Ondatec

Macrolux® Systems

POLYCARBONATE SYSTEMS

More light for a better life

Stabilit
EUROPA

Stabilit Europa was created in 2000 as a subsidiary in Spain of Stabilit S.A. belonging to the Verzatec Group, one of the most important companies worldwide in the manufacture and marketing of plastic laminates, with more than 50 years of experience.

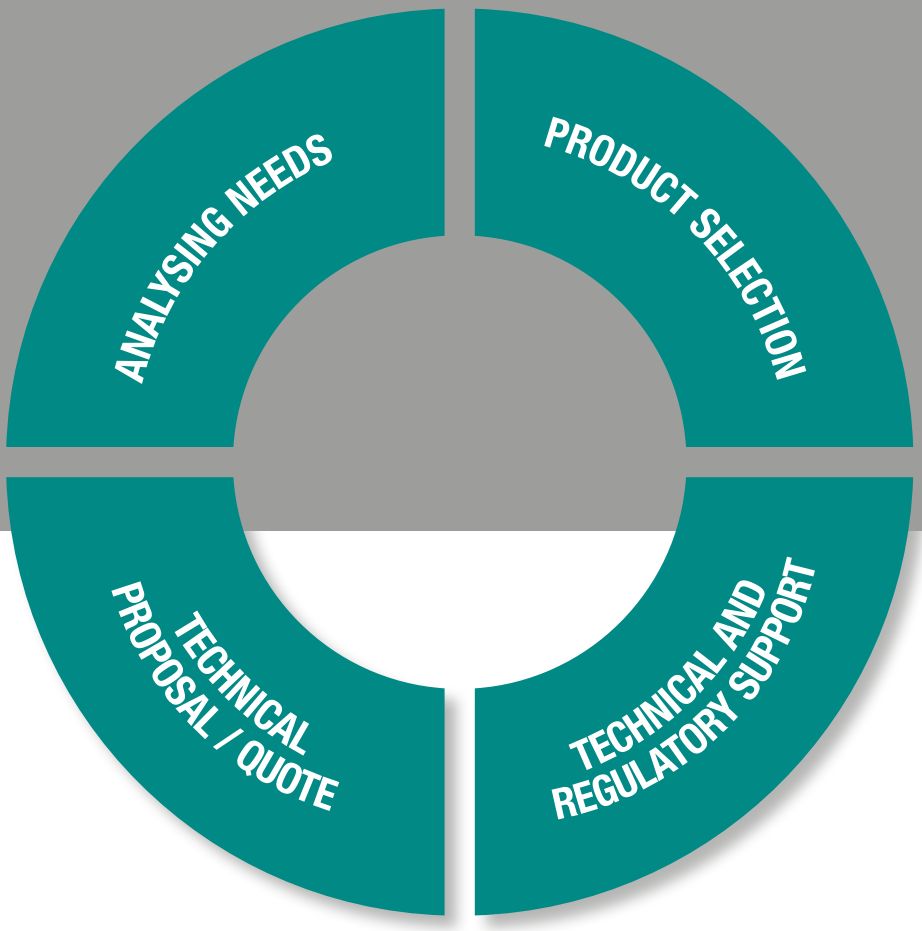
Stabilit Europa produces a wide range of translucent and opaque laminates, translucent to take advantage of natural light in all kind of buildings, and opaque for industrial coatings and for the automotive industry.

Stabilit Europa is a company that is distinguished by a philosophy of continuous improvement. Its leadership is based on the use of advanced technology in its equipment and production processes, as well as the high quality and variety of its products.

Stabilit Europa has been created to attend, provide service and provide the needs of the European market in this type of products.

Customer focus

Stabilit is a leader in promoting innovative solutions that anticipate customer demands and market trends, predicting future needs and staying at the cutting edge. **Stabilit Europa, s.l.u.** is the go-to partner for customers looking for a company who will be with them every step of the way, from the drawing board through to installation of the finished product.



