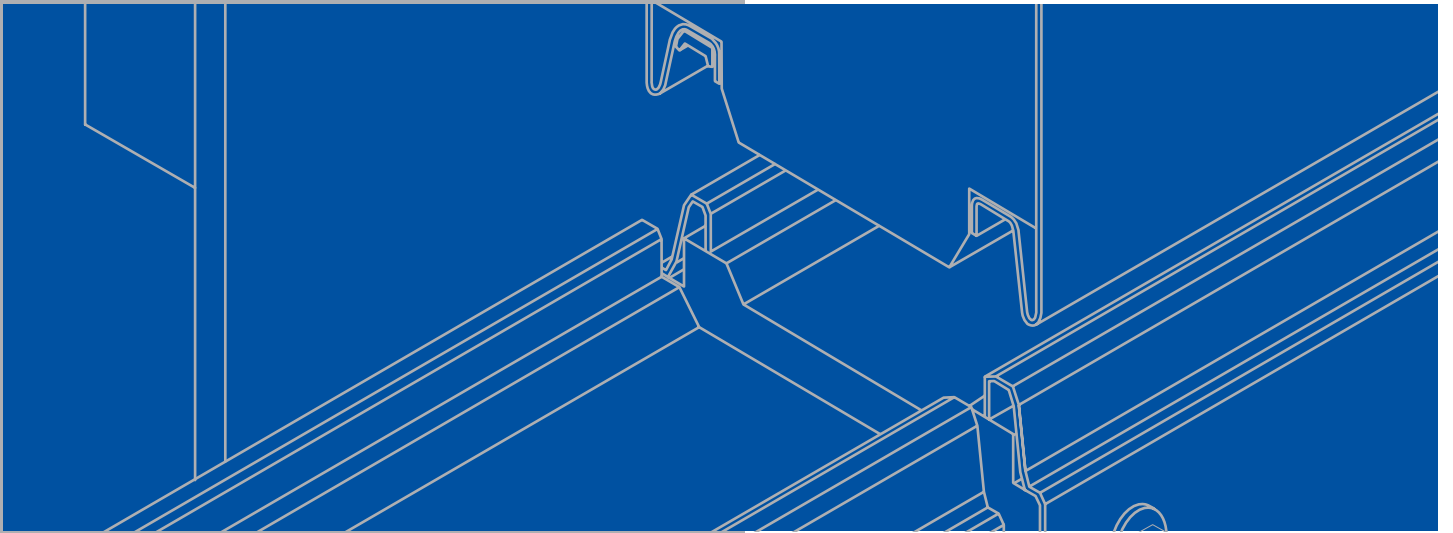


FIREMASTER



Technical manual

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1. Structural properties

Manufactured using metal facings bonded to a high density structural mineral wool core, Eurobond's panels offer exceptional spanning characteristics.

Eurobond's panel strength characteristics have been calculated following the European recommendations for Sandwich Panels: TWG 7.4.ECCS W56; including a load safety factor of 1.5 and material safety factor of 1.25.

Maximum allowable spans (m) for internal walls & ceilings

Product	Panel thickness (mm)				
	75	100	125	150	175
Firemaster Wall Lite	6.0	6.9	7.7	8.4	9.1
Firemaster Wall Extra	8.2	9.4	10.5	11.5	12.0
Firemaster Wall Ultima	–	–	–	11.5	–
Firemaster Ceiling	5.5	6.1	7.0	7.6	8.0

Wall panel calculations are based on a uniformly distributed load of 0.25 kN/m².

Ceiling panel calculations are based on BS6399 using a uniformly distributed load of 0.25 kN/m² plus a point load of 0.9 kN.

Please note the above spans are based on the cold state structural performance of the panels. Where fire resistance is required the allowable spans may need to be reduced to ensure the fire resistance is maintained. These allowable spans are shown in Section 2 Fire Performance.

2. Fire performance

Fire performance should be judged on both fire resistance and reaction to fire. Firemaster panels have been tested/assessed to BS476 Part 22, for fire resistance and independently approved for reaction to fire by the Loss Prevention Council to LPS1181 and LPS1208 and by Factory Mutual to Standard 4880.

Fire resistance

Fire resistance is generally a requirement of Building Regulations but can also be used when compartmentation within buildings is required. It is measured in terms of:

- i. Integrity – the ability of a system to prevent the penetration of hot gases and flames
- ii. Insulation – the ability of the system to reduce the temperature rise on the unexposed side of the fire and therefore prevent fire spread through radiated heat

When considering the fire resistance of a panel system it is important to refer to both integrity and insulation. Some foam-cored cladding systems, when used with cover strip flashings, intumescent and stitching of the joints, can achieve reasonable levels of integrity but not insulation. This increased level of integrity is often mistakenly taken as fire resistance. However, without the insulation values it is of limited use. Also the use of additional cover strips, intumescent and stitching of the joints is often unacceptable from an installation and aesthetic point of view. This leads to instances where although specified, the additional cover strips, etc. are not fitted. Firemaster panels require NO additional components in order to achieve the excellent ratings shown in the table below.

Firemaster panels used in a wall application will provide equal fire performance from both sides i.e symmetrical fire performance.

Product	Panel thickness (mm)	Fire resistance (minutes)		Maximum unsupported length (m)	
		Insulation	Integrity	LPS1208	BS 476 Pt 22
Firemaster Wall Lite	75	30	60	3.0	3.0
		30	30	5.5	5.5
		60	60	4.5	4.5
	100	60	90	4.0	4.0
		30	30	5.5	5.5
		60	60	4.5	4.5
	125	60	90	4.0	4.0
		60	60	5.5	5.5
		90	120	5.0	5.0
	150	60	60	5.5	5.5
90		120	5.0	5.0	
175	60	60	5.5	5.5	
	90	120	5.0	5.0	
Firemaster Wall Extra	75	60	60	3.0	3.0
		30	30	7.5	12.0
		60	60	6.0	12.0
	100	120	120	5.5	12.0*
		30	30	7.5	12.0
		60	60	6.0	12.0
	125	120	120	5.5	12.0*
		30	30	7.5	12.0
		60	60	6.0	12.0
	150	120	120	5.5	12.0
30		30	7.5	12.0	
60		60	6.0	12.0	
175***	180	180	5.5	12.0	
	180	180	–	12.0	
Firemaster Wall Ultima**	150	240	240	7.5	9.0
Firemaster Ceiling	100	60	60	4.2	4.2
		60	60	4.2	4.2
	150**	120	120	3.6	3.6
		60	60	6.0	6.0

ALL panels can be fitted vertically or horizontally.

* Joint stitched on both sides at 3m centres

** Panel joint stitched on both sides at 300mm centres

*** 0.7mm faces to both sides

Reaction to fire

Most reaction to fire tests and approvals have been insurance-driven following significant fires in buildings constructed using foam-cored panels. Firemaster panels have been tested and approved by the Loss Prevention Certification Board (LPCB) and Factory Mutual (FM).

What is Loss Prevention Certification Board (LPCB) Approval

Approval is independent 3rd party confirmation that products meet and continue to meet appropriate standards. It is different from a test as approval helps ensure, through regular audits, that the product continues to comply with the prevailing standards, which are themselves, subject to revision and re-issue. The auditing process also helps to confirm that the product supplied to the marketplace is exactly the same as the product which was originally tested and approved.

The LPCB came into being in the 1980s following a reorganisation of the insurance trade bodies. However, its origins can be tracked back to the 1880s. The Fire Offices Committee (FOC) were involved with writing the FOC technical documents which became the Loss Prevention Standard (LPS). The LPCB joined Building Research Establishment (BRE) Certification in March 2000.



Subject to the conditions of Approval as a Class 1 metal faced wall panel with non-combustible core when installed as described in the current edition of the Factory Mutual Research Approval Guide



Certificate No545a/01/02/03/11 LPS 1208
Certificate No545c/01/02/03 LPS 1181



Assessed to ISO 9001:2000
Certificate number 545

LPS 1181

LPS1181 Part 2 is a reaction-to-fire test developed specifically for internal wall & ceiling panel systems and provides for three main grades of product.

Grade of panel	Fire resistance (minutes)		Wall & Ceiling lining test thermal exposure	
	Integrity	Insulation	Level	Source
INT-1	60	30	Enhanced	Gas Burner
INT-2	60	30	Standard	Timber crib
INT-3	Not applicable	Not applicable	Standard	Timber crib

Panel type	Panel thickness (mm)	LPS 1181 Part 2 Grade
Firemaster Wall Lite	75	INT-2
	100	INT-1
	125	INT-1
	150	INT-1
	175	INT-1
Firemaster Wall Extra	75	INT-1
	100	INT-1
	125	INT-1
	150	INT-1
	175	–
Firemaster Wall Ultima	150	INT-1
Firemaster Ceiling	75	INT-3
	100	INT-1
	125	INT-1
	150	INT-1
	175	INT-1

The FPA in conjunction with InFiReS (Insurers' Fire Research Strategy Funding Scheme) have published the following design guide: "Food Processing Factories 1; Design Principles". This uses a risk-assessment approach to determine the grade of panels that should be used in a particular environment. Shown in the table below are the recommended minimum grade of panels that should be used depending on the calculated risk.

	High risk	Medium risk	Low risk
Minimum grade of panel required	LPS 1181 Part 2 INT-1	LPS 1181 Part 2 INT-2	LPS 1181 Part 2 INT-3

Factory Mutual

Firemaster walls & ceilings have been approved by Factory Mutual to FMRC Standard 4880 "Class1 fire classification of metal faced insulated wall panels with non-combustible core for installation with no height restriction."

