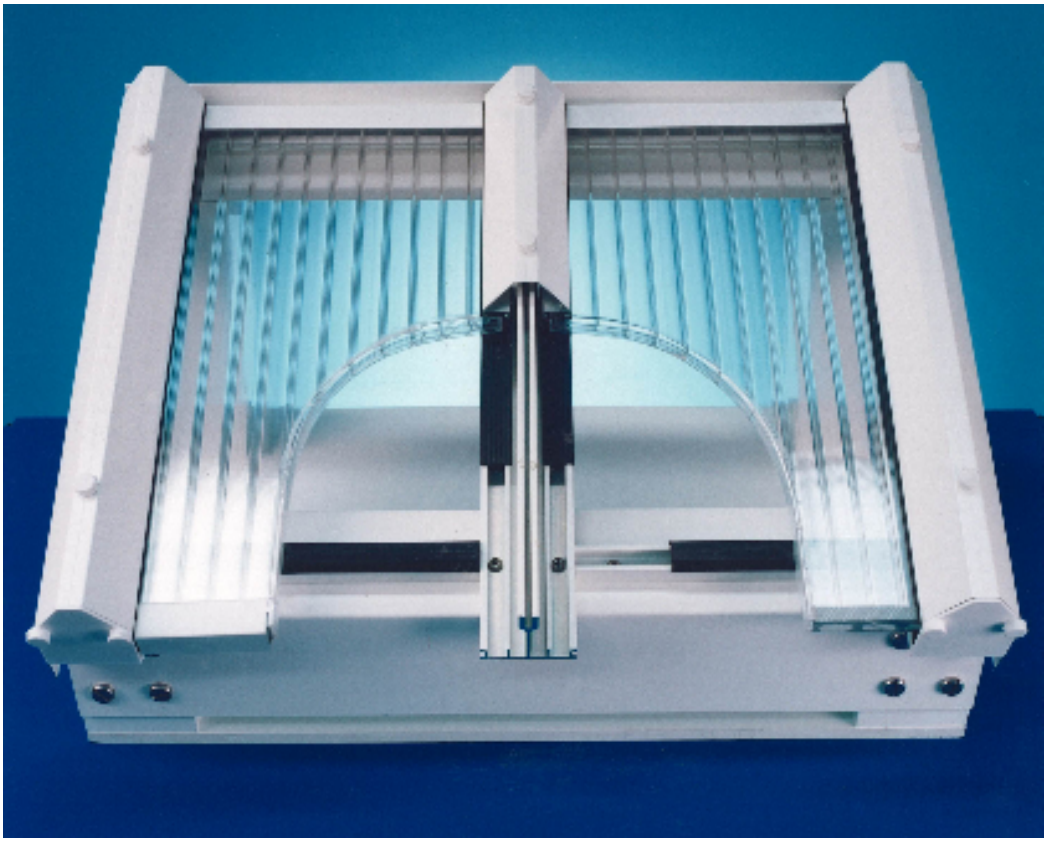
Fixing Instructions for the Twinfix

280/283(P280) and 280/283/284 (P284)

Structural Glazing Bar Systems



Tools you will need to construct your Twinfix roof:

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

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System Description

The 280/283 System is designed for installing multiwall polycarbonate glazing and will span up to 3200mm unsupported when glazed with multiwall polycarbonate. It consists of an aluminium base and a screw down aluminium capping bar that clamps the multiwall firmly and securely in place. A wide range of complementary items, fixing accessories and matching profiles are available. If used in an application with enclosed sides, order it as the P284 system. It would be supplied with a UPVC thermal underclad clipped to the base bar to help prevent condensation forming.

Glazing with Glass

The 280/283 System can also be used when glass or double glazed units are the preferred glazing material. However the spanning capability is much reduced as are the glazing centres. Twinfix cannot advise what the spans and centres should be as it depends on the thickness and type of glass. **Mechanical end plates should be fitted when glazing with glass.**

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°. The 280/283 system can be used with up to 25mm thickness glazing sheet.

Sheets of polycarbonate will expand and contract as temperatures change. Always leave room to accommodate expansion when joining sheets on glazing bars (Fig.1).

