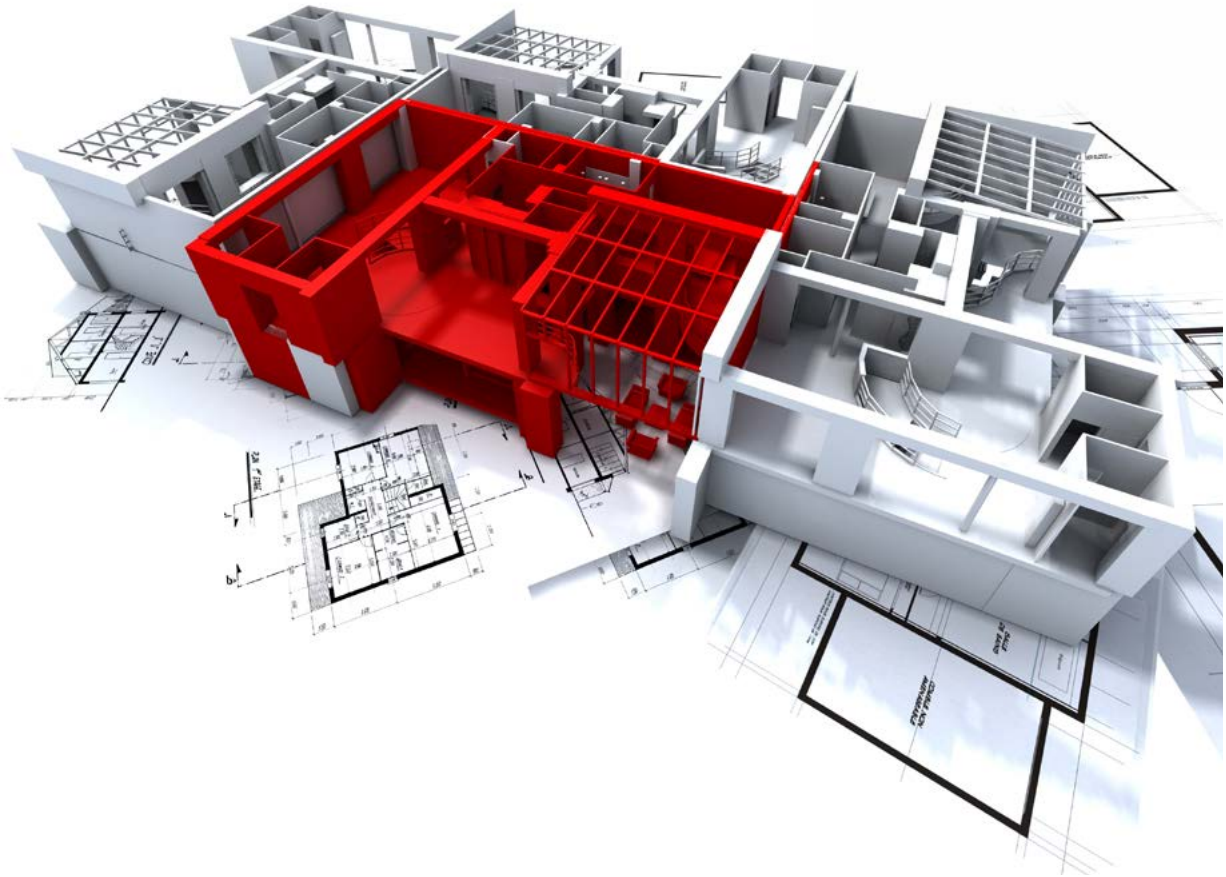
# ROCKWOOL®
# FIREPRO®

Comprehensive range of passive fire protection products and solutions



ROCKWOOL®

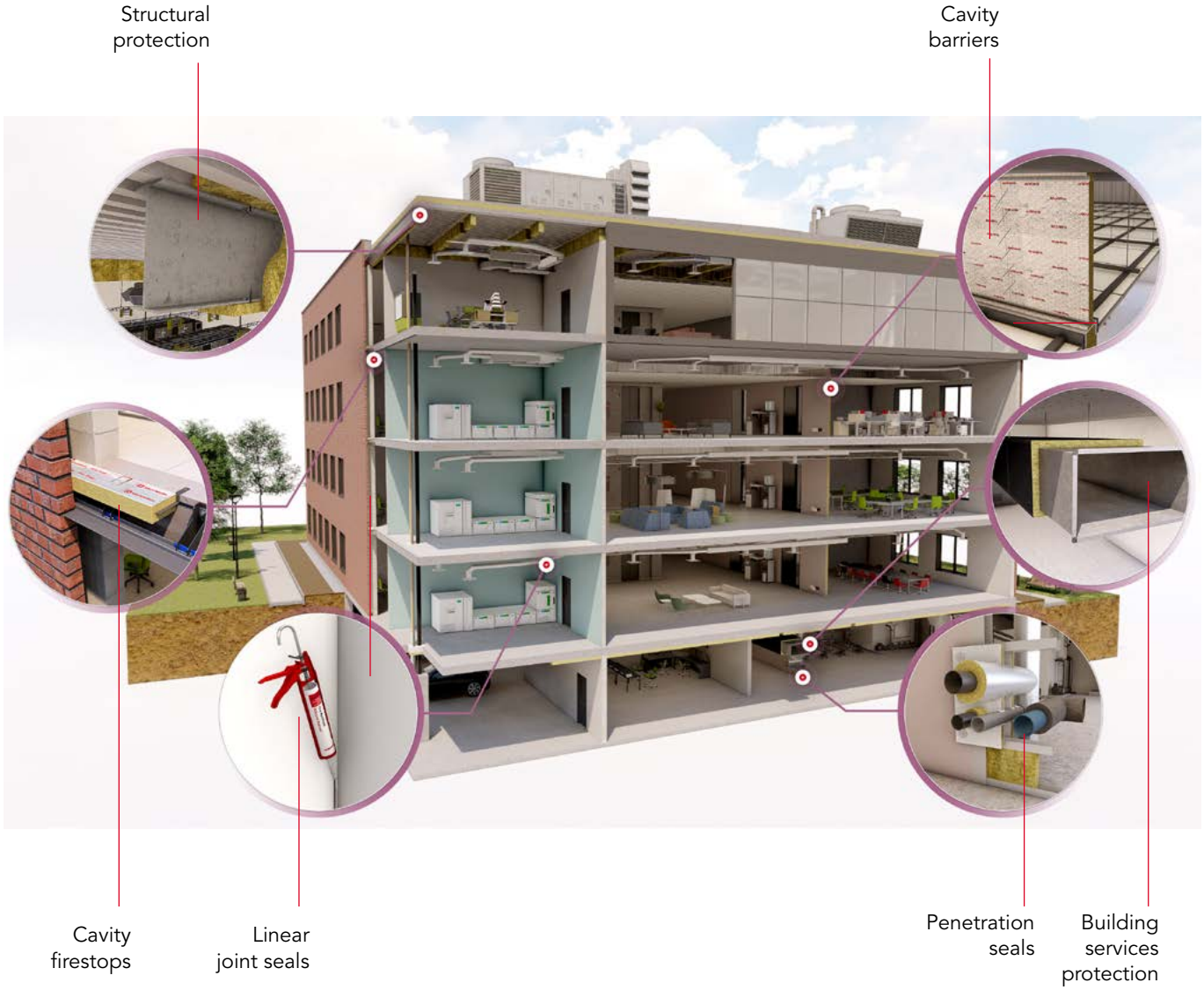
# Introduction

**Passive fire protection is a critical component of any fire safety strategy.**

Usually unseen but always at work, passive fire protection systems are built into the structure of the building to safeguard the lives of the building occupants. When properly installed, passive fire protection measures will protect the building's structure and limit the spread of fire and smoke by containing it within the compartment.

The ROCKWOOL® FIREPRO® range of passive fire protection products provides firestopping and fire resistance throughout the building's construction, ensuring the building and its occupants are safer in the event of a fire. Our specialist range of products support architects, contractors and developers to conform to current building regulations.

