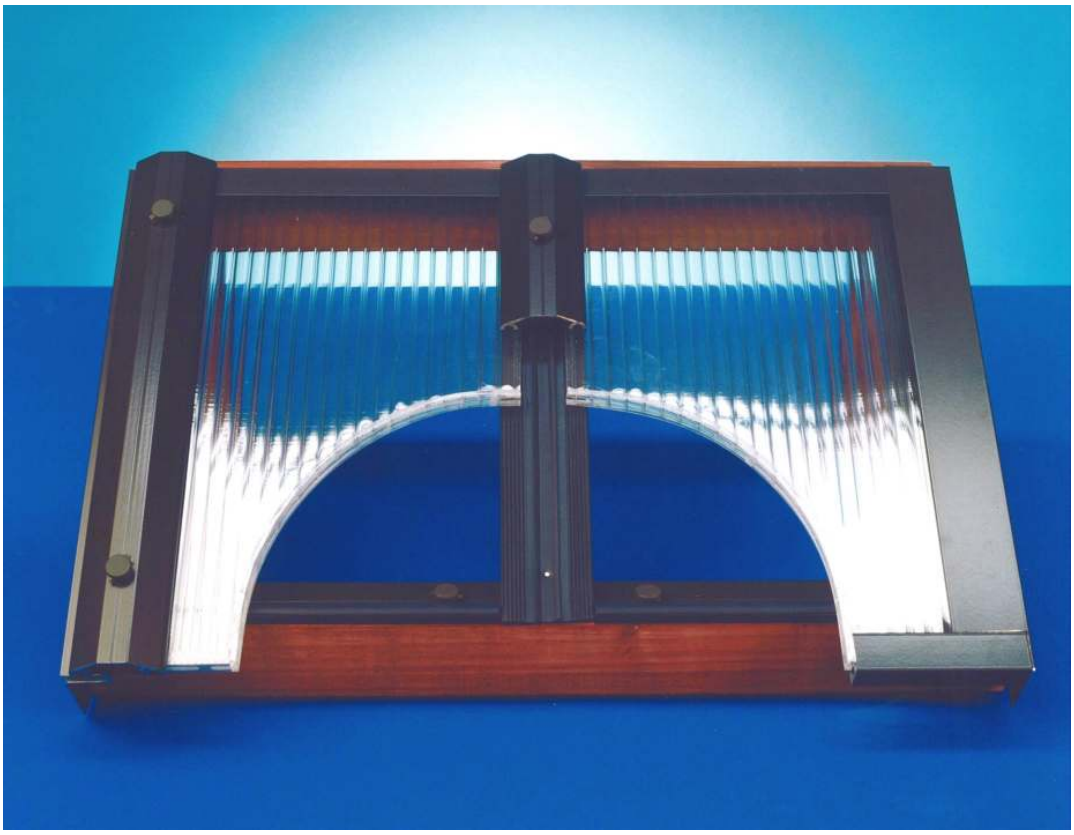
How to install multiwall polycarbonate glazing using the P501 Rafter Gasket Glazing System



The tools you will need to construct your roof:

- Tape measure
- Screwdriver
- Spirit level
- Hacksaw
- Drill
- Hammer

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System Description

The P501 system is designed for installing multiwall polycarbonate glazing onto 50mm wide rafters. It consists of a 50mm wide rafter gasket and a screw-down aluminium capping bar which clamps the multiwall glazing firmly and securely in place. A wide range of other complimentary items, fixing accessories and matching profiles are available. The 500 system is normally used when working with 10mm or 16mm multiwall sheet, or with glass. Thicker polycarbonate, such as 25mm, is more often secured onto rafters 60mm wide.

Glazing with Glass

The P501 system can also be used when either glass or double glazed units are the preferred glazing material. However, the glazing centres do have to be narrowed. It is difficult to recommend the actual centres as this depends on the thickness and type of glass. **Mechanical end plates should always be fitted when glazing with glass.**

End Plates

When glazing with glass, a mechanically fixed end plate should be fitted at the eaves end of every rafter. These are usually powder coated steel and are screwed to the rafter itself with the rafter gasket laying over the end plate.

Design Detail

Multiwall polycarbonate is normally used on a roof with a gentle slope, which will allow rainwater to drain into guttering. We recommend the minimum slope should be 5°.

