

# PLAZIT-POLYGAL MULTIWALL POLYCARBONATE EXTRUDED STANDING-SEAM SYSTEM (TOPGAL)

## PRODUCT DATASHEET



### DESCRIPTION

The PLAZIT-POLYGAL MULTIWALL POLYCARBONATE EXTRUDED STANDING-SEAM SYSTEM (TOPGAL) is suitable for the roofing and covering of buildings.

The TOPGAL polycarbonate panels are produced according to the European Standard EN 16153-2013.

TOPGAL (TPGL) polycarbonate panels are available in thicknesses of 6, 8, 10, 16 and 20 mm, and in two standard panel widths – 600 mm and 998 mm. The TOPGAL panel system includes all accessories needed for installation.

TOPGAL's unique multi-wall structure, with its relatively low weight, enables the optimum transmission of light into buildings and provides excellent thermal insulation, wind-load resistance, and high structural strength and superior rigidity.

It is available in a choice of colors and with coatings for reflection of solar rays.

Standard TOPGAL panels have UV protection on one side, 2-side UV protection is available on request.

### TYPICAL PROPERTY VALUES

Type / Thickness, mm / Weight, g/m <sup>2</sup>	Width, mm	K-Value, W/m <sup>2</sup> ·°C	Min. Radius for Cold Bending*, m	Impact Strength, joule	Sound Reduction Value, Db	Coefficient of linear expansion	Service Temperature Range
TPGL 6/1600	600	3.1	1.2	1.25	18	6.65•10 <sup>-5</sup> m/(m•°C): 2.5 mm/m for clear and white, 4.5 mm/m for dark sheets (ΔT=80°C)	-40°C–+120°C for short time service. -25°C to +85°C for prolonged service
TPGL 8/1900	600	2.4	1.8	1.53	18		
TPGL 10/2200	600	2.1	2.0	1.61	19		
TPGL 16 3000	600	1.9	3.2	2.00	21		
TPGL 16/3000	998	1.8	3.2	2.31	21		
TPGL 20/3200	998	1.5	4.0	3.00	22		

#### Remarks:

\* Cold bending can be done only in the direction of the ribs, never parallel to the ribs.

- K-Values are based on ASTM C177. Overall Heat Transfer Coefficient is measured according to winter night conditions with no solar radiation.

- Impact Strength is tested with a Falling Dart Impact Test according to ASTM D-5628.

- Sound Reduction Value is calculated according to DIN 52210.

### OPTICAL PROPERTIES

Typical Colors are: clear (CLR), bronze (BRZ) and opal (ICE).

Property values for other standard / special colors are available upon request.

**Clear sheets:**

Thickness, mm	Width, mm	SC**	SHGC**	Light Transmission (%) by ASTM D 1003
TPGL 6	600	0.8	0.7	65
TPGL 8	600	0.7	0.6	65
TPGL 10	600	0.7	0.6	65
TPGL 16	998	0.6	0.51	50
TPGL 16	600	0.65	0.55	60
TPGL 20	998	0.6	0.51	47

**Bronze colored sheets:**

Type / Thickness, mm	Width, mm	SC**	SHGC**	Light Transmission (%) by ASTM D 1003
TPGL 6	600	0.6	0.51	30
TPGL 8	600	0.58	0.5	30
TPGL 10	600	0.58	0.5	30
TPGL 16	998	0.46	0.39	20
TPGL 16	600	0.49	0.42	20
TPGL 20	998	0.46	0.39	20

