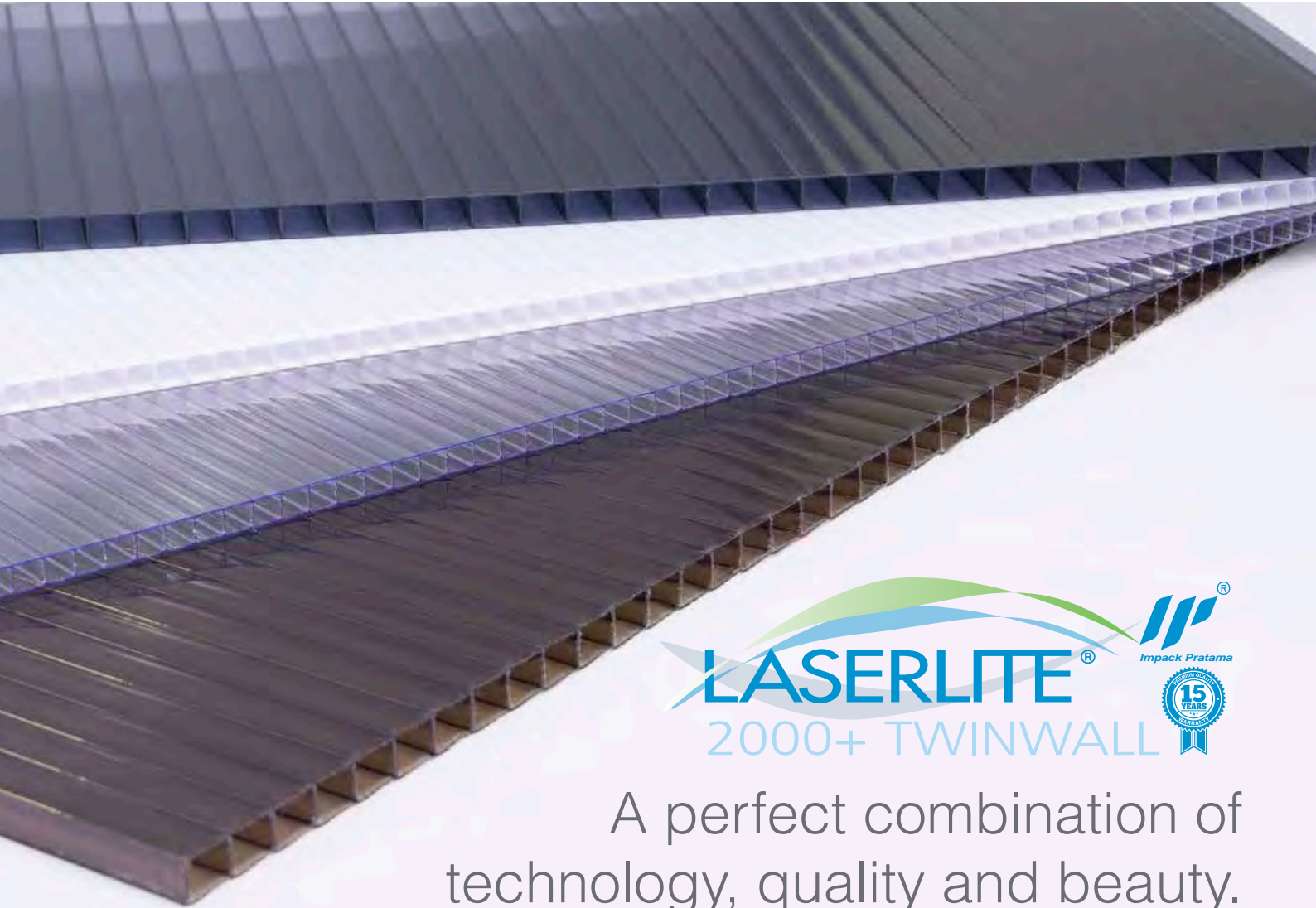


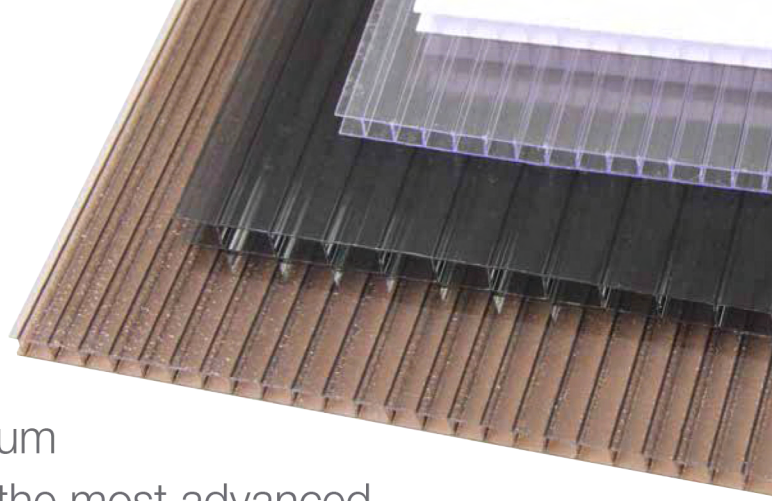
LASERLITE[®]

NEW ZEALAND



A perfect combination of technology, quality and beauty.





Laserlite® 2000+ Twinwall is a premium multi-wall polycarbonate sheet, with the most advanced and proven technology to date. Laserlite® 2000+ Twinwall polycarbonate sheet is an ideal combination, offering a lightweight glazing panel with excellent impact resistance and has an industry leading 15 year warranty against loss of light transmission.

Manufactured by PT Impack Pratama Industri TBK, a global leader in the design and manufacture of thermoformed polymers, Laserlite® 2000+ Twinwall polycarbonate sheet offers superior clarity, durability and unmatched design flexibility and structural integrity that surpasses other glazing material.

Laserlite® 2000+ Twinwall is the first choice for almost any demanding glazing application. Offering excellent thermal and acoustical properties as well as being aesthetically pleasing, Laserlite® 2000+ Twinwall will meet most architectural requirements and is available in a range of attractive colour tint options.



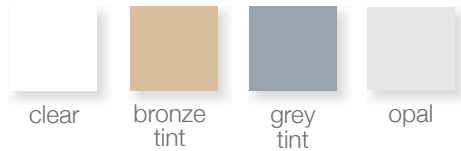
