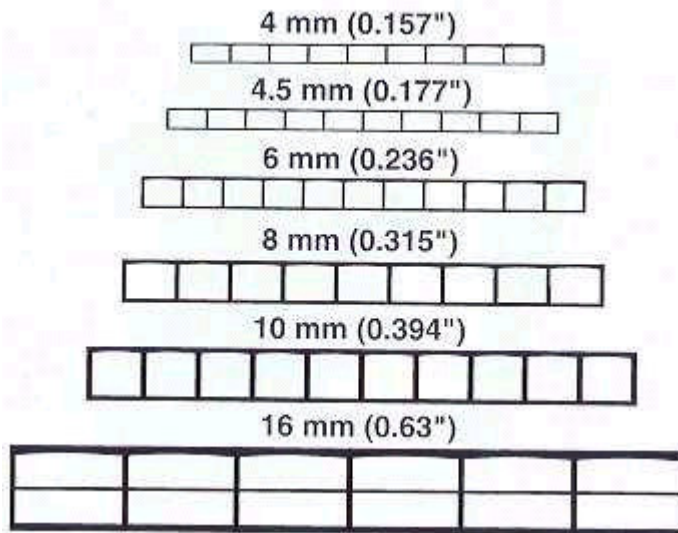
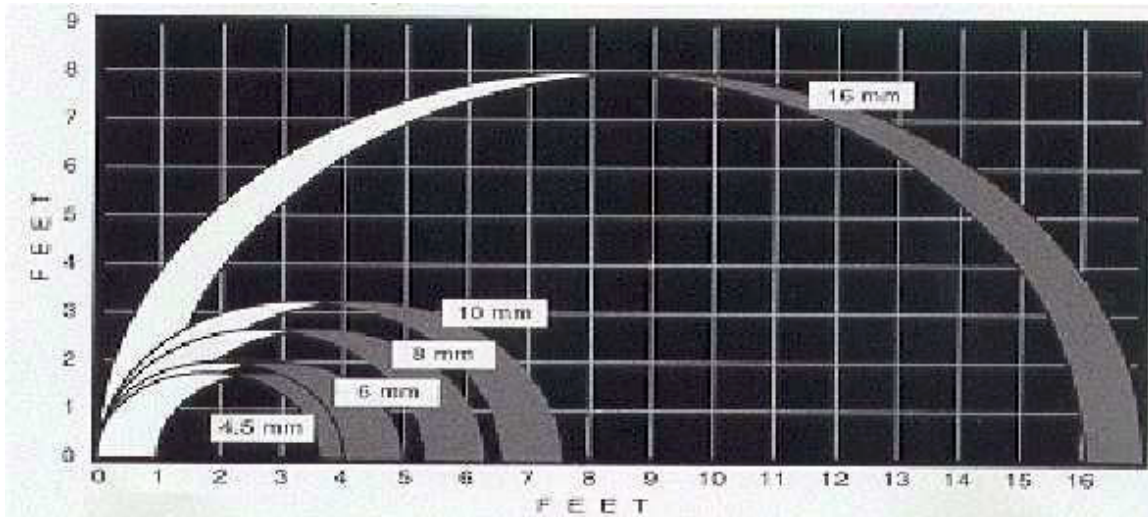


Verolite Polycarbonate Multiwall


Technical Specifications



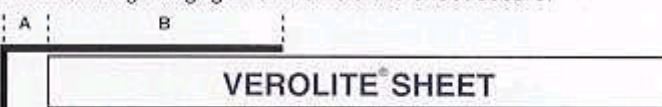
MAXIMUM SPACING OF PURLINS (in centimeters) (25 mm deflection on 120 cm fixed width)				
Load (kN/m)	6 mm	8 mm	10 mm	16 mm
0.745	76	96	114	188
1.24	66	76	89	112
1.74	51	58	76	96
2.23	26	46	71	91

LOADING - MAXIMUM SPACING OF PURLINS (in inches) (1\"/>				
15	30	38	45	74
25	26	30	35	44
35	20	23	30	38
45	10	18	28	36

Expansion

 **THERMAL EXPANSION**

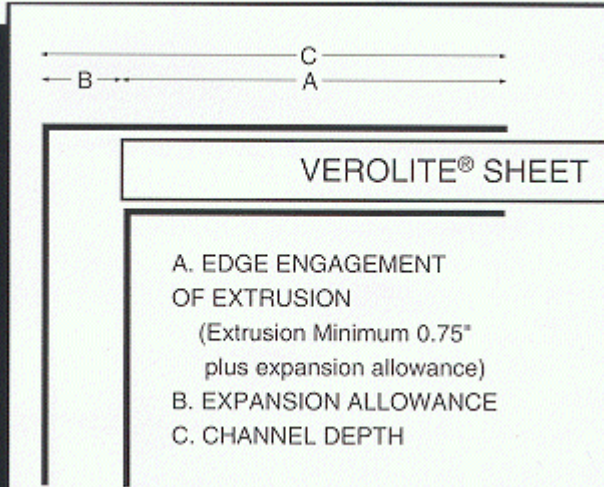
All polycarbonate materials expand and contract with changes in temperature. The Thermal Expansion Factor is (ASTM D-696) 3.9×10^{-5} in./in./°F. When using extruded channels for installation it is important that the channel offers sufficient edge engagement to hold the sheet secure.



