



POLYCARBONATE
SHEET

Multiwall Polycarbonate Glazing

marlonst
LONGLIFE

marlonstBlue

marlonClickfix¹⁰⁴⁰



Plastic Sheets

Marlon ST Longlife is a high performance multiwall glazing material manufactured from damage resistant polycarbonate with co-extruded Longlife UV protection. It is light in weight yet robust and resistant to impact. The extensive range of structures and thicknesses available and the Marlon Clickfix panel glazing system provides the ideal solution for a wide variety of rooflighting and glazing applications.

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marlon Clickfix 1040



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Multiwall Polycarbonate Sheet

MARLON ST LONGLIFE IS A PREMIUM MULTIWALL POLYCARBONATE SHEET OFFERING EXCELLENT LIGHT TRANSMISSION, EXCEPTIONAL IMPACT RESISTANCE AND AN OUTSTANDING STRENGTH TO WEIGHT RATIO MAKING IT A FAR SUPERIOR OPTION COMPARED TO OTHER GLAZING MATERIALS.

THE EXTENSIVE RANGE OF STRUCTURES, TINTS, ADVANCED SHEET FORMULATIONS AND OPTIONAL COATINGS AS WELL AS THE MARLON CLICKFIX PANEL GLAZING SYSTEM PROVIDES THE IDEAL CHOICE FOR ALMOST ANY ROOFLIGHTING AND GLAZING APPLICATION.



Marlon ST Longlife is a lightweight insulating glazing material manufactured from damage resistant polycarbonate. A wide range of structures and thicknesses are available for varying degrees of light transmission and thermal insulation capabilities.

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Marlon ST Blue is a transparent temperature controlling multiwall polycarbonate sheet. Cleverly designed with cool light technology, it can help to reduce heat build-up by up to 7°C.

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Marlon Clickfix 1040 multiwall polycarbonate panels are co-extruded with interlocking connections which simply click and fix together to create a seamless façade.

marlonClickfix1040



Material benefits

STRENGTH & IMPACT RESISTANCE

Hail, vandalism or accidental damage to roof glazing can be hazardous and expensive to repair. Marlon ST Longlife multiwall polycarbonate glazing is up to 200 times stronger than glass and highly resistant to impact damage making it the ideal glazing material in a wide range of applications where the sheet may be exposed to risk of damage.

This strength is maintained over a broad temperature range making Marlon ST Longlife suitable for use in climates that experience hot or cold temperature extremes.



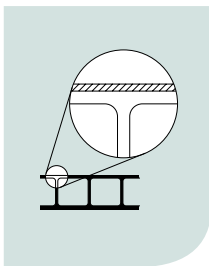
- Strong and resistant to impact, 200 times stronger than glass
- Reduces the need for costly repairs and maintains safety on buildings with access to the roof
- Ideal for a wide range of applications including factories and industrial buildings, greenhouses and agricultural buildings or buildings and roof structures in extreme climates.



UV PROTECTION & WEATHERABILITY

Marlon ST Longlife has a high performance UV protection layer co-extruded on one or both sides of the sheet. The layer prevents UV rays from penetrating the sheet, protecting people by filtering out over 98% of damaging UV radiation.

It also protects the sheet against the effects of weathering. Marlon ST Longlife is suitable for external applications even in extreme weather climates the sheet will retain its properties and colour.



- UV Longlife protection barrier filters out over 98% of harmful UV radiation protecting the people underneath the sheet from the sun
- UV Longlife protection barrier protects the sheets from weathering and yellowing under the sun and prolongs the life of the sheet
- Marlon ST Longlife has a broad temperature range and will maintain its properties even in extreme weather conditions



Material benefits



THERMAL INSULATION & ENERGY EFFICIENCY

The multiwall structure of Marlon ST Longlife provides a thermally insulating glazing material which brings natural light into a building whilst reducing heat loss through the glazing. This contributes to a more energy efficient structure. Marlon ST Longlife is available in a range of structures and thicknesses up to 55mm and can achieve u-values as low as 0.83W/m²K.

- Range of multiwall structures provide a thermally insulating glazing material
- Reduces the need for artificial lighting whilst reducing heat loss improving the overall energy efficiency of the building
- Can achieve u-values as low as 0.83W/m²K and helps to reduce the carbon footprint of a building



LIGHT TRANSMISSION & SOLAR CONTROL

The positive effects of natural daylight in healthcare and educational facilities is well documented. It can also contribute to a more productive environment in retail stores and create the perfect environment for a healthy pitch in large stadia and sporting arena.

