CLASSIFICATION TO FIRE
B s1 d0

Macrolux®

TRANSPARENCY, RESISTANCE AND INSULATION
IN A BLINK OF AN EYE

RURAL | INDUSTRIAL | COMMERCIAL | RESIDENTIAL | TRANSLUCENT

Macrolux® Multiwall

Macrolux® Solid

Macrolux® Rooflite

CELLULAR POLYCARBONATE LAMINATES
COMPACT POLYCARBONATE LAMINATES
CORRUGATED AND TRAPEZIODAL COMPACT POLYCARBONATE LAMINATES

Macrolux®, are sheets manufactured by extrusion from polycarbonate pellets, protected on one or both sides from ultraviolet rays by means of coextrusion of U.V. absorbent agents, guaranteeing resistance to ageing by maintaining all its properties over time.

Macrolux® is the ideal product for applications with high demands of light transmission, lightness and impact resistance with possibilities of cold bending.

Macrolux® is a product adaptable to many industrial and building projects.

Main advantages

- **Very high properties**

  Macrolux® polycarbonate sheets have high luminous transmission rates, making them ideal for natural lighting of rooms.

- **Thermal insulation**

  Macrolux® cellular has a high thermal resistance that together with the use of natural light, improves the energy saving of the building.

- **Lightness**

  Macrolux® sheets have a very small weight per square meter, which facilitates their manipulation, not significantly affecting as a load on the structure.

- **Weather resistance**

  The coextrusion technique allows obtaining a polycarbonate with a high content of U.V. arranged on the surface of the sheet, maintaining its characteristics unchanged for many years.

- **Temperature resistance**

  Macrolux® sheets can be used continuously in a temperature range from -30 to +120ºC, keeping their physical-chemical characteristics unchanged.

- **Impact resistance**

  The remarkable resistance of the polycarbonate allows the **Macrolux®** sheets to support the most severe load conditions. **Macrolux®** polycarbonate sheets are 200 times stronger than glass and 10 times more resistant than other thermoplastics.

- **Cold curvable**

  Macrolux® sheets can be cold curved respecting the minimum radius of curvature provided in the product specification. In this way, the load capacity values increase with respect to the flat solutions.

Characteristics

Macrolux® General technical characteristics

PROPERTIES		RULE	VALUE
Mechanical properties			
Creep tensile strength (50 mm/min)		ISO 527	63 MPa
Breaking strain (50 mm/min)		ISO 527	70 MPa
Lengthening of creep (50 mm/min)		ISO 527	6 %
Break elongation (50 mm/min)		ISO 527	120 %
Elasticity modul (1 mm/min)		ISO 527	2350 MPa
Charpy impact (with V notch)	+ 23º C	EN ISO 179/1eA	75 KJ/m^2
	- 30º C	EN ISO 179/1eA	15 KJ/m^2
Izoz impact (with notch)	+ 23º C	EN ISO 180/1A	70 KJ/m^2
	- 30º C	EN ISO 180/1A	12 KJ/m^2
Mechanical properties			
Density		ISO 1183	1,2 g/cm^3
Water absorption (23º C saturation)		ISO 62	0,35 %
Humidity absortion (23º C, 50% RH)		ISO 62	0,15 %
Permeability to water vapor (23º C, 85% RH, 0.1 mm)		ISO 15106-1	15 g/m^2 (24h)
Mechanical properties			
Linear thermal expansion coefficient (23ª C, 55º C)		ISO 11359-2	6,5x10^{-5} K^{-1} (0,065 mm/mºC)
Thermal conductivity		ISO 8302	0,20 W/m K
Vicat softening temperature (50 N, 120º C/h)		ISO 306	145-149º C

Typical values referred to Polycarbonate as raw material.

Macrolux® Multiwall

Macrolux® Multiwall, are polycarbonate laminates with alveolar structures that give the product insulation and resistence.

All **Macrolux® Multiwall** laminates are protected against ultraviolet rays by coextrusion of U.V. absorbent agents on the outside face.