VEROLITE® SHEET

A- Expansion Allowance
B- Edge Engagement of Extrusion (Extrusion Minimum 0.75" plus expansion allowance)

EXPANSION ALLOWANCES



VEROLITE® SHEET

A. EDGE ENGAGEMENT OF EXTRUSION
(Extrusion Minimum 0.75" plus expansion allowance)

B. EXPANSION ALLOWANCE

C. CHANNEL DEPTH



EXPANSION / CONTRACTION

All polycarbonate materials expand and contract with changes in temperature. The Thermal Expansion Factor (ASTM D-696) is 3.9×10^{-5} in./in./°F. The channel to secure Verolite® sheets in the sign cabinet must allow for edge engagement and an expansion/contraction allowance as in the Expansions Allowances table.

Length or Width		(A) Edge Engagement		(B) Expansion Allowance		(C) Required Channel Depth	
(in.)	(m)	(in.)	(mm)	(in.)	(mm)	(in.)	(mm)
24	0.61	.75	19	.0625	1.6	.813	20.6
48	1.2	.75	19	.125	3.2	.875	22.2
72	1.8	.875	22	.188	4.8	1.0	27
96	2.5	1.0	25	.25	6.4	1.25	31.7
128	3.0	1.25	32	.313	8	1.56	39.3
144	3.6	1.5	38	.375	9.5	1.875	47.2
168	4.3	1.75	44	.433	11.1	2.188	55.8
192	4.9	2.0	51	.5	12.7	2.5	63.7
216	5.3	2.5	64	.563	14.3	3.063	77.8
240	6.1	3.0	76	.625	16	3.625	92.1

Properties/Flammability



PHYSICAL TEST DATA

Tensile @ Break (psi)	9,200
Elongation @ Yield (%)	6
Elongation @ Break (%)	110
Density (gm/cm ³)	1.2
Deflection Temperature @ 66 psi	275°F
Continuous Use Temperature	212°F

Format: 2 gloss surfaces with one side protected by a proprietary ultra-violet protection layer backed by a written warranty.



FLAMMABILITY

The resins used to make Verolite® are specially developed for excellent flame retardant properties. Sheets have been independently tested for the following standard Fire Resistance tests.

ASTM D635 Rate of burn: CC1 (Less than 1 in./min.) ASTM E662. This is the smoke generation test used by the U.S. Department of Mass Transportation and the Federal Aviation Administration for determining the suitability of passenger cabin materials. Verolite® smoke generated was 105. The guidelines allow 200 or less.

Bonding Adhesives



BONDING ADHESIVES

Product Type	Product Name	Manufacturer
NEUTRAL CURE SILICONES Bonds to Plastic, Metal or Wood	•Trademate*	Dow-Corning Corp. 1-800-TRADE
	•Silpruf** Construction 1200**	General Electric Co. U.S. 1-800-255-8886 Can. 1-800-363-3643
	•#525 or #343	CSL Silicones 519-836-9044
	•Spectrum® 2***	Tremco Sealants U.S. 1-800-321-7906 Can. 1-800-363-3643
WELD-ON Bonds to Butyrate	#35	I.P.S. 310-366-3300
METHYLENE CHLORIDE Bonds to Acrylic or Polycarbonate		Various Generic
URETHANE Bonds to Anything	•2408FS	Resin Technology 508-230-8070

Chemical Resistance



CHEMICAL RESISTANCE

The following are considered safe for polycarbonate :

Acetic Acid	Ammonium Chloride
Antimony Chloride	Borax in Water
Butane	Calcium Chloride
Calcium Hypochloride	Carbon Dioxide
Carbon Monoxide	Citric Acid-10%
Copper Sulphate	Ethyl Alcohol - 95%
Ethylene Glycol	Formalin - 10%
Hydrochloric Acid - 20%	Methane
Hydrofluoric Acid - 5%	Mercury
Oxygen	Ozone
Sulphur	Urea
Water	

The Following require caution:

Cyclohexane	Diesel Oil
Formic Acid	Glycerine
Heating Fuel	Jet Fuel
Perchloric Acid-Conc.	Gasoline
Sulphur Dioxide	Turpentine

