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Bighands Building Supply Australia Pty Ltd  
60-68 Hampstead Road Auburn NSW 2144  
p: 1300 242 799  
e:info@bighandsbuildingsupplies.com.au  
w: bighandsbuildingsupplies.com.au

## Installation Guide

# Twin-Wall



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# Before Installation

## 1. Cutting

Polycarbonate panels can be cut to any size or shape. The best tool to use is a circular saw (electric or battery). When using a circular saw, it's best to use a fine-tooth carbide-tipped blade. A standard blade can also be used, but not with fine results. When cutting curves and shapes, always use a jigsaw with a fine-tooth blade as well. When cutting, always make your cutting marks with a dark Sharpie type of pen – this makes for a dark line that is easily traceable and makes cutting easier. All polycarbonate sheets come with protective film on both sides. Make sure that when cutting, leave the protective film on. Make your cut, and then peel away before installing.

## 2. Blow out the scrap

Make sure to have an air blower handy, as cutting always leaves polycarbonate sawdust crumbs that statically cling to the inside of the airspace flutes. Blow these crumbs out before installing, or they will be there forever.

## 3. H-Joint and U-Channel

If H-Joins and U-channels are used, always use stainless steel or galvanized hex head screws with neoprene washers. Do not over tight the hex head, as this will create dimples on the sheet and will cause leaks over time. Fasten heads of the screw snug to the outer surface of the sheet.

# Polycarbonate Installation

## 1. Peel back protective film

After all cuts have been made, you're ready to install. Before handling and installing, peel back around 5cm of the protective film on both sides of the polycarbonate sheet. It's best to use skin-tight gloves to avoid fingerprint smudges, as this will be very visible at certain angles, especially for roof applications.

## 2. Make sure the UV side of the panel face to sun.

All polycarbonate sheets always indicate which side goes towards the sun. Either on the protective film or the UV label indicate the UV side. As soon as it's installed, peel away the protective film, rather than leave for few days. Then the film will getting sticker to peel off.

## 3. Structure Support Frame

If using polycarbonate H-channel profiles, these are about 5cm wide.

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#### 4. Install Sheets

Install sheets with the ribs running vertically in the direction of the fall on the roof with a minimum pitch of 5 degrees. ie. 88mm rise per lineal meter.

This will ensure adequate water will run off.

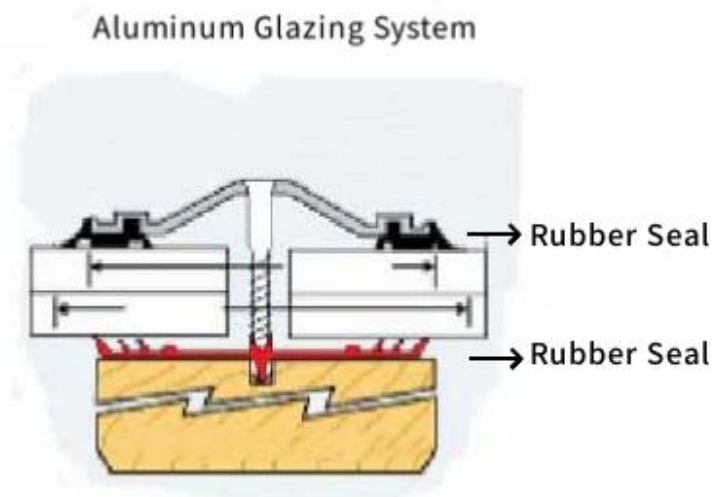
#### 5. H Joints

Aluminum joint should be a 50mm wide, Polycarbonate joints is 59.6mm wide.

The centre of the H-channel is where flat head screws are applied onto the support rafter. Always use galvanized flat head screws with neoprene.

The recommendation of the gap between each screw is  $\leq 1m$ .