Applications

- Translucent tunnels
- Skylights with structure
- Replacing glass in windows
- Greenhouses

Installation

Fixation system

The fastening system must allow the free expansion of the sheet, therefore rigid fasteners or through bolts are not recommended. Always provide sufficient clearance between the drill and the screw.

Structure

Whenever possible, nerves should be provided in the direction of the maximum slope of the sheet, thus ensuring the minimum accumulation of dust in the alveoli.

The sheets require a longitudinal and / or transverse support structure that can be of any nature or geometry. In modulation, the maximum dimensions of the sheet must be respected according to its thickness and loads to be supported and compatible with a suitable cutting.

Implementation and manipulation

The sheets are protected by a film on both sides indicating the face protected from solar radiation.

When it is necessary to seal the joints, the compatibility of the polycarbonate with the sealant should be ensured (neutral silicone is recommended).

It is essential to cover the cells to prevent the entry of dust inside the sheet. It is recommended to place aluminum tape at the ends: smooth, at the top and porous, which allows the condensation water to escape at the bottom.

If you need to drill the sheet you must use fastening buttons.

THICKNESS	4 mm	6 mm	8 mm	10 mm	16 mm
Sketch	2W Thicknesses: 4/6/8/10 mm				5X Thickness: 16 mm
Structure	2W	2W	2W	2W	5X
Width (mm)	2100	2100	2100	1220/2100	1220/2100
length (mm)	6000	6000	6000	6000/7000	6000/7000
Light transmission Transparent (%)	82	80	80	80	62
Light transmission Ice (%)	64	60	60	55	35
Thermal transmission U (W/m^2K)	3,9	3,5	3,2	3,0	2,0
Acoustic insulation (dB)	14	15	16	19	21
Minimum radius of curvature (mm)	750	1000	1250	1500	2400
Reaction to fire	B s1 d0	B s1 d0	B s1 d0	B s1 d0	B s1 d0

Accessoires

Porous ribbon

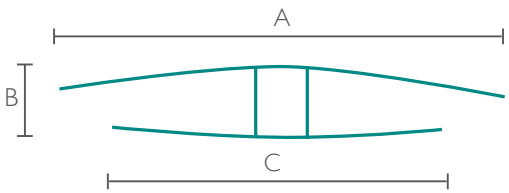
This ribbon should be installed in the perimeter of the sheet in the lower part to allow the free evacuation of possible condensations.

Smooth ribbon

This ribbon should be installed on the perimeter of the sheet at the top.

Polycarbonate Profile “H”

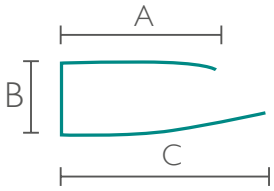
This is a non-load bearing profile, therefore not suitable to be subjected to loading. Its function is to join sheets longitudinally and transversely for minor works.



	A (mm)	B (mm)	C (mm)
For thickness 4-6 mm	68	7	55
For thickness 8-10 mm	70	11	55
For thickness 16 mm	103	17	92

Polycarbonate profile “U”

It is used as closing element of the alveoli in the sheets as a final finish.



	A (mm)	B (mm)	C (mm)
For thickness 4-6 mm	12	7	16
For thickness 8-10 mm	12	11	17
For thickness 16 mm	15	17	20

Fixing buttons

Protection element for fixing by direct screwing.

Macrolux® Solid

The polycarbonate sheets **Macrolux® Solid**, offer significant advantages over traditional glazing materials, in terms of lightness, impact resistance and transparency.

The polycarbonate sheets **Macrolux® Solid**, can be thermoformed and obtain special geometries. They are in turn protected U.V. on both sides, allowing its use outdoors.

Aplications

- Replacing glass in windows
- Translucent tunnels
- Skylights with structure
- Security elements
- Barrel vaults
- Industrial protection elements
- Advertising
- Signaling
- Roofs in general

Installation

Fixation system

The fastening system must allow the free expansion of the sheet, therefore rigid fasteners or through bolts are not recommended.

