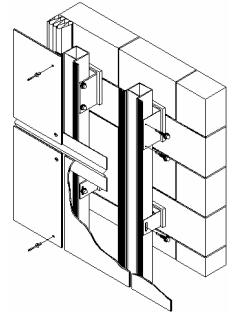


Fixing Instructions

Ashtech *SIMPLICITY* Rainscreen



1. The *SIMPLICITY* system is an external wall over cladding with a base of either ACM or solid aluminium, crafted in the form of panels, which are attached by rivets on a framing of aluminium sections. The sections are fastened to the structure via adjustable brackets.

A complementary insulation is usually positioned between the wall structure and the covering. This insulation is ventilated by the layer of air circulating between the insulation and the rear face of the panels.

The system is applicable on flat vertical substrates of masonry, concrete or steelwork, new construction or renovation, sheer or containing openings, located in upper storeys or on ground floor, protected from risks of impacts.

2. It is imperative that the fixing sub structure is plumb and true. If the sub structure construction is not a practical option then the mullions must be adjusted and aligned to suit. It is vital that the omega mullions are correctly positioned plumb, true and vertical as they determine the final panel positions. Before commencing cladding works check to ensure the provided supporting structure is within the required tolerances for the cladding supports ordered. The correct specification of fixings is stainless steel, either self-tapping or self-drilling/tapping, depending on substructure.

Note: The panels will follow any undulation in the support system and it is essential the support system is true for a flat, flush façade to be achieved.

3. The design and installation of the aluminium support framing is designed to be freely expandable.

The layout study of the support system shall take into account the wind forces. The maximum on-centre between omega bars is determined either by a standard width of the panels (subtracting the dimensions of any panel returns and the upstands of the panels), or by standard lengths. The spacing of the wall brackets, and the mullions shall be specified in such a way that the deflection of the mullions will be equal to or less than 1/200 of the span. A bracket shall mandatorily be placed at the location of the junctions with the horizontal cross members. Any cantilever of the mullions shall be limited to 250 mm. The support system can be adjusted thanks to the oblong holes.

In every case, an air layer shall be provided, minimum thickness 50 mm behind the panels.

End to end mullion connections shall be made, providing a spacing of 10 mm of expansion clearance by fish plating with the aid of a mullion splice, length 160 mm, incorporated on a single omega bar with the aid of two drive screws.

Panels in 4 mm thick ACM are sized based on Tables which result from a computer programme based on finished elements, verified by experiments for current configurations.

For non-specified formats, the performance under wind force shall be determined by testing according to the same criteria.

4. The mullions are fastened to the structure with the aid of wall brackets, 'U' section manufactured from 3 mm mill finish aluminium. The wall brackets shall be sized according to the fixing of the façade insulation, and should allow for adjustment clearance of at least 30 mm.
5. The mullion is an aluminium alloy extrusion, grade 6063 – T6. and are supplied in standard mill finish unless specified otherwise. The on-centre between framing sections is defined depending on the permissible loads, corresponding to the deflections under NORMAL wind at the centre of the panels, determined by the project design team.

6. The panels have a flat surface, without panel returns. The panels are to be riveted onto mullions so as to ensure free expansion.

There are two possibilities for drilling the rivet holes in the panels:

- a. Drill holes on site, using a stepped drill bit with no specific preparation for the panels.
- b. Drill holes in the factory, these are drilled in either a 5.1 mm diameter or 7.1 mm diameter (according to whether the rivets are to be fixed or expansion type). During the fitting on site, a guide is to be used for the positioning of the 5 mm dia rivets in the 7 mm diameter holes.

The drilling diameter of the panels is to be increased by 2 mm, which is a drill hole of 7 mm diameter for the rivets. Rivet heads of 14 mm diameter will then be necessary. The most important thing is to provide a minimum overlap of 1 mm of the head over the drill hole in the extreme position.

The pull out values taken into account in the calculations, are valid for a rivet a minimum of 15 mm from the edge of the panel.

7. The panel will be held against the omega sections and positioned with the aid of shims. The panels are then drilled, using a stepped drill bit, and the rivets are to be positioned as the work proceeds. The work will begin at the upper centre of the panel, and then goes towards the edges.

If the panel is pre-drilled in the factory, the mullion will be drilled with a guide, in the same order as stated above.

8. In high wind load areas such as at corners/parapets it may be necessary to fit additional fixing cleats. Check with engineer for this particular arrangement.

9. Openings for ventilating the air layer are to be provided at the lower and upper part of the cladding.

At the foot of the cladding, the opening is protected by fine mesh or perforated sheet metal, constituting an anti-rodent barrier or by a bottom drip flashing, leaving an opening of about 20 mm.

At the top of the cladding, the opening consists of a space of about 20 mm on the inside of the parapet between the downward extension of the coping and the parapet.

10. Panels around openings may require special treatment, please check detail drawings. Panels, flashings and extrusions may have a requirement for drainage holes, make sure they are clear.

11. Panels that are accidentally damaged after installation can be easily replaced by drilling the rivets. Be careful not to damage the drill hole already made in the mullion so as to reposition the new rivet at the same location. In case of damage, a new drill hole can be made at a minimum of 15 mm from an existing drill hole.

If there are any queries with the fixing of the panels and panel supports, they must be checked with the panel layout and detail drawings first, and then raised with Ash & Lacy Building Systems Ltd. before commencing installation.

End of Procedure