

CORRUGATED  
POLYCARBONATE  
SHEET

# Marlon CS

Protect  
& Daylight

 **Brett  
Martin**

# Marlon CS

Marlon CS | Marlon CS Stadia | Marlon CS Diamond | Marlon CST

Marlon CS is the range of high performance corrugated glazing sheets manufactured from damage resistant polycarbonate with co-extruded UV protection.

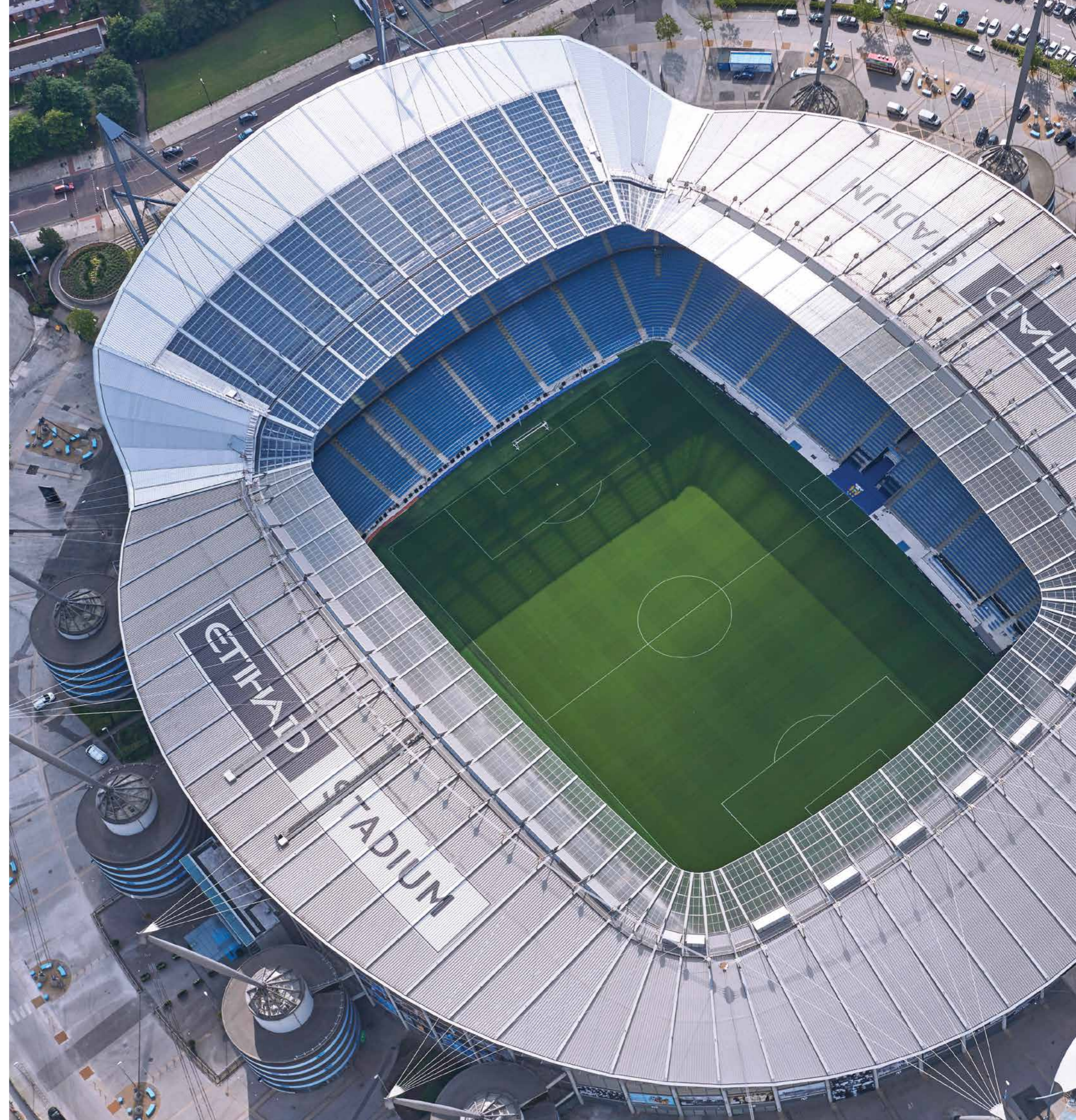
The extensive range of profiles and thicknesses, super strength diamond embossed sheets and corrugated multiwall sheets provide the ideal glazing solution for a range of construction, horticulture, agriculture and DIY projects worldwide.

- Excellent light transmission
- Co-extruded UV protection
- Exceptional impact resistance
- Outstanding strength to weight ratio
- Excellent fire performance

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 **Brett  
Martin**



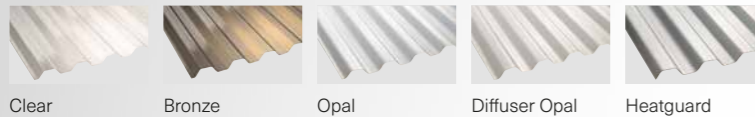
## MARLON CS RANGE

### Marlon CS

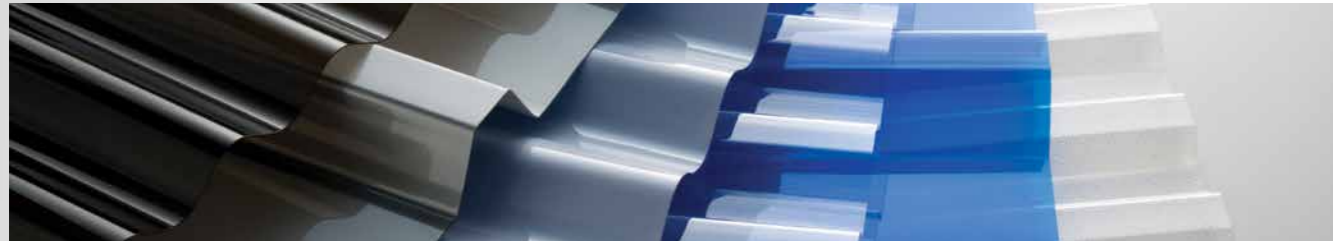
Corrugated polycarbonate sheet combining strength and impact resistance with high optical clarity and light transmission. Use as a complete roof covering or incorporate into any corrugated metal roofing and cladding system.