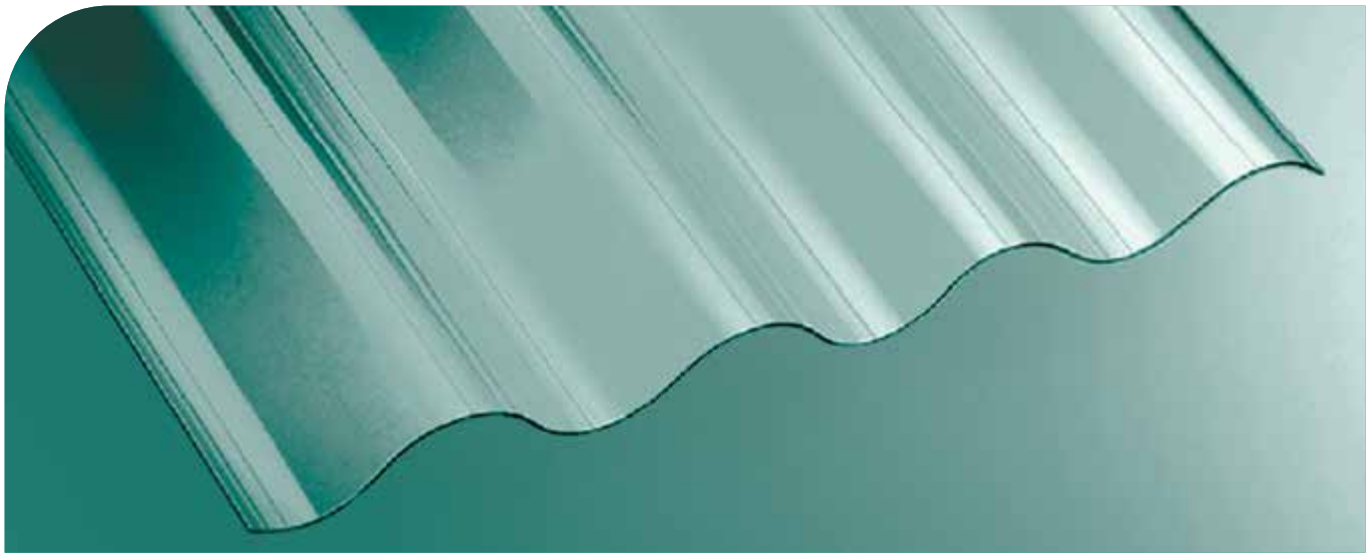
Structure

The sheets require a longitudinal and/or transverse support structure, which can be of any nature or geometry. In the modulation, the maximum dimensions of the sheet must be respected, according to its thickness and loads to be supported, and compatible with an adequate cutting according to its dimensions.

Implementation and manipulation

The sheets of compact polycarbonate can be fixed to the structure by various procedures: with universal or structural profiles and inside of the joinery elements. The sheets are protected by a film on both sides. When it is necessary to seal the joints, the compatibility of the polycarbonate with the sealant should be ensured, the use of neutral silicone is highly recommended in these cases.

THICKNESS	3 mm	4 mm	5 mm
Structure			
Width (mm)	2050	2050	2050
Length (mm)	3050	3050	3050
Light transmission Transparent (%)	88	87	87
Light transmission Ice (%)	56	48	42
Thermal transmission U (W/m^2K)	5,5	5,3	5,2
Acoustic insulation (dB)	26	27	28
Minimum radius of curvature (mm)	450	600	750
Reaction to fire	B s1 d0	B s1 d0	B s1 d0



Macrolux® Rooflite

Macrolux® Rooflite polycarbonate sheets are protected from ultraviolet rays by coextrusion of U.V. and they are adaptable to their specific profiles.

Applications

- Inclined metal or fiber cement roofs
- Sawtooth
- Greenhouses

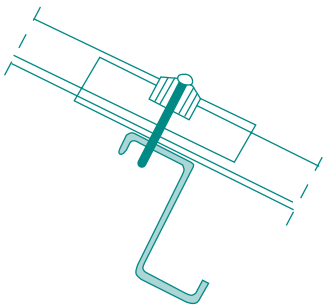
Installation

Fixation system

The fastening system must allow the free expansion of the sheet, therefore the rigid fixings or through bolts are not recommended.

