



ROCKWOOL®

FIREPRO®

Comprehensive range
of fire resistance
products & solutions

The ROCKWOOL FIREPRO® range of products provides firestopping and fire resistance throughout the whole construction process; intended to make buildings and their inhabitants safer in the event of fire.

Beyond ROCKWOOL insulation's inherent fire resistant qualities, our specialist range of products help architects, contractors and developers conform to current fire regulations.

Our range of fire resistance products cater for most general purpose and specialty building applications:

- Structural protection
- Penetration seals
- Joints
- Cavity barriers
- Heating, ventilation and air conditioning
- Process pipes.

Interested?

For further information on ROCKWOOL FIREPRO® products and solutions, contact the Technical Solutions Team on 01656 862 621 or email: info@rockwool.co.uk

Visit www.rockwool.co.uk to view our complete range of products and services

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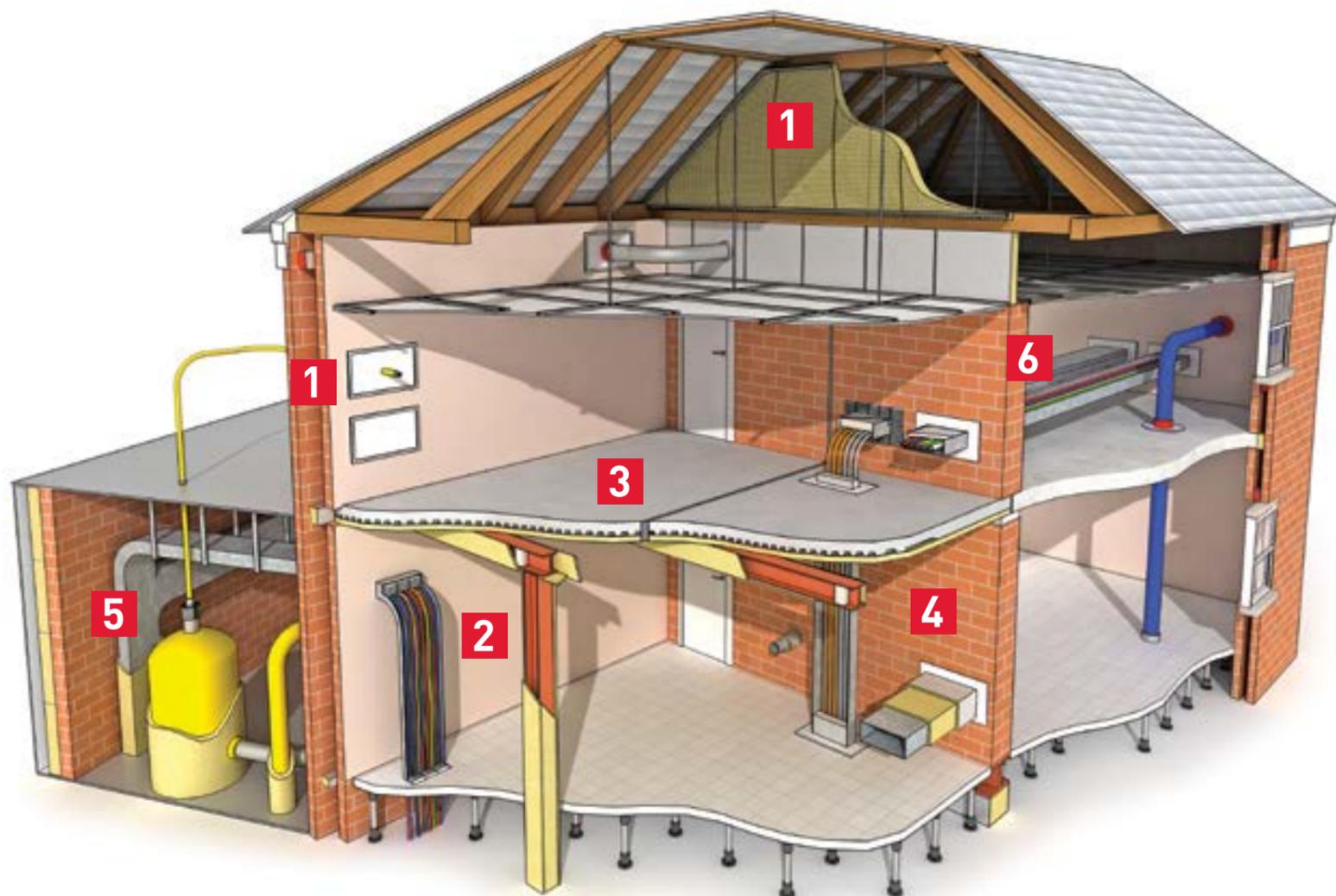
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50mm Ablative Coated Batt

Firestopping solution for voids in walls and floors

As part of the comprehensive FIREPRO® range of fire protection products, the ROCKWOOL Ablative Coated Batt is intended to act as an airseal barrier to reinstate the fire resistance and acoustic* performances of concrete floors, masonry walls and dry wall systems when voids have been created for the passage of services. This includes pipes made of plain or stainless steel, cast iron, copper, polypropylene (PP), high density polythene (HDPE), PVC and ABS along with all sheathed cables up to 80mm and supported cable bundles up to 100mm.

Ablative Coated Batts can also be used as a 'head-of-wall' barrier to extend the fire resistance and acoustic performances of drywall or masonry walls that finish at suspended ceiling height, up to the concrete soffit above. For use in concrete floors please contact the ROCKWOOL Technical Solutions team for size limitations.

In response to this growing and increasingly important market, ROCKWOOL has re-designed and tested the product to the dedicated fire resistance standard for penetration seals - EN 1366-3. Due to its specific nature, this document is intended to supersede the traditional BS 476: Parts 20 and 22 previously used for fire seal testing in the UK construction market.

The tests have proved the capability of a single 50mm Batt to provide up to 2 hours fire resistance integrity, insulation ratings are dependent upon the service penetration. Where 4 hour integrity and insulation are required we recommend the use of our 60mm Coated Batt. Please refer to page 8 of the ROCKWOOL FIREPRO® brochure for the 60mm product.

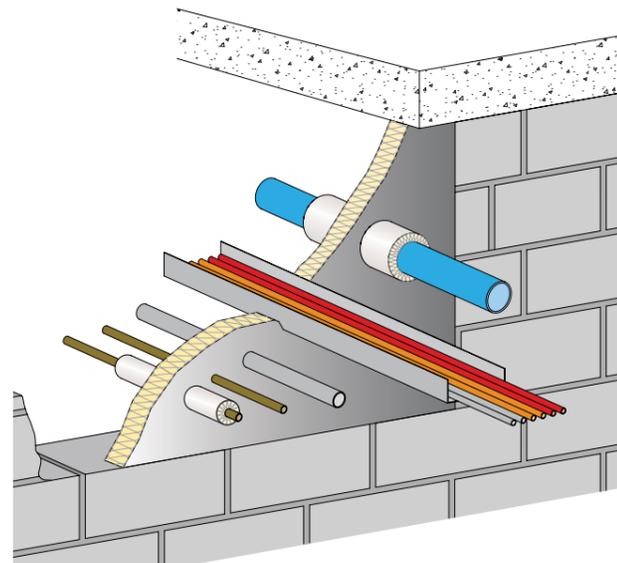


Figure 1

General benefits:

- Excellent fire resistance from single thickness Batt
- Standard size: 1200 x 600 x 50mm
- Suitable for sealing wall and floor voids containing most commonly used services
- Can be used as a blank seal and a head of wall seal
- Lightweight and simple installation
- Maintenance free
- 160kg/m³ density base material provides additional benefits of a smoke and acoustic seal
- Tested for air tightness

* Please contact ROCKWOOL Technical Solutions for further details.

Performance & properties

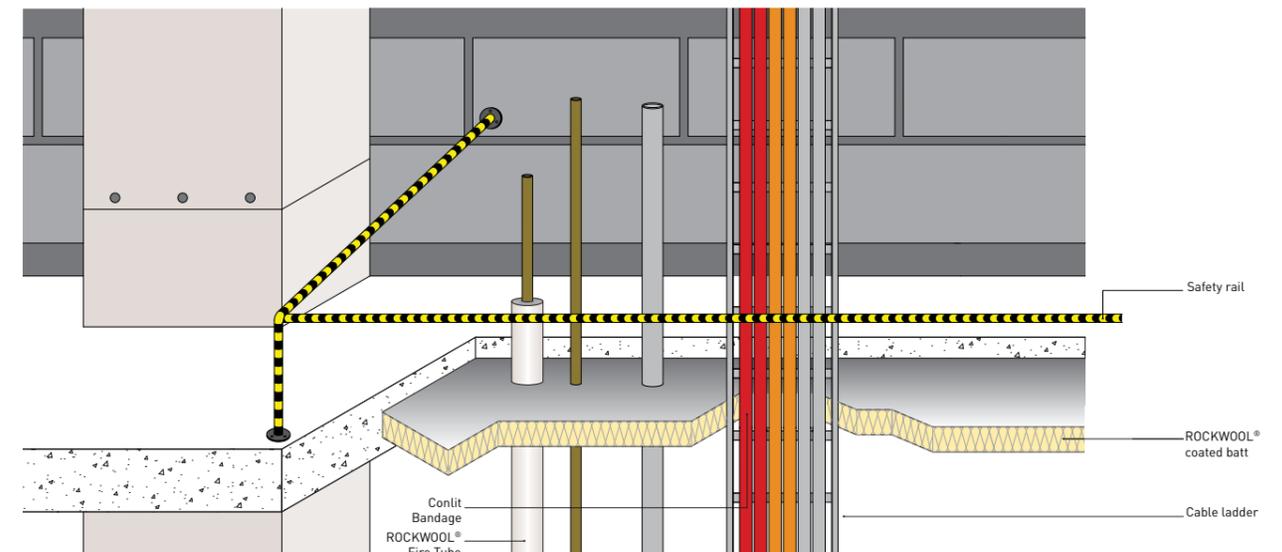


Figure 2

Installation

FIREPRO® Ablative Coated Batts are manufactured by spraying specially produced, high density ROCKWOOL insulation with an additional fire protection ablative coating. This is a fully automated process to ensure an even thickness of coating.

To install, the Batts are simply cut and a bead of Acoustic Intumescent Sealant applied around the external edges. They are then friction fitted between the services and the wall or floor edges to completely seal the void. Where butt joints are required between cut sections of adjacent batts, Acoustic Intumescent Sealant and/or FIREPRO® Glue is applied to both mating edges in order to form a fire tight bond between individual pieces of insulation. Contact the Technical Solutions team on 01656 862621 for specific details on blank seals and dampers.

All joints, including those around the perimeter of the Batt, are then pointed with FIREPRO® Acoustic Intumescent Sealant to complete the seal.

Plastic pipes (PVC, ABS and HDPE etc) must be sleeved with FIREPRO® Insulated Fire Sleeves at the point at which they pass through the Ablative Coated Batt. Similarly, to achieve fire resistance insulation (I) with metal pipes such as steel or copper, the pipes must be lagged with a 1m length of ROCKWOOL Fire Tube or Pipe Section (minimum 40mm wall thickness) protruding equal distances from both faces of the Ablative Coated Batt. The joint between the Ablative Coated Batt and the pipe insulation must be pointed with the FIREPRO® Sealant. Where the pipe has been thermally lagged with a combustible insulation, this must be cut away and replaced with the ROCKWOOL insulation, as above. Ensure the integrity of any vapour control layer is re-instated as necessary. The joint between the Batt and Fire Sleeve or Fire Tube must be pointed with the FIREPRO® Sealant.

Load-bearing seals

FIREPRO® Ablative Coated Batts are not intended for use as load-bearing seals. Where a load-bearing seal is required, ROCKWOOL Firestop Compound should be considered.

Fire performance

ROCKWOOL Ablative Coated Batt has been tested to the dedicated fire resistance standard for penetration seals - EN 1366-3. The independently prepared assessment, detailing the full scope of fire performance, is available from the ROCKWOOL Technical Solutions Team. Ablative Coated Batt fire resistance tests were conducted using ROCKWOOL Acoustic Intumescent Sealant and/or ROCKWOOL.

Acoustic data

Tested for head of wall:

- Rw= up to 48db (2 x Coated Batts)
- Rw= up to 37db (1 x Coated Batts)

The correct use of Coated Batt within concealed cavities and voids will reduce the level of transmitted sound:

- Rw= up to 52 db (2 x Coated Batts) – incorporating 48mm O/D PVC /15mm copper pipe penetrations.
- Rw= up to 34 db (1x Coated Batts) – incorporating 48mm O/D PVC /15mm copper pipe penetrations.

Further acoustic test data is available for use in facefix applications. Contact the ROCKWOOL Technical Solutions Team.

Technical advice

For specific integrity and insulation ratings for the various services, please consult ROCKWOOL Standard Details, available via the ROCKWOOL Technical Solutions team.



The following NBS Plus clauses include
'Ablative Coated Batt': P12-41, P12-325, P12-360, P12-365

60mm Ablative Coated Batt

Firestopping solution for large voids in walls and floors

As part of the comprehensive FIREPRO® range of fire protection products, the ROCKWOOL Ablative Coated Batt is intended to act as an airseal barrier to reinstate the fire resistance and acoustic* performances of concrete floors, masonry walls and dry wall systems when voids have been created for the passage of services. This includes pipes made of plain or stainless steel, cast iron, copper, polypropylene (PP), high density polythene (HDPE), PVC and ABS along with ductwork and dampers and a wide range of cable types (both sheathed and un-sheathed, supported on both trays and ladders).

Ablative Coated Batts can also be used as a 'head-of-wall' barrier to extend the fire resistance and acoustic performances of masonry walls that finish at suspended ceiling height, up to the concrete soffit above. Voids of up to 20m in length and 1.2m in height can be sealed. In addition, blank seals of up to 7.02m²** can be formed in either dry walls or masonry walls. For use in concrete floors please contact the ROCKWOOL technical solutions team for size limitations.

In response to this growing and increasingly important market, ROCKWOOL has re-designed and tested the product to the dedicated fire resistance standard for penetration seals - EN 1366-3. Due to its specific nature, this document is intended to supersede the traditional BS 476: Parts 20 and 22 previously used for fire seal testing in the UK construction market.

The tests have proved the capability of a single 60mm Batt to provide up to 4 hours fire resistance integrity and up to 2 hours insulation when used with all of the services listed above and also as a blank seal. Even for extreme requirements, where 4 hours integrity and insulation are required to maintain the performance of a masonry wall, a solution can also be accomplished with a double Batt solution.

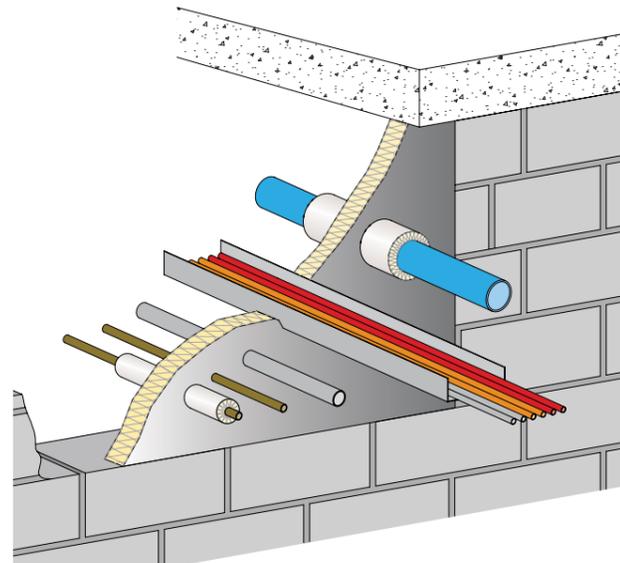


Figure 1

General benefits:

- Excellent fire resistance from single thickness Batt
- Standard size: 1200 x 600 x 60mm
- Suitable for sealing large wall and floor voids containing most commonly used services
- Can be used as a blank seal and a head of wall seal
- Lightweight and simple installation
- Maintenance free
- 180kg/m³ density base material provides additional benefits of a smoke and acoustic seal
- Tested for air tightness

* For further advice regarding acoustics please contact the ROCKWOOL Technical Solutions Team

** Please contact ROCKWOOL Technical Solutions for further details



The following NBS Plus clauses include 'Ablative Coated Batt': P12-41, P12-325, P12-360, P12-365

Performance & properties

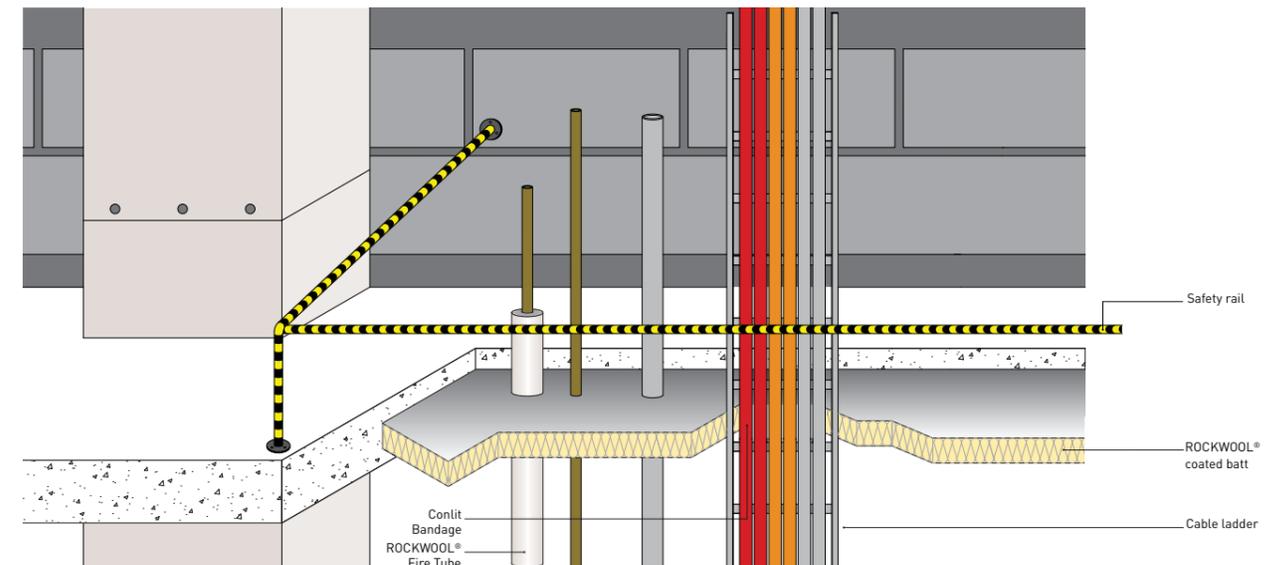


Figure 2

Installation

FIREPRO® Ablative Coated Batts are manufactured by spraying specially produced, high density ROCKWOOL insulation with an additional fire protection ablative coating. This is a fully automated process to ensure an even thickness of coating.

To install, the Batts are simply cut and a bead of Acoustic Intumescent Sealant applied around the external edges. They are then friction fitted between the services and the wall or floor edges to completely seal the void. Where butt joints are required between cut sections of adjacent batts, Acoustic Intumescent Sealant and/or FIREPRO® Glue is applied to both mating edges in order to form a fire tight bond between individual pieces of insulation. Contact the Technical Solutions team on 01656 862621 for specific details on blank seals and dampers.

All joints, including those around the perimeter of the Batt, are then pointed with FIREPRO® Acoustic Intumescent Sealant to complete the seal.

Plastic pipes (PVC, ABS and HDPE etc) must be sleeved with FIREPRO® Insulated Fire Sleeves at the point at which they pass through the Ablative Coated Batt. Similarly, to achieve fire resistance insulation (I) with metal pipes such as steel or copper, the pipes must be lagged with a 1m length of ROCKWOOL Fire Tube or Pipe Section (minimum 40mm wall thickness) protruding equal distances from both faces of the Ablative Coated Batt. The joint between the Ablative Coated Batt and the pipe insulation must be pointed with the FIREPRO® Sealant. Where the pipe has been thermally lagged with a combustible insulation, this must be cut away and replaced with the ROCKWOOL insulation, as above. Ensure the integrity of any vapour control layer is re-instated as necessary. The joint between the Batt and Fire Sleeve or Fire Tube must be pointed with the FIREPRO® Sealant.

Load-bearing seals

FIREPRO® Ablative Coated Batts are not intended for use as load-bearing seals. Where a load-bearing seal is required, ROCKWOOL Firestop Compound should be considered.

Fire performance

ROCKWOOL Ablative Coated Batt has been tested to the dedicated fire resistance standard for penetration seals - EN 1366-3. The independently prepared assessment, detailing the full scope of fire performance, is available from the ROCKWOOL Technical Solutions Team. Ablative Coated Batt fire resistance tests were conducted using ROCKWOOL Acoustic Intumescent Sealant and/or ROCKWOOL FIREPRO® Glue.

Acoustic data

Tested for head of wall:

- Rw= up to 52db (2 x Coated Batts)
- Rw= up to 38db (1 x Coated Batts)

The correct use of Coated Batt within concealed cavities and voids will reduce the level of transmitted sound:

- Rw= up to 52 db (2 x Coated Batts) – incorporating 48mm O/D PVC /15mm copper pipe penetrations.
- Rw= up to 34 db (1x Coated Batts) – incorporating 48mm O/D PVC /15mm copper pipe penetrations.

Further acoustic test data is available for use in facefix applications. Contact the ROCKWOOL Technical Solutions Team.

Technical advice

For specific integrity and insulation ratings for the various services, please consult ROCKWOOL Standard Details, available via the ROCKWOOL Technical Solutions team.

Acoustic Intumescent Sealant

Fire & Acoustic Intumescent Sealant for thin linear joints

As part of the comprehensive FIREPRO® range of fire protection products, ROCKWOOL Acoustic Intumescent Sealant is suitable for sealing joints and service penetrations in fire walls, partitions, fire rated door frames and glazing systems. Tested to BS476 Part 20, ROCKWOOL Acoustic Intumescent Sealant provides up to 4 hours fire protection in joints of up to 30mm width.

Acoustic Intumescent Sealant is available in 310ml cartridges, 600ml foil sausage packs or 5 litre tubs.

In addition to the fire rating the sealant may be used to seal joints in party walls to provide an acoustic seal.

Description

Acoustic Intumescent Sealant is a high specification, one part water based acrylic sealant. The sealant is extruded from a 310ml loaded cartridge into a standard sealant gun or a 600ml sausage loaded into a closed barrel sealant gun. The depth of the joint will depend on the gap to be filled and the fire rating required (see Tables 1 and 2).

Application

All surfaces must be thoroughly clean and free of bond breaking contaminants prior to application of the sealant. No priming is required for most commercial substrates, however it is recommended that before installation the sealant is applied to a small area of the substrate to assess adhesion.

The sealant should not be applied if the ambient temperature is below 5°C as adhesion may be impaired.

The sealant is fast curing, approximately 15 minute tack free time. When fully cured the sealant can be overpainted.



ROCKWOOL Acoustic Intumescent Sealant in blockwork joints



Figure 1 ROCKWOOL Acoustic Intumescent Sealant – Sealing around metal pipes



Available in 5 litre tubs, 600ml sausage packs and 310ml cartridges.

Performance & properties

Table 1 - Aerated concrete/Blockwork walls

Min wall width (mm)	Max. joint width (mm)	Sealant Depth (mm)	Backing	Type of Seal	Fire Resistance	
					Integrity	Insulation
150	10	10	Polyethylene foam backing rod	Single	200	166
150	10	10	Polyethylene foam backing rod	Double	265	265
150	15	15	Polyethylene foam backing rod	Single	227	227
150	15	15	Polyethylene foam backing rod	Double	265	230
150	30	30	Polyethylene foam backing rod	Single	240	233
150	30	30	Polyethylene foam backing rod	Double	265	265
200	50	25	Ethafoam backing rod	Single	245	82

Table 2 - Aerated concrete floors

Min floor depth (mm)	Max. joint width (mm)	Sealant Depth (mm)	Backing	Type of Seal	Seal location	Fire Resistance	
						Integrity	Insulation
230	50	25	Ethafoam backing rod	Single	Bottom	155	105
250	30	15	Ethafoam backing rod	Single	Bottom	243	65
250	20	10	Polyethylene foam backing rod	Single	Top	155	47
250	25	15	Polyethylene foam backing rod	Single	Top	240	73
250	50	25	Polyethylene foam backing rod	Single	Top	240	92

Note: Other performances are available – please contact Technical Solutions for details

Acoustic Performance

Weighted Sound Reduction Index (Rw) of up to 57db. Dependant on:

- Type of construction
- Type of seal backing
- Size of joint

Contact the ROCKWOOL Technical Solutions Team for more details.

Smoke Seal

ROCKWOOL Acoustic Intumescent Sealant will inhibit the passage of smoke.

Coverage

Each cartridge/sausage is intended to provide the following application rates:

Table 3

Joint size (mm)	Depth of sealant (mm)	Yield per cartridge (m)	Yield per sausage (m)
10	10	3.10	5.90
20	15	1.03	1.95
30	20	0.51	0.95

Colours

Available as standard in White.

Other colours are available for order, subject to relevant M.O.Q. Please contact ROCKWOOL Technical Solutions Team for further assistance.

Standards & approvals

Acoustic Intumescent Sealant has been tested and assessed to BS 476: Part 20 and is third party approved by the Loss Prevention Certification Board for performance and quality – Red Book certification no. 022b (4). Certificates can be accessed online at www.rockwool.co.uk and www.redbooklive.com

Specification

Install ROCKWOOL Acoustic Intumescent Sealant to provide up to 4 hours fire protection in all joints up to 30mm in all firewalls. Installation to be fully in accordance with manufacturer's instructions.

Building Regulations 2000 – Approved Document B – B2/3/4 – Internal fire spread (structure), paragraphs 0.10 – 0.11, state that the spread of fire inside a building can be restricted, by provisions for elements of structure to have a specified minimum period of fire resistance. Fire resistance is defined in terms of both integrity and insulation.

Fire Barrier Systems

Inhibiting the spread of fire & smoke in concealed spaces

As part of the comprehensive FIREPRO® range of products, ROCKWOOL Fire Barrier systems offer labour-saving solutions to prevent fire and smoke spread within roof and ceiling voids for all general conditions encountered on site.

The vertically hung Fire Barriers are capable of achieving both integrity and insulation protection periods from 15 to 120 minutes, and the friction fitted Fire Barrier Slab can also provide 60 minutes integrity and insulation. It is ROCKWOOL's essential insulation performance that limits the heat transfer through the barriers, preventing ignition of combustible materials in adjacent areas.

The 'Quick Fit' support system is patented (grant number is GB2393119B) and offers a quick, cost effective installation method for the Fire Barriers for periods of up to 60 minutes. This focus on ease of construction and installation has the added benefit of reducing the risks of installation error. 90 and 120 minute systems are also available using the traditional support methods (see section on 1½ and 2 hour barriers for typical specification).

Extended drops are easily catered for, with the system capable of maintaining its performance in void heights up to 10.5 metres – refer to sections on extended drops for further guidance.

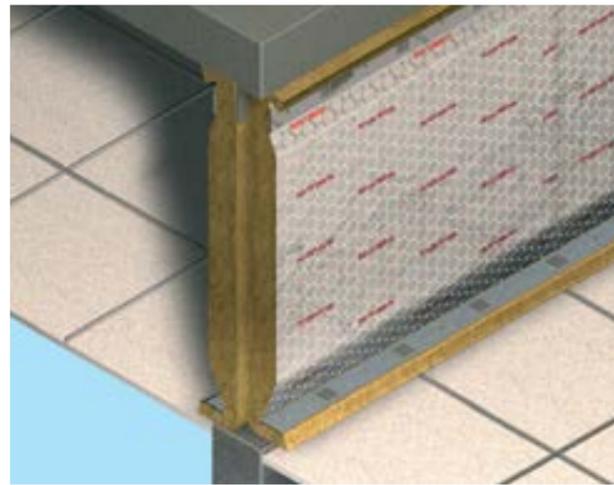


Figure 1 Fixing solutions to concrete decks using ROCKWOOL Fire Barrier

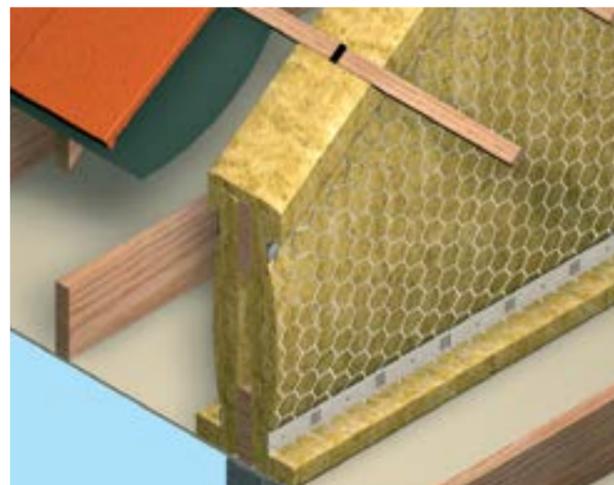


Figure 2 Fixing solutions to timber and steel using ROCKWOOL Fire Barrier

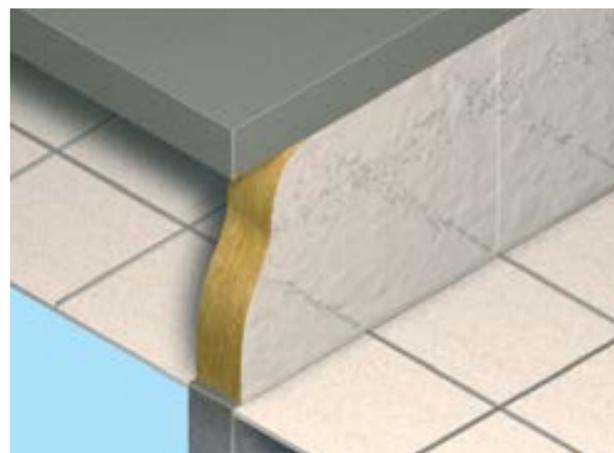


Figure 3 Firestopping solutions for voids up to 1 m using ROCKWOOL Fire Barrier Slab

Fixing solutions to concrete decks – The benefits:

- Fast patented angle and clamping plate system
- No nuts and bolts to fasten
- Simple hammer fix fixing system
- Simple angle support with stamped tongues
- One angle supports 2 barriers for 1 hour

Fixing solutions to timber and steel – The benefits:

- No bolts required
- Standard no.10 wood screws for timber
- Self tapping screws for steel purlins
- Fixings for clamping plate extended to 450mm
- Speed of installation increased
- Costs of installation reduced

Firestopping solutions for voids up to 1 metre using FireBarrier Slab – The benefits:

- Simple butt joint foil faced slab
- No fasteners or angles
- Cost of installation reduced
- Only 40mm intumescent sealant coat back to penetrations



The following NBS Plus clauses include 'Fire Barrier': K10-530, K10-545, K40-60, K40-287, K40-425, K40-431, K45-13, P10-75, P10-410, P10-430, P10-440
 'Fire Barrier Slab': F30-670, K10-545, P10-432, P12-40, P12-360

Description, performance & properties

Table 1

Product	Fire performance Integrity (mins)	Insulation (mins)	Report no.	Specification
½ hour Cavity Barrier	60	15	116911	1 layer 50mm
½ hour	60	30	119720	1 layer 60mm Fire Barrier plain or foil faced overlapped joints
1 hour Fire Barrier	60	60	116912	2 layers 50mm Fire Barrier staggered vertical joints
1½ hour Fire Barrier	90	90	51812	2 layers 50mm Fire Barrier staggered vertical joints
2 hour Fire Barrier	120	120	44509	2 layers 60mm Fire Barrier (plain or foil faced) separated by 40mm airspace
1 hour Fire Barrier Slab	240	60	122729	100mm foil faced slab

It is essential to ensure that the fire insulation criteria of any barrier specified meets the requirements set out in the Approved Document B.

Description

ROCKWOOL Fire Barrier has a 25mm galvanised wire mesh stitched with wire, to one face, to produce a flexible Fire Barrier with optional aluminium foil faces.

ROCKWOOL Fire Barrier Slab has a factory applied foil finish to both faces.

ROCKWOOL Fire Barrier and Fire Barrier Slab achieve a reaction to fire classification of A1 as defined in BS EN 13501:1 ROCKWOOL Fire Barrier systems have been developed to inhibit the spread of flames, heat and smoke through concealed spaces in buildings and improve sound reduction.

The fixing solutions described in this data sheet have been designed to simplify detailing and incorporate, where possible, commonly available building fasteners and components.

Fire Barrier slab dimensions

1000mm x 666mm x 100mm

Table 2 - Fire Barrier dimensions

Standard width 1 metre Thickness (mm)	Length (m)
50	4
60	3.5

Applications & design

ROCKWOOL Fire Barrier solutions can be applied as a hanging curtain or as a friction fitted slab. The barrier is continuously supported and secured to the soffit by its head. At the base, it is preferable in a cavity barrier situation to wire the barrier to the ceiling grid although it is acceptable to let it drape freely, turned back across the ceiling (see Fig13).

If the Fire Barrier is to form a continuation within a void of a fire resistant wall/partition, it is essential to fix the barrier to the wall/partition head to maintain integrity.

Regulations, standards and product approvals

Compartmentation: ROCKWOOL Fire Barriers and Fire Barrier Slabs are able to meet the fire requirements of Building

Regulations applicable to all parts of the UK and Ireland where fire resistant (compartment) walls need to be continued above a ceiling into the roof void, for all periods up to 2 hours and 1 hour respectively.

Concealed spaces (cavities): Similarly ROCKWOOL Fire Barriers and Fire Barrier Slabs satisfy the specific requirements for divisions of space within concealed cavities (Cavity Barriers) as defined in Building Regulations, intended to restrict the passage of smoke and flames through extended roof voids.

Certification: Fire Barrier Systems have been independently tested and assessed to BS 476: Part 22 by accredited laboratories. They are third party approved for performance and quality by the Loss Prevention Council Certification board (LPCB) and are listed in their Fire and Security 'Red Book' - certificate no. 022c. Certificates can be accessed online at www.rockwool.co.uk or www.redbooklive.com

The product has been authorised for use in LUL surface and sub-surface premises when installed in accordance with this data sheet – please refer to the LUL Approved Product Register website www.LU-apr.uk for specific details

Acoustic performance

The correct use of Fire Barrier within structural cavities and voids will reduce the level of transmitted sound.

Table 3

Room to room attenuation	Rw dB
Typical lay-in grid suspended ceiling	30
As above, with 50mm ROCKWOOL Fire Barrier	42
Applied as 2, but ROCKWOOL Fire Barrier foil faced	44
Applied as 2, but two thickness of 50mm ROCKWOOL Fire Barrier – both foil faced	50
ROCKWOOL Fire Barrier Slab foil faced both faces	50
If ceiling is plasterboard, add between 2–3 db	

Note: values are approximate

SoundPro range of acoustic solutions

Fire Barrier Systems are part of the ROCKWOOL SoundPro range of acoustic solutions.

½ hour Cavity Barrier – typical fixing methods

Figures 4-8 show typical details for Fire Barrier applied to a timber truss construction as a half hour cavity barrier within the roof section, to satisfy the requirements of Building Regulation B3 – (4) i.e. 30 minutes fire integrity and 15 minutes fire insulation.

If the truss is constructed from a minimum timber size of 35 to 49mm thick, both sides of all truss members/bracing require protection from fire in order to minimise charring and retain strength. Figure 6 shows strips of 50mm Fire Barrier used on the reverse side of the truss (for this purpose). Nail plate fixings may fail prematurely in fire unless protected (see Fig 9).

The new ROCKWOOL fixing system incorporates an angle support and clamping plate.

For fixing to timber, the ROCKWOOL clamping plate is used, compressing the barrier to the timber, fixed at 450mm centres using No. 10 woodscrews. For fixing to concrete soffits, the pre-punched angle support is fixed using Hilti DBZ or Ejot ECL 35 hammer set anchors at max. 750mm centres. For fixing to steel purlins, use Hilti SMD 02Z (5.5 x 70mm) self-tapping screws at max. 450mm centres.

To use the patented ROCKWOOL angle support system, bend tongues out to 90° and impale barrier onto them. The slotted clamping plate is then fitted by pushing the tongues through the slots, these are then bent over the face of the clamping plate completing the process.

