400 N/3cm	3500, 3500 N/cm; 400, 400 lb/in	7500, 6500 N/cm; 857, 742 lb/in	5800, 5800 N/cm; 662, 662 lb/in
	Test Method	JIS L 1096	JIS L 1096	JIS L 1096	JIS L 1096	JIS L 1096			
<b>Adhesion</b>	Warp, fill						60 N/cm <sup>2</sup> ; 6.85 lb/in	100 N/cm <sup>2</sup> ; 11.4 lb/in	80 N/cm <sup>2</sup> ; 9.1 lb/in
	Test Method						DIN 53357	DIN 53357	DIN 53357
<b>Hydrostatic resistance</b>	Warp, fill								
	Test Method								
<b>Cold crack</b>	Warp, fill								
	Test Method								
<b>Burning Characteristics-Test method</b>		ASTM E136, E84, E108, NFPA 701, BS 470 Part 4, 5, 6, 7, GB Class A, DIN 4102 B1	ASTM E136, E84, NFPA 701, DIN 4102 B1	DIN 4102 A2, B1	ASTM E136, E84, E108, NFPA 701, BS 470 Part 4, 5, 6, 7, GB Class A, DIN 4102 B1	ASTM E136, E84, E108, NFPA 701, BS 470 Part 4, 5, 6, 7, GB Class A, DIN 4102 B1	ASTM E84 E108 and E136; BS 476 parts 3, 5, 6, 7; NFP 92503 M1; NFPA 701 small scale	ASTM E84 E108 and E136; BS 476 parts 3, 5, 6, 7; DIN 4102; NFP 92503 M1; NFPA 701 small	ASTM E84 E108 and E136; BS 476 parts 3, 5, 6, 7; DIN 4102; NFP 92503 M1; NFPA 701 small
		Spectrophotometer, JIS R 3106	Spectrophotometer, JIS R 3106	Spectrophotometer, JIS R 3106	Spectrophotometer, JIS R 3106	Spectrophotometer, JIS R 3106			
<b>Transmission, reflectance, absorption</b>		10%, 80%	22%, 74%	40%, 54%	15%, 80%	12%, 80%			
<b>Seams (recommended style)</b>		Lap	Lap	Lap	Lap	Lap			
<b>Construction method</b>		Heatseal	Heatseal	Heatseal	Heatseal	Heatseal			
<b>Useful temperature range</b>									

# AIR, TENT & TENSILE STRUCTURES

Product		HDPE, LDPE coated							HDPE, UV-Stabilized	
Recommended Uses		Tensile Structures	Tensile Structures	Emergency relief shelters	Tensile Structures	Tensile Structures	Tensile Structures	Tensile Structures	Shade covers	
Trade Name of Fabric		Nova-Shield II RB88X-6 4 mil Armorkote	Nova-Shield II RU88X-6 4mil Armorkote	Nova-Shield FRU8-6	Nova-Shield II FRU88X-6 4mil Armorkote	Nova-Shield II FRU88X-6 6 mil Armorkote	Nova-Shield II RU88X-6(FR) 4mil Armorkote	Commercial 95 Waterproof		
Trademark Holder/Supplier		Intertape Polymer Group	Intertape Polymer Group	Intertape Polymer Group	Intertape Polymer Group	Intertape Polymer Group	Intertape Polymer Group	Gale Pacific		
Weight		217 g/m <sup>2</sup> ; 6.4 oz/yd <sup>2</sup>	217 g/m <sup>2</sup> ; 6.4 oz/yd <sup>2</sup>	112 g/m <sup>2</sup> ; 3.3 oz/yd <sup>2</sup>	220 g/m <sup>2</sup> ; 6.5 oz/yd <sup>2</sup>	220 g/m <sup>2</sup> ; 6.5 oz/yd <sup>2</sup>	220 g/m <sup>2</sup> ; 6.5 oz/yd <sup>2</sup>	447 gsm		
Weave Style		Double-stacked	Double-stacked	Plain	Double-stacked	double-stacked	Double-stacked	Knitted		
Yarn Count (warp, fill)		16, 16 tpi	16, 16 tpi	10, 8 tpi	16, 16 tpi	16, 16 tpi	16, 16 tpi			
Weight (top, bottom)		94, 94 g/m <sup>2</sup> ; 2.8, 2.8 oz/yd <sup>2</sup>	94, 94 g/m <sup>2</sup> ; 2.8, 2.8 oz/yd <sup>2</sup>	70, 70 g/m <sup>2</sup> ; 2.05, 2.05 oz/yd <sup>2</sup>	94, 94 g/m <sup>2</sup> ; 2.8, 2.8 oz/yd <sup>2</sup>	142, 142 g/m <sup>2</sup> ; 4.2, 4.2 oz/yd <sup>2</sup>	94, 94 g/m <sup>2</sup> ; 2.8, 2.8 oz/yd <sup>2</sup>	100 micron (normal thickness)		
UV topcoat material								UV stabilized LDPE		
UV topcoat weight										
Life Expectancy in years		7-12 Years	7-12 Years	5 Years	7-12 Years	7-12 Years	7-12 Years	7-12 Years		
Warranty, duration in years		7 Years	7 Years	No	7 Years	7 Years	7 Years	7 Years	Yes; side facing sun - coated 5 yr UV, non-coated side 10 yr UV	
Test Method		ASTM D 5199	ASTM D 5199	ASTM D 5199	ASTM D 5199	ASTM D 5199	ASTM D 5199	ASTM D 5199	ASTM D3776	
Thickness		0.59 mm; 0.023 in	0.59 mm; 0.023 in	0.305 mm; 0.012 in	0.59 mm; 0.023 in	0.66 mm; 0.025 in	0.59 mm; 0.023 in	0.59 mm; 0.023 in	71 mils	
Weight		407 g/m <sup>2</sup> ; 12 oz/yd <sup>2</sup>	407 g/m <sup>2</sup> ; 12 oz/yd <sup>2</sup>	252 g/m <sup>2</sup> ; 7.4 oz/yd <sup>2</sup>	407 g/m <sup>2</sup> ; 12 oz/yd <sup>2</sup>	495 g/m <sup>2</sup> ; 14.6 oz/yd <sup>2</sup>	407 g/m <sup>2</sup> ; 12 oz/yd <sup>2</sup>	407 g/m <sup>2</sup> ; 12 oz/yd <sup>2</sup>	447 gsm	
Roll width, usable		366 cm; 144 in	366 cm; 144 in	366 cm; 144 in	366 cm; 144 in	366 cm; 144 in	366 cm; 144 in	366 cm; 144 in	1.90 m	
Warp, fill		489, 489 N; 110, 110 lb/in	489, 489 N; 110, 110 lb/in	311, 311 N; 70, 70 lb/in	489, 489 N; 110, 110 lb/in	489, 167 N; 110, 105 lb/in	512, 512 N; 115, 115 lb/in	42.94 lbf		
Test Method		ASTM D2261	ASTM D2261	ASTM D2261	ASTM D2261	ASTM D2261	ASTM D2261	ASTM D2261	ASTM D2261	

<b>Trapezoidal tear</b>	Warp, fill	400, 400 N; 90, 90 lb/in	422, 400 N; 95, 90 lb/in	288, 222 N; 65, 50 lb/in	422, 401 N; 95, 90 lb/in	423, 400 N; 95, 90 lb/in	422, 400 N; 95, 90 lb/in	75.8 lbf
	Test Method	ASTM D4533	ASTM D4533	ASTM D4533	ASTM D4533	ASTM D4533	ASTM D4533	ASTM D5687
<b>Grab tensile</b>	Warp, fill	1557, 1511 N/cm; 350, 350 lb/in	1644, 1555N/cm; 370, 350 lb/in	956, 823 N/cm; 215, 185 lb/in	1600, 1555 N/cm; 360, 350 lb/in	1691, 1625 N/cm; 380, 365 lb/in	1664, 1555 N/cm; 370, 350 lb/in	
	Test Method	ASTM D5034	ASTM D5034	ASTM D5034	ASTM D5034	ASTM D5034	ASTM D5034	
<b>Strip tensile</b>	Warp, fill	438, 420 N/cm; 250, 240 lb/in	462, 420 N/cm; 260, 240 lb/in	293, 240 N/cm; 165, 135 lb/in	471, 436 N/cm; 265, 245 lb/in	517, 465 N/cm; 295, 265 lb/in	462, 420 N/cm; 260, 240 lb/in	
	Test Method	ASTM D5035	ASTM D5035	ASTM D5035	ASTM D5035	ASTM D5035	ASTM D5035	
<b>Adhesion</b>	Warp, fill							
	Test Method							
<b>Hydrostatic resistance</b>	Warp, fill	2927 kPa; 424 psi		405 kPa; 59 psi		4165 kPa; 604 psi		
	Test Method	ASTM D751 A		ASTM D751 A		ASTM D751 A		
<b>Cold crack</b>	Warp, fill	-60C	-60C, -76F	-40C, -40F	-40C, -58F	-40C, -58F	-40C, -40F	
	Test Method	ASTM D2136	ASTM D2136	ASTM D2136	ASTM D2136	ASTM D2136	ASTM D2136	Flax Cracking Resistance (AS 1441.6) 400,000+
<b>Burning Characteristics-Test method</b>								
<b>Light Values-Test method</b>		ASTM E903	ASTM E903	ASTM E903	ASTM E903	ASTM E903	ASTM E903	
<b>Transmission, reflectance, absorption</b>		0%, 31.4%, 68.6%	12%, 74.3%, 13.7%	14.2%, 72.6%, 13.2%	6.8%, 80.3%, 12.9%	5.3%, 80.8%, 13.9%	8.9%, 75.3%, 15.5%	UVR block up to 97.7%
<b>Seams (recommended style)</b>		Lap	Lap	Lap	Lap	Lap	Lap	
<b>Construction method</b>		Heatseal, sew	Heatseal, sew	Heatseal, sew	Heatseal, sew	Heatseal, sew	Heatseal, sew	Hot air/ wedge weldable
<b>Useful temperature range</b>		-60 - 80 C	-60 - 80 C	-60 - 80 C	-60 - 80 C	-60 - 80 C	-60 - 80 C	-30 - 70 C