LATERAL SOLAPE PROFILE

CREST FIXATION



Structure

The sheets require a transverse support structure that can be of any nature or geometry. In the modulation the maximum dimensions of the sheet must be respected according to the profile and the loads to be supported.

Implementation and manipulation

When it is necessary to make a seal, the compatibility of the polycarbonate with the sealant should be ensured, it is highly recommended in these cases the neutral silicone.

In the sheets the face with U.V. protection is indicated that must be placed abroad.

Rules for the correct installation of Macrolux® Rooflite

Support structure

The maximum separation between purlins must be determined for each profile, depending on the load to be supported and the maximum allowable deformation. In any case, it can never be higher than 1.20 m. In case of separations between important purlins (greater than 1.20 m), intermediate supports should be placed.

Dilation of the sheets

The coefficient of thermal expansion of polycarbonate is significantly higher than that of structures and other plastic products, therefore, it is essential to provide systems that allow the free expansion of the sheets. It is necessary to make drills with a diameter 3 mm greater than that of the screw.

Length of the sheets

The sheets of great length (more than about 7 meters) accumulate longitudinal dilatations of high absolute value so they should be avoided whenever possible.

In case of needing larger lights, transverse overlaps are recommended, from 15 to 20 cm depending on the slope of the roof.

Layout of the sheets

The face indicated as specially protected against U.V. rays, is the one that must go outside. In on-site sandwich covers it is recommended to always install the foil white-diffuser on the outside and transparent on the inside.

Fixation of the sheets

The profiles can be drilled using standard drills and must be firmly fixed to avoid vibrations; taking special care when drilling at a right angle. The holes must always be made at a minimum distance of 50 mm from the edges of the sheet.

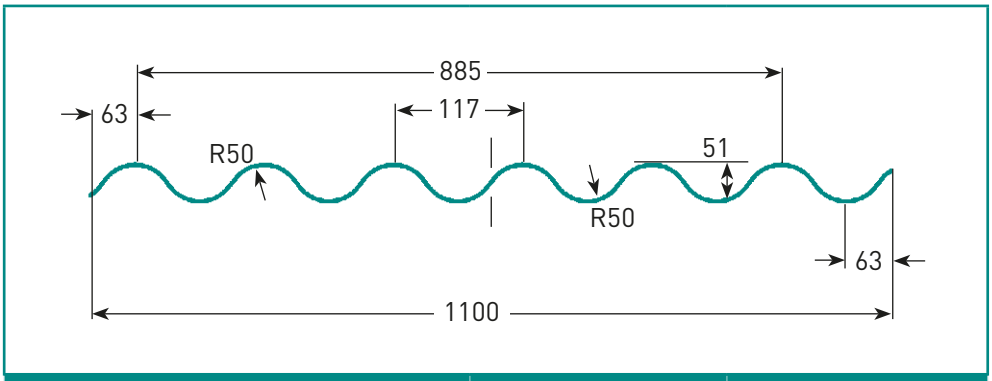
The washers must be of a sufficient diameter so that the clamping force can be distributed and keep the flat sheet for a good seal. Only soft EPDM, Neoprene or XLPE washers compatible with polycarbonate can be used. Never use PVC washers. Do not press too hard because the fixing must guarantee the tightness but without forcing the material or preventing its free expansion.