#### PRODUCT RANGE

<b>Thicknesses</b>	0.8mm-2.0mm
<b>Colours &amp; Tints*</b>	Clear, Clear Embossed, Bronze, Opal, Diffuser Opal, Heatguard, Specials
<b>Sheet Widths</b>	Up to 1260mm
<b>Profiles*</b>	Extensive range of profiles, profile matching service
<b>Options*</b>	Double sided UV protection, Condensation Control



Clear Bronze Opal Diffuser Opal Heatguard



\*Subject to request. Minimum order quantities may apply.

#### TYPICAL APPLICATIONS

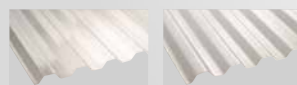
- Rooflights and sidelights
- Vertical glazing
- Composite rooflights
- Canopies

### Marlon CS Stadia

Premium 2mm thick Marlon CS corrugated polycarbonate for enhanced spanning and load bearing capabilities. Can be used with the custom sliding bracket system to accommodate longer sheet lengths.

#### PRODUCT RANGE

<b>Thicknesses</b>	Up to 2mm
<b>Colours &amp; Tints*</b>	Clear, Diffuser Opal
<b>Cover Width</b>	1000mm
<b>Profiles</b>	P1947, P2023
<b>UV Protection</b>	Single or Double Sided



Clear Diffuser Opal



\*Subject to request. Minimum order quantities may apply.

#### TYPICAL APPLICATIONS

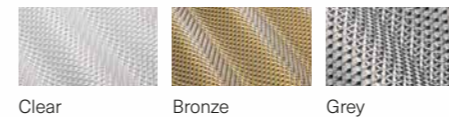
- Stadia
- Arena
- Sports facilities
- Training grounds

### Marlon CS Diamond

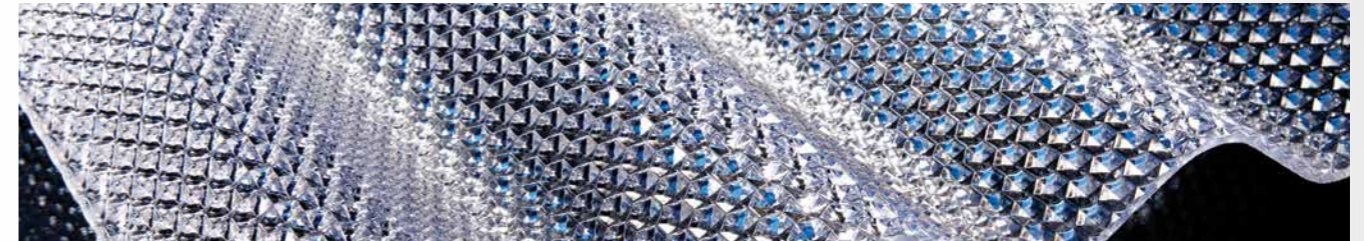
Super tough, super strong and super resilient corrugated polycarbonate sheet with an attractive diamond embossed pattern. At 2.6mm and 2.8mm in thickness, the sheets are stronger and more rigid, providing superior spanning and load bearing capabilities.

#### PRODUCT RANGE

<b>Thicknesses</b>	2.6mm and 2.8mm
<b>Colours &amp; Tints*</b>	Clear, Bronze, Grey
<b>Sheet Widths</b>	1045mm
<b>Profiles</b>	PX1944
<b>UV Protection</b>	Double sided



Clear Bronze Grey



\*Subject to request. Minimum order quantities may apply.

#### TYPICAL APPLICATIONS

- Rooflights and Canopies
- Vertical Glazing and Screens
- Decorative display

### Marlon CST

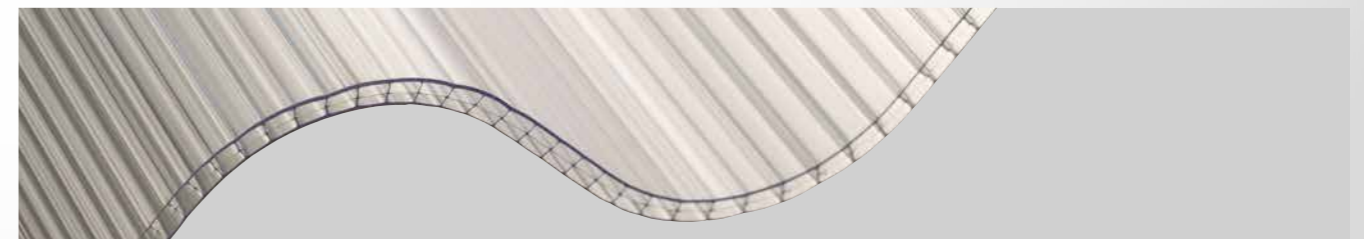
Corrugated multiwall polycarbonate sheet which provides all the durability and impact resistance of corrugated polycarbonate sheet with the added insulation and rigidity provided by the multiwall structure.

#### PRODUCT RANGE

<b>Profiles</b>	2.5mm Twinwall Iron & 6mm Triplewall 177/51
<b>Colours &amp; Tints*</b>	Clear, Glass Clear, Pearlescent, Heatguard
<b>Sheet Widths</b>	Up to 1152mm
<b>Finishing</b>	Heat Sealed Edges
<b>Options*</b>	Double sided UV protection, Mitred Corners



Clear Glass Clear Pearlescent Heatguard



\*Subject to request. Minimum order quantities may apply.

#### TYPICAL APPLICATIONS

- Industrial rooflights and canopies
- Vertical glazing
- Greenhouses and farm buildings
- Pergolas and patio covers



# Incredible Strength to Weight Ratio

Polycarbonate's strength to weight ratio makes it an ideal material for roofing and glazing applications and an excellent alternative to heavier building materials.

## Features & Benefits



200 times stronger than glass at only a fraction of the weight



Excellent impact resistance



Superb glazing solution suitable for even the most extreme of climates



Rigid and self supporting allowing architectural spanning applications



Weight allows for architectural designs that could not be realised with heavier materials



Light weight for reduced transport energy and ease of handling.