# AIR, TENT & TENSILE STRUCTURES

AIR, TENT & TENSILE STRUCTURES		Polyester, acrylic coated						Air structures, pole tents	
Product	PES, PVC coated	Air structures, tensile structures						Tents, tensile structures	Air structures, pole tents
Recommended Uses		Polyester, acrylic coated							
Trade Name of Fabric	Duraskin B 1673	Arquiten 1500	Arquiten 1800	Arquiten 2000	Arquiten 2000 Traditional	Arquiten 3000	Holiday	Odyssey IV	
Trademark Holder/Supplier	Verseidag Indutex GmbH	Plastextil S.A.	Plastextil S.A.	Plastextil S.A.	Plastextil S.A.	Plastextil S.A.	Marchem CFI	Marchem CFI	
Base Fabric	Weight	180 g/m <sup>2</sup> ; 5.31 oz/yd <sup>2</sup>						159.36 g/m <sup>2</sup> ; 4.7 oz/yd <sup>2</sup>	
	Weave Style	L 1/1						Plain	Plain
Coating	Yarn Count (warp, fill)	1100, 1100 tpi						1100 Dtex high tenacity (12, 12 yarn/cm)	58 , 44 tpi
	Weight (top, bottom)	413 g/m <sup>2</sup> ; 12 oz/yd <sup>2</sup>							
Life Expectancy in years	UV topcoat material	Acrylic, Polyurethane, PVDF						Acrylic, Polyurethane, PVDF	Acrylic
	UV topcoat weight								
Warranty, duration in years	Life Expectancy in years	10-15 Years						7 Years	10 Years
	Warranty, duration in years	5 Years						3 Years	5 Years
Finished Fabric	Test Method	ASTM 751						ASTM 751	FED-STD 191A (5041)
	Thickness	0.5 mm; 0.2 in						0.58 mm	.022 in
	Weight	800 g/m <sup>2</sup> ; 24 oz/yd <sup>2</sup>						20 oz/yd <sup>2</sup>	13.0 oz/yd <sup>2</sup>
Tongue tear	Roll width, usable	250 cm; 61, 98 in						60, 70, 80 in	62 in
	Warp, fill	260, 240 N; 58, 54 Lbf						280, 250 N; 63, 56 Lbf	380, 400 N; 85, 90 Lbf
Test Method	DIN 53363	ASTM 751						ASTM 751	ASTM D2261
Test Method		ASTM 751						ASTM 751	FED-STD 191A(5134)



# AIR, TENT & TENSILE STRUCTURES

## AIR, TENT & TENSILE STRUCTURES

Polyester, acrylic coated, continued

Product		Polyester, acrylic coated, continued									
Recommended Uses		Air structures, pole tents	Cleerspans, tensile structures, shade structures	Tent sidewalls	Cleerspans, tensile structures, shade structures	Air structures, tension tents, acoustic liners, pole tents, cleerspans, tensions structures, shade structures	Tension tents, pole tents, cleerspans, tents	Pole tents	Pole tents		
Trade Name of Fabric		Odyssey IV	Precontraint 392 mesh	Precontraint 402 8104	Precontraint 492 mesh	Precontraint 502 colors	Precontrait 702 Aluminum	Shelter-Rite 3916	Shelter-Rite 3920		
Trademark Holder/Supplier		Marchem CFI	Ferrari Textiles	Ferrari Textiles	Ferrari Textiles	Ferrari Textiles (distributed by Tri Vantage LLC)	Ferrari Textiles	Seaman Corp.	Seaman Corp.		
Base Fabric		Weight								132 g/m <sup>2</sup> ; 3.7 oz/yd <sup>2</sup>	
		Weave Style	Plain	Precontraint Basket	Precontraint Basket	Precontraint Basket	Precontraint Basket	Plain	Plain	Plain	
Coating		Yarn Count (warp, fill)	High tenacity	1100 high tenacity	High tenacity	High tenacity	1100 high tenacity				
		Weight (top, bottom)	24 oz/yd <sup>2</sup>		29 oz/yd <sup>2</sup>		174 oz/yd <sup>2</sup>				
		UV topcoat material	Acrylic	Acrylic	Acrylic	Acrylic	Acrylic	Acrylic	Acrylic	Acrylic	Acrylic
Life Expectancy in years		UV topcoat weight									
		Life Expectancy in years	15 Years	5 Years	15 Years	10 Years	12 Years	8 Years	5+ Years	5+ Years	5+ Years
Finished Fabric		Warranty, duration in years	10 Years	5 Years	10 Years	8 Years	5 Years	5 Years	5 Years	5 Years	
		Test Method	FED-STD 191A (5041)	NF EN ISO 2286-2	NF EN ISO 2286-2		NF EN ISO 2286-2	NF EN ISO 2286-2	ASTM D751	ASTM D751	ASTM D751
		Thickness				0.48 mm	0.64 mm				
Roll width, usable		Weight	24.0 oz/yd <sup>2</sup>	15.4 oz/yd <sup>2</sup>	29.0 oz/yd <sup>2</sup>	17.4 oz/yd <sup>2</sup>	26.7 oz/yd <sup>2</sup>	54.3 g/m <sup>2</sup> ; 16 oz/yd <sup>2</sup>	67.8 g/m <sup>2</sup> ; 20 oz/yd <sup>2</sup>		
		Roll width, usable	157.5 cm; 62 in	106 in	70 cm; 70 in	70 cm; 70 in	70 cm; 70 in	106 in	155 cm; 61 in	155 cm; 61 in	
Tongue tear		Warp, fill									
		Test Method	FED-STD 191A(5134)						ASTM D751	ASTM D751	ASTM D751

<b>Trapezoidal tear</b>	Warp, fill	35, 30 lb/in	60, 60 daN/5cm	20, 18 daN/5cm	100.55 daN/5cm	25, 20 daN/5cm	30, 28 daN/5cm	133, 111 N; 30, 25 lb
	Test Method	FED-STD 191A(5136)	DIN 53363	DIN 53363	DIN 53363	DIN 53363	DIN 53363	ASTM D751
<b>Grab tensile</b>	Warp, fill	300, 250 lb/in						1335, 1112 N; 300, 250 lb
	Test Method	Fed-STD 191A(5100)						ASTM D751
<b>Strip tensile</b>	Warp, fill		300, 300 daN/5cm	250, 220 daN/5cm	400, 250 daN/5cm	250, 250 daN/cm	280, 280 daN/5cm	350, 350 N/cm; 200, 200 lb/in
	Test Method		NF EN ISO 1421	NF EN ISO 1421	NF EN ISO 1421	NF EN ISO 1421	NF EN ISO 1421	ASTM D751
<b>Adhesion</b>	Warp, fill		8 daN/5cm	8 daN/5cm	12 daN/5cm	9 daN/5cm	10 daN/5cm	18 N/cm; 10 lb/in
	Test Method		NFG 37.107	NFG 37.107	NFG 37.107	NF EN ISO 2411	NF EN ISO 2411	ASTM D751
<b>Hydrostatic resistance</b>	Warp, fill	1 psi						3.45 Mpa; 500 psi
	Test Method							ASTM D751
<b>Cold crack</b>	Warp, fill	-20 F						-40C, -40F
	Test Method							ASTM D2136
<b>Burning Characteristics-Test method</b>		CPAI-84 Section 7, MVSS-301, NFPA 701	CSFM, NFPA 701	CSFM, NFPA 701	CSFM, NFPA 701	ASTM E84, CSFM, NFPA 701	CSFM, NFPA 701	NFPA 701, CSFM, ASTM D6413
<b>Light Values-Test method</b>								
<b>Transmission, reflectance, absorption</b>						depends on color	opaque	opaque
<b>Seams (recommended style)</b>			RF-Overlap	Heatseal	RF-Overlap	RF-Overlap	Heatseal	Lap or butt
<b>Construction method</b>		Sew						Heatseal or RF
<b>Useful temperature range</b>			-22 - 158 F	-22 - 158 F	-22 - 158 F	-22 - 158 F	-22 - 158 F	-40 - 160 F