An all-round approach to see your project through to success

step 1

ANALYSING NEEDS

The brief is the most delicate stage of the process. This is where initial ideas are bounced around to come up with possible solutions that will create the base of the project.

step 2

PRODUCT SELECTION

During this stage, customers draw on our team's expertise to decide on one or more potential solutions. Samples, technical data sheets and drawings make for creative, instructive sessions.

step 3

TECHNICAL AND REGULATORY SUPPORT

Every project has its technical and environmental restrictions. With our experience, we can help you choose the safest, most reliable solutions. It is common knowledge that regulations can dictate both technical and financial choices and hence require careful evaluation.

step 4

TECHNICAL PROPOSAL / QUOTE

This is the final stage of a joint process at which both the supplier and purchaser see the fruits of their efforts, rewarded by the mutual knowledge that this is the best solution. Stabilit's support doesn't end here: we are there to help you through the subsequent installation stages, too.

Assistance to ensure correct installation

OUR GREATEST AMBITION IS FOR THE APPLICATION TO BE A SUCCESS.

We also provide assistance at the construction site, making sure the chosen products are installed correctly so you get the most out of them.

Our main objective is to achieve end customer satisfaction and see that each application stands as a showcase for everyone involved.

Product certification


ISTITUTO GIORDANO

RAPPORTO DI PROVA N. 235951


ÉMI

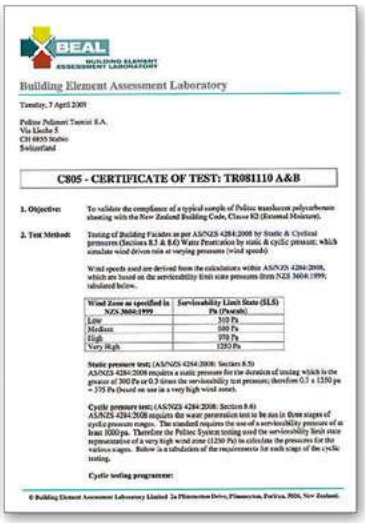
ÉME
ÉPÍTŐIPARI MŰSZAKI ENGEDÉLY


CSI

RAPPORTO DI CLASSIFICAZIONE
CLASSIFICATION REPORT
0412/DC\REA\14


Hoch

PRÜFZEUGNIS
PZ-Hoch-140230
zum Nachweis des Brandverhaltens nach DIN 4102, Teil 1


BEAL

Building Element Assessment Laboratory

C805 - CERTIFICATE OF TEST: TR081110 A&B


Avis Technique 2/12-1500*V1

Modulit 500 LP et
Modulit 338 LP


Applus laboratories

CLASIFICACIÓN

Clasificación de reacción al fuego: CLASE B-s1,d0

Stabilit products are certified by internationally accredited bodies and institutions, such as:

France: CSTB, LNE
Germany: Hoch
Hungary: ÉMI
Italy: CSI, Istituto Giordano
New Zealand: BEAL
Poland: ITB
Switzerland: FPC
USA: Architectural Testing
Spain: Applus + Laboratories

Our sales department will be more than happy to give you detailed information on which certificates are available and on tested products.

Company certification

UNI EN ISO 9001 certification

Our UNI EN ISO 9001 certification provides assurance in terms of quality, service and the testing of the raw materials we use, requiring us to meet stringent production standards and comply with strict control procedures.

Polycarbonate

Transparency 89%

Dimensional stability from -40°C to +130°C

High impact resistance from -20°C to +125°C

Self-extinguishing (oxygen index 28%)

Low creep

Low density (1,21 g/cm³)

