SPECIALIST PANELS UK LTD

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DATA SHEET 3

Mineral Wool (Rock Fibre)

Mineral Wool Rock Fibre (MWRF)

Mineral Wool is a high quality resin bonded slab, with a predominantly vertical fibre structure. The product provides an insulation core for use in sandwich panel systems. Mineral Wool panels offer a significant contribution towards improved fire safety. Under incoming European classifications for Construction Products it is expected that sandwich panels containing a mineral wool core, bonded to metal faces are likely to achieve a Classification of A2.

If exposed to fire, mineral wool products will not release dense smoke and will withstand temperatures in excess of 1,000 C

Approved to LPS 1208

Certification no: 957a

Mineral Wool Rock Fibre

Advantages:

Excellent thermal & acoustic properties

Fire safe

High compressive strength

Dimensionally stable

Chemically inert

Completely recyclable

CFC and HCFC free

Isowall Mineral Wool Panel Fire Ratings

Tested to BS 476 Part 22 Clause 5 by Warrington Fire Research

WARRES No.	Thickness	Insulation	Integrity
126082	100 mm	98 minutes	98 minutes
*	125 mm	120 minutes	120 minutes
126720	150 mm	208 minutes	265 minutes

* Warrington Assessment based on tests 126082 and 126720

European Test to ISO 834

100 mm	80 minutes	110 minutes

Panels tested and rated as above are fully approved to meet the fire resistance requirements for compartmentation given in the LPC Design Guide for fire protection of buildings and comply with the loss prevention standard LPS 1208**
for:

- Non-load bearing walls / partitions
- External walls
- Insulated enclosures

in respect of integrity and insulation.

** LPCB approval to LPS 1208 issue 2 certificate number 957a for Isowall mineral wool panels 100mm, 125mm and 150mm thick.

Approved to LPS 1208
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Panel Spans / Weights:

Walls: Maximum Height

Thickness	(Weight Kg/m²)	MW 110	(Weight Kg/m²)	MW 135
50 mm	14.50	5.000 m	15.75	5.500 m
75 mm	17.25	6.000 m	19.25	6.500 m
100 mm	20.00	7.000 m	22.50	8.000 m
125 mm	22.75	7.500 m	25.90	9.000 m
150 mm	25.50	8.000 m	29.25	10.000 m

Based on 0.55mm steel to both faces. For external walls, please refer back for advice.

Ceilings: Maximum Span

Weight kg/m²	Thickness	Non 'Walk-on'	'Walk-on'
15.75	50 mm	4.000 m	3.000 m
19.25	75 mm	5.500 m	4.000 m
22.50	100 mm	6.500 m	5.000 m
25.90	125 mm	7.500 m	6.000 m
29.25	150 mm	8.500 m	7.000 m

'Walk-on' ceilings have 0.7mm thick steel on top face and in the case of fire rated ceilings a self drilling / tapping screw is foxed through the top of the overlapping joint.

Based on BS 6399 Part 1 for dead and imposed loads.

NB: In case of 'walk-on' ceilings, dynamic loading of excessive foot traffic can cause failure of the panels and it is recommended that protection such as walk-boards are used, both during the initial build period and afterwards.

Acoustic Properties of Isowall Mineral Wool Panels

Weighted SRI (db)

Thickness	MW 110	MW 135
50mm	29	28
100mm	31	30
150mm	33	31

Isowall Mineral Wool Panel 'U' Values w/m²°C

Thickness	MW 110	MW 135
50mm	0.80	0.84
75mm	0.53	0.56
100mm	0.40	0.42
125mm	0.32	0.34

Core Material Performances	MW 110	MW 135	Test Standard / Method
Thermal $\lambda 10$ Conductivity (W/mk)	0.040	0.042	ISO 8302
Delamination strength σ_t (kPa)	80	110	EN 1607
E-Modulus delamination E_t (kPa)	3100	3500	EN 1607
Compression strength σ_t (kPa)	75	110	EN 826
E-Modulus compression E_d (kPa)	3200	5000	EN 826
Shear strength τ (kPa)	80	100	EN 12090
Shear modulus G (kPa)	4200	6000	EN 12090
Likely EU Fire Classification	A1	A1	EN ISO 1182 prEN 13501-1

Design and Construction Considerations

Because of the change in attitude towards the use of composite sandwich panels in food processing factories in particular, it is necessary to xconsider the use of these types of panels and the areas in and around which they are intended for.

In order to obtain the best results when using these panels it is important that a proper design procedure is followed:

- Full fire risk assessment of the building and processes (high or low risk)
- The need for self contained and stable enclosures and compartmentation
- The combustibility and fire performance of the core panel
- Panel joints and fixing detail
- Full consideration given to active, as well as passive, fire suppression systems

In short, a complete fire safety management approach.

