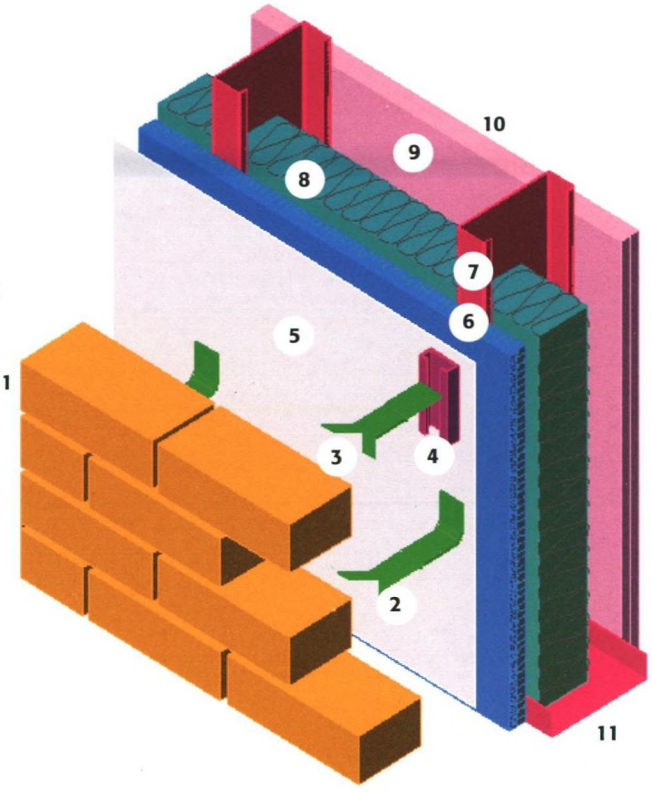
ASF RAPID DRY ENVELOPE WITH A BRICK OUTER LEAF

DATA SHEET: BC01

1 Brickwork
2 Stainless steel brick ties (frame cramps), or:
3 Twist in ties, with:-
4 Stainless steel brick tie track fixed with self-drill self-tapping screws, through the board to the studs.
5 Waterproof, vapour permeable, membrane.
6 Thermal sheathing board.
7 Galvanised Ayrshire Steel Framing CS stud.
8 Mineral fibre insulation to suit fire, thermal and acoustic requirements.
9 Plasterboard including vapour barrier.
10 Plasterboard to fire and acoustic requirements
11 CR Base Track



NB: the weight of the bricks must be carried by the foundations, (wall ~ 12m high max.) or on ledger angles on the main structural frame, and not on the ASF studs. The SCI recommend an inner leaf stiffness of L/500 when supporting brickwork. Because of the composite effect of the two leafs, most structural engineers accept that L/360 is sufficiently stiff for the steel framing. There is a substantial cost saving with the latter choice. All quotations should be based on the figure deemed by the projects' engineer to be most appropriate.

- 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 studs 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 2001 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.

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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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.

Hammersmith Hospital and Imperial College

Since the substantial internal fit out is on the critical path, Hospital builders have quickly become conscious of the programme savings with Ayrshire Steel Framing. Although by different architects for different customers, both the main Hammersmith Hospital building, and the Imperial College building beside it, use steel framing. The former has a brick and stone outer skin supported for lateral loads only; the latter a terracotta rainscreen entirely supported by the framing. The terracotta rainscreen, assembled from stud and track on site, was completed some 16 weeks before the "prefabricated" glass curtain wall seen on the far end of the buildings.

City South, Manchester

The City south residential development for Bellway Homes by Mowlem is one of a series for the same customer. Ayrshire Steel Framing was chosen by the architect in preference to an inner leaf of blockwork.

Following this, the main contractor used Ayrshire Steel Framing on the City Gate project nearby. In some areas the framing was completed long before the brickwork, taking it off the critical path.

Citygate, Manchester

1. UR deflection head
2. VB3809 horizontal bracing to both sides @ 150 mm approx. below the head, and CS blocking to the 4th gap.
3. CS stud @ centres to suit wind loads and boarding. Stud fixed to base track, sliding in head track.
4. CS stud to carry brick ties @ 150 mm from openings.
5. Mid span horizontal bracing to both sides and CS blocking to the 4th gap.
6. CR base track.
7. CR window cill. (Window head similar)
8. Vapour permeable, waterproof membrane over thermal sheathing board.
9. Brick tie track. (for use with twist in ties - not required with frame cramps)
10. Waterproof thermal flashing to window rebate.