2.6 INSTALLATION

2.6.1 GENERAL

The fixing of Dimond Purlin Systems is generally carried out by steel fabricators and riggers who are familiar with installation of the Dimond Purlin range.

2.6.2 HANDLING & STORAGE

Correct handling and storage is critical to ensure the Dimond Purlin System is not damaged on site. The following points must be adhered to for maximum product durability and performance over the expected life of the product.

- A visual inspection should be carried out, when delivery is taken on site, of all the material supplied to ensure the product is free from damage and the galvanised coating is in good condition.
- Damaged product resulting in a distorted or buckled section shape must not be installed and should be replaced.
- Site storage must be clear of the ground on dunnage to allow the free movement of air around each bundle. When product is stored on site, it must be kept dry using covers over each product bundle.
- Wear protective gloves when handling the product. Treat all cut edges as sharp.
- Product must always be lifted when moved and not dragged as damage to the galvanised coating will occur.
- Dimond bracing must not be relied upon to act as lifting points during craneage of preassembled sections.

2.6.3 GENERAL FIXING & WORKMANSHIP

- Bundle labels should be checked to ensure the correct size and type is used for the designated area.
- Purlins are placed on the upside of the portal cleat (or at premarked centres for Top Notch), and fixed onto the cleat or rafter.
- Installation of DHS Purlins relies on the correct bolt type, diameter and washer being located through each cleat hole and tightened.
- Washers should be used under the bolt head or nuts against the DHS Purlin.
- Bolts should be tightened using the part turn tightening method, commonly termed snug fit. There are two stages, the first involves bringing the mating surfaces of the joint into effective contact by initially tightening the bolt. The second stage involves marking the bolt and nut relative to each other and then completing a further half turn.
- Self-drilling screws should installed as per engineer's specification (refer Section 2.4.7 Fasteners), and tightened with mechanical drivers set to a preset torque setting. Avoid overtightening as this may damage the galvanised coating.
- Lapped purlins require additional fixings to be installed in the lapped region. Refer detail N in Section 2.3.16.15 for DHS Purlins or detail D in Section 2.4.11 for Top Notch Purlins.
- Additional strapping for Top Notch Purlins may be required as specified by the design engineer.
- The purlin system must not be subject to or installed on spans that are excessive for the loads imposed during construction, or in the serviceable life of the product. All construction loads must have the design engineer's approval, prior to loading.
- All connections including those between the purlin system and primary structural framework must be fully fixed and tightened before any loads are applied. Similarly bracing members must be correctly positioned and fastened prior to installation of the roofing or cladding.
- Gas cutting of holes, or welding of members, or connections are not recommended, as these may cause an unacceptable loss of member strength capacity. In addition gas cutting or welding will remove the galvanised coating locally around the welded area, reducing the product's durability.
- The recommended method for cutting of Top Notch is either by hacksaw or shear cut such as tin snips. If using an abrasive disc blade, care must be taken to ensure the swarf doesn't fall on other products causing rust stains, and the burred cut edge must be cleaned off and primed after cutting.
- DHS Purlins and Top Notch Purlins are not designed for walking on as manufacturing lubricant may still be present on these components. In additional Health and Safety requirements prohibit "walking the purlins". All on-site Health & Safety requirements must be adhered to.
- Roofing and wall cladding sheets can not be installed until the roofing contractor is satisfied that the support structure is complete, sound, and correctly aligned. This includes support around penetrations and openings.
- Curved roofs (whether draped/rolled or crimped) require purlin alignment within ±5mm to minimise the risk of unacceptable finished appearance.
- Hanging of fixtures from the purlin lips, brace channel lips or brace channel flanges is not recommended. All fixtures must be attached to the web of the member they will be connected to and are subject to specific design by the engineer.
- Dimond Purlin Systems are not intended to be used as members to which fall arrest anchor points are attached.