Clear Marlon ST Longlife can achieve more than 80% light transmission reducing the need for artificial lighting and reducing the running costs of a building. A range of standard and non-standard tints are available offering a more controlled light transmission, opal and dual tinted options offer softer light transmission and an attractive finish for more enclosed internal spaces such as conservatories and sunrooms.

- Clear Marlon ST Longlife can achieve excess of 80% light transmission
- Marlon ST Longlife is available in a range of tints for varying degrees of solar control
- Opal and dual tinted options are also available for a softer, more ambient light



FIRE PERFORMANCE

Marlon polycarbonate meets the highest classification of European testing (EN13501) and in the event of a fire it will soften and open, allowing smoke, heat and gases produced by the fire to escape. This 'venting' property means that damage within buildings can be limited. For more details on fire ratings please contact our technical department.

WARRANTY

Marlon ST Longlife and Marlon Clickfix 1040 both carry a 10 year limited warranty.



Product Range

Marlon ST Longlife is available in a range of structures and thicknesses for varying degrees of light transmission and insulation capabilities. The range includes sheets for energy efficiency, super strength, cold curving, dual tints, temperature control and condensation control. Marlon Clickfix 1040 interlocking multiwall panels are also available for ease of installation.

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marlon **Clickfix** 1040

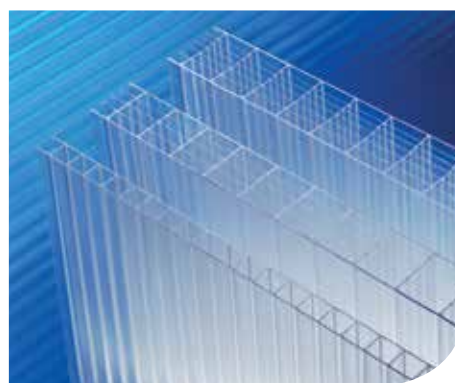
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MULTIWALL POLYCARBONATE SHEET

Marlon ST Longlife is a lightweight multiwall polycarbonate sheet with exceptional insulating properties and high impact resistance. Excellent light transmission and an attractive appearance make Marlon ST Longlife the ideal solution for a wide range of applications including architectural roofing, vertical glazing and conservatories. The vast product range includes sheets for Super Strength, Energy Efficiency, Cold Curving, Dual Tints, Condensation Control and Temperature Control.



Colours and tints:	Clear, Bronze, Opal, Heatguard, Bronze/Opal and Heatguard/Opal
Widths:	Widths up to 2100mm
Thicknesses:	4mm to 55mm
Structures:	Twinwall, Triplewall, Mwall, Fourwall, Fivewall, Sixwall, Sevenwall, 7Xwall, Xwall, XXwall, Ninewall, Tenwall
Specials:	Double sided UV protection*, Condensation control*

* Minimum order quantities apply.



Marlon ST Longlife carries a 10 year limited warranty.



Marlon ST Range

ENERGY EFFICIENT

Thicker, thermally insulating structures provide free natural daylight into a building with minimal heat loss increasing the overall energy efficiency of the building.

Range	Thickness
Fivewall	16mm & 25mm
7X wall	20mm & 25mm
Sevenwall	16mm, 32mm & 35mm
Ninewall	32mm
Tenwall	35mm, 40mm & 55mm

TYPICAL APPLICATIONS

- Rooflights
- Conservatories
- Vertical Glazing



SUPER STRENGTH

The reinforced XXwall structure combines sheet rigidity and low sheet weight and provides enhanced loading capacity for greater spanning distances.

