



POLYCARBONATE
SHEET

Plastics for horticulture

marlonst
LONGLIFE

marlon^{cs}
LONGLIFE

marlon^{cst}
LONGLIFE

marlon^{fsx}
LONGLIFE



Plastic Sheets

Polycarbonate Sheet for Greenhouse Glazing

Manufactured by plastics specialists Brett Martin, Marlon is a technically superior product which not only achieves the high levels of photosynthetic light transmission necessary for healthy plant growth but also combines high impact resistance, condensation control and UV protection.

marlon 

IMPACT PROTECTION

Damage to greenhouse glazing can be hazardous and expensive. Marlon polycarbonate is 200 times more resistant to impact than glass, providing excellent protection against hailstones, vandalism and accidental damage.

WIND PROTECTION

Marlon polycarbonate sheet has a very high stiffness to weight ratio providing a lighter glazing alternative ideal for greenhouse structures.

FIRE PROTECTION

Marlon polycarbonate sheets comply with most international fire resistance standards.

CONDENSATION PROTECTION

The optional anti-drip surface layer prevents the formation of water droplets and reduces condensation and associated fogging. This technology positively impacts crop yields by improving photosynthetic light transmission and decreasing the spoilage caused by dripping.

UV PROTECTION

The co-extruded UV absorption layer acts to block the damaging UV radiation which burns plants, flowers and people whilst transmitting the natural solar light for photosynthesis, encouraging healthy crop development. The structured options are both insulating and light diffusing.



Polycarbonate Sheet Range

AVAILABLE IN A RANGE OF MULTIWALL, CORRUGATED, CORRUGATED MULTIWALL AND FLAT SHEET OPTIONS, WHICH ARE EASILY CUT OR COLD CURVED, MARLON POLYCARBONATE CAN BE PERFECTLY INTEGRATED INTO ANY GREENHOUSE DESIGN CONSTRUCTION.

Clear sheet options maximise natural light transmission whilst a range of tints offer varying degrees of solar control. Advance sheet technologies include a diffuser opal tint which maximises on light transmission whilst eliminating hotspots and an optional anti-condensation layer which reduces fogging and associated dripping which can spoil crops.

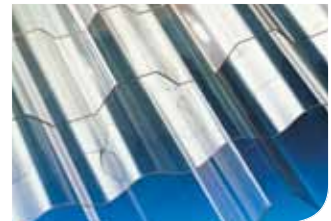


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MULTIWALL
POLYCARBONATE SHEET

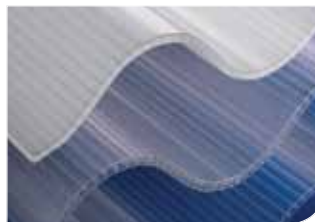
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CORRUGATED
POLYCARBONATE SHEET

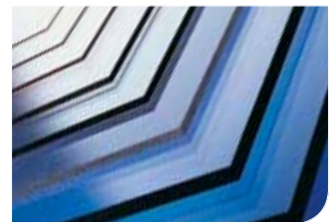


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MULTIWALL CORRUGATED
POLYCARBONATE SHEET

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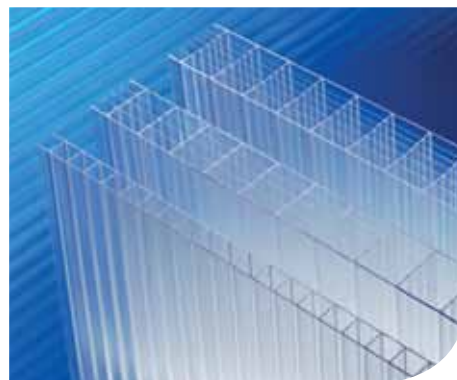
FLAT POLYCARBONATE SHEET

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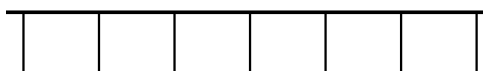
MULTIWALL POLYCARBONATE SHEET

Marlon ST Longlife is a lightweight multiwall polycarbonate insulating glazing sheet. It is manufactured from damage resistant polycarbonate with added co-extruded Longlife protection from the effects of UV weathering.