Laserlite 2000+ Twinwall is available in thicknesses of 6mm and 8mm, in 1.220m widths and 5.8m lengths.

Stock lengths are cut from these to suit each individual project requirement.

Advantages of Laserlite® 2000+ Twinwall Polycarbonate

- NZBC Fire group 1-S
- Reduces heat without sacrificing light
- Absorbs almost 100% of sunlight UV radiation
- 250 times stronger than glass and 20 times stronger than acrylic
- Very light, very strong and virtually unbreakable
- Capable of withstanding temperature fluctuations from -20°C to 120°C
- 15 year limited warranty against loss of light transmission

Light & Heat Transmission

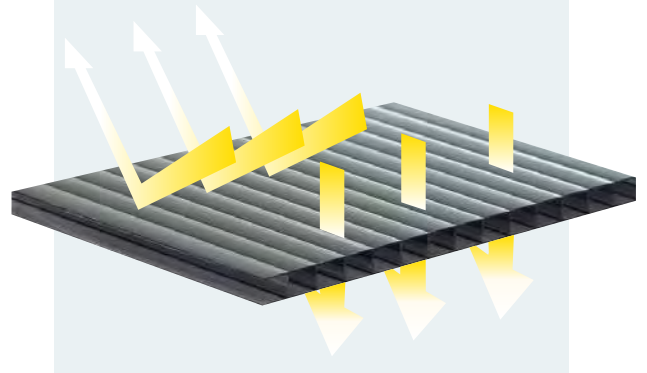


	clear	bronze tint	grey tint	opal
Light Transmission %	86%	29%	13%	21%
Heat Transmission % ‡	73%	63%	45%	11%
Shading Co-efficient	0.91	0.79	0.66	0.32
Solar Heat Gain Co-efficient	0.78	0.68	0.57	0.28

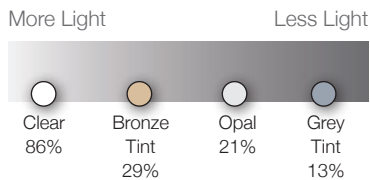
*Above data applies for Laserlite® 2000+ Twinwall 8mm only

How it Works

Being a multiwall product Laserlite® 2000+ Twinwall offers reduced thermal buildup under the sheet as compared to single skin products. Whilst allowing sufficient light transmittance Laserlite® 2000+ Twinwall should be considered where heat reduction is a design consideration.