Range	Thickness
XX wall	32mm & 35mm

TYPICAL APPLICATIONS

- Rooflights
- Canopies
- Vertical Glazing



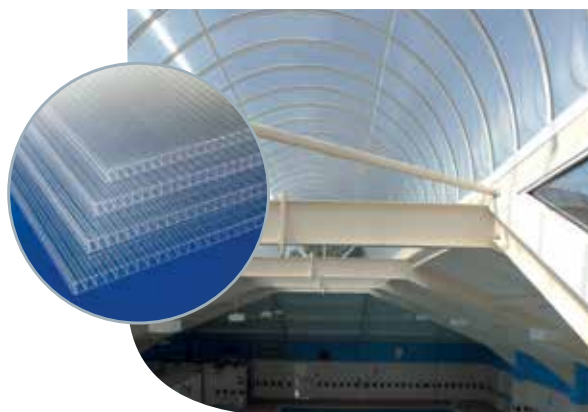
COLD CURVING

Multiwall sheets suitable for cold curving on site facilitates freedom of design for curved rooflight applications

Range	Thickness
Twinwall	4mm, 6mm, 8mm & 10mm
Triplewall	16mm
Fourwall	8mm & 10mm
Fivewall	16mm

TYPICAL APPLICATIONS

- Rooflights
- Curved Rooflights
- Barrel Vaults
- Swimming Pool Covers
- Arched Walkways
- Greenhouses



Marlon ST Range



DUAL TINTED

Solar controlling dual tinted sheets reduce heat build-up and solar glare and create a private internal environment.

Range	Thickness
7X wall	25mm
Fivewall	25mm
Sevenwall	32mm & 35mm
Tints	Bronze Opal & Heatguard Opal

TYPICAL APPLICATIONS

- Architectural Rooflights
- Conservatories



INFRA RED HEAT BLOCK

Transparent multiwall polycarbonate sheet with Cool Light Technology designed to block heat transmitting Infra-Red solar energy cleverly reducing heat build-up by up to 7°C.

Range	Thickness
Sevenwall	35mm

TYPICAL APPLICATIONS

- Rooflights
- Canopies
- Conservatories
- Vertical Glazing

marlon **st** *Blue*



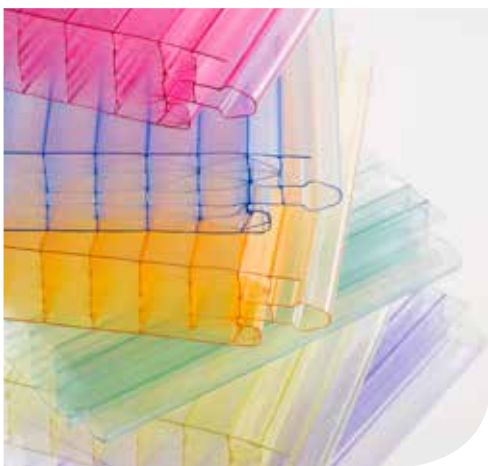
CONDENSATION CONTROL

Multiwall glazing with an anti-drip surface for greenhouse applications.

Range	Thickness
Twinwall	6mm, 8mm & 10mm
Triplewall	16mm
Fourwall	8mm & 10mm

TYPICAL APPLICATIONS

- Commercial Greenhouses
- Domestic Greenhouses
- Garden Centres



marlon *Clickfix* 1040

MULTIWALL POLYCARBONATE GLAZING

Marlon Clickfix 1040 is a range of unique interlocking multiwall polycarbonate glazing panels manufactured from damage resistant polycarbonate. The panels simply click and fix together to create a completely seamless façade. A full range of accessories are also available for a complete architectural glazing system which provides quality natural light, superior thermal insulation and UV protection in addition to the impact resistance, resilience and structural strength inherent in polycarbonate.

Marlon Clickfix 1040 is suitable for use in all building types in either façade or roof, as cladding or partitioning, internally or externally.



Marlon Clickfix 1040
carries a 10 year
limited warranty.

Standard tints:	Clear (g), pearlescent (g)
Special colours*:	Available on request
Width:	500mm
Thickness:	40mm
Structures:	Tenwall

* Minimum order quantities apply.

Product Options

The extensive range of Marlon ST options offer solutions to suit a variety of light transmission and thermal insulation specifications.

STRUCTURES

The extensive range of structures offers a range of sheet weights and thermal insulation capabilities. See page 13 for a full list of structure options.

THICKNESSES

Marlon ST Longlife is available in sheet thicknesses up to 55mm which can achieve U-values as low as 0.83W/m²K. The thicker, thermally insulating sheets bring free natural daylight into the building with minimal heat loss increasing the overall energy efficiency of the building.

TINT OPTIONS

Marlon ST Longlife is available in clear for maximum light transmission, and a range of tints for varying degrees of solar control. Dual tinted and temperature controlling tints are also available, see page 14.

