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## GUIDE 020: FASTENERS

It is not uncommon to find the main structural design concerns have been applied purely to the load bearing capacity of the external profile. Requests have been made for load span tables for the cladding product, but no information is sought for structural suitability of the connections.

These are actually some of the most vulnerable points. If inadequately fixed with too few or incorrectly specified fasteners the structural integrity of the sheet/panel is irrelevant – the product will not be able to resist the design loadings.

Fastener selection should be made at the design stage to ensure that the correct specification is chosen for each particular application. Typical information required to ensure suitability of fixing connection include tensile and shear breaking loads, pull out and pull over performance values.

### Definitions:

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|---|---|---|
| FASTENER | - | A mechanical device used to secure a component to a structure or to another component. |
| FIXING | - | The resultant connection of components achieved by the use of a fastener. |

There are many types of fastener available for use within metal cladding systems. When selecting there are two basic categories of fasteners to consider:

### Primary

These fasteners are components that physically 'anchor' the cladding system in place. To function satisfactorily they must be capable of transferring the loads the cladding system is subjected to, back to the support structure. Therefore, their structural capacity plays a particularly important role within the overall project design. Where fasteners are exposed to the elements they must also provide a weather-tight seal.

Normally secured through the trough of the profile, the most commonly used fasteners are self drilling and tapping items, which can be installed into light gauge cold rolled steel spacers, rails and purlins in one quick operation. Available in plated carbon steel or stainless steel they come complete with a 16mm diameter sealing washer for wall cladding, a 19mm diameter washer for roof cladding and a minimum of 29mm when installing rooflights.

If used externally they can be supplied with integral plastic heads colour matched to suit the cladding system. This is a statutory requirement when installing external rooflights as the heads need to be red in order to safely identify their placement.

## Secondary

The primary function of these fasteners is to ‘stitch’ connections, e.g. profile side laps and flashing trims to sheet.

As with the primary fasteners if exposed to the elements they must be able to provide a weather-tight seal.

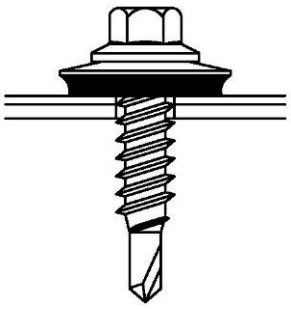
The most popular types are self drilling and tapping stitching screws with sealing washers and integral coloured heads or sealed rivets with painted heads.

However, rivets and bolts with rubber nuts are also used for specialist applications.

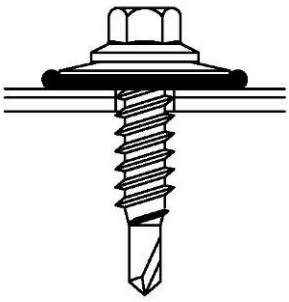
### DESIGN SERVICE

Our fixing experience stems from previous positions held at leading corporate manufacturers over the last 25 years. As a result we have not only been able to develop an excellent portfolio, we have gained the expertise to offer a technical service that is second to none. This technical service encompasses fastener specification, on-site testing and full structural calculation to ensure complete peace of mind.

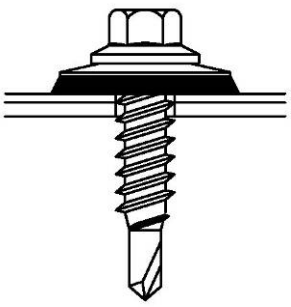
This service can be incorporated as a ‘bolt-on’ to the supply package or issued as part of an un-biased independent consultation service including products not included within our supply. For the most comprehensive service within the industry please contact us.



UNDER DRIVEN FIXING



OVER DRIVEN FIXING



CORRECTLY DRIVEN FIXING