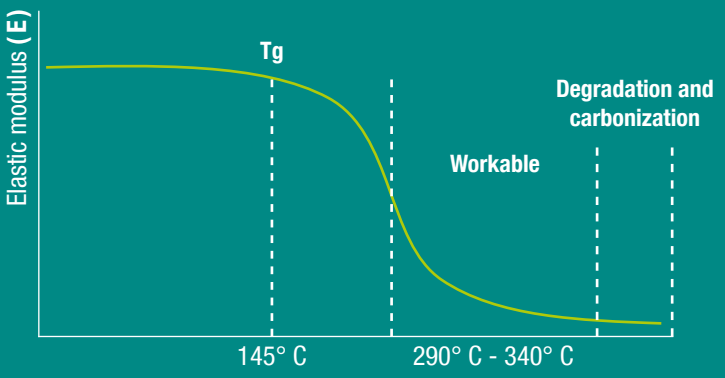
Excellent thermal and electric insulation

Extremely low moisture absorption (0,3%)

Good UV resistance

Morphological structure

Amorphous Aromatic Polymer
Polyester Family
Just one Tg a 138°C ~ 145°C



E_{glass} = *70000 N/mm²* - E_{PC} = *2300 N/mm²* - E_{ALU} = *7200 N/mm²*

PC: main advantages	
Light weight and transparency	lighter structure
Can be produced in low thicknesses	lighter weight
Self-extinguishing	good reaction to fire performance
Versatile to use	cold bending and thermobending
Visual adaptability	option of colouring with increasing degrees
Wide choice of surface finishes	plain, embossed, painted■ and metallic
Impact	ductile break = no shards in event of breakage
Dimensional stability	guaranteed long term
Compliance with industry standards	flammability, thermal insulation, loads
LCA (Life Cycle Assessment)	favourable and totally recyclable at end of life cycle

■ *Choosing the right solvent is essential to avoid damaging the polymer*

Polycarbonate properties

Polycarbonate is a thermoplastic polymer boasting excellent mechanical and physical properties. It is ductile and hardwearing, which is why it is used for such applications as producing CDs and DVDs; while the automotive, aviation and ballistics industries (airplane windows, car headlights, riot shields and helmets, etc.) value it for its impact resistance. All the above properties, along with its transparency, make polycarbonate suitable for building applications.

Technical data		Value	Unit	Standard
Mechanical properties				
Yield stress (50 mm/min)		63	MPa	ISO 527
Stress at break (50 mm/min)		70	MPa	ISO 527
Yield strain (50 mm/min)		6	%	ISO 527
Strain at break (50 mm/min)		120	%	ISO 527
Tensile modulus (1 mm/min)		2350	MPa	ISO 527
Impact properties				
Charpy V-notched impact strength	+ 23°C	75	kJ/m^2	ISO 179/1eA
	- 30°C	15	kJ/m^2	ISO 179/1eA
Izod notched impact strength	+ 23°C	70	kJ/m^2	ISO 180/1A
	- 30°C	12	kJ/m^2	ISO 180/1A
Physical properties				
Density		1,2	g/cm^3	ISO 1183
Water absorption (23°C; saturation)		0,35	%	ISO 62
Moisture absorption (23°C; 50% RH)		0,15	%	ISO 62
Water vapor permeability (23°C; 85% RH; 0,1 mm)		15	$g/(m^2\ 24h)$	ISO 15106-1
Thermal properties				
Coefficient of linear thermal expansion (23°C÷55°C)		0,65	$10^{-4}/K$	ISO 11359-2
Thermal conductivity		0,20	W/(m K)	ISO 8302
Vicat softening temperature (50N; 120°C/h)		145-149	°C	ISO 306
Typical values referred to polycarbonate as raw material.				

Comparison with other products

When compared with other commonly used construction plastics and with glass, polycarbonate demonstrates superiority in various properties.