DOUBLE SIDED UV

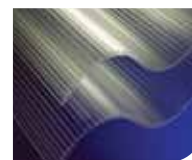
Marlon ST is available with double sided Longlife UV protection for applications in which both sides of the sheet will be exposed.

ANTI-DRIP

The specially designed anti-drip surface layer prevents the formation of water droplets in high humidity environments. This innovative technology can be applied to Marlon ST Longlife sheets to increase productivity in horticultural environments by maintaining high levels of light transmission and assisting in minimising fruit and flower spoilage caused by condensation.

CORRUGATED MULTIWALL POLYCARBONATE

Marlon CST corrugated multiwall polycarbonate sheet is also available. For more details on our corrugated range of Marlon polycarbonate please refer to our Marlon CS brochure.



Minimum order quantities may apply.



Structures

The extensive range of Marlon ST structures and sheet thicknesses provides a range of properties to suit a diverse variety of applications. For advice on a specific project please contact your sales representative or our technical department.

Twinwall (Twin) - thicknesses 4, 6, 8, 10 & 30mm

Thickness	U-Value
4mm	3.9
6mm	3.7
8mm	3.4
10mm	3.2
30mm	2.6

Fourwall (Four) - thicknesses 8mm & 10mm

Thickness	U-Value
8mm	2.8
10mm	2.5

Triplewall (Triple) - thickness 16mm

Thickness	U-Value
16mm	2.4

M Wall (M) - thickness 16mm

Thickness	U-Value
16mm	2.2

16x32mm M Wall (M) - improved clarity

Thickness	U-Value
16mm	2.5

X Wall (X) - thickness 16mm

Thickness	U-Value
16mm	2.0

Fivewall (Five) - thicknesses 16 & 25mm

Thickness	U-Value
16mm	1.9
25mm	1.6

Sixwall (Six) - thickness 10mm

Thickness	U-Value
10mm	2.4

7X Wall (7X) - thicknesses 20mm & 25mm

Thickness	U-Value
20mm	1.6
25mm	1.4

Sevenwall (Seven) - thicknesses 16, 32 & 35mm

Thickness	U-Value
16mm	1.78
32mm	1.25
35mm	1.2

XX wall (XX) - thicknesses 32 & 35mm

Thickness	U-Value
32mm	1.4
35mm	1.4

Ninewall - thickness 32mm

Thickness	U-Value
32mm	1.2

Tenwall - thicknesses 35, 40 & 55mm

Thickness	U-Value
35mm	1.08
40mm	0.99
55mm	0.83

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			
		16mm TRIPLEWALL	25mm FIVEWALL	32mm SEVENWALL	40mm TENWALL
Maximum Light	Clear	77%	68%	64%	54%
	Glass Clear (g)	75%	—	—	52%
Diffused Light	Pearlescent	—	—	—	44%
Solar Control	Opal	42%	30%	33%	33%
	Bronze	18%	11%	7%	—
Dual Tints	Bronze Opal	—	8%	7%	—
	Heatguard Opal	—	7%	4%	—
Temperature Control	Heatguard	20%	—	—	—

(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.

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



**MARLON ST
BRONZE OPAL**

Bronze external finish with
an opal internal surface



**MARLON ST
HEATGUARD OPAL**

Silver grey external finish
with an opal internal surface



**MARLON ST
IR BLUE**

Transparent sheet, reduces
temperatures by up to 7°



Applications

Rooflights and Vertical Glazing in:

Warehouses
Factories
Shopping Centres
Museums
Transport Terminals
Hospitals
Leisure Centres
Commercial Buildings
Schools
Offices

Rooflights & Vertical Glazing

High light transmission combined with thermal insulation from the multiwall structure make Marlon ST Longlife an ideal material for rooflights and vertical glazing. Natural light and U-values as low as $0.83\text{W/m}^2\text{K}$ contribute to a more energy efficient building whilst the attractive appearance of the sheet enhances design capabilities for a stunning architectural feature.



Applications



STADIA & SPORTS FACILITIES

Marlon ST Longlife is widely used for bringing natural daylight into stadia and other sporting facilities.

Natural daylight promotes healthy grass on the pitch providing an ideal surface to play on and looks superior for televised matches. It also creates pleasant seating and viewing areas for spectators whilst providing shelter from the elements.

