

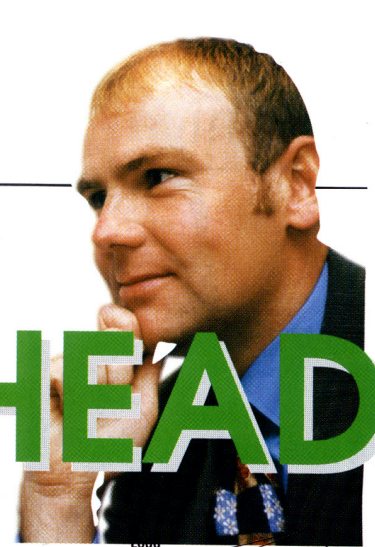
HEAD



TO

In this Head2Head, Bill Kenyon and Neil Sarsfield, technical support engineers at Ultraframe, discuss the purpose of tie bars and how to specify them.

HEAD



What is a Tie Bar

Over the last year, the most frequently asked question is, "Do I need a tie bar?" A tie bar is a piece of threaded bar that is usually joined to two opposed roof slopes - a further attachment is usually made at the ridge. The principle is to restrain any horizontal spread at the eaves eg. under heavy snow conditions.



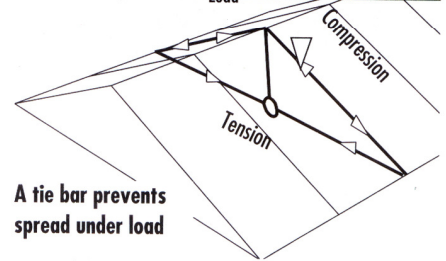
A completed conservatory utilising the tie bar to grow ivy

- Tie bars should always be positioned in line and directly under glazing bars (forming a vertical triangle) and supporting the ridge.
 - Standard fixing details is to the glazing bar utilising special brackets which are supplied with each tie bar kit.
- Factors that influence the necessity for a tie bar include ridge length, pitch, glazing material, conservatory width, glazing bar span and location (wind speed, snow loads and altitude). A typical tie bar chart from Ultraframe's revised UK Structural Design Guide is illustrated.

Typical Installation

When a tie bar is specified by the manufacturer or fabricator, it is a structural requirement of the roof and MUST ALWAYS BE FITTED.

Failure to comply with this may result in your reputation collapsing along with the roof. Furthermore, submitting to the occasional request by homeowners to leave out a tie bar is not permissible, even if they sign a waiver, because in law you are seen as an expert and the client signed waiver is no defence. A basic installation sequence is illustrated - always note that the tie bars must be fitted and adjusted prior to the roof being glazed (even polycarbonate). Tie bar brackets are normally attached to the glazing bars on pre-fabricated roofs and accompanying roof confirmation plans and installation guide indicate their positions.



A tie bar prevents spread under load

Summary

Tie Bars, when fitted are a structural requirement of the roof. However, some customers ask for tie bars when they are not structurally necessary - they have an aesthetic role, giving the conservatory a classic Victorian feel. Customers have been known to grow trailing ivy along their entire lengths, but a line should be drawn at hanging flowering baskets from them, as to do so may compromise its structural performance.

One final point - some installers have it in mind that the tie bars should slope up slightly (see photo with ivy). However, particularly on large roofs this imposes additional load on the on the ridge and possibly will effect the structural dynamics of the roof. It is advisable that tie bars should always be fitted level.

A typical tie bar specification chart lifted from Ultraframe's revised structural design guide

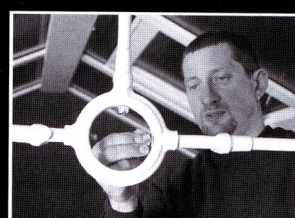
Typical installation sequence



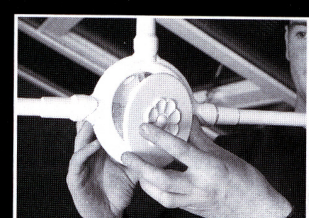
Fit the centre drop rod to the ridge body. The drop rod should be in-line with the brackets on the bars



Screw the horizontal threaded bars into the brackets



Assemble the centre boss and adjust the tie bar so that the window frames are plumb



Fit the coverplate