Panels can be installed vertically or horizontally with either steel or aluminium faces.

Spread of flame

All Corus Steel Colorcoat products, used in the manufacture of Firemaster panels, have a Class 'O' rating.

Euroclasses A1 Classification

All the previous information (LPS 1181, FM 4880 etc.) comes with different classifications. Eurobond's products achieve the highest available categories for both LPS 1181 and FM 4880. Despite this, confusion still exists about how the panels actually react in a fire.

To remove this confusion, Eurobond's panels are all made using a mineral wool core material which is non combustible when tested to BS EN ISO 1182. Following the new European classifications for reaction to fire, the core material of all Eurobond panels is rated A1.

Despite the misleading claims of some panel manufacturers, no foam cores, be it polystyrene, polyurethane or polyisocyanurate, are non combustible when tested to BS EN ISO 1182.

3. Thermal

Firemaster panels will provide the following U values:

Panel thickness (mm)	Firemaster Wall Lite	Firemaster Wall Extra	Firemaster Wall Ultima	Firemaster Ceiling
75	0.46	0.49	–	0.49
100	0.35	0.38	–	0.38
125	0.29	0.31	–	0.31
150	0.24	0.26	0.26	0.26
175	0.21	0.23	–	0.23

The above U values have been calculated using a plain element approach and do not take into account any thermal bridging through the joint.

If you require composite panels to be used as external cladding, please refer to our Europanel and Rockspan Technical Manual.

4. Acoustics

Weighted sound reduction index R_w (db)

Panel thickness (mm)	Firemaster Wall Lite	Firemaster Wall Extra	Firemaster Wall Ultima	Firemaster Ceiling
75	27.2	29.2	–	29.4
100	28.5	30.2	–	30.7
125	29.0	30.9	–	31.4
150	30.1	31.8	31.8	32.4
175	30.8	33.1	–	33.1

The information shown above is based on The Metal Cladding and Roofing Manufacturers Association (MCRMA) acoustic performance software provided by the University of Salford Acoustic Department.

All calculations are based on the following panel construction:

External face: 0.5mm thick steel

Core: 99Kg/m³ mineral wool for Firemaster Wall Lite
135Kg/m³ mineral wool for Firemaster Wall Extra and Ultima and Ceiling

Internal face: 0.5mm steel

5. Weights & Dimensions

Panel self weights (kg/m²)

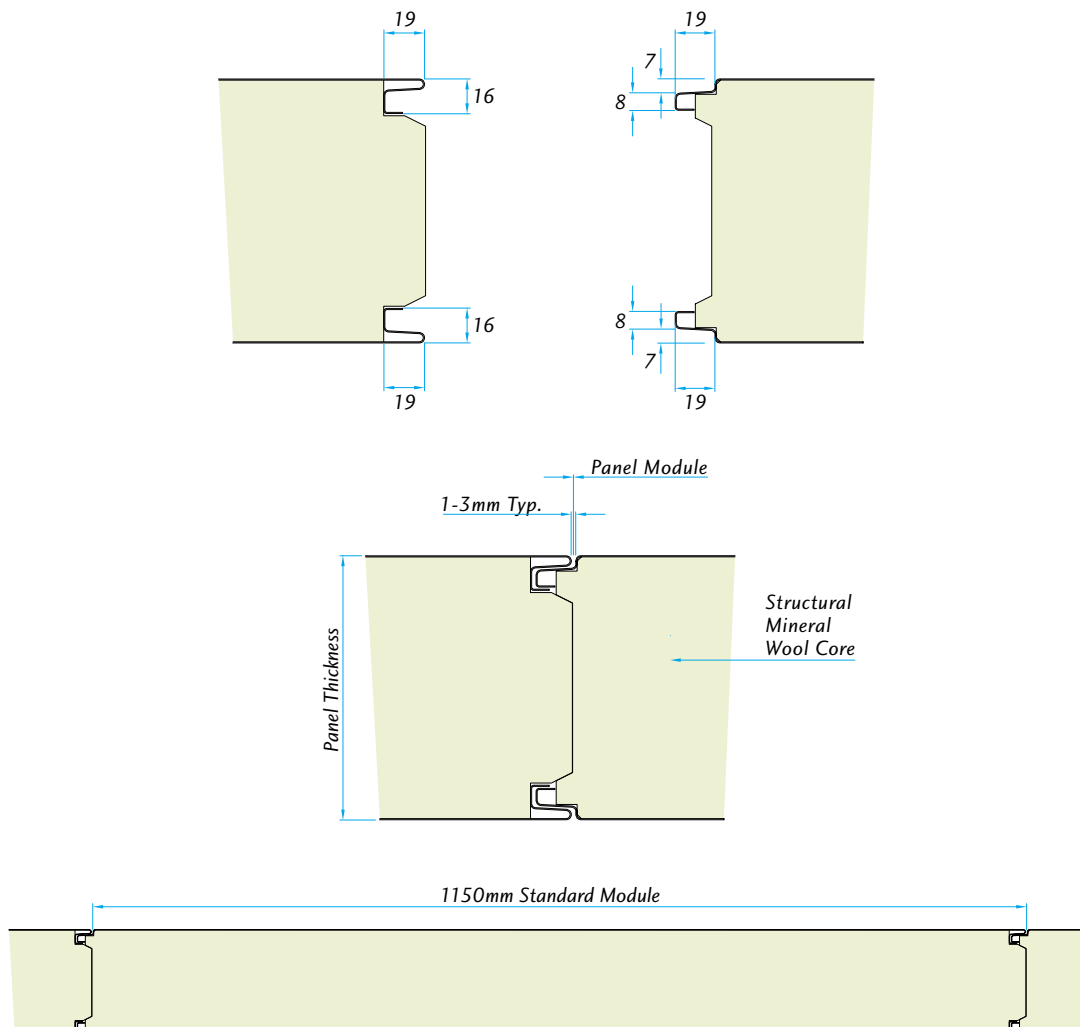
Panel thickness (mm)	Firemaster Wall Lite	Firemaster Wall Extra	Firemaster Wall Ultima	Firemaster Ceiling
75	15.09	18.46	–	20.13
100	17.34	21.84	–	23.51
125	19.59	25.21	–	26.88
150	21.84	28.59	31.90	30.26
175	24.09	31.97	–	33.64

Sizes available (mm)		Tolerances (mm)
Length	2000 – 12000	+/- 10
Width	600 – 1150	+/- 2
Thickness	75 – 150	+/- 1

Flatness tolerance

1.5 mm from the theoretical flat plane over a distance of 700mm

Joint details



6. Panel finishes

The panels are available with the following steel face finishes:

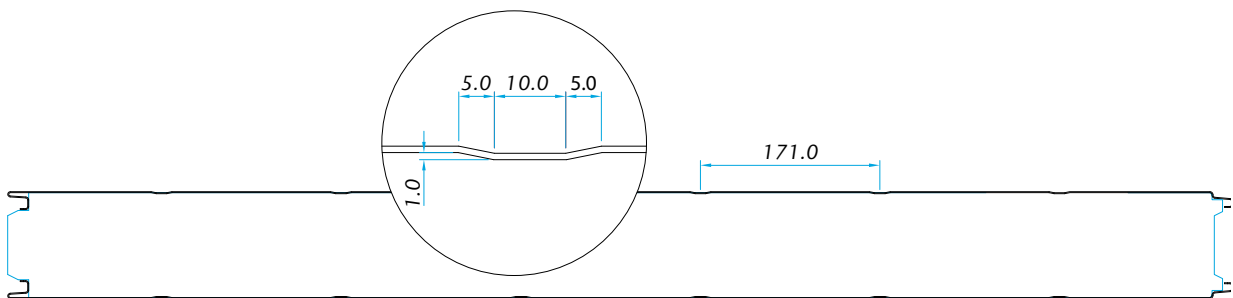
1. Foodsafe laminate
2. Primer coated galvanised
3. White/grey polyester

The following face profiles are also available:

Architecturally flat



Minibead finish



7A. Standard details: Firemaster vertically laid walls

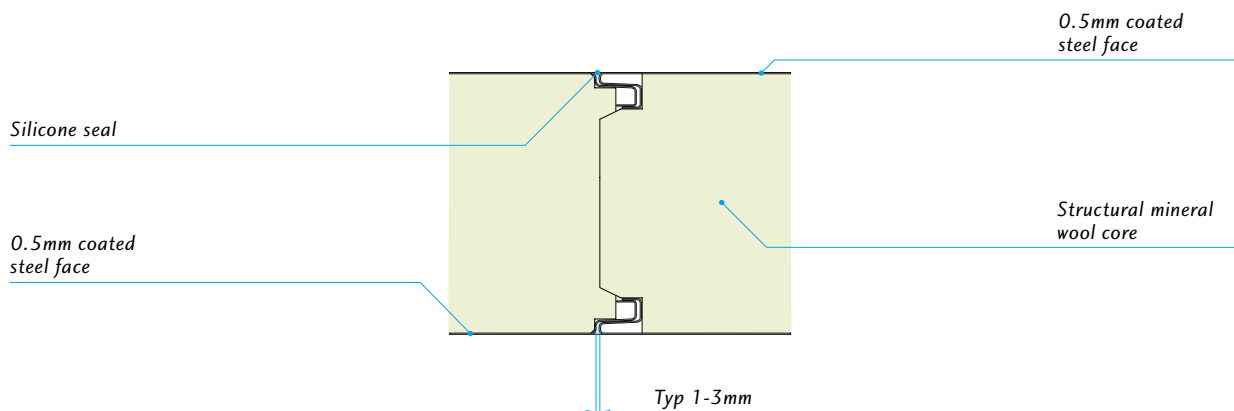
Eurobond have a comprehensive library of standard details that cover Firemaster panels in both wall and ceiling applications.