It can be used for:

Stadia

Arena

Sports Facilities

Training Grounds



CANOPIES & WALKWAYS

Marlon ST Longlife is light in weight, yet strong and robust and is widely used for creating sheltering canopies and covered walkways. The range of product options includes structures suitable for cold curving onsite and double sided UV protection for applications in which both sides of the sheet may be exposed to the sun.

It can be used for:

- Stadia
- Warehouses
- Shopping Centre Entrances
- Transport Terminals
- Schools
- Markets
- Cafés & Restaurants
- Car Parks



Applications



HORTICULTURE & AGRICULTURE

Marlon ST Longlife is robust and durable making it an ideal glazing option for rooflights and sidelights to bring natural daylight into agricultural buildings.

In addition to this, Longlife UV protection which blocks out over 98% of harmful UV rays and an optional anti-drip condensation control layer makes it a superb glazing option for horticultural applications.

It can be used for:

Commercial Greenhouses
Garden Centres
Domestic Greenhouses
Cow Sheds
Milking Parlours
Barns



HOUSE & HOME

With a range of tints for varying degrees of light transmission and solar control and an attractive finish, Marlon ST Longlife is the ideal glazing material for rooflights and conservatories and creating the perfect ambience for a relaxing living space.

Light in weight and easy to handle and install, Marlon ST Longlife is also ideal for DIY glazing projects around the home and garden.

It can be used for:

Conservatories

Sun Rooms

Swimming Pool Covers

Lean-to Extensions

Pergolas

Sun Screens



Working with Marlon ST

Marlon ST Longlife is robust yet lightweight. Installation is straightforward but it is **IMPERATIVE** that the following **RULES** are applied to **EVERY** installation.

Storage & Installation

STORAGE

Store Marlon ST Longlife sheets on a flat, horizontal surface. It is recommended that sheets are stored indoors where possible. If sheets are being stored outdoors they must be covered with an opaque cover, tightly secured, to protect from wind, rain and sun.

CUTTING

Marlon ST Longlife can be cut with a fine tooth circular saw or hand saw. Ensure that the sheet is well supported and cannot vibrate. Support the sheet close to the saw and cut at a shallow angle with slow steady strokes.

DRILLING

Holes can be drilled in Marlon ST Longlife sheets using hand or power drills. If using a power drill, set to a slow speed. Use a masonry bit and support the sheet underneath the hole position to avoid vibration. Always pre drill oversized holes (18mm) to allow for thermal movement. Always drill between the ribs and at least 30mm from end of sheet.

SHEET END CLOSURE

A sealing tape must be used at the top of the sheet (preferably aluminium) to prevent ingress of moisture, dust and insects.

A low-modulus neutral silicone MUST be used as an all-purpose silicone will cause polycarbonates to crack and disintegrate.

A breather tape must be used at the bottom end of the sheet to minimise condensation and prevent dust or insects entering the sheet.

The breather tape must be covered with a 'U' profile sealed to the top face of the sheet with a small silicone bead.

SECURING THE SHEET

Do not fix or clamp sheets too tightly. Leave room for thermal movement (see page 22).

FILM REMOVAL

The UV protected surface of Marlon ST Longlife is covered at manufacture with a branded film. A further plain film is applied to the inner surface. To install, the films should be peeled back about 50mm to allow clean sheet insertion into the glazing system and application of end tapes and closure. Ensure all film is completely removed as soon as installation is complete.

CLEANING

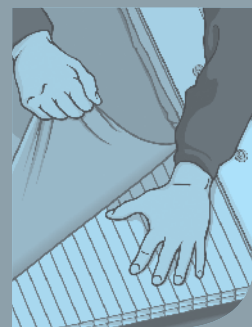
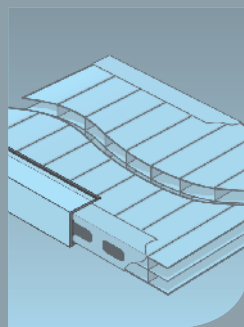
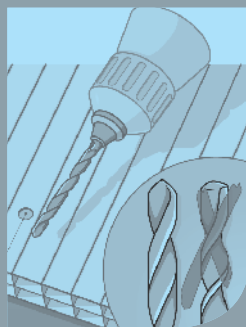
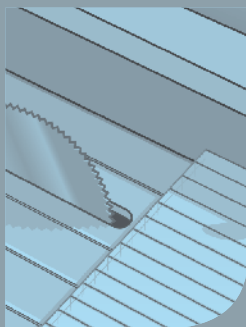
Wash the roof periodically, at least once a year. Use copious amounts of lukewarm water with an ordinary non-abrasive household cleaner and a sponge or soft cloth. Particular care should be taken when cleaning hardened debris from the roof.