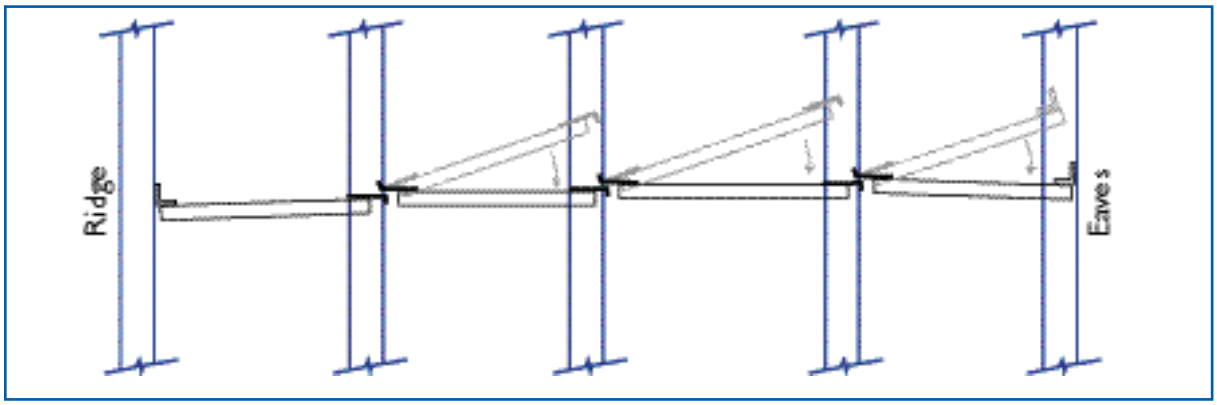
2.6.4 DHS BRACING INSTALLATION

Prior to the purlin system being fully tensioned up and loads applied, the bracing system must be installed.

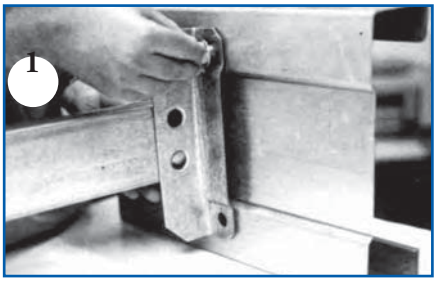
2.6.4.1 FASTBRACE INSTALLATION

Installation of Fastbrace is started from the ridge and works down the roof slope, but the first row of Fastbrace must be bolted off on the top purlin before beginning the next row.

Standard Installation Procedure

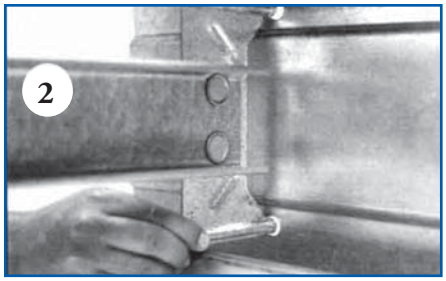


Note: As the eaves and ridge braces are bolted, there is a 25mm offset to the bracing line. This offset can be aligned, refer Section 2.3.15.1 Fastbrace.



1. The end cleat is bolted to the purlin at the ridge.

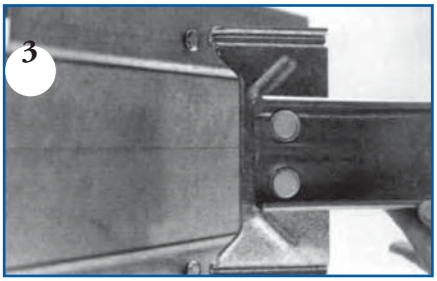
It is vital to make sure that the bolted cleat at the ridge is on the left of the brace (looking from the ridge down).

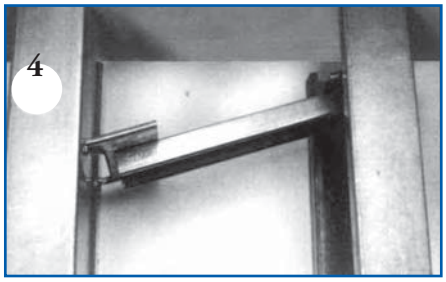


2. The locking tabs at the other end of the brace are then fitted into the second purlin and pushed to the right to lock (looking from the ridge down).

3. The second brace is then held at a 45 degree angle and inserted into the other side of the second purlin. Now rotate the brace until square to the purlin.

Ensure all locking tabs are fitted into the purlin holes.





4. Fit the other end of the brace into the next purlin. Steps 3 and 4 of this process are then repeated until the last cleat is bolted to the eave purlin.

Note that due to the versatility of the system, the process can be started at the ridge or the eaves.

Continued on next page

2.6.4.1 FASTBRACE INSTALLATION *continued*

Adjustable Fastbrace allows up to 20mm adjustment to be made anywhere in the Fastbrace system, simply by installing this adjustable brace and fully tightening two bolts. Further detail is in Section 2.3.15.

Purpose-made cranked sag rods, installed in the lower holes of the DHS ridge purlin at the bracing line, tie each roof plane together at the ridge. These rods should be fitted with washer and double nuts and fully tightened up prior to loading.

Bolted channel bracing relies on placing and tightening one bolt top and bottom through the brace cleat/purlin assembly. Hence the installation time required for bolted channel bracing is much longer than for Fastbrace.