NB: Always check with our website www.eurobond.co.uk for the latest version of any drawing.

These details are available in DWG format to allow them to be directly imported into project-specific drawings.

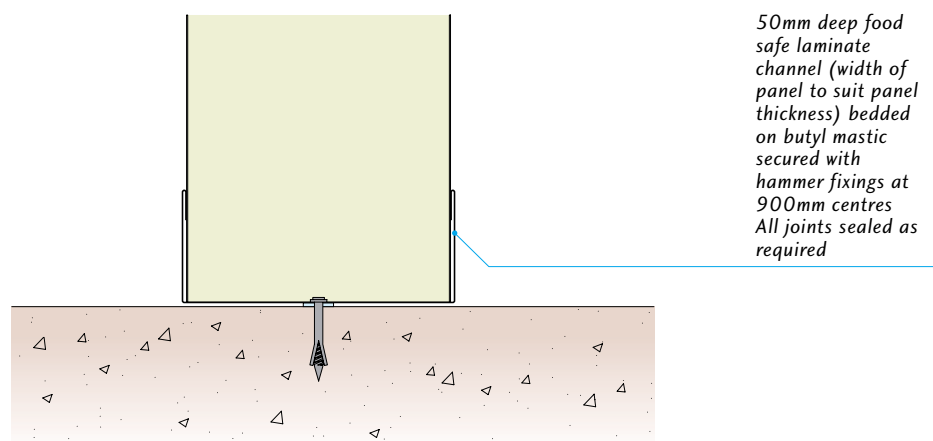
Firemaster interlocking joint detail

FMV-01A



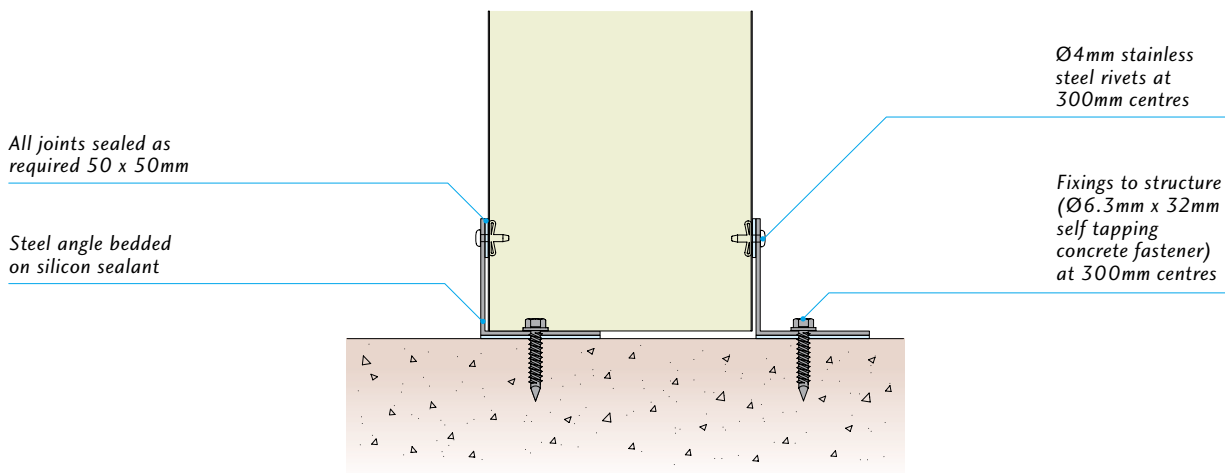
Typical wall/floor junction

FMV-05A



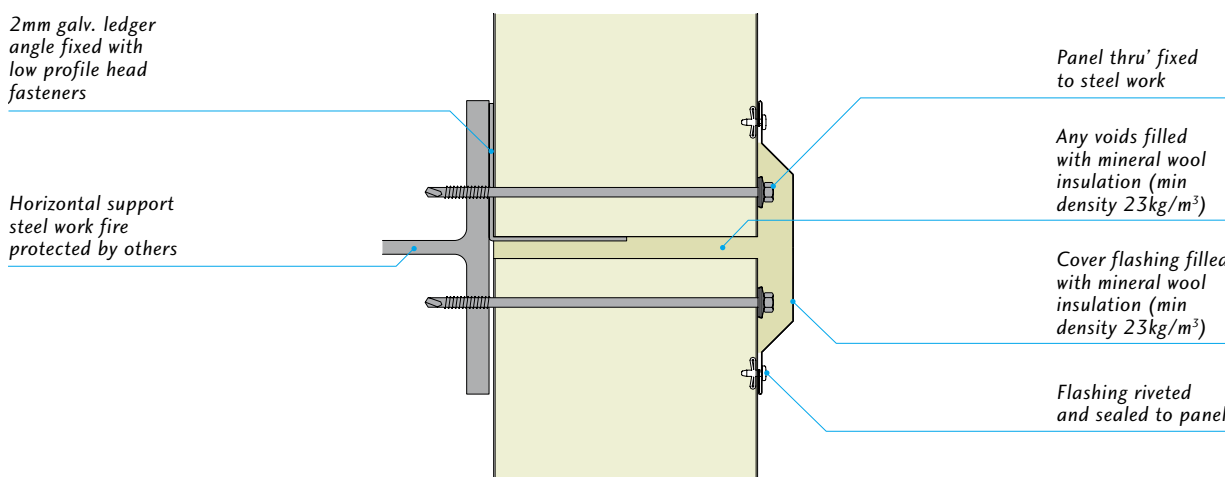
Typical wall/floor junction

FMV-05C



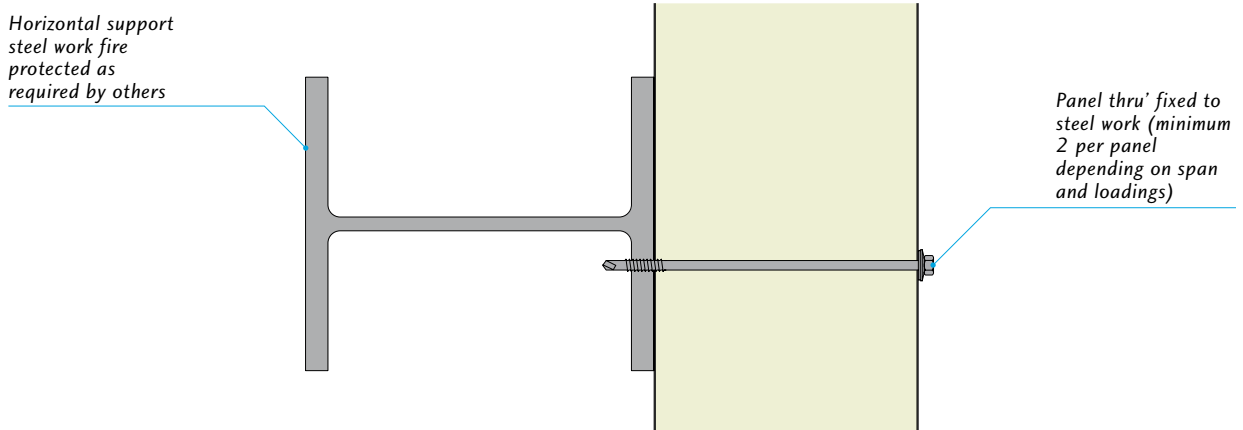
Panel stack detail not Vertically laid panels – panel stack detail 2