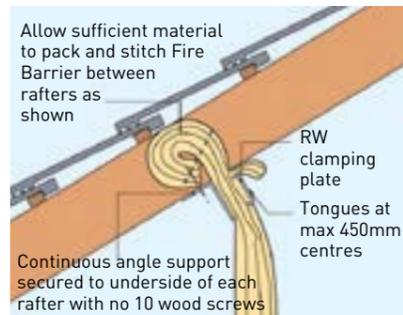
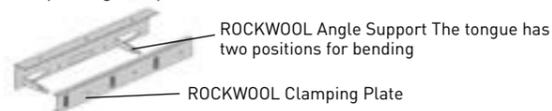


Figure 4 Fire Barrier transverse to rafters

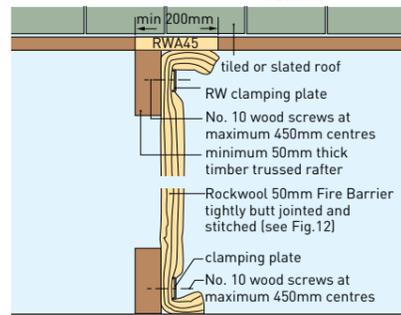


Figure 5 Half hour protection for timber truss construction 50mm thick or more. Note: Nail plate protection required – see Figure 6

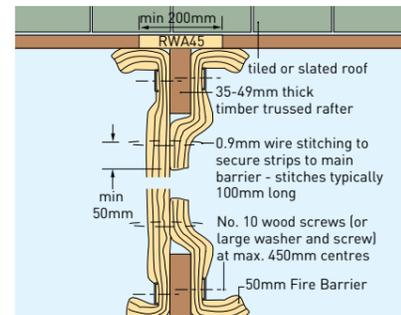


Figure 6 Half hour protection for timber truss construction 35 to 49mm thick

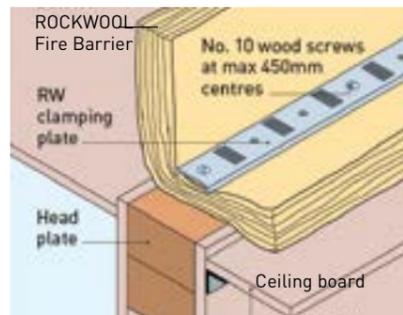


Figure 7 Head of partition

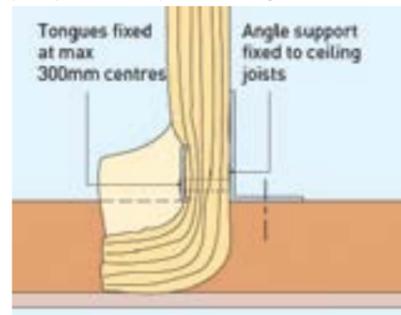


Figure 8 Barrier fitted transversely to timber joisted ceiling



Figure 9 Nail plate protection

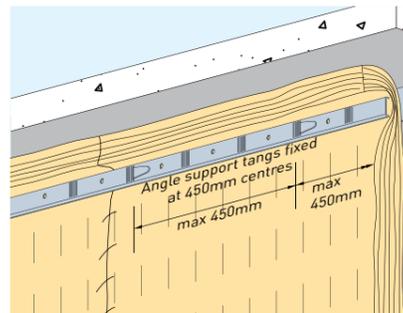


Figure 10 50mm Fire Barrier fixed to concrete soffit

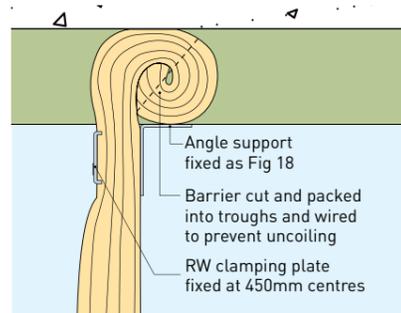


Figure 11 50mm Fire Barrier running across ribbed soffit – Section

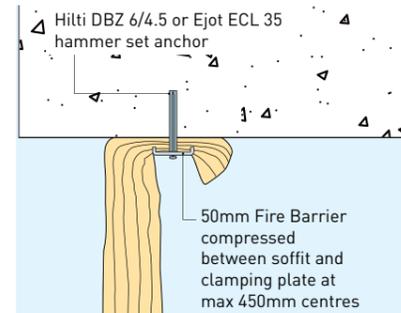


Figure 12 Alternative fixing to flat soffit or perimeter, appropriate to barriers with a shallow drop

At the head of the barriers, the RWA45 fire stop inserts lying over the roofing felt and below the tiles / slates should be compressed by approximately 10% eg. use a 30mm thickness for 25mm thick tiling battens. To minimise the risk of dislodgement of the RWA45 as a result of roof collapse on one side of the barrier, cut the tiling battens as they pass over the supporting rafter and re-fix both parts to the top rafter edge – see detail on page 12. Where roof tiling battens pass over the head and run perpendicular to the line of the Fire Barrier, it is recommended that they should be dis-continuous.

60-30 Fire Barrier

If 30 minutes insulation is required, use 1 layer of 60mm plain or foil faced fire barrier with 100mm vertical overlapped joints (Fig 16). The barrier is otherwise fixed for timber construction as previously shown on page 14.

Common details

Extended drops

ROCKWOOL 50mm Fire Barrier single and double layers, can be extended from a 3.5m drop to a maximum 6m drop by fixing an additional 2.5m section, stitched with overlapped joints as per Figure 17. For additional guidance and drops in excess of 6m, please refer to figure 31 and associated guidance.

Wire stitching of butt joints in ROCKWOOL Fire Barriers

Adjacent barriers must be closely butt jointed, or overlapped, and through stitched with 0.9mm galvanised annealed wire. It is essential that the barrier provides a good seal at its head, perimeter and at all joints. Where the barrier abuts a profile such as a trapezoidal deck, the material must be cut to suit and secured to fire stop the gap (see Fig 13). For extended drops, 1.5mm diameter galvanised and annealed wire is used (see Fig 17).

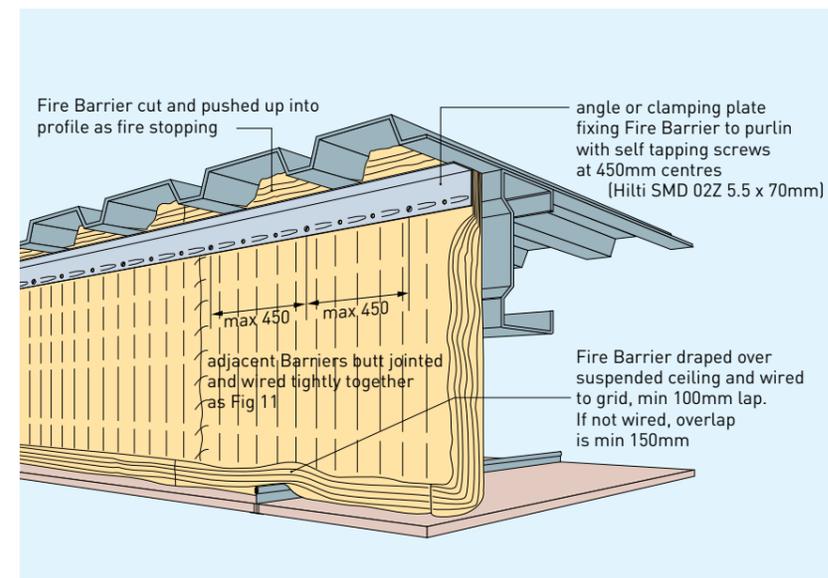


Figure 13 50mm Fire Barrier applied below metal roof decking

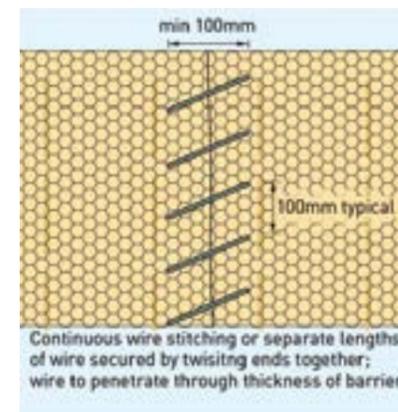


Figure 14 Joint in Barrier – Elevation

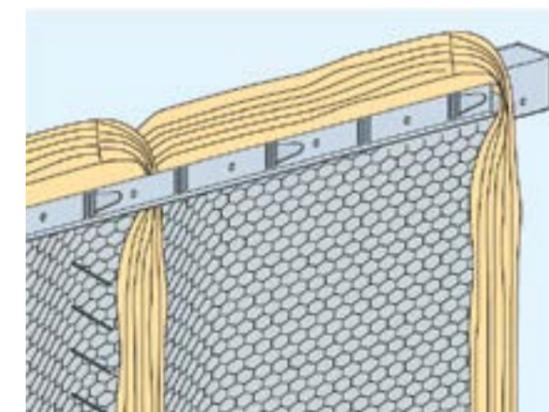


Figure 15 60mm Fire Barrier with overlap joints to obtain 60 mins integrity 30 mins insulation

Penetration details

It is regarded as good practice to adequately support or reinforce services penetrating compartment walls and cavity barriers, to prevent displacement. It is recommended that such supports should be no greater than 500mm from each face of the Fire Barrier.

To maintain the integrity of the Fire/Cavity Barrier when penetrated by services with a high melting point (such as steel or copper pipes, beams or trusses) the barrier is first cut locally to accommodate the service or structural member and then re-stitched as neatly as possible. The penetration is then lightly sleeved each side of the barrier to a minimum length of 300mm, using the same barrier material. Each sleeve should be securely stitched to the main barrier to produce a tight seal and prevent future detachment (see figures 18 and 19). Where access is only available from one side, the double seal solution may be replaced by a single 'collar' detail – please contact our Technical Solutions Team for further advice.

If the penetrating service is manufactured from low melting point materials such as plastic or aluminium, then sleeving should be extended to at least 1000mm either side of the barrier.

This guidance applies to services such as pipes, sheathed cables and conduits, including those carried on steel trays.

For protected steel ductwork with a tested fire resistance performance (stability, integrity and insulation) at least the same as the Fire Barrier, 300mm sleeves should be applied either side of the main barrier, as for high melting point services above.

For information on achieving fire protection to steel ductwork, please refer to the ROCKWOOL Fire Duct System data sheet.

For non-fire protected ductwork, or that with a fire resistance performance less than the barrier, two sleeves should be applied to each side of the barrier. An inner sleeve of 1000mm and an outer sleeve of 300mm. All sleeves should be stitched to the main barrier.

The duct should also include an independently supported fire damper, located in the line of the main barrier. Reference should also be made to Approved Document B of England & Wales Building Regulations – Volume 1, Requirement B3, Section 7 and Volume 2, Requirements B3, Section 10.

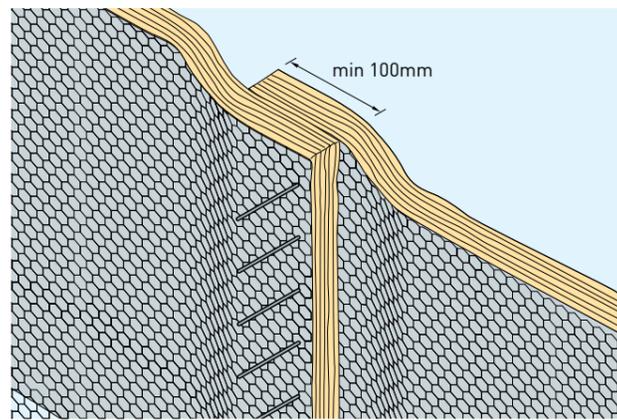


Figure 16

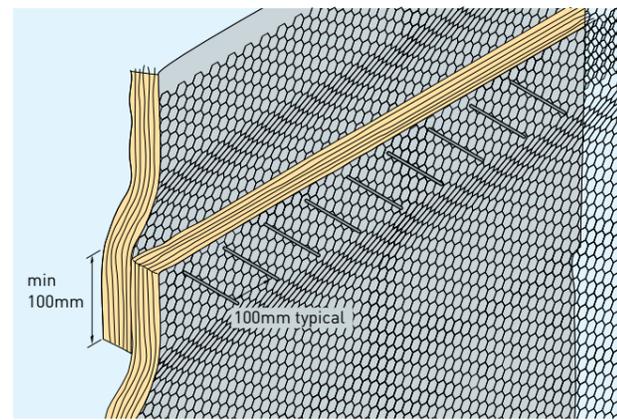


Figure 17 50mm Fire Barrier extended from 3.5m to 6m using a 1.5mm dia. wire-stitched overlapped joint

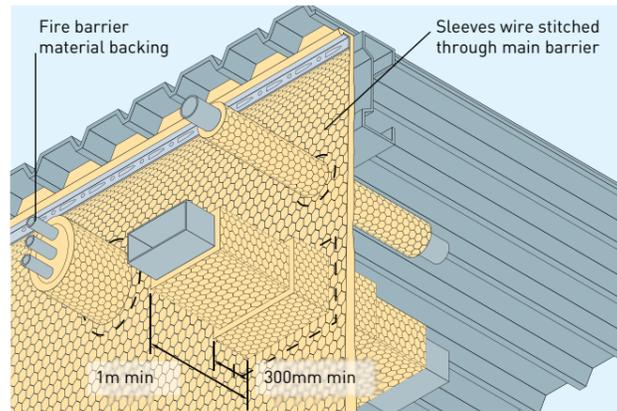


Figure 18 Penetration of Fire Barrier by pipework and ductwork. Length of pipe sleeving: 300mm for high melting point pipes such as steel or copper, 1,000mm for lower melting point pipes such as plastic or aluminium.

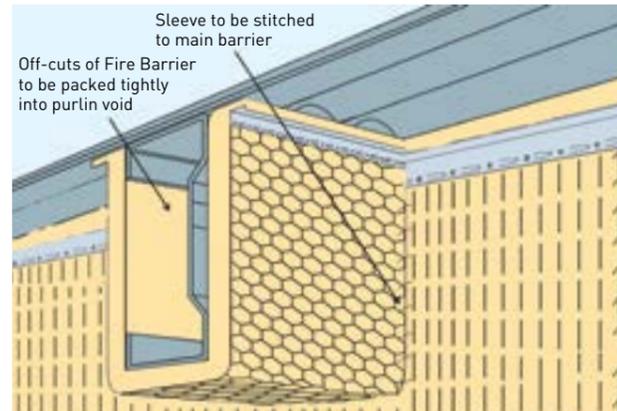


Figure 19 50mm Fire Barrier running parallel with metal deck profiles NB. Fire barrier must be fixed to a structural loadbearing support between purlings

1 hour Fire Barrier – typical fixing methods

The unique, patented ROCKWOOL support angle and clamping plate is used to fasten two 50mm Fire Barrier curtains with one support angle without the need for an airspace.

The ROCKWOOL support angle has tongues that are pushed out from opposite sides at 300mm max. centres. The ROCKWOOL Fire Barriers are then impaled on the tongues on both sides and clamped using the ROCKWOOL clamping plates. The tongues are finally bent over the clamping plates, completing the system.

The system uses 50mm Fire Barrier in a double layer with joints staggered. (Please note; wire reinforced sides should be placed outwards).

Fixing to timber structure (1 hour)

When a 1 hour Fire Barrier is supported on structural timber (for example a trussed rafter), and the thickness of timber is 35–49mm, one layer of 60mm ROCKWOOL Fire Barrier must be placed on each side of the timber (see Figure 21). Where timber thickness is 50mm or greater, 2 layers of 50mm Fire Barrier are sufficient.

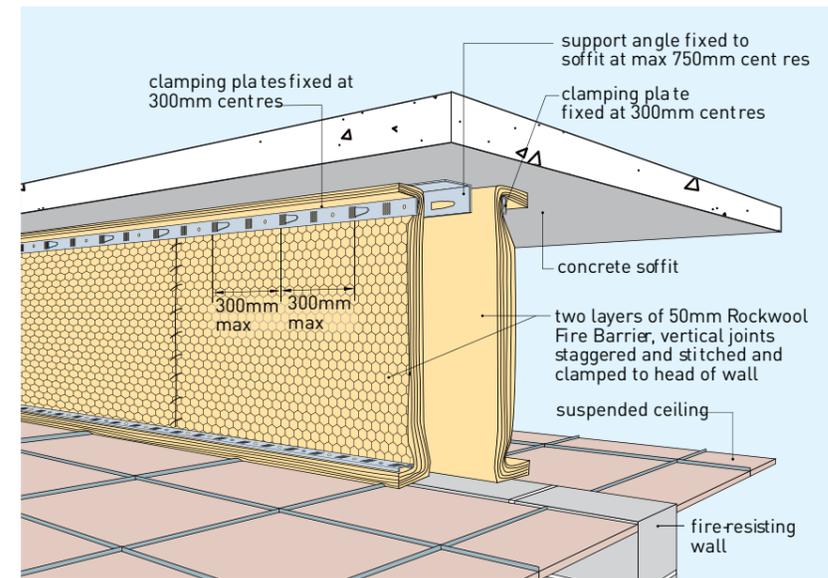


Figure 20 One hour Fire Barrier – General view

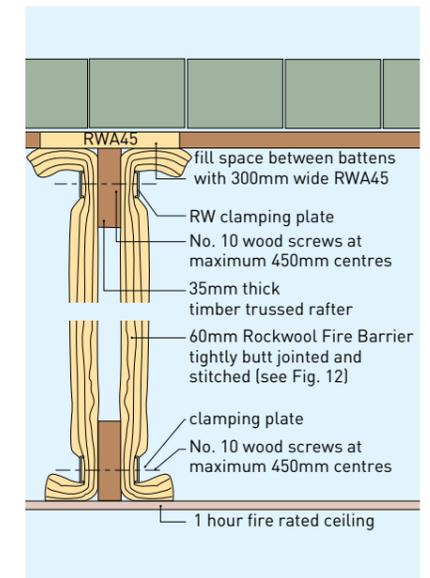


Figure 21 One hour protection for timber truss construction between 35 - 49mm thick

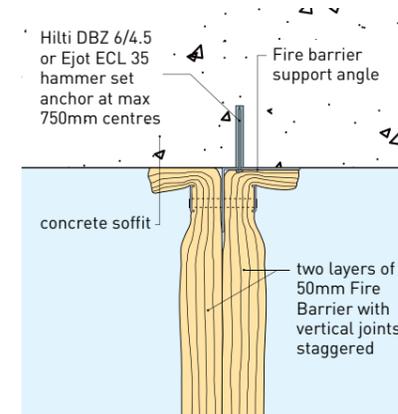


Figure 22 One hour – fixing to head

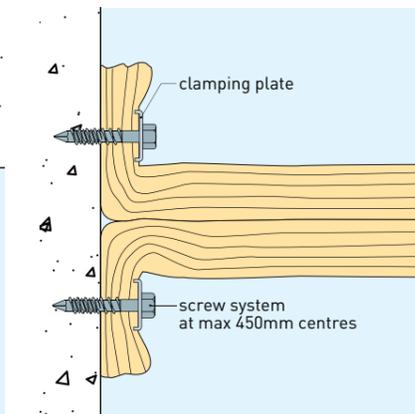


Figure 23 One hour Fire Barrier Perimeter fixing – Plan view

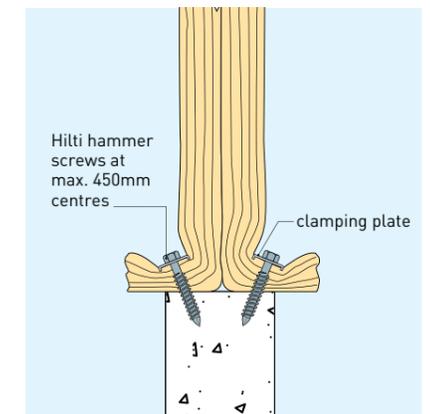


Figure 24 One hour – Fire Barrier Base detail

At the head of the barriers, the RWA45 fire stop inserts lying over the roofing felt and below the tiles / slates should be compressed by approximately 10% eg. use a 30mm thickness for 25mm thick tiling battens. To minimise the risk of dislodgement of the RWA45 as a result of roof collapse on one side of the barrier, cut the tiling battens as they pass over the supporting rafter and re-fix both parts to the top rafter edge – see detail on page 12. Where roof tiling battens pass over the head and run perpendicular to the line of the Fire Barrier, it is recommended that they should be dis-continuous

1½ hour and 2 hour Fire Barrier – typical fixing methods

1½ hour Fire Barrier

The ROCKWOOL 1½ hour Fire Barrier system uses 2 layers of 50mm fire barrier with staggered joints fixed as Fig. 25–27. Please note: Wire reinforced faces should be placed outwards.

2 hour Fire Barrier

The ROCKWOOL 2 hour Fire Barrier consists of two layers of 60mm (plain or foil-faced), wire stitched Fire Barrier with staggered vertical joints, separated by a nominal 40mm air space.

The base or perimeter to which the barrier is fixed must be capable of remaining in place for 2 hours.

Angle and strap for 1½ and 2 hour Fire Barriers

The following specification for slotted angles and straps is suitable for supporting ROCKWOOL Fire Barriers for 1½ and 2 hours when tested to BS 476: Part 22. Slotted angles (62 x 41 x 2mm) and straps (38 x 2mm) manufactured from mild steel conforming to BS 1449: Part 1.1: 1991 and cold reduced to provide a minimum of 0.2% proof stress of 417 Mpa (27 tons/in²) and conforming to BS 4345: 1968 (1986) – Specification for slotted angles (inc. flat strap).

Durability

For durability, we recommend that the finish should be capable of withstanding at least 200 hours salt spray and 400 hours humidity corrosion resistance testing to BS 3990: Part F. Slotted angles and straps conforming to this specification are available from the following suppliers: JB Products Tel: 01384 240234 Link 51 Tel: 01952 682251 Romstor Tel: 01442 242261

Site advisory service

ROCKWOOL provides a site advisory service by engineers, solely employed to assist with advice when installing ROCKWOOL materials on site. The service is intended for site guidance, but is not intended to be an inspection facility unless agreed under a separately financed contract agreement.

For approval of installed barriers, the installer or building owner will be referred to a suitably accredited and experienced fire assessor or fire safety engineering organisation.

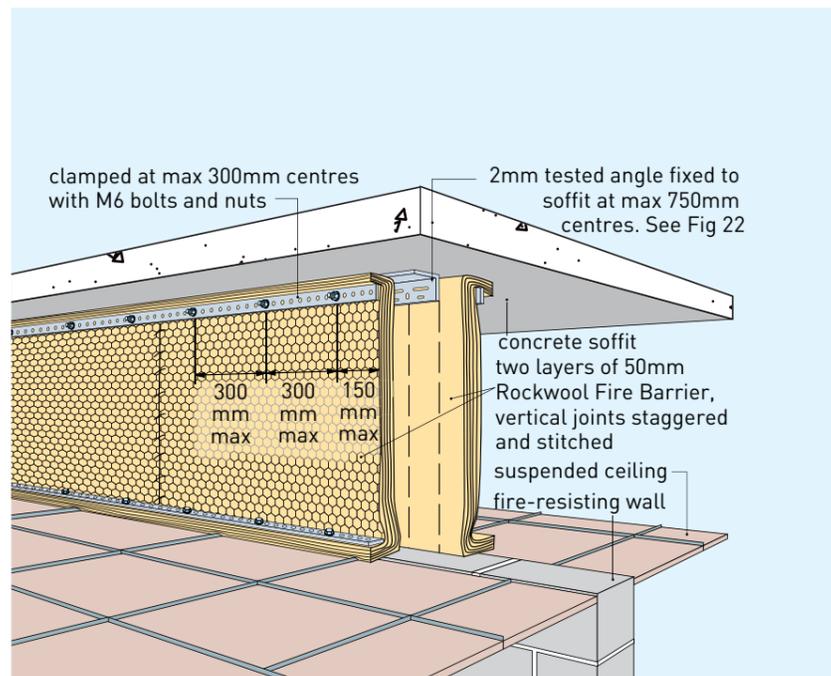


Figure 25

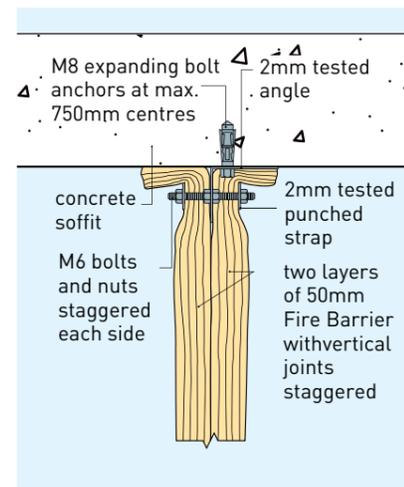


Figure 26 1½ hour Fire Barrier – section at head

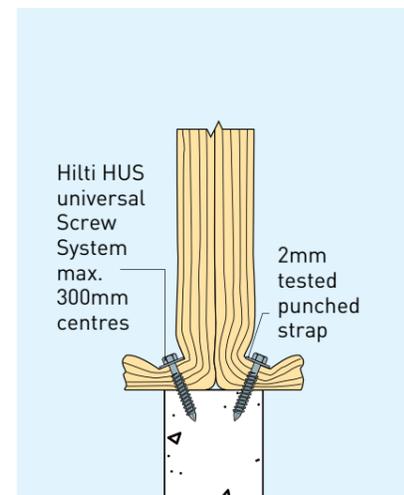


Figure 27 1½ hour – Fire Barrier base detail

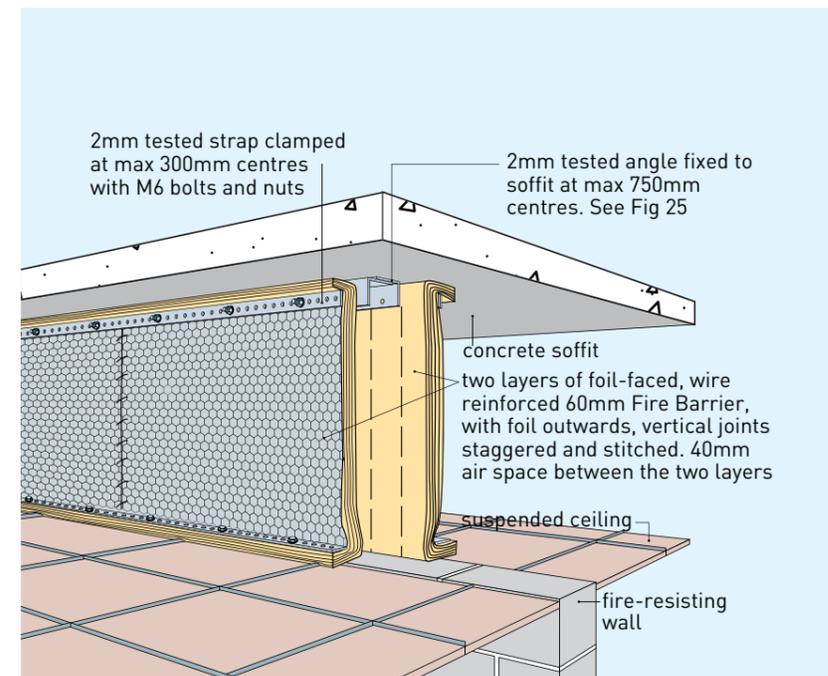


Figure 28 Two hour Fire Barrier – General view

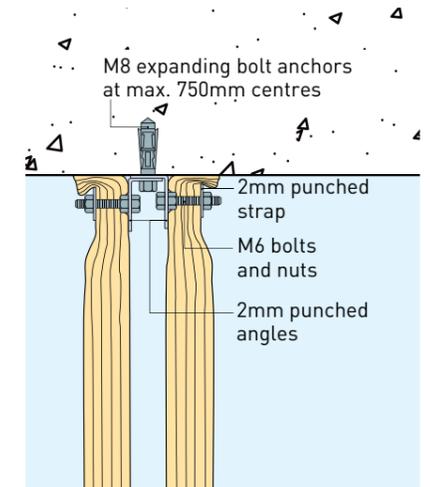


Figure 29 Two hour Fire Barrier – section at head

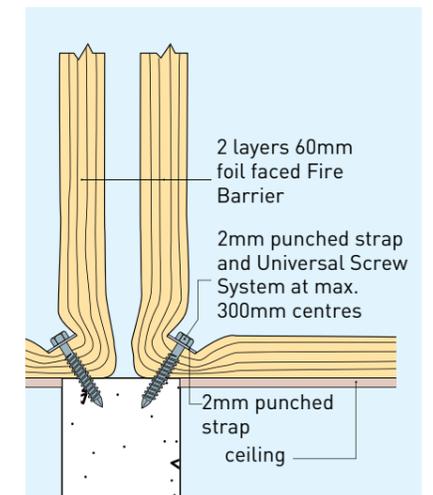


Figure 30 Two hour Fire Barrier - base detail

Proprietary fixings

All steel hammer set expansion anchors for soffit fixings are available from Hilti, or Ejoyt. For perimeter fixings to concrete or masonry, use Hilti HUS Universal Screw system. For fixings to timber, use standard No. 10 steel wood screws 100mm long.

References

Publications

For further information on the design of cavity barriers and firestops, reference should be made to the BRE Current Paper 7/77 whilst BRE Digest Nos. 214 and 215 discuss practical problems and solutions.

Supply

ROCKWOOL Fire Barrier support angle and clamping plate are specially manufactured for ROCKWOOL.

Clamping Plate:

3m x 40mm, 10 lengths per pack

Fire Barrier Support Angles:

3m x 34mm x 75mm, 10 lengths per pack

ROCKWOOL Acoustic Intumescent Sealant:

310ml cartridges, 25 per box

Packaging of Fire Barrier

Shrink wrapped in polyethylene.

General design considerations

A cavity fire barrier must be designed to restrict the passage of both hot smoke and flame for the minimum specified period, as listed in Approved Document B in support of the Building Regulations. In addition, it must be fixed in such a way that:

- It will remain effective in the event of structural movement
- There are no gaps where it abuts other elements of construction
- It complies with the requirements of Approved Document B of the Building Regulations.

Extended drops

For periods of up to 60 minutes, ROCKWOOL Fire Barriers can be used for extended void heights between 3.5 and 6m without the need for a supported frame – see Figure 14 for joining barriers with overlap. For periods of up to 90 minutes, this drop height can be increased to 10.5m (9m for 120 minutes), by the use of a simple frame system constructed from slotted angles and straps (see 1½ and 2 hour support systems).

Further details are available from ROCKWOOL Technical Solutions Team.

Fire barriers and dampers

Where ROCKWOOL Fire Barriers are installed in conjunction with fire dampers, the dampers must be supported independently of the fire barrier. HVCA or ASFP publications may be helpful.

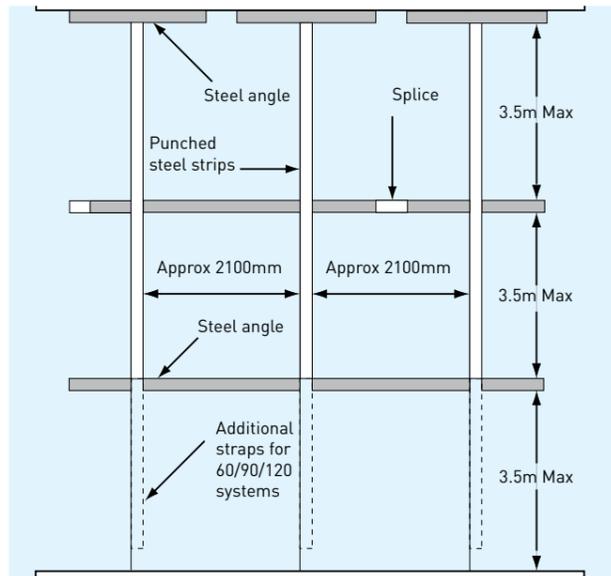


Figure 31

Table 4

Barrier configuration	Max height no additional support	Max height additional support	Integrity (mins)	Insulation (mins)
50mm single layer	3 metres	10-5 metres	60	15
50mm double layer	6 metres*	10-5 metres	30	15
60mm double layer with cavity	3-5 metres	9 metres	90	90
	6 metres*		60	60
	3-5 metres		120	120

* Horizontal overlapped joint required (see fig.14)

Access through barriers

Where regular access is required through the barriers for maintenance purposes etc, this should be achieved by the inclusion of an independently supported fire rated door set and frame. The Fire Barriers should be clamped to the door frame with the RW clamping plate and appropriate fixings at 450mm centres.

Work on site

Handling and storage

ROCKWOOL Fire Barriers are easy to handle. It is easy to cut to any shape. The product should be stored indoors or under a weatherproof covering.

Maintenance

Once installed ROCKWOOL Fire Barriers should need no maintenance. Fire Barriers should be inspected to ensure that they have not been disturbed during maintenance of areas and/or as part of a regular maintenance program.

Fire Barrier Slab

Fire Barrier Slab offers a new solution to this typical application for up to 4 hours integrity. ROCKWOOL Fire Barrier Slab is an aluminium foil faced slab used to close voids of up to 1m in height and 20m in length supported by a masonry wall (minimum density of 400 kg/m³) offering the same fire performance.

The slabs are cut to height and friction fitted within the opening. ROCKWOOL Acoustic Intumescent Sealant or ROCKWOOL LUL Intumescent Sealant is applied to the butt joints and perimeter of the barriers.

Service penetrations

The ROCKWOOL Fire Barrier Slab can be penetrated by steel pipes of up to 33mm external diameter or smaller, and steel cable trays of 305 x 50mm or smaller.

These penetrating services must be independently supported a maximum of 150mm from the face of the slabs. ROCKWOOL Acoustic Intumescent Sealant or ROCKWOOL LUL Intumescent Sealant is applied to the butt joints and perimeter of the barriers. See Figure 30.

Fire performance of ROCKWOOL Fire Barrier Slab

No penetrations - 4 hour integrity; 1 hour insulation Service penetrations 1½ hour integrity; 1 hour insulation When subjected to BS 476:Part 20 and 22: 1987 – reference WFRC – report C122729.

ROCKWOOL Intumescent Sealants

All joints are closed using ROCKWOOL Acoustic Intumescent Sealant or ROCKWOOL LUL Intumescent Sealant to ensure a tight fit during a fire situation.

Flammability

When subjected to flame, ROCKWOOL Intumescent Sealants will expand and char, blocking the passage of smoke and flame (see Fig 33). In sensitive areas, such as underground tunnels where smoke evolution could be a potential problem, use ROCKWOOL LUL Sealant.

Service temperature range

-20°C to +70°C

Coverage

Based on a 9mm x 6mm joint, ROCKWOOL Intumescent Sealants will cover approximately 5.5 linear metres. Intumescent Sealants must be applied with a minimum width of 6mm and a maximum width of 20mm.

The Intumescent Sealants will allow for 10% compression and tension movement in a butt joint. Both varieties of ROCKWOOL Intumescent Sealants are supplied in 310ml cartridges, 25 cartridges per box.

Packaging of Fire Barrier Slabs

Two slabs per pack enclosed in polythene.



Figure 32 One hour Fire Barrier Slab – general view

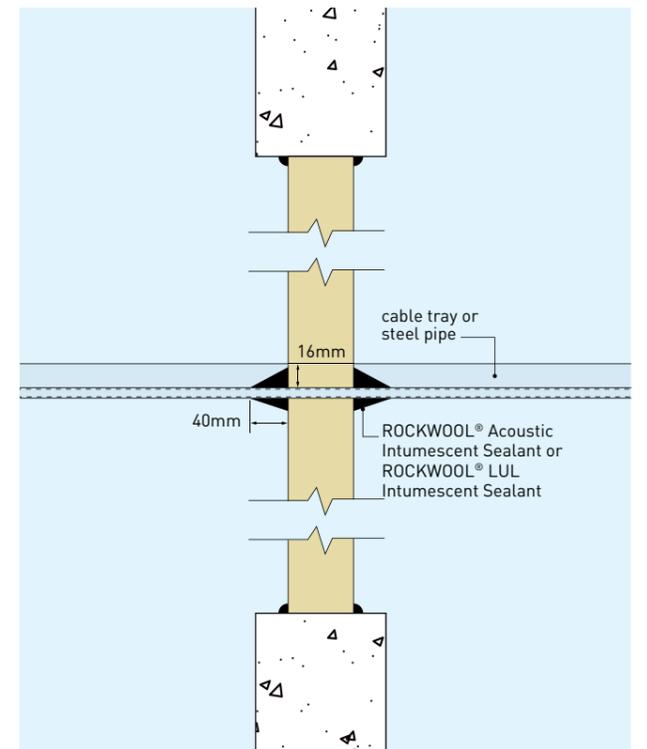


Figure 33 Section through steel penetration

The product has been authorised for use in LUL surface and sub-surface premises when installed in accordance with this data sheet – please refer to the LUL Approved Product Register website www.LU-apr.uk for specific details.

