HEAD TO HEAD

For this Head2Head,Ultraframe technical support engineers Bill Kenyon and Mick Rowley look at the requirement for and specification of Gallows Brackets.

Gallows brackets transfer the load from the conservatory roof onto a supporting structure thereby eliminating potential box gutter deflection and movement. Gallows brackets that are designed to carry structural loads should have a cross brace and , as a good rule of thumb ,the vertical leg should be at least 1.5 times greater than the horizontal.

Some Box gutters require extra support other than fixing through it`s side (i.e. into a wall or fascia) where it:-

1.Exceeds the limitations of the manufacturers structural design guidance for an unsupported area.
Depending on the load being imposed onto the box gutter (determined by the width, projection and glazing material used), the box gutter will require extra support beyond certain centres to resist deflection. (Typically either every third glazing bar to a maximum of 2.4 metres).
This must not be confused with the maximum span for a 'unsupported' box gutter which is less, 2.25mtrs. The definition of an unsupported box gutter being a box gutter which is neither supported underneath or fixed to a wall/fascia.

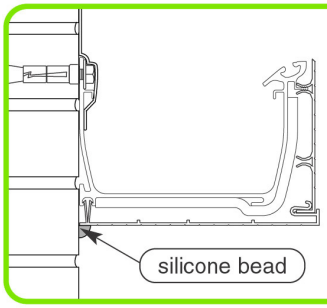
2.Where there is extra load being concentrated or transferred down from the ridge.
Areas of concentrated load usually occur under tie bars. Tie bars, due to their inherent design, have many functions- they prevent lateral spread and support the ridge, transferring the roof load (in-between tie bars) down and onto the boxgutter eaves. As you can see it is essential that these areas are fully supported.

3.Eliminate any undue stress in a particular area.
Areas where the load needs to be spread away from a potentially weaker area would be on internal and external box gutter corners. On larger conservatories the loads coming from the hips\ valleys could put undue stress on any welds at the corners of box gutter runs, and so supporting these areas on either side will reduce localised stress in this area.

Alternatives to gallows brackets:
Essentially there are three options.
1.Boxgutter supported on bricks
2.On wider soffits a suitable post (powder coated) with a welded plate top and bottom suitably fixed into the base can look very effective.
3.Wide patio doors should be overcome using the third option which is to use a support beam to support the box gutter along its length with gallows brackets /brick piers at each end.
Some installers consider attaching long "L"& "T" shape brackets to sit the box gutter on, usually above a patio door/window and then attaching this to a fascia. This method should be viewed with caution. Remember the support required is only as good as its weakest fixing, Fixing into fascias /endgrain of rafters needs to be considered very carefully with regard to their condition, grade and species.
Fixing into walls requires the same amount of consideration. The correct specification of fixing should be used to complement the inherent material properties of the wall and avoiding any fixing being pulled through and failing.
Surveyors should always take care to correctly specify box gutters and structural supports. By definition, these items are only fitted on bigger and more complex roofs. Follow the guide lines to get it right first time.

In summary gallows brackets should be fitted:

A. On all roofs utilising (165mm or 265mm) box gutters when fitted with a tie bar irrespective of width or projection,and the gallows bracket to be situated immediately underneath the tie bar.
B. On all poly roofs over 4500mm and glass roofs over 3000mm in width or projection when utilising 165mm or 265mm box gutters.
C. When gallows brackets are used they should be spaced every third glazing bar or between 2.0 to 2.4metre centre`s.
D. Gallows brackets should be fitted on both sides of internal and external corners of box gutters



Fitters Tip

During the cold winter months we occasionally receive calls alleging that there is a leak form the boxgutters. This usually manifests itself as damp blushes on the plaster. This is usually as a direct result of either warm moist air getting behind the back of the insulated boxgutter and condensing, which is easily remedied by applying a bead of silicone at the junction where the claddings meet the house wall (shown left) or from inadequate pointed flashings on the back wall, again easily remedied.