BRINGS NATURE IN

Installation Instructions
for Using HCP Fastening Accessories
with Polygal Sheets

Wise men look before they leap…

This ancient adage is certainly very apt in the case of long life construction elements such as air vents; shade roofing, covered car parking, greenhouses, warehouses, interior partitions, skylights and more…

These installation instructions will allow you to install Polygal sheets correctly, using the company's 35 years of accumulated experience in the field of lightweight roofing in Israel and around the world. To assist you with any questions you may have, Polygal's Technical Support Department is at your service at all times. (E-mail: techsupport@polygal.com).

Safety at the Jobsite

- √ Employ all safety measures required for working on scaffolding and roofs
- √ Beware of slipping when working above the roofing sheets
- √ Beware of losing your balance when carrying sheets in windy conditions

A selection of Polygal products:

Product	Thickness (inch)	Colors	Dimensions
PCSS Type Sheets	¼", 5/16", 3/8", 5/8"	Clear, bronze, blue, green, turquoise and ice. Polyshade Silver and blue Primalite (except for ¼")	Standard Dimensions: Width – 6.9'. Length – 19.7'. Special Dimensions: Width – Any width up to 6.9'. Length – Up to 39.4'.
Titan Type Sheets	5/8"		
HCP Polycarbonate Fastenings		Clear, bronze, blue, green, turquoise, ice, Polyshade Silver.	Standard Dimensions: Length – 19.7'. Special Dimensions: Length – Up to 39.4'.

Storage Before Installation

- Store the sheets on a flat surface, protected from direct sunlight.
- Do not cover the roofing sheets with PVC sheeting (tarpaulin).

Preparing the Supporting Structure

- Complete all the metalwork and painting before beginning sheet installation work.
- Check the dimensions on site, and plan the roofing requirements before ordering Polygal products for the project.

Planning the Supporting Structure

- Install the sheets with the ribs parallel to rain flow and with a slope of at least 10° ①
- Supporting beams must be at least 1" wide ② to ensure good anchorage of sheets and fastening accessories.

Purlin structure

Main beam structure
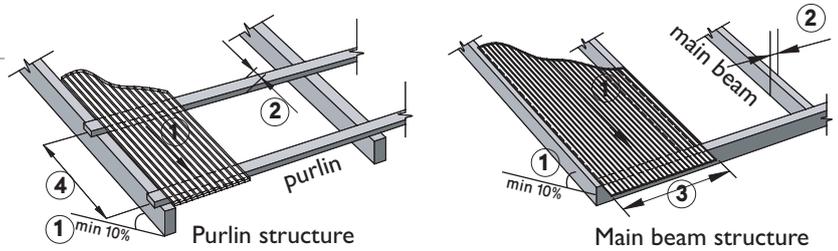
Calculation of maximum recommended* distance between main beams and between purlins for **flat roofing** must take into account wind pressure of up to 20 PSF.

| Sheet Type and Thickness (inch)	Distance (inch) Between Supporting Structure Main Beams (sheet width)	Distance Between Purlins According to Sheet Width		
		Up to 27.6"	Up to 39.4"	Up to 49.2"
Standard 5/16" - 3/8"	29.5"	47.2"	45.3"	35.4"
Standard 5/8" / Titan 5/8"	41.4" / 47.2"	59"	49.2"	47.2"

Calculation of maximum recommended* distance between main beams and between purlins for **curved roofing** must take into account wind pressure of up to 20 PSF.

Sheet Type and Thickness (inch)	Distance between main beams (sheet width) in the main beam structure (inch)							Distance between purlins for a 49.2" wide sheet
Curve width S (inch)	118"		157.5"			500"		
Curve height h (inch)	17.7" - 29.5"	23.6"	31.5"	39.4"	29.5"	39.4"	49.2"	
Standard 5/16" - 3/8"	49.2"		37.4"	45.3"	49.2"	31.5"	37.4"	41.3"	43.3"
Standard 5/8" / Titan 5/8"	49.2"	-	49.2"		-	49.2"			47.2"

* Ensure that a qualified professional checks and approves the structure before execution.