MARLON ST HORTICULTURAL RANGE

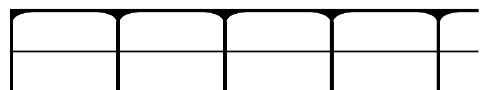
Twinwall (Twin) - thicknesses 4, 6, 8, & 10mm



Fourwall (Four) - thicknesses 8mm & 10mm



Triplewall (Triple) - thickness 16mm



OPTIONS

- Double Sided UV Protection
- Condensation Control

ACCESSORIES

A full range of accessories are also available, please refer to the Accessories Product Guide.



Marlon ST Longlife carries a 10 year limited warranty.

Tints & Colours

Clear Marlon ST Longlife can achieve excess of 80% light transmission making it an ideal material for providing maximum daylight into a building. A range of tints are also available for varying degrees of solar control.



LIGHT TRANSMISSION

	COLOUR	LIGHT TRANSMISSION			
		4mm TWINWALL	8mm TWINWALL	10mm FOURWALL	16mm TRIPLEWALL
Maximum Light	Clear	85%	82%	74%	77%
	Glass Clear (g)	—	—	—	75%
Solar Control	Opal	39%	39%	34%	42%
	Bronze	28%	20%	30%	18%

(g) Glass Fibre Filled

GLASS EFFECT

The addition of glass fibre to the sheet formulation creates an attractive sheet finish and can add to the aesthetics of a building.

SPECIALS

Special colours are available on request.

HEATGUARD

Marlon ST Heatguard is manufactured from a specially developed pigment which allows light to enter through the roof at the same time as deflecting solar radiation. Tests have shown that it can reduce solar transmission through the roof by over 50%.



**MARLON ST
CLEAR**

For maximum light
transmission



**MARLON ST
BRONZE**

Solar controlling tint




**MARLON ST
OPAL**

Virtually opaque for softer
light and privacy

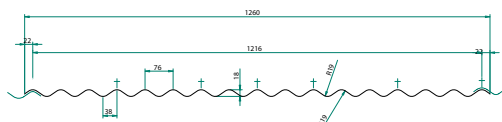
The full Marlon ST range includes an extensive range of structures in thicknesses from 4mm to 55mm. For further details refer to the Marlon ST brochure.



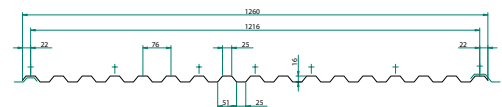
CORRUGATED POLYCARBONATE SHEET



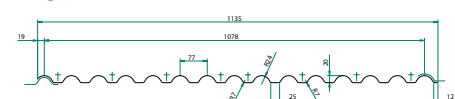
Iron Profile



Greca Profile



Omega Profile



OPTIONS

- Double Sided UV Protection
- Condensation Control
- Colours/Tints: Clear, Bronze, Opal, Diffuser Opal.
(special colours also available on request)

ACCESSORIES

A full range of accessories are also available, please refer to the Accessories Product Guide.



Marlon CS Longlife carries a 10 year light transmission warranty and a 3 year weather breakage warranty.



Plastic Sheets

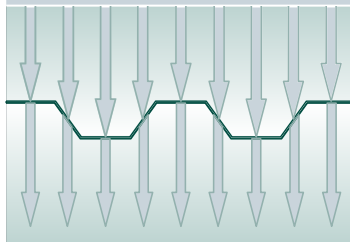


Marlon CS Longlife is available in Diffuser Opal, a soft opal tinted sheet with advanced solar control and enhanced UV resilience. Diffuser Opal's clever technology dissipates daylight as it travels through the sheet creating a much softer, diffused light inside the building minimising shadows and eliminating hotspots which can be damaging to crops. Enhanced UV resilience reduces yellowing caused by prolonged exposure to direct sunlight allowing the sheet to maintain its light transmission properties for longer and prolonging the life of the sheet.