**ICE colored sheets:**

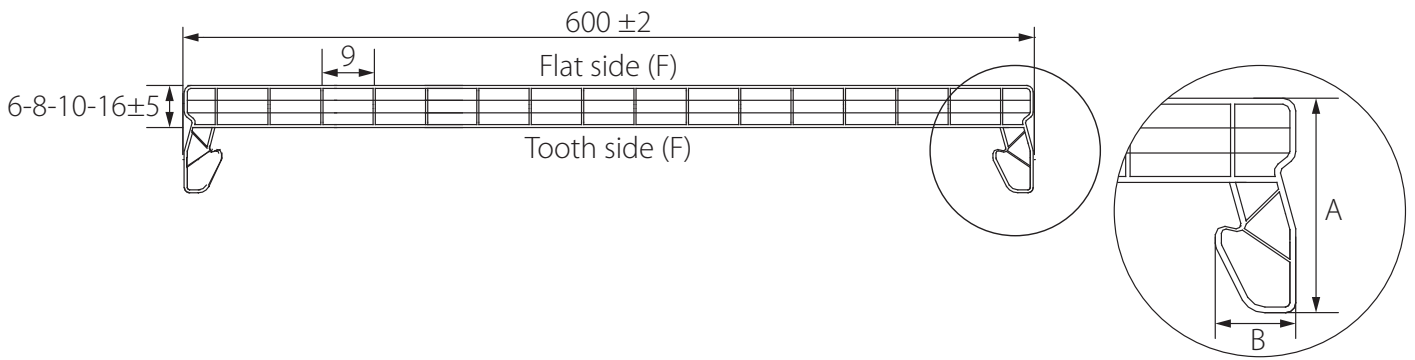
Type / Thickness, mm	Width, mm	SC**	SHGC**	Light Transmission (%) by ASTM D 1003
TPGL 6	600	0.42	0.37	20
TPGL 8	600	0.41	0.36	20
TPGL 10	600	0.4	0.35	20
TPGL 16	998	0.37	0.32	20
TPGL 16	600	0.4	0.35	20
TPGL 20	998	0.37	0.32	20

\*\* **SC** - Shading Coefficient is the ratio between SHGC of the panel and SHGC of 3 mm glass.

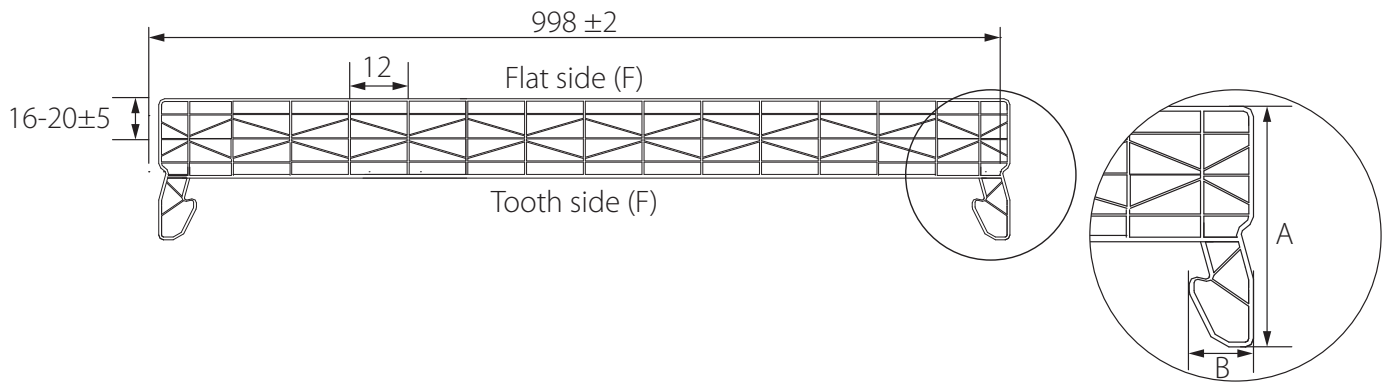
\*\*\* **SHGC** - Solar Heat Gain Coefficient is the ratio between the solar heat gain through the panel and the incident solar radiation.

PANEL STRUCTURES

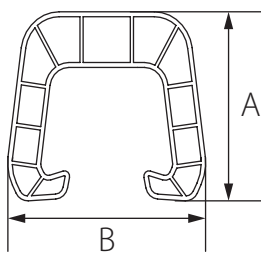
Topgal 6, 8, 10, 16 mm



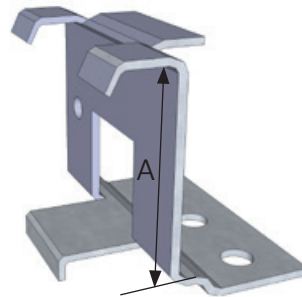
Topgal 16 and 20 mm



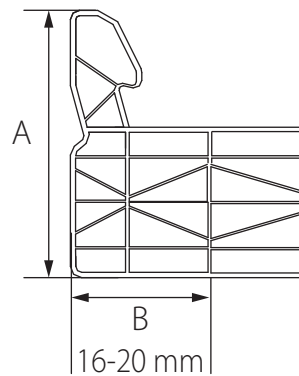
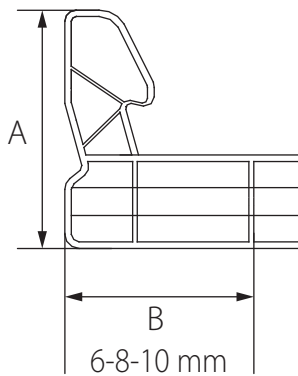
PC Connector