Smallest permissible cold bending radius (R)

Sheet Thickness (inch)	¼"	5/16"	3/8"	5/8"
Smallest Bending Radius (inch)	41.3"	55.1"	68.9"	110.2"
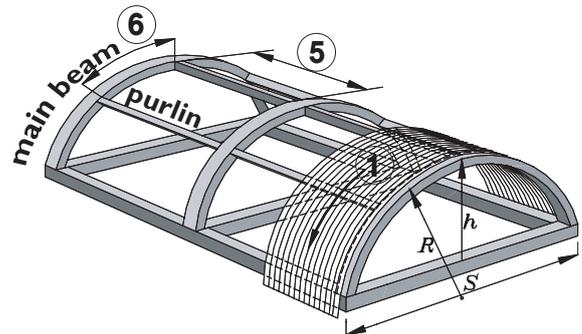
Polygal Accessories Required for Installation

| Accessory		Accessory Catalogue Number			
		¼" Sheet	5/16" Sheet	3/8" Sheet	5/8" Sheet
Aluminum Edge Profile		327	311	312	313
Polycarbonate Connecting Profile			210		211
Polycarbonate Base Profile			207		
Side Spacer Profile			226		313
Base Profile Anchoring Screw (1¼")		412 (metal structures) 421 (wood structures)			
Polygal Sheet Anchoring Screw (2")		400 (metal structures) 422 (wood structures)			
Bell Seal		473			
Anchor profile cap to connecting profile		424			
Ventilating Edge Tape		508		509	
Sealed Edge Tape		512		513	

Preparing the Sheets

• Remove the grey protective film ②.

• Fold back the printed sheet protection film 10 cm on each side ③.

• Attach ventilating edge tape ④a to the lower edge and sealed edge tape ④b to the upper edge.
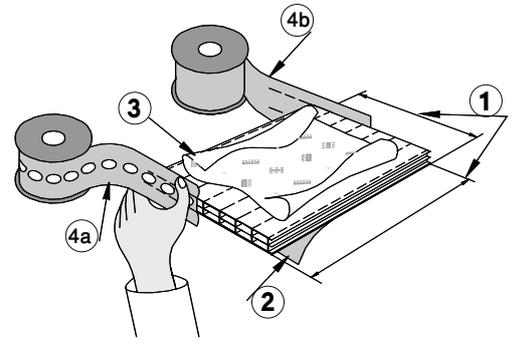
Preparing the End Profiles

• Use a metal saw to cut the aluminum edge profiles (see: Accessories Table) into pieces matching the width of sheets to which they will be attached.

• Drill drainage channels to allow for the flow of condensed water along the profiles used for the bottom section of the building's roof.

• Attach the edge profile to the sheet with the short side on top of the sheet.
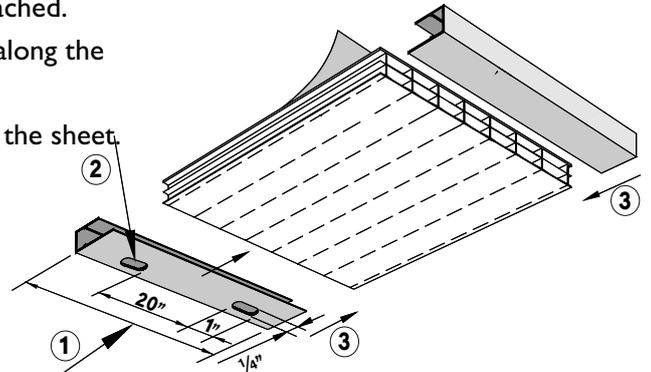
Preparing the HCP Connecting Profiles

• Cut the base profile (207) and the cap (210 or 211) to the length required. For curved roof buildings, cut the connecting profile cap 1" longer than the base.

• To anchor to non-metal structures, drill ¼" holes, 20" apart in the base for the beam structure or according to the position of the purlins.
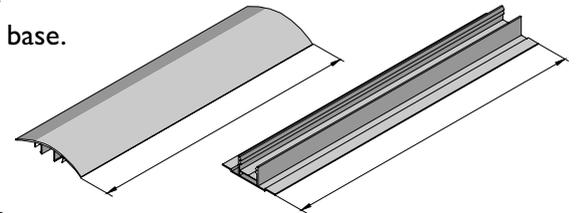
Installation Instructions for Roofing a Beamed Structure