	U.M.	PC	PMMA	PVC	PET	GRP	Glass
Density	g/cm^3	1,20	1,19	1,38	1,33	1,42	2,50
Strength	kJ/m^2	70	2	4	3	1,2	-
Modulus of elasticity	N/mm^2	2.300	3.200	3.200	2.450	6.000	70.000
Linear thermal expansion	1/°C	$6,5 \times 10^{-5}$	$7,5 \times 10^{-5}$	$6,7 \times 10^{-5}$	$5,0 \times 10^{-5}$	$3,2 \times 10^{-5}$	$0,9 \times 10^{-5}$
Thermal conductivity	W/m K	0,20	0,19	0,13	0,24	0,15	1,3
Max. service temperature	°C	120°	90°	60°	80°	140°	240°
UV transparency	%	4	40	nd	nd	19	80
Fire performance	-	very good	poor	good	good	poor	fireproof
Resistance to weathering	-	good	very good	poor	fair	poor	excellent
Chemical compatibility	-	fair	fair	good	good	good	very good

Ondatec

Ondatec 177 / 51 3W - 6 mm

Ondatec

Lightweight

High thermal insulation

Excellent impact resistance

Good light transmission

Good fire performance

Certified quality guarantee

UV protection

Ondatec panels are recommended for use in applications in combination with fibre cement sheets where it is necessary to create one or more spot lights. They are particularly suitable in replacement or refurbishment of ridge / gutter roofing applications, and large surface areas. **Ondatec** is available in flat version, with optional workings on request for special applications (eg. cutting lateral corners) and in the thickness of 6 mm. The product is supplied with thermowelded ends to reduce the condensation and the accumulation of dirt on the inside of the structure. It overlaps laterally and longitudinally, thus creating the possibility to realize lengths covering the whole slope. The range of optional accessories which completes the **Ondatec** makes its use very easy and versatile.

Impact resistance

Polycarbonate's mechanical properties make this the technopolymer with the highest impact resistance, allowing it to provide optimum protection against accidental damage and weather-related damage. These qualities mean polycarbonate significantly outperforms other materials (glass, acrylic, PET, etc.) commonly used in applications where transparency is a key requirement. Impact resistance remains constant across a particularly wide temperature range.

UV protection

Applying UV Absorber protection stops polycarbonate from absorbing UV rays that would otherwise lead to its rapid degradation and be responsible for subsequent yellowing and for undermining the strength of the exposed surface. UV protection is applied using co-extrusion technology, whereby an even shielding layer can be produced to screen the polycarbonate from the UV component of the solar radiation. With this technology, the UV protection is made resistant to weathering and is not prone to damage by incorrect maintenance.

Warranty

The panels with UV protection offer a 10-year warranty against yellowing, loss of light transmission and hail damage. Our sales department will be happy to provide you the exact warranty terms.

Fire behaviour

Fire safety is a fundamental necessity. The **Ondatec** panels are tested in independent qualified laboratories on the basis of current applicable regulations in the construction industry. Our offices are at your disposal to provide you with details regarding the available certificates.

Thermal transmittance

Thermal transmittance, or U-value, (unit of measure $W/m^2 K$) is the mean flow of heat per m^2 that passes through a structure (the polycarbonate panel) separating two environments with different temperatures (usually separating a heated or air-conditioned room from outdoors). The lower this value, the more effective the insulation offered by the panel. With a view to reducing heating/air-conditioning costs - with a consequent reduction in harmful emissions into the atmosphere - international standards require both building materials and fenestration systems to meet ever-stricter thermal transmittance requirements. With its extensive range of multiwall panels, **Stabilit Europa, s.l.u.** is at the cutting edge when it comes to providing its customers with the most appropriate solutions in compliance with current standards.

Thermal expansion

Thermal expansion is a characteristic property of materials that consists in their tendency to change in size as temperature increases. This expansion is quantified via a coefficient that, in the case of polycarbonate, equates to 0,065 mm/m °C. The fact that this coefficient value is much higher than the values associated with materials usually used for roofing and joinery (aluminium, steel, etc.) generates the need for solutions that compensate for this difference in thermal expansion, which thus needs to be factored in at the design stage and in all building applications.

