

4.1 SOLID SHEETS

PoliComp®
← 2.500mm →

Polycarbonate solid sheets with U.V. protection on both sides

DESCRIPTION

The development of extrusion technology have allowed the construction of a plant unique in Europe for the production of solid polycarbonate sheets with width of 2,500 mm of various thicknesses and colors.

The polycarbonate product range is divided into solid PoliComp® sheets, with UV protection on both sides. Scudo®Pro sheets, no UV protected ideal for industrial applications.

PRODUCTION STANDARDS

Thickness (mm)	2	3	4	5	6	8	10	12	15
Weight (kg/m ²)	2,4	3,6	4,8	6,0	7,2	9,6	12,0	14,4	18,0
Width (mm)	2.050 - 2.500								
Length (mm)	6.100								



SPECIAL TREATMENT

ADVANTAGES

- ❖ Only plant that produces up to 2.500mm width
- ❖ Light transmission
- ❖ Resistance to U.V. rays and to hail
- ❖ Impact strength
- ❖ Easy to process

APPLICATIONS

- Vertical windows
- Roofing
- Curved roofing
- False ceilings

produced in accordance with EN 16240

SAFETY

Scudo®Pro sheets are used in safety glazing applications, for machine tool guards.

PoliComp® sheets are used instead for build roof, vertical windows and advertising signs.

LIGHTNESS

Compared to normal glass structures, PoliComp® and Scudo®Pro sheets considerably reduce the weight of the structures.

A solid polycarbonate sheet weighs 50% less than a sheet of glass of the same thickness.

LIGHT TRANSMISSION

PoliComp® sheets have good light transmission properties and are also available in bronze and opal.

ENERGY SAVING

PoliComp® sheets provide excellent thermal insulation, an important factor in reducing fuel consumption for heating buildings.

DURABILITY

PoliComp® sheets are guaranteed for durability. (see terms of warranty)

COEXTRUSION

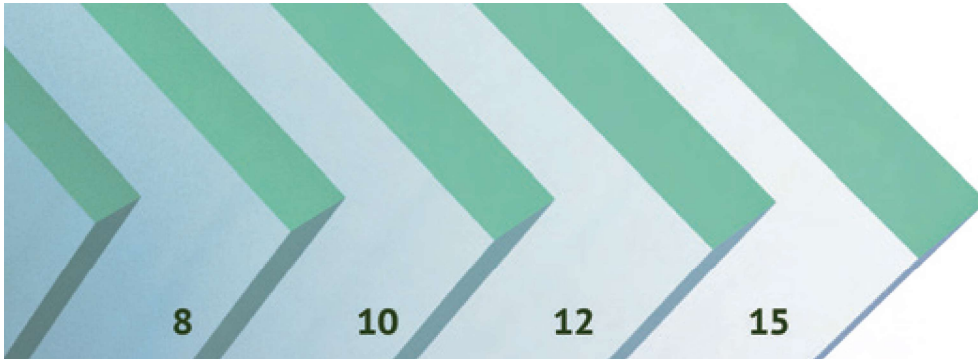
A layer of high-performing UV absorber is coextruded onto both sides of PoliComp® sheets. This filters the light and protects the polymer against the effects of ageing, ensuring excellent impact strength even after prolonged exposure to sunlight.

UV PROTECTION ON TWO SIDES

PoliComp® sheets have UV protection on both sides.

SELF-EXTINGUISHING

The solid polycarbonate sheets have Class1 type approval in thickness from 8mm to 12mm, and meet the EuroClass B-s2,d0 fire rating in accordance with the European legislation EN 13501-1 for thickness from 2mm to 6mm.