Step 1 – Use screws (see: Accessories Table) to attach the base connecting profiles to the roof beams. Make sure that screws do not bend, tear or exert excessive pressure on the profile.
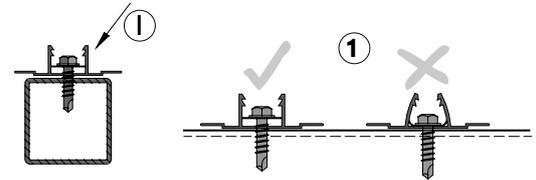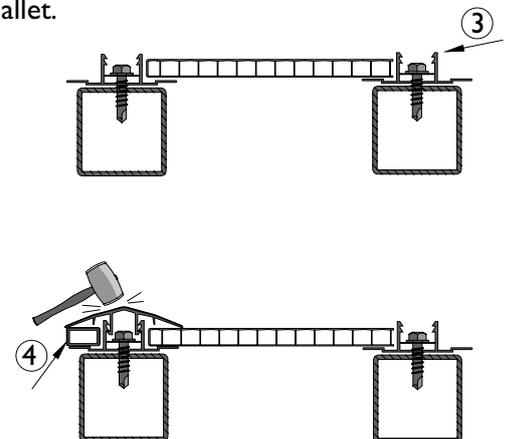
Step 2 – Place the sheet on top of the base profile support edges, with the side covered by the printed protective film facing upwards.
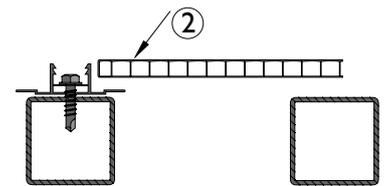
Step 3 – Slide the base under the sheet and attach it to the beam.

Step 4 – Place the side spacer profile (see: Accessories Table) onto the roof beam and attach the cap to the base by hammering into place with a rubber mallet.
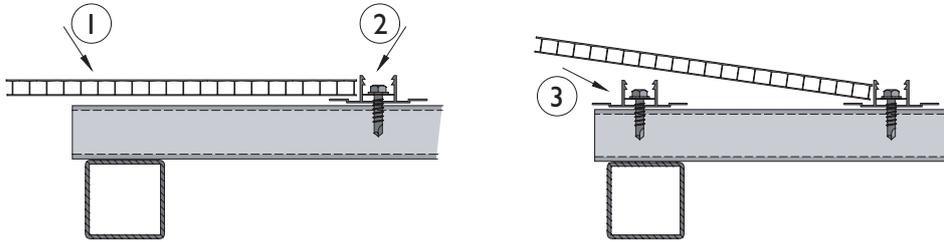
Steps 5 to 7 – Continue adding sequentially, a sheet (step 5), a base connecting profile (step 6) and a cap (step 7) until reaching the end of the building. After completing installation, remove all the printed protective film from the sheets.
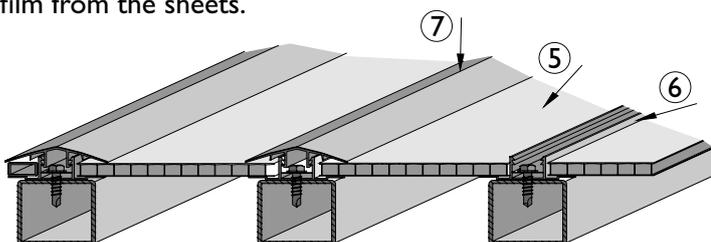
Installation Instructions for Roofing a Purlin Structure Building

Step 1 – Place the sheets with the side protected by the printed film upwards, ensuring that they are at a right angle from the building's top roofline.

Step 2 – Slide the base connecting profile underneath the sheet edge and use base profile attaching screws (see: Accessories Table) to anchor them to the purlins. Make sure that the screw does not tear, bend or exert excessive pressure on the base connecting profile.

Step 3 – Attach the base to the roofline purlins.

Step 4 – Match sheet size to the distance between the bases.

Step 5 – Position the side spacer profile in place (see: Accessories Table – for ¼" sheets, use a 1" wide piece of sheet as the side spacer). Position the connecting profile cap in place and, with a shock-absorbing support under the sheet, use a rubber mallet to connect it to the base.