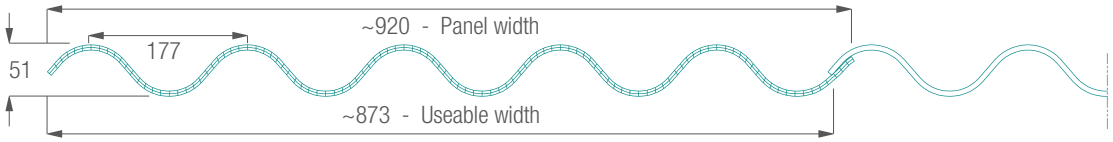
Light transmission

Proper lighting design entails ensuring that the building interior receives the required amount of light. So it is clearly important to use panels that let enough light through. The **Ondatec** product range gives you plenty of choice at the design stage of your project, with an array of colour options to meet your every need.

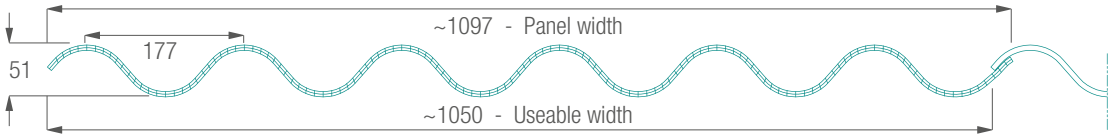
Ondatec 177/51 3W - 6 mm

Ondatec 177/51 3W 6 mm is a corrugated multiwall panel designed to be used for roofs and vertical walls in industrial buildings. **Ondatec** panels perfectly match the fibre cement roof panels: this enables the creation of both ridge-to-gutter skylights and spot lights in the middle of pitched roofs, as well as continuous roofs thanks to the perfect possibility of longitudinal and transversal overlapping. The panel can be supplied with a UV-resistant coextruded transparent gasket, able to increase the air and water tightness performance.

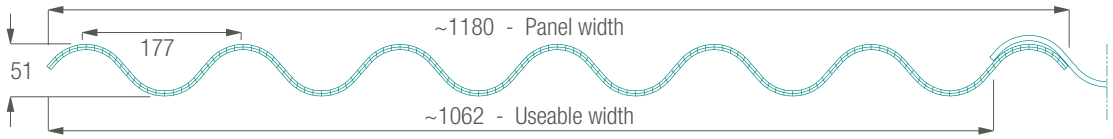
PLUS



5½ waves



6½ waves



7 waves

Ondatec 177/51 3W - 6 mm technical data			
Thickness	6 mm		
Walls nr.	3		
Wave pitch	177 mm		
Height	51 mm		
Width	5½ waves: 920 mm (useable width 873 mm)	6½ waves: 1097 mm (useable width 1050 mm)	7 waves: 1180 mm (useable width 1062 mm)
Length	Upon request (maximum recommended length 6 m)		
Thermal transmittance	3,3 W/m^2 K		
Colours		**LT**	**G Value**
	Clear (8005)	72%	-
	Opal (8121)	60%	-
UV protection	Coextruded on the external side		
Warranty	10-year warranty against hail damage, yellowing, loss of light transmission		
Service temperature	-40°C / +120°C		
Thermal expansion coefficient	0,065 mm/m°C (6,5 x 10^{-5}1/k)		
Fire certification	EUROCLASS B s1 d0		

FLAT ROOF SPECIFICATIONS

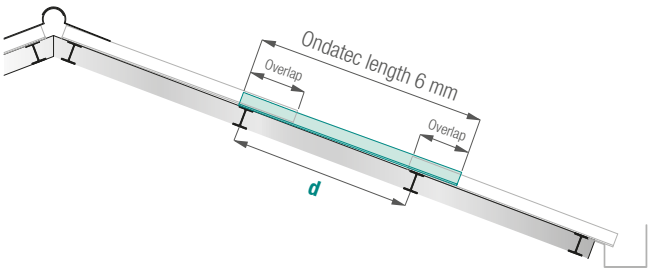
Construction of a flat translucent roof and / or skylight consisting of:

- **Ondatec 177/51 3W 6 mm** corrugated multiwall panel, co-extruded UV protection on the external side, 3 walls structure, 6 mm thickness, wave height 51 mm, thermal transmittance 3,3 W/m^2 K, clear or opal colours, thermowelded ends; dimensions: panel width 920 mm and 1097 mm (useable width 873 mm and 1050 mm), length upon request; 10-year warranty.
- The panel can be supplied with UV-resistant coextruded transparent gasket, to increase the performance of air and water tightness.
- PE spacer.
- Metal half-ridge cover (upon request).