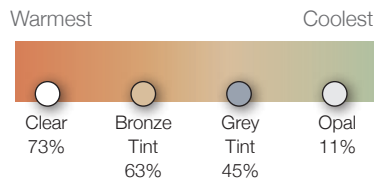
Light Transmission (LT)



Light Transmission (LT): % of visible light transmission (400-700nm) that passes through the sheet.

The lower the figure the less light passes through the sheet.

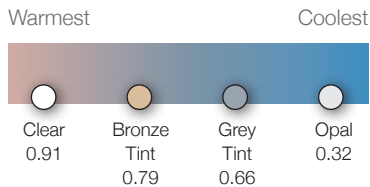
Heat Transmission (HT)



Heat Transmission (HT): % of total solar radiation transmission (300-2800nm). This value describes the ability of the sheet to conduct heat.

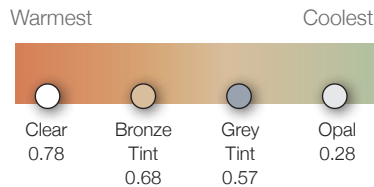
The lower the figure the greater the heat resistance, the cooler it is under the sheet.

Shading Co-efficient Ratio (SC)



Shading Co-efficient (SC): A ratio of the warming effect of the sun's rays through a sheet divided by the sun's warming effect through 3mm float glass (300-2500nm). The lower the figure the cooler it is under the sheet.

Solar Heat Gain Co-efficient (SHGC)



Solar Heat Gain Coefficient (SHGC): Total solar energy transmitted or absorbed and re-radiated under the sheet (300-2500nm). The lower the figure the cooler it is under the sheet.



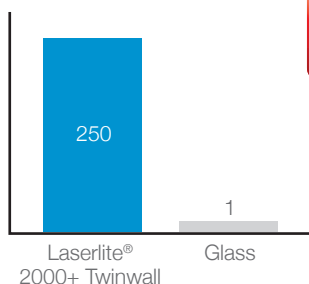
NZBC Fire Group 1-S Rating

Extensively tested using the full scale ISO 9705 room test. This extensive testing utilises a gas burner exposing the sheeting to 100kw fire for 10 minutes, and then an increase to 300kw for a further 10 minutes. Laserlite® Twinwall Polycarbonate achieves a NZBC 1-S Rating as flashover is not reached.

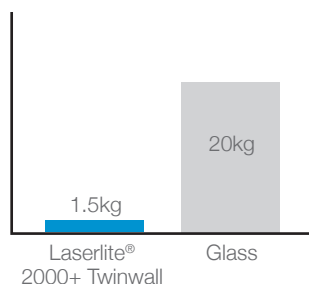
Comparison to Glass

Based on 6mm clear Laserlite® 2000+ Twinwall vs 8mm clear standard glass

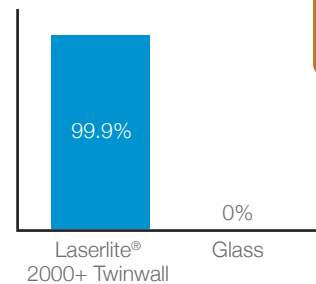
IMPACT RESISTANCE



WEIGHT (per m²)



UV PROTECTION



Technical Data

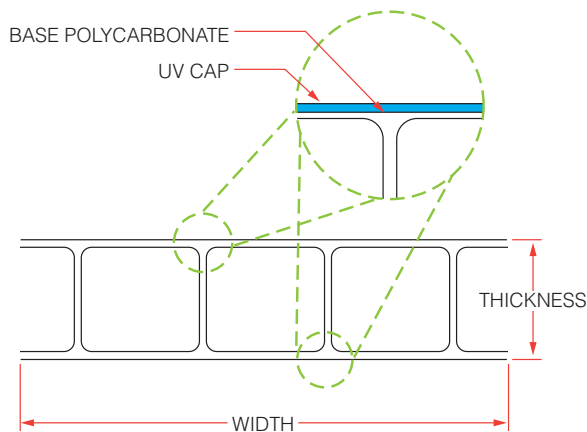
PRODUCT OVERVIEW

Laserlite® Twinwall is a twinwall hollow structured flat lightweight polycarbonate glazing sheet