Fig.1

Sheet widths should be reduced by 10mm to allow for expansion. For example, if you are installing 16mm sheet and your glazing bars are 990mm apart (centre to centre), use a 980mm wide sheet (Fig.2).

Sheet Thickness	Glazing Bar Centres	Spans Unsupported
10mm	700mm	3200mm
16mm	1000mm	3200mm
25mm	1250mm	3200mm

When ordering or cutting polycarbonate to a required length, remember 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 7).

Fig.2

Span Requirements

For applications using multiwall polycarbonate where a shorter span is required, we would recommend using a lighter Twinfix Glazing System, such as the 226/227 or 320/286. If a 4 metre span is required, you could use our 280/288 system. Alternatively the base bar can be fitted onto purlins orrafters. The base bar must be fitted at the eaves, the ridge and to any purlin. If fitting to rafters, the base bar should be secured to the rafter every 300mm.

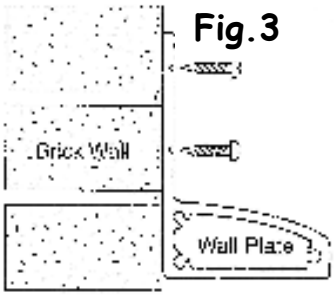


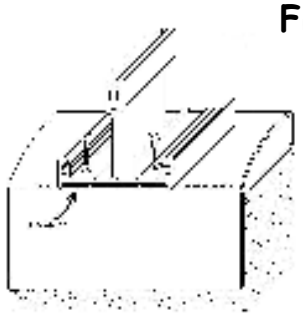
Fig.3

Step 1: Fit the aluminium wall plate (Ref. 290). The wall plate can accommodate all the Twinfix structural bar systems at angles ranging from 5° to 25° (Fig.3). For a neat finish fix an end plate to each end of the wall plate.

Step 2: Fit the aluminium eaves beam (Ref. 291). The eaves beam can accommodate all the Twinfix structural bar systems at angles ranging from 5° to 25°. For a neat finish fix an end plate to each end of the eaves beam.

Step 3: If required, fit the underclad to the base bar. If glazing with glass, screw fit the mechanical end plate at the eaves end through the holes in the end plate into the gasket ports in the 283 base, using 16mm x 10swg stainless steel screws.

Fig.4



Step 4: Screw the aluminium base bar (ref. 283) to the eaves beam and wall plate and to any purlins if they are being used, remembering to start and finish the roof with a base bar (Fig.4). Slide in the 280G gasket. If buying the bars in the pre-packs, the gasket is supplied already pressed into the bars.

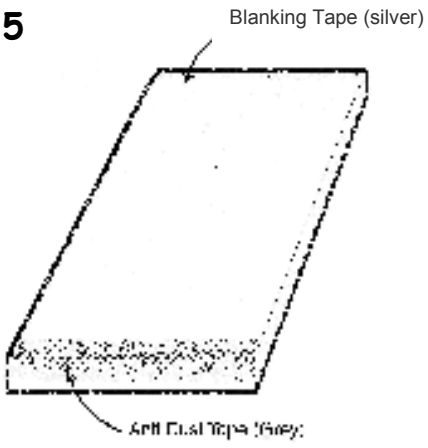
Fig.4A

Step 5: Fit the eaves filler (ref. P285F) at the eaves of the structure. This fills the gap between the underside of the sheet and the top of the support structure (Fig.4A). If other materials are being used as a wall plate and/or eaves beam, please use barrier tape to avoid electrolyte corrosion between the 280/283 glazing bar and the wall plate/eaves beam.

Step 6: Cut the glazing bar cap (ref. 280) 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 each of the other bars once on the roof. The drill holes should be of a size to accommodate a 10swg screw. Slide the 280G gasket into each side of the glazing bar cap. If buying the bars in a pre-pack, the gasket is supplied already pressed into the bars.

Step 7: 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.