Ondatec 177/51 load charts

Load chart for FLAT option - 2 supports

Admissible load D/50	
Load (N/m2)	Distance between supports (mm)
600	1100
800	1050
1000	1000
1200	950
1400	900
1600	850
1800	750
2000	700



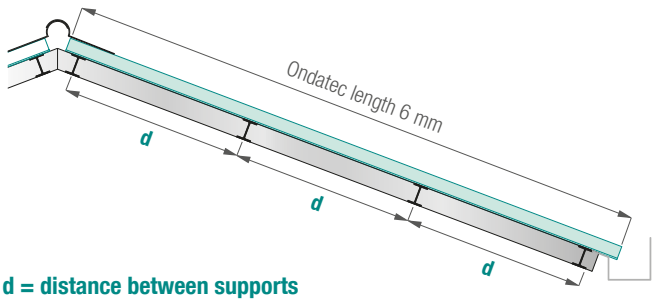
d = distance between supports

Camber 1/50 – distance between supports --------

Maximum camber limit 50 mm ———

Load chart with 3 or more supports for FLAT solution

Admissible load D/50	
Load (N/m2)	Distance between supports (mm)
600	1450
800	1300
1000	1200
1200	1150
1400	1100
1600	1050
1800	1000
2000	950



d = distance between supports

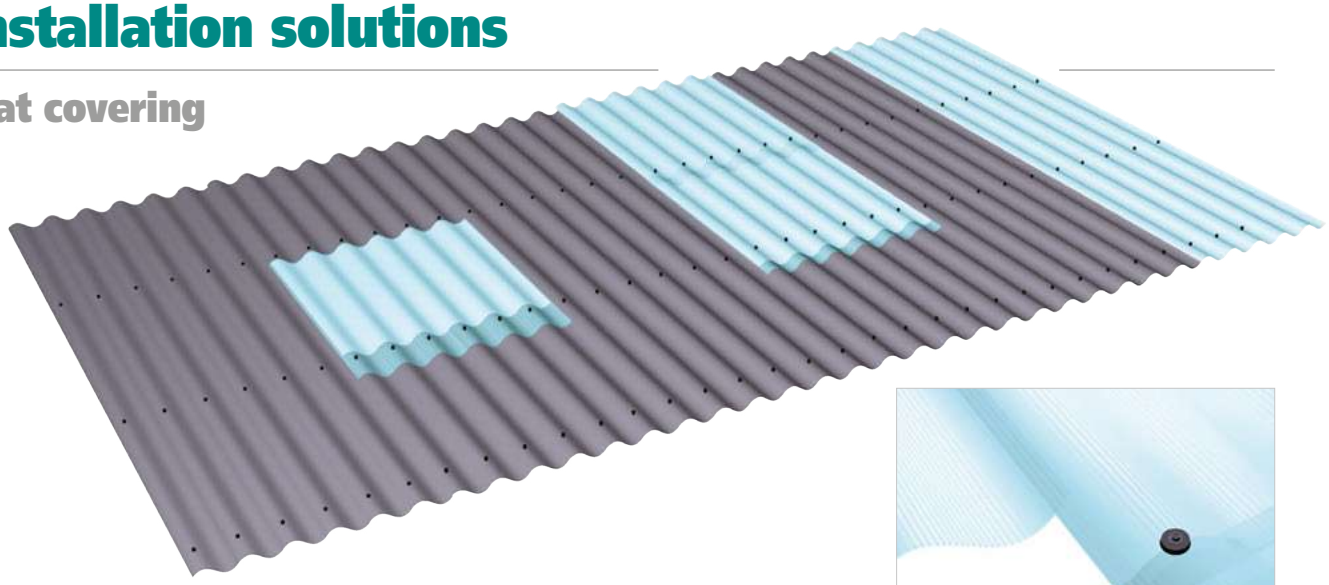
Camber 1/50 – distance between supports --------