FMV-02A



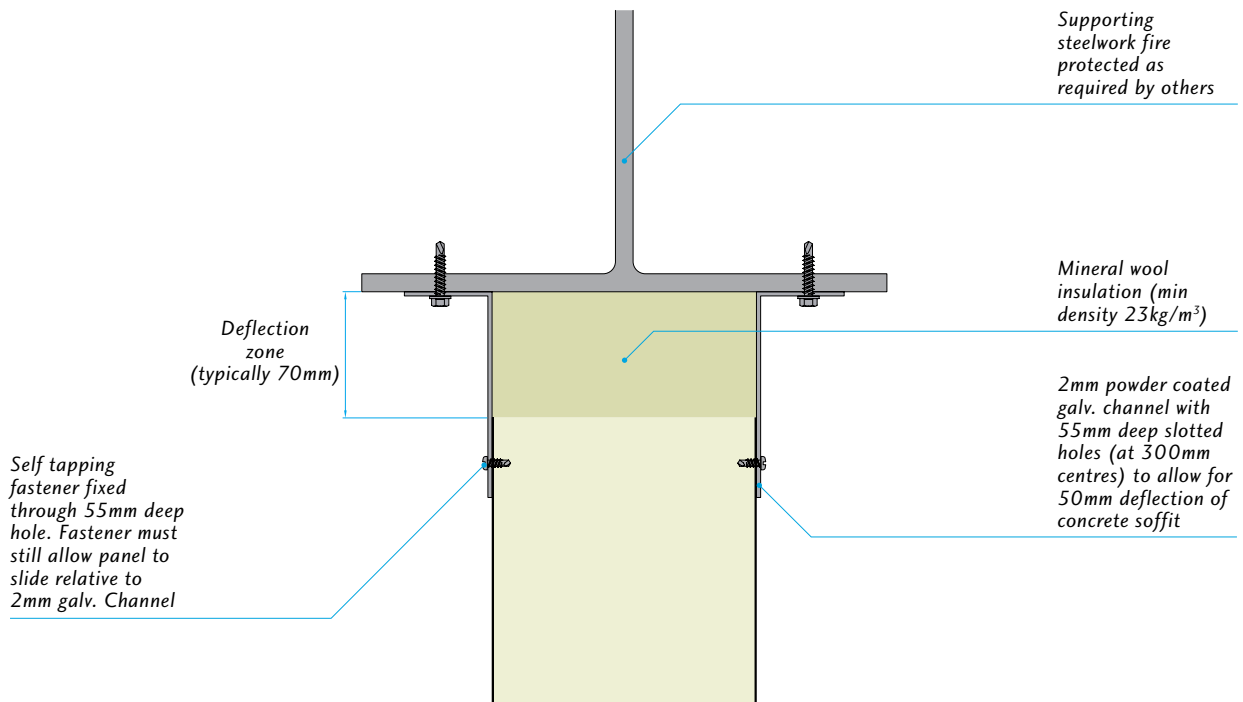
Intermediate fixing detail

FMV-02B



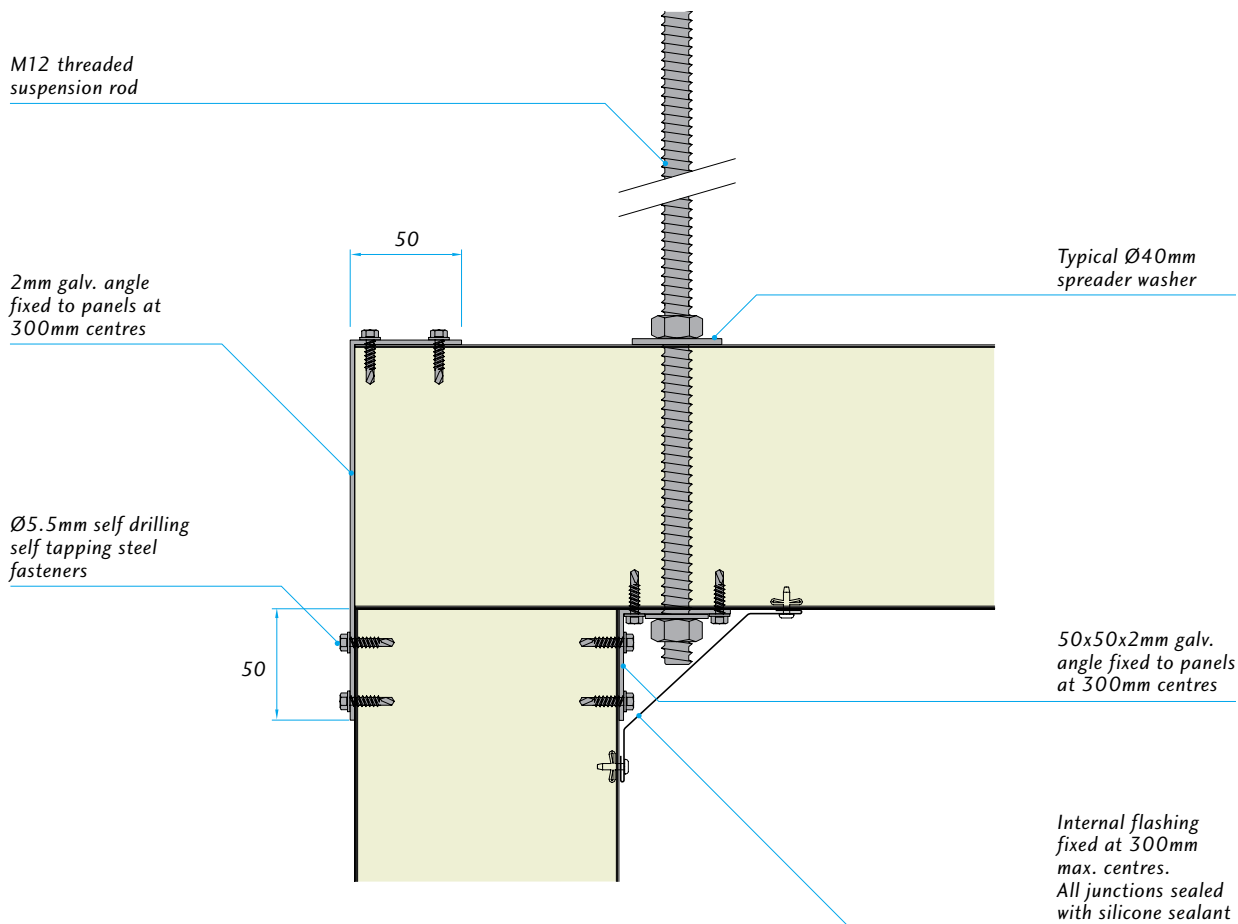
Typical wall/beam junction with 50mm deflection allowance