**MARLON CS
CLEAR**

88% Light Transmission
0% Diffused

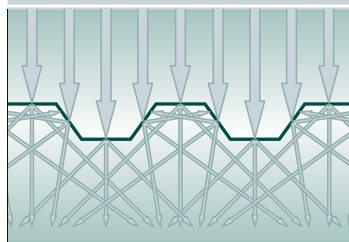


For maximum light
transmission and clarity



**MARLON CS
CLEAR EMBOSSED**

86% Light Transmission
20% Diffused

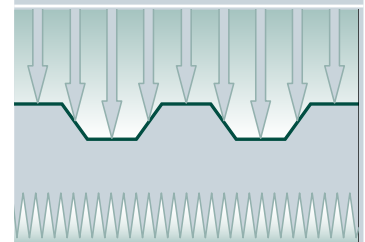


High light transmission privacy
glazing with some light diffusion



**MARLON CS
DIFFUSER OPAL**

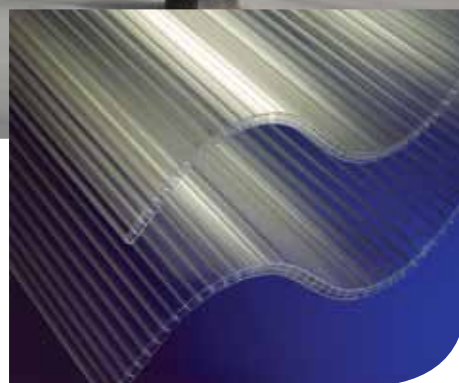
73% Light Transmission
100% Diffused



High light transmission with
complete light diffusion

Minimum order quantities may apply. Speak to your sales representative for more details.

Extensive range of profiles available. Please refer to the Marlon CS brochure for further details.



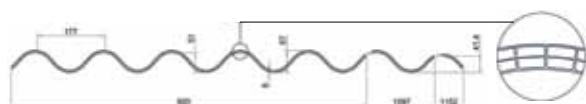
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CORRUGATED MULTIWALL POLYCARBONATE SHEET

Marlon CST Longlife corrugated multiwall polycarbonate sheet provides all of the characteristics of standard corrugated sheet with the added benefit of insulation from the multiwall structure. The sheets are co-extruded with Longlife UV protection which protects the sheet from the damaging effects of UV radiation. Marlon CST Longlife can be used with fibre cement sheets or as a complete roof and wall sheeting material.

MARLON CST HORTICULTURAL RANGE

Triplewall (6mm) - 177/51 Profile



Marlon CST Longlife carries a 10 year light transmission warranty and a 3 year weather breakage warranty.

OPTIONS

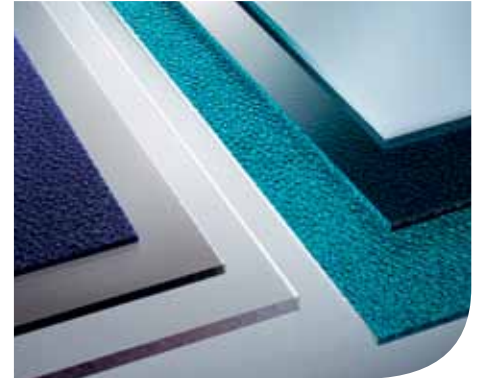
- Double Sided UV Protection
- Colours/Tints: Clear, Glass Clear, Pearlescent, Opal.



marlon **fsx** LONGLIFE

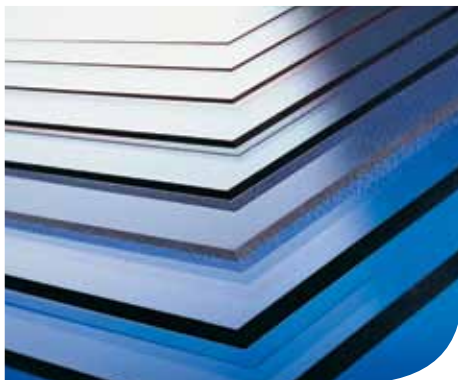
FLAT POLYCARBONATE SHEET

Marlon FSX Longlife is a premium quality extruded flat polycarbonate sheet characterised by high impact resistance, excellent strength to weight ratio, optical clarity, light transmission, durability, design flexibility and fire resistance. Marlon FSX Longlife has double sided UV protection and provides a superior glazing solution to that of other flat glazing materials.



