ASF RAINSCREEN 'SECRET FIX' PANELS

DATA SHEET: RC02

For Design software to choose the most cost effective stud for the job, ask for our AyrSuite Professional CD. Visit www.ayrshire.co.uk to order the CD or associated literature.

Oncology Unit Q E Hospital Birmingham

Following the speedy completion of the Q E Hospital Accident and Emergency Department for the same client, using Ayrshire Steel Framing; the same inner leaf was chosen here.

This building uses resin rainscreen panels to great effect.

The long construction times, and wide ranging fit out required for hospital buildings makes them ideal candidates for the use of a rapid dry enveloping system.

Wilmslow Park

These AyrFrame modules were prefabricated to arrive on site fully weather tight and finished internally. The totally modular solution included integral stair and lift modules.

This "rapid dry envelope" solution was clad with aluminium faced rainscreen panels, secured with through fixed rivets.

The cladding installers struggled to keep up with the rapid pace of the erection of this 9 storey building.

Burford Road, Timber Rainscreen

Western Red Cedar cladding is often added as a rainscreen to produce a focal point on multi-occupational buildings with a range of cladding types.

Apart from clear glass, the majority of them can be hung on the same Ayrshire Steel Framing inner leaf.

The very low weight of these walls allows the possibility of substantial savings on the foundations and slabs, providing that the projects' engineer takes account of it right from the start.

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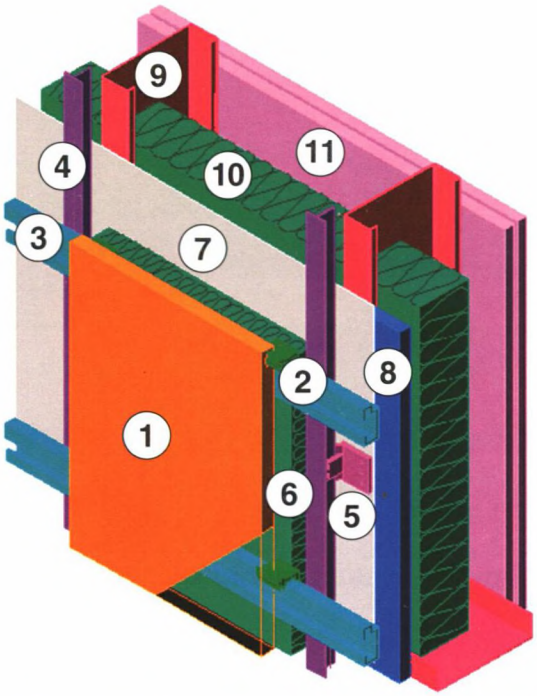
1 Rainscreen panel
2 Panel clip
3 Horizontal carrier to hold clips
4 Vertical aluminium angle or 'T' rail
5 Aluminium bracket to align and level
6 Rainscreen insulation
7 Waterproof breather membrane
8 Sheathing board, e.g. cement particleboard. Board must be able to take screws at a minimum of 15mm from edge.
9 Ayrshire Steel Framing wall studs designed to suit the height, and carry vertical loads and horizontal wind loads.
10 Mineral fibre insulation to suit fire, thermal and acoustic performance requirements
11 Vapour resistant plasterboard under fire resistant plasterboard



- Ayrshire Steel Framing is used to form the inner leaf of the external wall of a concrete, or a hot rolled steel framed building. It rapidly forms a dry enclosure, so that internal fit out can begin earlier. This is normally as soon as the slab over the next floor is finished. The erection of the outer leaf can therefore be taken off the critical path.
- Fast track steel framing can be erected in all weathers, unlike masonry solutions. The minimum reduction in programme is therefore equal to the number of frosty and rainy days during construction of the buildings' fabric. In practice the actual speed of erection is also greater than for blockwork.
- The studs act as integral wind posts to laterally support the brick outer skin. The system is designed, using condensation risk analysis, so that the studs are warm and dry. This ensures long life without the expense of using stainless steel.
- With minimal wall thickness, the stud also provide space for wiring and plumbing, support for dry lining, and zones for enough insulation to match and exceed the recommended "Part L" "U" factor requirements for 2002 and beyond. Maximum thermal efficiency will lead to reduced energy bills, and also a more cost effective heating installation.
- The low weight of the system leads to easy handling, and to reduced frame and foundation costs, if designed in soon enough.
- In commercial and multi-residential applications, (built in hot rolled steel or concrete framing), floor to soffit heights are usually less than column to column spans. It is therefore more economical to use vertical support steelwork.
- A large variation in floor to soffit height can be expected within normal building tolerances. Ayrshire Steel Framing is carefully designed to allow the prefabricated components to be altered to fit.
- **Installation from prefabricated panels**
  If Ayrshire Steel Framing is to be placed outside the slab, the accuracy of the framing elements simplifies construction. In this situation prefabricated panels can speed erection on site. Partnering is advisable because final panel design needs to be started earlier than normal, to allow time for prefabrication. Savings accrue from the reduction in programme time, with factory quality as an added bonus.

  The need to line up rainscreen panels very accurately can be overcome with sightline breaking flashings between prefabricated panels.

System Performance

Typical Figures are:

Thermal 'U' value

0.3 to 0.2 w/m^{2}k

Sound Insulation

48 - 57 RwdB

Fire Resistance

30mins to 120mins

Wind Loads

Integral wind posts to suit

These figures are based on various combinations of vertical steel studs, drywall boards, insulation and external cladding.

Method of Construction:

Use individual prefabricated components screwed together in-situ, or factory assembled bare or clad panels for speed, accuracy, and quality.

Your choice will be influenced by cost, specific application, and site conditions. Generally, walls spanning between floors are built in-situ from individual components, and incorporate a deflection head detail.

Walls outboard of the floor slab can be built either as above, but without a deflection head, or from prefabricated panels, which are available from us on a longer leadtime.

Stud options range from 70 mm to 340 mm deep, in 390 N/mm^2 material, with service slots @ 610 centres for a speedy first fix.

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