Sheets of polycarbonate will expand and contract as temperatures change, always leave room to accommodate expansion when joining sheets on glazing bars (Fig.1). Sheet widths should be reduced by 3-5mm to allow for expansion. For example, if you are installing 10mm sheet and your glazing bars are 700mm apart (centre to centre), use a 695-698mm wide sheet.

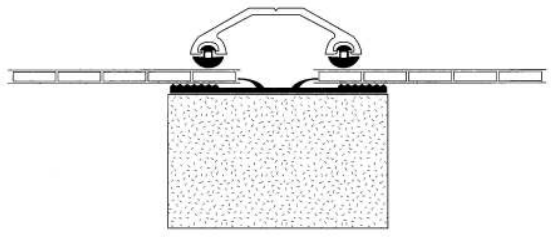


Fig.1

Sheet Thickness	Glazing Bar Centres
10mm	700mm
16mm	1,000mm

When ordering or cutting polycarbonate to a required length, remember that your sheet should be 10mm shorter than your glazing bars to allow for the fitting of aluminium U profile end closures. We can supply you with sheet that has been cut to size, blown and sealed in our factory (in which case disregard Step 5).

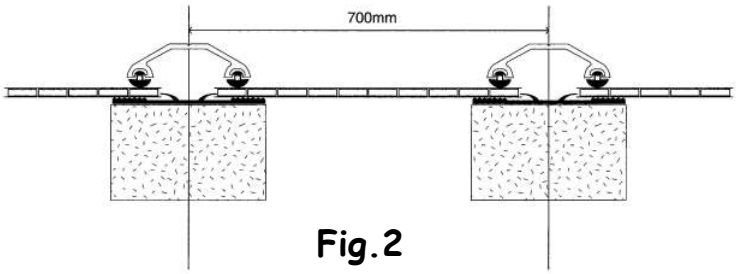


Fig.2

Step 1: Measure and set out where the rafters and, if they are going to be used, purlins are going to lie. Rafters should be 50mm wide when installing the P501 system. 10mm sheet can be accommodated at centres no more than 700mm apart (Fig.2). Wider sheets will need noggins adding between the rafters. The sheet will need fastening down on to these noggins using Fixing Buttons.

Step 2: Nail the rafter gasket to the rafters through the central channel with galvanised nails spaced 300mm apart.

Step 3: Fix the eaves filler, if using, across the structure at the eaves end (Fig.3). This solves the problem of filling the gap between the underside of the sheet and the top of the support structure.

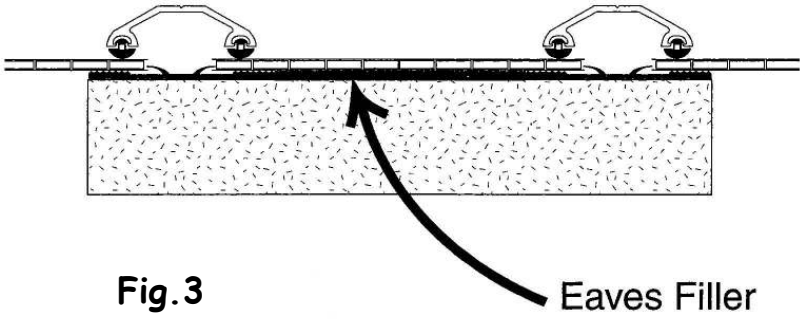
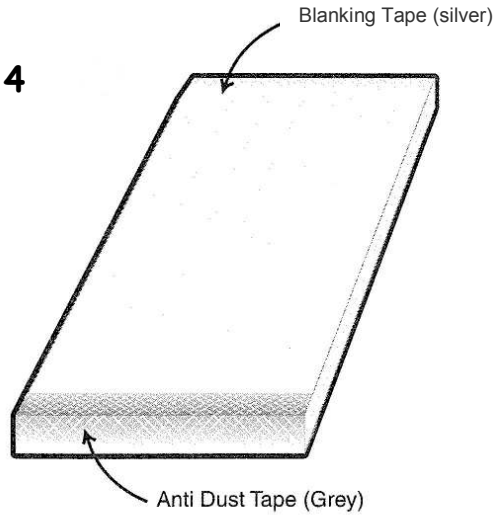


Fig.3

Step 4: Cut the glazing bar cap to the required length and drill the cap at regular intervals with holes no more than 300mm apart, ensuring the holes will line up uniformly with the holes on all the other bars once fitted on to the roof. The drill holes should be of a size to accommodate a 10swg screw.