FMV-07A



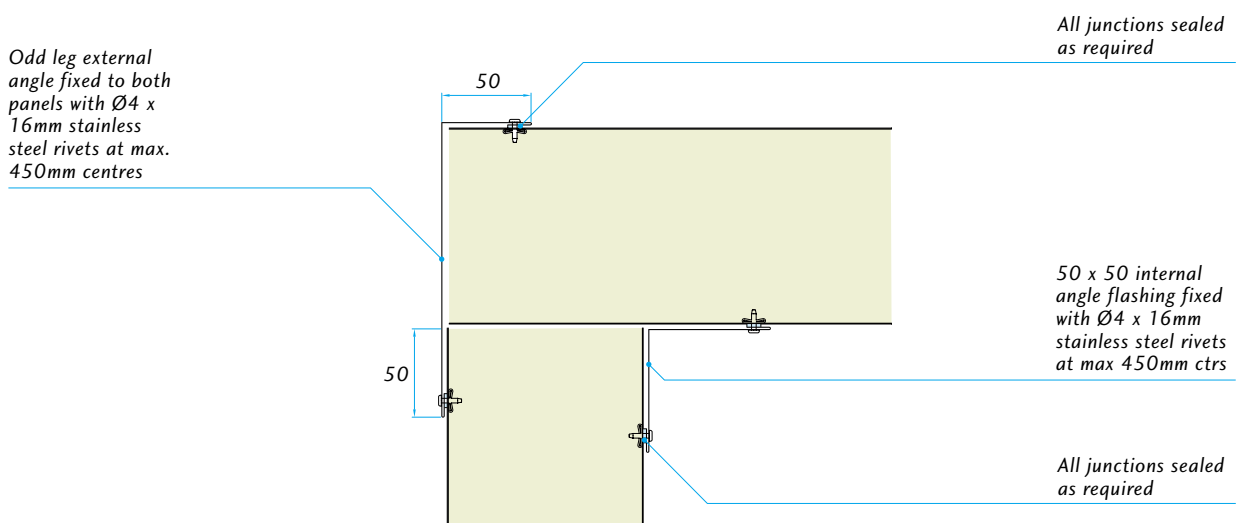
Wall/ceiling junction detail

FMV-08B



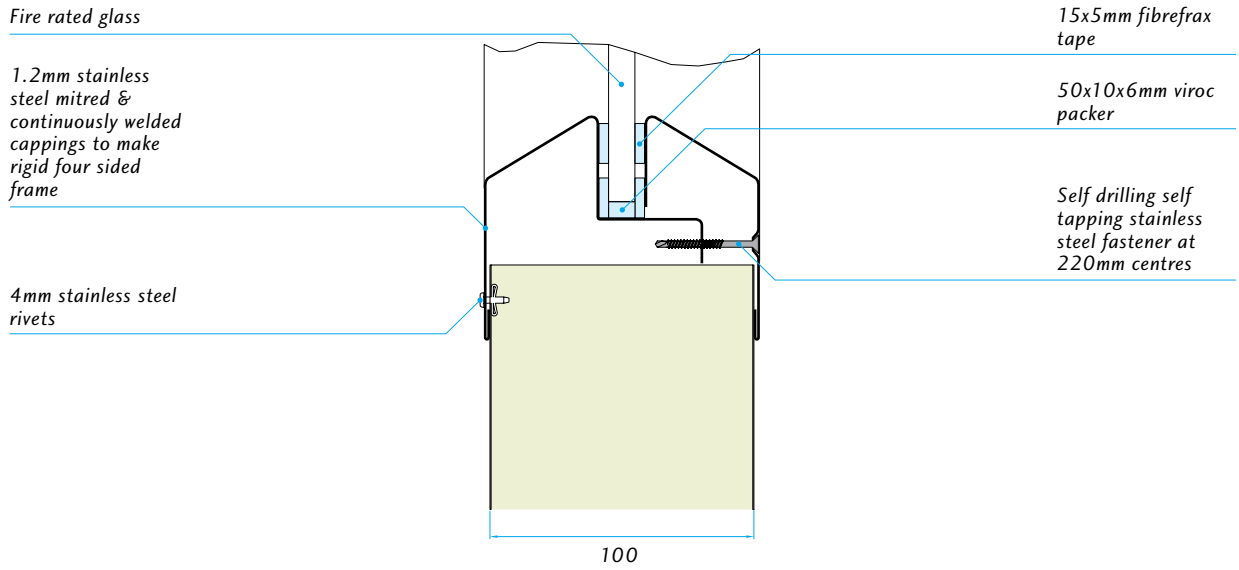
Typical corner/ceiling junction

FMV-08D



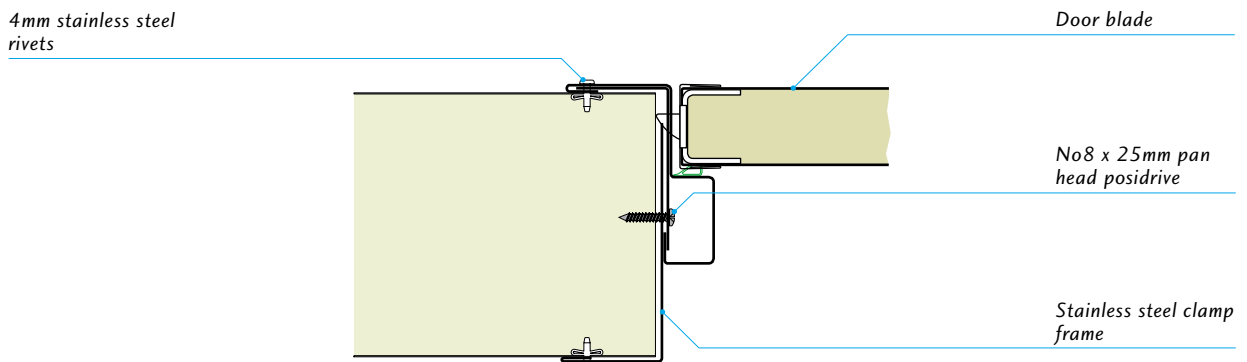
Firemaster vision panel detail

FMVP-3A



Firemaster personnel door detail

FMV-09A

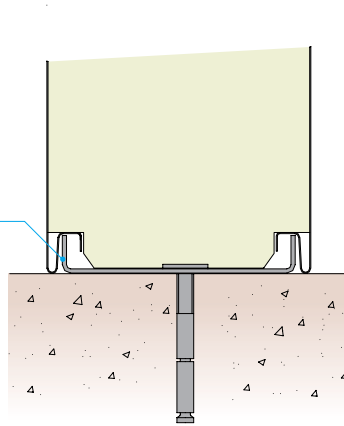


7B. Standard details: Firemaster horizontally laid walls

Base detail 1

FMH-05A

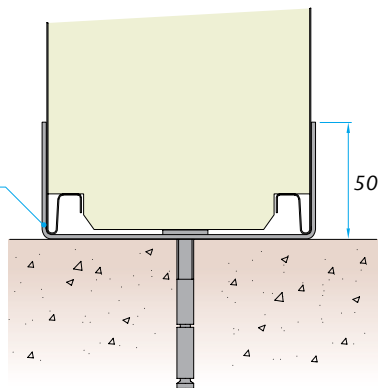
2mm galvanised base channel support fixed to floor slab @ max 600mm CTRS



Base detail 2

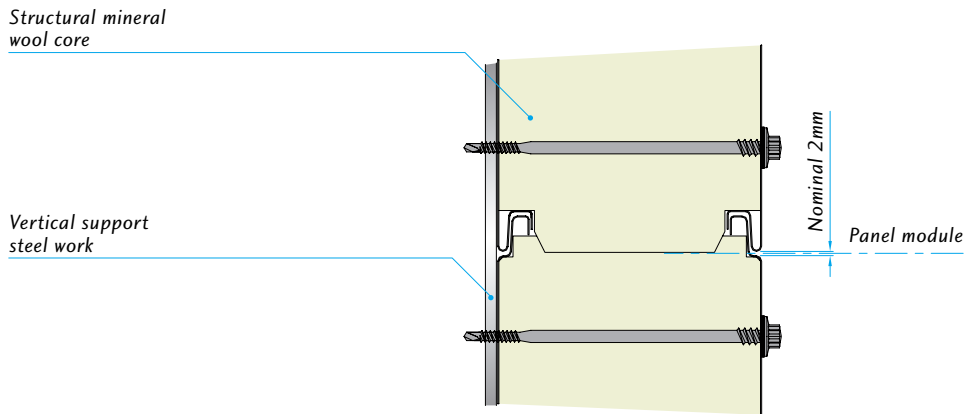
FMH-05B

1.5mm galvanised base channel powder coated if required and fixed to floor slab @ max 600mm CTRS