In the ROCKWOOL® FIREPRO® Book you can find products for a range of specialist passive fire protection applications which include:



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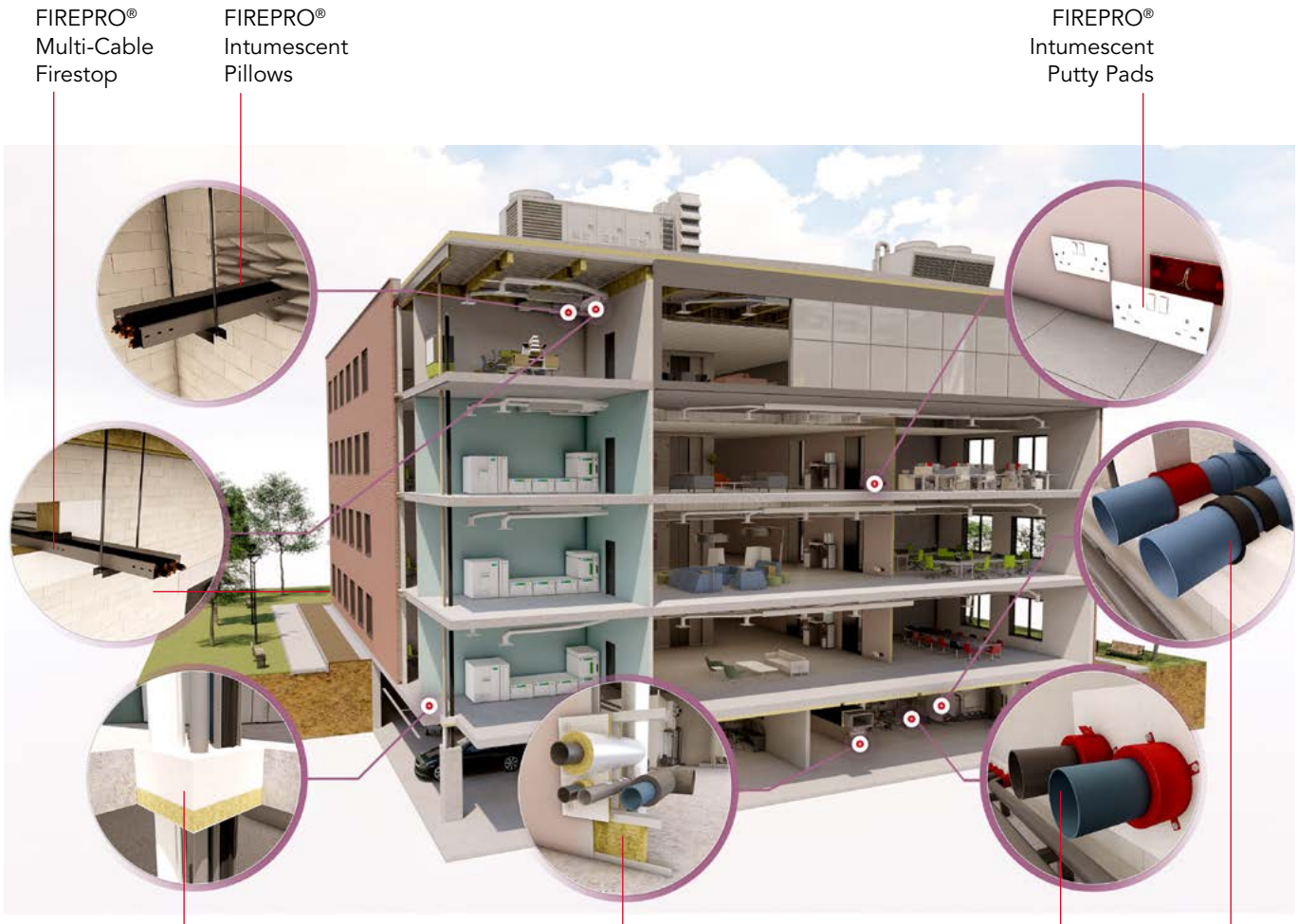
# FIRE STOPPING
# Section 1 – Penetration seals

Modern buildings include a vast array of building services which when installed, often pass through fire resistant compartment elements. It is also important to consider that buildings are subject to change, and that many building services can be added throughout its lifetime.

It is vitally important that breaches applied to compartment walls and floors by services are appropriately sealed to prevent the passage of fire and smoke. When sealing penetrations through compartment walls and floors, it essential that approved and tested products are used to re-establish the fire resistance of the compartment.

ROCKWOOL® Firestopping solutions include a wide range of 3rd party-approved products that have been developed to seal apertures made within compartment walls and floors. Within our range of penetration seals, we have products that have been designed for use with specific types of building services including:

- Combustible pipes
- Metal pipes
- Cables, cable trays & conduits
- Fire dampers
- Duct work
- Electrical sockets



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## Core products

- Ablative Coated Batt
- Acoustic Intumescent Sealant
- Insulated Fire Sleeves
- Pipe Wrap Roll

- Firestop Compound
- High Strength Compound
- Intumescent Pipe Wraps
- Firestop Pipe Collars

- High Expansion Intumescent Sealant

- Intumescent Putty Pads

- Multi Cable Firestop

- Intumescent Pillows

## Useful documents and standards

- ASFP Technical Guidance Document – TGD 17: Code of practice for the installation and inspection of fire stopping systems in buildings
- ASFP Red Book: Fire stopping and penetration seals for the construction industry
- ASFP: Ensuring best practice for passive fire protection in buildings
- ASFP: On-site guide to installing fire stopping
- ROCKWOOL® Firestopping Standard Details
- BS 476-20: Fire test on building materials and structures. Method for determination of the fire resistance of elements of construction
- BS EN 1366-3: Fire resistance test for service installations. Penetration Seals
- BS EN 1363-1: Fire resistance tests. General Requirements
- BS EN 13501-2: Fire classification of construction products and building elements. Classification using test data from resistance to fire tests, excluding ventilation services.

*ASFP ( Association for Specialist Fire Protection) guidance documents can be sourced at www.asfp.org.uk*



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# FIREPRO® 50MM ABLATIVE COATED BATT

## Advantages

- Excellent fire resistance from a single thickness batt
- Comprehensively tested as part of the FIREPRO® suite of solutions
- Suitable for sealing wall and floor voids containing most commonly used services and substrates
- Can be used as a blank seal and a head of wall seal
- Lightweight and simple to install
- Tested for air tightness, providing an additional smoke and acoustic seal

## Description

The ROCKWOOL Ablative Coated Batt comprises a high density stone wool core, pre-coated on both sides with our high-performance ablative coating.

Ablative Coated Batt has been comprehensively tested as part of the ROCKWOOL FIREPRO® range of fire protection products, specifically for use in service penetrations, head of wall and other void seals.

## Applications

- Multiple substrates including: solid walls and floors; flexible walls
- Multi-service penetrations
- Head of wall
- Blank seals
- Face-fixed applications
- Large-framed service voids

For a fully comprehensive list of applications, please refer to the appropriate ROCKWOOL standard details available at www.rockwool.co.uk or contact the ROCKWOOL Technical Solutions Team.

## Performance

### Fire performance

Tests have proved the capability of a single 50mm Batt to provide up to 2 hours fire resistance Integrity and Insulation ratings are dependent upon the service penetrations and void size. Where 4 hours integrity and insulation are required we recommend the use of our 60mm Ablative Coated Batt.

### Acoustic performance

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.

For specific acoustic requirements please contact ROCKWOOL Technical Solutions.

## Product information

| Property | Description |
|---|---|
| Length | 1200mm |
| Width | 600mm |
| Thickness | 50mm |
| Fire Resistance | Up to 2 hours |
| Density | 160Kg/m³ |
| Air Leakage | 0.8 m³/h/m² |

### Standards and approvals

BS EN 1366-3: 2009 and the dedicated fire resistance standard for linear joint seals, BS EN 1366-4:2006. Ablative Coated Batt has been classified in accordance with BS EN 13501-2.