Firestop Compound

Firestop solution for cable pipe and duct penetrations

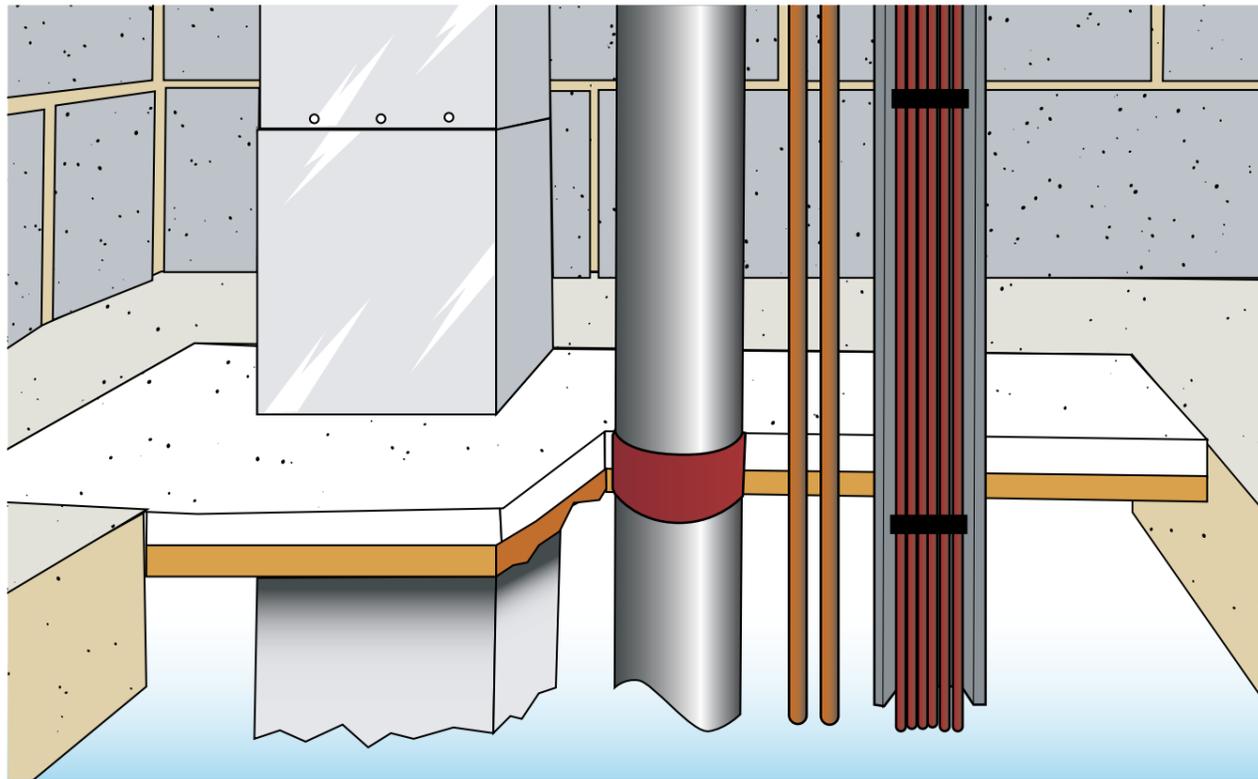


Figure 1 Firestop Compound poured onto permanent stonewool fibre shutter in floor

As part of the comprehensive FIREPRO® range of fire protection products, ROCKWOOL Firestop Compound is used to provide a fire resisting seal around service penetrations in fire rated walls and floors. Tested to BS476 Part 20, 1987, Firestop Compound provides up to 6 hours fire protection.

Description

Firestop Compound is a specially formulated gypsum based compound, which is mixed with water to be trowelled or poured around service penetrations. *

General benefits:

- Smoke seal
- Good acoustic barrier
- Suitable for making good around most types of service penetrations
- Load bearing (see Load bearing table for details)
- Simple installation
- No smoke emission
- Maintenance free
- Unaffected by humidity
- Available within 48 hours of order

Performance & properties

Installation instructions

In floors, a permanent shuttering made from 50mm ROCKWOOL slab (minimum density 140kg/m³) is cut and friction fitted between services and the edges of the floor slab. Firestop Compound is then trowelled over the shutter to a depth of 25mm thick. This is allowed to cure. Further Firestop Compound is then mixed to a pouring grade and tops the seal up to the required depth.

Floor Openings Pouring:

- 1) A bag of compound to 10 litres water (3:1) by volume. Vary to suit site conditions
- 2) Set the shuttering into the opening ensuring a tight fit so that once the required depth of Compound is installed it finishes flush with the floor slab/screed unless otherwise specified
- 3) Mix and pour compound until the required thickness is achieved.

Reinforcement

Reinforcing of the compound requires either 12mm diameter bars or 40mm (high)x 60mm steel angle fixed across the short span of the aperture. The bars should be installed at 200mm centres across the aperture and may be installed such that they are recessed into the surrounding structure by minimum 50mm on both sides or supported on an steel angle securely fixed to the structure. Steel angle reinforcement shall be installed at 250mm centres and shall be bolted back to supporting angle, which is fixed back to the structure. The support angle for rod or angle reinforcement shall be 50mm x 50mm x 1.6mm and shall be securely fixed back to the structure with nominally 8mm steel anchor bolts at a maximum of 200mm centres. In all instances the reinforcement shall be positioned approximately 30mm above the bottom surface of the compound to ensure adequate fire protection from below. Existing compound installations can be easily drilled or sawn to allow the provision of additional or replacement services and subsequently re-sealed. Recommended minimum clearance between services and surrounding structure – 50mm or half the diameter, whichever is greater.

Wall openings

In walls, Firestop Compound is mixed into a stiff consistency for trowelling into openings.*

Trowelling

- 1) A bag of compound to 10 litres water (3:1) by volume. Vary to suit site conditions.
- 2) Apply compound as specified (see sketches a, b, c).
- 3) Trowel the compound, starting at the base of the opening ensuring the correct thickness of material is installed. Work progressively towards the top of the opening until the barrier is complete. If shuttering panel is set at the centre, repeat process on other side.

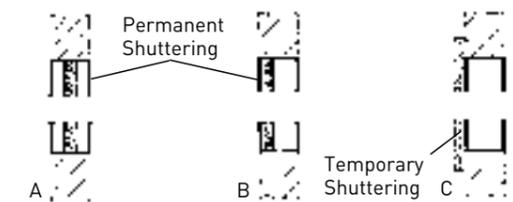


Figure 2

Firestop Compound sets in 30-45 minutes and is capable of accommodating light foot traffic in approximately 72 hours.

The product has been authorised for use in LUL surface and sub-surface premises when installed in accordance with this data sheet – please refer to the LUL Approved Product Register website www.LU-apr.uk for specific details



The following NBS Plus clauses include 'Firestop Compound': P12-37, P12-340

*Plastic pipework must be protected with either ROCKWOOL Firestop Pipe Collars or Intumescent Pipe Wraps. (See separate product information)

Performance in walls and floors

Firestop Compound has been independently tested for use in walls and floors.

When reinforced, Firestop Compound offers up to 360mins* protection for both Integrity and Insulation in masonry/ concrete walls or concrete floors.

When un-reinforced, Firestop Compound offers up to 240mins* protection for both Integrity and Insulation in masonry/ concrete walls or concrete floors.

Table 1 - Acoustic performance

Thickness of Compound (mm)	Weighted Sound Reduction Index (Rw)
75	39db
100	46db
150	51db

Table 2 - Coverage of compound

Thickness of Compound (mm)	Number of bags/m ²
75	3.15
100	4.20
150	6.30

These are approximate calculations based on 22kg bags. The coverage does not take into account the percentage of the hole filled with services.

Table 3 - Load bearing fire seals (light foot traffic only)

Thickness of Compound (mm)	Max. load bearing area free of services
75	500 x 500mm
100	750 x 750mm

Openings larger than 750 x 750mm clear area need to be reinforced. Please see overleaf or contact the ROCKWOOL Technical Solutions Team.

Specification

Specification

Install ROCKWOOL Firestop Compound to provide 1,2,3 or 4 hour fire rating to all service penetrations through all fire rated walls and floors. Installation to be fully in accordance with manufacturer's instructions.

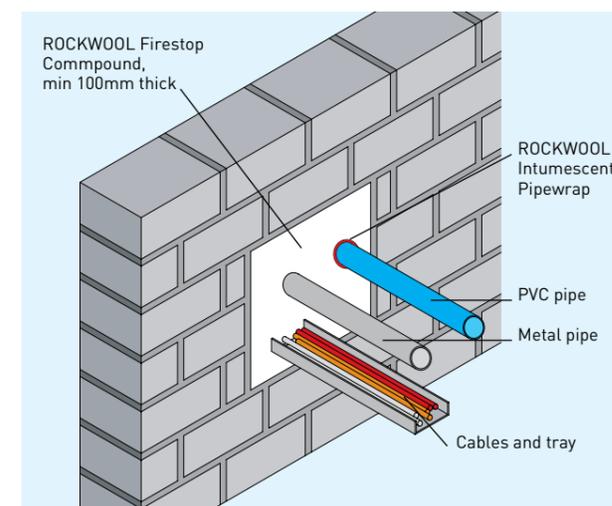


Figure 3 Firestopping at wall penetrations

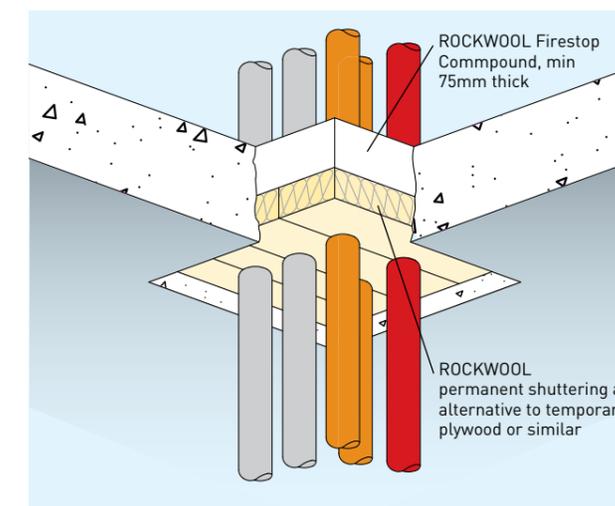


Figure 4 Firestopping at floor penetrations

Firestop Compound – spans with services

Table 4 - Non-reinforced seals

Firestop compound thickness (mm)	Fire rating (hours)	Maximum opening width x any linear length (mm)	Load bearing capacity (kn)
75	2	500	2.5
100	4	750	2.5

Table 5 - Simply reinforced seals

Firestop compound thickness (mm)	Fire rating (hours)	Maximum opening width x any linear length (mm)	Load bearing capacity (kn)
100	4	Up to 1500	2.5

This is general guidance. Advice from ROCKWOOL Technical Solutions should always be obtained.

*For advice on particular applications and fire performance, please contact ROCKWOOL Technical Services.

Firestop Pipe Collars

Firestop solution for plastic pipework penetrations

As part of the comprehensive FIREPRO® range of fire protection products, ROCKWOOL Firestop Pipe Collars provide a simple and effective method of firestopping plastic pipework where it passes through fire resistant walls and floors in a retrofit situation.

Tested to BS476 Part 20, Firestop Pipe Collars provides up to 4 hours fire protection.

General benefits:

- Simple to install
- Water resistant
- Maintenance free
- Available to suit pipe sizes ranging from 55 to 355mm O.D.
- Available from order in 48 hours



ROCKWOOL Firestop Pipe Collars

Construction & installation guidance

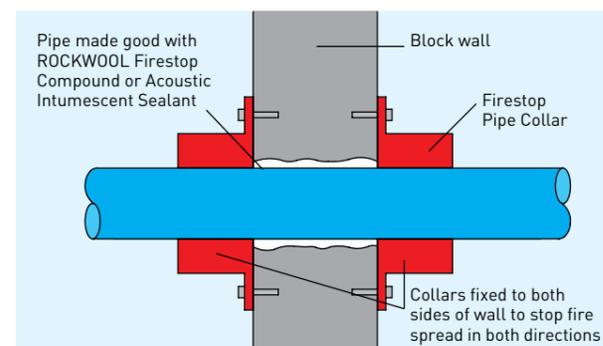


Figure 1

Installation in walls

- 1) Make good wall around plastic pipe with either ROCKWOOL Acoustic Intumescent Sealant or Firestop Compound.
- 2) Undo the toggle clip on the Firestop Pipe Collar and open it out.
- 3) Slide the Firestop Pipe Collar, with its fixing tabs pointing towards the face of the wall, around the plastic pipe.
- 4) Lock the Firestop Pipe Collar around the pipe closing the toggle clip. Push the Firestop Pipe Collar back on to the wall.
- 5) Fix the Firestop Pipe Collar to the wall by means of 32mm long steel self-tapping screws, through the fixing tabs.
- 6) Repeat for the other side of the wall if required.

Installation in floors

- 1) Make good floor around plastic pipe with either ROCKWOOL Acoustic Intumescent Sealant or Firestop Compound.
- 2) Undo the toggle clip on the Firestop Pipe Collar and open it out.
- 3) Slide the Firestop Pipe Collar, with its fixing tabs pointing up towards the face of the soffit, around the plastic pipe.
- 4) Lock the Firestop Pipe Collar around the pipe closing the toggle clip. Push the Firestop Pipe Collar back on to the soffit.
- 5) Fix the Firestop Pipe Collar to the soffit by means of 32mm long steel self-tapping screws, through the fixing tabs

Specification

Install ROCKWOOL Firestop Pipe Collars to provide up to 1, 2, 3 or 4 hours fire protection to all plastic pipework, in accordance with manufacturer's instructions.

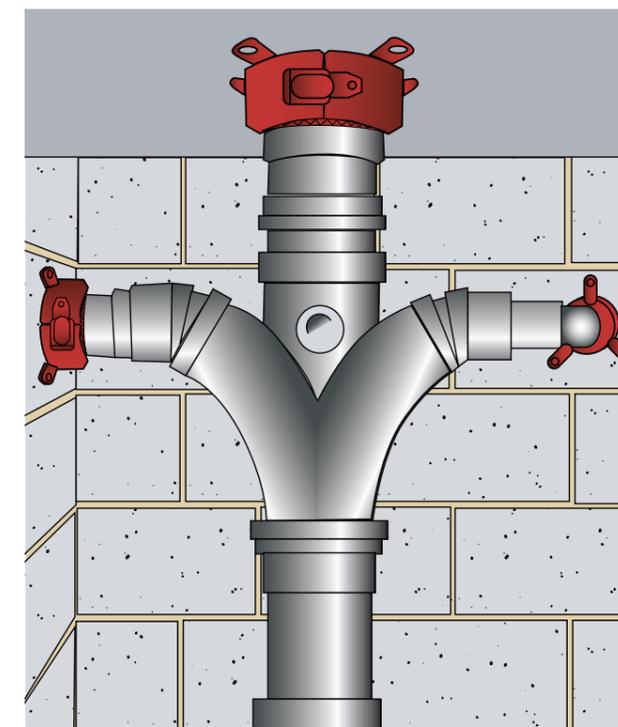


Figure 2

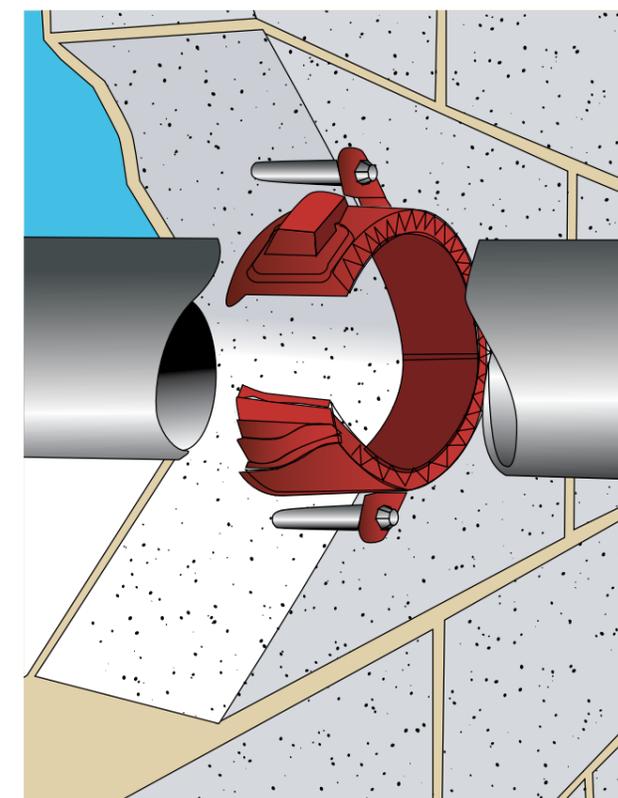


Figure 3

The product has been authorised for use in LUL surface and sub-surface premises when installed in accordance with this data sheet – please refer to the LUL Approved Product Register website www.LU-apr.uk for specific details.



The following NBS Plus clauses include
Firestop Compound: P12-43, P12-370, P12-380

Description, performance & properties

Description

Firestop Pipe Collars consist of a corrosion resistant power coated steel sleeve, containing a flexible graphite based intumescent liner manufactured to suit the pipework to be firestopped. Integral toggles are opened up and the collar is simply fitted around the plastic pipe.

The toggles are closed and the collar is pushed flush to the surface of the wall or underside of floor. The collar is then securely fastened to the structure by means of fire resistant fixings threaded through fixing tabs.

Any gaps of up to 25mm wide around the pipework should be filled with ROCKWOOL Acoustic Intumescent Sealant. For gaps greater than 25mm wide ROCKWOOL Firestop Compound can be used.

Under fire conditions the intumescent material swells filling the void left by the burnt out plastic.

Table 1 - Sizes

Compact Collar Dimensions To suit pipe Nom O D. (mm)	Product Reference	Fire Rating (mins)
55	128063	120
63	128064	120
82	128065	120
110	128060	120
125	128061	120
160	128062	120
55	128069	240
63	128070	240
82	128071	240
110	128066	240
125	128067	240
160	128068	240

Other sizes available, please contact our Technical Solutions Team for details.

Table 2 - Performance in masonry supporting walls

Maximum pipe OD (mm)	Maximum pipe wall thickness (mm)	Collar depth (mm)	Intumescent insert thickness (mm)	Fire resistance (min)	
				Integrity	Insulation
55	7	60	4	120	120
55	7	60	8	240	249
82	7	60	8	240	240
110	7	60	8	120	120
110	7	60	12	240	240
160	7	60	20	240	240

Table 3 - Performance in plasterboard supporting walls

Maximum pipe OD (mm)	Maximum pipe wall thickness (mm)	Collar depth (mm)	Intumescent insert thickness (mm)	Fire resistance (min)	
				Integrity	Insulation
55	7	60	4	120	120
82	7	60	8	120	120
110	7	60	8	60	60
110	7	60	12	120	120
160	7	60	20	120	120

Table 4 - Performance in concrete floors

Maximum pipe OD (mm)	Maximum pipe wall thickness (mm)	Collar depth (mm)	Intumescent insert thickness (mm)	Integrity	Insulation
55	7	60	8	240	249
82	7	60	8	240	240
110	7	60	8	120	120
110	7	60	12	240	240
160	7	60	20	240	240

Fire Resistant Silicone Sealant

A high performance firestopping sealant

Description

ROCKWOOL Fire Resistant Silicone Sealant is a one part alkoxy cure silicone with excellent unprimed adhesion to most building surfaces. This high specification product is designed to be used in joints with high movement capability or where they are formed between dissimilar substrates, eg. steel and masonry.

Application

Application of ROCKWOOL Fire Resistant Silicone Sealant it is a simple process as the product is extruded from a cartridge loaded into a standard sealant gun. The depth of the joint will depend on the gap to be filled and the fire rating required (see Table 1).

All surfaces must be thoroughly clean and free of bond breaking contaminants prior to application of the sealant. No priming is required for most construction substrates; however, we recommended that a small area be tested on substrates.

The sealant should not be applied if the ambient temperature is below 5° C as adhesion will be impaired.

Fire Resistant Silicone Sealant is tested to BS 476: Part 20.

Performance & properties

Table 1 - Fire rating

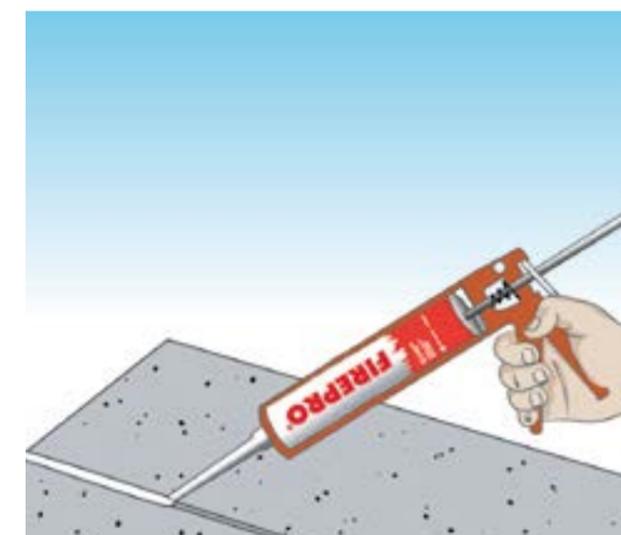
Joint size (mm)	Sealant depth (mm)	Backing material	Dimensions	Single or dual seal	Integrity (in mins)	Insulation (in mins)
15	10	PE	25mm diameter	Single	240	120
15	10	Mineral wool (density 90kg/m³)	15mm thick x 10mm depth	Dual	240	240
25	15	PE	30mm diameter	Single	240	120
40	25	Mineral wool (density 90kg/m³)	40 x 25mm depth	Dual	240	240

Coverage

ROCKWOOL Fire Resistant Silicone Sealant is available in 310ml cartridges. One cartridge will provide the following coverage rates:

Table 2

Joint size (mm)	Metres per litre
6x6	27.75
9x6	18.50
12x9	9.25
18x12	4.75
25x10	4.0



Colours

White

Specification

Once installed, ROCKWOOL Fire Resistant Silicone Sealant should provide up to 4 hours of fire protection in all joints up to 40mm.

- Installation must be fully in accordance with manufacturer's instructions
- Once installed the sealant can offer up to 25 years service (if correctly applied).



FIREPRO® High Expansion Intumescent Sealant

Prevents the spread of smoke and flames

FIREPRO® High Expansion Intumescent Sealant is an easy to apply waterborne acrylic emulsion sealant containing graphite. It expands at temperatures above 135° celsius sealing around various penetrations and services to prevent the passage of smoke and flames.

Applications

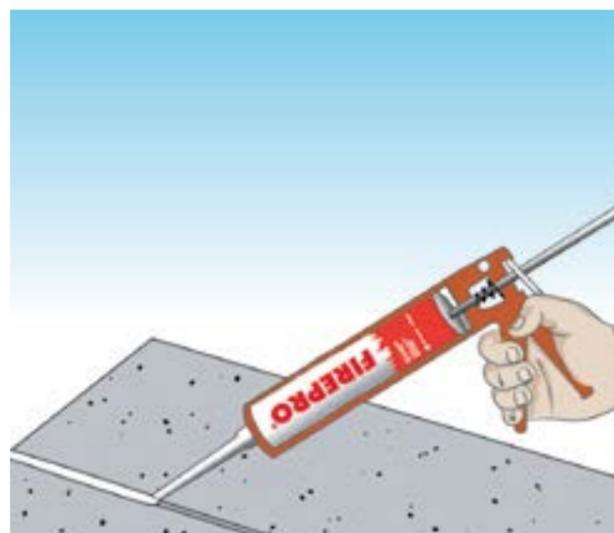
FIREPRO® High Expansion Intumescent Sealant is recommended for use where a flexible and durable fire resistant seal is required.

Suitable applications include:

- Combustible and non combustible pipes
- Cables (single cables or bunches of cables)
- Other permanent services
- Suitable for masonry walls

Standards & approvals

Provides up to 4 hours fire protection in joints up to 30mm. Tested to BS476: Part 20 and 22: 1987.



Application procedure

All surfaces must be clean and sound, free from dirt, grease and other contamination. Wood plaster and brick may be damp but not running wet. Use mechanical abrasion to clean porous surfaces before application.

For extra performance in movement situations, a primer can be prepared by diluting 1 part Sealant with 2 parts of water and mixing thoroughly. The primer should be brush applied and allowed to dry for 2 to 3 hours before applying sealant. Alternatively a standard PVA sealer may be used on the surface.

Prepare joint by cleaning and priming if necessary, as previously detailed. Cut nozzle to the desired angle and gun firmly into the joint to give a good solid fill. Strike off the sealant flush with the joint sides within five minutes of application, before surface skinning occurs. A small amount of shrinkage will occur on curing. If a flush finish is required, fill the joint slightly proud of the surface to allow for shrinkage.

Limitations

The sealant is not intended for application on bituminous substrates or substrates that can exude certain oils and plasticizers or solvents.

The sealant is not recommended for submerged joints or areas exposed to high abrasion.

The sealant is not suitable for food contact or medical applications.

Performance & properties

Table 1 - Fire resistance In 2 hour plasterboard wall

Service penetration	Hole size (mm)	Design of joint	Depth of sealant (mm)	Fire integrity (mins)
55mm diameter HDPE/PVC pipe	105	25mm annular joint in Patrice fixed coated panel (50mm thick) on both sides of wall	40	120
110mm HDPE/PVC pipe	160	25mm annular joint in Patrice fixed coated panel on both sides of wall	40	120

Table 2 - Fire resistance In concrete floors

Service penetration	Hole size (mm)	Design of joint	Depth of sealant (mm)	Fire integrity (mins)
110mm HDPE/PVC pipe	160	Mineral wool shutter (25mm thick)/ sealant (Mineral wool shutter removed before test)	75	90

Table 3 - Fire resistance In 150mm thick masonry walls

Service penetration	Hole size (mm)	Design of joint	Depth of sealant/ mineral wool (mm)	Fire integrity (mins)	Fire insulation (mins)
Cable tray (150x25mm)	200x100	Sealant/mineral wool/sealant	40/50	120	120
Cable bunch (100mm diameter)	150 diameter	Sealant/mineral wool/sealant	40/50	120	120
PVC pipe (110mm)	162 diameter	Sealant/mineral wool/sealant	40/50	120	120
ABS (50mm)	150 diameter	Sealant/mineral wool/sealant	40/50	120	120

Table 4 - Physical performance

Form	Ready to use thixotropic paste
Cure system	Water based
Specific gravity	1.5
Extrusion rate	350g/min
SAG	<3min
Open time	30 mins
Tack free time	60 mins
Curing time	3 to 5 days
Shore (A) hardness	50
Solids	> 80%
Application temperature range	+4°C to +35°C
Service temperature range	-15°C to 70°C
Shelf life	Up to 12 months when stored in unopened cartridges under cool dry conditions. Avoid extreme temperatures.

The product has been authorised for use in LUL surface and sub-surface premises when installed in accordance with this data sheet – please refer to the LUL Approved Product Register website www.LU-apr.uk for specific details.



Insulated Fire Sleeves

Firestopping of insulated pipe penetrations

As part of the comprehensive ROCKWOOL FIREPRO® range of fire protection products, ROCKWOOL Insulated Fire Sleeves are a unique combination of stone wool and graphite intumescent. They provide all the ROCKWOOL thermal, noise and fire benefits with an added intumescent effect.

When thermally insulated plastic pipes pass through fire resisting walls and floors, the insulation is normally removed at the point of penetration to enable standard pipe collars and wraps to close the resulting void when the plastic softens and melts due to the effects of a fire. However, the removal of this insulation may result in the formation of condensation on cold pipe work or heat loss from hot pipes.

ROCKWOOL Insulated Fire Sleeves avoid this problem by providing both fire stopping and thermal insulation in a single product.

ROCKWOOL Insulated Fire Sleeves are intended for use on copper, steel and most types of plastic pipes, trunking and conduits to provide up to 2 hours fire resistance.

ROCKWOOL Insulated Fire Sleeves can be used on numerous division types and under fire attack, expand both inwards to choke the plastic service penetration but also outwards to seal gaps between the sleeve and the surrounding construction.

Advantages

- Quick, simple and accurate installation
- Maintains pipe insulation at penetration points
- Supplied with integral vapour barrier
- No mastic or ancillaries required
- Excellent thermal and acoustic insulation

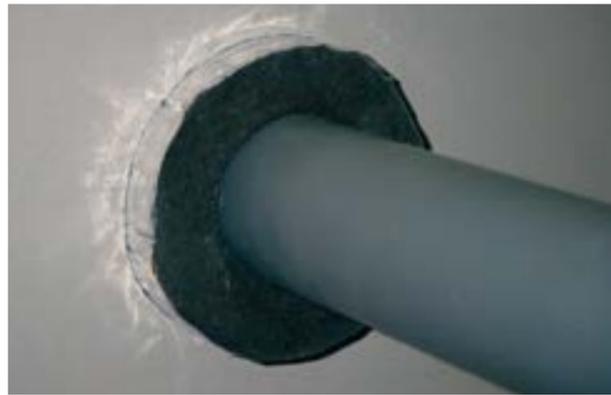
Standards and approvals

ROCKWOOL Insulated Fire Sleeves have been independently tested and assessed to BS 476: Part 20 for periods of up to 2 hours in concrete walls and floors, plasterboard partitions and stone wool fire resistant coated batts.

Description

ROCKWOOL Insulated Fire Sleeves are a unique combination of ROCKWOOL and graphite intumescent.

Supplied with a factory applied reinforced aluminium foil facing.



Dimensions

ROCKWOOL Insulated Fire Sleeves are supplied 300 mm long. They are manufactured to fit a range of standard pipe sizes, from 17 mm to 169 mm O.D. and standard thicknesses of 25 mm to 100 mm.

Other pipe sizes and thicknesses may be available to special order.

Service Temperature and Limiting Service Temperature

ROCKWOOL Insulated Fire Sleeves are used to fire stop pipe work operating at temperatures between 0°C and 180°C. At low temperatures, care should be taken to maintain the vapour barrier.

Acoustics

The use of ROCKWOOL Insulated Pipe Fire Sleeves can considerably reduce the noise emission from noisy pipework. For higher standards of acoustic insulation, it is recommended that an increased length of the pipe-work either side of the compartment wall or floor is insulated with ROCKWOOL Techwrap 2 or Techtube.

pH Neutrality

ROCKWOOL insulation is chemically compatible with all types of pipes, equipment and fittings. (Guidance is given in BS 5970 regarding the treatment of austenitic stainless steel pipework and fittings). Stone wool insulation is chemically inert. A typical aqueous extract of ROCKWOOL insulation is neutral or slightly alkaline (pH 7 to 9.5).

Biological

ROCKWOOL is a naturally inert, rot-proof material that does not encourage or support the growth of fungi, moulds or bacteria. Stone wool does not offer sustenance to insects or vermin.

Applications

ROCKWOOL Insulated Fire Sleeves should be installed to the same thickness as the pipe insulation (min 25 mm thick). For un-insulated pipes, a thickness of 25 mm is required to maintain the fire resistance of the wall or floor.

Table 1 - Fire resistance (FR) performance - ducting, trunking and conduits

Service type	Material	Max size W/D (mm)	Wall thickness range (mm)	Supporting construction		FR integrity (minutes) Wall & Floor	Wall	Floor	Report
				Wall	Floor				
Rectangular vent ducts	PVC	210/63 308/66	1.6 to 3	M/PB	Concrete	120	90	120	1
Square trunking	PVC	100/100	3	M/PB	Concrete	120	90	120	1
Cable conduit	PVC	Up to 55 diameter	3	M/PB	Concrete	120	90	120	1

Table 2 - Fire resistance (FR) performance - metal and plastic pipes in Masonry, Plasterboard or Concrete Supporting Construction

Service type	Material	Minimum diameter	Wall thickness (mm)	Maximum diameter	Wall thickness (mm)	Supporting construction		FR integrity (minutes) Wall & Floor	FR insulation (minutes)		Report
						Wall	Floor		Wall	Floor	
Metal pipes (uninsulated)	Copper Mild steel Stainless steel	22	2.5	165	14.2	M/PB	Concrete	120	0	0	1
Pipes (plastic)	PVC/UPVC PVC/UPVC Polybutylene	55 160 12	3.0 3.0 2.0	160 110 28	4.2 4.2 3.5	M/PB/CB M/PB M/PB/CB	Concrete Concrete Concrete	120 120 120	120 90 120	120 90 120	1

A minimum thickness of 25 mm is required for uninsulated pipes.
25 to 100 mm available to match insulation on other pipes.
Manufactured to fit pipe diameters of 15 to 169 mm

1 = Chilt/A12265
M = Masonry
PB = Plasterboard
CB = Ablative Coated Batt

Table 3 - Fire resistance (FR) performance of plastic pipes in FirePro® Ablative Coated Batt

Service type	Material	Pipe Outer diameter (mm)	Wall thickness (mm)	FR Integrity (minutes)		FR Insulation (minutes)	
				50mm Coated Batt	2x 50mm Coated Batt	50mm Coated Batt	2x 50mm Coated Batt
Pipes (Plastic)	Polybutylene	15-28	2.5	60	120	60	120
	HDPE	40	3	60	120	30	120
	PVCu	43	1.8	60	120	30	120
	PVC	55	2	60	120	30	120
	HPDE	56	2.3	60	120	30	120
	ABS	57	4	60	120	30	120
	PVC, PVCu	82	3.2-4.0	60	120	30	120
	HDPE	90	3.5	60	120	30	120
	PVC, PVCu	110	3.2-4.0	60	120	30	120
	HDPE	110	4.3	60	120	30	120
	ABS	110	5	60	120	30	120
	PVC, PVCu	160	3.2-4.5	60	120	30	120
	HDPE	160	6.2	60	120	30	120
	ABS	160	6.7	60	120	30	120

For information regarding alternative pipe sizes or types, or for help regarding achieving higher integrity and insulation ratings. Please contact ROCKWOOL Technical Solutions Team for further assistance.

Notes

Specification clauses

- 1) Supporting construction designation:-
 Floors: Cast concrete between 1100 and 2400kg/m³ density
 M= Masonry between 600 and 1500kg/m³ density
 PB= Plasterboard clad steel or timber stud partitions with fire resistance at least the same as the Fire Sleeve performance
 CB= ROCKWOOL 50 or 60 mm thick Ablative Coated Batt
- 2) Insulated Fire Sleeves should extend at least 25 mm from each face of the supporting wall or floor construction to allow for effective sealing against any thermal insulation, except when used with ROCKWOOL Ablative Coated batts where a minimum of 50 mm protrusion is required from both faces.
- 3) The gap between the supporting construction and the Insulated Fire Sleeve should be kept as small as practical. If gaps exceed 15 mm around the sleeve or 8 mm between the service and the sleeve, these should be filled with ROCKWOOL FIREPRO® Acoustic Intumescent Sealant or FIREPRO® Firestop Compound
- 4) The installed length of any Insulated Fire Sleeve shall be at least 60 mm

Installation

ROCKWOOL Insulated Fire Sleeves are supplied 300 mm long and are simply cut to the desired length and as a minimum, be cut flush with both faces of the wall/floor. When used in conjunction with PVC services or ROCKWOOL Ablative Coated Batts, they are required to extend beyond the face of the wall/floor. For details of how far they need to extend specification clause 2.

To maintain thermal efficiency, the Insulated Fire Sleeves should tightly abut any existing pipe insulation and where this is foil faced, all joints must be sealed with self-adhesive foil tape.

No specialist tools or ancillary materials are required for the fitting of ROCKWOOL Insulated Fire Sleeves. ROCKWOOL Insulated Fire Sleeves can accommodate irregularities in the division opening and the pipe O.D. of up to 15 mm.

Multiple pipe penetrations can be accommodated in conjunction with ROCKWOOL Ablative Coated Batts.

A minimum thickness of 25 mm is required for uninsulated pipes. Thicknesses of 25 to 100 mm available to match insulation on other pipes. Manufactured to fit pipe diameters of 15 to 169 mm.

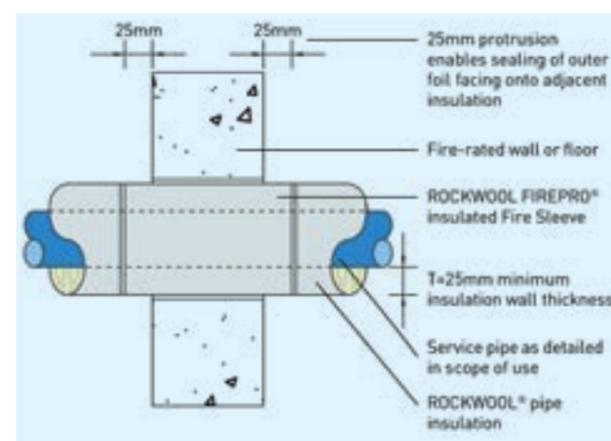


Figure 1

Intumescent Expansion Joint Seal

Firestop solution for linear joints in walls & floors

As part of the comprehensive FIREPRO® range of fire protection products, Intumescent Expansion Joint Seal provides an easy retro-fit solution to firestop existing construction joints up to 75mm thick in floors and walls. Tested to BS476 Part 20, Intumescent Expansion Joint Seal provides up to 4 hours fire protection.