Steps 6 and **7** – Continue to add sheets, (step 6) and caps (step 7) until reaching the end of the building. After completing installation, remove all the printed protective film from the sheets.
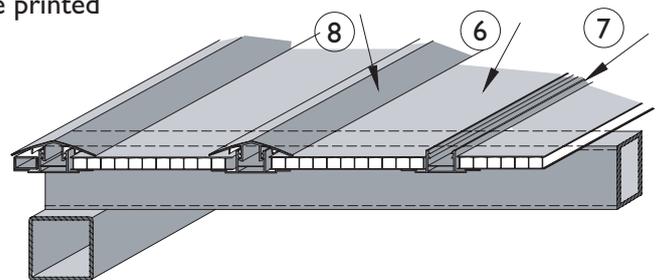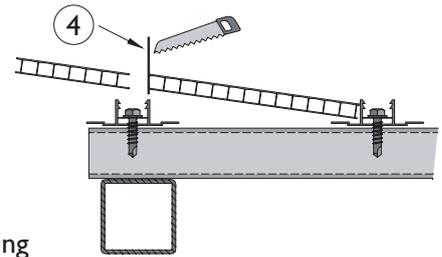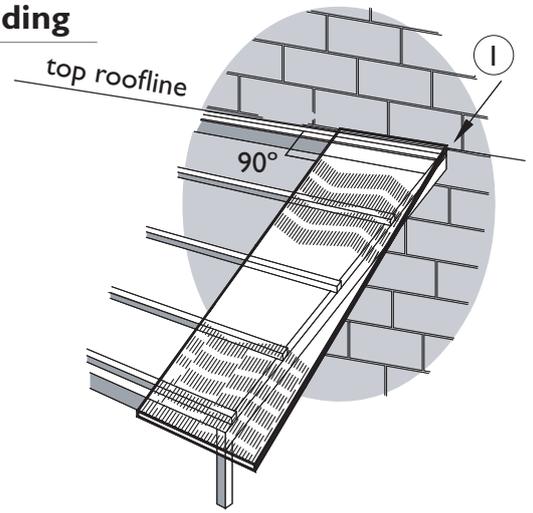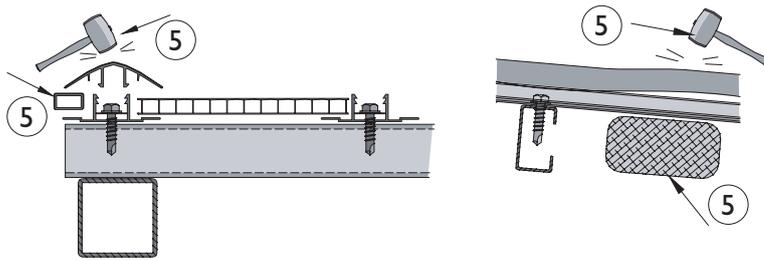
Attaching to Walls, Gutters and Ridges

• Form the metal cladding parts which will be attached to the wall on one side and will cover the sheet edge on the other side ①. Seal with Polygal Silicon (507) as needed.

• Plan a gutter with a receptacle area and connect the sheet to the gutter ②.

• Form the metal cladding part for the roofline and connect it to the caps.
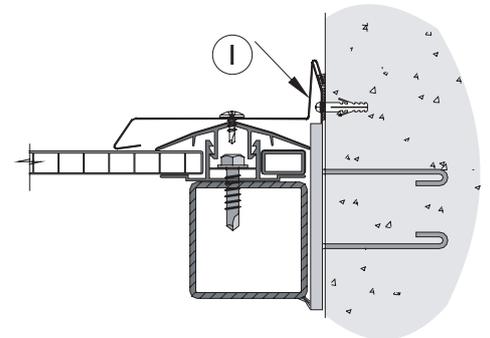
Finish and Fixing Reinforcements

• Place fixing screws with seals only in the support frame lines ③.

• Do not over-tighten screws.

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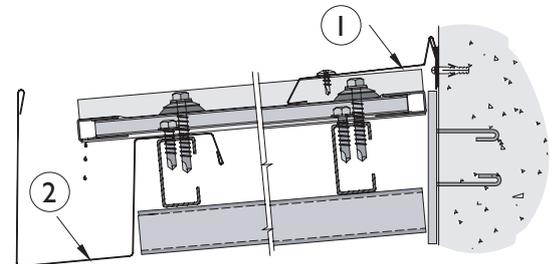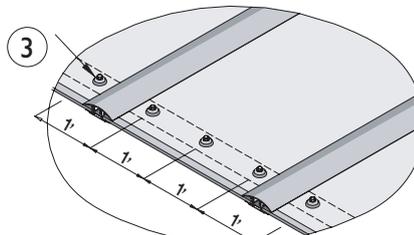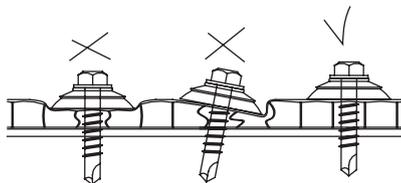
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