Third party accreditation through IFC and Certifire.

CE marked to ETAG 26-02

For further information on the full scope of fire performance please refer to the appropriate standard details available www.rockwool.co.uk or contact ROCKWOOL Technical Solutions.

*Note: All Ablative Coated Batt fire resistance tests were conducted using ROCKWOOL FIREPRO® ancillary products as appropriate.*



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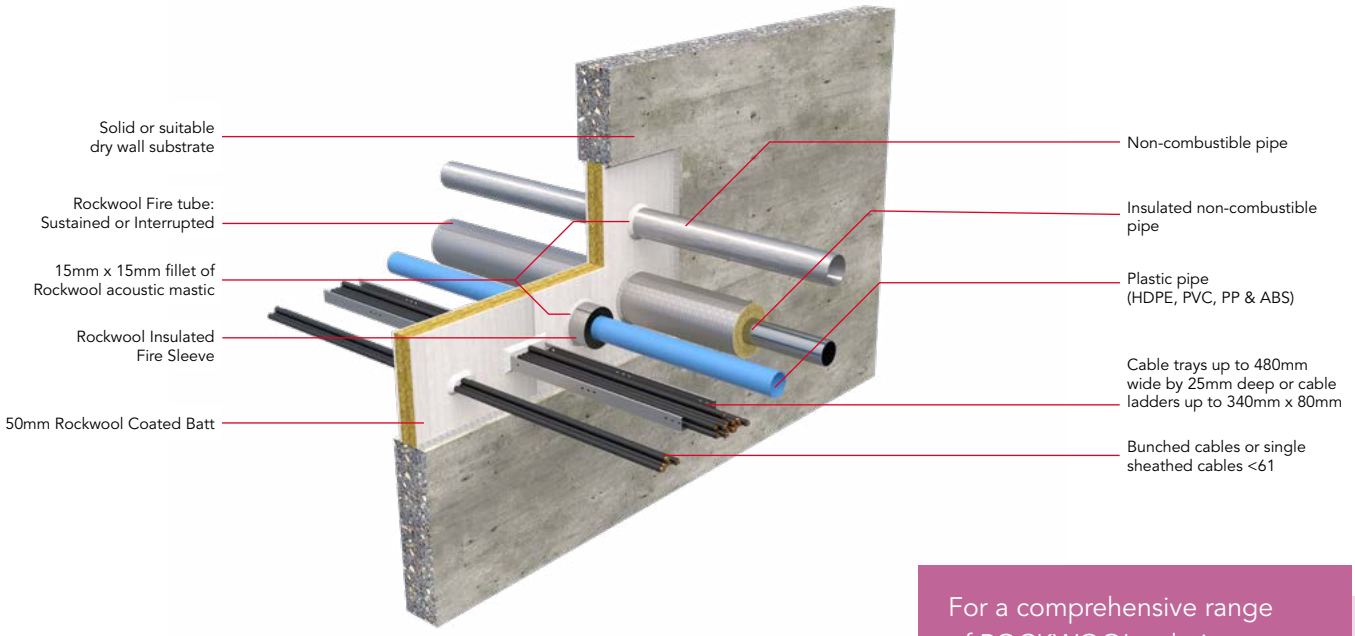
## Installation

1. Make sure that the area within the aperture is clean of any debris and remove any dust from the edges.
2. Cut ROCKWOOL Ablative Coated Batt to the size and shape required to fit the aperture ensuring that batt will make a tight fit with all edges of the aperture.
3. Cut rectangular holes from the coated batt to accommodate cable trays or ladders containing cables.
4. Cut the Coated Batt across its width at the mid-point of each rectangular hole to enable the Batt to be fitted into the aperture.
5. Apply ROCKWOOL Acoustic Intumescent Sealant to all edges of the Batt ensuring that an even cover is achieved over the entire thickness of the Batt. This should include the outer edges of the Batt and the edges of the cuts made across the Batt to allow fitting into the aperture.
6. Insert the Batt into the aperture.
7. Apply a bead of ROCKWOOL Acoustic Intumescent Sealant approximately 15mm wide around the perimeter of the Batt ensuring that all gaps between the Batt and surrounding edges are fully filled.
8. Apply a bead of ROCKWOOL Acoustic Intumescent Sealant approximately 15mm wide where cables pass through the Batt. Ensure that the sealant fully enclosed each cable within the tray or ladder and that all gaps are fully filled.
9. Repeat step 7 and 8 on the other side of the Batt.

### Other installation information

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.




## Specification clauses

50mm Ablative Coated Batt is associated with the following NBS clauses:

P12 Fire stopping systems

- 325 Boards – Mineral Bound Lightweight
- 360 Mineral Wool Rigid Batts
- 365 Mineral Wool Rigid Batts – Ablative Coated

For a comprehensive range of ROCKWOOL solutions for penetrating services passing through the Ablative Coated Batt, please refer to the applicable ROCKWOOL standard details available at **www.rockwool.co.uk** or contact ROCKWOOL Technical Solutions.

# FIREPRO® 60MM ABLATIVE COATED BATT

## Advantages

- Excellent fire resistance from a single thickness batt
- Suitable for sealing 20m long x 1.2m high voids at head of wall
- Suitable for large unframed voids up to 7.02m²
- Tested with dampers
- Comprehensively tested as part of the FIREPRO® suite of solutions
- Lightweight and simple to install
- Tested for air tightness, providing an additional smoke and acoustic seal

## Description

The ROCKWOOL Ablative Coated Batt comprises a high-density stone wool core, pre-coated on both sides with our high-performance ablative coating.

Ablative Coated Batt has been comprehensively tested as part of the ROCKWOOL FIREPRO® range of fire protection products, specifically for use in service penetrations, head of wall and other void seals.

## Applications

- Multiple substrates including: solid walls and floors; flexible walls
- Multi-service penetrations
- Head of wall
- Blank seals
- Face-fixed applications

For a fully comprehensive list of applications, please refer to the appropriate ROCKWOOL standard details available at www.rockwool.co.uk or contact the ROCKWOOL Technical Solutions team.



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## Performance

### Fire performance
Tests have proved the capability of a single 60mm Batt to provide up to 4 hours fire resistance Integrity and Insulation ratings are dependent upon the service penetrations and void size.

### Acoustic performance
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.

For specific acoustic requirements please contact ROCKWOOL Technical Solutions

## Technical information

### Standards and approvals
BS EN 1366-3: 2009 and the dedicated fire resistance standard for linear joint seals, BS EN 1366-4:2006. Ablative Coated Batt has been classified in accordance with BS EN 13501-2. 60mm Ablative Coated Batt is also comprehensively tested to BS 476 Part 20 & 22.

Third party accreditation through IFC and Certifire.

CE marked to ETAG 26-02.

For further information on the full scope of fire performance please refer to the appropriate standard details available www.rockwool.co.uk or contact ROCKWOOL Technical Solutions.