The following will attack polycarbonate:

Acetone	Acrylonitrile
Ammonia	Amyl Acetate
Benzene	Bromine
Butyl Acetate	Chloroform
Dimethyl Formamide	Caustic Soda
Hydrochloric Acid-Conc.	Ether
Hydrofluoric Acid-Conc.	Iodine
Methyl Ethyl Ketone	Methanol
Perchloroethylene	Styrene
Toluol	Xylene
Sulphuric Acid-Conc	

Availability

STANDARDS AND PROPERTIES							
VEROLITE® AVAILABILITY	4.0 mm	4.5 mm	6 mm	8 mm	8 mm Hi-Clarity	10 mm	16 mm
Standard Widths (meters)	1.22, 1.83, 2.1	1.22, 1.83, 2.1	1.22, 1.83, 2.1	1.22, 1.83, 2.1	1.22, 1.83	1.22, 1.83, 2.1	1.22, 1.83, 2.1
Standard Widths (inches)	48, 72, 83	48, 72, 83	48, 72, 83	48, 72, 83	48, 72	48, 72, 83	48, 72, 83
Spacing Between Flutes (mm)	7	7	7	10	18	10	19
LIGHT TRANSMISSION							
Tints: Clear C1	83%	82%	80%	80%	80%	79%	78%
Opal C9	40%	40%	40%	40%	N/A	40%	40%
White C9	20%	20%	20%	20%	N/A	20%	20%
Bronze C2	30%	30%	30%	30%	N/A	30%	30%
Dark Bronze C2	15%	15%	15%	15%	N/A	15%	15%
Gray C4	30%	30%	30%	30%	N/A	30%	30%
Blue C5	50%	50%	50%	50%	N/A	50%	50%
Green C7	50%	50%	50%	50%	N/A	50%	50%
INSULATION							
R-Factor	1.41	1.47	1.56	1.64	1.64	1.79	2.38
U-Factor (BTU/hr/ft ² /°F)	0.71	0.68	0.64	0.61	0.61	0.56	0.42



LIGHT TRANSMISSION - CLEAR AND TINTS - %

Custom production of any specific light transmission is available on request. The twinwall profile gives effective heat-loss reductions when used instead of regular glass. Savings of up to 50% have been documented. The heat distortion temperature is very high: 275°F (ASTM D-648). In general terms, insulation values increase with thicker profiles. This is noted in the table above.



CHOOSE THE RIGHT GAUGE

Table lists maximum length limits at common set widths for flute orientation shown: (Maximum width of 48" is recommended for this flute direction)



Standard Wind Load (psf)	24" WIDE		36" WIDE	42" WIDE	48" WIDE
	Maximum length in inches at above widths				
10	no limits	6mm-172"	6mm-114"	6mm-100", 8mm-129"	6mm-86", 8mm-108", 10mm-171"
20	no limits	6mm-119", 8mm-174"	6mm-91", 8mm-129", 10mm-154"	6mm-78", 8mm-99", 10mm-128"	6mm-67", 8mm-83", 10mm-102"
30	6mm-167"	6mm-93", 8mm-132"	6mm-72", 8mm-91", 10mm-115"	6mm-63", 8mm-79", 10mm-96"	6mm-55", 8mm-65", 10mm-81"
40	6mm-135"	6mm-74", 8mm-102"	6mm-67", 8mm-73", 10mm-97"	6mm-55", 8mm-65", 10mm-80"	6mm-41", 8mm-56", 10mm-66"

Notes: Maximum 3" deflection is allowed - width is across flute direction. There are no limits to 16 mm lengths in any of the above widths.

Storage/Cleaning/Painting

* Registered Trademark of Dow Corning Corp.

** Registered Trademark of General Electric Company

*** Registered Trademark of Tremco Manufacturing



PAINTING

Product Type	Product Name	Manufacturer
GRIPFLEX	•T2000 Series (Spray) •T1000 Series (Screen)	Akzo Coatings U.S. 800-241-2173 CAN. 416-672-3580
LACRYL	•400(Spray) •800 (Screen)	Spraylat Corp. 914-699-3030



CLEANING OF INSTALLED PANELS

It is very important to use only warm soapy water for cleaning. Never use abrasive cleaners, solvents or sharp tools on the sheets. Always rinse well with clean water after washing. Wipe dry with a soft cloth to avoid water spotting in hard water areas. Contact the manufacturer for reference to specific cleaner brands.



STORAGE OF PANELS -OUTDOORS

The sheets should be stacked on a solid flat surface. Store out of direct sun to avoid accumulated heat effects. Cover for protection. Never use flexible vinyl sheets as a cover as the plasticizers may react with the polycarbonate.