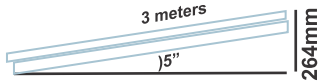
Technical Data Sheet

UltraGuard Abrasion resistant Polycarbonate Sheet

INSTALLATION TIPS

step 1

Purlins & accessories



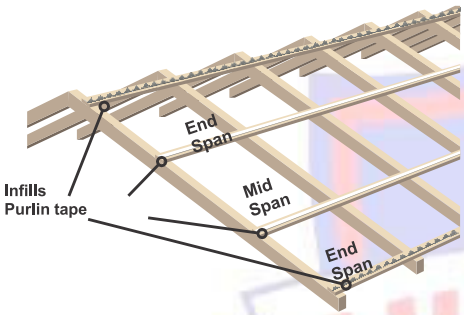
Ensure that your roof pitch is at least 5°, ie. 88mm rise per lineal meter.
This will ensure adequate water run off.

Curved Roof

Minimum curving radius 4.0 m.

Maximum Purlin Spacings

Profile	End Span	Mid Span
Corrugated	800mm	1000mm
Greca	900mm	1200mm
5 Rib	900mm	1200mm



step 2

Fixings

Fixing at

Profile	End	row	Mid	Row
Corrugated -	every	2nd	every	3rd
Greca -	every	2nd	every	3rd
5 Rib -	All			

Overlap:

Corrugated - 1 1/2 corrugations

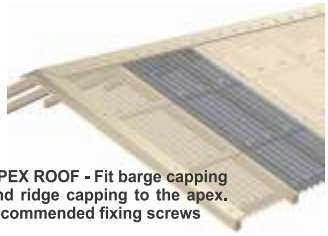
Greca - 1 corrugation

5Rib - 1 corrugation

Prevailing wind direction

step 3

Capping & flashings for various installations



APEX ROOF - Fit barge capping and ridge capping to the apex. recommended fixing screws

AGAINST A WALL/FASCIA - Fit barge capping to edge of sheet and apron flashing at the wall or fascia. Secure using recommended fixing screws.

UNDER A GUTTER – Fit Back channel flashing with foam infill strips under gutter prior to laying sheets and Barge. Capping to edge of sheet.

Important Notes

Use only compatible accessories, including EPDM rubber washers, silicones, sealing tape, closure fixtures etc.

For clear PolyMac® sheets onto wooden purlins, apply white acrylic paint, or aluminum tape, in order to prevent over-heating of the purlins.

Shaped foam polyethylene (PE) sealing strip.

Silicone sealant.

CuttingTips

Use jigsaw or circular saw with fine tooth blades.
Apply high blade speed with moderate feeding rate.
Support the sheets near the cutting line.
Clean the dust and cutting chips after cutting.

FasteningTips

Use adjustable electric screwdriver.
The fastener must be installed perpendicular to PolyMac® sheet.

Important: Do not over-tighten.

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AGRICULTURE

CONSTRUCTION

DIY

ARCHITECTURE

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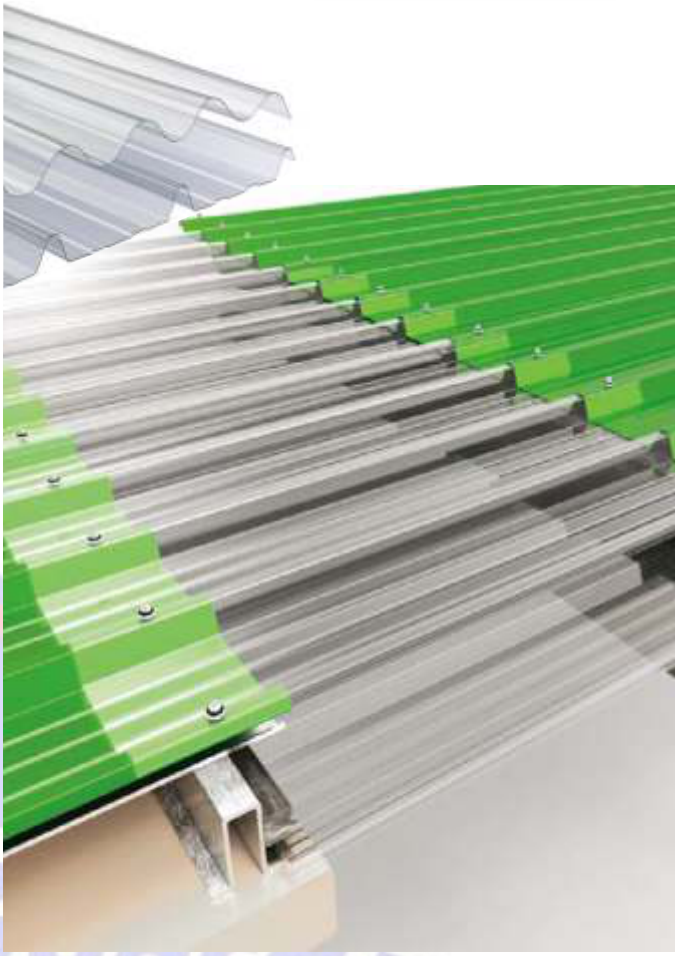
Introduction



PolyMac® Corrugated Polycarbonate Rooflight Sheets facilitate multi-benefit use of natural daylight in industrial scale structures. They stand up to demanding exterior applications and offer multiple advantages over alternatives. PolyMac® profile matching technology allows panels to integrate virtually into any corrugated metal roof and form a complete shield against harmful UV rays while transmitting very high amounts of visible light. The panels' strength and high resistance to weathering allows them to maintain a high light transmission for very long periods, contribute to the conservation of energy and improve the quality of the working environment. A wide range of colours, transparencies and surface types enables optimal solar transmission specification for any type of structure, environment and climatic conditions.