MARLON FSX HORTICULTURAL RANGE

Flat Sheet - thicknesses 2mm - 15mm



Marlon FSX Longlife carries a 10 year limited warranty.

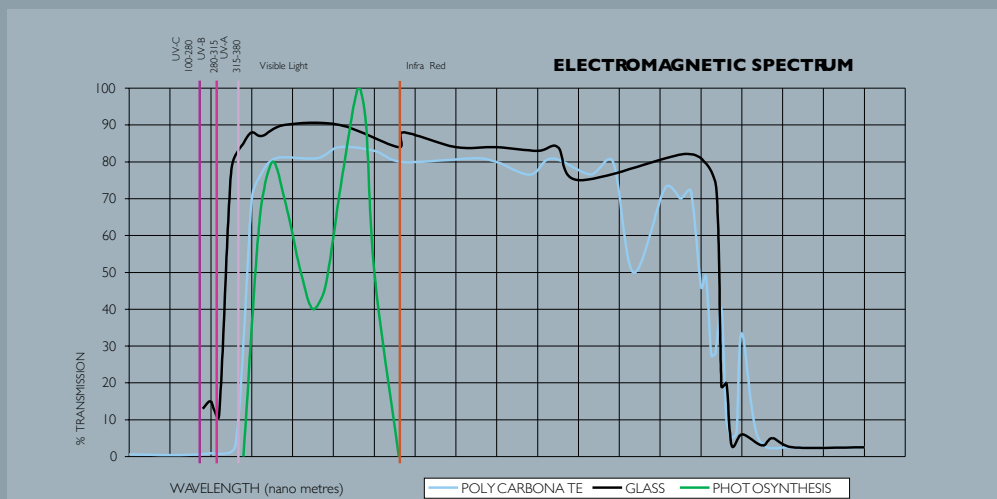
OPTIONS

- Colours/Tints:
Clear, Bronze, Opal.
(special colours also available on request)

Horticultural Roofing Specifications

- UV protection from damaging ultra violet rays with up to 90% transmission of solar light for photosynthesis
- Condensation control to maximise light transmission and reduce moisture spoilage
- Superior impact resistance against hail, vandalism and accidental damage
- Marlon polycarbonate sheets comply with most international fire tests

POLYCARBONATE SHEET SPECIFICATION							SOLAR PROPERTIES		
PRODUCT DESCRIPTION	STRUCTURE / PROFILE	THICKNESS (mm)	WEIGHT (g/m ²)	STANDARD WIDTH (mm)	U VALUE (W/m ² k)	LIGHT TRANSMISSION (%) DIN 5036	SOLAR TRANSMISSION (ST) %	SHADING COEFFICIENT (SC)	SOLAR HEAT GAIN COEFFICIENT (SHGC)
Marlon ST	Twin	6	1300	2100	3.7	82	80	0.92	0.79
	Twin	8	1500	2100	3.4	82	80	0.92	0.79
	Four	8	1500	2100	2.8	74	72	0.83	0.72
	Twin	10	1700	2100	3.2	82	80	0.92	0.79
	Four	10	1700	2100	2.5	74	73	0.84	0.72
	Triple	16	2500	2100	2.4	77	73	0.84	0.72
Marlon CS	Greca	0.8 - 1	1400 @ 1mm	798 - 1260	5.7	88	83	0.98	0.84
	Omega	0.8 - 1	1390 @ 1mm	1108 - 1260	5.7	88	83	0.98	0.84
	Iron	0.8 - 1	1360 @ 1mm	812 - 1260	5.7	88	83	0.98	0.84
Marlon CST	177/51 TRW	6	2000	920 - 1152	3.33	79	76	0.86	0.74
Marlon FSX	Flat	3	3600	2050	5.61	92	82	0.97	0.84



Properties

CHEMICAL RESISTANCE

Marlon polycarbonate has, in general, excellent resistance to most chemicals; resistance to specific compounds depends on concentration and temperature, duration of exposure and stress within the sheet. Contact with plastic coated metal sheets, wet wood preservatives, solvents and alkali cleaners should be avoided.