Never stand directly on the roof.

Avoid any abrasive cleaners or solvents.

Do not scrub Marlon ST sheet with brushes or sharp instruments.

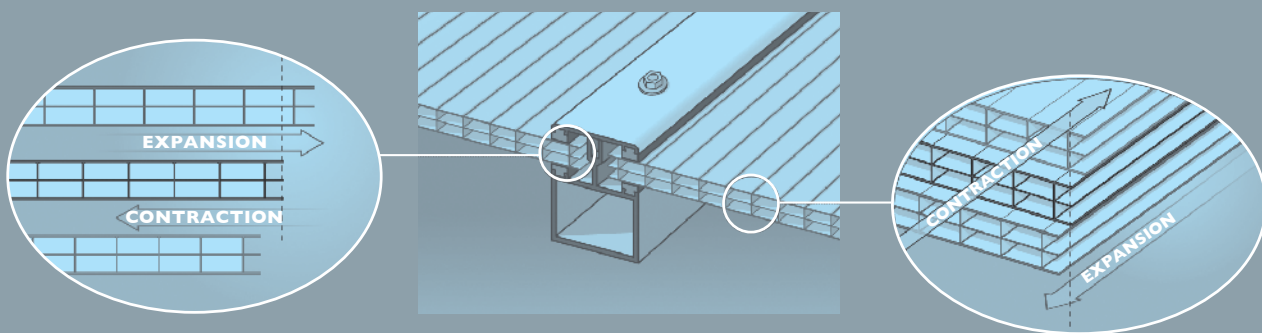
Avoid all contact with wood preservative or paint.



Thermal Movement

IMPORTANT:

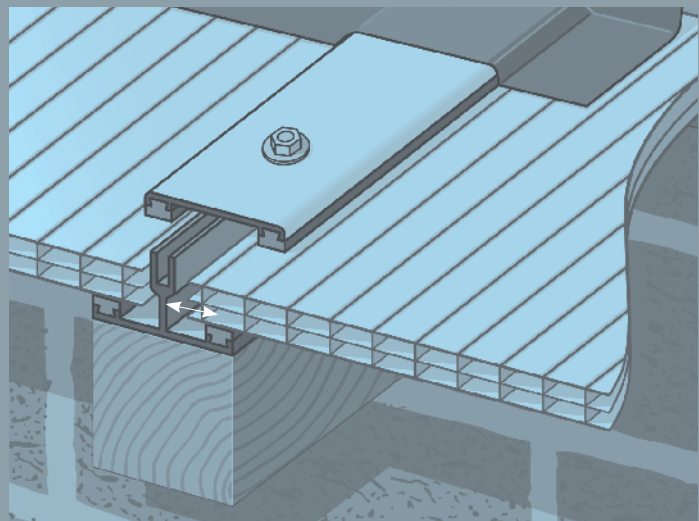
POLYCARBONATE SHEET **EXPANDS** WITH HEAT AND **CONTRACTS** WITH COLD.



Accommodating the thermal expansion of Marlon ST Longlife sheet cannot be over emphasised as this is generally greater than that of other popular glazing materials and affects both length and width.

Sufficient allowance for thermal movement must be made in all glazing bars, side and end closures.

- Ensure that the clearly marked UV protected surface of the Marlon ST Longlife sheet is to the outside.
- Marlon ST Longlife sheets must always be installed with the ribs running vertically, or up-slope.
- Roofs should always be designed with a minimum slope of 5° to allow adequate rainwater run-off.
- Do not over tighten screws.



Marlon Clickfix Installation

For full installation instructions for Marlon Clickfix 1040 please refer to the Marlon Clickfix Installation Manual.