APPLICATIONS

Industrial / Warehouse Skylight

Greenhouse / Horticulture

Stadium Covering

Canopies

Solar dryers

Hangar

Architectural Structures

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MAIN ADVANTAGES

Clarity - Natural, clear PolyMac® exhibits the clarity of glass, transmitting up to 90% of natural light.

Energy Saving - By transmitting natural daylight into the structure, PolyMac® Rooflights reduce energy consumption of electric lighting.

Matching Any Profile - PolyMac® corrugation technology enables sheets to be quickly matched into any given profile, opening infinite corrugation possibilities.

Strength - PolyMac® polycarbonate sheets, are virtually unbreakable and highly resistant to impact, hailstones and loads.

Protective - PolyMac® does not allow harmful UV radiation to penetrate.

Flammability - PolyMac® meets the highest standards.

Low Weight - Light in weight, PolyMac® sheets are easy to handle and install.

Weather Resistance - PolyMac® sheets resist wind, hail and extreme temperatures from -50°C to +120°C.

An integrated UV protective layer allows PolyMac® to retain its transparency without yellowing over the course of a long lifetime of service.

10 Year Warranty - PolyMac® is warranted to retain its attractive appearance over its long lifetime with minimum maintenance.

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Product Data Sheet

	Test conditions	Units	Standards	Makrolon Resin Value
Rheological Properties				
Melt volume – Flow rate	300°C; 1.2kg	cm^3/(10min)	ISO 1133	6
Melt Mass – Flow rate	300°C; 1.2kg	g/(10min)	ISO 1133	6.5
Moulding shrinkage Parallel/normal		%	b.o ISO 2577	0.6-0.8
Mechanical Properties				
Tensile modulus	1mm/min	Mpa	ISO527	2350
Yield Stress	50mm/min	MPa	ASTMD638	47
Yield Strain	50mm/min	%	ISO527-1;2	6.3
Nominal tensile strain at break	50mm/min	%	ISO527	>50
Stress at break	50mm/min	MPa	ISO527-1;2	70
Strain at break	50mm/min	%	b.o ISO527-1;2	120
Tensile Creep modulus	1 hr	MPa	ISO899-1	2200
Tensile Creep modulus	1000h	MPa	ISO899-1	1900
CHARPY impact strength	23°C	KJ/M^2	ISO 179-1eU	NB
CHARPY impact strength	–30°C	KJ/M^2	ISO 179-1eU	NB
IZOD Notched impact strength	23°C; 3mm	KJ/M^2	b.o ISO 180-4A	58.4
IZOD Notched impact strength	–30°C; 3mm	KJ/M^2	b.o ISO 180-4A	16C(P)
Thermal Properties				
Glass transition temperature	10°C/min	°C	ISO 11357-1,-2	148
Temperature of deflection under load	1.80 MPa 0.45 MPa	°C	ISO 75-1;2	128 140
Vicat Softening temperature	50 N, 50°C/h	°C	ISO 306	148
Co-efficient of linear thermal expansion	23 to 55°C	10^{-4}/K	ISO 11359-1;-2	0.65
Burning Behaviour UL 94 (UL Recognition)	1.5mm 0.75mm 10mm	Class	UL94	HB V-2 V-O(CL)
Oxygen index	Procedure A	%	ISO 4589-2	27
Glow wire test (GWFI)	1.5mm 2.0mm 3.0mm	°C	IEC 695-2-12	850 850 930
Electrical properties				
Relative permittivity	100 Hz		IEC 250	3.1
Relative permittivity	1 MHz		IEC 250	3.0
Dissipation factor	100 Hz	10^{-4}	IEC 60250	5
Dissipation factor	1 MHz	10^{-4}	IEC 60250	95
Volume resistivity		ohm. m	IEC 60093	1E14
Surface resistivity		ohm	IEC 60093	1E16
Electrical strength	1mm	kV/mm	IEC 60243-1	34
Comparative tracking index (CTI)	Solution A	Rating	IEC 112	250
Other properties				
Water absorption (saturation value)	Water at 23°C	%	ISO 62	0.30
Water absorption (equilibrium value)	23°C / 50% r.h	%	ISO 62	0.12
Density		Kg/M^3	ISO 1183-1	1200
Glass fibre content		%	ISO 3451-1	
Material Specific properties				
Viscosity number		cm^3/g	ISO 1628-1	64
Refraction index	Procedure A	–	ISO 489	1.587