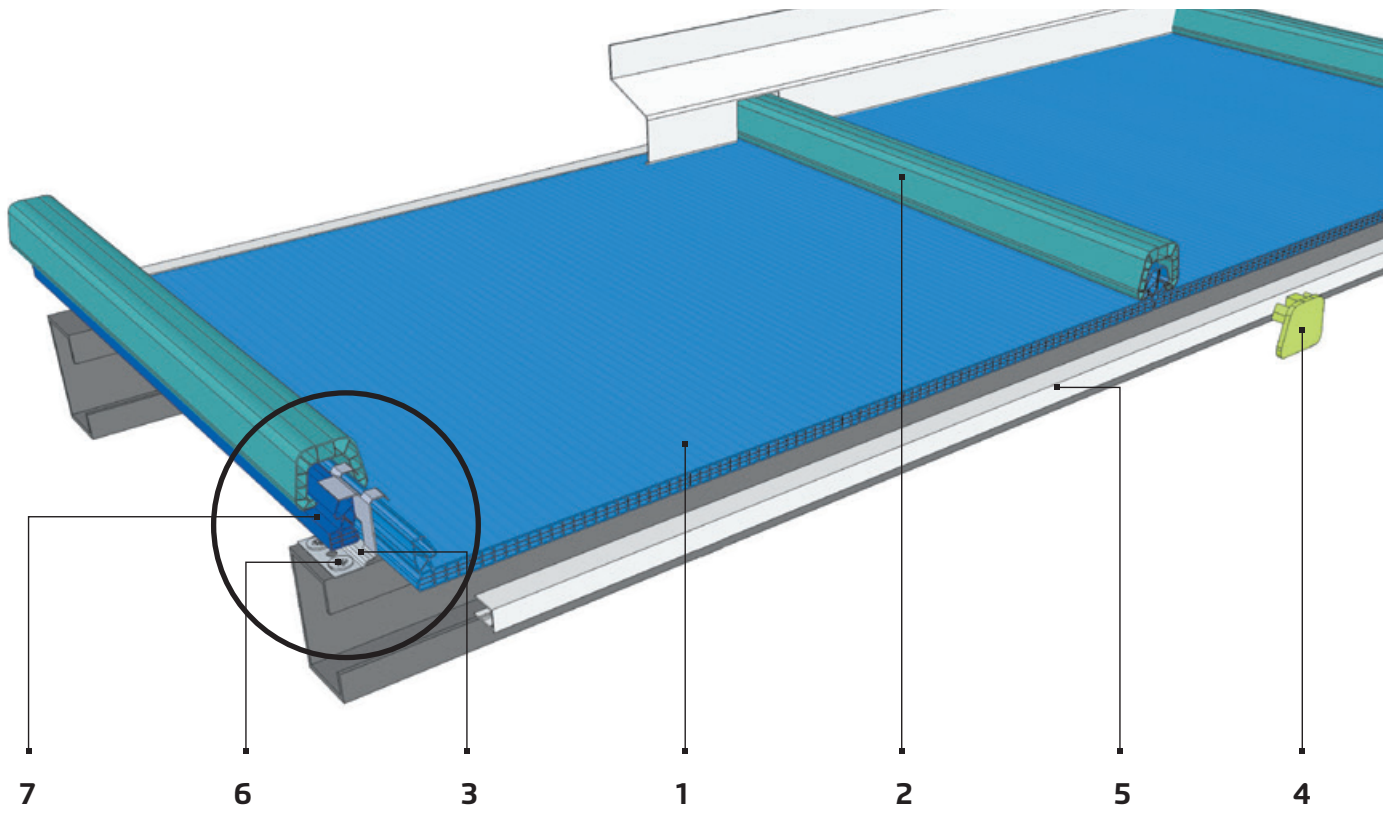
Fastener



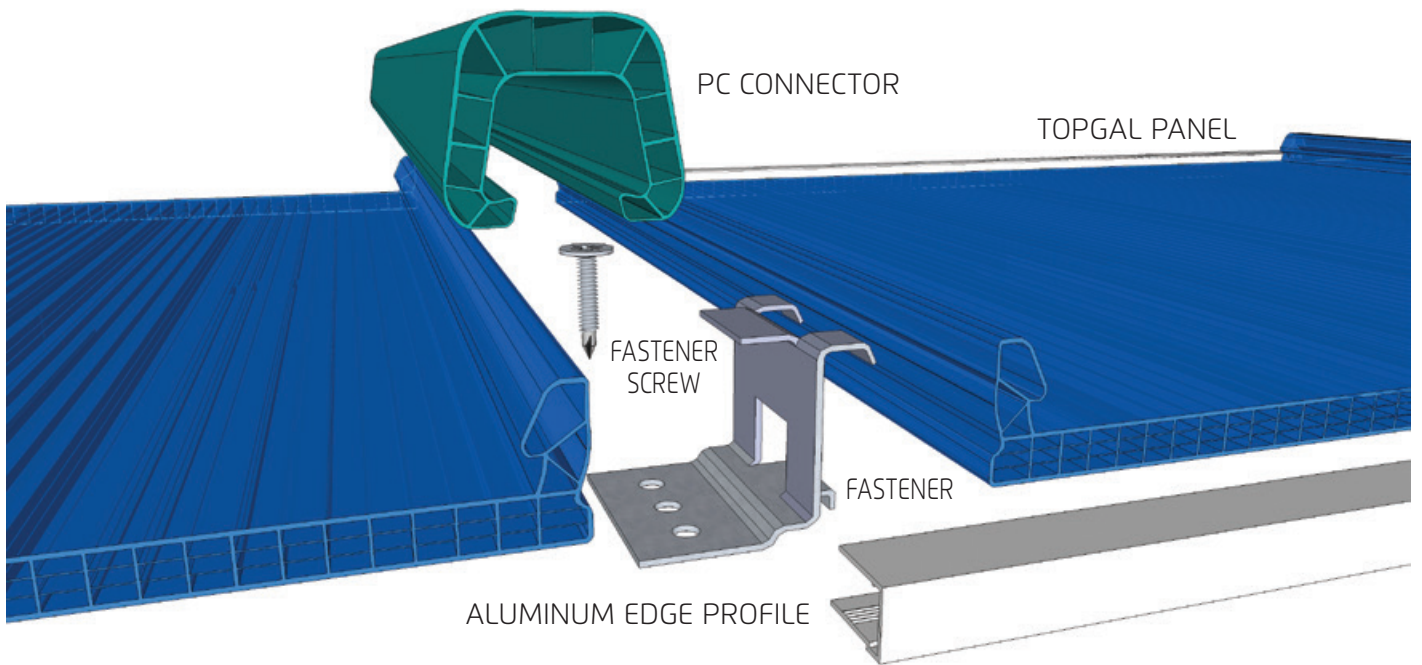
PC Side profiles



# INSTALLATION SCHEME



# DETAIL A



## TOPGAL INSTALLATION ACCESSORIES

NN	Item	Function	Cat. No	Description
1		TOPGAL PANEL		Maximum panel length for export is 11.80 m
2		PC CONNECTOR	#240	Color: panels matched
3		FASTENER	#534 – 6 mm #530 – 8 mm #531 – 10 mm #532 – 16 mm #533 – 20 mm	Stainless Steel
4		CONNECTOR END CAP	#525	Polycarbonate Color: clear
5		ALUMINUM EDGE PROFILE	#327 – 6 mm #311 – 8 mm #312 – 10 mm #313 – 16 mm #328 - 20 mm	Length 6 m
6		FASTENER SCREW	#431 -(for metal structures) #436 -(for wood structures)	Philips #10 / 5/8" Philips #10 / 1"
7		PC SIDE PROFILE	#245 – 6 mm #241 – 8 mm #242 – 10 mm #243 – 16 mm #244 - 20 mm	Color: panels matched
8		STOPPER	#554 – 6 mm #550 – 8 mm #551 – 10 mm #552 – 16 mm #553 – 20 mm	Stainless Steel
9		ALUMINUM CONNECTOR	#360	Length 6 m
10		ANTI DUST TAPE	#508 - 6-8 mm #509 – 10-16 mm #510 - 20 mm	Roll length 33m
11		ALUMINUM SIDE PROFILE	#361	Length 6 m
12		Gap Sealing Foam	#41525 - 6-10 mm #41526 - 16-20 mm	600 mm length (6-10 mm) 1000 mm length (16-20mm)

## TOPGAL ACCESSORIES DIMENSIONS

Type	Panel Thickness, mm	Height, mm (A)	Width, mm (B)
PC CONNECTORS	all	31.0	29.5
PC SIDE PROFILES	6	21.5	20
	8	23.5	20
	10	25.5	20
	16	31.5	20 \ 23*
	20	35.5	23
FASTENERS	6	22.2	
	8	24	
	10	26	
	16	32.5	
	20	36	

\*16/600 \ 16/998

## TOLERANCES FOR DIMENSIONS

Maximum length: subject to shipping constraints.