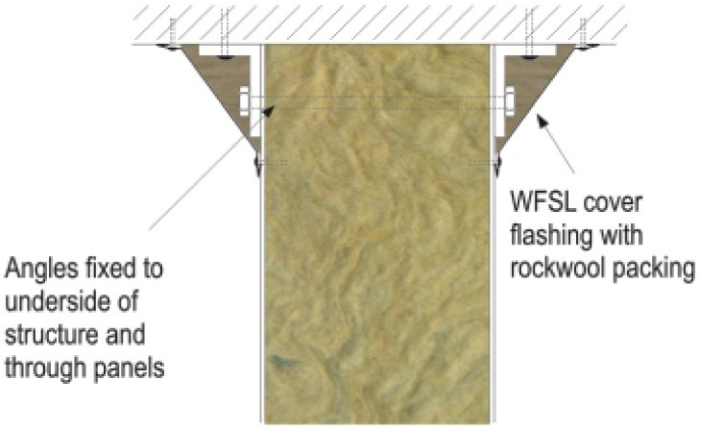
Recommended Detail Fixing

It is important that in the case of fire rated panels the fixing details are designed so that the panels are retained in position in the event of a fire. Therefore:

- All fixings should be steel and not aluminium
- Steel angles / channels to be a minimum of 1.6mm thick (16g)
- All rivets are stainless steel

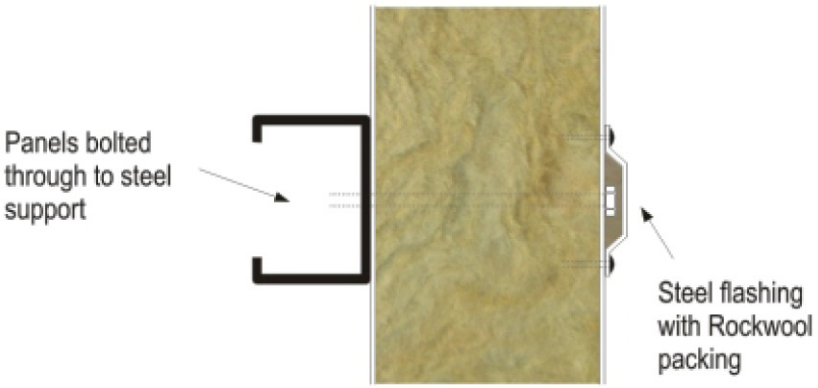
The following are various details which may be considered by the project architect.

Top Fixing Detail

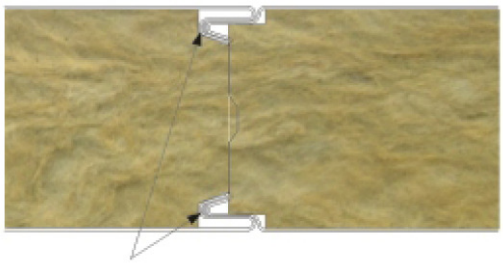


Mid Point Support

For high (or external) wall panels where required.