Long term durability means lower maintenance



Reduces the need for costly repairs



# Outstanding Technical Performance

Polycarbonate offers a wide range of technical properties that make it an ideal solution in even the most challenging environments.

## Features & Benefits



Service temperature up to 100°C  
- suitable for high temperature internal or external environments



Excellent fire performance with certification available from Brett Martin's Technical Department



Co-extruded UV protection layer filters out over 98% of UV rays for enhanced weatherability, preventing yellowing and loss of strength.



Double sided UV protection option available for applications in which both sides of the sheet are exposed to the sun.



UV protective glazing protects everything underneath from the damaging effects of the sun – people, livestock & plants



Limited warranty, contact our Technical Department for further details



# Excellent Light Transmission

Polycarbonate's optical qualities make it ideal for applications requiring maximum daylight.

## Features & Benefits



Achieves almost 90% light transmission



Reduced need for artificial light cuts building energy costs



Range of tints offering differing levels of light transmission and light diffusion to meet the designer's requirements



Natural daylight has been proven to promote health and wellbeing and improves mood

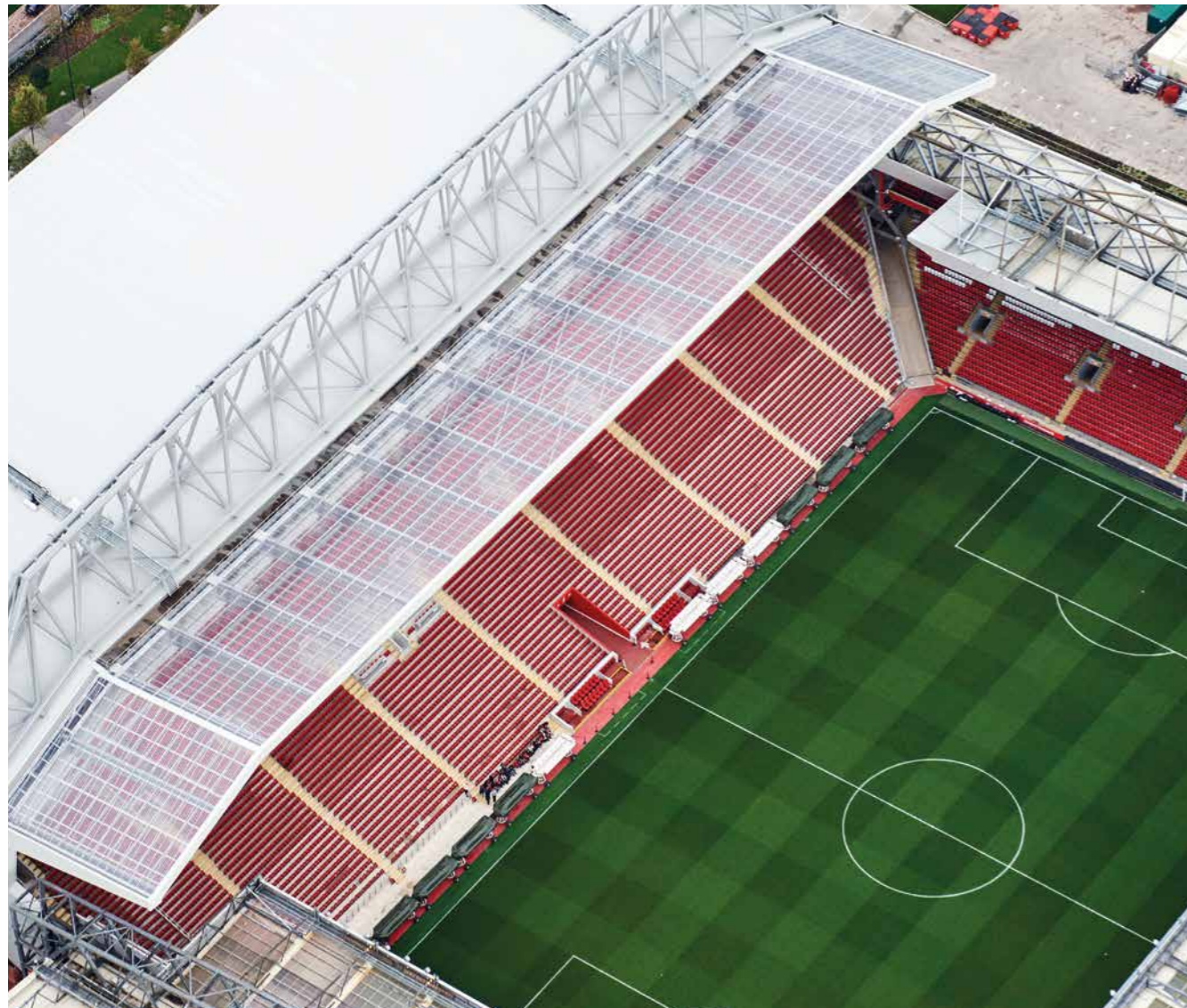


Natural daylight increases productivity and performance in schools, workplaces and sports facilities.

# Applications

Marlon's incredible strength to weight ratio, outstanding technical performance and excellent light transmission make it the ideal choice for a range of construction, horticultural, agricultural and DIY applications.