# AIR, TENT & TENSILE STRUCTURES

## AIR, TENT & TENSILE STRUCTURES

Product		Polyester, acrylic coated, continued						
Recommended Uses	Air structures, tension tents, clearspans, tensile structures	Tension tents, tensile structures	Air structures, ension tents, clearspans, tensile structures	Tension tents, pole tents, tensile structures	Tension tents, acoustic liners, clearspans, tensile structures, shade structures	Tension tents, acoustic liners, clearspans, tensile structures, shade structures	Tension tents, pole tents, clearspans, tents	
Trade Name of Fabric	Shelter-Rite 8028	Shelter-Rite 8424	Shelter-Rite 9032	Shelter-Rite 9319	Soltis 86	Soltis 92	Stamoid Drop Stop	
Trademark Holder/Supplier	Seaman Corp.	Seaman Corp.	Seaman Corp.	Seaman Corp.	Ferrari Textiles (distributed by Tri Vantage LLC)	Ferrari Textiles (distributed by Tri Vantage LLC)	Ferrari Textiles	
Base Fabric	Weight	170 g/m <sup>2</sup> ; 5 oz/yd <sup>2</sup>	339 g/m <sup>2</sup> ; 10 oz/yd <sup>2</sup>	108 g/m <sup>2</sup> ; 3.2 oz/yd <sup>2</sup>				
	Weave Style	Weft-inserted warp-knit	Weft-inserted warp-knit	Weft-inserted warp-knit	Preconstraint Basket	Preconstraint Basket		
	Yarn Count (warp, fill)						1100/1200 high tenacity	
Coating	Weight (top, bottom)							
	UV topcoat material	PVDF; Acrylic; Kynar	PVDF; Acrylic; Kynar	PVDF; Acrylic; Kynar	PVDF; Acrylic; Kynar	Acrylic	Acrylic	
	UV topcoat weight							
Life Expectancy in years	10+ Years	10+ Years	10+ Years	10+ Years	8 Years	8 Years	5 Years	
Warranty, duration in years	10 Years	10 Years	10 Years	10 Years	5 Years	5 Years	5 Years	
Finished Fabric	Test Method	ASTM D751	ASTM D751	ASTM D751	ASTM D751		NF EN ISO 2286-2	
	Thickness				0.43 mm	0.45 mm		
	Weight	950 g/m <sup>2</sup> ; 28 oz/yd <sup>2</sup>	814 g/m <sup>2</sup> ; 24 oz/yd <sup>2</sup>	1085 g/m <sup>2</sup> ; 32 oz/yd <sup>2</sup>	644 g/m <sup>2</sup> ; 19 oz/yd <sup>2</sup>	11.7 oz/yd <sup>2</sup>	12.4 oz/yd <sup>2</sup>	21.5 oz/yd <sup>2</sup>
Roll width, usable			142 cm; 56 in	137 cm; 54 in	69 cm; 69 in	69 cm; 69 in	96.4 in	
Tongue tear	Warp, fill	1223, 1223 N; 275, 275 lb	712, 712 N; 160, 160 lb	489, 489 N; 110, 110 lb				
	Test Method	ASTM D751	ASTM D751	ASTM D751				

<b>Trapezoidal tear</b>	Warp, fill	378, 378 N; 85, 85 lb	223, 267 N; 50, 60 lb	445, 445 N; 100, 100 lb	155, 178 N; 35, 40 lb	45, 20 daN/5cm	40, 20 daN/5cm	33, 33 daN/5cm
	Test Method	ASTM D751	ASTM D751	ASTM D751	ASTM D751	DIN 53363	DIN 53363	DIN 53363
<b>Grab tensile</b>	Warp, fill	3115, 3115 N; 700, 700 lb	1669, 1558 N; 375, 350 lb	3738, 3738 N; 840, 840 lb	1157, 1157 N; 260, 260 lb			
	Test Method	ASTM D751	ASTM D751	ASTM D751	ASTM D751			
<b>Strip tensile</b>	Warp, fill	916, 916 N/cm; 515, 515 lb/in	526, 482 N/cm; 300, 275 lb/in	1156, 1156 N/cm; 650, 650 lb/in	350, 350 N/cm; 200, 200 lb/in	230, 160 daN/5cm	310, 210 daN/5cm	280, 310 daN/5cm
	Test Method	ASTM D751	ASTM D751	ASTM D751	ASTM D751	NF EN ISO 1421	NF EN ISO 1421	NF EN ISO 1421
<b>Adhesion</b>	Warp, fill	18 N/cm; 10 lb/in	18 N/cm; 10 lb/in	18 N/cm; 10 lb/in	18 N/cm; 10 lb/in			
	Test Method	ASTM D751	ASTM D751	ASTM D751	ASTM D751			
<b>Hydrostatic resistance</b>	Warp, fill	3.45 Mpa; 500 psi	3.45 Mpa; 500 psi	3.45 Mpa; 500 psi	2.41 Mpa; 350 psi			
	Test Method	ASTM D751	ASTM D751	ASTM D751	ASTM D751			
<b>Cold crack</b>	Warp, fill	-40C, -40F; -55C, -67F	-40C, -40F; -55C, -67F	-40C, -40F; -55C, -67F	-40C, -40F; -55C, -67F			
	Test Method	ASTM D2136	ASTM D2136	ASTM D2136	ASTM D2136			
<b>Burning Characteristics-Test method</b>		NFPA701, CSFM, ASTM E84; ASTM D6413, ULC 5109	NFPA701, CSFM, ASTM E84; ASTM D6413	NFPA701, CSFM, ASTM E84; ASTM D6413	NFPA 701, CSFM, ASTM E84; ASTM D6413; ULC 5102; ULC 5109	ASTM E84, CSFM, NFPA 701	ASTM E84, CSFM, NFPA 701	CSFM
<b>Light Values-Test method</b>								
<b>Transmission, reflectance, absorption</b>		depends on color	depends on color	depends on color	depends on color	depends on color	depends on color	0.15%
<b>Seams (recommended style)</b>		Lap or butt	Lap or butt	Lap or butt	Lap or butt	RF-Overlap	RF-Overlap	Butt weld
<b>Construction method</b>		Heatseal or RF	Heatseal or RF	Heatseal or RF	Heatseal or RF			
<b>Useful temperature range</b>		-40 - 160 F	-40 - 160 F	-40 - 160 F	-40 - 160 F	-22 - 158 F	-22 - 158 F	-22 - 158 F

# AIR, TENT & TENSILE STRUCTURES

## AIR, TENT & TENSILE STRUCTURES

Product		Polyester, PVC coated									
Recommended Uses	Tension tents, pole tents	Tension tents, pole tents	Tension tents, pole tents	Tension tents, pole tents	Tension tents, pole tents, tents	Air structures, tension structure	Tension tents, pole tents, tent sidewall	Air Structures, tension tents, pole tents, tensile structures	Air Structures, tension tents, pole tents, tensile structures	Air Structures, tension tents, pole tents, tensile structures	
Trade Name of Fabric	Architent FS	Big Top 300	Big Top 350	BTF-19	Duraskin B 40173	Durasking Type III B 4915	GraphicTent	Hiraoka 2121-IIIE	Hiraoka 3121-IIIE		
Trademark Holder/Supplier	Herculite Products	Glen Raven Inc	Glen Raven Inc	Naizil Inc.	Verseidag Indutex	Verseidag Indutex	Herculite Products	Hiraoka & Co. Ltd.	Hiraoka & Co. Ltd.		
Base Fabric	Weight	2.5 oz/yd <sup>2</sup>	2.5 oz/yd <sup>2</sup>		180 g/m <sup>2</sup> ; 5.31 oz/yd <sup>2</sup>	370 g/m <sup>2</sup> ; 10.91 oz/yd <sup>2</sup>		310 g/m <sup>2</sup>	385 g/m <sup>2</sup>		
	Weave Style	wft inserted warp knit	wft inserted warp knit	Polyester, woven, 1000 x 1000 denier	L 1/1	Panama		L 1/1	Plain		
	Yarn Count (warp, fill)	9, 9 tpi	9, 9 tpi		1100, 1100 tpi	1670, 1670 dtex					
Coating	Weight (top, bottom)	10.5, 6.0 oz/yd <sup>2</sup>	10.5, 6.0 oz/yd <sup>2</sup>		282, 8.32 g/m <sup>2</sup> ; 188, 5.55 oz/yd <sup>2</sup>	408, 272 g/m <sup>2</sup> ; 12.04, 8.02 oz/yd <sup>2</sup>					
	UV topcoat material	PVC film	PVC				RainKleen	PVDF	PVDF		
	UV topcoat weight	0.03 oz/yd <sup>2</sup>									
Life Expectancy in years		2 Years	2 Years	6 Years tent life	10 - 15 Years	10 - 15 Years					
Warranty, duration in years		2 Years	2 Years	6 Years	5 Years	5 Years		15 & 20 Years	15 & 20 Years		
Finished Fabric	Test Method	FED-STD 191	FTM 191A 5030/5041	ASTM D3774				ASTM D751	ASTM D751		
	Thickness					32 oz/yd <sup>2</sup>		0.75 mm; 30 mil	0.80 mm; 32 mil		
	Weight	16 oz/yd <sup>2</sup>	16+/- .50 oz/yd <sup>2</sup>	18/19 oz/yd <sup>2</sup>			17 oz/yd <sup>2</sup>	940 g/m <sup>2</sup> ; 28 oz/yd <sup>2</sup>	1020 g/m <sup>2</sup> ; .030 oz/yd <sup>2</sup>		
Roll width, usable	61 in	60+/- .75 in	60+/- in		250 cm; 98.42 in	250 cm; 98.42 in		204 cm; 80.3 in	204 cm; 80 in		
Tongue tear	Warp, fill	100+/- 15, 100+/- 15 lb/in	100+/- 15, 100+/- 15 lb/in	50, 40 lb/in			50, 55 lb/in				
	Test Method	FTM 191A SEC 5134	FTM 191A SEC 5134	ASTM D 2261			FED-STD 191				