Type	Panel Thickness, mm	Panel Thickness, mm	Width (B) / Height (A) of Profiles, mm	Length, mm
TPGL 6 / 600	± 0.5	± 2		$\leq 3 \text{ m} - - 0 / + 6$ $\geq 3 \text{ m} - - 0 / + 0.2\%$ from nominal length
TPGL 8 / 600				
TPGL 10 / 600				
TPGL 16 / 998				
TPGL 16 / 600				
TPGL 20 / 998				
PC CONNECTOR (all thicknesses)			± 0.5 / ± 0.5	- 0 / + 0.2% from nominal length
PC SIDE PROFILE			± 0.5 / ± 0.3	$\leq 3 \text{ m} - - 0 / + 6$ $\geq 3 \text{ m} - - 0 / + 0.2\%$ from nominal length

### Planar bowing ("Banana") Tolerance

Max allowed planar bowing of the sheet - 0.15% of nominal length

### Flatness ("Bowling" or "Waves") Tolerances

Max allowed deviation from flatness - 0.5% of nominal width of the sheet

## DEFINITIONS

### UV PROTECTION

A coextruded UV absorbing layer which is an integral part of the panel and protects the panel from degradation from solar ultraviolet radiation. The effectiveness of this protection has been confirmed by field and laboratory durability testing of the Yellowness Index (YI), Light Transmission (LT) and Impact resistance.

Plazit-Polygal TOPGAL panels are warranted against loss of physical, mechanical and optical properties during the guarantee period. Details are available at the Plazit-Polygal website ([www.plazit-polygal.com](http://www.plazit-polygal.com)).

### FIRE TEST PERFORMANCE

Plazit-Polygal TOPGAL multiwall polycarbonate panels are suitable for construction applications according to standards ASTM D635 and ASTM E84 and EN 13501. For detailed information, please contact Plazit-Polygal Technical Support.

### CHEMICAL RESISTANCE

Plazit-Polygal polycarbonate multiwall panels can be safely used with most building materials and glazing components, however, some common materials are **not compatible** with polycarbonate. The chemical stability depends on many factors such as the concentration of the chemical agents and on exposure temperature. Considering the complexity of chemical compatibility, all materials which intended for contact with the polycarbonate products should be tested. A list of compatible and non-compatible materials is available for download at the Plazit-Polygal website ([www.plazit-polygal.com](http://www.plazit-polygal.com)).

### GENERAL GUIDELINES

#### STORAGE

TOPGAL panels must be stored in a dry, dark and well-ventilated area, with NO EXPOSURE to direct sunlight, wind, dirt or hard objects. Avoid storage in areas with excessive heat or aromatic cleaning solvents.

Panels should be stored on a flat clean raised surface and placed on a soft material (such as cardboard) to prevent damage. DO NOT store panels under flexible PVC coverings, as flexible PVC is not compatible with polycarbonate and can cause serious damage to the panels.

#### CLEANING & MAINTENANCE

Polycarbonate panels will give longer and more effective service life by cleaning by warm soapy water using a mild liquid dish soap. If any dirt remains, gently wipe off with a soft cloth.

- Commercial liquid cleaners may **not** be compatible with polycarbonate and are not recommended.
  - Sponges, squeegees, brushes or sharp instruments should **not** be used for cleaning panels as they can damage the protective UV coating and/or causes scratches in the panel surface.
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## RE-WORKING

- Polycarbonate panels can be cut easily and accurately using standard workshop equipment. This includes standard circular, jig or table saw with a blade having 8-12 teeth per inch (circular saws should have fine-toothed panel blades).
- Holes can be easily and cleanly drilled with regular drills (holes should be made slightly larger than screws in order to allow for thermal expansion).
- Cold bending can be done but only in the direction of the ribs, never parallel to the ribs (see properties table above for minimum bending radius)
- TOPGAL Installation Instruction is available at the TOPGAL Guide Book.  
For detailed information, please contact Plazit-Polygal Technical Support.

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DISCLAIMER: The data in this advertisement are provided in good faith and constitute general information without commitment and no warranty is given or implied. Our plastics products are a combustible thermoplastic that complies with various international standards, as customary in each country. Avoid exposure to excessive heat or aromatic cleaning solvent. Normal fire precautions should be taken to protect against combustion.

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