Fig.5



This is done by blowing air through the flutes and sealing the ridge end of the sheet with blanking tape (PBT10/16/25, silver in colour). Seal the eaves (gutter) end of the sheet with anti-dust breather tape (Ref. FT 10/16/25, grey in colour). This process helps prevent dust entry whilst allowing condensation drainage (Fig.5).

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.

Step 8: Having already fitted a base bar to one end of the roof, fix a side trim (ref. 272/273/275) over the base bar to the side of the fascia or building (Fig.6).

Fig.6

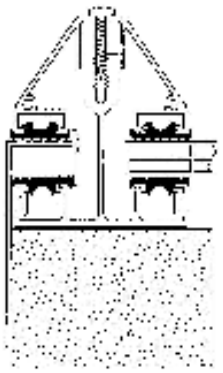
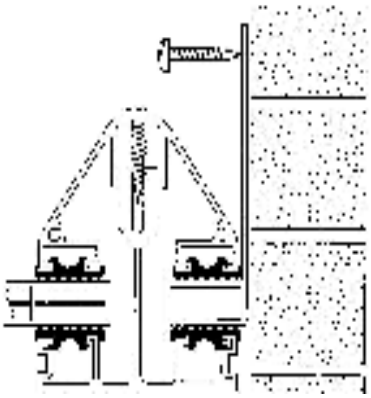


Fig.7



Step 9: If butting a sheet up to a wall, simply upturn the side trim profile, fix to the wall and flash over (Fig.7).

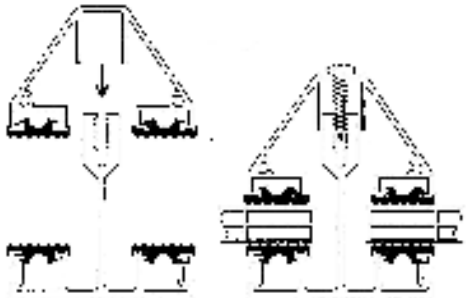
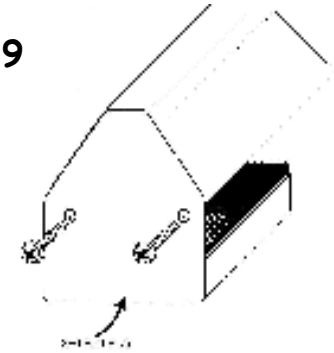


Fig.8

Step 10: Fix the top U profile (ref. 252/253/255) over the sheet. Locate the sheet over the 283 base bar leaving room for expansion. Ensure the sheet is level and fit the glazing bar cap (ref. 280) using the recommended screws, capping each screw with a screw cover cap (Fig.8).

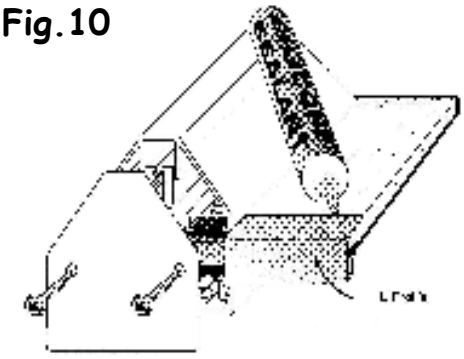
Step 11: Place an adjoining sheet into position with top U profile fitted. Repeat this procedure for the remaining panels ensuring screws are not over tightened as this will limit the expansion and compress the sheet.

Fig.9



Step 12: Screw the polycarbonate end plate (ref. 280EP) onto the end of the 280/283 system (Fig.9).

Fig.10



Step 13: Accurately cut the aluminium U profile (ref. 252/3/5) to the appropriate length and fix over the anti-dust tape at the eaves end of the sheet between the glazing bars. A bead of silicone sealant can be applied to the upper side of the sheet along the line where it meets the U profile. Only use silicone sealant that is compatible with polycarbonate (Fig.10).

Step 14: Finally, dress down the Butyl Flashing (ref. 200/20).

Shaped Roofs: On a roof where a hipped bar is required, the cap and base bar are the same as the standard system, however the gasket is changed to a half round version to accept the polycarbonate coming in at the angle. The reference number for this product is P280H or P284H if the UPVC thermal underclad is fitted.