*Note: All Ablative Coated Batt fire resistance tests were conducted using ROCKWOOL FIREPRO® ancillary products as appropriate.*

## Product information

| Property | Description |
|---|---|
| Length | 1200mm |
| Width | 600mm |
| Thickness | 60mm |
| Fire Resistance | Up to 4 hours |
| Density | 180Kg/m³ |
| Air Leakage | 0.41 m³/h/m² |

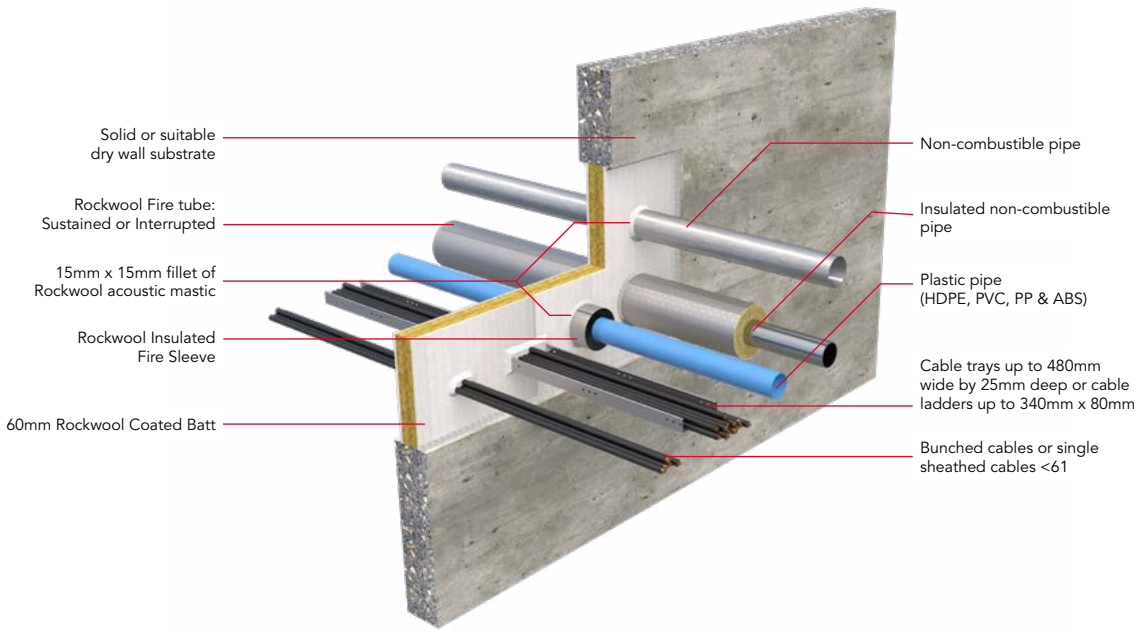
## Installation

1. Make sure that the area within the aperture is clean of any debris and remove any dust from the edges.
2. Cut ROCKWOOL Ablative Coated Batt to the size and shape required to fit the aperture ensuring that batt will make a tight fit with all edges of the aperture.
3. Cut rectangular holes from the coated batt to accommodate cable trays or ladders containing cables.
4. Cut the Coated Batt across its width at the mid-point of each rectangular hole to enable the Batt to be fitted into the aperture.
5. Apply ROCKWOOL Acoustic Intumescent Sealant to all edges of the Batt ensuring that an even cover is achieved over the entire thickness of the Batt. This should include the outer edges of the Batt and the edges of the cuts made across the Batt to allow fitting into the aperture.
6. Insert the Batt into the aperture.
7. Apply a bead of ROCKWOOL Acoustic Intumescent Sealant approximately 15mm wide around the perimeter of the Batt ensuring that all gaps between the Batt and surrounding edges are fully filled.
8. Apply a bead of ROCKWOOL Acoustic Intumescent Sealant approximately 15mm wide where cables pass through the Batt. Ensure that the sealant fully enclosed each cable within the tray or ladder and that all gaps are fully filled.
9. Repeat step 7 and 8 on the other side of the Batt.

*Note: For any areas of Batt where the coating has been damaged, repaint with the Ablative Coating. Ensure that there is no uncoated slab or bare mineral wool visible.*

### Other installation information

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. For seals over 1200mm x 1200mm Batt to Batt joints are to be fully coated with FIREPRO® Glue.




## Specification clauses

60mm Ablative Coated Batt is associated with the following NBS clauses:

P12 Fire stopping systems

- 325 Boards – Mineral Bound Lightweight
- 360 Mineral Wool Rigid Batts
- 365 Mineral Wool Rigid Batts – Ablative Coated

For a comprehensive range of ROCKWOOL solutions for penetrating services passing through the Ablative Coated Batt, please refer to the applicable ROCKWOOL standard details available at **www.rockwool.co.uk** or contact ROCKWOOL Technical Solutions.



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# ROCKWOOL ABLATIVE COATING


## Advantages

- Suitable for spray or brush application
- Dries to give a sound, flexible white surface finish
- Provides a stable surface for adhesive and fixing sealants

## Description

The ROCKWOOL ablative Coating is a water based, ready to use viscous paste 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*. ROCKWOOL Ablative is supplied in 5L tubs.

## Applications

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 air seal 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.

*Please contact ROCKWOOL Technical Solutions for guidance on suitable paints

## Performance

### Fire performance

ROCKWOOL Ablative Coating is designed to re-seal the surface of Ablative Coated Batt where damage to the ablative coating may have occurred during installation.

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.

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 information

### Product information

| Property | Description |
|---|---|
| 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 |

## Installation

ROCKWOOL Ablative Coating can be spray or brush-applied.

## Specification clauses

ROCKWOOL Ablative Coating is associated with the following NBS clauses:

P12 Fire Stopping Systems

- 325 Boards: Mineral Bound Lightweight
- 360 Mineral Wool Rigid Batts
- 365 Mineral Wool Rigid Batts: Ablative Coated



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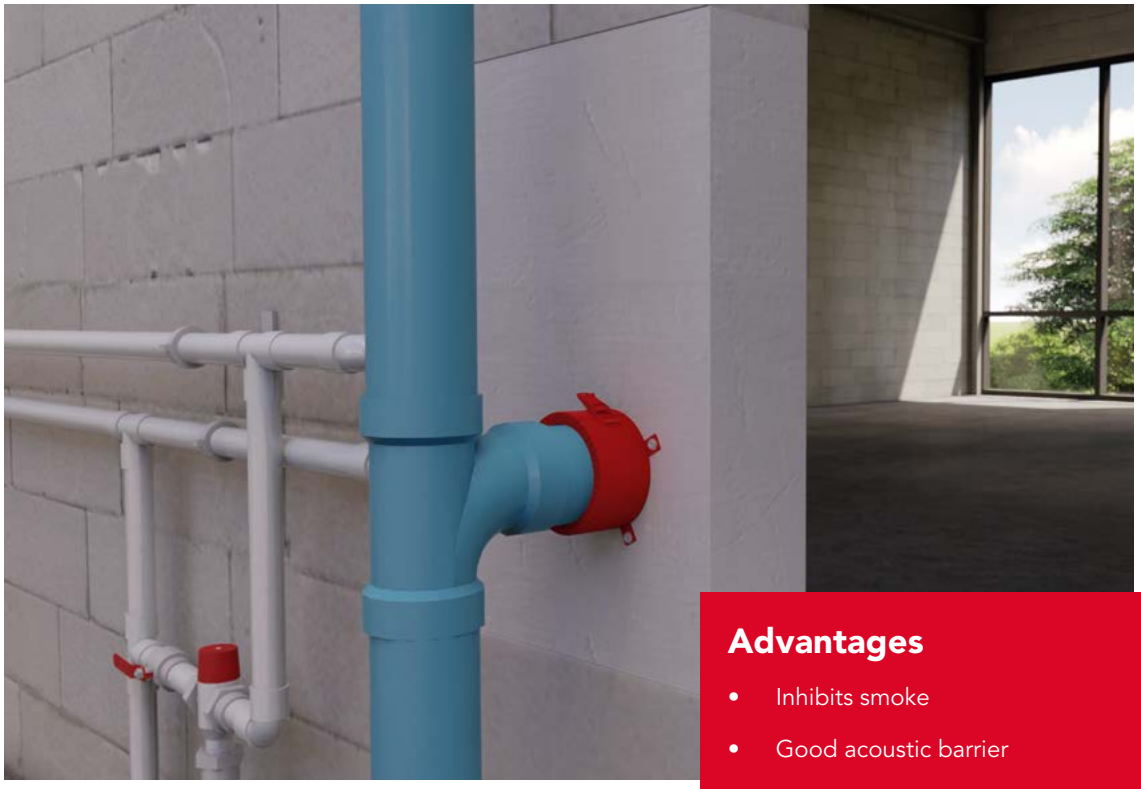
# FIREPRO®
# FIRESTOP COMPOUND



## Advantages

- Inhibits smoke
- Good acoustic barrier
- Suitable for sealing around most types of service penetrations
- Load bearing capability
- Simple installation
- No smoke emission
- Unaffected by humidity

## Description

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

## Applications

- Re-instating the fire resistance of wall and floor constructions
- Load bearing floors
- Wall penetrations
- Load bearing seals around unsupported fire dampers

# Performance

## Acoustic performance

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

For specific information on acoustic performance please contact ROCKWOOL Technical Solutions on 01656 868490 or technical.solutions@rockwool.co.uk.