Sealed

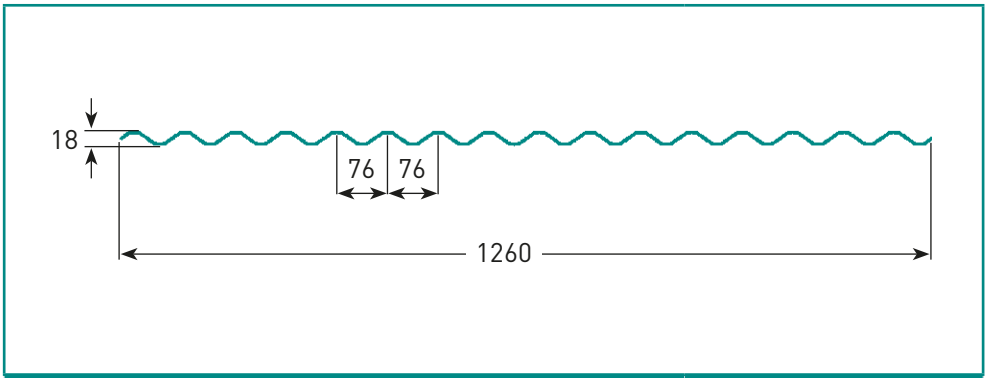
Always use neutral silicone. Under no circumstances can polyurethane foam be used.

Range

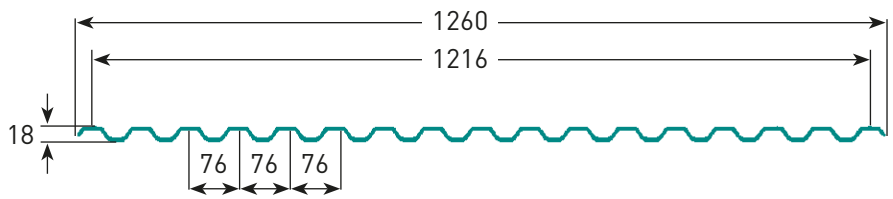
THICKNESSES		0,8 mm	0,9 mm	1,0 mm
Light transmission	Transparent (%)	89	89	89
	Ice (%)	80	75	75
Thermal conductivity (W/m K)		0,20	0,20	0,20
Coefficient linear thermal expansion (mm/m ºC)		0,065	0,065	0,065
Reaction to fire		B s1 d0	B s1 d0	B s1 d0



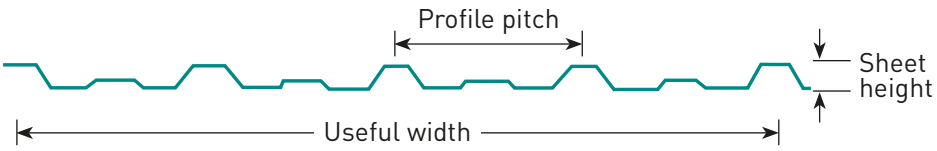
WAVE 1	0,9 mm	1,0 mm
Width (mm)	1100	1100
Length (mm)	6000 / 7500	6000 / 7500
Minimum radius of curvature (mm)	11500	11500
Loads (2 supports)	**Distance (mm)**	**Distance (mm)**
600 N/m²	1250	1300
900 N/m²	1150	1200
1200 N/m²	1050	1100
1500 N/m²	1000	1050



WAVE 2	0,8 mm
Width (mm)	1260
Length (mm)	5000 / 6000
Minimum radius of curvature (mm)	4000
Loads (2 supports)	**Distance (mm)**
600 N/m²	800
900 N/m²	700
1200 N/m²	650
1500 N/m²	600



WAVE GT	0,8 mm
Width (mm)	1260
Length (mm)	6000
Minimum radius of curvature (mm)	4000
Loads (2 supports)	**Distance (mm)**
600 N/m²	850
900 N/m²	800
1200 N/m²	750
1500 N/m²	700



TRAPEZOIDAL	
Thicknesses (mm)	0,8 - 0,9 - 1,0
Length (mm)	≤ 12000

Other profiles: consult **Stabilit Europa**.

Macrolux®

Certifications

Stabilit Europa is distinguished by having the Quality Management System certification according to the ISO 9001 standard in all its processes.

Fire reaction certificate in **Macrolux®** product according to EN 13501-1. Classification obtained: B s1 d0.

Macrolux® products are guaranteed for ten years.
(consult cases in which it does not apply).

Distributor

The information included in the catalog is purely indicative, based on the experience and tests carried out by the company; without this supposes any type of responsibility on his different applications, since **Stabilit Europa** does not have any control on his final use.

Stabilit
EUROPA

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