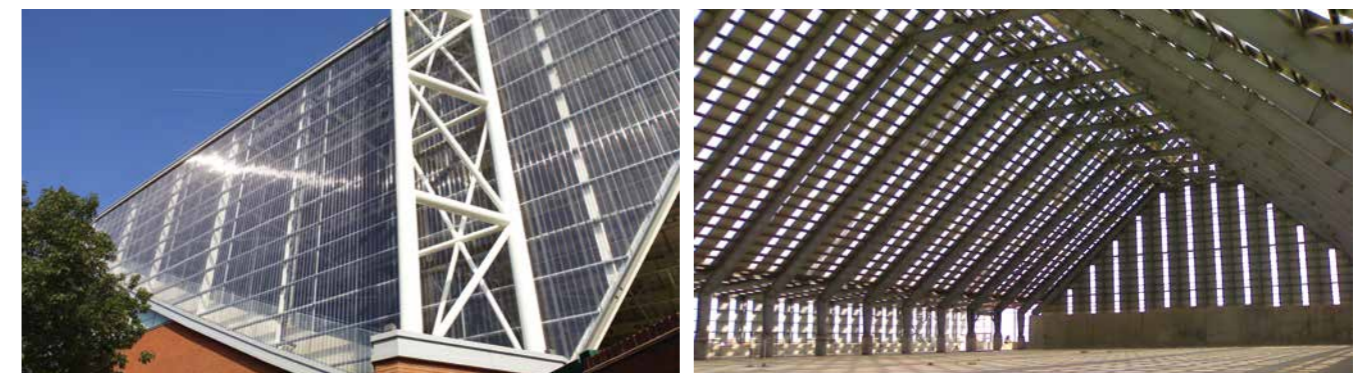
## Stadia



High natural light transmission combined with a UV protection layer that filters over 98% of harmful UV radiation makes Marlon CS corrugated polycarbonate sheets the ideal solution for roofing and vertical glazing in stadia and arena applications. Create bright and airy outdoor seating and viewing areas that are sheltered from the elements whilst reducing shadows and promoting healthy grass for an optimum playing surface and a pitch that looks good for televised matches.

- Stadia
- Arena
- Sporting Facilities
- Training Grounds

## Rooflights & Vertical Glazing



With a database of over 1000 profiles and a profile matching service Marlon CS sheets can be profile matched to most corrugated roofing and cladding systems. Installed as single skin or insulating factory assembled rooflights and sidelights to provide natural daylight and reduce the energy consumption of a building.

- Factories
- Warehouses
- Retail Units
- Storage Facilities
- Train Sheds
- Aircraft Hangers

# Applications

## Horticulture & Agriculture



Strong and durable yet lightweight, Marlon CS sheets are easy to install and reduce the need for frequent costly repairs. Maximise daylight for growing crops or create a comfortable environment for livestock with a range of solar controlling tints. Natural light reduces the need for artificial lighting reducing the running costs and energy consumption of a building. The co-extruded UV protection layer, which blocks over 98% of harmful UV rays protects animals and plants from the harmful effects of the sun.

- Commercial greenhouses
- Garden centres
- Domestic greenhouses
- Livestock sheds
- Milking parlours
- Barns

## House & Garden



Marlon CS is light in weight, easy to handle and easy to install with standard tools making it the ideal solution for home improvement projects around the house and garden. Choose from a wide range of products suitable for DIYer's planning simple projects including canopies, sunscreens, carports and greenhouse glazing replacement.

- Canopies
- Swimming pool covers
- Carports
- Pergolas
- Sun screens
- Awnings
- Greenhouses





# Marlon CS

Marlon CS corrugated polycarbonate sheets combine strength and impact resistance with high optical clarity and light transmission. Use these lightweight yet robust sheets as a complete roof or vertical glazing solution or incorporate into any corrugated metal roofing and cladding system in simple single skin or advanced composite panel.

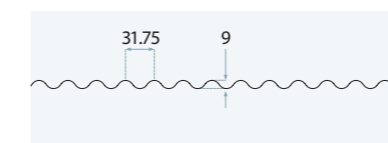
## Typical Applications

- Rooflights and sidelights
- Vertical glazing
- Composite rooflights

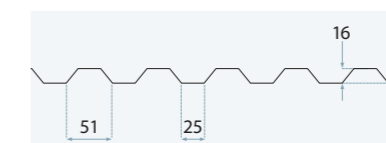
## Key Features

- Provides almost 90% light transmission
- 200 times stronger than glass
- Can be profile matched to any roofing or cladding profile

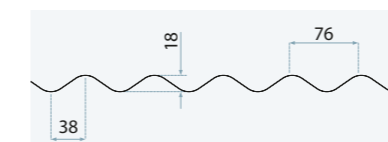
## Popular Profiles



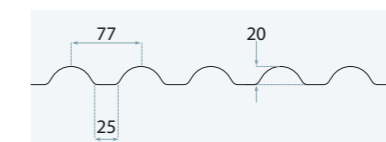
**Mini**  
Sheet width: 1000mm



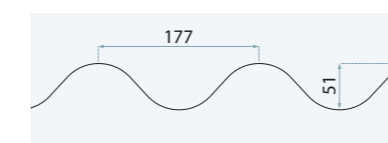
**Greca**  
Sheet width: 1260mm



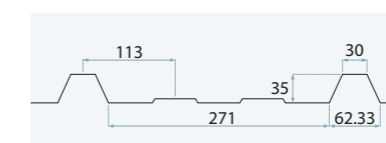
**Iron**  
Sheet width: 1260mm



**Omega**  
Sheet width: 1135mm



**P0007**  
Sheet width: 1100mm



**P0619**  
Sheet width: 1046mm

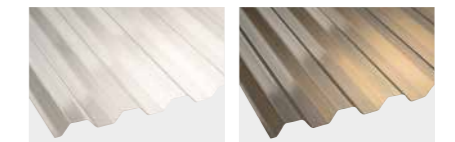
## Product Range

**Thicknesses**  
0.8mm-2.0mm

**Sheet widths**  
Up to 1260mm

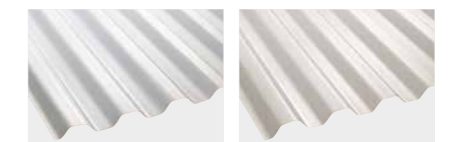
**Options\***  
Double sided UV protection,  
Condensation Control

## Colour & Tints\*



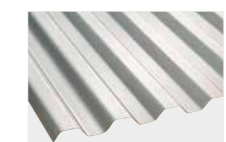
Clear

Bronze



Opal

Diffuser Opal



Heatguard

\*Specials available on request



Search our database of over 1000 profiles using our profile finder tool, available on [brettmartin.com](http://brettmartin.com)



# Marlon CS Stadia

Marlon CS Stadia premium 2mm thick corrugated polycarbonate sheets provide exceptional spanning and load bearing capabilities. Choose from three fixing systems including the custom sliding bracket system ideal for longer sheet lengths.