Description

Intumescent Expansion Joint Seal is a compressible strip formed by shrink wrapping a graphite based intumescent polymer to both faces of a ROCKWOOL core.

Intumescent Expansion Joint Seal is supplied in one metre lengths to suit the joint to be filled. The width of the product is dependent on the fire rating required (see Table 1 and 2).

The seal is installed by simply compressing by hand and then pushing into the joint. Adjacent pieces of the product are tightly butted together. There is no need to use any adhesives or intumescent sealant in conjunction with the product.

In a fire, the graphite based intumescent material swells to form a hard char, which prevents the passage of fire and smoke through the joint.

Intumescent Expansion Joint is suitable for use in:

- Blockwork cavities
- Curtain wall/Concrete slab interfaces
- Expansion joints
- Structural joints

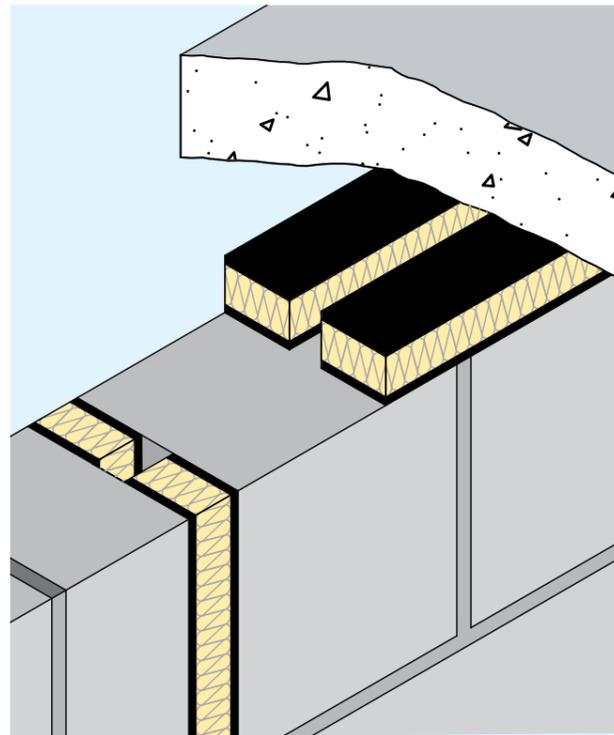


Figure 1

General benefits:

- Simple to install
- Water resistant
- Maintenance free
- Available in small quantities
- Available from 48 hours of order

Performance & properties

Intumescent Expansion Joint being a component of structure satisfies both integrity and insulation requirements as shown in the table above.

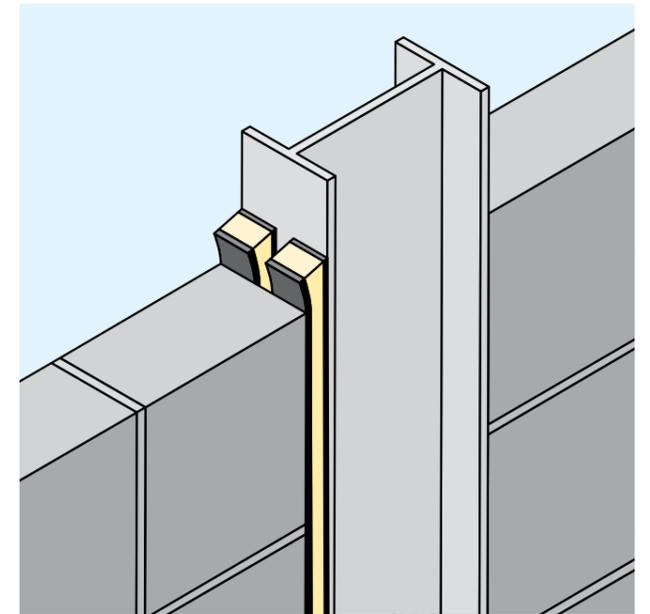
Specification

Install Intumescent Expansion Joint to provide up to 4 hours fire rating to all construction joints up to 75mm thick. Installation to be fully in accordance with manufacturer's instructions.

Installation instructions

Intumescent Expansion Joint is used to prevent fire penetration through movement joints and gaps in walls and concrete floors for a specified period up to 4 hours. They are manufactured oversize to fit under compression.

- 1) Remove all loose debris and compound from the gap
- 2) Ensure correct width is installed to suit the required Fire Rating
- 3) Where the gap varies in the length to be sealed, ensure that the correct thickness is installed under compression
- 4) Do NOT remove sleeving
- 5) Keep material dry and protect from impact damage
- 6) Compress and insert the strip into the gap ensuring tight butt joints



Building Regulations 2013 – Approved Document B – B2/3/4 – Internal fire spread (structure), paragraphs 0.10 – 0.11, state that the spread of fire inside a building can be restricted, by provisions for elements of structure to have a specified minimum period of fire resistance. Fire resistance is defined in terms of both integrity and insulation requirements when applied to fire separating elements.

Table 1 - Fire resistance (FR) performance

Joint Size	Width of Seal	Fire Rating (Integrity/Insulation)	Single / Double Seal
Up to 10mm	25mm	2 Hours	Single
	50mm	4 Hours	Single
Joints from 11mm up to 50mm	25mm	2 Hours	Dual
	50mm	4 Hours	Dual
Joints from 51mm up to 75mm	25mm	2 Hours	Dual
	50mm	4 Hours	Dual

Please note that seals for joints up to 50mm wide must be fitted under a minimum of 5mm compression and joints 51-75mm must be fitted under a minimum of 10mm compression.

Intumescent Pillows

Temporary firestop solution for large voids in walls & floors

As part of the comprehensive FIREPRO® range of fire protection products, ROCKWOOL Intumescent Pillows have been tested to BS 476:part 20 to provide up to 4 hours fire protection to metal services and cables passing through fire resisting compartment floors and walls.

General benefits:

- Simple to install
- Easy to remove and reinstate whilst changing services
- Maintenance free
- Dry system
- Available from 48 hours of order



Description

Intumescent Pillows are simply packed tightly in between penetrating services and the wall. In a floor, pillows are additionally supported by means of a mesh support system. (See Figure 3).

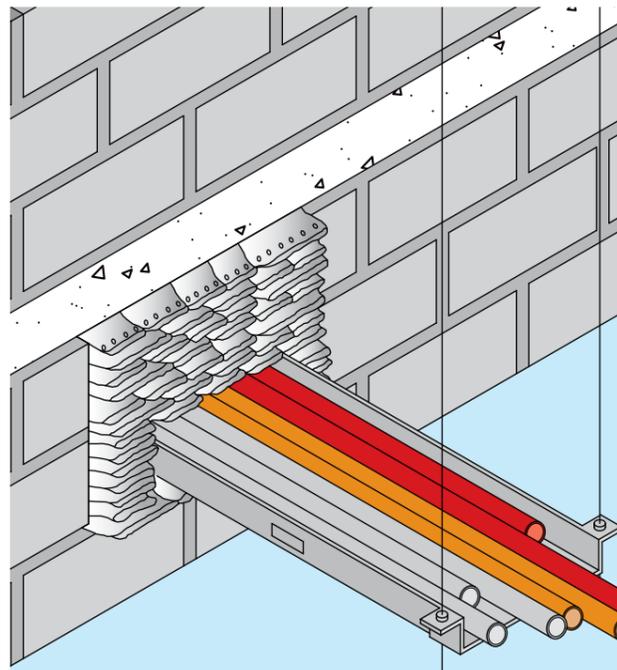


Figure 1 Intumescent Pillows friction fitted between services and firewall

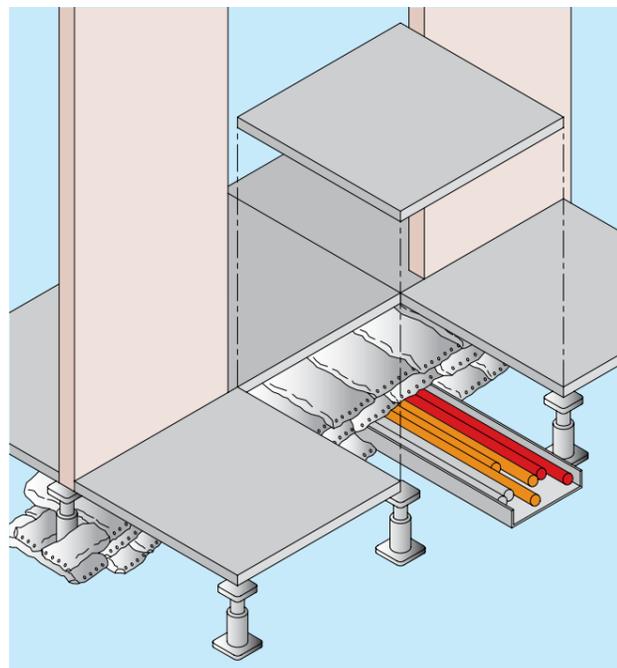


Figure 2 Intumescent Pillows forming cavity barrier underneath raised access floor

Performance & properties

Under fire conditions, Intumescent Pillows expand several times their original volume to form an effective seal around service penetrations.

Intumescent Pillows are suitable for use with:

- Metal pipework
- Cable trays
- Electrical trunking (inside and outside)

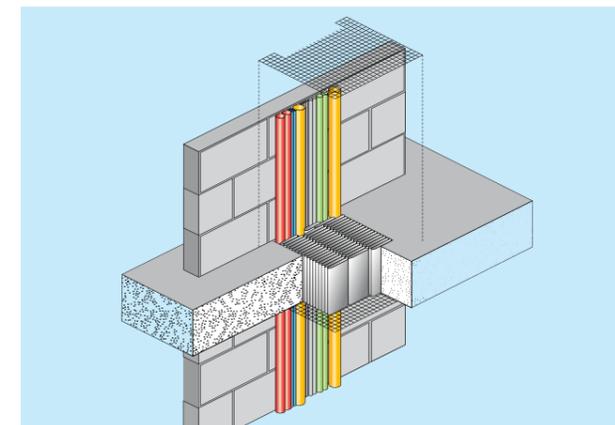


Figure 3

Installation in floors

- 1) Make a basket using galvanised steel mesh (50 x 50mm squares x 2.5mm wire diameter) to sit into the hole in the floor slab. There should be a minimum 50mm overlap on the surrounding floor slab or wall. Mechanically fix to top of floor slab or wall.
- 2) Lay Intumescent Pillows standing on end into the wire basket. Pack the pillows tightly into the basket around the penetrating services.
- 3) For electrical trunking, remove the lid and install a pillow inside so that it aligns with the depth of the floor. Replace the lid on the electrical trunking.
- 4) Lay a sheet of the galvanised steel mesh over the basket and tie together using steel wire.

Installation in walls

- 1) Push the first Intumescent Pillow into the hole to be filled, so that the longest dimension (300mm long) spans across the wall.
- 2) For electrical trunking, remove the lid and install a pillow inside so it aligns with the depth of the wall. Replace the lid on the electrical trunking.
- 3) Pack the hole tightly with additional Intumescent Pillows until it is full.

For plasterboard partitions, the hole must be framed out using suitable stud noggins prior to installing the Intumescent Pillows.

Table 1 - Performance in masonry supporting walls

Method of support /Installation	Maximum aperture dimensions	Fire resistance (min) Integrity	Insulation
Friction fitted	850 x 850mm	120	120
Friction fitted	600 x 600mm	240	120

Minimum density of masonry supported walls – 650kg/m³ 300mm bag length to be laid horizontally in wall void. Bags should be laid centrally within wall thickness.

Table 2 - Performance in masonry supporting walls

Method of support /Installation	Maximum aperture dimensions	Fire resistance (min) Integrity	Insulation
Friction fitted	850 x 850mm	120*	120*

* Product performance is dependent on matching performance of plasterboard wall system. Void in plasterboard should be fully 'framed out' with steel studs or similar 300mm bag length to be laid horizontally in wall void. Bags should be laid centrally within wall thickness.

Table 3 - Performance in concrete floors

Method of support /Installation	Maximum aperture dimensions	Fire resistance (min) Integrity	Insulation
Wire basket	850 x 850mm	120	120
Wire basket	600 x 600mm	240	120

300mm bag length to be laid vertically in floor void.

Approved service penetrations: Steel and copper pipes not exceeding 100mm OD. Multi-core power cables not exceeding 25mm diameter. Multi-core signal PVC sheathed cables not exceeding 11mm diameter. CAT5 or CAT5E communication cables not exceeding 6mm diameter. Fibre optic cables not exceeding 6mm diameter. Perforated steel cable trays carrying single cables (as above) or bunched in bundles, no more than 50mm overall diameter with each bundle separated by at least 40mm. Steel trunking not exceeding 150 x 150mm (through floor seals only) containing single cables (as above) or bunched in bundles, no more than 50mm overall diameter with each bundle separated by at least 40mm. Remaining void within trunking should be fully sealed with Intumescent Pillows.

General notes

All penetrating services should be at least 100mm apart and located within the pillows at least 50mm from the surrounding aperture. Due to the nature of the penetrating service eg. steel or copper pipes, the fire insulation performance may be reduced. All penetrating services should be independently supported within 1m of the pillows, either side of the exposed edge / face of the pillows. For cables supported on trays passing through floor seals, the independent supports should be fixed to the trays and the cables clamped securely to the trays. Plastic conduits or trunking should be cut short by at least 100mm either side of pillow seal.

Table 4 - Estimating quantities

Pillow size (mm)	Approximate number
300 x 200 x 30	165 per m² opening
300 x 150 x 30	220 per m² opening
300 x 100 x 30	330 per m² opening
300 x 50 x 30	660 per m² opening

Specification

Install ROCKWOOL Intumescent Pillows to provide up to 4 hours rating where services pass through fire rated walls and floors. Installation to be fully in accordance with manufacturer's instructions.

Intumescent Pipe Wraps

Firestop solution for plastic pipe penetrations

As part of the comprehensive FIREPRO® range of fire protection products, ROCKWOOL Intumescent Pipe Wraps offer a simple and more economic alternative to Firestop Pipe Collars, for firestopping plastic pipework and electrical trunking in walls and floors. Tested to BS476 Part 20, Intumescent Pipe Wraps will provide up to 4 hours fire protection.

General benefits:

- Simple to install
- No mechanical fixings
- Water resistant
- Maintenance free
- Available to suit pipe sizes up to 160mm O.D.
- Available to fit most electrical trunking sizes
- Available from order in 48 hours

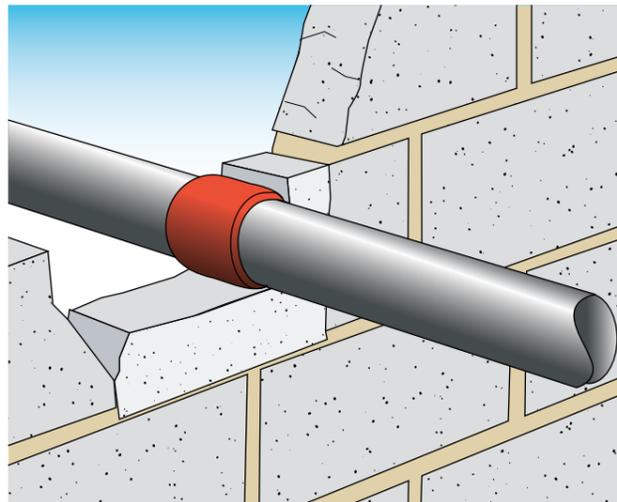


Figure 1 Intumescent Pipe Wrap sealed into compartment wall with ROCKWOOL Firestop Compound.

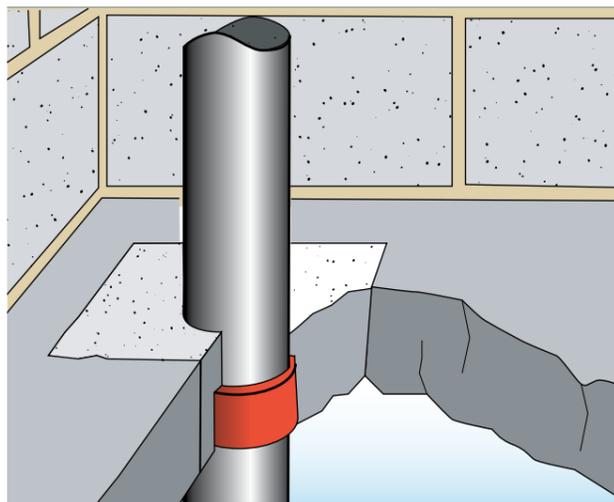


Figure 2 Intumescent Pipe Wrap sealed into compartment floor using ROCKWOOL Firestop Compound.

Description, performance & properties

Table 1 - Performance in masonry supporting walls

Maximum pipe OD (mm)	Maximum pipe wall thickness (mm)	Pipe wrap size		Fire resistance (min)	
		Width (mm)	Thickness (mm)	Integrity	Insulation
55	7	50	4	120	120
55	7	50	8	240	240
82	7	50	8	120	120
82	7	75	8	240	240
110	7	50	8	120	120
110	7	100	8	240	240
160	7	100	20	240	240

Table 2 - Performance in concrete floors

Maximum pipe OD (mm)	Maximum pipe wall thickness (mm)	Pipe wrap size		Fire resistance (min)	
		Width (mm)	Thickness (mm)	Integrity	Insulation
55	7	50	4	120	120
55	7	50	8	240	240
82	7	50	8	120	120
82	7	75	8	240	240
110	7	50	8	120	120
110	7	100	8	240	240
160	7	100	20	240	240

Suitable for PVC, UPVC, Polypropylene, MDPE & HDPE pipe materials (Also suitable for ABS pipe material up to 55mm OD).



The following NBS Plus clauses include 'Intumescent Pipewraps': P12-375

Description, performance & properties

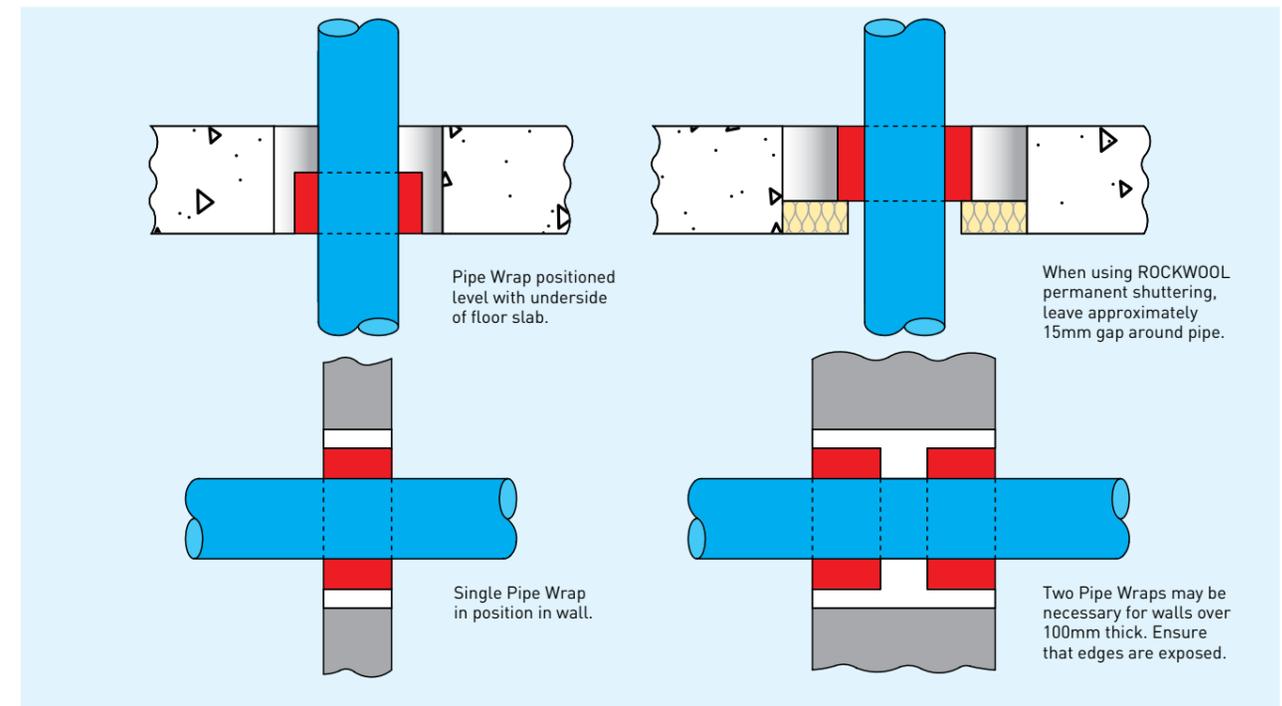


Figure 3

Description

Pipe Wraps comprise layers of a graphite based intumescent sheet encapsulated in a polythene sheath. All Pipe Wraps are supplied in correct length to suit pipe diameter.

Installation instructions

The product is intended to be wrapped around the outside diameter of the pipework or trunking and is secured by means of a self-adhesive strip. The Intumescent Pipe Wrap is then positioned within the compartment wall or floor so that the edge of the product is left exposed at the face of the wall or soffit.

The Intumescent Pipe Wrap is then sealed into the structure with ROCKWOOL Firestop Compound.

Under fire conditions, the intumescent material expands against the structure and fills the void left by the burnt out plastic.

For walls it may be necessary to fit two wraps depending on the fire risk areas concerned and if the wall thickness exceeds 150mm.

Where pipes are insulated, please refer to the Insulated Fire Sleeve data sheet.

Intumescent Pipe Wraps are used to prevent fire penetration in plastic pipes that pass through walls or floors for a specified period of up to 4 hours. They are manufactured as a sealed unit to the correct length and width to suit the pipe diameter and fire rating.

- 1) Check that the pipe surface is clear of mortar.
- 2) Ensure that the appropriate pipe wrap is installed to suit the outside pipe diameter and required fire rating.
- 3) Wrap around pipe and fix with integral self-adhesive strip.
- 4) Slide into position ensuring that the bottom edge is exposed in a floor slab and both edges are exposed in a wall. Two wraps may be necessary when the wall thickness exceeds 100mm.
- 5) Seal the pipe wrap into the structure with ROCKWOOL Fire Stop Compound.

Specification

Install ROCKWOOL Intumescent Pipe Wraps to provide up to 4 hours fire protection to all plastic pipework and electrical trunking where they pass through fire rated walls and floors. Installation to be fully in accordance with manufacturer's instructions.

Intumescent Putty Pads (External Socket)

For the external lining of electrical socket boxes

ROCKWOOL External Socket Intumescent Putty Pads are designed for lining electrical socket boxes externally, in most forms of dry wall or plasterboard construction in both commercial and residential buildings.

Description

The pads are non-setting and flexible and will not harden, crack or dry out with age. The intumescent properties activate as temperatures reach 200°C, restricting the passage of fire and smoke.

External Socket Intumescent Putty Pads provide a fast, efficient and clean method of achieving the required fire and acoustic ratings as specified in the 2006 edition of the Building Regulations approved document part E and B, sections 7 and 7.12 b.



ROCKWOOL External Socket Intumescent Putty Pads are available in both single and double socket versions.

Performance & properties

Specification compliance

External Socket Intumescent Putty Pads have been tested to the following assessments:

- An indicative fire test based on BS476 Part 20:1987 and EN1366-3 achieved a fire rating up to 2 hours within a dry wall construction.
- Sound tested for acoustic performance values and achieved values of up to 67dB (indicating the product should uphold acoustic performance requirements of most normal partitioning systems).

Table 1 - Technical details

Skimming Time	Non Setting
Cure Time	Non Setting
Hardness Shore A	12 - 15
Activation Temperature	Approximately 200°C
Application Temperature	0°C to 40°C
Shelf Life	A minimum of 24 months when stored in unopened containers

Applications

External Socket Intumescent Putty Pads are designed for (but not limited to) effecting a fire and acoustic seal externally around electrical socket boxes. Using the putty pads removes the need to install time-consuming baffle boxes.

Applications

- To achieve a high quality seal, ensure the socket is clean, dry and free from any dirt and dust.
- Remove the protective paper from one side of the pad and align the pad so that it fits centrally over the switchbox.
- Firmly press the perimeter of the pad to ensure it is bonded to the substrate.
- Remove the remaining protective paper and trim off any excess material to leave a neat finish.

Storage

Store in cool, dry conditions. Protect from frost.

Putty Pad dimensions

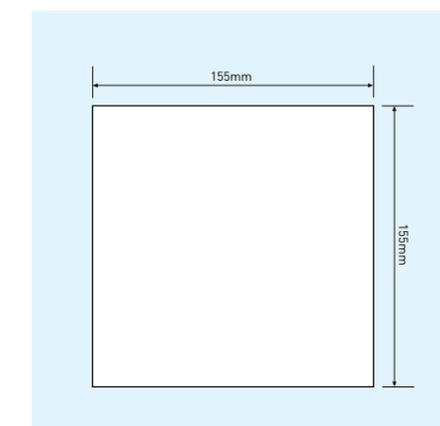


Figure 1 Single Electrical Socket Cross

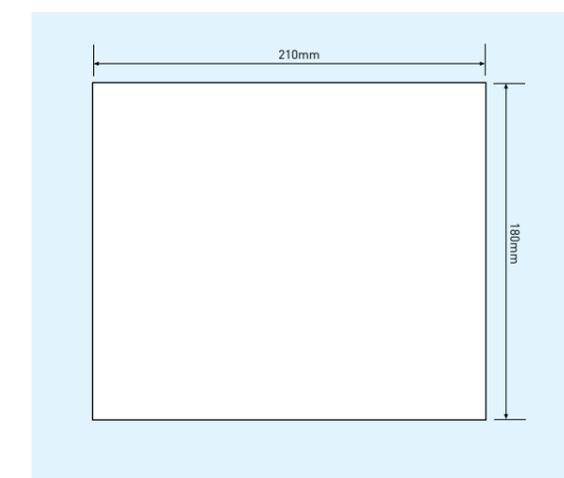


Figure 2 Double Electrical Socket Cross Shape

Intumescent Putty Pads (Internal Socket)

Restricts the spread of fire in plasterboard partitions

ROCKWOOL Internal Socket Intumescent Putty Pads have been developed for use in plasterboard partitions that have been partially penetrated by electrical socket boxes. They are designed to maintain acoustic integrity and fire resistance.



ROCKWOOL Internal Socket Intumescent Putty Pads are available in both single and double socket versions.

General benefits:

- Provides fire protection
- Reduces noise transfer
- Pre-cut cross shape ensure hassle free installation
- Low smoke emission
- Maintenance free
- Remains malleable
- Long service life
- Available for single and double sockets



Switch box before installation of Putty Pad



Putty Pad installed inside switch box

Description, performance & properties

Description

Acoustic Intumescent Putty Pads are manufactured from a red, non-setting, silicone based intumescent polymer.

Installation is simple:

- Remove the face plate of the electrical socket box.
- Mould the pre-formed putty pads into the back of the box and around the cables.
- Simply replace and secure the face plate.

Under fire conditions the intumescent pad expands to fill the void left by the burnt out electrical socket box, preventing the spread of fire through the plasterboard wall. The intumescent putty can also be used for upgrading the acoustic performance of partitions where electrical sockets boxes have penetrated the wall, reducing room-to-room noise transfer.

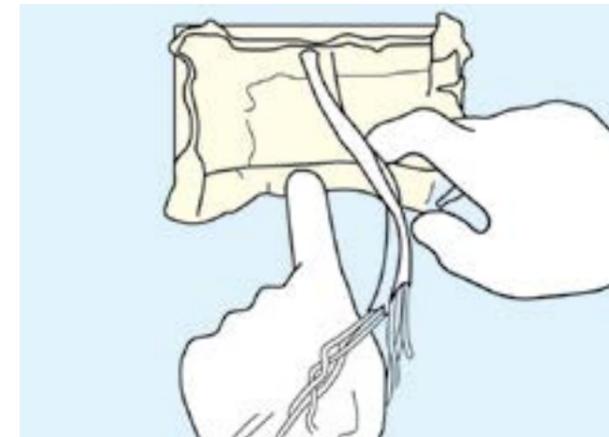


Figure 1

Specification

Intumescent Putty Pads are available in two sizes to suit single and double gang electrical boxes.

Fire resistance

Tested to BS476 Part 20:1987/EN1366-3, Acoustic Intumescent Putty Pads offer up to 2 hour fire resistance.

Acoustic benefits

Measurement of airborne sound insulation was made in accordance with BS EN ISO 140-3:1995. Single number quantities were calculated in accordance with BS EN ISO 717-1:1997.

Intumescent Putty Pads (Internal Socket) offer a weighted sound reduction index of up to 67db. Tests were conducted by BRE Acoustics who hold UKAS accreditation for the measurement of sound insulation in the field and the laboratory. The measurements were conducted using the procedures accredited by UKAS.

Installation should be in full accordance with manufacturer's instructions.

Putty Pad dimensions

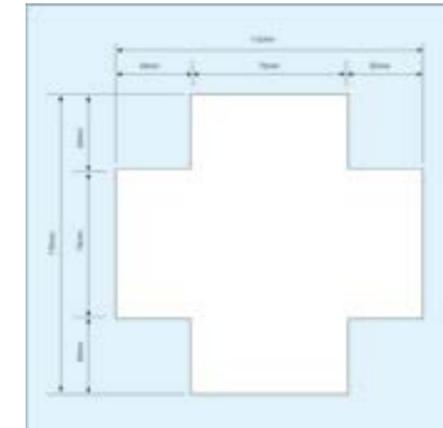


Figure 2 Single Electrical Socket Cross Shape

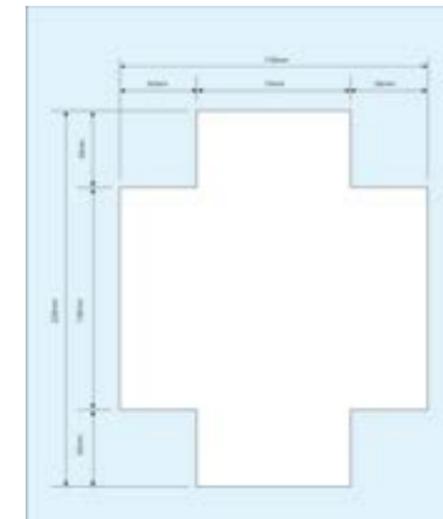


Figure 3 Double Electrical Socket Cross Shape

Ordering

When ordering this product you need the following information:

- Size of Putty Pad required
- Quantity required

Linear & Trapezoidal Firestop Systems

Firestopping solutions at compartment junctions

As part of the comprehensive FIREPRO® range of fire protection products, Linear and Trapezoidal Firestop Systems have been developed to provide up to 4 hours firestopping at the junctions of compartment walls and floors. The systems have been tested in accordance with BS 476 Part 20: 1987.

Solutions illustrated are for masonry walls with a density of at least 400 kg/m³ and include both fire integrity and insulation criteria for concrete decks, composite decks and simple profiled sheeting.



General benefits:

- Up to 4 hours fire stopping to meet integrity and insulation criteria
- Suitable for all walls from 400 kg/m³
- Available from 48 hours of order
- Available in small quantities
- Totally enclosed option

Description, performance & properties

Description

Composition and manufacture

ROCKWOOL is manufactured primarily from a melt of volcanic rock. The molten rock is spun into wool and resin impregnated.

Linear and Trapezoidal Firestop products are made from dense moisture resistant ROCKWOOL, allowing adequate compression yet retaining the necessary lateral stiffness for ease of installation.

Dimensions

All Firestop products are supplied in standard lengths of 1m.

Linear Firestop 2A

Rectangular strips, (Installed under min. 5% compression)

Thicknesses: 12.5, 20, 30, 40, 50, 60, 70, 80, 90, 100mm

Widths: 100, 150, 200, 300, 400mm

Fire resistance: Up to 4 hours.

Trapezoidal Firestop 2B

Trapezoidal strips (tight fit required)

Available for all profiled decks. Deck profile to be named at time of order, e.g. Ribdeck 60, Alphalok etc.

Dovetail Infill FireStop Strip

Supplied as narrow rectangular strips for pinched installation into nominated dovetail shaped deck profiles; e.g. Holorib, Quickspan, Q51 etc.

Note: Dovetail infill strips must be installed with vertical laminations.

Performance

Fire Resistance

Min. wall thickness / fire stop width	Fire resistance (Integrity and Insulation)
100mm	2 hours
150mm	3 hours
200mm	4 hours

Note: Stated performance assumes fire resistance of supporting wall is no less than the fire stop.

Chemical

ROCKWOOL stone wool has a basaltic composition in which the refractory oxide components have been enhanced for stability at high temperatures.

ROCKWOOL is chemically inert. An aqueous extract of the wool is neutral (pH7) or slightly alkaline.

Biological

ROCKWOOL Linear and Trapezoidal Firestop Systems are completely rot proof, do not offer sustenance to vermin and do not encourage the growth of fungi, moulds and bacteria.

Compatibility

ROCKWOOL products are compatible with all normal building and constructional materials with which they are likely to come into contact.

Durability

ROCKWOOL materials will perform effectively throughout the lifetime of the building with a minimum of maintenance (unless disturbed).

Environment

No CFCs, HCFCs or HFCs are used to manufacture of ROCKWOOL materials.

Design & installation

The following installation requirements must be met in order to reliably achieve the stated fire resistances.

- Linear Firestop 2A must be fitted as rectangular pieces, tightly butt jointed and compressed by at least 5% in thickness.
- Up to 3 layers may be used. Single layer firestopping will always be preferred, with multi-layer methods limited to those occasions where building tolerances demand practicality. All layers should be installed simultaneously. The height of void should not exceed the width of the firestop.
- Gaps associated with perimeter floor slab/wall firestopping should be firestopped using ROCKWOOL SP Firestop Systems.

Sealing

Small holes may be filled with ROCKWOOL Acoustic Intumescent Sealant if necessary (see data sheet for more details).

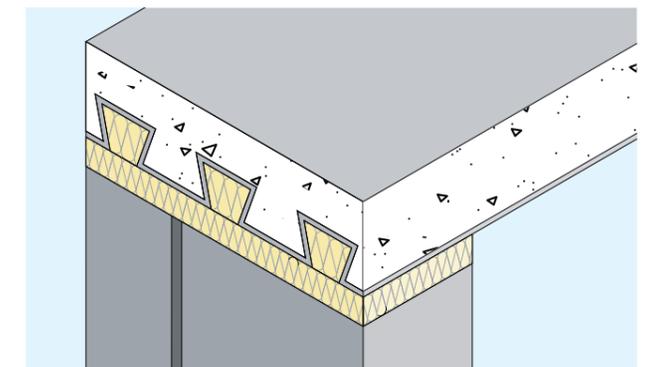


Figure 1 Pinched Dovetail Infill Strips over lengths of Firestop 2A

The product has been authorised for use in LUL surface and sub-surface premises when installed in accordance with this data sheet – please refer to the LUL Approved Product Register website www.LU-apr.uk for specific details



The following NBS Plus clauses include
'Linear & Trapezoidal Firestops': F30-670, G30-240

Applications & fire resistances

All fire ratings apply to gaps over walls constructed of dense aggregate blocks, lightweight aggregate concrete, clay bricks, or concrete blocks, which have a density of 400 kg/m³ or more.

Fire resistance includes integrity and insulation criteria to BS 476: Part 20: 1987.

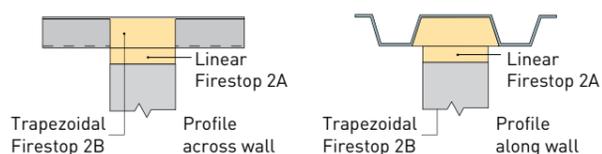


Figure 2 Profiled metal deck over blockwork wall

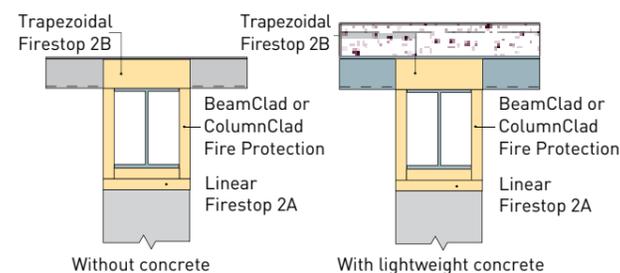


Figure 3 Profiled metal deck with or without lightweight concrete over universal beam

The fire resistance of the Firestop will be the same as that achieved by the fire protection of the beam.