## Load bearing capability

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

Openings with a clear area larger than 750 x 750mm need to be reinforced as outlined within the installation section. For further information on the reinforcement of openings greater than 750 x 750mm, please contact ROCKWOOL Technical Solutions on 01656 868490 or technical.solutions@rockwool.co.uk.

# Technical information

## Standards and approvals

FIREPRO® Firestop Compound has been tested to BS 476 Part 20:1987

FIREPRO® Firestop Compound is third party accredited through IFC and Certifire.

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

## Fire performance

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.

Plastic pipework must be protected with either ROCKWOOL Firestop Pipe Collars or Intumescent Pipe Wraps. For further advice on specific applications and fire performance, please contact ROCKWOOL Technical Solutions on 01656 868590 or technical.solutions@rockwool.co.uk.

## Firestop Compound - Spans with services

Non-reinforced seals

| Firestop Compound thickness (mm) | Fire rating (hours) | Max. opening width x any linear length (mm) | Load bearing capacity (Kn) |
|---|---|---|---|
| 75 | 2 | 500 | 2.5 |
| 100 | 4 | 750 | 2.5 |

Simply reinforced seals

| Firestop Compound thickness (mm) | Fire rating (hours) | Max. opening width x any linear length (mm) | Load bearing capacity (Kn) |
|---|---|---|---|
| 100 | 4 | Up to 1500 | 2.5 |



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### Product information

| Property | Description |
|---|---|
| Pack Size | 22Kg Bag |
| Fire Resistance | Up to 6 hours |
| Load Bearing Capacity | Up to 2.5KN |
| Acoustic Performance | Up to 51dB |

## Installation

### Floor installations

In floors, a permanent shuttering made from 50mm ROCKWOOL slab (minimum density 140kg/m$^3$) 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 (See Figure 1).

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

### Installation instructions – Floors

1. Mix a bag of compound to 10 litres of 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.

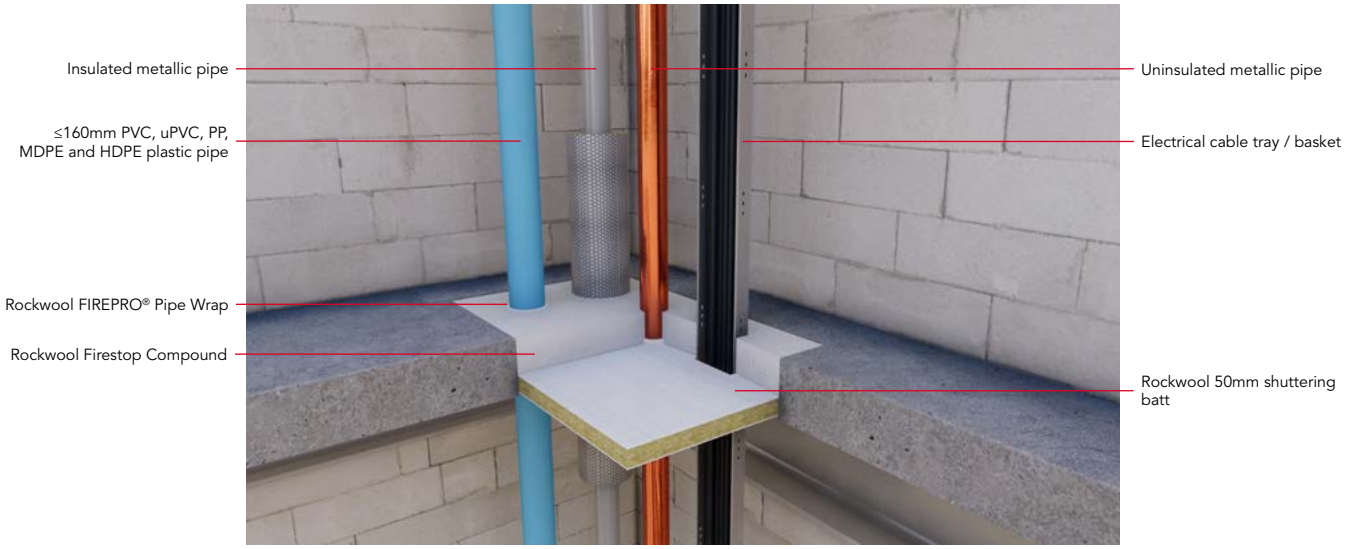


Figure 1

### Wall installations

In wall applications (See Figure 2), Firestop Compound is mixed into a stiff consistency for trowelling into openings.

### Installation instructions – Walls

1. Mix a bag of compound to 10 litres of water (3:1) by volume. Vary to suit site conditions.
2. Apply the compound using the specified shuttering method (See Figure 3).
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 the shuttering panel is set at the centre, repeat the process on the other side.

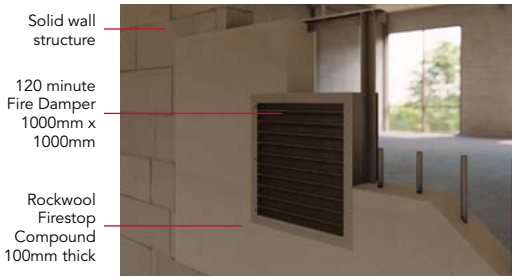


Figure 2

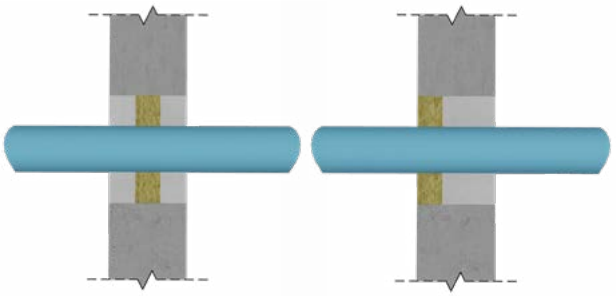

Figure 3

| Thickness of Compound (mm) | Number of bags/m² |
|---|---|
| 75 | 3.15 |
| 100 | 4.20 |
| 150 | 6.30 |

### Coverage

*The above calculations are approximate and based on 22kg bags.*

*The coverage rates shown do not take into account the area of service penetrations within the aperture.*

## Specification clauses

ROCKWOOL Firestop Compound is associated with the following NBS clauses:

P12 Fire stopping systems

- 340 Intumescent Mortar



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# FIREPRO®
# HS FIRESTOP COMPOUND

## Advantages

- Unsupported spans of up to 1800mm
- High load bearing capacity
- Suitable for use with multiple service penetrations
- Can be formed into blocks
- Good acoustic barrier
- Effective smoke seal
- Rapid setting

## Description

HS Firestop Compound is a specially formulated gypsum-based mortar, which is mixed with water to create a workable range from stiff to pourable mix. HS Firestop Compound is also suitable for pre-casting into convenient size blocks for use in wall openings.