Create bright stands and pavilions where spectators are protected from the elements. The system is light in weight with superior impact resistance and exceptional spanning capabilities making it ideal for stadia, arena and sports facilities.

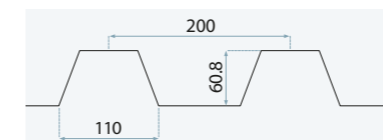
## Typical Applications

- Stadia
- Arena
- Sports facilities

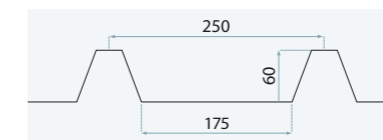
## Key Features

- 90% light transmission
- Super strong 2mm thick sheet
- Choice of three fixing systems

## Popular Profiles



**P1947**  
Sheet width: 1117.6mm



**P2023**  
Sheet width: 1063mm



## Product Range

<b>Thicknesses</b>	Up to 2mm
<b>Cover width</b>	1000mm
<b>UV Protection</b>	Single or double sided

## Colour & Tints\*



Clear

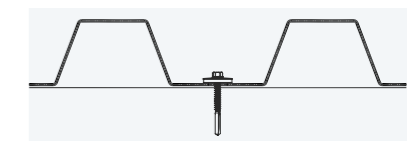
Diffuser Opal

\*Specials available on request

## Fixing Options



Crown (P2023)



Valley (P1947)



Sliding Bracket (P1947)



# Marlon CS Diamond

Marlon CS Diamond is a super tough, super strong and super resilient corrugated polycarbonate sheet with an attractive diamond embossed pattern. At 2.6mm and 2.8mm in thickness, the sheets are stronger and more rigid, providing superior spanning and load bearing capabilities. Naturally clear, these sheets provide exceptional light transmission.

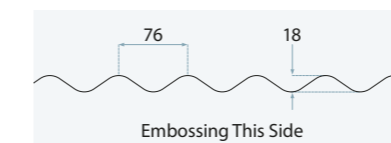
## Typical Applications

- Rooflights and Canopies
- Vertical Glazing and Screens
- Decorative display

## Key Features

- Diamond embossed surface finish
- Enhanced strength, spanning and load bearing
- Excellent light transmission

## Popular Profiles



**PX1944**  
Sheet width: 1045mm

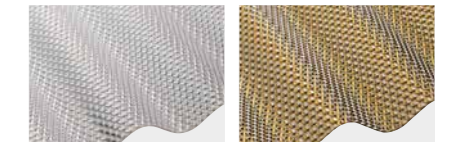
## Product Range

**Thicknesses**  
2.6mm and 2.8mm

**Sheet width**  
1045mm

**UV Protection**  
Double Sided

## Colour & Tints\*



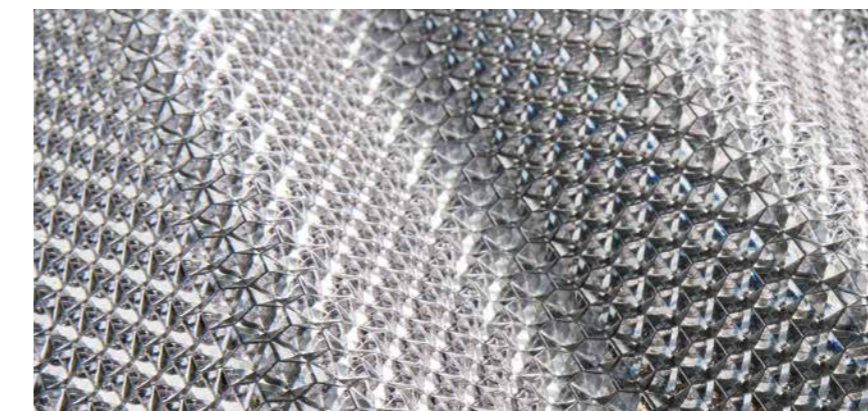
Clear

Bronze



Grey

\*Specials available on request





# Marlon CST

Marlon CST corrugated multiwall polycarbonate sheet provides all the durability and impact resistance of corrugated polycarbonate sheet with the added insulation and rigidity provided by the multiwall structure. Use incorporated with fibre cement sheeting or as a complete roof and wall cladding material.

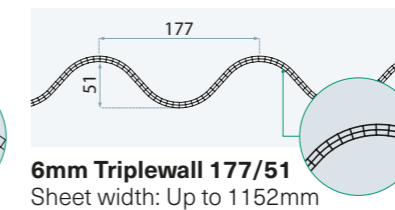
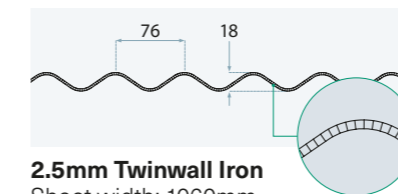
## Typical Applications

- Industrial rooflights and canopies
- Vertical glazing
- Greenhouses and farm buildings
- Pergolas and patio covers

## Key Features

- Light in weight
- Enhanced spanning capabilities
- Reduced condensation from multiwall structure
- Damage and impact resistant

## Popular Profiles



## Product Range

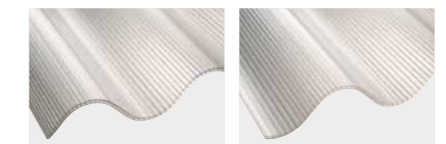
**Profiles**  
2.5mm Twinwall Iron  
6mm Triplewall 177/51

**Sheet widths**  
Up to 1152mm

**Finishing**  
Heat Sealed Edges

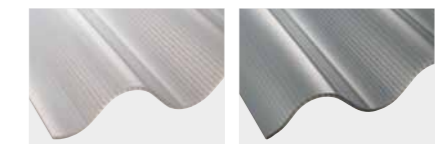
**Options\***  
Double sided UV protection,  
Mitred Corners

## Colour & Tints\*



Clear

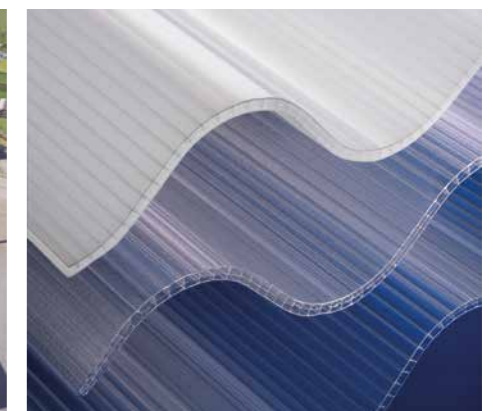
Glass Clear



Pearlescent

Heatguard

\*Specials available on request



# Profile Matching

Brett Martin holds a database of over 1000 profiles for corrugated rooflight and glazing sheet including all of the commonly used stadia, industrial, horticulture and DIY profiles.