# AIR, TENT & TENSILE STRUCTURES

## AIR, TENT & TENSILE STRUCTURES

Polyester, PVC coated, continued

Product		Polyester, PVC coated, continued										
Recommended Uses	Tension tents	Air structures, tension tents, clearspans, tensile structures	Tensile structures	Tensile structures	Tensile structures	Tensile structures	Tensile structures	Tensile structures	Tensile structures	Tensile structures	Tension tents, pole tents, clearspans, tents	Tension tents, pole tents, clearspans, tents
	Trade Name of Fabric	LAC 650 SL	Plus Cover	Precontrait 1002 Formula S	Precontrait 1202 Formula S	Precontrait 1302 Formula S	Precontrait 1502 Formula S	Precontrait 502 8103 S	Precontrait 502 8104 S	Precontrait 702 8103 S	Precontrait 502 8103 S	Precontrait 502 8104 S
Trademark Holder/Supplier	Dickson	Naizil Inc.	Ferrari Textiles	Ferrari Textiles	Ferrari Textiles	Ferrari Textiles	Ferrari Textiles	Ferrari Textiles	Ferrari Textiles	Ferrari Textiles	Ferrari Textiles	Ferrari Textiles
	Weight	20 oz/yd <sup>2</sup>	300 g/m <sup>2</sup> ; 8.8 oz/yd <sup>2</sup>									
	Weave Style	Woven		Precontrait Basket	Precontrait Basket	Precontrait Basket	Precontrait Basket					
Base Fabric	Yarn Count (warp, fill)	1100 x 1100 d	High tenacity	High tenacity	High tenacity	High tenacity	High tenacity	High tenacity	High tenacity	High tenacity	High tenacity	1100 high tenacity
	Weight (top, bottom)		31 calibrated	31 calibrated	40 calibrated	44 calibrated						
	UV topcoat material	PVC	PVDF	Calibrated PVDF	Calibrated PVDF	Calibrated PVDF	Calibrated PVDF	Calibrated PVDF	Calibrated PVDF	Calibrated PVDF	Calibrated PVDF	Weldable PVDF
Coating	UV topcoat weight											
	Life Expectancy in years	5+ Years	10 Years	15 Years	15 Years	15 Years	15 Years	15 Years	15 Years	15 Years	15 Years	7 Years
Warranty, duration in years	5 Years ltd	10 Years	10 Years	10 Years	10 Years	10 Years	10 Years	10 Years	10 Years	10 Years	10 Years	5 Years
	FED-STD 191A (5030/5041)		NF EN ISO 2286-2	NF EN ISO 2286-2	NF EN ISO 2286-2	NF EN ISO 2286-2	NF EN ISO 2286-2	NF EN ISO 2286-2	NF EN ISO 2286-2	NF EN ISO 2286-2	NF EN ISO 2286-2	NF EN ISO 2286-2
Finished Fabric	Test Method	21 mil	0.78 mm	0.78 mm	1.02 mm	1.14 mm	1.14 mm	0.53 mm	0.48 mm	0.64 mm	0.64 mm	0.64 mm
	Thickness	20 oz/yd <sup>2</sup>	1100 g/m <sup>2</sup> ; 32 oz/yd <sup>2</sup>	31 oz/yd <sup>2</sup>	31 oz/yd <sup>2</sup>	40 oz/yd <sup>2</sup>	44 oz/yd <sup>2</sup>	21.4 oz/yd <sup>2</sup>	18.9 oz/yd <sup>2</sup>	26.7 oz/yd <sup>2</sup>	26.7 oz/yd <sup>2</sup>	26.7 oz/yd <sup>2</sup>
	Weight	91 and 118 in	250 cm; 98.5 in	70 cm; 70 in	70 cm; 70 in	70 cm; 70 in	70 cm; 70 in	70 cm; 70 in	70 cm; 70 in	70 cm; 70 in	70 cm; 70 in	98 or 106 in
Roll width, usable												
Tongue tear	Warp, fill		890, 890 N; 200, 200 lb/in									
	Test Method		FED-STD 191A (5134)									

<b>Trapezoidal tear</b>	Warp, fill	44, 38	666, 510 N; 150, 115 lb/in	105, 100 lb/in	130, 110 lb/in	155, 130 lb/in	235, 165 lb/in	28, 28 daN/5cm	28, 28 daN/5cm	30, 28 daN/5cm
	Test Method	ASTM D751	FED-STD 191 (5136)	ASTM D751-00	ASTM D751-00	ASTM D751-00	ASTM D751-00	DIN 53363	DIN 53363	DIN 53363
<b>Grab tensile</b>	Warp, fill	367, 319								
	Test Method	ASTM D751								
<b>Strip tensile</b>	Warp, fill		2264, 2086 N/cm; 510, 470 lb/in	480, 450 lb/in	565, 565 lb/in	880, 740 lb/in	1020, 810 lb/in	280, 280 daN/5cm	280, 280 daN/5cm	280, 280 daN/5cm
	Test Method			ASTM D751-00	ASTM D751-00	ASTM D751-00	ASTM D751-00	NF EN ISO 1421	NF EN ISO 1421	NF EN ISO 1421
<b>Adhesion</b>	Warp, fill		133 N/cm <sup>2</sup> ; 20 lb/in	12 daN/5cm	12 daN/5cm	13 daN/5cm	15 daN/5cm	10 daN/5cm	10 daN/5cm	10 daN/5cm
	Test Method		FED-STD 191A (5970)	NF EN ISO 2411	NF EN ISO 2411	NF EN ISO 2411	NF EN ISO 2411	NF EN ISO 2411	NF EN ISO 2411	NF EN ISO 2411
<b>Hydrostatic resistance</b>	Warp, fill	554 psi								
	Test Method	ASTM D751								
<b>Cold crack</b>	Warp, fill	-40F								
	Test Method	1/8" Mandrel	FED-STD 191 (5874)							
<b>Burning Characteristics-Test method</b>			CFMS, NFPA 701 1989 large scale	CSFM, NFPA 701, UBC 31-1	CSFM, NFPA 701	CSFM, NFPA 701	CSFM, NFPA 701	CSFM, NFPA 701	CSFM, NFPA 701	CSFM, NFPA 701
<b>Light Values-Test method</b>				ASHRAE 74-1988	ASHRAE 74-1988	ASHRAE 74-1988	ASHRAE 74-1988			
<b>Transmission, reflectance, absorption</b>				6%, 78%, 16%	7%, 77%, 16%	5%, 78%, 17%	5%, 78%, 17%	opaque	19%	opaque
<b>Seams (recommended style)</b>				RF-Overlap	RF-Overlap	RF-Overlap	RF-Overlap	Heatseal	Heatseal	Heatseal
<b>Construction method</b>										
<b>Useful temperature range</b>				-22 - 158 F	-22 - 158 F	-22 - 158 F	-22 - 158 F	-22 - 158 F	-22 - 158 F	-22 - 158 F

# AIR, TENT & TENSILE STRUCTURES

Product		Polyester, PVC coated, continued									
Recommended Uses		Tension tents, pole tents, clearspans, tensile structures	Pole tents	Pole tents	Pole tents	Air structures, tension tents, clearspans, tensile structures	Tension tents, tensile structures	Air structures, tension tents, clearspans, tensile structures	Air structures, tension tents, clearspans, tensile structures	Tension tents, pole tents, tensile structures	Tension Tents, pole tents, clearspans, tent sidewall
Trade Name of Fabric		PS Cover	Shelter-Rite 3916	Shelter-Rite 3920	Shelter-Rite 8028	Shelter-Rite 8424	Shelter-Rite 9032	Shelter-Rite 9319	Shelter-Rite 9319	Showtime S-83	
Trademark Holder/Supplier		Naizil Inc.	Seaman Corp.	Seaman Corp.	Seaman Corp.	Seaman Corp.	Seaman Corp.	Seaman Corp.	Seaman Corp.	Herculite Products	
Base Fabric	Weight	180 g/m <sup>2</sup> ; 5.3 oz/yd <sup>2</sup>	132 g/m <sup>2</sup> ; 3.7 oz/yd <sup>2</sup>	132 g/m <sup>2</sup> ; 3.7 oz/yd <sup>2</sup>	254 g/m <sup>2</sup> ; 7.5 oz/yd <sup>2</sup>	170 g/m <sup>2</sup> ; 5 oz/yd <sup>2</sup>	339 g/m <sup>2</sup> ; 10 oz/yd <sup>2</sup>	108 g/m <sup>2</sup> ; 3.2 oz/yd <sup>2</sup>			
	Weave Style		Plain	Plain	Weft-inserted warp-knit	Weft-inserted warp-knit	Weft-inserted warp-knit	Weft-inserted warp-knit	Weft-inserted warp-knit		
	Yarn Count (warp, fill)										
Coating	Weight (top, bottom)										
	UV topcoat material	PVDF	PVDF; Acrylic	PVDF; Acrylic	(Tedlar) PVF; PVDF; Acrylic	(Tedlar) PVF; PVDF	(Tedlar) PVF; PVDF; Acrylic	(Tedlar) PVF; PVDF			
	UV topcoat weight										
Life Expectancy in years		10 Years	2+ Years	2+ Years	10+ Years	10+ Years	10+ Years	10+ Years	10+ Years		
Warranty, duration in years			2 Years	2 Years	10 Years	10 Years	10 Years	10 Years	10 Years		
Finished Fabric	Test Method		ASTM D751	ASTM D751	ASTM D751	ASTM D751	ASTM D751	ASTM D751	ASTM D751	FED-STD 191	
	Thickness										
	Weight	700 g/m <sup>2</sup> ; 20 oz/yd <sup>2</sup>	543 g/m <sup>2</sup> ; 16 oz/yd <sup>2</sup>	678 g/m <sup>2</sup> ; 20 oz/yd <sup>2</sup>	950 g/m <sup>2</sup> ; 28 oz/yd <sup>2</sup>	814 g/m <sup>2</sup> ; 24 oz/yd <sup>2</sup>	1085 g/m <sup>2</sup> ; 32 oz/yd <sup>2</sup>	644 g/m <sup>2</sup> ; 19 oz/yd <sup>2</sup>		17 oz/yd <sup>2</sup>	
Roll width, usable		250 cm; 98.5 in	155 cm; 61 in	155 cm; 61 in			142 cm; 56 in	137 cm; 54 in	61 and 98 in		
Tongue tear	Warp, fill	222, 177 N; 50, 40 lb/in	334, 223 N; 75, 50 lb/in	334, 223 N; 75, 50 lb/in	1223, 1223 N; 275, 275 lb	712, 712 N; 160, 160 lb	1335, 1335 N; 300, 300 lb	489, 489 N; 110, 110 lb			
	Test Method	FED-STD 191A (5134)	ASTM D751	ASTM D751	ASTM D751	ASTM D751	ASTM D751	ASTM D751	ASTM D751		