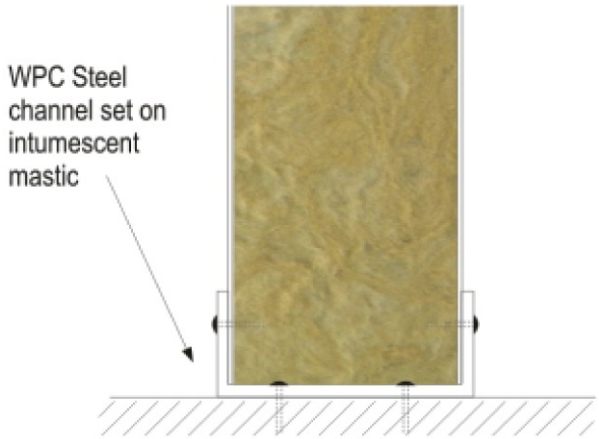


Standard Inta-Lock Panel to Panel Joint

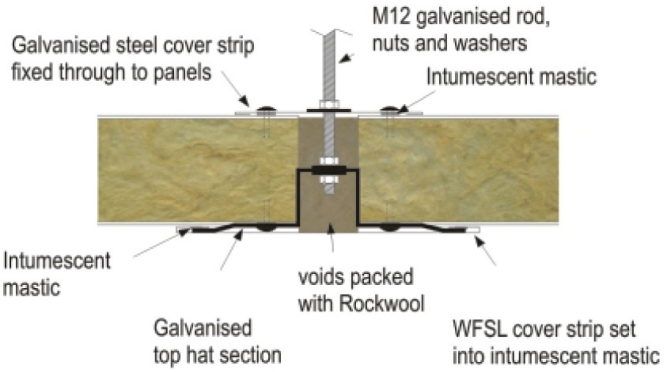


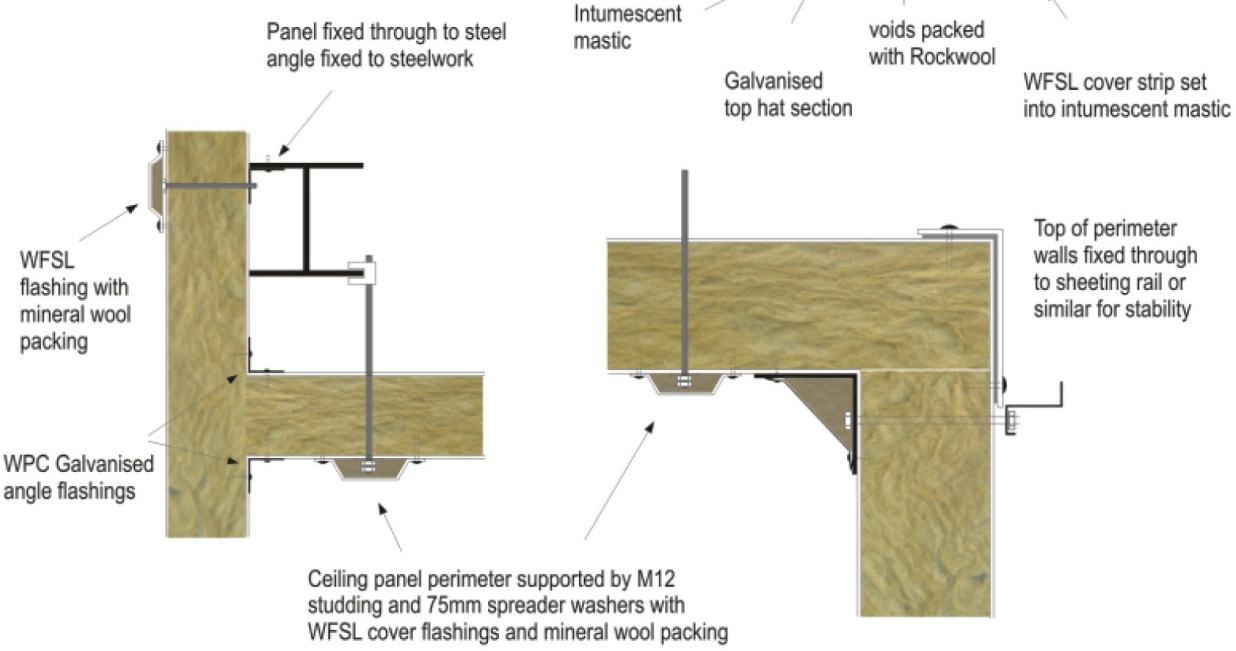
Intumescent mastic applied into joints with silicone pointing to external

Floor Fixing Detail

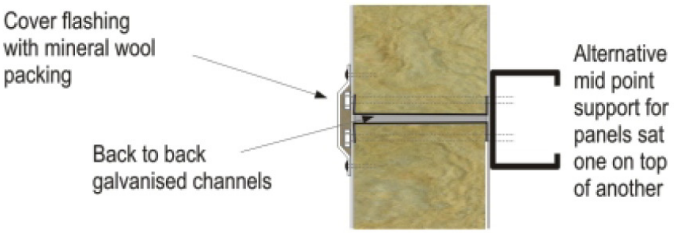


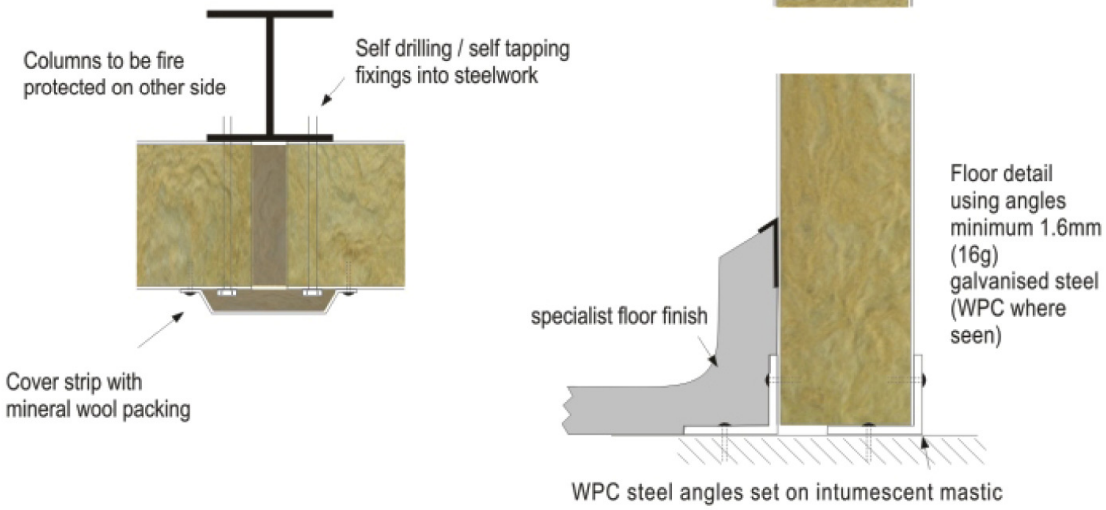
Suspended Ceiling Detail For Fire Rated Panels





Vertical column fixing detail





All details shown are recommendations only

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