In addition to this we can profile match to any corrugated metal and fibre cement roofing and cladding sheet.

Minimum order quantities apply. Speak to your sales representative to discuss your specific requirements.

Over  
**1000**  
profiles in our  
database

# Profile Finder

Search for Polycarbonate, GRP, PVC & Foam Filler profiles in Brett Martin's Profile Finder tool.

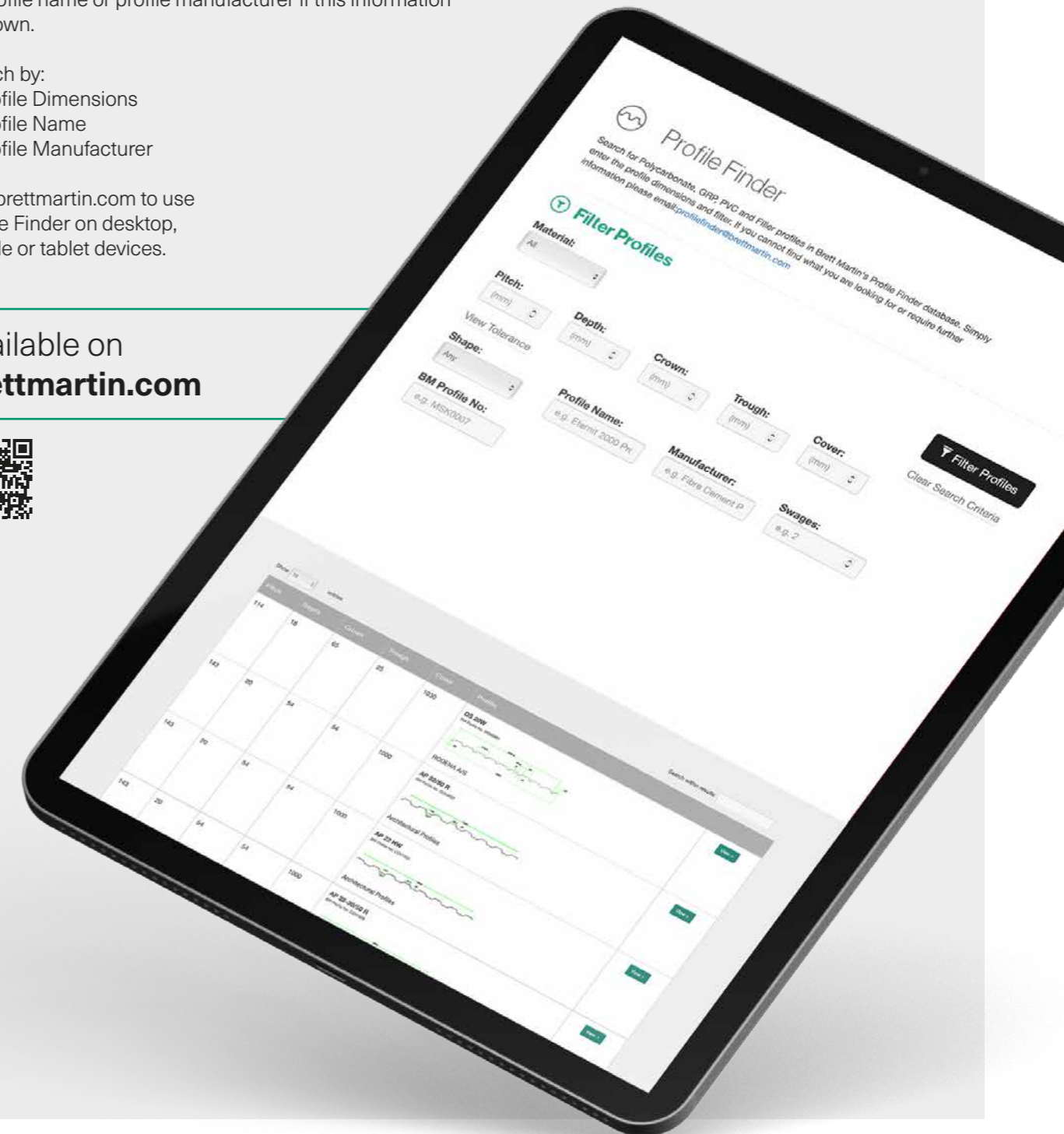
The Profile Finder tool from Brett Martin makes the specification of roofing and cladding sheet profiles fast and efficient. Simply enter a few key dimensions into the profile finder tool and it will search through thousands of profiles and narrow down the possible matches in just a few moments. Alternatively you can search by profile name or profile manufacturer if this information is known.

Search by:

- Profile Dimensions
- Profile Name
- Profile Manufacturer

Visit [brettmartin.com](http://brettmartin.com) to use Profile Finder on desktop, mobile or tablet devices.

Available on  
**brettmartin.com**





# TECHNICAL INFORMATION & INSTALLATION GUIDELINES

Marlon CS Longlife sheets are resilient and highly resistant to impact damage. However, as with all other glazing materials care must be taken to handle, store and install the sheets properly to ensure best performance.

For Technical advice on your specific project please contact [technical@brettmartin.com](mailto:technical@brettmartin.com)

## Light Specification

Clear Marlon CS can achieve almost 90% light transmission making it an ideal material for applications requiring maximum light transmission. A range of tints are also available for varying degrees of light diffusion and solar control.