<b>Trapezoidal tear</b>	Warp, fill	142, 134 N; 32, 30 lb/in	133, 111 N; 30, 25 lb/in	378, 378 N; 85, 85 lb	223, 267 N; 50, 60 lb	445, 445 N; 100, 100 lb	155, 178 N; 35, 40 lb	50, 55 lb/in
	Test Method	FED-STD 191 (5136)	ASTM D4533	ASTM D4533	ASTM D4533	ASTM D4533	ASTM D4533	FED-STD 191
<b>Grab tensile</b>	Warp, fill		1335, 1112 N/cm; 300, 250 lb/in	3115, 3115 N/cm; 700, 700 lb	1669, 1558 N/cm; 375, 350 lb	3738, 3738 N/cm; 840, 840 lb	1157, 1157 N; 260, 260 lb	225, 205 lb/in
	Test Method		ASTM D751	ASTM D751	ASTM D751	ASTM D751	ASTM D751	FED-STD 191
<b>Strip tensile</b>	Warp, fill	1154, 1110 N/cm; 260, 250 lb/in	350, 350 N/cm; 200, 200 lb/in	916, 916 N/cm; 515, 515 lb/in	526, 482 N/cm; 300, 275 lb/in	1156, 1156 N/cm; 650, 650 lb/in	350, 350 N/cm; 200, 200 lb/in	
	Test Method		ASTM D751	ASTM D751	ASTM D751	ASTM D751	ASTM D751	
<b>Adhesion</b>	Warp, fill	133 N/cm <sup>2</sup> ; 20 lb/in	18 N/cm; 10 lb/in	18 N/cm; 10 lb/in	18 N/cm; 10 lb/in	18 N/cm; 10 lb/in	18 N/cm; 10 lb/in	15.2 lb/in
	Test Method	FED-STD 191A (5970)	ASTM D751	ASTM D751	ASTM D751	ASTM D751	ASTM D751	FED-STD 191
<b>Hydrostatic resistance</b>	Warp, fill		3.45 Mpa; 500 psi	3.45 Mpa; 500 psi	3.45 Mpa; 500 psi	3.45 Mpa; 500 psi	2.41 Mpa; 350 psi	405 psi
	Test Method		ASTM D751	ASTM D751	ASTM D751	ASTM D751	ASTM D751	FED-STD 191 -40 F
<b>Cold crack</b>	Warp, fill	-30C, -22F	-40C, -40F	-40C, -40F	-40C, -40F	-40C, -40F	-40C, -40F	-40F
	Test Method	FED-STD 191 (5874)	ASTM D2136	ASTM D2136	ASTM D2136	ASTM D2136	ASTM D2136	FED-STD 191
<b>Burning Characteristics-Test method</b>		CFMS, NFPA 701 1989 large scale	NFPA 701, CSFM, ASTM D6413	NFPA701, CSFM, ASTM E84; ASTM D6413	NFPA701, CSFM, ASTM E84; ASTM D6423	NFPA701, CSFM, ASTM E84; ASTM D6413	NFPA 701, CSFM, ASTM E84; ASTM D6413	CSFM, NFPA 701
<b>Light Values-Test method</b>								
<b>Transmission, reflectance, absorption</b>			depends on color	depends on color	depends on color	depends on color	depends on color	
<b>Seams (recommended style)</b>		Lap or butt	Lap or butt	Lap or butt	Lap or butt	Lap or butt	Lap or butt	
<b>Construction method</b>		Heatseal or sew	Heatseal or RF	Heatseal or RF	Heatseal or RF	Heatseal or RF	Heatseal or RF	
<b>Useful temperature range</b>			-40 - 160 F	-40 - 160 F	-40 - 160 F	-40 - 160 F	-40 - 160 F	

# AIR, TENT & TENSILE STRUCTURES

AIR, TENT & TENSILE STRUCTURES		Polyester, PVC-coated, continued					Polyester, PVDF-coated				
Product	Tension tents, pole tents, clearspans, tensile structures	Tension tents	Air structures, tension tents, acoustic liners, pole tents, clearspans, tensile structures	Air Structures, tension tents, pole tents, clearspans, tensile structures	Air Structures, clearspans, tensile structures	Air Structures, tension tents, pole tents, clearspans, tensile structures	Air Structures, clearspans, tensile structures	Air Structures, tension tents, clearspans, tensile structures	Air Structures, tension tents, pole tents, clearspans, tensile structures, shade structures		
Recommended Uses	Sports Cover	Sun Block	1002 T2 back PVDF	1202 T2 back PVDF	1302 T2 back PVDF	1502 T2 back PVDF	702 T2 back PVDF	Arquitens 1500			
Trade Name of Fabric											
Trademark Holder/Supplier	Naizil Inc.	Dickson	Ferrari Textiles	Ferrari Textiles	Ferrari Textiles	Ferrari Textiles	Ferrari Textiles	Ferrari Textiles	Ferrari Textiles	Plastextil S.A.	
Base Fabric	Weight	200 g/m <sup>2</sup> ; 5.9 oz/yd <sup>2</sup>									
	Weave Style		Preconstraint Basket	Preconstraint Basket	Preconstraint Basket	Preconstraint Basket	Preconstraint Basket	Preconstraint Basket	Preconstraint Basket	Plain - Tafetan	
Coating	Yarn Count (warp, fill)	1100 x 1100 d								1100 Dtex high tenacity (6, 6 yarn/cm)	
	Weight (top, bottom)		31 oz/yd <sup>2</sup>	31 oz/yd <sup>2</sup>	40 oz/yd <sup>2</sup>	44 oz/yd <sup>2</sup>	22 oz/yd <sup>2</sup>				
	UV topcoat material	PVDF	PVDF	PVDF	PVDF	PVDF	PVDF	PVDF	PVDF	Acrylic, Polyurethane, PVDF	
UV topcoat weight											
Life Expectancy in years	10 Years	5+ Years	18+ Years	18+ Years	18+ Years	18+ Years	18+ Years	18+ Years	18+ Years	10 Years	
Warranty, duration in years	5 Years	5 Years ltd	15 Years	15 Years	15 Years	15 Years	15 Years	15 Years	10 Years	5 Years	
Finished Fabric	Test Method	FED-STD 191A (5030/5041)								ASTM 751	
	Thickness	27 mil	0.78 mm	0.78 mm	1.02 mm	1.14 mm	0.48 mm			0.7 mm	
	Weight	750 g/m <sup>2</sup> ; 22 oz/yd <sup>2</sup>	26 oz/yd <sup>2</sup>	31 oz/yd <sup>2</sup>	40 oz/yd <sup>2</sup>	44 oz/yd <sup>2</sup>	22 oz/yd <sup>2</sup>			25 oz/yd <sup>2</sup>	
Roll width, usable		61, 98 and 118 in	70 in	70 in	70 in	70 in	70 in	70 in	70 in	60, 70, 80 in	
Tongue tear	Warp, fill	310, 222 N; 70, 50 lb/in								280, 240 N; 58, 54 Lbf	
	Test Method	FED-STD 191A (5134)								ASTM 751	

<b>Trapezoidal tear</b>	Warp, fill	177, 133 N; 40, 30 lb/in	51, 43	105, 100 lb/in	130, 110 lb/in	155, 130 lb/in	235, 165 lb/in	85, 82 lb/in	
	Test Method	FED-STD 191A (5136)	ASTM D751	ASTM D751-00	ASTM D751-00	ASTM D751-00	ASTM D751-00	ASTM D751-00	
<b>Grab tensile</b>	Warp, fill		440, 412						580, 480 N/cm; 331, 274 Lbf/in
	Test Method		ASTM D751						ASTM 751
<b>Strip tensile</b>	Warp, fill	1398, 1354 N/cm; 315, 305 lb/in		480, 450 lb/in	565, 565 lb/in	880, 740 lb/in	1020, 810 lb/in	340, 330 lb/in	
	Test Method			ASTM D751-00	ASTM D751-00	ASTM D751-00	ASTM D751-00	ASTM D751-00	
<b>Adhesion</b>	Warp, fill	133 N/cm <sup>2</sup> ; 20 lb/in		12 daN/5cm	12 daN/5cm	13 daN/5cm	15 daN/5cm	10 daN/5cm	
	Test Method	FED-STD 191A (5970)		NF EN ISO 2411	NF EN ISO 2411	NF EN ISO 2411	NF EN ISO 2411	NF EN ISO 2411	
<b>Hydrostatic resistance</b>	Warp, fill		628 psi						
	Test Method		ASTM D751						
<b>Cold crack</b>	Warp, fill	-30C, -22F	-40F						
	Test Method	FED-STD 191A (5874)	1/8" Mandrel						
<b>Burning Characteristics-Test method</b>		CSFM	CSFM title 19, NFPA-701, ASTM E-84 Class A	CSFM, UBC 31-1, NFPA 701	CSFM, NFPA 701	CSFM, NFPA 701	CSFM, NFPA 701	CA State Fire Marshal, NFPA 701	NFPA 701, ASTM 6413
<b>Light Values-Test method</b>				ASHRAE 74-1988	ASHRAE 74-1988	ASHRAE 74-1988	ASHRAE 74-1988	ASHRAE 74-1988	
<b>Transmission, reflectance, absorption</b>				6%, 78%, 16%	7%, 77%, 16%	5%, 78%, 17%	5%, 78%, 17%	9%, 76%, 51%	opaque
<b>Seams (recommended style)</b>		Lap or butt		Abrasion-RF-Overlap	Abrasion-RF-Overlap	Abrasion-RF-Overlap	Abrasion-RF-Overlap	Abrasion-RF-Overlap	Overlap
<b>Construction method</b>		Heatseal or sew							Heatseal, RF or Sew
<b>Useful temperature range</b>				-22 - 158 F	-22 - 158 F	-22 - 158 F	-22 - 158 F	-22 - 158 F	-20 - 160 F