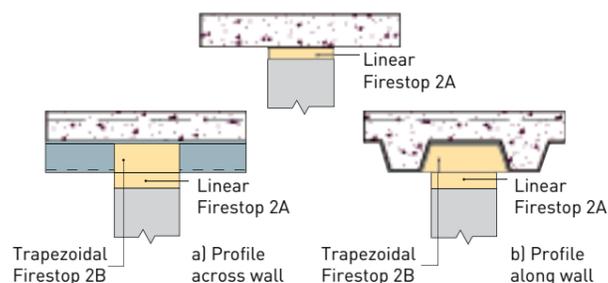


Figure 4 Profiled metal deck under lightweight concrete cover

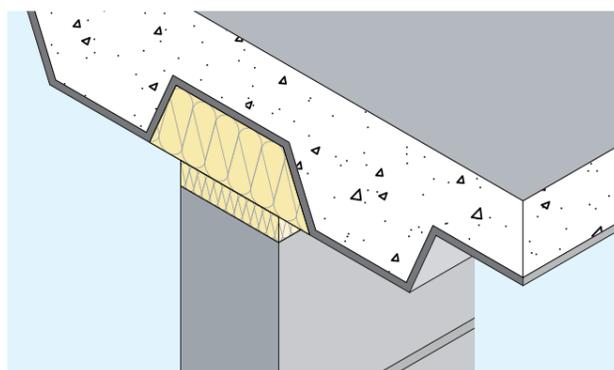


Figure 5

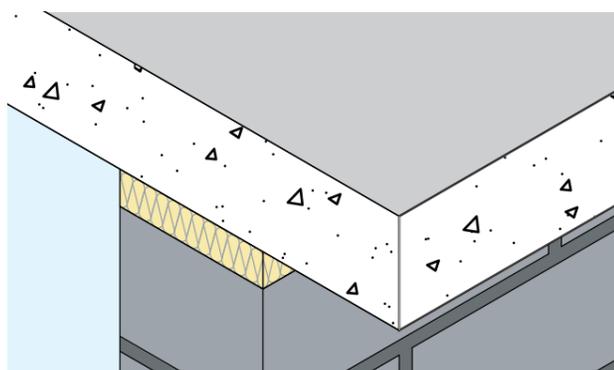
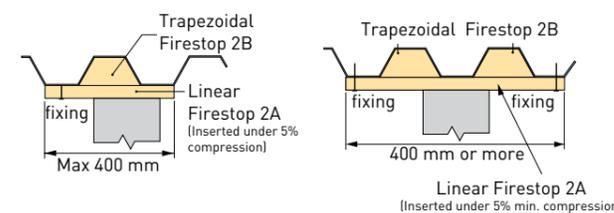


Figure 6 Concrete deck over blockwork wall



Figures 7a & 7b: Composite metal deck with profiles parallel but offset from wall line

Fig 7a: The 'overhang' of the Linear FireStop 2A should be supported with steel self-tapping screws or 'hammer fix' anchors into deck / concrete soffit at 350mm maximum centres (minimum of 3 fixings per 1m length of fire stop).

Fig 7b: Where the Linear FireStop 2A is required to be fixed to the deck at distances in excess of 400mm, turn the 1m length of fire stop 90° and cut to required size to suit profile spacing. In such cases, secure each length of fire stop to the soffit using at least 2 fixings at both ends.

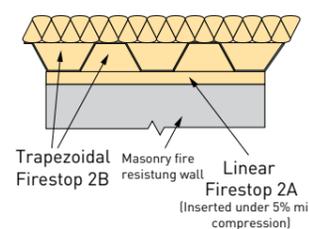


Figure 8: ROCKWOOL insulated flat roof deck with profiles perpendicular to wall line

When fire stopping between the head of a fire resistant wall and the underside of a roof deck insulated with ROCKWOOL HARDROCK DD flat roof insulation, both upper and lower deck profiles may need to be filled with Trapezoidal FireStop 2B products. In such cases, when placing an order it should be noted that the sizes of the two profiles may differ.

In cases where combustible thermal insulation passes over the head of a fire resisting wall, guidance on maintaining fire compartmentation is provided in Approved Document B (Volume 2, Section B3) of The England and Wales Building Regulations 2000 (2006 edition). To reduce the risk of fire spreading to an adjacent compartment in such cases, it may be necessary to extend the wall through the roof line or introduce a 'protected zone' 1500mm either side of the fire resisting wall.

Typical specification

All firestopping over compartment walls and similar construction gaps to be made using ROCKWOOL Linear and Trapezoidal Firestop Systems, supplied by ROCKWOOL Ltd, Pencoed, Bridgend CF35 6NY, to meet the requirements of BS 476: Part 20: 1987 for the evaluation criteria of stability, integrity and insulation performance in accordance with Building Research Establishment Assessment No. CC 82633.

All joints of Linear and Trapezoidal Firestopping materials to be closely butted and the installation to be carried out in accordance with the manufacturer's recommendations.

Work on site

Handling and storage

ROCKWOOL Linear and Trapezoidal Firestop materials are light and easy to handle and should be cut using a sharp bladed knife. Store in dry conditions.

Maintenance

Once installed, Linear and Trapezoidal Firestop materials will need no maintenance unless disturbed.

Shrink wrapping

For areas such as clean rooms, Firestop systems are available totally enclosed in shrink wrap.

Ordering

For linear voids between head of wall and deck soffit:-
Product: ROCKWOOL Linear FireStop 2A

Please state:
Thickness (mm) - allowing for 5% req. compression
Width (mm)
Total length (m)

For trapezoidal voids in deck profile:-
Product name: ROCKWOOL Trapezoidal FireStop 2B
Please state:
■ Proprietary name of profiled deck (if known)
■ Whether fitting into upper or lower deck profiles
■ Dimensions of deck void (mm) - Essential if proprietary deck name is unknown
■ Total length required (m)

For 'Dovetail' voids in deck:-
Product name: ROCKWOOL Dovetail Infill FireStop Strip
Please state:
■ Proprietary name of profiled deck (if known)
■ Dimensions of deck void (mm) - Essential if proprietary deck name is unknown
■ Total length required (m)

Multi-Cable Firestop

Firestop solution for multi-cable penetrations

As part of the comprehensive FIREPRO® range of fire protection products, ROCKWOOL Multi-Cable Firestop has been developed to effectively seal cable bunches in electrical trunking and cable trays, where they pass through fire rated walls and floors. Tested to BS476 Part 20, Multi-Cable Firestop will provide up to 4 hours fire protection.

- General benefits:**
- Simple to install
 - Cables can be easily added or removed
 - No de-rating of cables required
 - Maintenance free
 - Dry system

Description
Multi-Cable Firestop is a compressible fire retardant foam which is laminated both sides with a graphite based intumescent polymer. Multi-Cable Firestop is supplied in sections measuring 60mm wide x 30mm thick x 1000mm long.

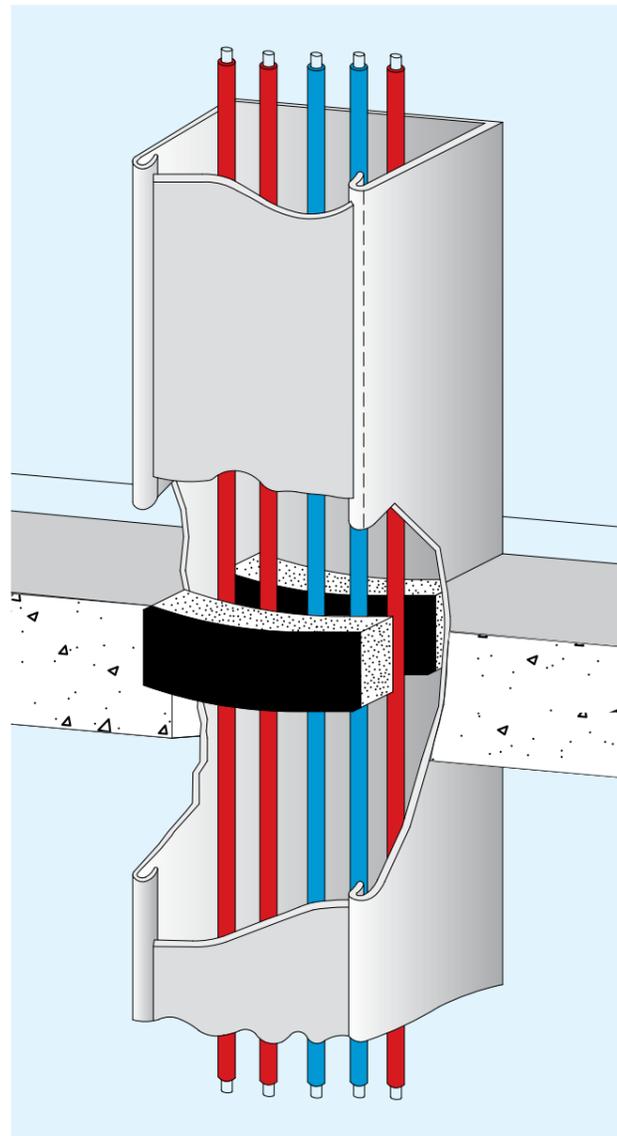


Figure 1 Multi-Cable Firestop filling electrical trunking and cable trays where they pass through compartment floors. ROCKWOOL Firestop Compound making good service riser floor.

Performance & properties

Installation instructions

The product is cut to length to suit the width of the cable tray or electrical trunking to be firestopped. For example, with 100mm x 50mm electrical trunking the product would be cut into sections of 100mm long.

Multi-Cable Firestop is then laid on top of the cable runs orientating the product so that the 60mm width lies across the thickness of the wall or the depth of the floor slab.

Multi-Cable Firestop is then layered to fill the complete void depth of the electric trunking or the cable tray. Ensure electrical trunking lids are fixed back after installing the product.

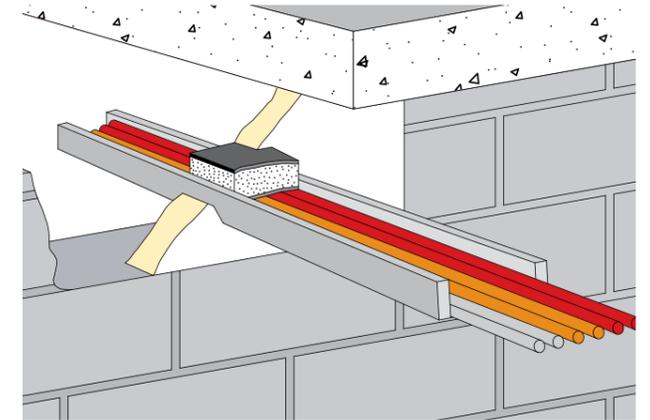


Figure 2

Table 1 - Fire rating

Services and support	Surrounding penetration seal	Width of fire stop for each Coated Batt (mm)	Maximum void height (mm) (no. of fire stop plies)	Fire resistance integrity (mins)		
				Seal in a masonry wall	Seal in a plasterboard wall	Seal in a concrete floor
Cables (see note 1) secured to appropriately supported perforated steel cable trays/ladders (max. width 150mm)	Single 60mm ROCKWOOL Ablative Coated Batt	60	25 (1)	180		180
	ROCKWOOL Ablative Coated Batt		55 (2)	120		120
	ROCKWOOL Ablative Coated Batt		80 (3)	120		n/a
Cables (see note 1) within PVC trunking (maximum 100 x 100mm)	Double 60mm ROCKWOOL Ablative Coated Batt	60	25 (1)	240	60	240
	ROCKWOOL Ablative Coated Batt		55 (2)	240	60	240
	ROCKWOOL Ablative Coated Batt with no air gap		80 (3)	240	60	n/a
	Double 60mm ROCKWOOL Ablative Coated Batt with no air gap	60	100 (1)	240	60	-

1. Suitable for copper cored / PVC sheathed and insulated power cables up to 12mm diameter, secured on perforated trays/ladders or within PVC trunking passing through both walls and floors
2. Cables and trays must be supported within 500mm on both sides of the seal
3. Maximum of 3 layers of cables, each layer sealed with the Multi-Cable Fire stop
4. The aperture width cut from the Ablative Coated Batt should match the width of the cable tray (maximum 150mm) or PVC trunking (maximum 100mm)
5. There must be a minimum of 100mm width of Ablative Coated Batt between the penetration and the edge of the main aperture within the supporting construction.

- Maximum depth filled must not exceed 60mm
- For larger voids see Intumescent Pillows, Firestop Compound or Ablative Coated Batt.

Specification

Install ROCKWOOL Multi-Cable Firestop to provide up to 4 hours fire protection in all electrical trunking and cable trays (where they pass through fire rated walls and floors). Installation to be fully in accordance with manufacturer's instructions.

SP Firestop Systems

The purpose-made solution for cavity fire stopping

As part of the comprehensive FIREPRO® range of fire protection products, ROCKWOOL SP Firestop Slab is a product specifically designed to form cavity fire stops within buildings.

It may be installed horizontally or vertically and is suitable for cavity widths between 50mm and 400mm, in both masonry and curtain wall constructions.

NB: For cavity widths of 250mm or more, joints between adjacent lengths of firestops should be sealed on the top surface with aluminium foil tape. The product has been designed as a one-piece system and allows easy cutting and installation. It provides a unique lateral compression to facilitate tightness of fit.

The product is available in two versions:
SP 60 Slab, provides 1 hour fire resistance.
SP 120 Slab, provides 2 hours fire resistance.



SP Firestop Slabs at floor / external wall junction
International Patent App. PCT/GB98/01733

General benefits:

- Easy to cut and install
- Ensures site tolerances are accommodated
- Independently tested to provide 2 hours of fire resistance
- Resists the passage of smoke – aluminium foil faced on both sides
- Suitable for cavity widths up to 400mm
- Easy site storage and handling
- Quality assured to BS EN ISO 9001

Description, performance & properties

Description

Shape & dimensions

ROCKWOOL SP 60 Firestop Slab: 1000 x 650 x 75mm thick
ROCKWOOL SP 120 Firestop Slab: 1000 x 650 x 90mm thick
The products are faced on both sides with reinforced aluminium foil to give Class 0 rating and excellent smoke resistance.

Both slabs are designed to be cut on-site, to produce cavity fire stops of 1000mm length and in widths to suit individual cavity sizes, as shown in Figure 1.

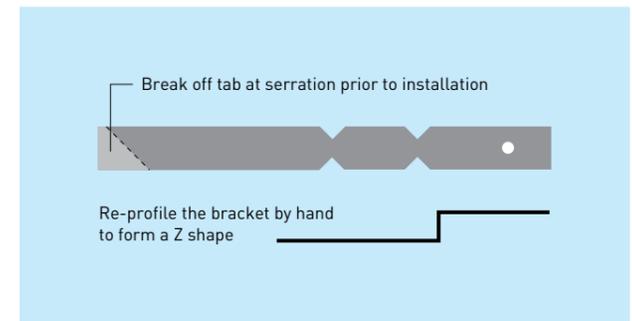


Figure 2 SP Firestop Fixing Bracket

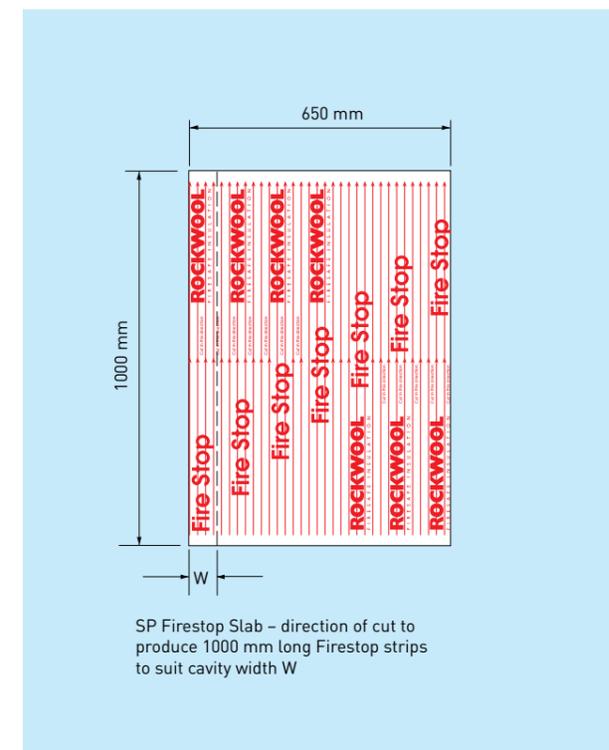


Figure 1 Cutting methodology for ROCKWOOL SP Firestop Slab

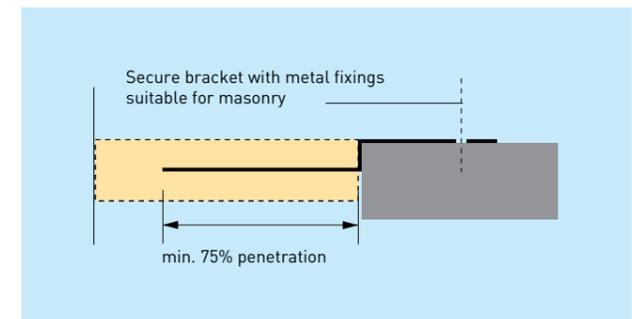


Figure 3 Sectional view of Firestop Slab and Bracket

Accessories

ROCKWOOL SP Fixing Brackets* are required for the installation (figure 2). They are supplied in two standard types, namely SP/S Fixing Bracket designed for cavities up to, and including 100mm wide and SP/L Fixing Bracket for cavities over 100mm and up to 400mm wide.

Brackets are supplied in cardboard boxes, flat packed, and are designed to be easily re-profiled by hand on site. The SP Fixing Brackets should be cut on site as necessary to allow at least 75% penetration of the Firestop.

*Please note: In order to comply with the fire test certification, only ROCKWOOL SP Fixing Brackets should be used to install the product.

Standards & approvals

ROCKWOOL SP 60 and SP 120 Firestop Slabs have been tested and assessed in accordance with BS 476: Part 20: 1987 and have achieved 60 minutes and 120 minutes respectively for both integrity and insulation, as detailed in LPC assessment CC89697.

ROCKWOOL SP 60 and SP 120 Firestop Slabs comply with the provisions of Approved Document B3 of the 1991 building Regulations (2002 edition).

SP Firestop Systems are third party approved by the Loss Prevention Council Certification board (LPCB) for performance and quality and are listed in the **Red Book** - certificate no. 022b. Certificates can be accessed online at www.rockwool.co.uk or www.redbooklive.com

The product has been authorised for use in LUL surface and sub-surface premises when installed in accordance with this data sheet – please refer to the LUL Approved Product Register website www.LU-apr.uk for specific details

Performance

Fire

The base mineral wool of ROCKWOOL SP 60 and SP 120 Firestop Slabs is inherently fire safe and achieves Euro Class A1. ROCKWOOL products will withstand temperatures of up to 1000°C without melting.

Acoustic

ROCKWOOL products have excellent acoustic properties, and can significantly reduce the levels of airborne sound transmission through wall and floor cavities.

Resistance to moisture

ROCKWOOL SP 60 and SP 120 Firestop Slabs are water repellent and unaffected by the freeze/thaw cycle.

Applications

Fire resistance between the edge of a concrete floor slab and curtain walling which is stable in fire.

ROCKWOOL SP 60 and SP 120 Firestop Slabs provide one and two hours fire resistance respectively in voids up to 400mm wide.

Please note: Curtain walling systems should be adequately restrained to the floor.

Figure 4 illustrates a typical arrangement, using SP Fixing Brackets at 500mm centres.

Masonry wall cavities

ROCKWOOL SP 60 and SP 120 Firestop Slabs provide one and two hours fire resistance respectively in masonry wall cavities up to 400mm wide. They can be used both horizontally and vertically.

Figure 5 illustrates typical applications, with the product fitted tightly between masonry leaves. When it is not possible to build the brackets into a leaf, the fixings can be re-profiled as necessary and mechanically fixed to the face of the masonry.

The application of ROCKWOOL SP Firestop Slabs is the responsibility of the site operator. Fixing sequence instructions are shown clearly on each pack as well as cutting guide lines on the surface of each slab.

External cladding

Where used in conjunction with profiled metal cladding, cut the ROCKWOOL SP Firestop Slab to suit the profile.

Suitable for cavity widths up to 400mm*

Sitework

General

ROCKWOOL SP Firestop Slabs are designed for cutting on site with a sharp knife or saw and a straight edge. The cavity to be firestopped should be measured and the ROCKWOOL SP Firestop Slab cut to suit this dimension, using one piece only per gap width – see Figures 4 and 5.

For easy compression fitting and to accommodate the fixing pattern, cutting should be along the 1000mm width as indicated in figure 1.

The SP Fixing Brackets are then re-profiled by hand and cut as necessary to allow at least 75% penetration of the fire stop material.

They should be placed as shown in the diagrams, or fixed by other suitable mechanical means.

General

The fixing sequence is as follows:

- Cut the ROCKWOOL SP Firestop Slab allowing an additional 3–5mm for compression when fitted.
- The ROCKWOOL SP 60 or SP 120 Firestop Slab is impaled onto the SP Fixing Brackets at the rate of 2 per 1000mm length, fixed at 500mm ±10mm centres, as shown in Figure D. The SP Fixing Brackets should be placed 250mm ±10mm in from each end of the ROCKWOOL SP Firestop Slab.
- The product should then be fitted securely into the void, and tightly butted to the adjacent ROCKWOOL SP Firestop Slab.
- Once the ROCKWOOL SP Firestop Slab has been accurately fitted, the SP Fixing Brackets must then be mechanically fixed to the edge of the floor slab with metal fixings suitable for masonry.

Masonry wall cavities

The fixing sequence is as follows:

- Cut the ROCKWOOL SP Firestop Slab to suit the cavity size, ensuring a tight fit.
- After suitably re-profiling the SP Fixing Brackets, they can be built into the bed joints of the internal leaf at 500mm ±10mm centres. Alternatively, the SP Fixing Brackets may be re-profiled by hand into an 'L' shape and mechanically fixed to the face of the inner leaf.
- The ROCKWOOL SP Firestop Slab is then impaled onto the SP Fixing Bracket after the next lift of inner leaf masonry.
- Work on both leaves can then be continued and must include either a vertical damp proof course or a cavity tray, installed over the ROCKWOOL SP Firestop Slab as shown in Figure 5.

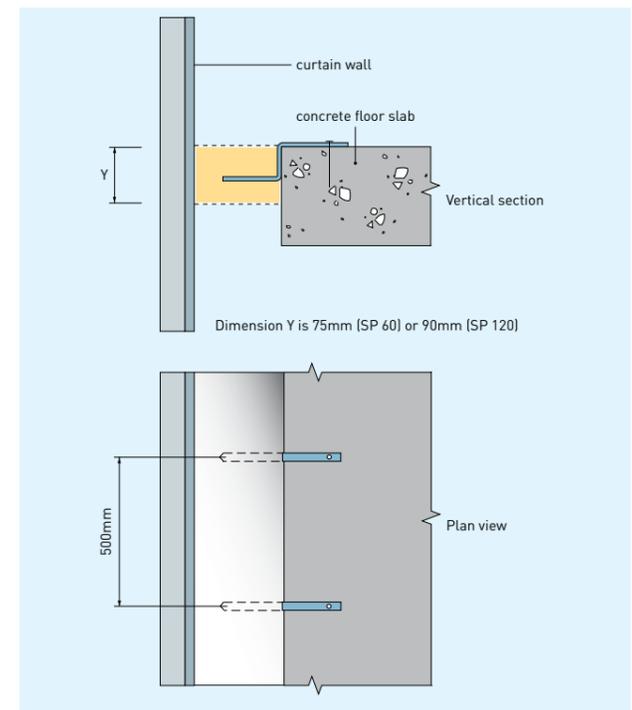


Figure 4 ROCKWOOL SP Firestop Slab between floor and curtain wall

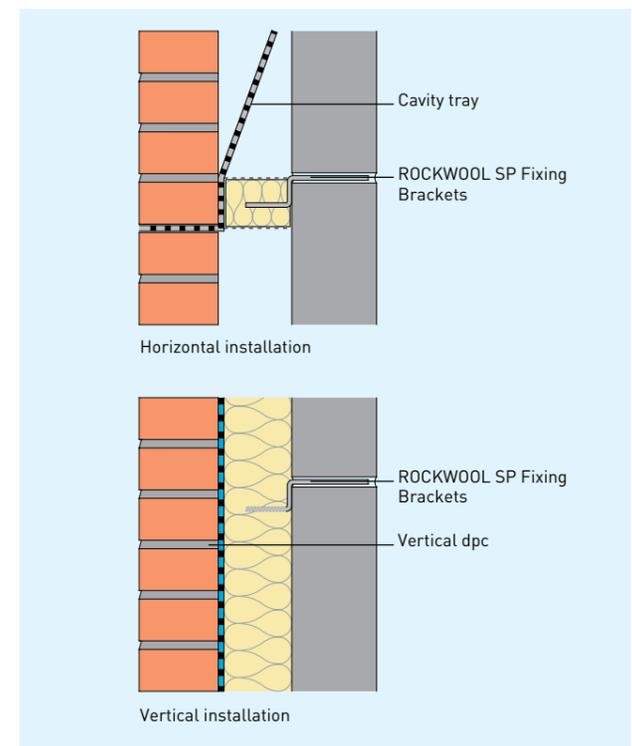


Figure 5 ROCKWOOL SP Firestop Slab between masonry leaves

*Please note: For cavity widths of 250mm or more, joints between adjacent lengths of firestops should be sealed on the top surface with aluminium foil tape.

Site use

Storage and handling

ROCKWOOL SP Firestop Slabs are light and easy to handle. They are supplied in compression wrapped polyethylene, which will provide short term protection. For long term storage they must be protected by a waterproof covering.

Estimating quantities

The chart below indicates the usage of ROCKWOOL SP Firestop Slabs and fixings, assuming accurate site cutting practices.

Table 1

Cavity width (mm)	Linear metres per slab (m)	Linear metres per pack (m ²)	Number of fixings required per pack
50	12	48	96
55	11	44	88
60	10	40	80
65	9	36	72
70-75	8	32	64
80-85	7	28	56
90-105	6	24	48
110-125	5	20	40
130-155	4	16	32
160-210	3	12	24
215-320	2	8	16
325-400	1	4	8

Typical specifications

Curtain Walling

The cavity fire stop between the edge of the concrete floor slab and curtain walling is to be ROCKWOOL SP 60 or SP 120 Firestop Slab as manufactured by ROCKWOOL Limited, Pencoed, Bridgend CF35 6NY to provide 1 hour or 2 hour fire resistance for both integrity and insulation criteria (LPC assessment CC89697). Fixings are ROCKWOOL SP/S or SP/L Fixing Brackets, fixed in accordance with the details given in the this data sheet.

Slabs should be cut to suit the width of the as-built cavity, allowing an additional 3–5mm for compression, and securely fitted into the void. All joints are to be tightly butted.

Masonry wall cavity

The cavity barrier is ROCKWOOL SP 60 or SP 120 Firestop Slab to provide 1 hour or 2 hour fire resistance for both integrity and insulation criteria (LPC assessment CC89697).

Fixings are ROCKWOOL SP/S or SP/L Fixing Brackets, fixed in accordance with the details given in this data sheet. A damp proof membrane or cavity tray is to be installed during the construction of the outer leaf. Slabs should be cut to suit the width of the as-built cavity and securely fitted. All joints are to be tightly butted.

Curtain walling and external cladding systems

ROCKWOOL SP FireStop Slabs will provide fire stopping in conjunction with a stable, external façade system. During a fire, if the behaviour of the facade panel or its fixing is such that a gap develops between the ROCKWOOL SP FireStop Slab and the panel allowing fire to pass through, ROCKWOOL Limited cannot accept liability for failure. Specifiers should ensure that the choice of the curtain walling components will not diminish firestopping requirements.

Curtain walling systems are manufactured from a wide range of materials which react differently in fire. Large scale independent UK investigations have shown that some glazed or aluminium external cladding systems are liable to integrity failure under attack, within short periods of time - 5 and 20 minutes respectively.

Steel faced composite panels filled with combustible insulation can be unstable under fire attack. Curtain walling systems incorporating fire-sensitive panels may suffer severe movement and buckling, resulting in gaps forming between the panel and the ROCKWOOL SP FireStop Slab.

Ordering

There are 4 slabs per standard pack. Please quote ROCKWOOL SP 60 or SP 120 Firestop Slab and the number of packs and brackets required.

ROCKWOOL Ablative Coating

As part of the comprehensive FIREPRO® range of fire protection products, ROCKWOOL Ablative Coating is used to manufacture ROCKWOOL Ablative Coated Batts. These are manufactured by spraying specially produced, high density ROCKWOOL insulation with an additional fire protection provided by ROCKWOOL ablative coating. This is a fully automated process to ensure an even thickness of coating.

ROCKWOOL Ablative Coating is used to further improve the fire resistant properties of ROCKWOOL stone wool slabs. The ablative nature of the coating resists flame spread and forms an insulated char which protects the stone wool slab.

The Ablative Coating is available separately to enable site repairs to Ablative Coated batts, that may have been damaged during installation.

ROCKWOOL Ablative Coated Batt is intended to act as an airseal barrier to reinstate the fire resistance and acoustic performances of concrete floors, masonry walls and dry wall systems when voids have been created for the passage of services. This includes pipes made of plain or stainless steel, cast iron, copper, polypropylene (PP), high density polythene (HDPE), PVC and ABS along with all sheathed cables up to 80mm and supported cable bundles up to 100mm.

Description

ROCKWOOL Ablative Coating is a water based coating which may be brush or spray applied to stone wool slabs. The coating is available in white and in other colours subject to minimum order quantities. The coating may be over painted if desired*. Ablative Coating is available in 5L tubs.

Table 1 - Technical data

Form	Ready to use viscous paste
Cure System	Water loss
Colour	White
Specific Gravity	1.3 - 1.4
pH	8.5 - 9.2
Flashpoint	None
Solids Content (%w/w)	>58%
Application Temp Range	+10°C to +30°C
Vice Temp Range	-15°C to +75°C
Shelf Life	Up to 12 months when stored in unopened containers under cool dry conditions. AVOID FROST and extremes of temperature.
Durability	Up to 15 years when used as recommended.



General benefits:

- Designed to be spray or brush applied onto ROCKWOOL Ablative Coated Batts
- Dries to give a sound, flexible white surface finish
- During installation of Ablative Coated Batts, the cured coating reduces de-lamination and increases surface stability for adhesive and fixing sealant application

Fire performance

ROCKWOOL Ablative Coated Batt has been tested to the dedicated fire resistance standard for penetration seals- prEN 1366-3. The independently prepared assessment, detailing the full scope of fire performance, is available from the ROCKWOOL Technical Solutions Team. Ablative Coated Batt fire resistance tests were conducted using ROCKWOOL Acoustic Intumescent Sealant and/or ROCKWOOL FIREPRO® Glue.

Limitations

ROCKWOOL Ablative Coating and stone wool slabs may only be used to fire protect service penetrations if supported by independent fire test evidence due to the variants in the density and thicknesses of stone wool slabs available.

Technical advice

For specific integrity and insulation ratings for the various services, please consult ROCKWOOL Standard Details, available via www.rockwool.co.uk

*Please refer to ROCKWOOL Technical Solutions for guidance on suitable paints.

TCB & PWCB Cavity Barriers

Fire Protection for timber frame & masonry cavity walls

Preventing fire spreading through concealed voids is essential for improving safety and property protection. One of the best ways to achieve this is to correctly specify and install cavity barriers.

ROCKWOOL Cavity Barriers have been specifically developed to exceed minimum building regulation requirements for fire resistance in concealed wall cavities. They have been tested and assessed for up to 60 minutes fire resistance (Integrity and Insulation).

Advantages

- Easy to install
- Durable products withstand on-site handling
- Once installed, performance is not affected by movement in the building, shrinkage or thermal change
- Can be used vertically or horizontally

Standards and approvals

ROCKWOOL TCB Cavity Barriers are also approved by the Loss Prevention Certification Board (LPCB) for performance and quality. 1991 (2000 edition.)

Fire Performance

ROCKWOOL Cavity Barriers are manufactured from non-combustible stone wool, which has a Euroclass A1 fire rating when classified in accordance with BS EN 13501-1 and BSI Quality Assurance Standard BS EN ISO 9001: 2000.

The Cavity Barriers have been tested and assessed for up to 60 minutes fire resistance (integrity and insulation) in accordance with BS 476: Part 20.

Description

PWCB Cavity Barrier also provides effective perimeter edge sealing that helps to minimise air leakage and heat loss between the external cavity and separating party wall.



Figure 1 TCB Cavity Barrier installed at separating wall position



Figure 2 PWCB Cavity Barriers installed at separating wall position

Performance

ROCKWOOL PWCB cavity barrier also achieves the requirements for fire safety, acoustic flanking and thermal bypass in one single product.

ROCKWOOL TCB & PWCB cavity barriers are manufactured from non-combustible stone wool, encapsulated within a resilient polythene sleeve which eliminates the need for weather protection during installation. The sleeves are also colour-coded to differentiate between the two products, TCB's being red and PWCB's white.

Fire

The use of ROCKWOOL Cavity Barriers satisfies the requirements of:

- Approved Document B (Domestic) B3 – Section 6: Concealed spaces (Cavities)
- Approved Document B (Non-domestic) B3 – Section 9: Concealed spaces (Cavities)
- Scottish Technical Handbook Section 2 – Fire Section 2.4: Cavities
- NI Technical Booklet E – Section 3: Provision of cavity barriers.

ROCKWOOL TCB Cavity Barriers are approved by the Loss Prevention Certification Board (LPCB) for performance & quality and are listed in the **Red Book** Certificate No 022b.

Acoustics

ROCKWOOL Cavity Barriers comply with the generic description for cavity closers to prevent flanking noise transmission, along concealed cavities in both external and separating walls.

Thermal

ROCKWOOL PWCB Cavity Barrier will assist in providing an effective perimeter edge seal between the external cavity wall and separating party wall (party wall thermal bypass).

Fixing and jointing

All ROCKWOOL Cavity barriers are 1200mm long and are designed to be compression fitted within the cavity (min 10mm-15mm compression). The barriers do not rely on the polythene flanges to hold them in place in the event of a fire. It is essential that the correct cavity barrier size is specified to suit the as-built cavity width. TCB & PWCB cavity barriers are available in a range of thicknesses to suit cavity widths (refer to the tables at the end of the data sheet for more information).

All joints between adjacent cavity barriers and intersections should be closely butted to ensure that a continuous fire seal is maintained.

Applications

ROCKWOOL Cavity barriers can be used in both vertical and horizontal applications.

In vertical applications, both flanges of the Cavity Barrier can be fixed to the inner leaf at 150mm centres, using staples or clout nails prior to compression fitting by outer cavity wall.

In horizontal applications, only the top flange of the polythene sleeve should be fixed.

External walls masonry constructions: (Full Fill & Partial Fill cavity insulation)

Fully filled cavities in external walls

Where the external wall cavity is fully filled external cavity barriers are generally not required in the outer wall.

Partially filled cavities in external walls

Where partial fill insulation is used in the external wall, the insulation should be cut back to permit the cavity barrier to be compression fitted between the inner and outer leaves. The head of the cavity wall should also be closed at eaves level with the ROCKWOOL TCB cavity barrier.

PWCB Cavity Barrier

All ROCKWOOL PWCBs are 200mm wide, and are specifically designed for use at party wall/external wall cavity junctions. PWCBs also achieve the requirements for fire safety, acoustic flanking and thermal bypass in one single product.

If installed correctly, ROCKWOOL PWCB will help minimise the thermal party wall bypass effect, by restricting air leakage and heat loss between the party wall cavity and the external cavity.

Thermal Bypass Effect

Approved documents L1A & L2 A of England and Wales's Building Regulations and Section 6 of Scotland's Building standards (domestic), have recognised that considerable heat loss can occur where party wall cavities interface with external cavity walls. A key feature of a SAP calculation is that Building Regulations now assign a U-value of 0.5 W/m²K to be taken for a separating party wall cavity unless specific action is taken to improve its performance.

Ways to limit heat loss:

- **Perimeter edge sealing only:** Thermal regulations allow a U-value of 0.20W/m²K to be claimed when effective perimeter edge sealing is used around all exposed edges of the party wall
- **Perimeter edge sealing plus fully filling the party wall cavity:** A U-value of zero can be claimed if the party wall cavity is fully filled with an appropriate mineral wool insulation, and effective perimeter edge sealing is provided around all exposed edges.

Cavity type in party wall	U-value claim for SAP
Unfilled cavity with no effective edge sealing	0.50 W/m ² K
Unfilled cavity with effective edge sealing only	0.20 W/m ² K
Fully filled cavity and effective edge sealing	0.00 W/m ² K

Advantages of ROCKWOOL PWCB

- Provides perimeter edge sealing minimising air leakage and heat loss between the external cavity wall and the party cavity wall.
- **Non Combustible:** Meets building regulation requirements for a cavity barrier
- Tested and assessed to BS 476: Part 20 for use in all concealed cavities within masonry & timber framed constructions
- Satisfies three regulation requirements with one single product
- PWCB can be used in both horizontal and vertical applications
- **Thermal: Party wall thermal bypass:** PWCB meets the requirements for an effective party wall perimeter edge seal, by restricting air flow around the exposed edges of party wall cavities
- **Fire: Acts as an effective cavity barrier:** PWCB is non-combustible and exceeds minimum fire resistance requirements for cavity barriers as set out within the Building Regulations
- **Acoustic:** ROCKWOOL PWCB provides an excellent acoustic absorber by reducing flanking transmission between adjoining properties, (as required by Approved Document E and Robust details).