PHYSICAL PROPERTIES

	Value	Unit	Test metod
Density	1.200	kg/m ³	ISO 1183
Moisture absorption 23°C	0,15	%	ISO 62-4
Refractive index 20°C	1.586	-	ISO 489

MECHANICAL PROPERTIES

	Value	Unit	Test metod
Resistance to tensile stress	>60	MPa	ISO 527-2
Elongation at yield	6	%	ISO 527-2
Elongation at break	>70	%	ISO 527-2
Elastic modulus	2.300	MPa	ISO 527-2
Limiting flexural stress	ca.90	MPa	ISO 178
Impact strength (Charpy, unnotched)	no break	kJ/m ²	ISO 179
Impact strength (Charpy, notched)	ca.11	kJ/m ²	ISO 179

THERMAL PROPERTIES

	Value	Unit	Test metod
Vicat softening temperature	146-151	°C	ISO 306
Thermal conductivity	0,2	W/m°C	ISO 8302
Linear thermal expansion	0,065	mm/m°C	ISO 11359-2

ELECTRICAL PROPERTIES

	Value	Unit	Test metod
Dielectric strength	35	kV/mm	IEC 60243-1
Volume resistivity	1E14	Ohm/m	IEC 60093
Surface resistivity	1E16	Ohm	IEC 60093

LIGHT TRANSMISSION (%)

Thickness (mm)	2	3	4	5	6	8	10	12	15
Color									
transparent	91	90	90	89	88	86	83	80	78
bronze	70	60	51	43	41	33	29	23	15
light blue	-	62	57	52	47	42	-	-	-
opal	60	53	48	42	38	30	22	16	11
green	83	79	75	71	67	59	51	43	-

THERMAL TRANSMITTANCE U (W/m²K)

Thickness (mm)	2	3	4	5	6	8	10	12	15
PoliComp®	5,60	5,40	5,30	5,10	5,00	4,80	4,50	4,30	4,10
Glass	-	5,87	5,82	5,80	5,77	5,71	-	-	-

ACOUSTIC INSULATION (R_w) (dB)

Thickness (mm)	2	3	4	5	6	8	10	12	15
Value	25	26	27	28	29	31	33	34	37

WEIGHT (kg/m²)

Thickness (mm)	2	3	4	5	6	8	10	12	15
PoliComp®	2,4	3,6	4,8	6,0	7,2	9,6	12,0	14,4	18,0
Glass	5	7,5	10	12	15	20	25	30	-

The solid polycarbonate sheets in the extensive PoliComp® range offer extreme transparency. They are ideal for applications that require superior thermal and sound

insulation combined with a lightweight structure with good impact strength. PoliComp® sheets are as clear as glass, weigh half as much and are 250 times more impact resistant.



APPLICATION OF FLAT SHEETS

Solid polycarbonate sheets can be installed in most PVC, wood, steel and aluminium structures and frames.

The frame must hold the sheet in place while allowing it to expand. The choice of sheet thickness depends on the load value required. According to the size of the sheet, from table A, the effective area and also the thickness will be calculated.

Table B can be used to calculate the thickness of the sheet to be used according to the size of the sheet (AREA) and the required load value.

The values shown in table B (positive and negative loads) have been calculated for sheets fixed on four sides, with a maximum bend value (rise) of 50mm.



SHEET SIZE

	Sheet width (m)							
	0.25	0.50	0.75	1.00	1.25	1.50	1.75	2.00
0.25	A1	A1	A1	A1	A1	A1	A1	A1
0.50	A1	A2	A3	A4	A4	A4	A4	A4
0.75	A1	A3	A5	A6	A7	A7	A7	A7
1.00	A1	A4	A6	A8	A9	A9	A10	A10
1.25	A1	A4	A7	A9	A10	A11	A12	A13
1.50	A1	A4	A7	A9	A11	A13	A14	A15
1.75	A1	A4	A7	A10	A12	A14	A16	A17
2.00	A1	A4	A7	A10	A13	A15	A17	A18
2.25	A1	A4	A7	A10	A13	A16	A18	A19
2.50	A1	A4	A7	A10	A14	A16	A19	
2.75	A1	A4	A7	A11	A14	A16	A19	
3.00	A1	A4	A7	A11	A14	A17	A19	
3.25	A1	A4	A7	A11	A14	A17		
3.50	A1	A4	A7	A11	A14	A17		
3.75	A1	A4	A7	A11	A14	A17		
4.00	A1	A4	A7	A11	A14	A17		
4.25	A1	A4	A7	A11	A14	A17		
4.50	A1	A4	A7	A11	A14	A17		
4.75	A1	A4	A7	A11	A14	A17		
5.00	A1	A4	A7	A11	A14	A17		