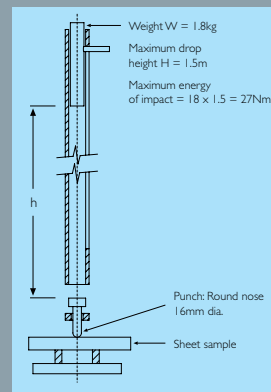
IMPACT RESISTANCE

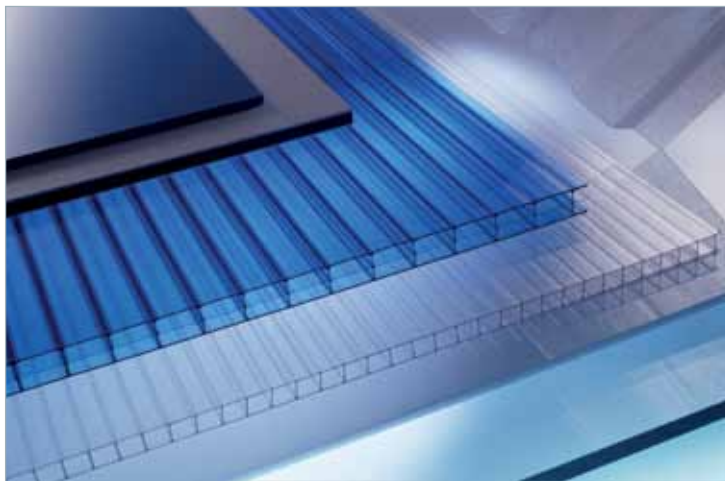
Polycarbonate exhibits greater resistance to impact than any other glazing material over a temperature range of -40 to +130°C. It is up to 200 times more resistant to impact than glass. High impact resistance means that Marlon polycarbonate is suitable for use in areas with a high risk of glazing breakage, such as areas prone to vandalism or hail storms, where other glazing materials might be inappropriate.

FALLING DART

The impact test illustrated demonstrates the impact resistance of Marlon polycarbonate sheet. A striker of diameter 16mm contacts a sample of sheet placed on a support ring with inner diameter 38mm. A weight of 1.8kg is dropped on to the striker from a height of 1.5m. The resulting impact energy of 27Nm only dents the sample: it does not crack or penetrate.

PROPERTIES		TEST METHOD	VALUE	UNITS
Mechanical	Tensile strength at yield	DIN 53455	>60	MPa
	Tensile strength at break	DIN 53455	>70	MPa
	Elongation at yield	DIN 53455	6 - 8	%
	Elongation at break	DIN 53455	>100	%
	Modulus of elasticity	DIN 53457	>2300	MPa
	Charpy notched impact strength	DIN 53453	>50	kJ/m ²
Physical	Specific gravity	DIN 53479	1.20	g/cm ³
	Refractive index nD5	DIN 53491	1.586	
	Water absorption, 4h @ 23°C	DIN 53495	0.35	%
	Water permeability (thickness 1mm)	DIN 5322	<2.28	g/m ²
Thermal	Softening temperature - Vicat 'B'	DIN53460	148	°C
	Deflection temperature (load 1.81MPa)	DIN53461	142	°C
	Linear thermal expansion	DIN53752	6.8x10 ⁻⁵	m/m.K
	Thermal conductivity	DIN52612	0.2	W/m.K
	Maximum service temperature	Permanent	100	°C
	- no loading	Short term	130	°C





Brett Martin's plastic sheets product range includes extensive options in foam PVC, polycarbonate, PVC, acrylic, aPET, PETg, SAN and styrene.

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Plastic Sheets

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