# AIR, TENT & TENSILE STRUCTURES

## AIR, TENT & TENSILE STRUCTURES

Product		Polyester, PVDF-coated, continued												
Recommended Uses												Air structures, tension tents, acoustic liners, pole tents, clearspans, tensile structures	Air structures, tension tents, acoustic liners, pole tents, clearspans, tensile structures	Air structures, tension tents, acoustic liners, pole tents, clearspans, tensile structures
Trade Name of Fabric		Arquitens 1800	Arquitens 2000	Arquitens 2000 Traditional	Arquitens 3000							Hiraoka - SD1800 (PVDF Transparent Membrane)	Hiraoka - SD1600 (PVDF Transparent Membrane)	Hiraoka - SD1800 (PVDF Transparent Membrane)
Trademark Holder/Supplier		Plastextil S.A.	Plastextil S.A.	Plastextil S.A.	Plastextil S.A.							Hiraoka & Co. Ltd.	Hiraoka & Co. Ltd.	Hiraoka & Co. Ltd.
Base Fabric	Weight											110 g/m <sup>2</sup> ; 3.2 oz/yd <sup>2</sup>	55 g/m <sup>2</sup> ; 1.6 oz/yd <sup>2</sup>	110 g/m <sup>2</sup> ; 3.2 oz/yd <sup>2</sup>
	Weave Style	Plain - Tafetan	Plain - Tafetan	Plain - Tafetan	Plain - Panama							Plain	Plain	Plain
	Yarn Count (warp, fill)	1100 Dtex high tenacity (7,7 yarn/cm)	1100 Dtex high tenacity (9,9 yarn/cm)	1100 Dtex high tenacity (9,9 yarn/cm)	1100 Dtex high tenacity (12,12 yarn/cm)							18 x 20 yarns/in; 750 x 750 d/2	3 x 3 yarns/in; 500 x 1000 d/2	24 x 24 yarns/in; 500 x 500 d/2
Coating	Weight (top, bottom)													
	UV topcoat material	Acrylic, Polyurethane, PVDF	Acrylic, Polyurethane, PVDF	Acrylic, Polyurethane, PVDF	Acrylic, Polyurethane, PVDF							PVDF	PVDF	PVDF
	UV topcoat weight													
Life Expectancy in years		10 Years	7 Years	10 Years										
Warranty, duration in years		5 Years	3 Years	5 Years										5 Years
Finished Fabric	Test Method	ASTM 751	ASTM 751	ASTM 751	ASTM 751							ASTM D751	ASTM D751	ASTM D751
	Thickness	0.7 mm	0.7 mm	0.58 mm	0.9 mm							0.7 mm; 27 mil	0.8 mm; 31 mil	0.6 mm; 24 mil
	Weight	25 oz/yd <sup>2</sup>	25 oz/yd <sup>2</sup>	20 oz/yd <sup>2</sup>	32 oz/yd <sup>2</sup>							830 g/m <sup>2</sup> ; 25 oz/yd <sup>2</sup>	840 g/m <sup>2</sup> ; 25 oz/yd <sup>2</sup>	690 g/m <sup>2</sup> ; 20 oz/yd <sup>2</sup>
Roll width, usable		60, 70, 80 in	60, 70, 80 in	60, 70, 80 in	60, 70, 80 in						204 cm; 80.3 in	204 cm; 80.3 in	102 cm; 40.2 in	
Tongue tear	Warp, fill	280, 245 N; 63, 55 Lbf	280, 250 N; 63, 56 Lbf	280, 250 N; 63, 56 Lbf	380, 400 N; 85, 90 Lbf									
	Test Method	ASTM 751	ASTM 751	ASTM 751	ASTM 751									

<b>Trapezoidal tear</b>	Warp, fill			120, 110 daN/5cm; 270, 248 Lbs	17, 17 daN; 38, 38 lbs/in	13, 24 daN; 29, 54 lbs	18, 22 daN; 40, 49 lbs
	Test Method			DIN 53363		ASTM D751	ASTM D751
<b>Grab tensile</b>	Warp, fill	700, 580 N/cm; 400, 331 Lb/in	800, 700 N/cm; 457, 400 Lb/in	1200, 1100 N/cm; 685, 628 Lb/in			
	Test Method	ASTM 751	ASTM 751	ASTM 751			
<b>Strip tensile</b>	Warp, fill			850, 730 daN/5cm; 971, 834 Lbs	241, 180 daN/5cm; 276, 258 lb/in	90, 106 daN/5cm; 103, 121 lb/in	205, 180 daN/5cm; 234, 206 lb/in
	Test Method			ASTM D751		ASTM D751	ASTM D751
<b>Adhesion</b>	Warp, fill			18, 14 daN; 20, 16 lb/in			
	Test Method			ASTM D751			
<b>Hydrostatic resistance</b>	Warp, fill						
	Test Method						
<b>Cold crack</b>	Warp, fill						
	Test Method						
<b>Burning Characteristics- Test method</b>		NFPA 701, ASTM 6413	NFPA 701, ASTM 6413	NFPA 701, ASTM 6413		NFPA-701, AS 1530, 2 & 3	NFPA-701, AS 1530, 2 & 3
<b>Light Values-Test method</b>							JIS Z 8722
<b>Transmission, reflectance, absorption</b>		opaque	opaque	opaque	66%	66%	52%
<b>Seams (recommended style)</b>		Overlap	Overlap	Overlap		Overlap	Overlap
<b>Construction method</b>		Heatseal, RF or Sew	Heatseal, RF or Sew	Heatseal, RF or Sew		Heatseal, RF	Heatseal, RF
<b>Useful temperature range</b>		-20 - 160 F	-20 - 160 F	-20 - 160 F	-30/60 C; -22/140 F		

# AIR, TENT & TENSILE STRUCTURES

## AIR, TENT & TENSILE STRUCTURES

Polyester, PVDF-coated, continued

Product		Polyester, PVDF-coated, continued											
Recommended Uses	Air structures, tension tents, acoustic liners, pole tents, clearspans, tensile structures	Hiraoka - SE1055 (Transparent Membrane)	Hiraoka - SA-4180 (PVDF Transparent Membrane)	Hiraoka - SE1055 (Transparent Membrane)	Hiraoka - SA-4180 (PVDF Transparent Membrane)	Hiraoka 102T-IE	Hiraoka 102T-II (SAC)	Hiraoka 104T	Hiraoka 104T (SAC)	Hiraoka 212T-II (SAC)	Hiraoka 312T-II (SAC)	Air Structures, tension tents, pole tents, tensile structures	Air Structures, tension tents, pole tents, tensile structures
Trade Name of Fabric	Hiraoka - SA-4180 (PVDF Transparent Membrane)	Hiraoka - SE1055 (Transparent Membrane)	Hiraoka - SA-4180 (PVDF Transparent Membrane)	Hiraoka - SE1055 (Transparent Membrane)	Hiraoka 102T-IE	Hiraoka 102T-II (SAC)	Hiraoka 104T	Hiraoka 104T (SAC)	Hiraoka 212T-II (SAC)	Hiraoka 312T-II (SAC)	Hiraoka & Co. Ltd.	Hiraoka & Co. Ltd.	
Trademark Holder/Supplier	Hiraoka & Co. Ltd.	Hiraoka & Co. Ltd.	Hiraoka & Co. Ltd.	Hiraoka & Co. Ltd.	Hiraoka & Co. Ltd.	Hiraoka & Co. Ltd.	Hiraoka & Co. Ltd.	Hiraoka & Co. Ltd.	Hiraoka & Co. Ltd.	Hiraoka & Co. Ltd.	Hiraoka & Co. Ltd.	Hiraoka & Co. Ltd.	
Base Fabric	Weight	60 g/m <sup>2</sup> ; 1.7 oz/yd <sup>2</sup>	16 g/m <sup>2</sup> ; 0.5 oz/yd <sup>2</sup>	200 g/m <sup>2</sup> ; 5.2 oz/yd <sup>2</sup>	200 g/m <sup>2</sup> ; 5.2 oz/yd <sup>2</sup>	200 g/m <sup>2</sup> ; 5.2 oz/yd <sup>2</sup>	165 g/m <sup>2</sup> ; 4.9 oz/yd <sup>2</sup>	165 g/m <sup>2</sup> ; 4.9 oz/yd <sup>2</sup>	165 g/m <sup>2</sup> ; 4.9 oz/yd <sup>2</sup>	310 g/m <sup>2</sup>	385 g/m <sup>2</sup>		
	Weave Style	Plain	Plain	L 1/1	L 1/1	L 1/1	Plain	Plain	Plain	L 1/1	Plain	Plain	
Coating	Yarn Count (warp, fill)	3 x 3 yarns/in; 100 x 1000 dt/2	2 x 2 yarns/in; 1000 x 1000 dt/2										
	Weight (top, bottom)												
	UV topcoat material	PVDF		PVDF	PVDF	PVDF	PVDF	PVDF	PVDF	PVDF	PVDF	PVDF	
Life Expectancy in years	UV topcoat weight												
	Life Expectancy in years	10 Years		15 & 20 Years	15 Years	15 Years	10 Years	10 Years	10 Years	15 Years	15 Years		
Finished Fabric	Test Method	ASTM D751	ASTM D751	ASTM D751	ASTM D751	ASTM D751	ASTM D751	ASTM D751	ASTM D751	ASTM D751	ASTM D751	ASTM D751	
	Thickness	0.9 mm; 35 mil	0.5 mm; 19 mil	0.6 mm; 24 mil	0.6 mm; 24 mil	0.6 mm; 24 mil	0.5 mm; 20 mil	0.5 mm; 20 mil	0.5 mm; 20 mil	0.75 mm; 30 mil	0.80 mm; 32 mil		
	Weight	950 g/m <sup>2</sup> ; 28 oz/yd <sup>2</sup>	600 g/m <sup>2</sup> ; 18 oz/yd <sup>2</sup>	800 g/m <sup>2</sup> ; 24 oz/yd <sup>2</sup>	800 g/m <sup>2</sup> ; 24 oz/yd <sup>2</sup>	800 g/m <sup>2</sup> ; 24 oz/yd <sup>2</sup>	635 g/m <sup>2</sup> ; 18.4 oz/yd <sup>2</sup>	635 g/m <sup>2</sup> ; 18.4 oz/yd <sup>2</sup>	635 g/m <sup>2</sup> ; 18.4 oz/yd <sup>2</sup>	920 g/m <sup>2</sup> ; 27 oz/yd <sup>2</sup>	1020 g/m <sup>2</sup> ; 030 oz/yd <sup>2</sup>		
Tongue tear	Roll width, usable	185 cm; 72.8 in	205 cm; 80.7 in	204 cm; 80 in	204 cm; 80 in	204 cm; 80 in	204 cm; 80 in	204 cm; 80 in	204 cm; 80 in	204 cm; 80.3 in	204 cm; 80 in		
	Test Method		21, 20 daN; 47, 45 lbs/in										