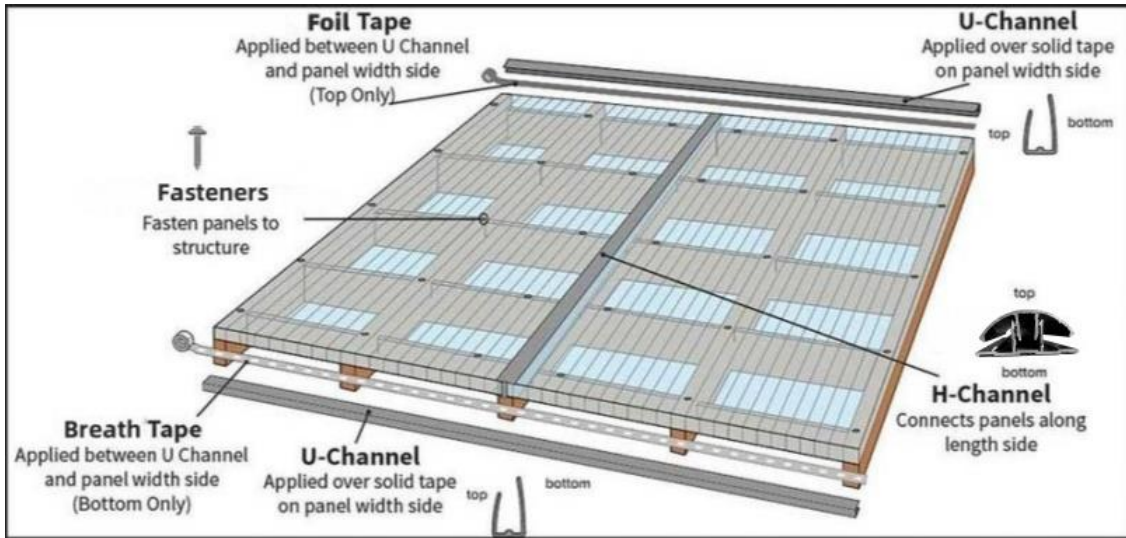
Fasten a mushroom head on top of the joiner.



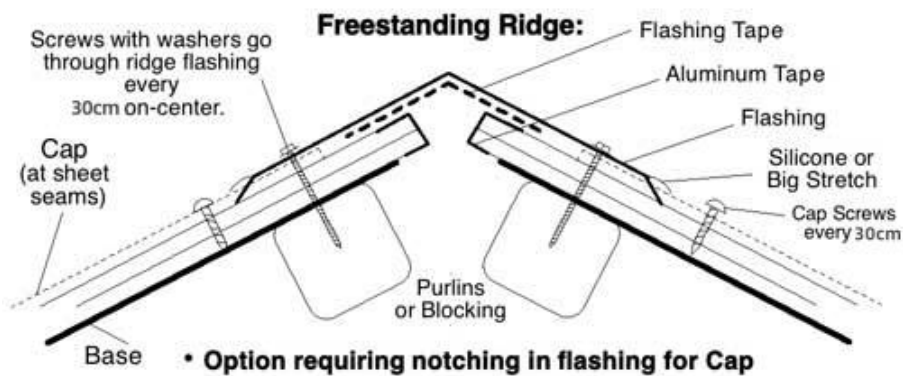
#### 6. U-Channel and Tape

U-channels are used for the open ends of the polycarbonate sheet: top and bottom. U-channels will help to seal the open ends and prevent dust and little critters from accumulating at the bottom of the panel.

In addition, the Foil Tape and Breath Tape are also recommended for both ends prior to installing the U-channel. The bottom of the panel should have pin-sized weep holes to allow air to dry up any condensation that forms inside the air flutes.



## How to make a Freestanding Ridge



## How to make a Curved Roof

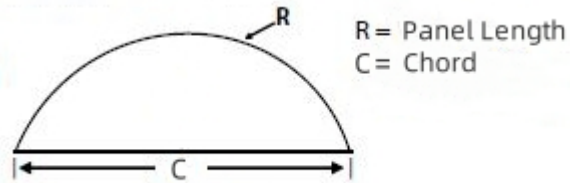
Because Twin Wall sheets are inherently pliable, polycarbonate roofing sheets are perfect for bending into curved roofs. But even so, when bending polycarbonate roofing sheets to make curved pergola roofing, you need to consider two important things.

The first is the material's Minimum Chord Length. That is, the smallest chord length around which the material can be cold-formed (bent without applying any heat) without compromising its long term integrity.

Here's the Minimum Chord Length table provided for Twin Wall polycarbonate sheets.

### Twin Wall Minimum Bending Length

Product	Profile	Panel Thickness	Panel Length	Chord $\geq$
Twin Wall		10mm	3.6m	3.0m
			4.2m	3.3m
			5.0m	3.5m
			6.0m	4.0m



The other important factor to a curved roof pergola design is the orientation of the polycarbonate when being bent. The “flutes” or corrugations need to be parallel to the arch. These structures of the polycarbonate sheets increase their flexibility and rigidity but if they are oriented the wrong way dirt and moisture can build up and damage the material.