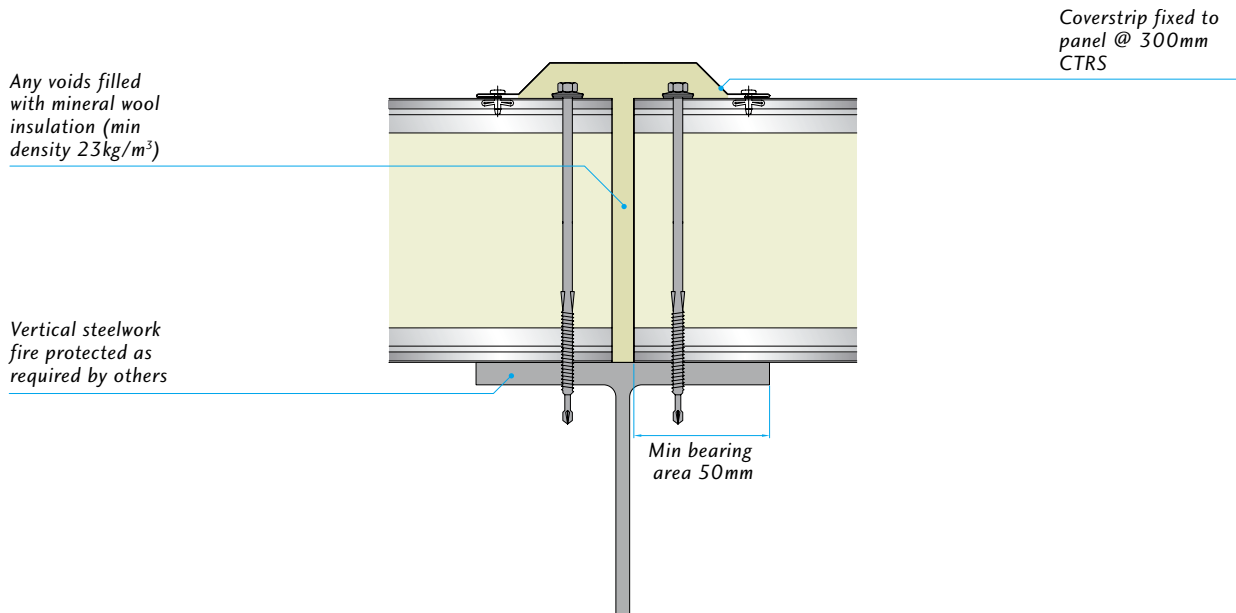
Horizontal joint detail

FMH-01A



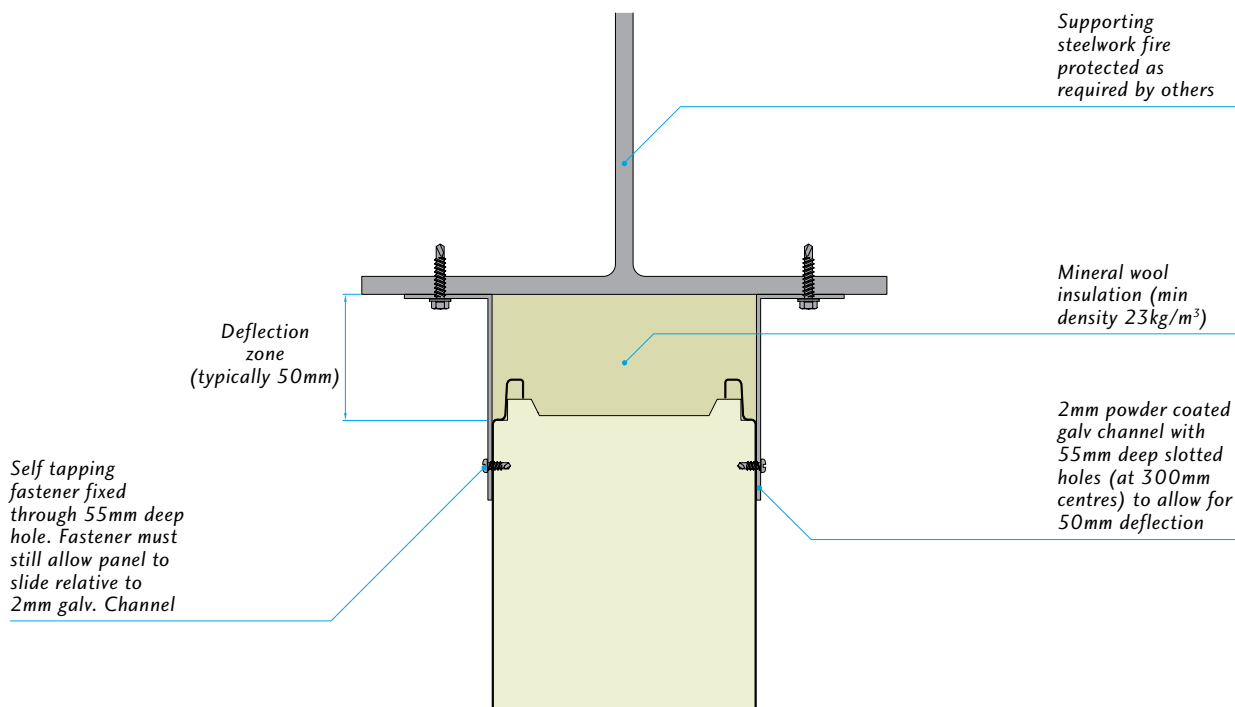
Vertical joint detail

FMH-02A



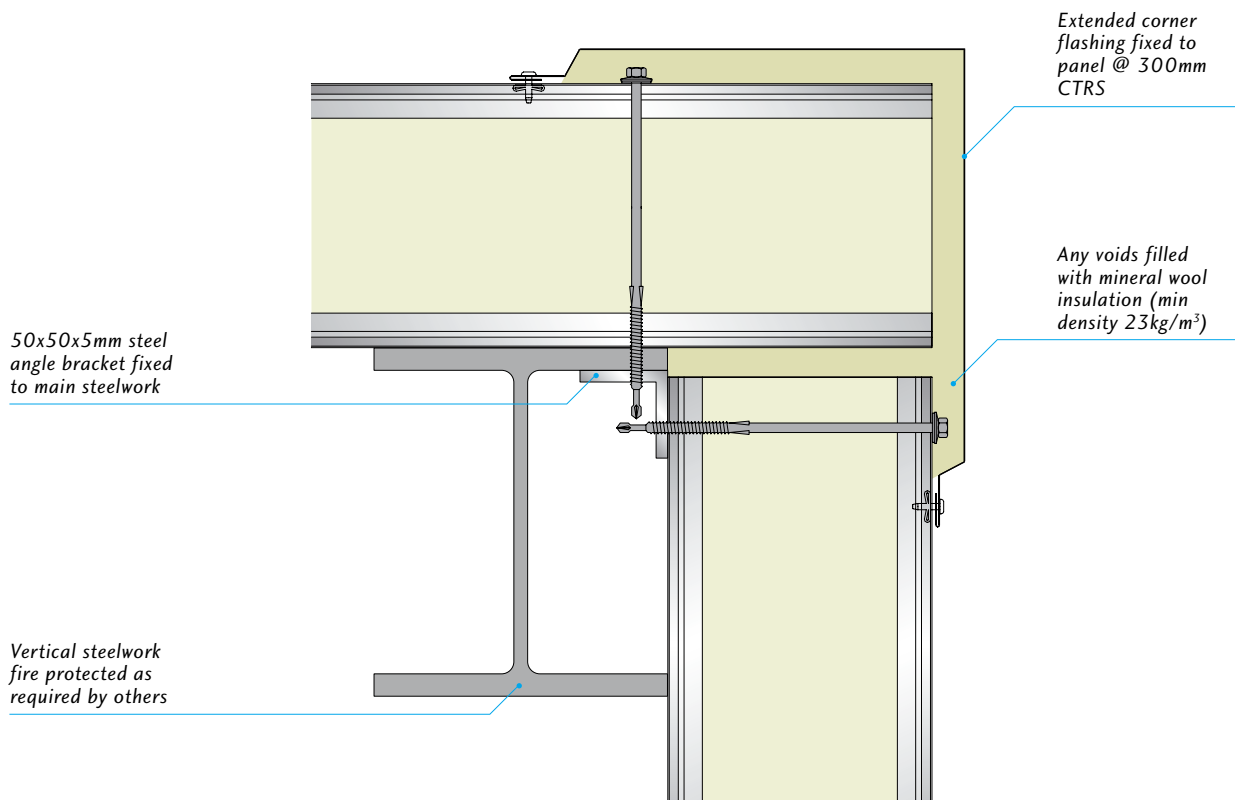
Typical wall/beam junction with 50mm deflection allowance

FMH-07A



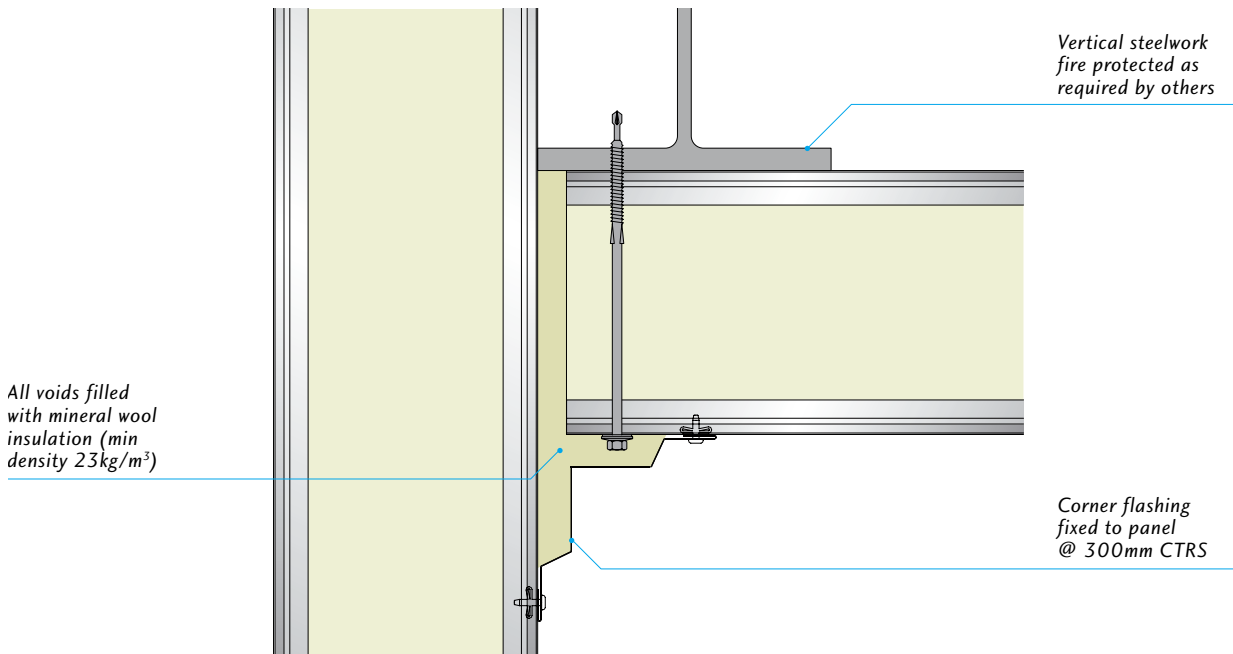
Typical corner detail

FMH-08A



Typical wall abutment detail

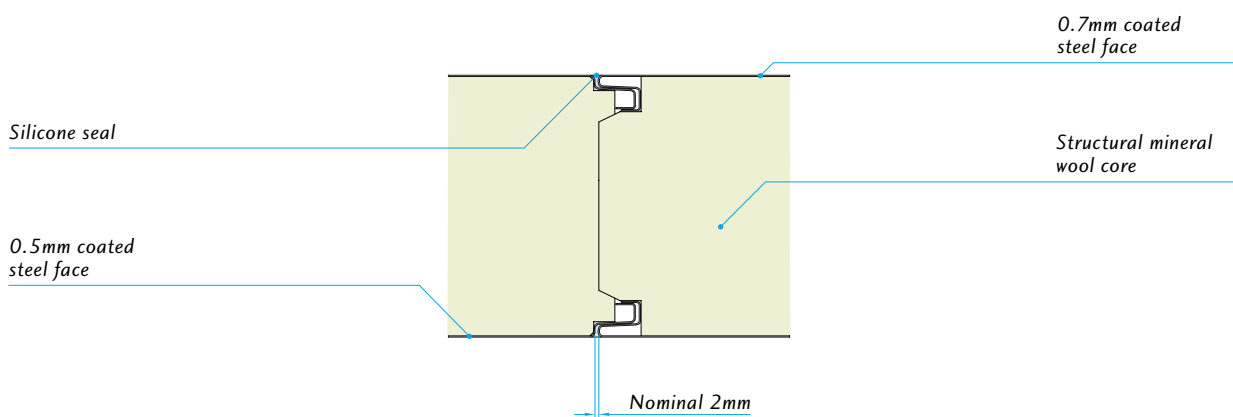
FMH-08B



7c. Standard details: Firemaster ceilings

Interlocking joint detail

FMC-01A



Joggled top hat suspension detail – vertical section

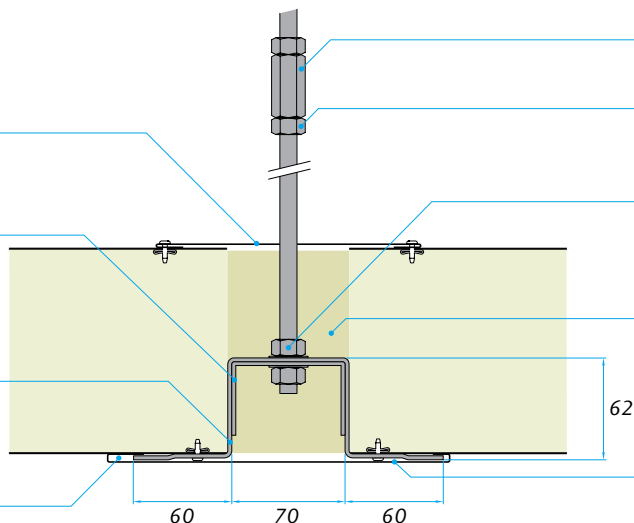
FMC-05A

125mm steel coverstrip secured with 4 x 13mm s.s. rivets @ 300mm max. centres
All junctions sealed with silicone