Sizes, fire performance and quantities**Table 1 - PWCB sizes and fire performance**

Cavity width (mm)	PWCB size (mm)	Fire resistance per construction Masonry to Timber Masonry to Masonry
50-55	200x65	60min integrity 60min insulation
75-80	200x90	60min integrity 60min insulation
90-100	200x110	60min integrity 60min insulation
101-110	200x120	60min integrity 60min insulation
111-120	200x130	60min integrity 60min insulation
121-130	200x140	60min integrity 60min insulation
131-140	200x150	60min integrity 60min insulation
141-150	200x160	60min integrity 60min insulation

Table 2 - PWCB sizes and quantities

PWCB size (mm)	Pieces per bag	L/metres per bag	Bags per box	L/metres per box
200x65	18	21.6	5	108
200x90	12	14.4	5	72
200x110	10	12.0	5	60
200x120	9	10.8	5	54
200x130	8	9.6	5	48
200x140	7	8.4	5	42
200x150	6	7.2	5	36
200x160	6	7.2	5	36

Table 3 - TCB sizes and fire performance

Cavity width (mm)	TCB size (mm)	Fire resistance per construction Timber to Timber Masonry to masonry Masonry to timber
50-55	65x65	30min integrity 30min insulation 60min integrity 30min insulation
56-65	75x75	60min integrity 30min insulation 60min integrity 30min insulation
75-80	90x90	60min integrity 30min insulation 60min integrity 30min insulation
90-100	110x110	60min integrity 60min insulation 60min integrity 60min insulation
101-110	120x120	60min integrity 60min insulation 60min integrity 60min insulation
111-120	130x130	60min integrity 60min insulation 60min integrity 60min insulation
121-130	140x140	60min integrity 60min insulation 60min integrity 60min insulation
131-140	150x150	60min integrity 60min insulation 60min integrity 60min insulation
141-150	160x160	60min integrity 60min insulation 60min integrity 60min insulation

Table 4 - TCB sizes and quantities

PWCB size (mm)	Pieces per bag	L/metres per bag	Bags per box	L/metres per box
65x65	45	54	5	270
75x75	35	42	5	210
90x90	25	30	5	150
110x110	18	21.6	5	108
120x120	15	18	5	90
130x130	12	14.4	5	72
140x140	9	10.8	5	54
150x150	8	9.6	5	48
160x160	7	8.4	5	42

Fire Duct Systems

Single layer fire protection for rectangular, circular & oval ducts

As part of the comprehensive ROCKWOOL FIREPRO® range of fire protection products, Fire Duct Systems (previously Conlit® Ductwork Systems) provide fire protection and thermal and acoustic insulation for circular and rectangular steel ductwork.

Three products are available in the Fire Duct Systems range:

- Fire Duct Slab – for rectangular ducts
- Fire Duct Section – for circular ducts between 60 mm and 356 mm diameter
- Fire Duct PSM – for circular ducts greater than 406 mm diameter

All three Fire Duct products are supplied faced on one side with reinforced aluminium foil.

Advantages

- Specified with confidence
- Quick and easy to install
- Fully certified to BS 476-24 (duct types A and B)
- ½, 1, 1½ and 2 hour fire protection for stability, integrity and insulation
- Choice of fixing options
- Single layer, enabling verification of system installation
- Space efficient, non-brittle, strong and safe
- Multi-role insulation: fire protection, acoustic and thermal
- Can be installed on standard DW144/42 ductwork.

Standards and quality approvals

Three performance criteria; stability, integrity and insulation, are required in equal measure for all ducts which pass through fire-rated walls or floors.

BS 9999:2008- Protection using Fire Resisting Ductwork Clause 33.4.3.4 requires that:

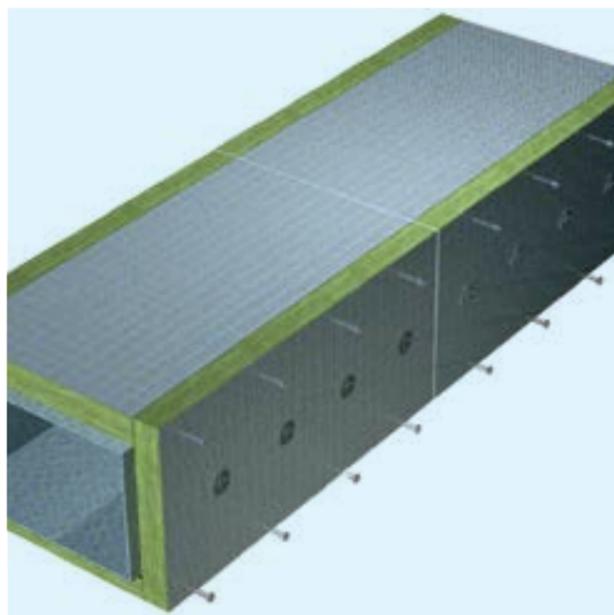
‘The fire resistance of ductwork, when tested from either side, should be not less than the fire resistance required for the elements of construction in the area through which it passes’.

BS 476 – 24, Clause 9.1 states that:

‘The fire resistance of test specimens shall be the duration in minutes, of heating in accordance with 5.1.1, until failure occurs according to one or more of the performance criteria, i.e. stability, insulation, integrity, or until the test is terminated, whichever is the shortest time’.

Duct System Test Data

The Fire Duct products have been tested and assessed by the Loss Prevention Certification Board (LPCB) of the BRE in accordance with BS 476 – 24, ‘Fire tests on building materials and structures – Methods for determination of the fire resistance of ventilation ducts’.



Fire Duct products can be used to provide fire protection to horizontal, vertical, rectangular, circular, ventilation and smoke extract steel ductwork fully in accordance with BS 476 – 24, ducts ‘Type A’ and ‘Type B’, “Fire outside duct” and “Fire inside duct”.

The ½, 1, 1½, and 2 hour periods of fire resistance stated in this manual are for stability, integrity and insulation in equal measure. For example, the 60 minutes duct constructions shown are certified for 60 minutes stability, 60 minutes integrity and 60 minutes insulation.

‘Kitchen extract’ ducts

These are subject to separate BS 476-24 requirements and are additionally covered for ½ and 1 hour protection periods.

Fire Duct Systems are third party approved by the Loss Prevention Council Certification board (LPCB) for performance and quality and are listed in the “Red Book” - certificate no. 022f. Certificates can be accessed online at www.rockwool.co.uk or www.redbooklive.com

Description

Fire Duct Slab is a high density insulation slab faced with reinforced aluminium foil.

Fire Duct Section is a high density pre-formed pipe section faced with reinforced aluminium foil.

Fire Duct PSM is a high density slab with factory machined grooves to facilitate installation around a circular duct, faced with reinforced aluminium foil.



The product has been authorised for use in LUL surface and sub-surface premises when installed in accordance with this data sheet – please refer to the LUL Approved Product Register website www.LU-apr.uk for specific details

Performance & properties

Dimensions

Fire Duct Slab

- Size: 1200 x 2000 mm
- Thicknesses: 40, 50, 70 and 90 mm*
- Facing: reinforced aluminium foil

Fire Duct Section

- Diameters: 60 to 356 mm
- Thicknesses: 30, 40 and 90 mm
- Facing: reinforced aluminium foil

Fire Duct PSM

(Made of Fire Duct Slab with factory machined grooves to suit specific duct diameters)

- Diameters: 406 mm and above
- Thicknesses: 40 and 90 mm*
- Facing: reinforced aluminium foil

Fire Duct Section for use on hangers

- Nominal OD from 17 mm
- Thicknesses: from 30 mm*
- Facing: reinforced aluminium foil

Performance

Reaction-to-Fire

Fire Duct Slab

- Surface spread of flame: Class 0 to BS 476-7
- Non-combustibility: Class A1 to BS EN 13501-1

Fire Duct Section

- Surface spread of flame: Class 0 to BS 476-7
- Sections >300mm external diameter: A1 to BS EN 13501-1 (Non-combustible); Sections <300mm external diameter: A2 to BS EN 13501-1 (Limited combustible)

Fire Duct PSM

- Surface spread of flame: Class 0 to BS 476-7
- Non-combustible – Class A1 to BS EN 13501-1

pH Neutrality

ROCKWOOL insulation is chemically compatible with all types of pipes, equipment and fittings. (Guidance is given in BS 5970 regarding the treatment of austenitic stainless steel pipework and fittings). Stone wool insulation is chemically inert. A typical aqueous extract of ROCKWOOL insulation is neutral or slightly alkaline (pH 7 TO 9.5).

Durability

ROCKWOOL has been proven in service for over 50 years in all types of typical internal applications. Fire Duct Systems will give effective protection for the lifetime of the ducts that they insulate.

Biological

ROCKWOOL is a naturally inert, rot-proof material that does not encourage or support the growth of fungi, moulds or bacteria. Stone wool does not offer sustenance to insects or vermin.

Table 1 - Fire resistance Performance summary – Fire Duct Slab, Section and PSM

Fire Resistance (hours)	Duct type	Required Fire Duct thickness (mm)	Joint options (see Fig.2 below)	Hanger protection Fire Duct Slab (mm)	Hanger protection Hanger Section (mm)	Max. duct size for mitre-joint, glued system (mm)
½	HVAC & smoke extract	40	BC	40	17 x 30	1500 x 1500
½	Kitchen extract	40	BC	40	17 x 30	1500 x 1500
1	HVAC & smoke extract	40	BC	40	17 x 40	1000 x 1000
1	Kitchen extract	90	ABC	40	17 x 40	1500 x 1500
1½	HVAC & smoke extract	70	ABC	50	17 x 50	1200 x 1200
2	HVAC & smoke extract	90	ABC	60	17 x 60	1000 x 1000

*Other thicknesses are available subject to minimum quantities

Application**System options – rectangular ducts****Welded pin fixing method**

Attachment by welded pins allows extremely rapid installation with slab joints simply butted together.

Welded pins are generally spaced at 350 mm maximum centres along the length of the duct and at 500 mm maximum centres across the width and depth of the duct. Pins are required on all four sides of vertical ducts, but may be omitted from the top face of horizontal ducts, see Figures 5 and 6.

Longitudinal corner joints fixed with pigtail screws at 250 mm maximum centres (screw length to be 2 x slab thickness). Side wall slabs must overlap top and bottom slabs (as shown). Cross joints bonded with FIREPRO® Glue.

Alternative joint methods

Instead of pigtail screws, longitudinal joints can be fixed with FIREPRO® Glue and nails, at 500 mm max. centres.

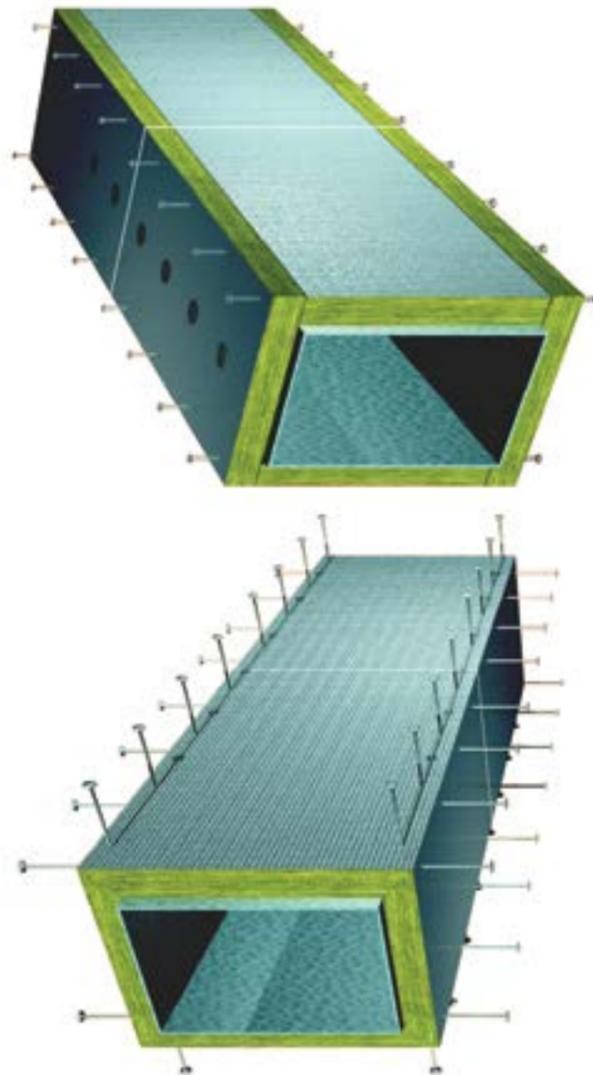
Instead of glue, cross joints can be protected with centrally positioned, 100 mm wide Fire Duct strips fixed along both edges with pigtail screws at 250 mm max. centres.

Mitre-joint fixing methods

The use of mitre-joints at slab corners allows installation in situations where welding may not be practical.

Mitre-joint method

All joints bonded with ROCKWOOL FIREPRO® Glue. Longitudinal corner joints secured with nails while ROCKWOOL FIREPRO® Glue cures.

**System options – circular ducts****Fire Duct Section**

Circular steel ducts of between 60 mm and 356 mm diameter may be protected using Fire Duct Section.

Fire Duct Section must be glued with ROCKWOOL FIREPRO® Glue at the joints and in the grooves. Steel bands or wires must be fitted circumferentially to the system at 300 mm nominal centres to hold all joints and grooves tightly closed while the glue cures.

Where required, cover strips and bearer protection pieces are to be cut from Fire Duct Section (or Fire Duct PSM) of the appropriate diameter. The foil covering is to be removed from the area of Fire Duct Section immediately beneath the cover strips prior to gluing into position and securing with steel nails or pins.

All joints are to be securely taped with 75 mm wide plain soft aluminium foil self-adhesive tape (Idenden type T303, or similar and approved) to maintain a continuous vapour barrier.

The hanger system is as described in our FIREPRO® Brochure and as shown in figure 1 and 2, with the angle bearer formed into a circular shape to suit the diameter of the duct or the Fire Duct Section (depending on whether the hanger is located inside or outside the protection).

Fire Duct Section is used to protect the drop rods as described in this brochure. General installation principles are as otherwise described in this Product Data Sheet for Fire Duct Slab.

Fire Duct PSM

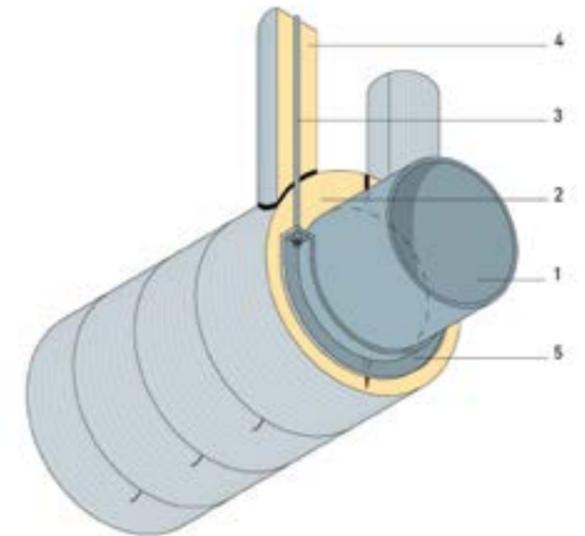
Circular steel ducts of 406 mm and greater diameter may also be protected using Fire Duct PSM.

Fire Duct PSM must be glued at the joints and in the grooves with ROCKWOOL FIREPRO® Glue. Steel bands or wires must be fitted circumferentially to the system at 300 mm nominal centres to hold all joints and grooves tightly closed while the glue cures.

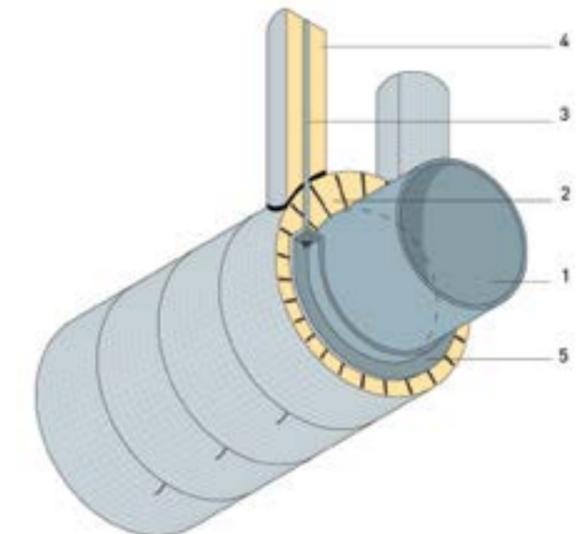
General duct, hanger and installation details are as described for Fire Duct Section.

Figure 1

Fire Duct Section applied to circular duct

**Figure 2**

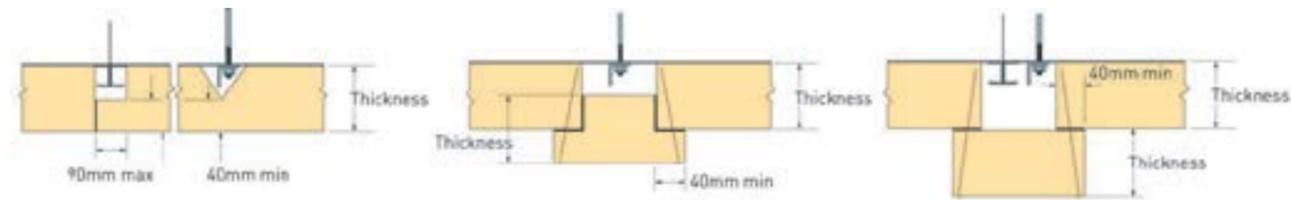
Fire Duct PSM applied to circular duct

**Notes to Figures 1 and 2**

- 1 Circular steel duct to DW/144
- 2 Fire Duct Section/Fire Duct PSM
- 3 M10 steel drop rods at 1500 mm maximum centres
- 4 Fire Duct Slab/Section – protection to hanger system
- 5 30 x 30 x 3 mm minimum steel angle bearer

Installation guidance

Figure 3



Joint Option A - Rebated protection
 Joint Option B - Protection using 'T' section
 Joint Option C - Protection using block cover strip

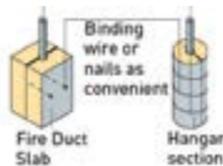
Hangers, bearers and flanges

Fire Duct products are approved to provide fire protection to steel ductwork, wholly constructed using steel fixings in accordance with current HVAC specification DW/144 and superseded specification DW/142.

Where there are constructional options within DW/144 and DW/142, these are expanded upon below. These details are primarily concerned with duct joint types and the suspension method.

DW/142 flanged cross joint types J3, J4, J5 and J6 are acceptable for use with the Fire Duct System, without modification.

Figure 4 - Isometric view of drop rod protection options



Fire Duct Slab, Fire Duct Section or Fire Duct PSM may be installed either outside or inside the hanger system.

Bearers will require additional protection only when positioned outside the Fire Duct layer.

Drop rods will normally be protected with Fire Duct Section or with Fire Duct Slab blocks (see Figure 4 above).

Alternatively, the support steelwork may be sized so that separate protection is not required. Design of this 'unprotected support' method is independent of the Fire Duct System.

Protection of hangers outside fire

Hangers outside the Fire Duct System are protected by cutting a rebate into a block of Fire Duct Slab, Fire Duct PSM or Fire Duct Section.

The rebate should be no larger than necessary to accommodate the bearer. The block should be glued and pinned in position (see Figure 3, Option A) or secured using pigtail screws.

Dimensions

Item	Duct size (mm)		
	Up to 1500 x 1500	Up to 2000 x 2000	Up to 3000 x 3000
Maximum hanger centres (mm)	1500	1500	1500
Minimum drop rod size	M10	M10	M12
Minimum angle bearer (mm)	30 x 30 x 3	50 x 50 x 5	50 x 50 x 6

* DW/144 and DW/142 do not specifically cover ducts larger than 3 m wide. Please contact ROCKWOOL for details.

Ancillaries

Welded steel pins

Welded pins are generally spaced at 350 mm maximum centres along the length of the duct and at 500 mm maximum centres across the width and depth of the duct. Pins are required on all four sides of vertical ducts, but may be omitted from the top face of horizontal ducts (see Figures 5 and 6).

Details of alternative mechanically fixed pins are available from ROCKWOOL on request.

ROCKWOOL FIREPRO® Glue

ROCKWOOL FIREPRO® Glue has a pH value of 11. It is provided in 17 kg drums and should always be stirred before use.

Where required, 1–1.5 mm of glue should be applied to each Fire Duct joint. The glue is generally applied by spatula or trowel.

Where present, any foil facing must be removed from surfaces prior to the application of ROCKWOOL FIREPRO® Glue. Take care to remove any FIREPRO® Glue from all aluminium foil surfaces with a damp cloth.

Nails (for use only with mitre-joint 'glued' systems) The nail length is to be 2 x board thickness (see Figure 7 for positions).

Pigtail screws

Pigtail screws are to be used at all corner joints where FIREPRO® Glue is not used, and to secure cross joint cover strips.

Pigtail screws are to be positioned at 250 mm maximum centres, and the screw length is to be 2 x slab thickness.

For horizontal ducts, pigtail screws must be inserted horizontally.



Optional edge protection

Light gauge metal angles may be glued in position to provide optional edge protection. The metal angles must be degreased. Small pins may be required to hold the angle to the underside of the duct.

Vapour barrier

Where a vapour barrier is required, all exposed Fire Duct edges and penetrations through the foil must be sealed using aluminium foil tape.

Figure 5

Steel pin arrangement where side panel does not exceed 1000 mm and soffit panel does not exceed 600 mm

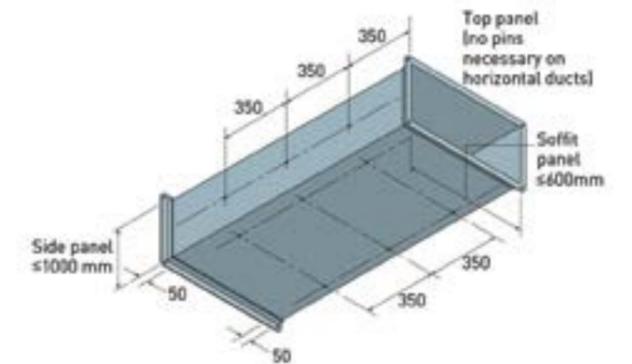


Figure 6

Steel pin arrangement where side panel is greater than 1000 mm or soffit panel is greater than 600 mm

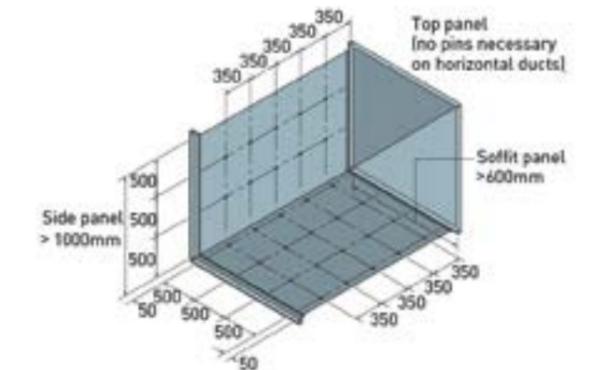
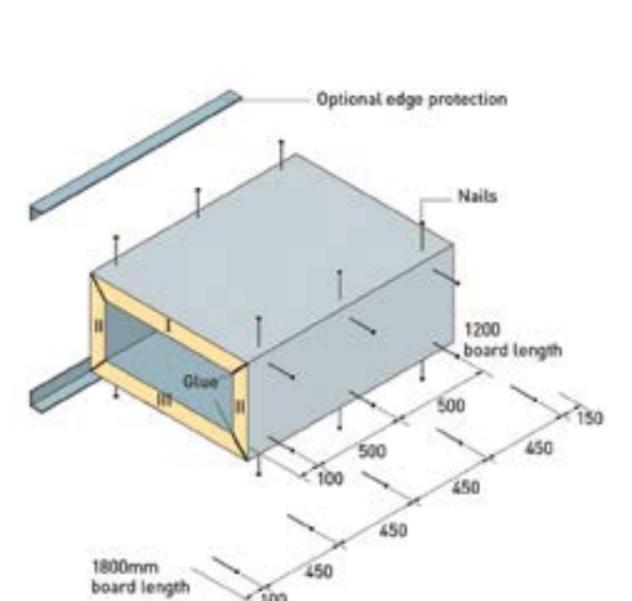


Figure 7

Rectangular ducts – 45° mitre joint system, showing installation sequence



Wall penetrations, elbows, 2 and 3-sided applications and access hatches

Wall and floor penetrations

Support to duct sides is required at all penetrations for stability purposes. This support can be provided by:

- A 30 x 30 x 2 mm mild steel angle frame fixed to the duct at the penetration mid point. Steel rivets should be used at 300 mm maximum centres (Figure 8),
- Locating the duct joint at the penetration mid point.

In all cases, low density ROCKWOOL is packed tightly into the void between the Fire Duct product and the wall opening.

120 mm wide blocks of Fire Duct are glued (or secured with pigtail screws) to the duct insulation and to the wall on both sides of the penetration.

All Fire Duct to wall joints are glued. Aluminium foil is located in Fire Duct joints at wall penetrations (as shown).

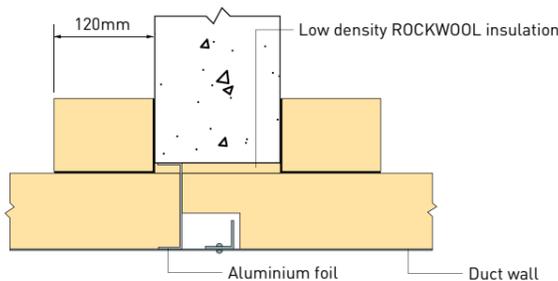


Figure 8
Steel angle frame support to duct at penetration mid point

Proprietary penetration seals

Where proprietary penetration seals are used, compatibility with the separating element, duct construction and Fire Duct System must be demonstrated by independent test or assessment.

Elbows (rectangular ducts)

Small elbows may simply be boxed or 'squared off'. Larger elbows may need to be protected by cutting fan shaped pieces, generally in accordance with the illustration (Figure 9).

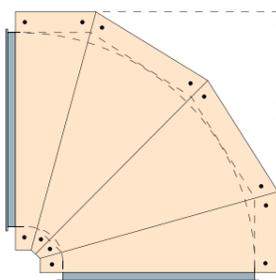


Figure 9
Typical elbow detail for rectangular ducts

2 and 3-sided applications (rectangular ducts)

The use of Fire Duct products incorporating welded pins is recommended for 2 and 3-sided applications.

The method illustrated (Figure 10) for three-sided applications, may also be used for two-sided applications where the duct is securely braced in the corner of a room.

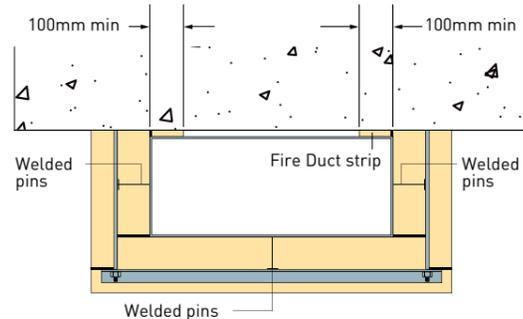


Figure 10
Three sided protection for rectangular ducts, using welded pin fixing method

Access hatches (rectangular ducts)

Steel access hatches which are constructed and fitted in accordance with DW/144 may be protected with Fire Duct Slab (figure 11) .

The Fire Duct cover may be fitted in any face of the duct. However, if the sliding cover is not in the horizontal plane the guides must be positioned so as to prevent movement of the cover due to weight, vibration etc.

The sliding cover must be a tight fit in the guides. No part of the arrangement may be within 50 mm of edges or joints within the main duct protection layer of Fire Duct Slab.

All Fire Duct Slab joints (excluding sliding joints) are to be glued and pinned as previously detailed.

Access hatches (circular ducts)

Details of access hatches for circular ducts are available on request.

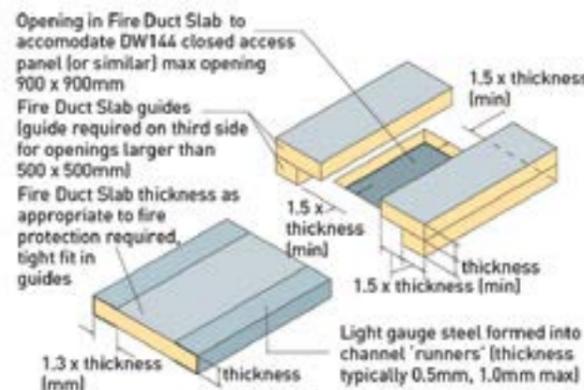


Figure 11
Removable cover panel for steel access hatch

Criteria for preparation of ductwork prior to insulation

Fire Duct products are certified to provide fire protection to ductwork conforming to Construction Details 1 to 12 in the table below and to the requirements of HVCA Specification DW/144. The table may be used as a check list for on-site verification of ductwork construction.

Construction detail	Requirement	Details of Modification where needed	Within Specification
1. Duct sheeting	Rigid steel (zinc-coated, alu-zinc coated, black or stainless)		
2. Sheet thickness	0.8 mm or greater. See DW/144 for ducts larger than 1500 mm		
3a. Welded pin fixing methods	Up to 1500 x 1500 mm: no additional system modifications		
	Up to 2000 x 2000 mm: increase angle bearer size to 50 x 50 x 5 mm min		
	Up to 3000 x 3000 mm: increase angle bearer size to 50 x 50 x 6 mm min		
	Increase drop rod diameter to M12 min		
	Up to 4000 x 4000 mm: 50 x 50 x 6 mm min. bearer. M12 min. drop rod		
	Incorporate additional drop rod mid-width through duct and bearer*		
	Weld (or fasten with with nuts and large washers) M15 min. strengthening rod. at mid-width of each flanged joint and penetration point to maintain cross section		
	Seal all holes with mastic		
	Above 4000 x 4000 mm: 50 x 50 x 6 mm bearer. M12 min. drop rod		
	Incorporate additional drop rods through duct and bearer to ensure 1500 mm max. spacing along bearer*. Weld (or fasten with nuts and large washers) M15 min. strengthening rod at each flanged joint and penetration point to ensure 1500 mm max. spacing along joint. Seal all holes with mastic.		
	*Additional drop rods to pass through duct and bearer. Rods to support bearer 'Top' of duct to be held in position with steel nuts and large steel washers		

Criteria for preparation of ductwork prior to insulation continued

Construction detail	Requirement	Details of Modification where needed	Within Specification
3b. Mitre-joint fixing methods		If duct dimensions exceed those shown, use welded steel pins as per Fire Duct system manual (see item 3a)	
½ hr HVAC & smoke extract	1500 mm x 1500 mm		
½ hr kitchen extract	1500 mm x 1500 mm		
1 hr HVAC & smoke extract	1500 mm x 1500 mm		
1 hr kitchen extract	1500 mm x 1500 mm		
1½ hr HVAC & smoke extract	1200 mm x 1200 mm		
2 hr HVAC & smoke extract	1000 mm x 1000 mm		
4. Flanged cross joint	Type J3, J4, J5 or J6 to HVAC specification DW/142 and DW/144	Strengthen joints (contact ROCKWOOL)	
5. Joint seal	May be included or omitted		
6. Constructional fixings	Steel		
7. Bearers	30 x 30 x 3 mm (min.) steel angle. See item 3a for ducts larger than 1500 mm		
8. Drop rods	M10 (min.) mild steel. See item 3a for ducts larger than 2000 mm		
9. Drop rod anchors		If fire rating is unconfirmed and anchor is all-steel, ie without plastic or chemical components; affix 300 mm x 300 mm collar of unfaced Fire Duct Slab to soffit with FIREPRO® Glue, keeping anchor central. Collar thickness to equal duct encasement layer. Optional self-tapping screws may be used to support collar. Glue adjacent Fire Duct drop rod protection to collar.	
Fixed through steel suspension frame	Steel frame to be independently fire rated Fire protect steelwork		
Fixed into concrete	Anchors to have confirmed fire rating.		
10. Spacing of suspension system			
10a. Horizontal ducts	1500 mm max centres		
10b. Vertical ducts: 2 or 3 sided	1500 mm max centres	Install additional supports	
10c. Vertical ducts: 4 sided	Support at every floor (4 m max centres)		
11. Stiffening of duct at penetration detail		Install steel angle frame	
12. Compartment wall	Fire rated masonry, concrete, brick, block, plasterboard or other fire rated construction		

Specification clauses

Typical specification clauses for rectangular ducts to be read in conjunction with the Fire Duct Systems options

Welded pin fixing method

- 1) All ductwork is to be insulated with* mm ROCKWOOL Fire Duct Slab, having a factory applied reinforced aluminium foil to one face and complying with Building Regulations Class 'O' requirements.
- 2) The Fire Duct Slab is to be fixed to the duct using 2.5 mm diameter welded steel pins and 38 mm spring steel washers in accordance with the ROCKWOOL Product Data Sheet 'Fire Duct systems'.
- 3) The foil facing is to be removed from any surfaces to which FIREPRO® Glue is to be applied.
- 4) All corner joints are to be fixed with pigtail screws at 250 mm maximum centres. Screw length is to be 2 x slab thickness.
- 5) All cross joints are to be filled with FIREPRO® Glue and held tightly closed.
- 6) Drop rods and bearers are to be at 1500 mm maximum centres and to be M10 steel rod and 30 x 30 x 3 mm steel angle respectively. Ductwork is to be generally in accordance with HVCA Specification DW/144.
- 7) Drop rods and exposed bearers are to be insulated with* mm Fire Duct Slab or† x* mm Fire Duct Section, as appropriate. Rebates or cover pieces are to be used at duct flange and bearer locations according to site conditions and subject to ROCKWOOL approval.
- 8) Where a vapour barrier is required, all exposed Fire Duct edges and penetrations through the foil should be sealed using self adhesive aluminium foil tape (Idenden type T303, or similar and approved).

Alternative longitudinal joints

Delete clauses 3 and 5 in Method 1 above, and insert new clause 5:

- 5) All joints are to be filled with FIREPRO® Glue and held tightly closed. Use nails at 500 mm centres at corner joints to aid this process.

Alternative cross joints

Delete clauses 3 and 5 in Method 1 above, and insert new clause 5 :

- 5) All cross joints are to be covered with centrally positioned 100 mm wide strips of Fire Duct Slab of the same thickness as the insulation. The cover strips are to be fixed along both edges using pigtail screws at 250 mm max. centres.

* Insert Fire Duct Slab insulation thickness required.

† Insert appropriate overall diameter.

Mitre-joint fixing method

- 1) All ductwork is to be insulated with* mm ROCKWOOL Fire Duct Slab, having a factory applied reinforced aluminium foil to one face and complying with Building Regulations Class 'O' requirements.
- 2) The Fire Duct joints at ductwork corners are to be 45° mitred. Square butt joints to be used elsewhere.
- 3) The foil facing is to be removed from any surfaces to which FIREPRO® Glue is to be applied.
- 4) All joints are to be filled with FIREPRO® Glue and held tightly closed.
- 5) All mitred joints are to be held tightly closed with nails (length = approx. 2 x Fire Duct Slab thickness) until the glue has fully cured. 2 nails juxtaposed at 90° are to be located at 3 points per 1200 mm length of mitred joint and at 5 points per 2000 mm length.
- 6) Drop rods and bearers are to be at 1500 mm maximum centres and to be M10 steel rod and 30 x 30 x 3 mm steel angle respectively. Ductwork is to be generally in accordance with HVCA Specification DW/144.
- 7) All drop rods and exposed bearers are to be insulated with* mm Fire Duct Slab or† x* mm Fire Duct Section, as appropriate. Rebates or cover pieces are to be used at duct flange and bearer locations according to site conditions and subject to ROCKWOOL approval.
- 8) Where a vapour barrier is required, all exposed Fire Duct edges and penetrations through the foil should be sealed using soft self-adhesive aluminium foil tape.

Fire Tube

Fire protection for process pipes and structural steel

As part of the comprehensive FIREPRO® range of fire protection products, Fire Tube is a rigid, pre-formed cylindrical section of ROCKWOOL specially engineered to provide cellulosic fire protection to circular section structural steel, and to process, sprinkler and service pipes. In addition to fire protection, Fire Tube provides a high degree of thermal and acoustic insulation.

Certification

Full-scale independent test data has been verified and assessed by BRE Global in Fire report number: CC 276856A. The fire performance of Fire Tube has been reviewed by the Fire Test Study Group for inclusion in the ASFP **Yellow Book**, endorsed by the Steel Construction Institute.