TABLE A

CHOICE OF THICKNESS

AREA	Load (daN/m ²)				
	60	80	100	120	140
A1	3	3	3	3	3
A2	3	3	4	4	4
A3	4	4	4	4	5
A4	4	4	5	5	6
A5	5	5	5	5	6
A6	5	6	6	6	8
A7	6	6	8	8	8
A8	6	6	8	8	8
A9	8	8	8	8	10
A10	8	8	10	10	10
A11	10	10	10	10	12
A12	10	10	10	12	12
A13	10	10	10	12	
A14	10	12	12		
A15	10	12	12		
A16	10	12	12		
A17	12	12			
A18	12	12			
A19	12				

TABLE B



INSTALLATION GUIDELINES

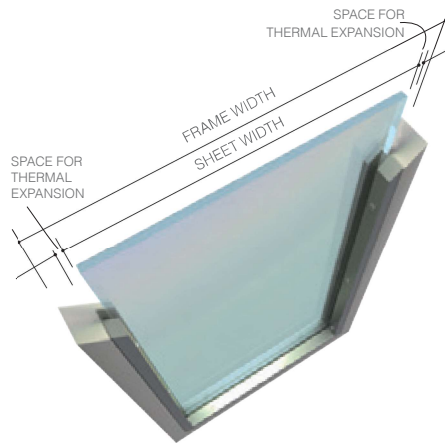
When cutting sheets to allow for thermal expansion special care must be taken to avoid applying stress to the material.

Tolerance must be provided both widthwise and lengthwise.

The table at the side shows the sheet cutting values, depending on the size of the frame, in order to allow for thermal expansion.

The edge fitting must be deep enough to allow the material to expand and also to prevent the sheet from escaping from the frame.

Frame (mm)	Sheet cut (mm)
300 - 1.000	3
1.000 - 1.300	4
1.300 - 1.700	5
1.700 - 2.000	6
2.000 - 2.300	7
2.300 - 2.700	8
2.700 - 3.000	9



APPLICATION OF COLD-CURVED SHEETS

PoliComp® is ideal for building integral arch or tunnel structures.

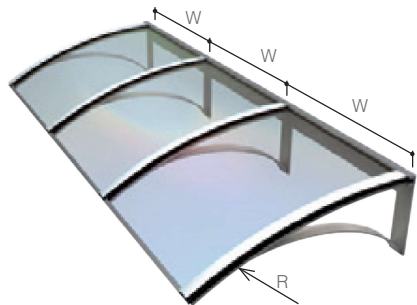
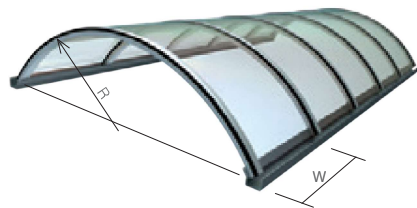
The minimum bend radius is 150 times the thickness of the sheet.

Example:

Sheet thickness: 3mm

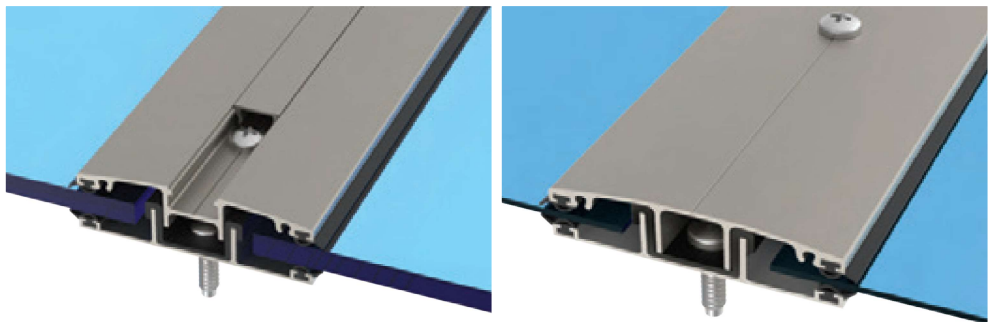
Min. radius = 3 x 150 = 450mm

The choice of sheet thickness depends on the bend radius R but also on the width of the sheet W. The length L must always be greater than the width W.



