



Introduction

PIR composite insulation panels may have been installed in locations where fire resistance (to fire attack from the internal face) is required to BS 476: Part 22: 1987. This might also include situations that require a protected zone, adjacent to a separating wall.

If *non-fire rated* PIR panels have been used, or if fire rated panels have been used but have not been installed in accordance with the manufacturers strict requirements, then the following SUPALUX® wall lining in a FLAMEBRAKER™ grid may be used to provide up to 90 minutes fire integrity, (15 minutes fire insulation).

NB: This construction will not provide any fire resistance to fire from the *external* face of the wall.

Construction

Minimum requirements for the external wall:

- Horizontal steel sheeting rails at 2.2m maximum vertical centres.
- Sheeting rails, supported by structural steel columns that are clad with a proprietary fire protection system to provide the required fire resistance rating (and also to maintain compartmentation, where appropriate).
- The external face of the sheeting rails are clad with steel faced polyisocyanurate (PIR) panels that are screwed or clamped to the sheeting rails with steel fixings. An example of such panels is Kingspan KS1000MR panels.
- The panels must have a Class 0 rating in terms of the national building regulations but are not required to have a fire resistance in their own right.

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Internal Wall Lining:

Insulation

- Rock wool, minimum two layers of 50mm thick x 60kg/m³ density, is suspended in the cavity of the external wall by fixing to the underside of the sheeting rails. The rock wool is fixed to the sheeting rails using galvanised steel angle, minimum 50mm x 25mm x 0.5mm thick, fastened with M4 steel self-tapping screws at 300mm maximum centres.
- Alternative thicknesses and densities of rock wool insulation may be fitted provided that the weight per square metre is at least that specified and that the percentage of binder content by weight does not exceed that of the insulation fitted in the tested constructions.

Supporting Grid

- The main T's of the FLAMEBRAKER™ metal grid wall lining system are positioned vertically at 603mm nominal centres on the internal face of the sheeting rails, and suspended from the sheeting rails with minimum 18mm wide x 0.8mm thick galvanised steel straps that pass over the sheeting rails and are fastened to them with minimum M4 steel rivets or self-tapping screws.
- Perimeter steel angles, minimum 25mm x 25mm x 0.6mm thick, are fastened to the surrounding construction on the internal face with minimum M5 steel screws (into non-combustible plugs for masonry/concrete constructions) at nominal 500mm centres.

Internal Lining Board

- SUPALUX® board, 600mm wide x 9mm thick, is fitted into the main T's and retained by spring steel wedges fitted into pre-punched holes in the stems of the main T's. The wedges are fitted at 150mm nominal centres.
- FLAMEBRAKER™ cross T's are fitted at horizontal board joints, with spring steel wedges retaining the SUPALUX® boards.
- For further details of the FLAMEBRAKER™ System, please consult with Promat Technical Service Department

Fire Performance

The SUPALUX® external wall lining construction, (which includes the PIR panels on the external face), would be expected to provide a fire resistance of 90 minutes integrity and 15 minutes insulation in terms of the performance criteria of BS 476: Part 22: 1987 for fire attack from the internal face.

NB: The construction will not provide fire resistance to fire attack from the external face. This solution is not appropriate for use with PUR, XPS or EPS composite panels.

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