### Light Transmission Table

	Colour	Marlon CS	Marlon CST	Marlon CS Diamond
Maximum Light	Clear	88%	79%	70%
	Glass Clear (g)	-	77%	-
Diffused Light	Diffuser Opal	73%	-	-
	Pearlescent (g)	-	53%	-
Controlled Light	Opal	46%	38%	-
	Bronze	32%	-	56%
	Solar Grey	29%	-	68%
Solar Control	Heatguard	7%	-	-

#### Embossing & Glass Filled

Embossing on one side of the sheet or the addition of glass fibre to the formulation are options available on selected profiles for applications where low light diffusion and privacy may be required.

#### Diffuser Opal

Diffuser Opal's clever technology dissipates daylight as it travels through the sheet creating a much softer diffused light inside the building with minimal shadowing and glare.

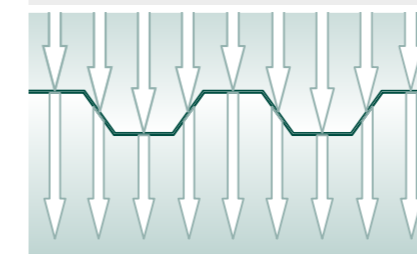
#### Heatguard

Marlon CS Heatguard's specially developed pigment 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%.

#### Clear



88% Light Transmission  
0% Diffused

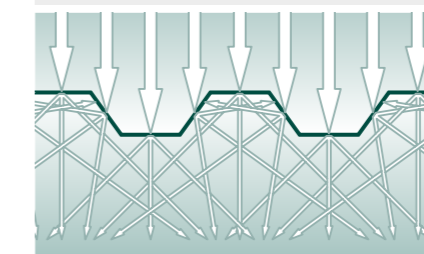


For maximum light transmission and clarity

#### Clear Embossed



86% Light Transmission  
20% Diffused

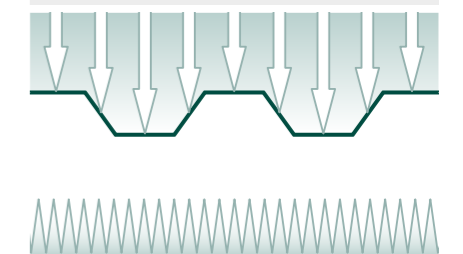


High light transmission privacy glazing with some light diffusion

#### Diffuser Opal



73% Light Transmission  
100% Diffused

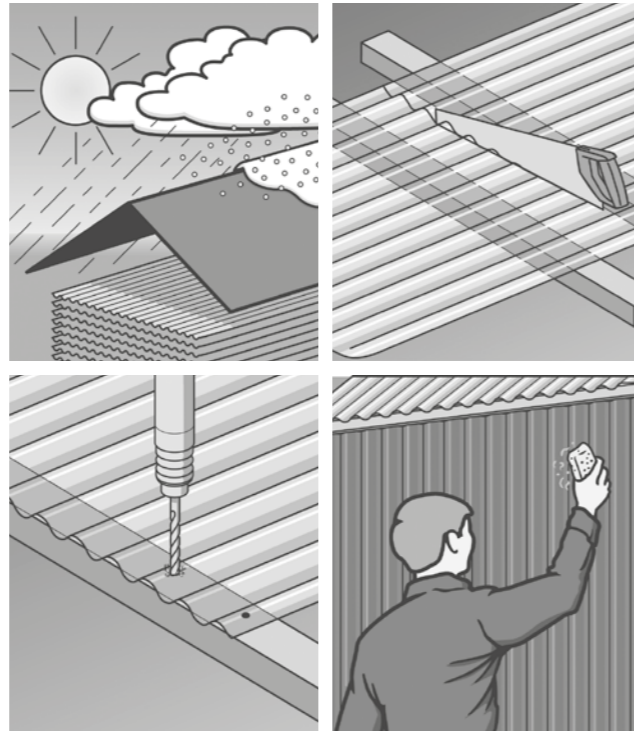


High light transmission with complete light diffusion

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

# Installation Guidelines

- Store sheets on a flat surface. Stack height should not exceed 1m. Use an opaque cover, tightly secured, to protect from wind, rain and sun. Storage is always preferable indoors.
- Ensure that the clearly marked UV protected surface of the Marlon CS sheet is to the outside.
- Marlon CS sheets must always be installed with the corrugation running vertically, or up-slope.
- Roofs should always be designed with a minimum slope of 5° to allow adequate rainwater run-off.
- Marlon CS sheet can be cut with a hand saw and a variety of powered saws. Always ensure that the sheet is well supported and cannot vibrate.
- Ensure that all sealants and tapes are compatible with polycarbonate.
- All accessory products should be light coloured, preferably white.
- Clean away all dust created when drilling fibre cement sheets.
- Sheets spanning up to two purlin spacings are of optimum length to cope with thermal movement.
- Maximum recommended sheet length for Marlon CS is 4m.



## Drilling & Fixing

### IMPORTANT

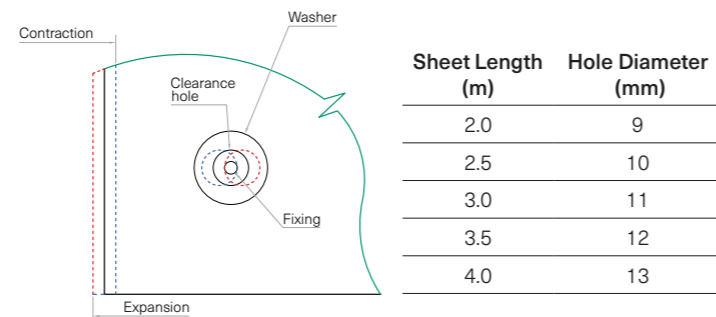
Polycarbonate sheet will expand in the heat and contract in the cold.