Step 5: Cut to size sheet is supplied blown free of dust and taped, ready to fit. If cutting sheet on site, you must ensure the flutes of the polycarbonate are free of any dust or swarf. This is done by blowing air through the flutes and sealing the ridge end of the sheet with blanking tape (PBT10, silver in colour). Seal the eaves (gutter) end of the sheet with anti-dust breather tape (Ref. FT10, grey in colour). This process helps prevent dust entry whilst allowing condensation drainage (Fig.4).

Fig.4



You can now start to fix the roof sheets; starting at one side of the roof and working across, fixing and dressing down flashings as you go.

Please note, some polycarbonates are UV coated on one side only. The sheet should have a protective film on both sides but only one side is printed. This is the side that should face outwards towards the sun. Do not forget to remove the masking film on both sides of the sheet. Do not cut it off using a sharp knife or you could damage the sheet underneath.

Step 6: Having already fitted a base bar to one end of the roof, fix a side trim over the base bar to the side of the fascia or building (see Fig.5). Alternatively use an F profile.

Fig.6

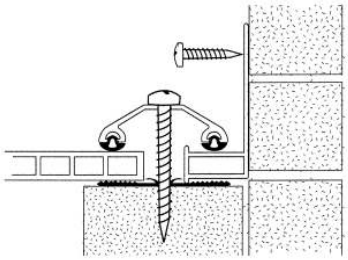
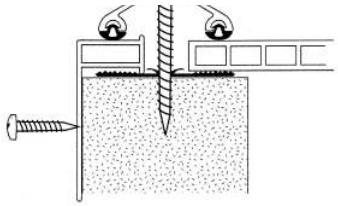


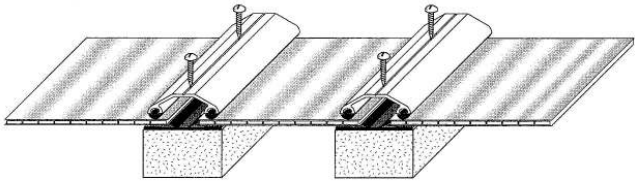
Fig.5



Step 7: If butting the glazing up to a wall face, simply upturn the side trim, fix to the wall and flash over (Fig.6). The same applies is using the F profile.

Step 8: Place an adjoining sheet with 'U' profile already fitted at the ridge end into position on the rafter gasket remembering to leave 2mm at either side for expansion. Fix through the aluminium cap and through the rafter gasket by using 62mm x 10swg stainless steel wood screws (ref. 62/10/WS). Ensure that screws are not over-tightened as this will undulate the glazing bar cap, limit the expansion and compress the sheet (Fig.7). Finally, press the screw cover caps into place.

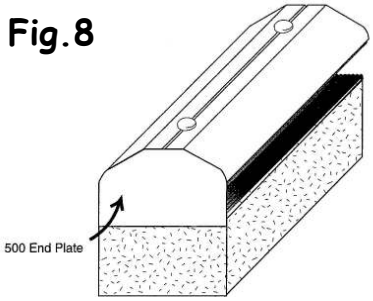
Fig.7



Step 9: Repeat this procedure for the remaining panels and on the last panel, repeat Step 6 or 7 to finish off.

Step 10: Push fit the polycarbonate end plate onto the end of each bar system (Fig.8).

Fig.8



Step 11: Measure and accurately cut the aluminium U profile (ref. 252) to the exact length and fix over the anti-dust tape at the eaves end of the sheet between the end plates. A small bead of silicone sealant can be applied to the upper side of the sheet along the line where it meets the U profile and smooth to give a neat finish (Fig.9). Only use silicone sealant that is compatible with polycarbonate.

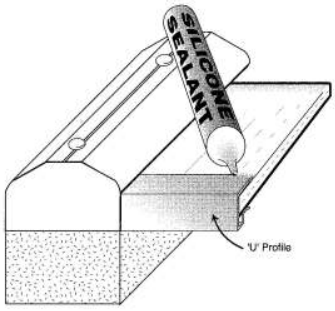


Fig.9

Step 12: Finally dress down the Butyl Flashing (ref. 200/20).

Shaped Roofs

On a roof where a hipped bar is required, the 501 system can accommodate a very slight angle. However, we would recommend installing a 60mm wide rafter at the hip and using the 261 hip rafter system. The capping bar (ref. 226) is supplied wider at 70mm instead of 60mm and angled to accept the polycarbonate coming in at the angle. The reference number for this product is P261H.