## Applications

- Re-instating the fire resistance of wall and floor constructions
- Load-bearing floors
- Wall penetrations
- Load-bearing seals around unsupported fire dampers

# Performance

## Fire performance

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

Plastic pipework must be protected with either ROCKWOOL Firestop Pipe Collars or Intumescent Pipe Wraps. For further advice on specific applications and fire performance, please contact ROCKWOOL Technical Solutions on 01656 868590 or technical.solutions@rockwool.co.uk

| Floor seals - Maximum aperture 1800 x 1800 | | | | | |
|---|---|---|---|---|---|
| Service | Diameter (mm) | Wall thickness (mm) | Min floor thickness (mm) | Classification E | Classification EI |
| Copper pipe ŧ | 40-107 | 1.5-14.2 | 100 | 60 | 15 |
| Steel pipe ŧ | 40-115 | 3.5-14.2 | 100 | | 120 |
| Steel pipe ŧ | 116-160 | 5-14.2 | 100 | 120 | 90 |
| Electrical cables Ᵽ | ≤80 | N/A | 100 | 120 | 60 |
| Non-sheathed wires Ᵽ | ≤24 | N/A | 100 | | 120 |
| Telecom cables Ᵽ | 100mm bundle | N/A | 150 | | 120 |
| **Floor seals – Maximum aperture unlagged solutions for cables and conduits** | | | | | |
| Cable trays | ≤450mm | | 100 | | 120 |
| Cable ladders | ≤300mm | | 100 | | 120 |
| Electrical cables | ≤21mm | | 100 | | 120 |
| Electrical cables | 22-80mm | | 100 | 120 | 90 |
| Non-combustible conduits | ≤16mm | | 100 | | 90 |

*ŧ - Service fitted with 50mm thick H&V 500mm above floor (L/I)*
*Ᵽ - Service fitted with 25mm thick Ductwrap 500mm above floor (L/I)*

| Rigid walls min 150mm thick - Maximum aperture 2600 x 2600 | | | | | |
|---|---|---|---|---|---|
| Service | Diameter (mm) | Wall thickness (mm) | Min wall thickness (mm) | Classification E | Classification EI |
| Blank seal 2.6 X 2.6M | No services | | 150 | | 240 |
| Non-combustible pipe ŧ | 40 - 219Ł | 1.0-14.2 | 150 | | 240 |
| Perforated cable trays | ≤500mm | n/a | 150 | | 240 |
| Non-perforated cable trays | ≤500mm | n/a | 150 | 240 | 180 |
| Cable ladders | ≤350mm | n/a | 150 | 240 | 120 |
| Cable ladders | ≤200mm | n/a | 150 | 240 | 240 |
| Electrical cables (s) | ≤21mm | n/a | 150 | 240 | 120 |
| Electrical cables (m) | 22-50mm | n/a | 150 | 240 | 120 |
| Electrical cables (l) | 51-80mm | n/a | 150 | 240 | 120 |
| Non combustible conduits | ≤16mm | n/a | 150 | 240 | 240 |
| Combustible conduits | ≤16mm | n/a | 150 | 240 | 180 |

*ŧ - Service fitted with 1m long 25mm thick H&V section (C/S) - 0mm separation distance to each other and aperture opening*
*Ł - When installed in opening with cable services, the diameter range reduces to 40 -108 with 10mm spacing*

### Acoustic performance

HS Firestop Compound has been tested in accordance with EN 10140 achieving Rw 57dB at a depth of 100mm (with 50mm ROCKWOOL shuttering batt).

For specific information on acoustic performance please contact ROCKWOOL Technical Solutions on 01656 868490 or technical.solutions@rockwool.co.uk

### Load bearing capability

HS Firestop Compound in floor spans of up to 1800mm without the need for further reinforcement. For further information on the load bearing capacity of HS Firestop Compound, please contact ROCKWOOL Technical Solutions.

| Property | Description |
|---|---|
| Description | Grey coloured free flowing powder |
| Pack size | 20kg bag |
| Density | 1750-1900kg/m³ |
| Loadbearing | 2.5KN/m² UDL |
| Fire resistance | Up to 4 hours |
| Acoustic performance | Rw 57dB (100mm Depth) |
| Max unsupported span | 1800mm |
| Thermal conductivity | 0.45W/mK |
| Setting expansion (%) | 0.1 |
| Typical yield | ±6bags/m² at 100mm depth |
| Expected shelf life | 6 months (When stored in accordance with the packaging instructions) |

## Technical information

### Standards and approvals

FIREPRO® HS Firestop Compound has been tested for resistance in accordance with BS 476 Part 20 and EN 1366-3.

HS Firestop Compound has been classified as EI 120 in accordance with EN 13501-2

FIREPRO® Firestop Compound is third party accredited through Certifire.

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

# Installation

## Mixing

HS Firestop Compound can be mixed preferably by mechanical paddle or manually, if required. Measure out the correct amount of clean water into a clean container to achieve the desired consistency.

Avoid any cross-contamination with part-cured and new mixes as this can accelerate curing times.

HS Firestop Compound: water ratio
Pourable Mix ratio of 3 - 3Vz:1
Trowel Mix ratio of 4:1

Gradually add the HS Firestop Compound, stirring continually. Continue mixing until the compound is mixed to a smooth, even consistency. Any spillage should be wiped up with a damp cloth before setting occurs*. Mix only enough material sufficient for use within the recommended pot life (20-30 minutes). Pot life and set times will be reduced for lower water content and higher temperatures.

*HS Firestop Compound may stain pipes and services

Installation should not be carried out when temperatures are above 35°C. Setting times are normally between 30 and 90 minutes.

*Note: Do not attempt to extend working time by remixing with additional water once the mortar has started to set, as this will interfere with the setting process. Always mix in clean buckets.*

Fit a shuttering board to the bottom of the opening. Shuttering materials must be able to support the wet weight of the compound under pouring conditions. Pour HS Firestop Compound to the required 100mm thickness.

## General installation requirements

Ensure that the aperture and services in question are tested with HS Firestop Compound, and the site conditions are within the application specification.

All services and apertures need to be clean and clear of all dust and loose particles. The aperture temperature needs to be at 5°C or above at time of installation. Plastic pipework must be protected with either ROCKWOOL Firestop Pipe Collars or Intumescent Pipe Wraps.

Upon installation make sure that you install the HS Firestop Compound to the recommended ratio for the aperture you are installing, make sure that you fill the full depth in a single pour to create a solid structure. Apply a minimum depth of 100mm in a single pour to achieve loadbearing capabilities.

Once filled, smooth off the HS Firestop Compound to produce a professional finish.

## Wall openings (Figure 1)

For small holes and gaps, trowel a stiff mix into the opening to the correct depth. For larger holes, use an appropriate non-combustible shuttering material to support the mix until it sets, or, if a fair faced finish is required to both sides, consider using a sandwich construction. Alternatively, the HS Firestop Compound may be pre-cast into convenient sized blocks, a stiff mix being used as a bedding mortar. All combustible services (Plastic Pipes etc.) should have a ROCKWOOL tested fire rated closure device/material fitted prior to the pouring of the HS Firestop Compound.



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### Floor openings (Figure 2)

When sealing holes in floor slabs, appropriate shuttering must be installed, cut to fit tightly around any services within the opening, to support the wet mix until it sets. Non-combustible shuttering materials, such as mineral fibre slab, can be left in place, but combustible materials must be removed, after the mix has set. For complex penetrations it may be preferable to initially form a thin seal around all services with a nominal 5mm layer of the HS Firestop Compound mix. Once this has set, the remaining depth of seal should be poured in one operation. All combustible services (Plastic Pipes etc.) should have a tested fire rated closure device/material fitted prior to the pouring of the HS Firestop Compound.