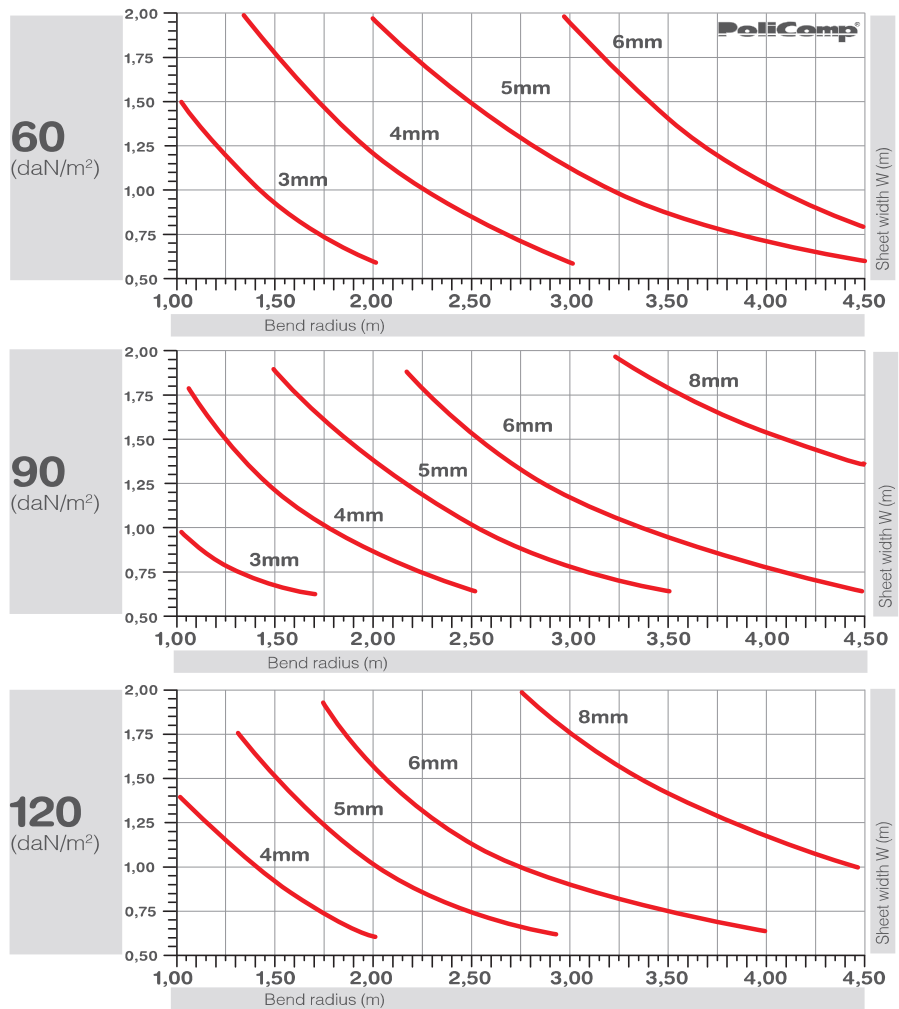
MINIMUM BEND RADIUS

Thickness (mm)	2	3	4	5	6	8	10	12
Radius (mm)	300	450	600	750	900	1.200	1.500	1.700



LOAD RESISTANCE

The graphs indicate the appropriate sheet thickness, for different bend radii, under different load conditions. These values have been calculated with sheets fixed on three sides.



ACCESSORIES



4890
Upper Aluminium profile with visible fixing screws



4892 (+4891)
Aluminium covering strip to hide screws



2760
Hollow rubber seal for H upper profile



4891 (+4892)
Upper Aluminium profile for hidden screws



2761
Thermal-break inner spacer for Alu H profiles



4898
PC closing cap for Alu H profiles



4893
Alu Base H profile for sheet th. 2-12 mm