

In this Head to Head, Ultraframe technical support engineers Simon Tennant and Miles Fallon discuss the importance of correct fixings in conservatories.

Ridges dropping, fixings being pulled from the host wall & frames bowing out are all results of insufficient or non-existent fixings. All of these problems are more often than not blamed on the lack of a tie bar, the inclusion of which is looked upon as the only solution. However with further investigation other factors are usually revealed as the source of the problem.

Eaves-beam connections

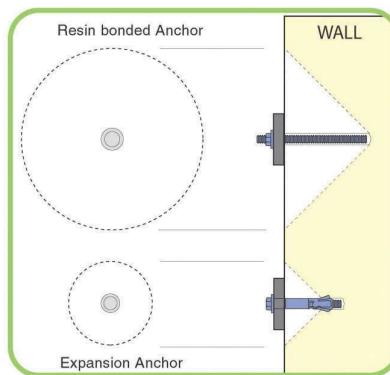
A common error is the failure to fix the eaves or ring-beam adequately at joint positions. The eaves-beam, when connected together creates a continuous 'ring' which supports the glazing bars & ridge which allows the roof to stand up. It is of paramount importance that any cleats designed to connect the eaves together are fixed correctly during installation using the fixings provided, if no cleats are provided with the system, suitable measures should be adopted with advice from the manufacturer. Failure to do this will seriously compromise the structural integrity of the roof. Any force applied to the eaves-beam joints, for instance through glazing bars could result in the joints 'opening up' & allowing the 'hipped' glazing bars to move forward & therefore allowing the ridge to drop.



Fixings into the host wall.

The type of fixings required when installing a conservatory is entirely the responsibility of the installer. Brick, block and masonry substrates vary widely in quality, the performance of an anchor primarily depends upon the integrity and strength of the substrate material into which it is fixed. In general, the stronger the substrate the greater the load before failure.

There are two typical kinds of load to consider. The first is tensile load, also described as 'pull-out' where a force would be required to pull a fixing out of its hole i.e. along it's axis. The second is shear, where the force is at right angles to the fixing.



Torque controlled expansion anchors are far superior in performance than 'hammer-in' screw fixings, being typically in excess of 10x stronger for the same diameter.

The starter or wallplate bars require a positive fix at several points i.e. in close proximity to the eaves beam & ridge & at regular centres in between, the spacing being dependent on the type & condition of the wall.

The load transferred down the glazing

bars from the ridge results in a force effectively trying to 'push' the conservatory away from the host wall. Weak, badly situated or insufficient fixings could fail & be pulled from the wall causing the frames/eaves-beam to be pushed forward & therefore causing the ridge to drop.

Frames

Careful consideration should also be given to the type of fixing used to connect the eaves-beam to the frames. As discussed previously, it is generally considered a pre-requisite that window frames used in conservatory construction should be reinforced. Although screw fixing down into steel would be perfectly adequate for the majority of conservatories, larger structures, particularly those with glass roofs should employ a dedicated fixing.