Thickness	Width (metres)	Length (metres)	Area Weight (kg/m ²)	U-Value (W/m ² °C)
6 mm	1.220 m	1.8 to 5.8m	1.3 kgm ²	3.5
8 mm	1.220 m	1.8 to 5.8m	1.5 kgm ²	3.3
10 mm*	1.050 m	1.8 to 5.8m	1.7 kgm ²	2.9

*10mm is available in Clear only.

* Other sizes are available upon request, subjected to minimum order quantity



CHEMICAL RESISTANCE

Laserlite® Twinwall may be affected by certain substances that may cause surface cracks. For general guidance, Laserlite® Twinwall is affected by: Benzine, Petrol, Ketones, Acetone, Phenols, Chlorinated and aromatic Hydrocarbons and petroleum based paints, abrasive cleaners and solvents.

For more information please contact your nearest Alsynite office.



TYPICAL PROPERTIES

Laserlite® Twinwall prevents the transmission of more than 99.9% of harmful UV radiation and is suitable for use in high and very high wind zones.

Laserlite Twinwall is BRANZ fire tested meeting NZBC fire group classification 1-S changes to the building code clauses c1 - c6.



TYPICAL PROPERTIES

Property	Method	Unit	Value
MECHANICAL			
Tensile Strength at Yield	ASTM D638	MPa	64
Elongation at break	ASTM D638	%	90
Flexural Strength	ASTM D790	MPa	93
Impact falling weight	ASTM D5420	J	40
THERMAL			
Coefficient of thermal expansion	ISO 6946	mm/m/°C	0.065
Service temperature	-	°C	-20 to 120
FLAMMABILITY			
Horizontal burn	UL94	mm	<2.54
Vertical burn	UL94	-	V1 Class
Ignition temperature, flash	ASTM D1929	°C	440

Technical Data

WIND LOAD

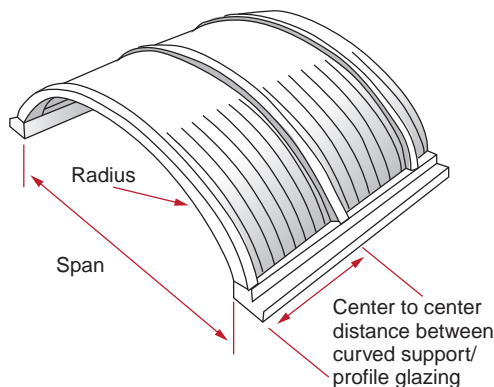
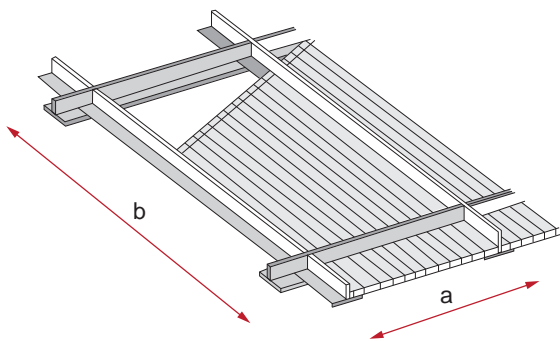
For high and very high wind zones it is necessary to decrease the purlin spans, please refer to the below graph for recommendations.

Four Sides Clamped Flat Glazing

Thickness (mm)	Wind Load (Kg/m ²)	Centre to Centre Distance (mm) between shorter span according to a:b* ratio		
		1:1	1:1.5	1:>1.5
		6	900	700
6	50	900	700	500
	80	700	500	350
	100	500	400	-
	120	400	300	-
8	50	1,150	900	600
	80	1,000	800	480
	100	900	650	450
	120	750	600	-
10	50	1,250	1,000	750
	80	1,200	900	550
	100	1,100	800	500
	120	950	700	450

*a = represents the center to center distance of glazing profiles on the short glazing side i.e. width of the sheet.

*b = represents the center to center distance of glazing profiles on the long glazing side i.e. Length of sheet.