45 x 70 x 2mm galv. connector 400mm long

Galv. joggled top hat secures to both panels with 4x13mm s.s. rivets @ 500mm max. centres

Optional Ø4x13mm s.s. rivet to positively locate coverstrip



For lengths greater than 3000mm use an M12 connector

M12 nylock nuts 2 off

2 full M12 hex nuts & 2 M12 flat washers

Mineral wool infill must be used (minimum density 23 kg/m³)

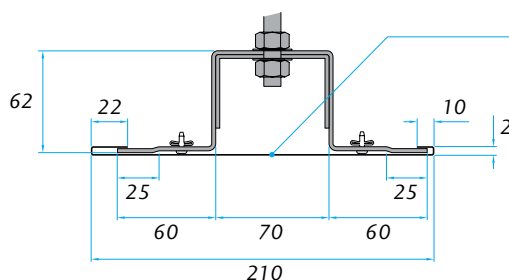
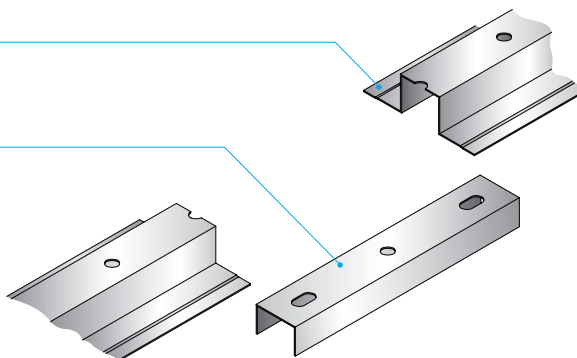
200mm coverstrip All junctions sealed as required

Joggled top hat suspension component details

FMC-03C

Joggled top hat

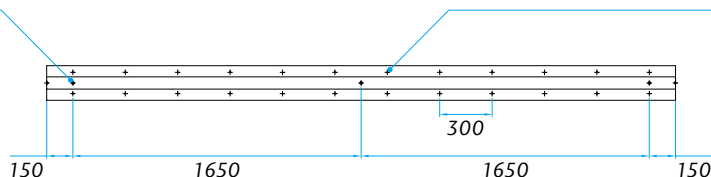
Top hat connector 400mm long



Coverstrip

3 full and 2 half holes Ø14mm

Ø5mm holes 16off @ 300mm centres



8. Mineral wool properties

In the past, due to its appearance and texture, doubts have been raised about the suitability of mineral wool when used in food environments and when in contact with installers and the general public. Eurobond, in conjunction with Rockwool, have had a series of independent tests carried out to prove the safety and suitability of mineral wool.

Promotion of bacterial growth

Through Campden & Chorleywood Food Research Association Group two tests were carried out to show that Rockwool does not promote bacterial growth:

i. Japanese Seal method (Test Report No. FH/67949/1)

The results of this test showed that using an example of typical food industry Gram of negative (E.coli) and Gram positive (S.aureus) bacteria, there was no evidence to suggest that Rockwool sustained more microbial growth than other control materials and may potentially inhibit the growth of some micro-organisms.

ii. Injection method (Test Report No. FH/67949/3)

From the results obtained it can be concluded that Rockwool does not promote growth of L.monocytogenes, P.aeruginosa and S.cerevisiae when injected into the material. In fact the counts decreased in Rockwool compared with PB controls.

In summary, using examples of typical food micro-organisms, there was evidence to suggest that microbial counts decrease when injected into Rockwool.

Water absorption properties of Rockwool (Test Report No. FH/67949/2)

Through Campden & Chorleywood Food Research Association Group a test was carried out which showed that when water was placed onto the surface of the Rockwool, a distinct ball formed showing the material is hydrophobic. Once the head of water is sufficient to overcome the surface tension holding the water on the surface, the Rockwool becomes 'leaky' and allows the water through. There does not appear to be any 'wicking' or capillary effect.

Rockwool performance and properties

Rockwool is manufactured from a volcanic rock to which coke and limestone are added. The molten material is spun into wool and small quantities of resin binder and mineral oil are added to lock the strands together and make them water repellent. The wool is formed into a mat, which is then carried through ovens where it is cured and compressed giving it good structural strength. This mat is used as the core for the Firemaster panel.

Rockwool has outstanding properties and performance that make it especially suitable for the Firemaster Panel:

- Fire – Superb fire properties and rated A1, the safest under the new Euroclass Reaction to Fire
- Insulation – Rockwool has excellent thermal and acoustic properties
- Biological – Rockwool is completely rot proof and does not encourage the growth of mould or bacteria
- Environment – No CFCs or HCFCs used in manufacture and it is fully recyclable
- Water Resistance – Rockwool mineral wool repels water. The vapour resistance is negligible and usually considered to be the same as that of air

Rockwool non-carcinogenic properties UK and European legislation

The safety of Rockwool mineral wool insulation is confirmed by UK and EU health and safety legislation whereby Rockwool is free from suspicion of carcinogenic effects, ie is not classified as a possible human carcinogen (UK HSE 'CHIP' Regulations and European Directive 97/69/EC).

A unique feature of Rockwool fibres is that they are bio-soluble – any fibres that are possibly inhaled are soluble in the human body but are not sensitive in this respect to humidity or other liquids outside the body.

Fraunhofer ITA certificate no. 02G98006A details the results of tests undertaken on Rockwool stone wool in accordance with the required EU method. These results confirm that it is not necessary to classify Rockwool fibres under UK and EU regulations.

9. Ceiling panels guidance for use

The exceptional performance of Firemaster Ceilings has made the use of mineral wool ceiling panels a practical proposition for specifiers and contractors alike. However, the abuse of the walk on capacity of Firemaster Ceilings must be avoided and therefore the following guidelines must be strictly adhered to:

How the law applies

The erection of insulated panel ceilings or subsequent maintenance and access operations come under health and safety law and this requires hazards to be identified and where possible, eliminated. Any residual risks should be assessed and safe systems of work developed to minimise them. Remember, having a safe system of work when undertaking work on a ceiling is a legal duty and should be a co-operative effort between Client, Contractor and Designer.

Control access to and movement over the ceiling

Provide dedicated and safe access onto the ceiling and ensure that all persons access the ceiling from these point(s) only. Whenever possible, access should be via a stair-tower. However, if ladders are used they should be tied at the top and extend at least 1.1m past the access point. Personnel must not jump or bounce on ceilings and should not gather in groups of more than two. Signs should be erected at all points of access.

Provision of access to maintain the roof

Where access is required to the ceiling area to inspect or maintain plant, designated walk ways must be used. These could take the form of an independently supported walk way which gives access to the necessary plant. Where a walk way cannot be installed but access is still required, the ceiling must be protected with 6 mm ply/hardboard to spread loads. These boards should be fixed to the back of the ceiling panels with self tapping screws and positioned:

- Close to and running parallel with the ceiling suspension system
- At the Perimeter of the ceiling where the ceilings panels are fixed back to the walls.

NB Should anything other than normal maintenance access be required, Youngman's' type walk boards should be used by all subcontractors at all times.

Fixing the ceiling

Always fix ceiling panels in accordance with Eurobond's recommendations, e.g. sequence of laying down the panels, number of fixings, etc. Never allow partial fixing only of ceiling panels. Each panel should be fully fixed, allowing progress of the work as it is laid down, with the correct number of fixings as required and system of support. If any cut outs for penetrations over 100mm wide are required this must have prior approval of Eurobond.

Post construction maintenance

Like any other product, Eurobond ceilings will perform better and for longer if you maintain them properly. But remember the hazards in maintaining a ceiling or using it for access can be greater than for constructing them. Do not allow any person access to a ceiling without vetting their skills and safety methods. Do not allow untrained employees to "pop up" for a quick look or to carry out quick repairs.

Remember – Contact Eurobond if in doubt on any aspect of new ceiling construction or subsequent access. The Best Practice Guide for work on ceilings constructed with steel faced insulated composite panels is also available upon request.

10. Installation

Handling

Forklift offload

When unloading the panels using a forklift, the forks should be set at their maximum distance apart and located centrally between the polystyrene packers. It is important that the panels do not come into contact with the mast uprights of the forklift as damage could occur. Panel stacks should be offloaded one at a time and then placed on even ground. Before installing panels the unopened panel stacks should be positioned so as to minimise any movement of individual panels from the stack to the point of installation. Individual panel lifting equipment must not be used to transport the panels around site.

Panel Clamps

Eurobond has developed a patented lifting clamp for the safe, easy installation of horizontal panels. Panel clamps are available in three sizes, to suit the following thickness of panels, 100mm, 125mm and 150mm. Contact Eurobond sales departments for further information.



Suction Lifting Equipment

When using suction lifting equipment as soon as the panels are lifted from the stack they should be rotated 90° in a vertical orientation to prevent any damage to the panel face.

Crane Off Load

When using a crane to off load panels, care must be taken not to damage the edges of them. To help protect the edges of the panels from sling damage, notched bearers and adequate lifting slings should be used. Please contact Eurobond for more details

Lifting equipment

Eurobond always recommends the use of approved type mechanical handling for the installation of mineral wool composite panels. In fact, our tests and customer feedback have shown that using such devices can give significant improvements in efficiency and reduction in losses due to damage.

Please contact Eurobond for a list of recommended suppliers.