British standards

Fire Tube conforms to BS 3958: Part 4, 'Bonded preformed mineral wool pipe sections'.

Performance data

Fire report CC 276856A details the expected fire resistance performance relating to critical steel temperatures of 50, 100, 150, 200, 250, 300, 350, 400 and 550°C for periods of up to 4 hours.

The required wall thickness of Fire Tube to provide a particular fire resistance for a specified period depends on the diameter, wall thickness and critical (fail) temperature of the steel column or pipe. However, in the case of pipes, the critical temperature is likely to depend on its contents.

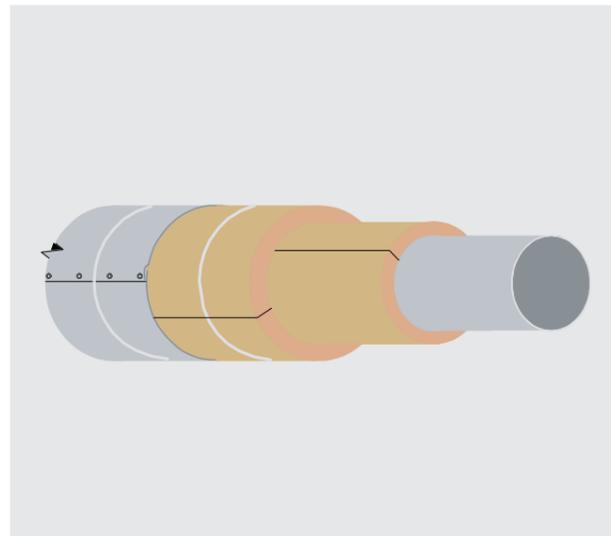
Sizes

Fire Tube is available to suit common metal structural column and pipe diameters in the range between 21 to 610mm Length: 1000mm

Standard wall thicknesses*: 25, 40, 50, 60 and 70mm (excluding 610 diameter)

* Other wall thicknesses may be available subject to quantity or can be accommodated on site by installing one tube over another.

Fire Tube is a strong, preformed ROCKWOOL section available un-faced or with an optional aluminium foil facing, primarily used to provide cellulosic fire protection to structural steel, Circular Hollow Sections (CHS), solid bars, sprinkler pipes, process pipework, etc.



General benefits:

- Range of wall thicknesses to accommodate specific steelwork, pipe and content fail temperatures
- Individually manufactured to fit pipe and CHS sizes up to 610mm outside diameter
- Proven in use for over 40 years
- Simple to install
- Excellent thermal and acoustic insulation
- Moisture resistant (should be weather protected for external use)
- Non Combustible (Class A1 in accordance with EN 13501-1)

The product has been authorised for use in LUL surface and sub-surface premises when installed in accordance with this data sheet - please refer to the LUL Approved Product Register website www.LU-apr.uk for specific details



Description, performance & properties

Installation specification

Cylindrical steel elements to be fire protected for minutes usingmm thick ROCKWOOL Fire Tube and fitted in accordance with the following method.

All ROCKWOOL-to-ROCKWOOL joints of the Fire Tube (including the partially split 'hinge' and the tube ends) to be filled with FIREPRO® Glue prior to application. All joints to be held firmly together with temporary bands of steel wire, jubilee clips or plastic cable ties at 200mm centres until adhesive within joints and between Tube ends has fully cured.

Structural steel fire protection

The section factors A/V (Hp/A) for standard structural steel sections can be found in the ASFP **Yellow Book** or can be calculated for each element by dividing the perimeter (circumference) exposed to fire (A) by the cross sectional area (V). For circular sections (including pipes), the following, simplified formulae can be used to calculate the A/V section factors:-

Solid sections: $A/V = 4 / OD$

Hollow sections: $A/V = OD / (thk (OD - thk))$

Where OD = outside diameter in m and thk = wall thickness in m

Worked example for CHS or Pipe

Outside diameter: 219.1mm (0.2191m)

Wall thickness: 8.0mm (0.008m)

Circumference (A): 0.6884m

Cross sectional area (V): 0.00531m²

Section factor (A/V): 130m⁻¹

Tables 1 and 2 provide the wall thickness of Fire Tube necessary to restrict the core design temperature of circular steel elements (based on their limiting section factors) to 400°C and 550°C respectively, during exposure to cellulosic fire test. The design temperature is defined as the mean temperature at which a beam or column is assumed to be capable of supporting a specified load. Similar tables for critical temperatures of 50°C, 100°C, 150°C, 200°C, 250°C, 300°C and 350°C are also available from the ROCKWOOL Technical Solutions Team.

Fire Tube wall thickness (mm)	Maximum A/V section factors for 550°C critical temperature - fire resistance (mins)					
	30	60	90	120	180	240
25	250	91	37	24	x	x
30	250	130	48	29	x	x
40	250	250	74	43	23	x
50	250	250	111	59	31	21
60	250	250	165	79	39	26
70	250	250	250	105	48	31
75	250	250	250	120	53	34
80	250	250	250	137	58	37
90	250	250	250	182	70	43
100	250	250	250	246	84	50

Table 1 Critical steel temp 400°C (for offshore and marine)

Fire Tube wall thickness (mm)	Maximum A/V section factors for 550°C critical temperature - fire resistance (mins)					
	30	60	90	120	180	240
25	250	250	83	44	23	x
30	250	250	111	56	28	19
40	250	250	193	84	40	26
50	250	250	250	121	53	34
60	250	250	250	172	68	42
70	250	250	250	245	85	52
75	250	250	250	250	95	57
80	250	250	250	250	106	62
90	250	250	250	250	129	73
100	250	250	250	250	158	86

Table 2 Critical steel temp 550°C (for load-bearing structural building frameworks)

Pipework fire protection

The critical failure temperature of a pipe will depend on the material it is made of, or its contents e.g. water or oil. Table 3 provides the minimum required wall thickness of Fire Tube for a variety of critical failure temperatures to provide 60 minutes fire resistance to a 219.1mm OD steel pipe with an 8mm wall thickness - Section factor (A/V) of 130m⁻¹

Critical temperature of pipe material or contents	Wall thickness of Fire Tube (mm)
100°C	100
150°C	75
200°C	60
250°C	50
300°C	50
350°C	40
400°C	30
550°C	25

Table 3 Dimensions of Steel Pipe

Cutting

Fire Tube is light and easy to cut to shape using a saw or a sharp knife.

Weather protection

If installed outdoors, Fire Tube must be protected from the weather. Prior to use, Fire Tube should be stored indoors or protected by a weather proof covering.

FIREPRO® Glue

Fire resistant adhesive for FIREPRO® fire protection systems

As part of the comprehensive FIREPRO® range of fire protection products, FIREPRO® glue has been specially developed for fixing ROCKWOOL fire protection systems. It is also suitable for glue fixing other suitable ROCKWOOL products where a fire resistant adhesive is needed.

Description

FIREPRO® glue is a waterbased product with an approximate pH 11, supplied in 17 kg plastic tubs.

FIREPRO® glue must always be stirred before use to ensure a uniform product consistency.

Generally storage should be made in frost free conditions. Should frost exposure occur, the glue should be thawed out followed by thorough stirring.

Frost exposure does not remove curing ability.

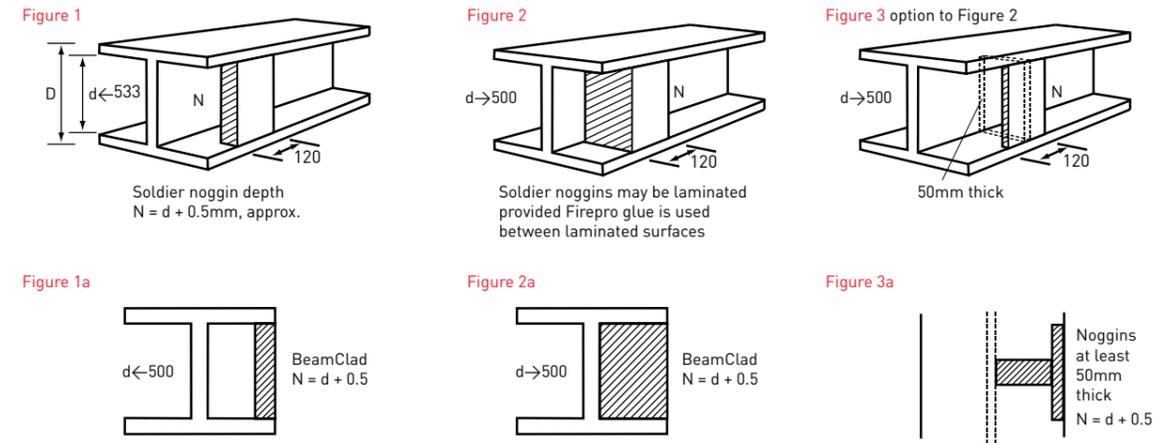
The use of FIREPRO® glue is not limited to particular temperatures and has been tested when applied to surfaces with temperatures of -10°C and upwards, but the curing rate insitu can be affected by:

- Temperature (see Table 1)
- Air humidity
- Thickness of glue layer in a joint
- Air access to glued joint (i.e. not sealed off)

Please note that the temperature of FIREPRO® glue must be 5°C or more when applied to surfaces at lower temperatures.



Construction & installation guidance



Application

Application of glue is typically made by a pallet knife or trowel before pressing surfaces together. Fixing boards together is supplemented by nails, pins or staples through noggin – board joints, and board – board joints.

Whilst steel surfaces may be acceptable when just moist to the touch, heavy water droplets, grease, scale oxide, dust etc should be removed prior to the application of FIREPRO® glue.

Testing has shown that even if glued joints are immediately subjected to heavy frost exposure, the final glued joint strength is not threatened, but curing is retarded.

Effects of ambient conditions

- 1) For all year round working, noggins should be cut to provide approximately 0.5mm interference fit into steelwork. Some friction in the fitting is required to satisfy **all conditions** and to provide a sensible limit to glue thickness.
- 2) In typical dry summer conditions of 20°C, curing of the basic glue will occur in approximately 4 hours before cover boards should be added onto the noggins.
- 3) The setting times of glue in moist air conditions is approximately 6-8 hours if the temperature is above freezing point, or in approximately 1 hour at 20°C.

Setting times for different conditions

Conditions	Setting time
Approx 20°C dry conditions	approx. 4 hours
Approx 3°C+ with moist air conditions	greater than 24 hours expected
-10°C to 0°C	Adequate bond forms within 1 hour but full cure may be delayed over 24 hours when temperatures 0 – 6°C

Table 1

Noggins to steelwork

Exhaustive testing has been made under various application conditions. ALL noggins fitted into steelwork should be cut to provide an interference friction fit of approximately 0.5mm. Excessive oversizing causing the noggins to bend should be avoided (refer to Figure 1).

The noggins should be installed so as to be just proud of the flange tips. For web depths greater than 500mm 'solid' noggins or 'T' noggins ROCKWOOL BEAMCLAD® must be used.

Again a nominal 0.5mm interference fit is recommended for **all ambient conditions**, but particularly for winter working. All noggin edges in contact with steelwork must be glued.

FIREPRO® Glue curing data

- Glue fixed noggins must be allowed to set fully before any attempt is made to fix cover boards. **Table 1** suggests minimum times to allow such setting to occur between ROCKWOOL BEAMCLAD® noggins and steelwork.
- Please note: when friction fitted glued joints are exposed to **sub zero temperatures** either immediately, or at some time during the curing process, an adequate bond stability will form in approximately 1 hour. This bond will be sufficient for cover boards to be applied. Full setting will continue as in **Table 1** when frost free conditions return, but stability will be provided by the supplementary pins or nails. The final strength of the glued joints will not be affected by exposure to sub zero temperatures during the curing process.
- FIREPRO® glue may be used to attach cover boards onto cured noggins (and in glued board joints), provided that a 24 hour interval is acceptable before further trades work on such protected steelwork.

The product has been authorised for use in LUL surface and sub-surface premises when installed in accordance with this data sheet – please refer to the LUL Approved Product Register website www.LU-apr.uk for specific details



ROCKWOOL BEAMCLAD® Systems

Fire protection solutions for structural steel & soffit protection

As part of the comprehensive FIREPRO® range of fire protection products, ROCKWOOL BEAMCLAD® systems boast a complete 'tool-box' of options, offering contractors simple and economical fire protection solutions to the very real diversity of modern steel constructions.

Proven in service over many years, these versatile dry fix systems have been widely used to combat the extremes of site, mixed trade and climatic conditions.

ROCKWOOL BEAMCLAD® has been assessed and third party approved for use with solid structural steel sections and cellular sections.

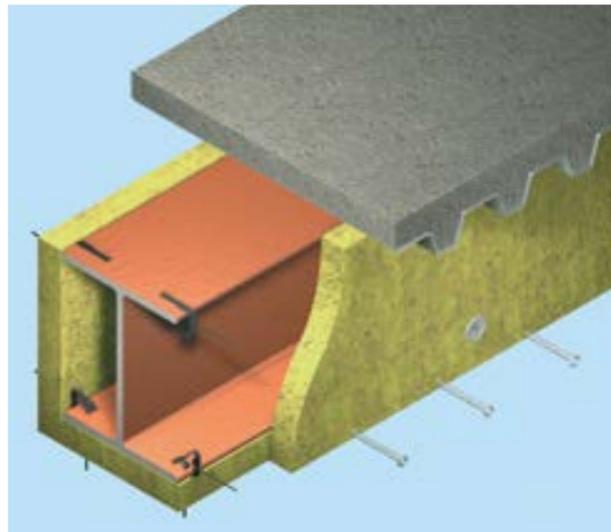


Figure 1 The unique ROCKWOOL BEAMCLAD® dry fix clip system (International Patent Application No PCT/GB 00/01955)

Configuration options

ROCKWOOL BEAMCLAD® boards can be fitted to provide dry joint solutions offering up to 2 hours fire protection, or glued solutions where extended protection up to 4 hours is required.

Table 1 - Project references

Project	Architect
125 Colmore Row, Birmingham	Sidell Gibson Partnership
Scottish Exhibition Conference Centre, Glasgow	Foster and Partners
Eland House, London	EPR Architects
Ocean Terminal, Leith, Edinburgh	Conran and Partners
The Bentall Centre, Kingston, Surrey	Building Design Partnership

Table 2 - Fire resistances of ROCKWOOL BEAMCLAD® systems

System	Fire resistance (mins)					
	30	60	90	120	180	240
Clip Fixed, dry application, dry board joints	•	•	•	•	•	•
Glued noggins, dry application, dry board joints	•	•	•	•	•	•
Welded noggins, dry application, dry board joints	•	•	•	•	•	•
Glued noggins, glued application, glued board joints	•	•	•	•	•	•
Welded pins, dry application, glued board joints	•	•	•	•	•	•

• for A/V up to 200m⁻¹

General benefits:

- No maintenance
- Moisture-repellent
- Choice of three finishes
- Easy to repair

Dry fix solutions

- Unique clip fix system
- Quick and simple to apply
- Up to 2 hours fire protection
- Dry process, no masked off areas required

Glue fix solutions

- Traditional noggin and stud welded pin systems
- Up to 4 hours fire protection
- High resilience

Description, performance & properties



ROCKWOOL BEAMCLAD® P
A plain product with a natural 'green' finish. For concealed areas.



ROCKWOOL BEAMCLAD® A/F
With Class 'O' reinforced aluminium foil, factory applied to the outer face. For limited view areas.



ROCKWOOL BEAMCLAD® T
With a white glass tissue factory-applied to the outer face. For limited view areas.

Composition & manufacture

ROCKWOOL BEAMCLAD® is manufactured primarily from a melt of volcanic rock and limestone. The molten rock is spun into a wool and immediately impregnated with special resins for handling and shaping. The material is then compressed, cured and formed into boards.

ROCKWOOL BEAMCLAD® boards are sized 2000 x 1200mm, in a range of thicknesses from 25mm up to 60mm.

Board density

Nominally 167 – 180 kg/m³.

Standards

ROCKWOOL BEAMCLAD® fire protection materials have been assessed to BS 476: Part 21: 1987 for the fire protection of loadbearing steelwork for up to 4 hours protection.

ROCKWOOL BEAMCLAD® Systems are third party approved by the Loss Prevention Council Certification board (LPCB) for performance and quality and are listed in the **Red Book** - certificate no. 022d. Certificates can be accessed online at www.rockwool.co.uk or www.redbooklive.com

High air flow situations

Unfaced ROCKWOOL BEAMCLAD® systems have been evaluated for use in return air plenums, by the Institute of Occupational Medicine to World Health Organisation test standards and for use in subways, for train speeds up to 150 km per hour.

Performance & properties

Fire performance

Up to 4 hours fire resistance for structural steelwork, assessed at critical temperatures between 350°C and 700°C, including the default temperatures of 550°C (columns) and 620°C (beams). Un-faced, aluminium-foil and glass tissue faced product options comply with both non-combustible and Class O definitions in UK Building Regulations.

Moisture

The rock wool fibres of ROCKWOOL BEAMCLAD® boards are randomly oriented, avoiding any tendency to promote capillary action or hygroscopic moisture absorption.

Moisture content

0% in air-dried state.

Moisture absorption

0.004% by volume at 20°C and 90% relative humidity.

Water absorption

Maximum 60 g/m² after 24 hour total water immersion testing (i.e. approximately 1.5% by weight for 25mm plain board).



The following NBS Plus clauses include 'ROCKWOOL BEAMCLAD® systems': K11-60, K11-885, K11-890

The product has been authorised for use in LUL surface and sub-surface premises when installed in accordance with this data sheet - please refer to the LUL Approved Product Register website www.LU-apr.uk for specific details.

Construction & installation guidance



ROCKWOOL BEAMCLAD® clip fix clip



Noggins glued between steelwork flanges.



Fixing stud welded pins

A comprehensive range of practical systems is available to meet a variety of site requirements.

ROCKWOOL BEAMCLAD® dry joint systems

These use either purpose-made clips, glued mineral wool noggins or stud welded pins to secure the insulation to structural steel sections. All board-to-board joints are straight butt joints, without the need for glue. Pigtail screws (minimum twice the insulation thickness, less 5mm) are used to secure the insulation boards to each other and/or to the noggins.

ROCKWOOL BEAMCLAD® glued joint systems

These use an inorganic and non-toxic glue to bind board-to-board joints and/or to the noggins. Standard flat head nails, twice the thickness of the insulation, are used as initial supports.

Installation options

Dry board joint systems

Clip fix application

A quick and user-friendly dry joint board system featuring ROCKWOOL's push-fit clips.

The spring action of the clip creates a vice-like grip on the steelwork flange. The ROCKWOOL BEAMCLAD® board is impaled on to the clip pins and held in place with spring steel non-return washers. Supplementary pigtail screws fixed through the side boards into the soffit boards complete this system.

The clips are located at max. 600mm centres to top flange and max. 900mm centres to bottom flange, with pigtail screws for board to board joints at 150mm centres.

Combined clip and stud welded pin dry joint system
Where it is not possible to clip fix, eg beneath concrete soffits, stud welded pins (at the same fixing centres) are used in lieu of the clip fixing.

A/V limit for 2 hours = 200

Glued noggins application

A fast, easy to apply, dry joint board system where noggins are glued into position between the steelwork flanges using FIREPRO® Glue. Noggins are fixed at 1000mm nominal centres. The ROCKWOOL BEAMCLAD® boards are then retained by means of pigtail screws, fixed at 100mm nominal centres to the noggins and 200mm centres for board-to-board joints.

For beam depths over 533mm a Tee-noggin or full depth solid noggin is used to provide the support for the cover boards.

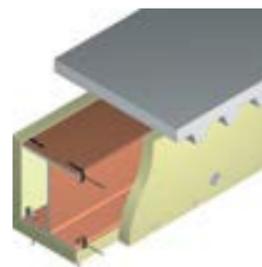


Figure 2 Clip fix dry joint board system (up to 2 hours fire protection)

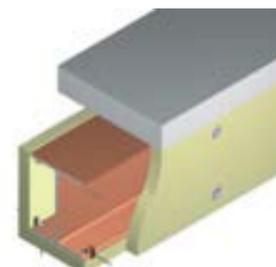


Figure 3 Clip and stud welded pin dry joint system (up to 2 hours fire protection)

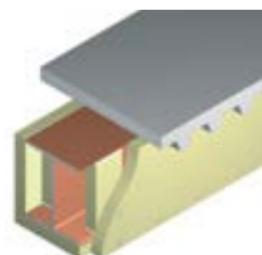


Figure 4 Glued noggins dry joint board system (up to 2 hours fire protection)

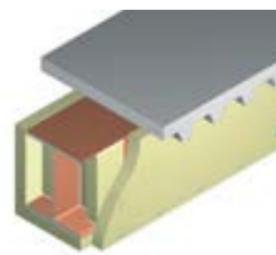


Figure 5 Alternative Tee-noggin arrangement (up to 2 hours fire protection)

Installation options

Stud welded pin application

A dry joint system employing steel welded pins.

The steelwork is cleaned in the area where the welded pin is to be positioned. The pin is then welded to the steel flange.

The ROCKWOOL BEAMCLAD® board is then impaled on to the stud welded pins and held in place with spring steel non-return washers.

The stud welded pins are fixed at max. 600mm centres to top flange and max. 900mm centres to bottom flange. The ROCKWOOL BEAMCLAD® board-to-board joints are then secured by means of pigtail screws fixed at nominal 150mm centres.

Glued board systems

Glue-fixed noggins and board-to-board glued joints

ROCKWOOL BEAMCLAD® noggins (at 1000mm nominal centres) are glued between the steelwork flanges, and the ROCKWOOL BEAMCLAD® side boards are glued to the noggins. The ROCKWOOL BEAMCLAD® side boards are also glued at all vertical joints and horizontal board-to-board joints.

Round head nails (length ≥ 2 x thickness of board) are fixed through the side boards into the noggins (min 2) and soffit boards (at 400mm nominal centres) to consolidate the glued joints.

Stud welded pins and board-to-board glued joints

Pins are stud welded at max. 600mm centres to top flange and max. 900mm centres to bottom flange. All board-to-board joints are glued and nailed.

Board jointing

Butted corner joints

Butted corner joints are made with square edge boards using either a dry joint with pigtail screws as below, or FIREPRO® Glue and nails at 400mm centres.

Axial joints

All axial joints are made with square butt edges, without nails. Glue is only required for glued board systems. For Foil faced products, joints can be finished with Class 'O' foil tape.

Noggins

ROCKWOOL BEAMCLAD® boards can be fixed to noggins, cut from ROCKWOOL BEAMCLAD® offcuts of at least the same thickness as the facia and soffit boards.

The edges of the noggins are glued where they contact the steelwork, then, once the glue has set firmly, the cover boards are fixed in position with either pigtail screws or FIREPRO® Glue and nails.

Welded steel pins

Boards are impaled onto stud welded pins and secured with nonreturn washers.

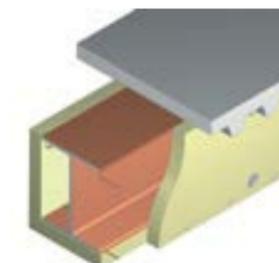


Figure 6 Stud welded pin dry joint board system (up to 2 hours fire protection)

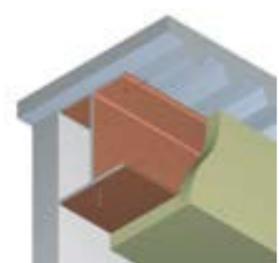


Figure 7 Two-sided protection with stud welded pins (up to 2 hours fire protection)

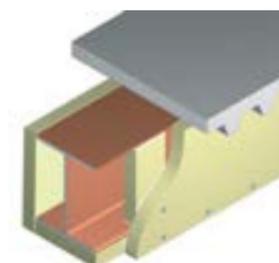


Figure 8 Glue-fixed noggins and board-to-board glued joints (up to 4 hours fire protection)

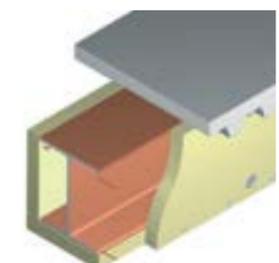


Figure 9 Stud welded pins and board-to-board glued joints (up to 4 hours fire protection)

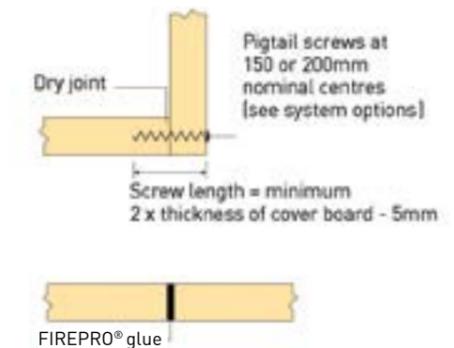


Figure 10

Installation options

Cellular

The method for determining the thickness of ROCKWOOL BEAMCLAD® required to protect a cellular or castellated beam:

- Calculate the effective section factor using the following equation
 Section factor (m⁻¹) = 1400 / t, where t = the thickness (mm) of the lower steel web
- Confirm the limiting design temperature of the beam with the manufacturer. In the absence of such information, a conservative fail temperature of 450°C can be used.

- Using the calculated section factor and protection period required, determine the thickness of ROCKWOOL BEAMCLAD® for a solid beam from the appropriate fire protection table for the limiting design temperature (or 450°C) and the fixing system being considered.
- Multiply this thickness by 1.20 to obtain the ROCKWOOL BEAMCLAD® thickness for the cellular or castellated beam.

Figure 11 - Beam with circular holes (boxed & profiled protection - glued and pinned joints)

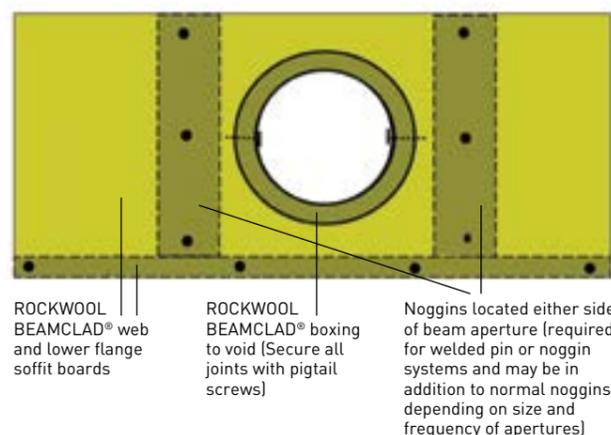


Figure 12 - Beam with square or rectangular holes (boxed & profiled protection - glued and pinned joints)

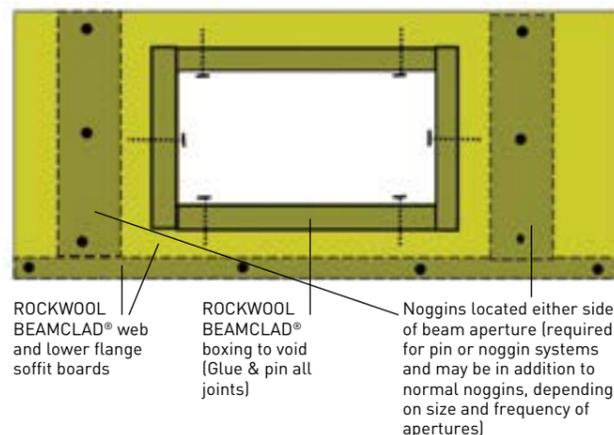


Figure 13 - Beam with circular holes (boxed protection - dry joints)

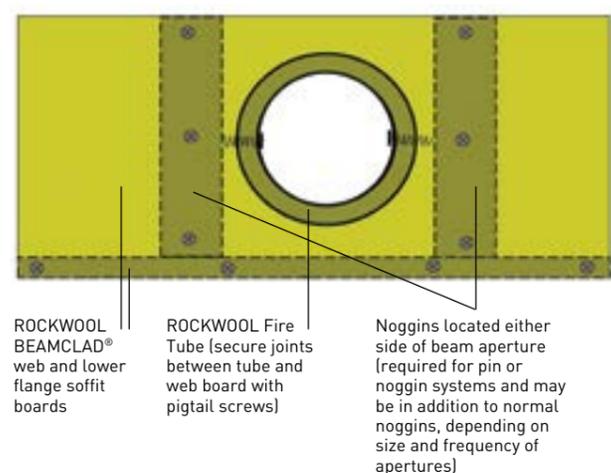
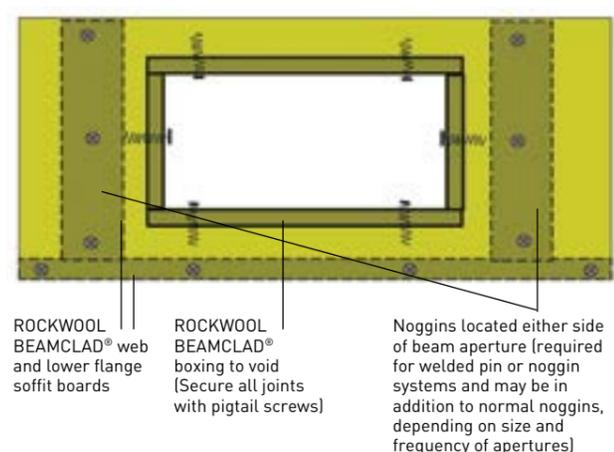


Figure 14 - Beam with square or rectangular holes (boxed protection - dry joints)



Installation options

Joints & glue

FIREPRO® Glue is an inorganic, non-toxic product with a pH of 11. FIREPRO® Glue is supplied pre-mixed in 17 kg tubs. A variety of joint types can be used (see previous page).

Coverage rate will depend on the linear length of the joints, width of joint (board thickness) and joint depth. Assuming total, effective useage of the glue on site, the following table provides an approximate weight (kg) of glue per linear metre of joint, based on a glue depth of 1mm.

Table 3

ROCKWOOL BEAMCLAD® thickness (mm)	Square butt joint	45° mitre joint
25	0.09	0.13
30	0.11	0.16
35	0.13	0.19
40	0.15	0.21
50	0.19	0.27
60	0.22	0.33

In practice, a degree of wastage would be expected and as such, it would be prudent to make an allowance for this when placing an order. As a very approximate guide, the coverage rate of a 17kg tub of FIREPRO® glue would be 35m² of applied board.

Supply

ROCKWOOL BEAMCLAD® slabs are supplied on pallets, shrink-wrapped in polyethylene, 26 pallets per 40 ft container.

Pigtail screws are available from ROCKWOOL stockists.

ROCKWOOL BEAMCLAD® clips are available in 2 sizes from ROCKWOOL in boxes of 1000 – small for 25mm and 30mm, large for 25mm and 40mm.

Washers are available from ROCKWOOL in boxes of 2000.

Welded pins and sprung steel non-return washers are available from external suppliers.

Fire Tube is also available for circular steel sections.

Fire Duct dry fix ductwork solutions are also available for steel duct protection.

Typical specification clauses

(to be read in conjunction with System Options on previous page)

- 1 The structural steel is to be fire protected using ROCKWOOL BEAMCLAD®^s system, with a^f facing, to provide^h fire resistance.
- 2 The main fixing system will be one of:
 - ROCKWOOL BEAMCLAD® clip system fixed at max. 600mm centres to top flange, and max. 900mm centres to bottom flange,
 - ROCKWOOL BEAMCLAD® noggin system fixed at 1000mm centres,
 - ROCKWOOL BEAMCLAD® stud welded pin system fixed at max. 600mm centres to top flange, and max. 900mm centres to bottom flange.
- 3 Board-to-board joints should be dry fixed using pigtail screws or glued and nailed in accordance with the data sheet.

^s insert system type

^f insert facing option

^h insert period of fire resistance

ROCKWOOL BEAMCLAD® Systems

Contractors' Fixing Guide

As part of the comprehensive FIREPRO® range of fire protection products, a new generation of dry fixing options has been added to the existing glued joint, pin and noggin systems. All have been tested or assessed to BS 476: Part 21: 1987.

This document explains and illustrates the installation methods using the six fixing options:

- Clip fix dry joint board system
- Stud welded pin dry joint board system
- Glued noggins dry joint board system
- Combined clip and stud welded pin dry joint system
- Stud welded pin glued jointed board system
- Glue fix noggin, glued jointed board system
- Tested and approved for solid and cellular sections

ROCKWOOL BEAMCLAD® boards

Dense ROCKWOOL boards are available with facings of glass tissue and reinforced aluminium foil as well as plain product. Size: 2000 x 1200mm. Thicknesses: 25, 30, 35, 40, 45, 50, 55 and 60mm.

Scope

Contractors are required to install materials as tested and detailed in this brochure. In situations not covered by this brochure, ROCKWOOL will either recommend a suitable detail or assist in obtaining an independent Design Appraisal.

Applications

This Fixing Guide provides details of all of the standard boxed applications. It covers fixing centres and details of available facings and joint details. Dry board joints for up to 2 hours and Glued Joints up to 4 hours protection. Profiled application methods are also available with the glued joint systems – details available ROCKWOOL Technical Solutions.

Clip fix, dry joint board system

The ROCKWOOL push-fit clip system offers extremely fast application rates as no glue is required and no plant or equipment is needed. The clip is fitted onto the steel flange by pushing it until a definite, audible click is heard. Board-to-board edge joints are fixed with pigtail screws.

Glued noggin or stud welded pin, dry joint board systems

Welded pin and glued noggin fixing solutions with dry joints are extremely quick to apply, reduce system installation costs and eliminate the need for glue. Fixing centres are the same as for the glued systems.

Combination systems

A combination of stud welded pins to the top flange and friction fit clips to the bottom flange can be used with concrete decks.

Glued noggin fix and stud welded pin systems – Glued Joints

The glued joint ROCKWOOL BEAMCLAD® systems remain for the applications that require fire protection periods of up to 4 hours.

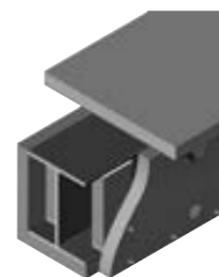
Figure 1 - Clip fix, dry joint board system



Benefits

- Simple to apply, dry push-fit
- Fast application rates
- No plant or equipment required
- Up to 2 hours fire protection
- Max. 2 hours A/V = 200
- Option of three finishes
- Easy system to repair, if damaged
- Clean, dry solution allowing other trades to work in same area during installation

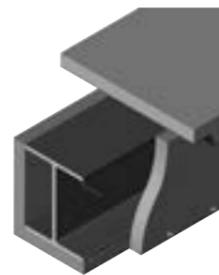
Figure 2 - Clip fix, dry joint board system



Benefits

- Simple to apply, glued noggin, dry butt board joints
- Speed of installation increased
- Noggins spaced at 1000mm centres
- Tee- noggins of same thickness insulation used with web depths of over 533mm
- Up to 2 hours fire protection
- Easy system to repair, if damaged
- No masking of area required during installation
- Pigtail screws at 200mm centres in place of glued board joints

Figure 3 - Stud welded pin, dry joint board system



Benefits

- Fast to install, dry fix stud welded pin system
- Only dry joint stud welded pin solution
- Stud pin fixing centres at max. 600mm ctrs for top flange and max. 900mm for bottom flange
- Up to 2 hours fire protection
- Pigtail screws at max. 150mm centres in place of glued board joints

ROCKWOOL BEAMCLAD® clip fix dry joint board system

The unique ROCKWOOL BEAMCLAD® clip fixing system is designed for ultimate speed of application. Its design features allow it to be used with standard steel deck types. The ROCKWOOL BEAMCLAD® clip fixing solution can be used to provide 2, 3 and 4-sided beam protection for up to 2 hours*.

* 2 hour A/V limitation: 200m⁻¹

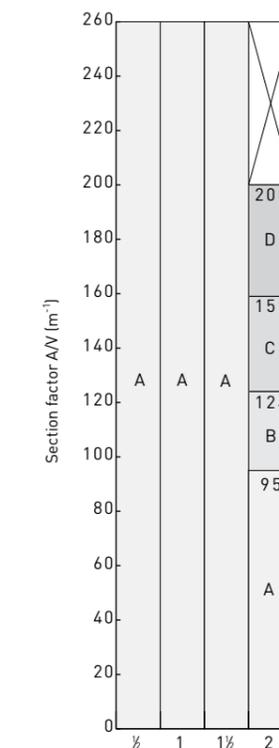
Installation sequence

- Friction fit the correct length clips (see A/V chart) onto the top and bottom flange tips at max. 600mm centres for the top flange (A) & max. 900mm centres for the bottom flange. (D) The first clip is positioned at max. 100mm in from the beam edge (B).
- Cut the ROCKWOOL BEAMCLAD® boards to suit the depth of the beam whilst allowing for the additional flange cover board thickness.
- Using the deck soffit as a guide, impale the ROCKWOOL BEAMCLAD® boards onto the clip legs, always starting at the top.
- Fit special ROCKWOOL BEAMCLAD® non-return washers onto the ROCKWOOL BEAMCLAD® clip legs and push washers tight to the insulation face.
- Apply pigtail screws horizontally at 150mm maximum centres, starting max. 75mm from the board's vertical edge (C). Minimum screw length must be 2 x cover board thickness -5mm.
- Tape joints with foil tape or scrim tape if required.