<b>Trapezoidal tear</b>	Warp, fill	32, 28 daN; 73, 60 Lbs		30, 30 daN; 68, 68 lbs	20, 20 daN; 45, 45 lbs	20, 20 daN; 45, 45 lbs	62, 62 daN; 140, 140 lbs	80, 70 daN; 180, 157 lbs
	Test Method	ASTM D751		DN 53363	ASTM D751	ASTM D751	DIN 53363	DIN 53363
<b>Grab tensile</b>	Warp, fill							
	Test Method							
<b>Strip tensile</b>	Warp, fill	124, 112 daN/5cm; 142, 127 lb/in	33, 33 daN/5cm; 38, 37 lb/in	310, 310 daN/cm; 354, 354 lbs/inch	248, 225 daN/5cm; 283, 257 lbs/inch	248, 225 daN/5cm; 283, 257 lbs/inch	450, 450 daN/5cm; 514, 514 lb/in	570, 570 daN/5cm; 651, 651 lb/in
	Test Method	ASTM D751	ASTM D751	ASTM D751	ASTM D751	ASTM D751	ASTM D751	ASTM D751
<b>Adhesion</b>	Warp, fill			8, 8 daN/5cm; 9, 9 lb/in	11, 11 daN/5cm; 13 lb/in	11, 11 daN/5cm; 13 lb/in	12, 11 daN/5cm; 14, 12 lb/in	15, 13 daN/5 cm; 17, 15 lb/in
	Test Method				ASTM D751	ASTM D751	ASTM D751	ASTM D751
<b>Hydrostatic resistance</b>	Warp, fill							
	Test Method							
<b>Cold crack</b>	Warp, fill							
	Test Method							
<b>Burning Characteristics- Test method</b>		NFPA-701, AS 1530, 2 & 3, CSFM		NFPA-701, ASTM E84, CFM, AWTA	NFPA-701, CSFM, ASTM E84, AWTA	NFPA-701, CSFM, ASTM E84, AWTA	NFPA-701, ASTM E-84, CSFM, DIN 4102-1 b-1, MEA 422-06-M	CSFM, NFPA 701, AWTA
<b>Light Values- Test method</b>		JIS Z 8722	JIS Z 8722	JIS Z 8722			JIS Z 8722	JIS Z 8722
<b>Transmission, reflectance, absorption</b>		63%	88%	13%		50% (white)	35%	30%
<b>Seams (recommended style)</b>		Overlap		Overlap	Overlap	Overlap	Overlap	Overlap
<b>Construction method</b>		Heartseal, RF		Heartseal, RF	Heartseal, RF	Heartseal, RF	Heartseal, RF	Heartseal, RF
<b>Useful temperature range</b>				-30/60 C; -22/140 F	-30/70 C; -22/158 F	-30/70 C; -22/158 F	-30/60 C; -22/140 F	-30/60 C; -22/140 F

# AIR, TENT & TENSILE STRUCTURES

Product		Polyester vinyl-laminated						
Recommended Uses		Pole tents, tent sidewall	Pole tents, clearspans, tensile structures, tent sidewall	Tension tents, pole tents, tent sidewall	Tension Tents, pole tents, clearspans, tent sidewall	Tension tents, pole tents, clearspans, sidewalls	Pole tents, tent sidewall	Tent sidewalls
Trade Name of Fabric		Architent	Architent 777-2000D	Architent Blackout	Architent Heavy-Duty Blackout	Architent Opaque 98	Architent Structural Clear	Architent Wideside
Trademark Holder/Supplier		Herculite Products	Herculite Products	Herculite Products	Herculite Products	Herculite Products	Herculite Products	Herculite Products
Base Fabric	Weight							
	Weave Style							
	Yarn Count (warp, fill)							
Coating	Weight (top, bottom)							
	UV topcoat material							
	UV topcoat weight							
Life Expectancy in years								
Warranty, duration in years								
Finished Fabric	Test Method							
	Thickness							
	Weight	14 oz/yd <sup>2</sup>	18 oz/yd <sup>2</sup>	16 oz/yd <sup>2</sup>	18 oz/yd <sup>2</sup>	16 oz/yd <sup>2</sup>	13 oz/yd <sup>2</sup>	10 oz/yd <sup>2</sup>
Roll width, usable		61 in	74 in	61 in	61 in	98 in	61 in	90 in
Tongue tear	Warp, fill	115, 125 lb/in	180, 200 lb/in	140, 165 lb/in	177, 195 lb/in	100, 100 lb/in	115, 125 lb/in	30, 35 lb/in
	Test Method	FED-STD 191 (5134)	FED-STD 191 (5134)	FED-STD 191 (5134)	FED-STD 191 (5134)	FED-STD 191 (5134)	FED-STD 191 (5134)	FED-STD 191 (5134)



# AIR, TENT & TENSILE STRUCTURES

AIR, TENT & TENSILE STRUCTURES		Polyester vinyl-laminated, continued									
Product	Tent sidewalls	Tension tents, pole tents, clearspans	Tension tents, pole tents, clearspans	Tension tents, pole tents, clearspans	Tension tents, pole tents, clearspans	Tent sidewalls	Tension tents, pole tents, party tents, tent sidewalls	Air structures, tension tents, tensile structures			
Recommended Uses	Architent Wideside 98	Polymar Tent-Poly Color	Polymar Tent-Poly Opaque	Polymar Tent-Poly Prima	Protec 2000 10 oz	Protec 2000 13 oz	Valmex FR 1000 Mehatop F-Type III				
Trade Name of Fabric	Herculite Products	Mehler Technologies Inc.	Mehler Technologies Inc.	Mehler Technologies Inc.	Glen Raven Inc	Glen Raven Inc	Mehler Technologies Inc.				
Trademark Holder/Supplier											
Base Fabric	Weight						380 g/m <sup>2</sup> ; 10.6 oz/yd <sup>2</sup>				
	Weave Style	Linen	Linen	Linen	Flat	Flat	Panama				
Coating	Yarn Count (warp, fill)				9 x 9; 500 x 500 d	9 x 9; 1000 x 1000 d					
	Weight (top, bottom)						340, 310 g/m <sup>2</sup>				
UV topcoat material	UV topcoat material	Acrylic lacquer	Acrylic lacquer	Acrylic lacquer			Weldable PVDF lacquer				
	UV topcoat weight						20 g/m <sup>2</sup>				
Life Expectancy in years		5 Years	5 Years	5 Years	5+ Years	5+ Years	5 Years				
Warranty, duration in years		5 Years	5 Years	5 Years	5+ Years	2 Years	5 Years				
Finished Fabric	Test Method	ASTM D751	ASTM D751	ASTM D751	ASTM D751	FED-STD 191A (5030/5041)	ASTM D751				
	Thickness	0.53 mm	0.53 mm	0.53 mm	0.53 mm		0.91 mm				
Roll width, usable	Weight	12.5 oz/yd <sup>2</sup>	650 g/m <sup>2</sup> ; 19 oz/yd <sup>2</sup>	750 g/m <sup>2</sup> ; 22 oz/yd <sup>2</sup>	650 g/m <sup>2</sup> ; 19 oz/yd <sup>2</sup>	10+/- .5 oz/yd <sup>2</sup>	13+/- .5 oz/yd <sup>2</sup>	1050 g/m <sup>2</sup> ; 31 oz/yd <sup>2</sup>			
		98 in	138, 155, 250, 300 cm; 54,25, 61, 98.5, 118 in	138, 155, 250, 300 cm; 54,25, 61, 98.5, 118 in	138, 155, 250, 300 cm; 54,25, 61, 98.5, 118 in	61 in	61 in	250 cm; 98.5 in			
Tongue tear	Warp, fill	100, 100 lb/in	300, 300 N; 40, 40 lb/in	350, 350 N; 50, 50 lb/in	300, 300 N; 40, 40 lb/in		900, 900 N; 150, 150 lb/in				
	Test Method	FED-STD 191 (5134)	ASTM D751	ASTM D751	ASTM D751		ASTM D751	ASTM D751			