Site storage

- Adequate level storage areas with easy access to place of fix are essential
- Panels should not be stacked more than 2.5m high
- Allow adequate access between stacks
- Ensure stacks are stable at all times
- Store panel packs off the ground on bearers and on a slope to allow water to drain away
- Bearers should be evenly spaced and positioned directly above other bearers
- Protect packs from the elements and other construction trades particularly once external wrapping has been removed.

Health and safety

Uses

Eurobond's panels are a laminated, composite panel system, with metal facings and a high-density mineral wool core, designed for use as wall cladding or walk-on ceilings for commercial and industrial buildings.

Fire hazards

Although Eurobond's panels are non-combustible, the following recommendations should still be followed to cover the packing material and to avoid any aesthetic damage to the panels.

- Naked flames, i.e. blowlamps, welding and burning equipment, smoking, etc. shall not be permitted where panels are being stored or installed
- High temperatures shall be avoided at storage and installation sites
- Storage and installation areas should be kept free of rubbish, which may be ignited, or help spread a fire
- In the event of a fire, breathing apparatus should be worn.

Handling

- During the handling of panels gloves should be worn to avoid laceration of the skin from the cut edge of the metal facings
- The panels are supplied in heavy packs and large individual panels are heavy therefore correct lifting and handling practises should be followed to avoid injury. HSE recommendations should be followed at all times.

Cutting of panels

Panels should only be cut using a jig saw, a reciprocating saw or any other saw specifically designed for cutting composite panels. DO NOT use an angle grinder or oxy-acetylene cutting equipment.

- Eye protection should be worn at all times to protect against any flying swarf
- Any sharp edges, caused by cutting, should be removed where possible
- Cutting may cause dust, which may act as an irritant and dust masks may need to be worn
- When cutting with power tools ear protection should be used.

Human health hazards

Under normal conditions the mineral wool core and metal facings are stable.

The core material is manufactured from wools, which are not classified as carcinogenic (Dangerous Substance Directive EC/67/548). Mineral wool is classified as an irritant and direct contact can cause an effect to the skin, known as mechanical irritation.

- Gloves should be worn and general contact with skin avoided, where possible, to prevent irritation
- When cutting in an enclosed environment, it may be necessary to provide dust extraction to ensure that the maximum exposure limits (MEL) are not exceeded. See Eurobond's Technical Department for specific information on the MEL for individual components within the panels.

First aid measures

- In the event of injury to skin or eyes seek immediate medical attention.

Disposal

- Mineral wool is non-hazardous and its disposal should be in accordance with local regulations
- Packaging material is combustible and must be kept away from possible ignition sources before disposal
- Ensure polythene wrapping is kept away from children.

Environmental Policy

Eurobond places the environment and its protection at the top of our agenda.

We recognise that our day to day operations and our products can directly and indirectly make an impact upon the environment and are committed to achieving the highest standards of environmental best practice in all aspects of our business.

To achieve this, by dedicating the necessary resources, we pledge to:

- Meet and where possible, exceed all environmental legislation, regulations and government guidance
- Apply strict quality controls by implementing an Environmental Management System to elevate levels of recycling and waste minimisation, reduce energy consumption and improve efficiency to achieve accreditation to ISO 14001
- Evidence our responsible attitude to the protection of natural resources and climate change through viable end of life solutions including recycling of waste streams
- Demonstrate a commitment to the prevention of all forms of pollution
- Foster and realise positive environmental practices throughout the company through training and individual responsibility
- Work with and encourage our supply partners, customers and hauliers to adopt and promote an equally effective environmental approach
- Protect and enhance all of our working environments with an understanding of the effect our operations may have on them
- Implement and review ambitious strategies and targets to promote and stimulate continual improvement in environmental performance
- Communicate our environmental commitment and achievements to staff, customers, partners and suppliers
- Seek out and respond to new opportunities to reduce the environmental impact of our products and manufacturing methods.

Quality Policy

The aim of Eurobond Laminates is to increase profitability by enhancing customer satisfaction through anticipation, identification and the implementation of customer requirements.

It plans to do this by the establishment and review of Quality Objectives and System Improvements through the Business Improvement process.

Eurobond Laminates Ltd is committed to complying with the requirements and continually improving the effectiveness of the ISO 9001:2000 Quality Management System.

Installation guides

Internal vertical wall panels – factory type environment (1/3/04 – Issue 1)

1. Check floor is level and mark line for fit of angle.
2. Drill and fix floor fixings at 300mm centres. See drawing number FMV-05C.
3. Repeat this action for one of the head angles only.
4. Apply continuous bead of sealant to inside edge of both angles (head and base).
5. Offer the vertical panel up to the angle and ensure panel is plumb before fixing.
6. Face fix both the head and the base angles to the panel at 300mm centres.
7. Hold panel in position and offer the next panel to it.
8. Slide panel into the next panel, ensure panel cores fit tightly together – if necessary use a 3mm spacer to ensure consistent joint widths.
9. Pack any voids with mineral wool – minimum density 23 kg/m³.
10. Fix second panel to angles repeating above.
11. Lay continuous bead of sealant to both floor and panel face in readiness for positioning of second (face) angles.
12. Repeat this in preparation for fixing of the head angles also.
13. Fix angles to panels at 300mm centres.
14. Apply continuous bead of mastic to panel/panel joints ensuring that no gaps are present.
15. See installation drawings for additional information.

Ceiling panels (1/3/04 – Issue 1)

1. Fit unistrut to structural steelwork @ 1.8m centres; fix M12 threaded rod to spring nut.
2. Locate galvanised top hat and top hat connectors onto M12 rods, located cover strip for top section capping and position top hat with M12 nuts and washers, repeat for length of run. Repeat for supports parallel to first run. See drawing numbers FMC-05A & FMC-03C.
3. Ensure levels are accurate and parallel with adjoining steelwork centres.
4. Fix angles to structural wall around the perimeter in readiness to accept ceilings. See drawing numbers FMV-08D & FMV-08B.
5. Fit panel, with female edge to wall, pack any voids with mineral wool insulation. (Refer to drawings for additional information.)
6. Ensure panel is level prior to fitting any angles.
7. Fix panel to angle at 300mm centres and top hat at 300mm centres; repeat for both ends and length of longitudinal edge.
8. Offer next panel to first, leaving a joint gap of 2-4mm. If necessary use a 3mm spacer to ensure consistent joint widths.
9. Repeat for second bay of ceilings.
10. Pack top hat voids with mineral wool insulation.
11. Attach coverstrip on upper side of ceiling panels using 4mm diameter stainless steel rivets at 300mm centres.
12. Slide coverstrip over joggled top hat on underside of ceiling.
13. Stitch panel joints at back of panel at 400mm centres.
14. See installation detail drawings for additional information.

Please note, the above installation instructions must be read in conjunction with the relevant Firemaster standard detail drawings. These are available for download from the Eurobond website.

11. Maintenance

Cleaning – internal panels

The Corus CES™ range of products have robust coatings that are tolerant of regular cleaning using any of the methods described below. More care is required for the Corus CES products with a paint-based topcoat as it is not suitable for pressure-hose cleaning or frequent washing.

Walls can be washed down with fresh water from a hose or bucket. The water may be heated to 60°C. A solution of fresh water and Tepol or non-aggressive detergent (which may contain dilute ammonia) may be used to remove heavy deposits from walls, followed by a fresh water rinse.

The maximum water temperature for pressure-hose cleaning is 60°C with a maximum pressure of 1000 pounds per square inch. Stubborn oil or grease stains can usually be removed with white spirit on a soft cloth, followed immediately by a fresh water rinse.

Solvents, cleaners containing abrasives and cleaners in strong concentrations should not be used. Over-cleaning or scrubbing can do more harm than good by creating micro-cracks in the surface that become ideal living spaces for bacteria.

Steam cleaning can cause problems if the coating overheats. The surface temperature of the panel should not exceed 60°C

CES is a trademark of Corus.

To allow regular washing of panels, it is important that both the design and maintenance of the panel system should prevent moisture collecting in crevices and joints. This is particularly important at the bottom of wall panels, where pollutants from cleaning solutions or from floor soil can cause corrosion problems. This can be achieved by a design which ensures that the edges are folded back and by sealing the edges with a neutral curing silicone sealant.

Touch-up painting

Slight scuffs are best left untreated. If the sheet has been scratched down to the substrate, it should be repaired with standard touch-up paint. Ensure that the applied paint is no wider than the original scratch. Since touch-up paints are air-drying, they will, over time, change colour differently from the original coating, so keep the applied area as small as possible.

Suppliers of complementary products

Cleaners:

British Flowplant Group Limited
Units 11 & 15
Stadium Court
Barbot Hall Industrial Estate
Rotherham S62 6EU
Tel: +44 (0)1709 838138

D.R. Chemicals Limited
Viking Way
Winchwen Industrial Estate
Swansea SA1 7DA
Tel: +44 (0)1792 701135

Perpetual Environmental Limited
Hayden Lane
Nuffield
Henley-on-Thames
Oxon RG9 5TX
Tel: +44(0)1491 641945

Time Factor Chemicals Limited
Penmaenmawr
Conwy
North Wales LL34 6AN
Tel: +44 (0)1492 622387

Touch-up paints:

Akzo Nobel Industrial Coatings Limited
PO Box 37
Crown House
Hollins road
Darwen
Lancashire BB3 0BG
Tel: +44 (0)1254 76076



Eurobond Laminates Ltd

Wentloog Corporate Park

Cardiff CF3 2ER

Telephone: 02920 77 66 77

Fax: 02920 36 91 61

Email: sales@eurobond.co.uk

www.eurobond.co.uk

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