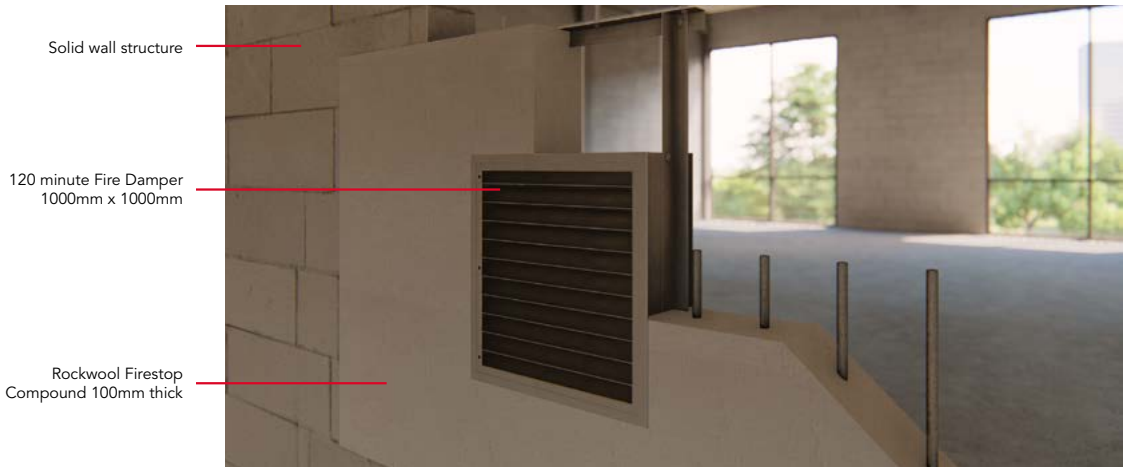


Figure 1

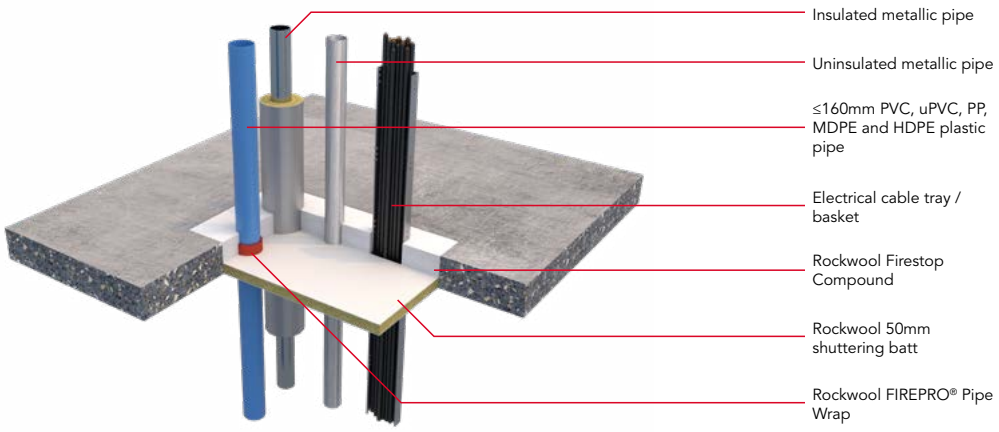


Figure 2

## Specification clauses

ROCKWOOL Firestop Compound is associated with the following NBS clauses:
P12 Fire stopping systems
340 Intumescent Mortar

# FIREPRO® INTUMESCENT PILLOWS


## Advantages

- Easy to install
- Easy to remove and reinstate when changing services
- Maintenance free
- Dry system

## Description

FIREPRO® Intumescent Pillows consist of intumescent material encased within a glass cloth bag. 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).

## Applications

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 1

Figure 2

Figure 3



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# Performance

## Fire performance

ROCKWOOL Intumescent Pillows to provide up to 4 hours rating where services pass through fire-rated walls and floors.

### Table 1

Performance in masonry supporting walls

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

### Table 2

Performance in drywall systems

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

### Table 3

Performance in concrete floors

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

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

*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 thicknesses.

## 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 x150mm (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.

# Technical information

## Standards and approvals

FIREPRO® Intumescent Pillows have been tested in accordance with BS EN 1366 Part 3: March 2009 achieving fire resistance (integrity) of up to 4 hours and insulation performance of 2 hours.

## Product information

| Property | Description |
|---|---|
| Length | 300mm |
| Width | 50, 100, 150 & 200mm |
| Thickness | 30mm |
| Fire resistance | Up to 4 hours integrity |

# Installation

### 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 onto 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.

### Installation of service penetrations

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.

### Coverage

Table 4
Estimating quantities

| Pillow size (mm) | Approximate number |
|---|---|
| 300 x 200 x 30 | 165 per $m^2$ opening |
| 300 x 150 x 30 | 220 per $m^2$ opening |
| 300 x 100 x 30 | 330 per $m^2$ opening |
| 300 x 50 x 30 | 660 per $m^2$ opening |

# Specification clauses

FIREPRO® Intumescent Pillows are associated with the following NBS clauses:

P12 Fire stopping systems

- 345 Intumescent pillows



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# FIREPRO® MULTI-CABLE FIRESTOP


## Advantages

- Simple to install
- Cables can be easily added/removed
- No de-rating of cables required
- Maintenance free
- Dry installation

## Description

Multi-Cable Firestop is 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 25mm thick x 1000mm long.

## Applications

FIREPRO® Multi-Cable Firestop has been developed to provide fire protection in all electrical trunking and cable trays at the junction in which these services pass through the compartment wall. FIREPRO® Multi-Cable Firestop can be used where electrical services pass through both walls and floors providing up to 4 hours fire resistance.

# Performance

## Fire performance

| 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 masonry wall | Seal in a plaster-board wall | Seal in a concrete floor |
| Cables (see note 1) secured to appropriately supported perforated steel cable trays/ ladders | Single 60mm ROCKWOOL Ablative Coated Batt | 60 | 25(1) | 180 | | 180 |
| | | | 55(2) | 120 | | 120 |
| | | | 80(3) | 120 | | n/a |
| | Double 60mm ROCKWOOL Ablative Coated Batt | 60 | 25(1) | 240 | 60 | 240 |
| | | | 55(2) | 240 | 60 | 240 |
| | | | 80(3) | 240 | 60 | n/a |
| Cables (see note 1) within PVC trunking (max. 100 x 100mm) | Double 60mm ROCKWOOL Ablative Coated Batt with no air gap | 60 | 100(1) | 240 | 60 | - |

## Fire performance - Service penetration requirements

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 the cable tray 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.
6. Maximum depth filled must not exceed 60mm.

# Technical information

## Standards and approvals

FIREPRO® Multi-Cable Firestop has been tested to BS 476: Part 20: 1987 and can provide up to 4 hours fire protection in joints.

Acoustic Intumescent Sealant is third party accredited through IFC and Certifire.

## Product information

| Property | Description |
|---|---|
| Length | 1000mm |
| Width | 60mm |
| Thickness | 25mm |
| Fire resistance | Up to 4 hours |



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## Installation

- Where a single Multi-cable Firestop is installed in fire-resisting walls (which will require fire resistance from either side), the Ablative Coated Batt and Multi-cable Firestop should be fitted centrally within the thickness of the wall. Twin layer Batts/Seals with an air gap should be aligned with each face of the wall.
- If a wall/floor does include a decorative finish, such as plaster, the Ablative Coated Batts must not be installed flush with the surface of this decorative finish; it must be recessed, to remain aligned with the face of the 'solid' construction.
- Where the Multi-cable Firestop is installed in fire-resisting floors, it shall be positioned approximately 15mm from the upper surface of the slab.
- Limitations and specifications for the construction of associated walls, partitions, and floors shall be as defined in Appendix K.
- Cables must be secured to perforated cable trays, which must be fully supported within at least500mm of both sides of the construction element; and using a support system that will remain effective under fire conditions. Cable trays may penetrate horizontal or vertical construction elements.
- Cables may also be included within PVC trunking, which must be fully supported within at least 500mm of both sides of the construction element; and using a support system that will remain effective under fire conditions. PVC trunking may only penetrate walls. The lid of the trunking should be cut within 100-150mm of the Ablative Coated Batt barrier to facilitate the installation of, or access to, cables and the Multi-cable Firestop within the trunking.
- Only one single layer of cables may be included on each cable tray, or within the trunking, prior to application of the multi-cable firestop material. Additional cables may be included between extra sections of Multi-cable Firestop, if necessary; but only one single layer of cables may be included between each subsequent section of Multi-cable Firestop material, where included.
- Over-compression of the seal can cause lateral expansion or misalignment of the activated strips; and the seals should be installed carefully, with consideration to the layers/thickness of cables.
- Maximum diameter of any cable is 12mm, and only power cables, of the type with multi-core copper conductor and PVC insulation/sheath, are approved.
- The aperture in the Ablative Coated Batt must match the width of the perforated cable tray.
- The section(s) of Multi-cable Firestop must extend over the full width of the aperture within the Ablative Coated Batt; i.e. to fill the aperture and the tray.