Sufficient allowance for thermal movement must be made when fixing the sheet by:

#### 1. Drilling oversized fixing holes

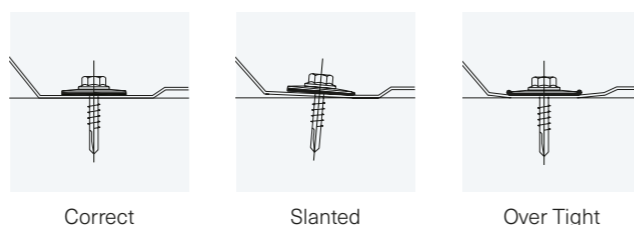
See table (right) for recommended clearance hole sizes for a Ø5mm fixing.

- This will accommodate +/-30° temperature range
- Metal drill bits are suitable, if using a power drill set to a low speed. Make sure that the sheet is supported underneath to avoid vibration
- Drill at least 40mm from the edge of the sheet



#### 2. Avoiding overtightening of fixings

- This will allow for natural movement of the sheet and will avoid unnecessary damage



## Finishing

- Contact with plastisol coated metal sheets, wet wood preservatives, solvents and alkali cleaners should be avoided. However Marlon CS has good resistance to acids, aliphatic hydrocarbons and alcohols; common environmental pollutants and marine environments do not have a detrimental effect.
- Use a low-modulus neutral silicone sealant as an all-purpose silicone will cause polycarbonates to crack and disintegrate.
- Ensure all branded ribbon is completely removed immediately after installation.

## Marlon CST Additional Considerations

In addition to all of the installation guidelines on pages 26 & 27 of this brochure the following considerations apply when installing Marlon CST sheet:

- Ensure mitres on Marlon CST and fibre cement sheets correspond
- Use Marlon CST sheets of equal length to the fibre cement on a roof
- Proper purlin spaces must be maintained appropriate to loading
- Sealants and washers on fasteners must be compatible with polycarbonate and should be preferably white in colour
- The sheet should be supported with foam fillers at each purlin position
- Marlon CST is not suitable for curved roof applications
- Fasteners must be fitted with a 25mm EPDM bonded washer (BAZ washer)
- Clean away all dust created when drilling holes in fibre cement sheets
- Primary fasteners must be fixed through each crown at top and bottom end laps, and through alternative crowns on intermediate purlins.

### IMPORTANT

When installing any roofing material, including rooflights, ensure that safe working methods are adopted and appropriate safety equipment is used.

## Installation Accessories

A full range of fully compatible accessories including ridge pieces, flashing, fixings, foam fillers and silicone sealant are available for the complete roofing solution.

It is important when installing any Marlon CS sheet that accessories are compatible for use with polycarbonate.



# Polycarbonate Mechanical Properties

## Strength & Damage Resistance



Damage to glazing can be hazardous and expensive but our Marlon CS corrugated polycarbonate sheets offer excellent protection against hailstones, vandalism and accidental damage with an impact resistance up to 200 times greater than glass. This characteristic is maintained over a broad temperature range and prolonged service life. The Marlon CS sheets will retain their physical properties in extreme weather conditions making them the ideal glazing solution for projects throughout the world. Marlon CS polycarbonate can withstand temperature extremes from -40°C to 100°C (-40 to 212°F) long term and up to 130°C short term. No other glazing material can offer this combination of impact resistance and wide working temperature range.

## UV Protection



Our Marlon CS polycarbonate sheets are co-extruded with a UV absorption layer. This protective layer prevents damaging UV radiation from penetrating the sheet for long term optical clarity and mechanical strength.

## Chemical Resistance



Marlon CS has good resistance to acids, aliphatic hydrocarbons and alcohols; common environmental pollutants and marine environments do not have a detrimental effect.

Contact with plastisol coated metal sheets, wet wood preservatives, solvents and alkali cleaners should be avoided.

## Fire Performance



Our Marlon CS sheets exhibit excellent fire performance and in the event of a fire 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 details of fire ratings please contact our Technical department.

## Warranty



Marlon CS sheets are manufactured under Quality Management Systems registered to BS EN ISO 9001. The sheets carry limited warranty. For full warranty details please contact our Technical department.

## Testing



Marlon CS sheets are designed and tested to the relevant industry standards and performance criteria. For further information please contact our Technical department.

Properties	Test Method	Value	Units
Mechanical	Tensile strength at yield	DIN 53455	>60 MPa
	Tensile strength at break	DIN 53455	>70 MPa
	Modulus of elasticity	DIN 53457	>2300 MPa
Physical	Specific gravity	DIN 53479	1.20 g/m <sup>3</sup>
	Softening temperature - Vicat 'B'	DIN53460	148 °C
Thermal	Linear thermal expansion	DIN53752	6.8 x 10 <sup>-5</sup> m/m.K
	Maximum service temperature	Permanent	100 °C
	- no loading	Short term	130 °C

# Polycarbonate General Guidelines

## Accessories

It is important when installing Marlon CS sheet that all accessories are compatible for use with polycarbonate. All accessory products should be light in colour, preferably white, to avoid heat absorption that could build up and damage the sheet. Our full range of installation accessories are fully compatible, visit [brettmartin.com/marloncs](http://brettmartin.com/marloncs) for further details.

## Thermal Expansion

In practical terms it is necessary to allow 3.5mm per linear metre between the top edge of the sheet and any flashings or structure.

## Cleaning

As a condition of ensuring that Marlon CS sheets perform at optimum throughout their service life, it is recommended that the sheets be cleaned periodically using suitable household cleaning agents as follows:

- Use lukewarm water to rinse the sheet and soften dirt.
- Make up a solution of lukewarm water and ordinary household cleaner or a mild soap and use this to wash the sheet.
- A sponge or soft cloth should then be used to gently remove dirt and grime.
- The cleaning process should then be repeated and the sheet rinsed and dried with a soft cloth.
- For larger areas clean the surface with a high-pressure water cleaner being careful not to dislodge flashing, sealants or fixings.

## Warning

Care should be taken to observe the following precautions:

1. Do not scrub Marlon CS sheets with brushes or sharp instruments.
2. Avoid any abrasives or cleaners of a highly alkaline composition.
3. It is generally advisable in all instances to test any cleaner on a sample piece of the Marlon CS sheet first and it should also be remembered that cleaners and solvents which state that they are suitable for cleaning polycarbonate may not be safe for use on the UV protective surface of the sheet.





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For the latest information visit  
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