Selecting the thickness of ROCKWOOL BEAMCLAD® board

Chart 1

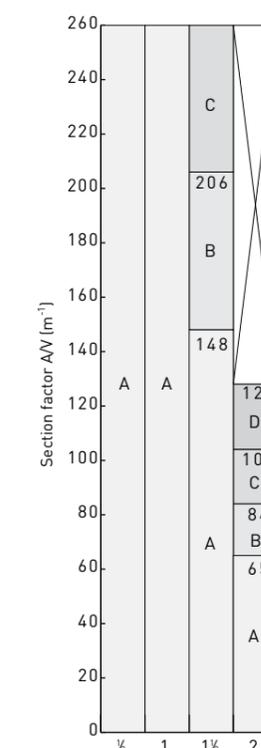
ROCKWOOL BEAMCLAD® clip system – Critical steel temperature 620°C, 3 sided protection for beams



Fire resistance period (hours)

Chart 2

ROCKWOOL BEAMCLAD® clip system – Critical steel temperature 550°C, 4 sided protection for beams & columns



Fire resistance period (hours)

ROCKWOOL BEAMCLAD® thicknesses to be read with Chart 1 & 2

The following key provides the required minimum thicknesses of ROCKWOOL BEAMCLAD® for the Section Factors given in the table.

A = 25mm - Use small clips
B = 30mm - Use small clips

C = 35mm - Use large clips
D = 40mm - Use large clips

Typical details



Figure 4 - 3-sided box

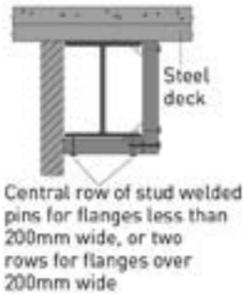


Figure 5 - 2-sided box

Fixing pattern

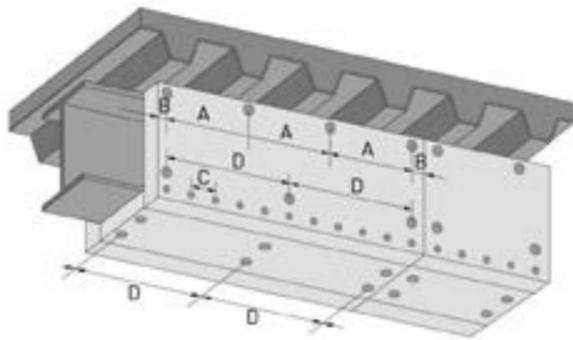


Figure 6

3-sided box with ROCKWOOL BEAMCLAD® clip fixing

- Dimensions
- A = top flange clips at max. 600mm centres for 2000mm boards (& 500mm centres if 1200mm board length used)
 - B = clips at max. 100mm from edge of board (20mm min)
 - C = pigtail screws at max. 150mm centres, and max. 75mm from board edge
 - D = bottom flange clips at max. 900mm centres.

Combined clip and stud welded pin dry joint systems

With concrete decks it may be necessary to fix stud welded pins to the top flange in place of clips.

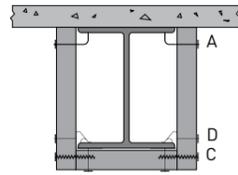


Figure 7 - 3-sided box

- Dimensions
- A = pins at max. 600mm centres
 - D = clips at max. 900mm centres
 - C = pigtail screws at max. 150mm centres
 - E = Steel supporting angle

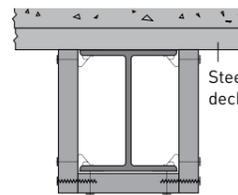


Figure 9 - 3-sided box

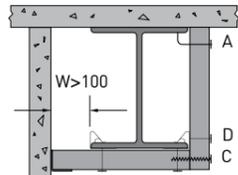


Figure 8 - 3-sided box

W > 100mm

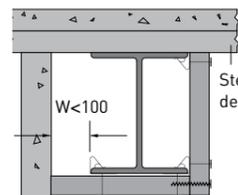


Figure 10 - 3-sided box

W < 100mm

ROCKWOOL BEAMCLAD® stud welded pin dry joint board system

A traditional stud welded pin solution with dry joints.

This dry fix pin solution can be used for 2, 3 and 4-sided beam protection for a period of up to 2 hours.

Installation sequence

- Clean the local area for pin welding and fix stud pin using arc or CD welds, ensuring a good contact has been achieved. Test weld by bending pin.
- Impale the ROCKWOOL BEAMCLAD® boards onto the stud welded pins using the deck soffit as a guide.
- Push 38mm diameter sprung steel non-return washers onto the exposed pin until tight to the cover board face. Crop pins as necessary.
- Fix pigtail screws along all board-to-board edge joints at 150mm maximum centres (c). Tape joints using aluminium foil tape or scrim, if required.

Selecting the thickness of ROCKWOOL BEAMCLAD® board

Chart 3
ROCKWOOL BEAMCLAD® stud welded pin dry joint system – Critical steel temperature 620°C, 3 sided protection for beams

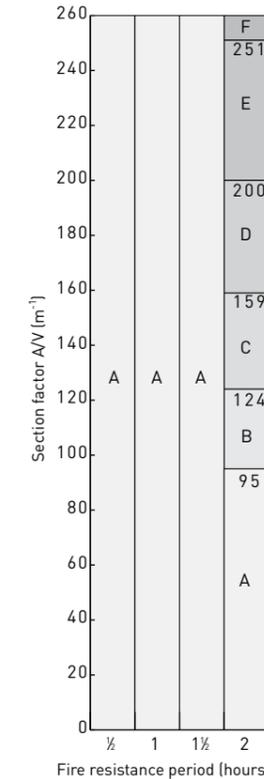
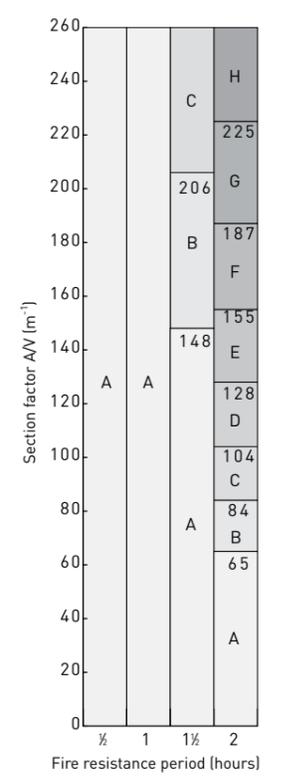


Chart 4
ROCKWOOL BEAMCLAD® stud welded pin dry joint system – Critical steel temperature 550°C, 4 sided protection for beams & columns



ROCKWOOL BEAMCLAD® thicknesses to be read with Charts 3 & 4

The following key provides the required minimum thicknesses of ROCKWOOL BEAMCLAD® for the Section Factors given in the table.

- A = 25mm
- B = 30mm
- C = 35mm
- D = 40mm
- E = 45mm
- F = 50mm
- G = 55mm
- H = 60mm

Typical details

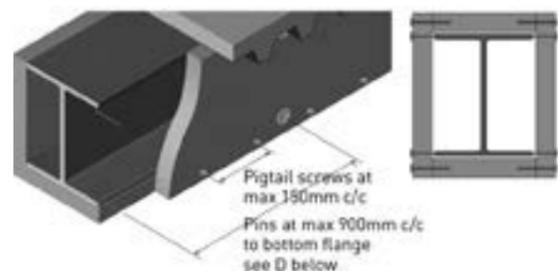


Figure 11 - 3-sided box

Figure 12 - 4-sided box

Fixing pattern

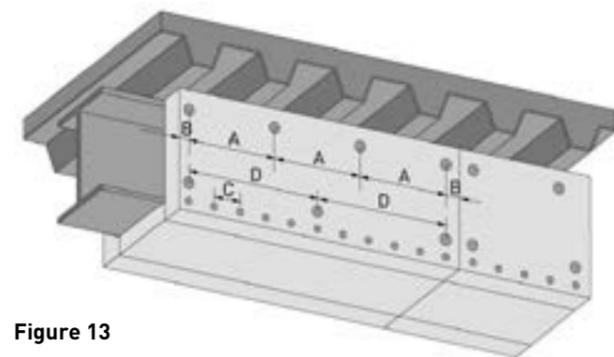


Figure 13

3-sided box with stud welded pins

Dimensions

- A = stud welded pins at max. 600mm centres for 2000mm board (500mm centres for 1200mm boards)
- B = stud welded pins, 20mm min. from edge of board
- C = pigtail screws at max. 150mm centres, and 75mm from edge of board
- D = bottom flange stud welded pins at max. 900mm centres

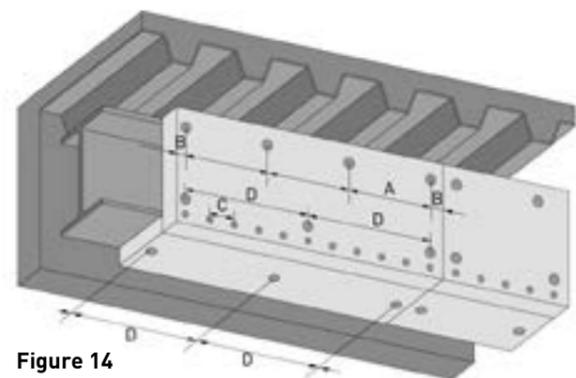


Figure 14

2-sided box with stud welded pins

Dimensions

- A = stud welded pins at max. 600mm centres for 2000mm board (500mm centres for 1200mm boards)
- C = pigtail screws at max. 150mm centres
- D = stud welded pins at max. 900mm centres for bottom flange

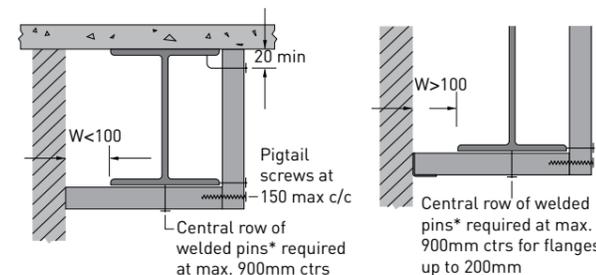


Figure 15 - 2-sided box

Figure 16 - 2-sided box

W limit is 100mm. Where W > 100mm a shelf angle or similar should be fixed to the wall

* For flange widths greater than 200mm, 2 rows of pins are required, each row approx. 25mm from flange tips.

ROCKWOOL BEAMCLAD® glued noggin dry joint board system

A noggin solution which removes the necessity for glue to board-to-board and board-to-noggin joints. The board-to-board edge joints are fixed with pigtail screws at 200mm centres. The glued noggins are at 1000mm fixing centres. This fixing solution can be used for 2, 3 and 4-sided beam protection for up to 2 hours.

Installation sequence

- Cut 120mm wide noggins (C) to suit web depth, using same thickness material as the cover protection. For web depths of 500mm and above use either solid noggins or 'T' shaped noggins made from cover board thickness. These are then glued into position at 1000mm centres (D).
- Cut the ROCKWOOL BEAMCLAD® boards to suit the depth of the beam whilst allowing for the additional flange cover board thickness.
- Push board tight to deck soffit and fix pigtail screws through the coverboards and into the noggins at maximum 100mm centres (B).
- Fix all board-to-board joints using pigtail screws at 200mm maximum centres (A). Minimum screw length must be 2 x cover board thickness - 5mm.

Selecting the thickness of ROCKWOOL BEAMCLAD® board

Chart 5
ROCKWOOL BEAMCLAD® glued noggin dry joint board system - Critical steel temperature 620°C, 3 sided protection for beams

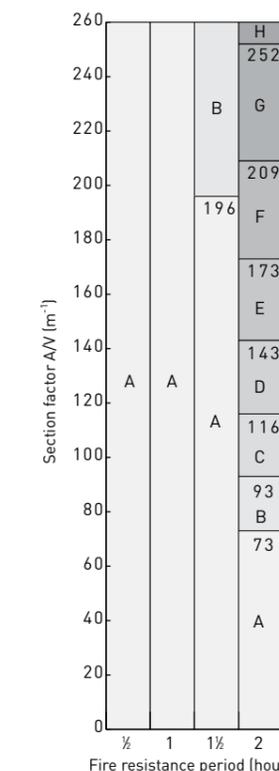
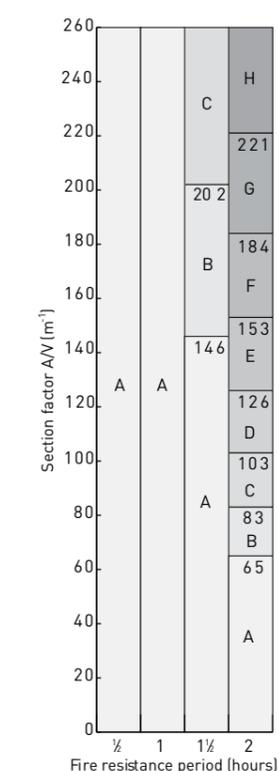


Chart 6
ROCKWOOL BEAMCLAD® glued noggin dry joint board system - Critical steel temperature 550°C, 4 sided protection for beams & columns



ROCKWOOL BEAMCLAD® thicknesses to be read with

Charts 5 & 6

The following key provides the required minimum thicknesses of ROCKWOOL BEAMCLAD® for the Section Factors given in the table.

- A = 25mm
- B = 30mm
- C = 35mm
- D = 40mm
- E = 45mm
- F = 50mm
- G = 55mm
- H = 60mm

Typical details

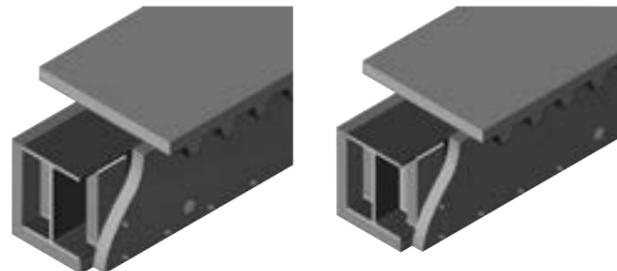


Figure 17 - 3-sided box

Figure 18 - Tee-noggin arrangement for web depths of over 500mm. See over for Tee-noggin specification

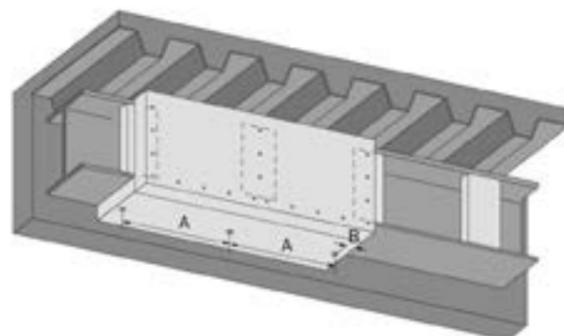
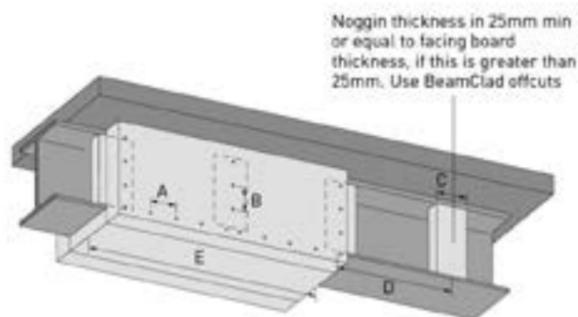


Figure 20 - 2-sided box using a combination of noggins and stud welded pins

Dimensions
 A = welded pins at max. 900mm centres for 2000mm board (500mm centres for 1200mm boards)
 B = welded pins at max. 100mm (min. 20mm) from board edge

Fixing pattern



Noggin thickness in 25mm min or equal to facing board thickness, if this is greater than 25mm. Use BeamClad offcuts

Figure 19 - 3-sided box using glued noggins

Dimensions
 A = pigtail screws at max. 200mm centres and 50mm max from edge of board
 B = pigtail screws at max. 100mm centres into noggins
 C = noggins of min. 120mm width
 D = noggins at max. 1000mm centres
 E = board length 2000mm

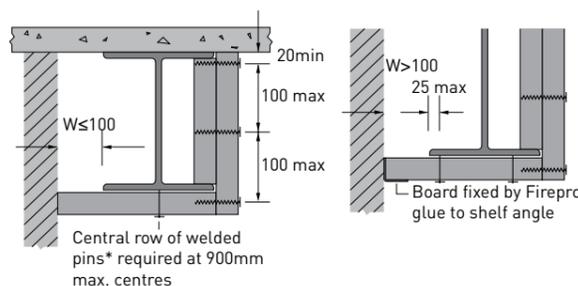


Figure 21 - 2-sided box

Figure 22 - 2-sided box
 W limit is 100mm. Where W > 100mm a shelf angle or similar should be fixed to the wall

* For flange widths greater than 200mm, 2 rows of pins are required, each row approx. 25mm from flange tips.

ROCKWOOL BEAMCLAD® glued systems

The following two systems are well established having been used for many years. The application of FIREPRO® Glue enhances the fire performance over the Dry Joint Systems for the 2, 3 and 4 hour periods. The Glue Joint Systems are capable of providing up to 4 hours fire protection.

Fixing boards to noggins

Wherever three or four-sided protection is required, fixing to noggins is a practical option. No power supply is required.

Fixing boards with stud welded pins

Situations will always occur where noggins do not afford a practical choice, e.g. for two-sided box constructions or diverse perimeter bracketing.

Stud welded pins allow the installer a simple, tested alternative to noggins.

Installation sequence (noggin fix)

Fixing noggins

Cut 120mm wide noggins to suit web depth, using same thickness material as the cover protection. For web depths of 500mm and above use either solid noggins or 'T' shaped noggins. For stability purposes, it is recommended that the face of the 'T' noggin is made from the same thickness as the cover board but the thickness of the return into the web should be at least 50mm. These are then glued into position at 1000mm centres.

Fixing boards

- Apply FIREPRO® Glue liberally to face of noggins. Quickly apply vertical boards and secure with nails long enough to pierce full thickness of noggins before FIREPRO® glue forms a hardened surface.
- Apply glue continuously and liberally to all board interfaces. Tightly butt to adjoining boards and nail through edge joints with same length nails as for noggins, at 400mm maximum centres.

Installation sequence (stud welded pin fix)

- Fit stud welded pins (3mm diameter) as indicated opposite.
- A selection of pins should be mechanically tested by bending from the vertical and returning it to the original position.
- sprung steel non-return washers to secure boards.
- Apply FIREPRO® glue to all board-to-board joints.
- Offer up flange boards and nail through glued corner joints at 400mm maximum centres.
- If using faced boards, apply foil or scrim tape over joints for uniformity of appearance.

For additional fixing details not covered, please contact ROCKWOOL Technical Solutions.

For A/V charts, see Charts 3 and 4 (Stud Welded).

ROCKWOOL BEAMCLAD® glued systems

Typical details

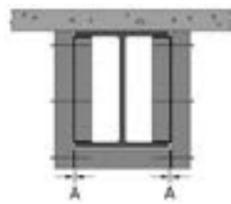


Figure 23 - 3-sided box
A noggins to project slightly beyond flange

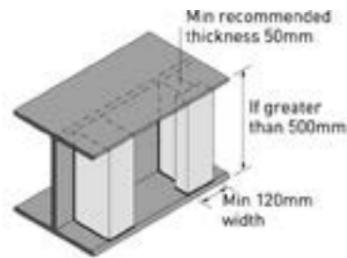


Figure 24 - Full depth noggin or Tee-noggin
for web depths greater than 500mm

Fixing pattern

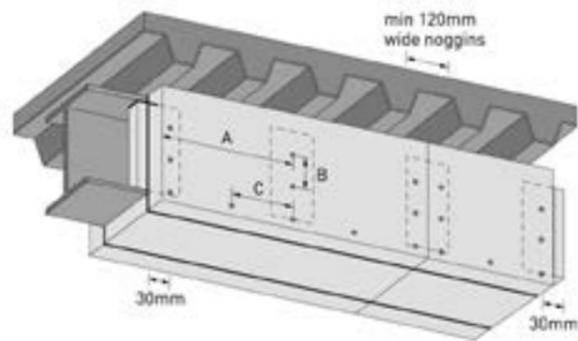


Figure 25 - Fixing method using glued noggins, nails and glued board-to-board joints

Dimensions
A = noggins at max. 1000mm centres
B = nails at max. 150mm centres
C = nails at max. 400mm centres (max. 30mm from edge of board joint)

Stud welded pin fixing arrangement

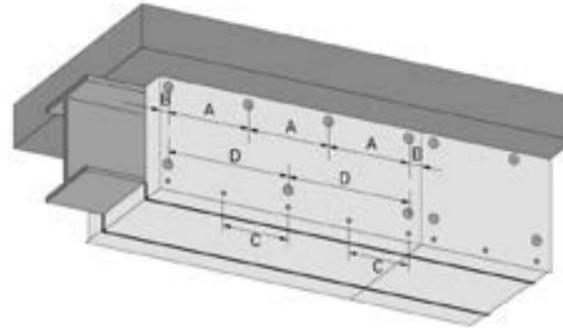


Figure 26 - 3-sided box with stud welded pins

Dimensions
A = stud welded pins at 600mm for 2000mm board (500mm for 1200mm boards)
B = stud welded pins at max. 100mm (min. 20mm) from edge of board
C = nails at max. 400mm centres
D = stud welded pins at max. 900mm centres for 2000mm boards, 500mm centres for 1200mm boards, on bottom flange

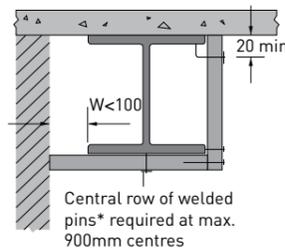


Figure 27 - 2-sided box

* For flange widths greater than 200mm, 2 rows of pins are required, each row approx. 25mm from flange tips.

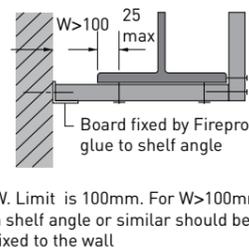


Figure 28 - 2-sided box

W. Limit is 100mm. For W>100mm, a shelf angle or similar should be fixed to the wall

Selecting the thickness of ROCKWOOL BEAMCLAD® board for glued systems

Chart 7
Steel beam sections
ROCKWOOL BEAMCLAD® glued joint systems – Critical steel temperature 620°C

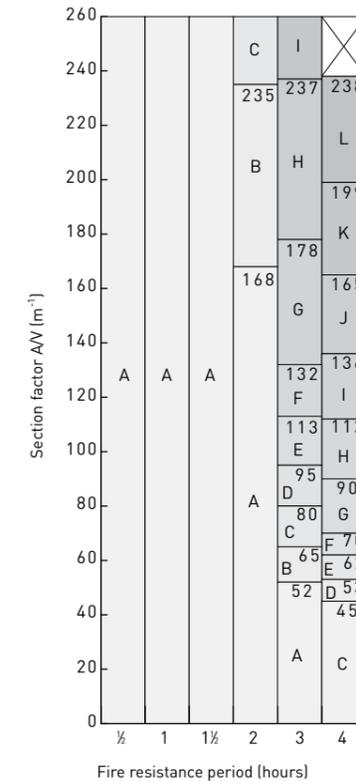


Chart 8
Steel beam sections
ROCKWOOL BEAMCLAD® glued joint systems – Critical steel temperature 550°C

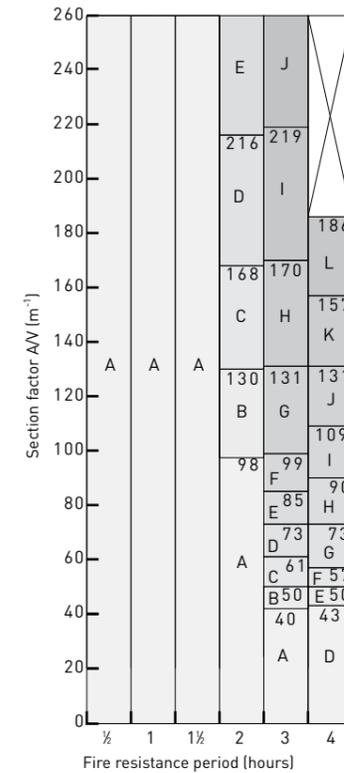
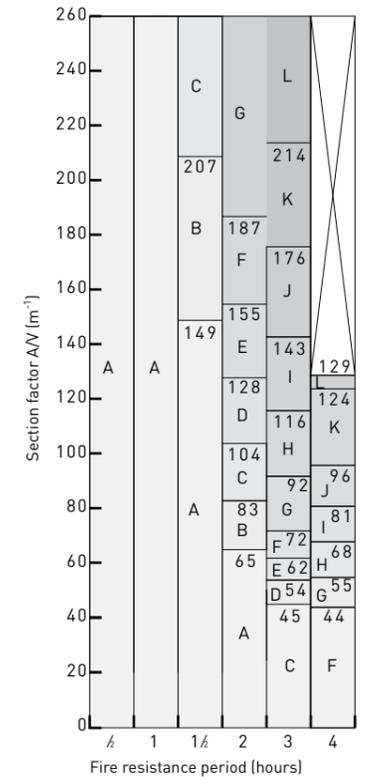


Chart 9
Steel column sections
ROCKWOOL BEAMCLAD® glued joint systems – Critical steel temperature 550°C



ROCKWOOL BEAMCLAD® thicknesses to be read with Charts 7, 8 and 9

The following key provides the required minimum thicknesses of ROCKWOOL BEAMCLAD® for the Section Factors given in the tables. The boards can be applied in either one or two layers.

- A = 25mm
- B = 30mm
- C = 35mm
- D = 40mm
- E = 45mm
- F = 50mm
- G = 55mm
- H = 60mm
- I = 80mm
- J = 90mm
- K = 100mm
- L = 110mm

Multi-layer applications

When a protection thickness in excess of 60mm is required, this can be achieved by plying two or more layers of ROCKWOOL BEAMCLAD® together. Where practical, stagger the joints between each layer.

For welded pin applications, each layer should be retained using separate non-return washer, i.e. one washer per layer.

For glued noggin applications, attach the first layer to the noggins as previously detailed, then apply a 120mm wide band of glue to the outside face of the first layer at locations corresponding to the noggins.

Apply the outer layer of ROCKWOOL BEAMCLAD®, supporting the boards until the glue sets by using nails of sufficient length to penetrate completely through the noggins.

General notes

Board jointing

Butted corner joints

Butted corner joints are made with square edge boards and depending on the system employed, use either a dry joint with pigtail screws at 150mm or 200mm centres, or FIREPRO® Glue and nails at 400mm centres.

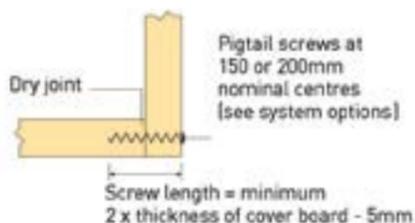


Figure 29

Axial joints

All axial joints are made with square butt edges, without nails. Glue is only required for glued board systems. Joints must be tightly butted.

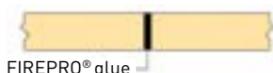


Figure 30

For foil faced products, joints can be finished with Class 'O' foil tape.

Noggins

ROCKWOOL BEAMCLAD® boards can be fixed to noggins, cut from ROCKWOOL BEAMCLAD® offcuts.

The edges of the noggins are glued where they contact the steelwork. Once the noggins have set firmly, the cover boards are fixed in position with either pigtail screws or FIREPRO® Glue and nails. The thickness of the noggin is to be the same as that of the cover board used.

Welded steel pins

Boards are secured to stud welded pins with non-return washers.

Glue

FIREPRO® Glue is required between all board-to-board and board-to-noggin joints for glued systems, but only between noggin-to- steel joints for dry systems.

Applying FIREPRO® Glue on the external face of joints is bad practice.

Whatever noggin system is employed, the glue between noggin and steel must be allowed to set hard before cover boards are applied to the noggins. This will normally take about 4 hours at 20°C ambient temperature.

FIREPRO® Glue is supplied pre-mixed in 17 kg tubs.

Coverage rate will depend on the linear length of the joints, width of joint (board thickness) and joint depth. Assuming total, effective useage of the glue on site, the following table provides an approximate weight (kg) of glue per linear metre of joint, based on a glue depth of 1mm.

Table 1

ROCKWOOL BEAMCLAD® thickness (mm)	Square butt joint	45° mitre joint
25	0.09	0.13
30	0.11	0.16
35	0.13	0.19
40	0.15	0.21
50	0.19	0.27
60	0.22	0.33

In practice, a degree of wastage would be expected and as such, it would be prudent to make an allowance for this when placing an order. As a very approximate guide, the coverage rate of a 17kg tub of FIREPRO® glue would be 35m² of applied board.

Universal beams A/V table (as per 2006)

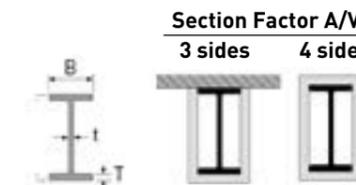


Table 2

Designation serial size	Mass per metre (kg)	Depth per section D (mm)	Width per section B (mm)	Thickness web t (mm)	Flange T (mm)	Area of section (cm²)	m ⁻¹	m ⁻¹
914x419	388	921.0	420.5	21.5	36.6	494.5	45	55
	343	911.4	418.5	19.4	32.0	437.5	50	60
914x305	289	926.6	307.8	19.6	32.0	368.8	60	65
	253	918.5	305.5	17.3	27.9	322.8	65	75
	224	910.3	304.1	15.9	23.9	285.3	75	85
	201	903.0	303.0	15.2	20.2	256.4	80	95
838x292	226	850.9	293.8	16.1	26.8	288.7	70	80
	194	840.7	292.4	14.7	21.7	247.2	80	90
	176	834.9	291.6	14.0	18.8	224.1	90	100
762x267	197	769.6	268.0	15.6	25.4	250.8	70	85
	173	762.0	266.7	14.3	21.6	220.5	80	95
	147	753.9	265.3	12.9	17.5	188.1	95	110
686x254	170	692.9	255.8	14.5	23.7	216.6	75	90
	152	687.6	254.5	13.2	21.0	193.8	85	95
	140	683.5	253.7	12.4	19.0	178.6	90	105
	125	677.9	253.0	11.7	16.2	159.6	100	115
610x305	238	633.0	311.5	18.6	31.4	303.8	50	60
	179	617.5	307.0	14.1	23.6	227.9	70	80
	149	609.6	304.8	11.9	19.7	190.1	80	95
	122	544.6	211.9	12.8	21.3	155.8	85	95
533x210	109	539.5	210.7	11.6	18.8	138.6	95	110
	101	536.7	210.1	10.9	17.4	129.3	100	115
	92	533.1	209.3	10.2	15.6	117.8	110	125
	82	528.3	208.7	9.6	13.2	104.4	120	140
	74	467.4	192.8	11.4	19.6	125.3	90	105
457x191	89	463.6	192.0	10.6	17.7	113.9	100	115
	82	460.2	191.3	9.9	16.0	104.4	105	125
	74	457.2	190.5	9.1	14.5	95.0	115	135
	67	453.6	189.9	8.5	12.7	85.4	130	150
	82	465.1	153.5	10.7	18.9	104.5	105	120
	74	461.3	152.7	9.9	17.0	95.0	115	130
457x152	67	457.2	151.9	9.1	15.0	85.4	125	145
	60	454.7	152.9	8.0	13.3	75.9	140	160
	52	449.8	152.4	7.6	10.9	66.5	160	180
	74	412.8	179.7	9.7	16.0	95.0	105	125
	67	409.4	178.8	8.8	14.3	85.5	115	140
	60	406.4	177.8	7.8	12.8	76.0	130	155
406x178	54	402.6	177.6	7.6	10.9	68.4	145	170
	46	402.3	142.4	6.9	11.2	59.0	160	185
	39	397.3	141.8	6.3	8.6	49.4	190	215
356x171	67	364.0	173.2	9.1	15.7	85.4	105	125
	57	358.6	172.1	8.0	13.0	72.2	120	145
	51	355.6	171.5	7.3	11.5	64.6	135	160
	45	352.0	171.0	6.9	9.7	57.0	150	180
356x127	39	352.8	126.0	6.5	10.7	49.4	165	195
	33	348.5	125.4	5.9	8.5	41.8	195	225
305x165	54	310.9	166.8	7.7	13.7	68.4	115	140
	46	307.1	165.7	6.7	11.8	58.9	135	160
	40	303.8	165.1	6.1	10.2	51.5	150	185
305x127	48	312.7	102.4	6.6	10.8	41.8	175	200
	42	308.9	101.9	6.1	8.9	36.3	200	230
	37	304.8	101.6	5.8	6.8	31.4	225	255
254x146	43	259.6	147.3	7.3	12.7	55.1	120	150
	37	256.0	146.4	6.4	10.9	47.5	140	170
	31	215.5	146.1	6.1	8.6	40.0	165	200
254x102	28	260.4	102.1	6.4	10.0	36.2	175	200
	25	257.0	101.9	6.1	8.4	32.2	190	225
	22	254.0	101.6	5.8	6.8	28.4	220	255
	30	206.8	133.8	6.3	9.6	38.0	145	180
203x133	25	203.2	133.4	5.8	7.8	32.3	170	210

For universal columns A/V table, please see ASFP Yellow Book.

Notes

Determining protection thickness

- The table opposite indicates the effect on A/V for three and four sided schemes
- Determine A/V factor from the table or by calculating for other exposure situations, ensuring the correct mass per metre is used
- Establish the period of fire protection required
- For A/V factors in excess of 260, contact ROCKWOOL for advice on both thicknesses and fixing methods preferred
- Bracing members: These do not generally require protection. If required as an essential element to the fire resistance, use A/V not greater than 200 m⁻¹
- Where steel beams are fixed to composite steel and concrete decks, the profiled re-entrant void may not need additional protection if allowances for board thickness or steelwork section factor are made

See the **ASFP Yellow Book 1.7** for current independent guidance.

General notes for systems

- Ensure steel is free from grease, dust or loose particles where noggins are to be glued, pins welded or clips applied
- Dry off steelwork where large water droplets are present. Steel damp to the touch is acceptable.
- Ensure that all noggins have the correct friction fit. Avoid excessive interference that may cause noggins to bend.
- Fix additional noggins (if required) at beam ends, beam-to-beam joints and large penetrations. For stud welded pin and clip systems it may be necessary to introduce soldier noggins into webs behind board to board joints to increase stability of the system on steelwork with large web depths.
- For glued system options ensure that all noggin-to-beam, noggin to-board and board-to-board surfaces are glued, and that the required setting time is allowed
- Remove any excess glue for neatness
- Any localised board shaping to be made at the point of installation should be carried out with a sharp knife or fine-toothed saw
- Avoid 'nuisance dust' from cutting operations lying on boards prior to installation
- Always use sharp-edged cutting tools
- The length of all nails used should be at least twice the thickness of the board being fixed
- Pigtail screw length should be twice the thickness of the board being fixed, less 5mm
- All board to board joints must be tightly butted

Vapour barriers

Glass-reinforced aluminium foil-faced ROCKWOOL BEAMCLAD® A/F provides an excellent vapour seal. For integrity of the foil, all edges should be taped (with a minimum 75mm wide) plain foil tape. Idenden T 303 tape is recommended as being suitable. Taped joints also prevent damage to foil edges during construction.

Board joints (glued)

No glue is required where boards meet wall or soffit surfaces, except in cases where a temporary fix to flange faces may be advantageous to the work sequence. Close contact between boards at joints is always essential.

Painted steel

Painting of structural steelwork is not always essential for corrosion protection. BS 8202: Part 1: 1995 permits the use of unpainted steel which is both interior to the building and in an area which will be constantly heated.

ROCKWOOL BEAMCLAD® thickness

In selecting ROCKWOOL BEAMCLAD® thicknesses, due consideration must be given to the required period of fire resistance and the A/V value of the steel sections concerned.

Supply

ROCKWOOL BEAMCLAD® slabs are supplied on pallets, shrink-wrapped in polyethylene. Pigtail screws are available from ROCKWOOL stockists. Clip fix ROCKWOOL BEAMCLAD® clips are available from ROCKWOOL in boxes of 1000. ROCKWOOL BEAMCLAD® washers are available from ROCKWOOL in boxes of 2000. Welded pins and sprung steel non-return washers are available from external suppliers.

References

ROCKWOOL BEAMCLAD® systems are part of the ROCKWOOL FIREPRO® range of fire protection products ranging from cavity fire stops to blastwall solutions for oil rigs.

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