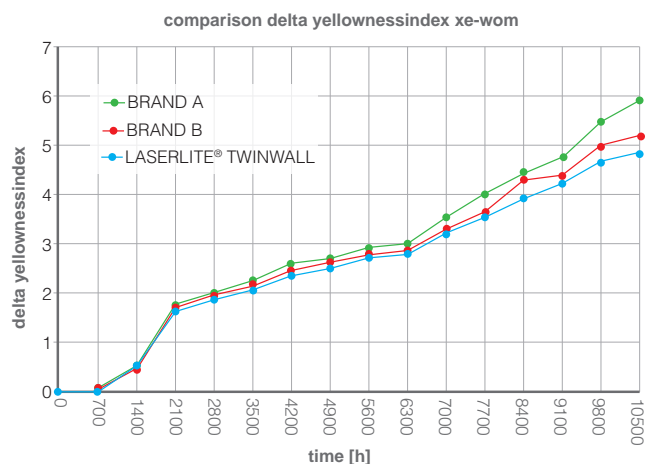


Two Sides Clamped Arched Glazing

Thickness (mm)	Sheet Arched-Curvature Radius (mm)	Centre to Centre Distance (mm) between supporting arches according to wind loads (Kg/m ²)			
		50	80	100	120
6	1,050	2,000	1,730	1,420	1,020
	1,500	1,470	1,090	890	660
	1,800	1,140	860	690	580
	2,200	810	690	-	-
	2,800	500	350	-	-
	4,000	500	350	-	-
8	1,400	1,650	1,450	1,320	1,170
	1,800	1,420	1,270	1,070	890
	2,200	1,090	890	710	600
	2,800	840	620	450	-
	4,000	600	500	-	-
	6,000	570	480	-	-
10	1,750	69	1,420	1,170	1,020
	2,200	88	960	810	660
	2,800	110	650	600	550
	4,000	600	500	-	-
	6,000	236	520	500	420

PRODUCT PERFORMANCE WARRANTY

Laserlite® Twinwall UV cap is co-extruded on both sides [UV2], this UV cap provides excellent protection against degradation and discoloration caused by UV radiation after years of exposure [evaluated according to ASTM D1925] the sheet shall not be ruptured due to loss of impact strength as a result of weathering or as a result of hail measuring up to 25mm in diameter attaining a velocity of up to 21 m/s.



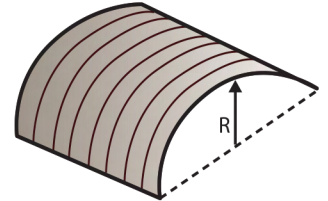
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Installation Guide

For bending installation, please see the below radius table:

1. Laserlite® 2000+ Twinwall is UV 2 treated, this means both sides are UV protected therefore any side can face the sun. Before installation, do not remove the masking film. After installation, masking film should be removed within a maximum of 48 hours.
2. A fine tooth saw or sharp knife can be used to cut the sheets. After trimming to the desired size, ensure the edges are free of burrs and debris and are dry.
3. Always install the sheets with the flutes facing vertically. Allow at least a 5° slope to allow for water flow, particularly important for roofing installations.
4. Oversize holes should be drilled 2mm larger than the diameter of the fasteners to allow for thermal expansion and contraction.
5. During installation, sheet ends should be sealed with polycarbonate u profiles to prevent condensation, algae and insects within the sheet walls [see Laserlite 2000+ Twinwall installation instructions at www.alsynite.co.nz].

Thickness (mm)	Minimum Radius (mm)
6 mm	750 mm
8 mm	900 mm
10 mm	1500 mm

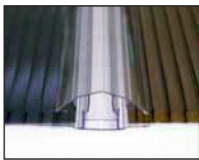


Alsynite supplies all Laserlite® 2000+ Twinwall polycarbonate end [U] and joining profiles [H] for use with Laserlite® 2000+ Twinwall sheeting.

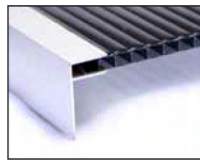
Accessories



U Joiner End Cap



Snap H Joiner



F Flashing



Combo Tape



12g x 40mm Rafter Fixings



12g x 55mm with Aluminium Embossed Washer for Purlin Fixings



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