<b>Trapezoidal tear</b>	Warp, fill		300, 300 N	19, 13	44, 51	1000, 1000 N
	Test Method		DIN 53363	ASTM D751	ASTM D751	DIN 53363
<b>Grab tensile</b>	Warp, fill	220, 200 lb/in	370 , 350 lb/in	110, 90	230 +/- 20, 210 +/- 20 lb/in	950, 900 lb/in
	Test Method	FED-STD 191 (5100)	ASTM D751	ASTM D5034	ASTM D751	ASTM D751
<b>Strip tensile</b>	Warp, fill		290, 270 lb/in			6000, 5500 N/cm; 550, 50 lb/in
	Test Method		ASTM D751 (Proc. B)			ASTM D751 (Proc. B)
<b>Adhesion</b>	Warp, fill	20 lb/in <sup>2</sup>	20 N/cm; 11 lb/in			25 N/cm; 14 lb/in
	Test Method	FED-STD 191 (5970)	ASTM D751, RFWeld			ASTM D751, RFWeld
<b>Hydrostatic resistance</b>	Warp, fill	325 psi	>2	184 psi	368 psi	>2 ; 20 Kpa
	Test Method	FED-STD 191 (5512)	DIN 53886	ASTM D751	ASTM D751	DIN 53886
<b>Cold crack</b>	Warp, fill	-40F	-40C, -40F	-40F	-40F	-40C, -40F
	Test Method	FED-STD 191 (5874)	ASTM D2136	1/8" Mandrel	1/8" Mandrel	ASTM D2136
<b>Burning Characteristics- Test method</b>		CSFM Reg. F-122.13	California T-19	California T-19	CSFA, CPAI-84, NFPA-701, TM2, MVSS-302, ASTM E-84, Class A	California T-19
<b>Light Values-Test method</b>						
<b>Transmission, reflectance, absorption</b>						
<b>Seams (recommended style)</b>			Lap seam	Lap seam	Lap seam	Lap seam
<b>Construction method</b>		Heatseal/sew/RF weld	Heatseal/sewn	Heatseal/sewn	Heatseal/sewn	Heatseal/sewn
<b>Useful temperature range</b>			-40 - 160 F	-40 - 160 F	-40 - 160 F	-40 - 160 F

# AIR, TENT & TENSILE STRUCTURES

AIR, TENT & TENSILE STRUCTURES					Polymer (solution-dyed)		Silicone
Product	Air structures, tension tents, tensile structures	Tension tents, pole tents, clearspans	Air structures, tension tents, tensile structures	Air structures, tension tents, tensile structures	Tents	Tents and other outdoor structures	Interior Tension Structure
Recommended Uses	Valmex FR 1400 Mehatop F-Type IV	Valmex FR 650-2 Lowick	Valmex FR 700 Mehatop F - Type I	Valmex FR 900 Mehatop F - Type II	Firesist	Weathermax FR	Sky 300
Trade Name of Fabric	Mehler Technologies Inc.	Mehler Technologies Inc.	Mehler Technologies Inc.	Mehler Technologies Inc.	Glen Raven Custom Fabrics	Safety Components	Ferrari Textiles
Trademark Holder/Supplier	Panama	Linen	Linen	Panama	Plain	Ottoman	Preconstraint Basket
Weight	510, 330 g/m <sup>2</sup>	240, 220 g/m <sup>2</sup>	400, 250 g/m <sup>2</sup>	340, 260 g/m <sup>2</sup>	Yes	8.0 oz/yard <sup>2</sup>	11 oz/yard <sup>2</sup>
Weave Style							
Yarn Count (warp, fill)					116, 30 tpi		
Coating	Weldable PVDF lacquer	Acrylic lacquer	Weldable PVDF lacquer	Weldable PVDF lacquer			
UV topcoat material							
UV topcoat weight	20 g/m <sup>2</sup>	15 g/m <sup>2</sup>	20 g/m <sup>2</sup>	20 g/m <sup>2</sup>			
Life Expectancy in years	5 Years	5 Years	5 Years	5 Years	5+ Years	7 - 10 Years	10 Years
Warranty, duration in years	ASTM D751	ASTM D751	ASTM D751	ASTM D751	ASTM D3776	5 Years	10 Years
Test Method	1.24 mm	0.53 mm	0.71 mm	0.79 mm			
Thickness	1350 g/m <sup>2</sup> ; 40 oz/yard <sup>2</sup>	650 g/m <sup>2</sup> ; 19 oz/yard <sup>2</sup>	850 g/m <sup>2</sup> ; 25 oz/yard <sup>2</sup>	900 g/m <sup>2</sup> ; 26.5 oz/yard <sup>2</sup>	8.75 oz/yard <sup>2</sup>	9.0 oz/yard <sup>2</sup>	11 oz/yard <sup>2</sup>
Weight	250 cm; 98.5 in	250 cm; 98.5 in	250 cm; 98.5 in	250 cm; 98.5 in	60 in	60 in	108 in
Roll width, usable	1080, 1080 N; 300, 300 lb/in	267, 270 N; 60, 60 lb/in	267, 267 N; 60, 60 lb/in	450, 400 N; 100, 100 lb/in	20, 14 lb/in	13, 15 lb/in	
Warp, fill	ASTM D751	ASTM D751	ASTM D751	ASTM D751	ASTM 2261+96	ASTM D2261	
Tongue tear							
Test Method							

<b>Trapezoidal tear</b>	Warp, fill	1200, 1200 N	300, 270 N	300, 300 N	500, 450 N		35, 30 lb/in	110, 110 lb/in
	Test Method	DIN 53363	DIN 53363	DIN 53363	DIN 53363		ASTM D5567	ASTM D 751-00R37
<b>Grab tensile</b>	Warp, fill	1150, 1100 lb/in	400, 380 lb/in	450, 425 lb/in	650, 600 lb/in	350, 200 Lbf	490, 390	
	Test Method	ASTM D751	ASTM D751	ASTM D751	ASTM D751	ASTM D5034-95	ASTM D5034	
<b>Strip tensile</b>	Warp, fill	7500, 6500 N/cm; 50, 700 lb/in	310, 290 lb/in	3000, 3000 N/cm; 330, 310 lb/in	4200, 4000 N/cm; 450, 430 lb/in			340, 340 lb/in
	Test Method	ASTM D751 (Proc. B)	ASTM D751 (Proc. B)	ASTM D751	ASTM D751 (Proc. B)			EN ISO 1421
<b>Adhesion</b>	Warp, fill	25 N/cm; 14.2 lb/in	20 N/cm	20 N/cm; 11 lb/in	25 N/cm; 14 lb/in			
	Test Method	ASTM D751, RFWeld	ASTM D751, RFWeld	ASTM D751, RFWeld	ASTM D751, RFWeld			
<b>Hydrostatic resistance</b>	Warp, fill	>2; 20 Kpa	>2; 20 Kpa	>2; 20 Kpa	>2	95 cm	90+ com	
	Test Method	DIN 53886	DIN 53886	DIN 53886	DIN 53886	AATCC 127-1998	AATCC 127	
<b>Cold crack</b>	Warp, fill	-40C, -40F	-40C, -40F	-40C, -40F	-40C, -40F	Pass	No change after 5 days at -40F	
	Test Method	ASTM D2136	ASTM D2136	ASTM D2136	ASTM D2136	ASTM B751-06	SAE J 323	
<b>Burning Characteristics-Test method</b>			California T-19	California T-19	California T-19		CPAI-84, CalTitle 19, NFPA 701, ASTM E-84, Canadian CAN/ULC-S109	MO-NFP 92.507
<b>Light Values-Test method</b>						EN410/14500 for a range of colors	Varies by color	ASHRAE 74-1988
<b>Transmission, reflectance, absorption</b>						0-19%, 4-81%, 1-96%		36%, 52%, 12%
<b>Seams (recommended style)</b>		Lap seam	Lap seam	Lap seam	Lap seam	Lap or french hem		Sewing only
<b>Construction method</b>		Heatseal/sewn	Heatseal/sewn	Heatseal/sewn	Heatseal/sewn	Heatseal with tape, sew		
<b>Useful temperature range</b>		-40 - 160 F	-40 - 160 F	-40 - 160 F	-40 - 160 F	-40 - 225 F		-50 - 180 C

## AIR, TENT & TENSILE STRUCTURES SPECIFICATION TABLE

The Air, Tent & Tensile Structures Fabric Specification Table lists characteristics of more than 130 fabrics manufactured and distributed by over a dozen companies.

For fabrics that are manufactured by one company and distributed by another, the manufacturer is listed. The organization of the table was developed by Harry Daugherty, P.E.

Manufacturers whose data has been reproduced here received listings for their fabrics at no charge. All specifications included in the table were submitted voluntarily by the firms, and their accuracy is the responsibility of the manufacturer.

The appearance of a listing in the table is not an endorsement of a company or product by *Fabric Architecture* or the Industrial Fabrics Association International (IFAI). *Fabric Architecture* and IFAI encourage readers to contact the companies directly for further information. Company information is listed below.

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