Properties

CHEMICAL RESISTANCE

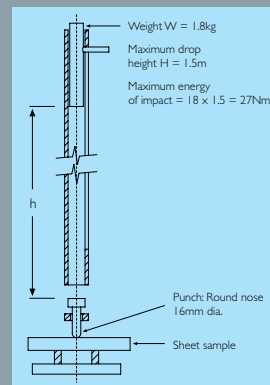
Marlon ST Longlife has, in general, excellent resistance to most chemicals; resistance to specific compounds depends on concentration and temperature, duration of exposure and stress within the sheet. Contact with plastic coated metal sheets, wet wood preservatives, solvents and alkali cleaners should be avoided. For details on the chemical resistance of Marlon ST Longlife to a range of chemicals please refer to the Marlon ST Longlife product guide.

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 ST Longlife 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

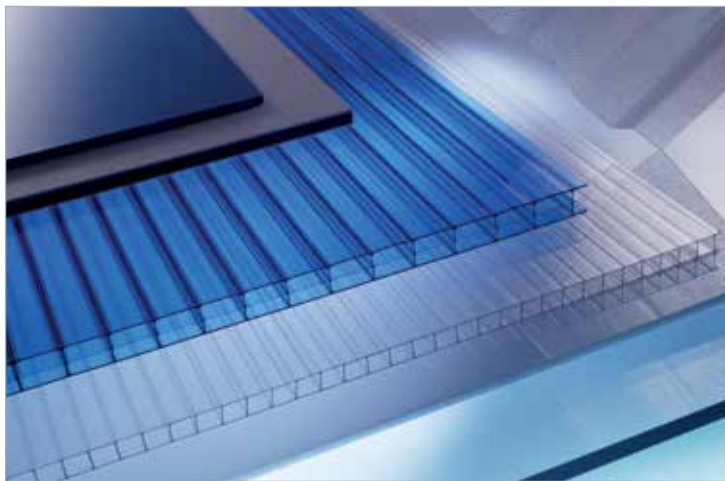
The impact test illustrated demonstrates the impact resistance of Marlon ST Longlife. A striker of diameter 16mm contacts a sample of sheet placed on a support ring with inner diameter 38mm. A weight of 1.8kg is dropped on to the striker from a height of 1.5m. The resulting impact energy of 27Nm only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



Typical properties of Marlon ST Longlife

MARLON ST SHEET THICKNESS (mm)																										
	4	6	8		10			16							20	25		30	32			35			40	55
Structure	Twin	Twin	Twin	Four	Twin	Four	Six	Triple	Five	M	M	X	Seven	7 X	7 X	Five	Twin	XX	Seven	Nine	XX	Seven	Ten	Ten	Ten	
Sheet thickness mm (±0.5)	4	6	8	8	10	10	10	16	16	16	16	16	16	20	25	25	30	32	32	32	35	35	35	40	55	
Rib spacing (nominal) mm	6	6	10	12.5	10	12.5	11.3	20	20	17.5	32	12.4	14	20	20	20	35	16	20	20	16	20	20	20	20	
Maximum Sheet width mm	2100	2100	2100	2100	2100	2100	2100	2100	2100	1250	1220	2100	2100	2100	2100	2100	1250	1250	2100	1250	980	2100	1250	1250	1250	
Approx weigh g/m²	800	1300	1500	1500	1700	1700	1700	2700	2700	2800	4000	2500	2500	2800	3100	3400	3500	3800	3600	3600	4200	3900	3900	4200	5000	
Light transmission (%)																										
Clear S	85	82	82	74	82	74	70	77	69	73	74	66	64	62	62	68	77	64	64	57	67	63	54	54	52	
Bronze B	28	26	20	21	33	30	—	18	16	—	—	—	—	—	7	11	18	11	7	—	11	7	—	—	—	
Opal V	39	39	39	39	40	34	—	42	39	35	39	—	—	28	28	30	37	40	33	—	33	31	35	33	32	
U-value W/M²k	3.9	3.7	3.4	2.8	3.2	2.5	2.4	2.4	1.9	2.2	2.5	2.0	1.78	1.6	1.4	1.6	2.6	1.4	1.25	1.2	1.4	1.2	1.08	0.99	0.83	
Falling dart Gardiner impact at 23°C Nm	21.3	27	>27	>27	>27	>27	>27	>27	>27	>27	>27	>27	>27	>27	>27	>27	>27	>27	>27	>27	>27	>27	>27	>27	>27	

The typical properties table includes some non-standard items which may be subject to minimum order quantities and extended lead times.



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

DOWNLOAD
OUR FREE APP



Plastic Sheets

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www.brettmartin.com



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