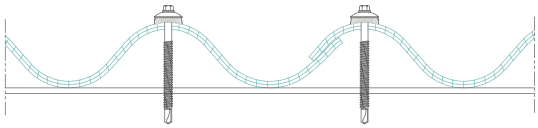
Maximum camber limit 50 mm ———

NOTE: minimum recommended slope 5%.

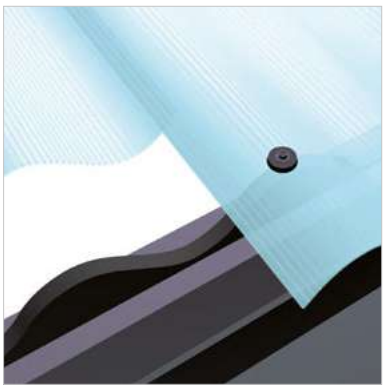
Installation solutions

Flat covering

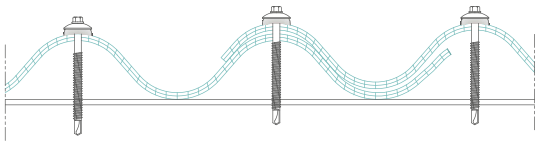




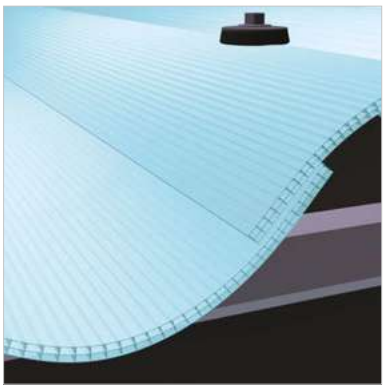
Standard overlap 5½ and 6½ waves



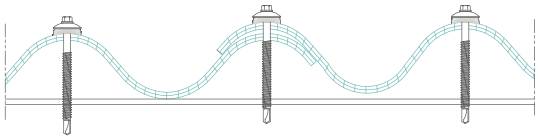
Detail with PE spacer



Overlap for areas exposed to high winds 5½ and 6½ waves



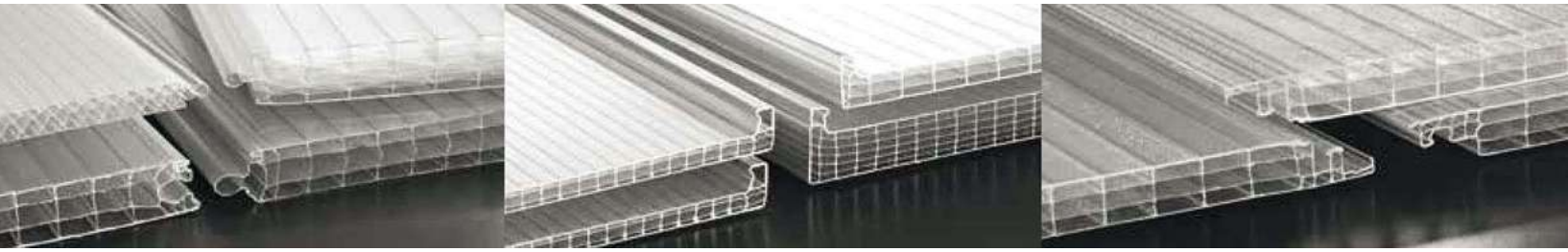
Detail for fixing and overlapping



Standard overlap 7 waves

Ondatec 177/51 accessories

			
Metal half-ridge cover	GRP header	PE spacer	Long / short fixing screw for high / low wave



Distributor

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EUROPA

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