Figure 1

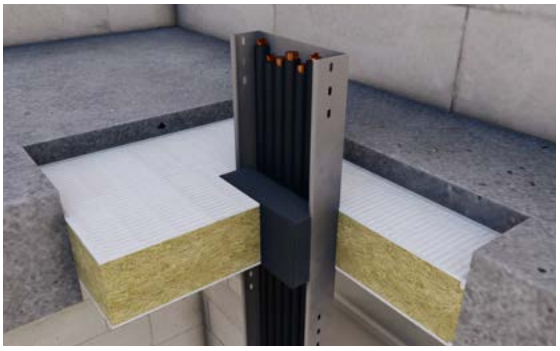

Figure 2

## Specification clauses

FIREPRO® Multi-Cable Firestop is associated with the following NBS clauses:

P12 Fire stopping systems

- 330 Fire stop laminate

# FIREPRO® INTUMESCENT PUTTY PADS


## Advantages

- Available for single & double sockets
- Up to 2 hours fire resistance
- Reduces noise transfer
- Pre-cut for simple installation
- Maintenance free

## Description

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

## Applications

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

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.




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## Performance

### Fire performance

Tested to BS 476 Part 20:1987/EN1366-3, Acoustic Intumescent Putty Pads offer up to 2 hour fire resistance.

### Acoustic performance

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.

## Technical information

### Product information

| Property | Description |
|---|---|
| Suitable socket size | Single & double gang |
| Suitable socket type | Internally & externally mounted |
| Activation temperature | 200°C |
| Application temperature | 0°C to 40°C |
| Acoustic performance | Up to 67 dB |
| Shelf life | Up to 24 months |
| Fire resistance | Up to 2 hours |

## Installation

1. Remove the socket plate.
2. To ensure a high-quality seal, ensure the socket box is clean, dry and free from any dirt and dust.
3. Remove the protective paper from one side of the pad and align the pad so that it fits centrally over the switchbox. (can be installed to either the inside or the outside of the socket, depending on the fitting method / type of socket).
4. Firmly press and mould the pre-formed putty pad into the back of the box and around the cables ensuring the pad perimeter is sufficiently bonded.
5. Remove the remaining protective paper and trim off any excess material to leave a neat finish.
6. Replace and secure the socket plate.

Figure 1

Figure 2

Figure 3

## Specification clauses

FIREPRO® Intumescent Putt Pads are associated with the following NBS Clause:

P12 Fire stopping systems

- 350 Intumescent Putty



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# FIREPRO®
# FIRESTOP PIPE COLLARS


## Advantages

- Simple to install
- Water resistant
- Maintenance free
- Available to suit pipe sizes ranging from 32 to 315mm O.D.
- Available from order in 48 hours

## Description

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

Firestop Pipe Collars consist of a corrosion resistant powder 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.

Gaps of up to 15mm between the substrate and service pipework should be filled with ROCKWOOL Acoustic Intumescent Sealant.

For gaps greater than 15mm wide ROCKWOOL Firestop Compound can be used. Under fire conditions the intumescent material within the collar expands, crushing the pipework and fill the void left by the pipework.

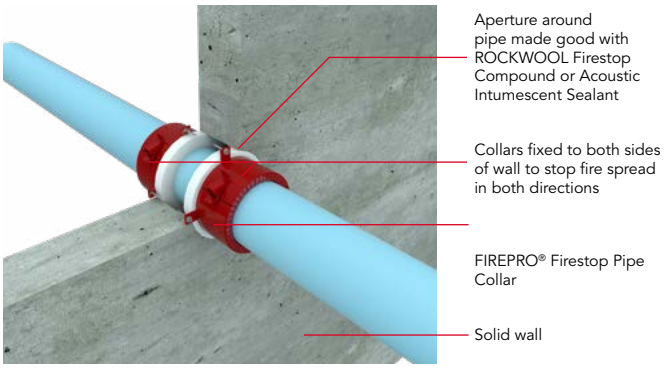


Figure 1

Figure 2

## Performance

ROCKWOOL Firestop Pipe Collars and Palm Collars have been tested according to either BS476 Pt 20 or EN1366-3. The independently prepared assessment, detailing the full scope of fire performance, is available from the ROCKWOOL Technical Solutions Team.

ROCKWOOL Firestop Pipe Collars provide up to 4 hours fire resistance integrity and insulation for PVC, cPVC, uPVC, PE, PP, MDPE and HDPE pipes up to a maximum 7mm wall thickness, for pipes from 32mm to 160mm. Collars may also be fitted to plastic pipes constructed from ABS or muPVC with a maximum outside diameter of 55mm.

ROCKWOOL Firestop Palm Collars can provide up to 4 hours fire resistance and are suitable for PVC and PP pipes in solid walls.

The performance of the collar will be determined by the performance of the substrate, so should 2 hours be the requirement of the collar then the substrate should be rated to no less than the collar.

For advice on particular types and sizes of pipes or particular applications, please refer to our standard details pack available via www.rockwool.co.uk or contact the Technical Solutions Team on 01656 868490.

Table 1
Performance in masonry supporting walls

| Collar type | Maximum pipe O.D. (mm) | Collar depth (mm) | Fire resistance (mins) | |
|---|---|---|---|---|
| | | | Integrity | Insulation |
| 2 hour | 32-55 | 60 | 120 | 120 |
| | 82 | 60 | 120 | 120 |
| | 110 | 60 | 120 | 120 |
| | 160 | 60 | 120 | 120 |
| 4 hour | 32-55 | 60 | 240 | 240 |
| | 82 | 60 | 240 | 240 |
| | 110 | 60 | 240 | 240 |
| | 160 | 60 | 240 | 240 |

Table 2
Performance in plasterboard supporting walls

| Collar type | Maximum pipe O.D. (mm) | Collar depth (mm) | Fire resistance (mins) | |
|---|---|---|---|---|
| | | | Integrity | Insulation |
| 1 hour | 32-55 | 60 | 60 | 60 |
| | 82 | 60 | 60 | 60 |
| | 110 | 60 | 60 | 60 |
| | 160 | 60 | 60 | 60 |
| 2 hour | 32-55 | 60 | 120 | 120 |
| | 82 | 60 | 120 | 120 |
| | 110 | 60 | 120 | 120 |
| | 160 | 60 | 120 | 120 |

Table 3
Performance in concrete floors

| Collar type | Maximum pipe O.D. (mm) | Collar depth (mm) | Fire resistance (mins) | |
|---|---|---|---|---|
| | | | Integrity | Insulation |
| 2 hour | 32-55 | 60 | 120 | 120 |
| | 82 | 60 | 120 | 120 |
| | 110 | 60 | 120 | 120 |
| | 160 | 60 | 120 | 120 |
| 4 hour | 32-55 | 60 | 240 | 240 |
| | 82 | 60 | 240 | 240 |
| | 110 | 60 | 240 | 240 |
| | 160 | 60 | 240 | 240 |



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Table 4
Pipe Collar wall thickness

| Pipe diameter (mm) | Approved wall thickness (mm) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | PVC | | HDPE | | PP | | ABS | |
| | Min | Max | Min | Max | Min | Max | Min | Max |
| 32 | 1.8 | 2.0 | 3.0 | 3.4 | 1.8 | 2.2 | 1.8 | 2.2 |
| 40 | 1.9 | 2.1 | 3.0 | 3.5 | 1.9 | 2.3 | 1.9 | 2.3 |
| 50 | 2.0 | 2.2 | 3.0 | 3.5 | 2.2 | 2.4 | 2.0 | 2.4 |
| 55 | 2.0 | 3.2 | 3.0 | 3.5 | 2.2 | 2.4 | 4.0 | 4.5 |
| 82 | 3.0 | 3.5 | 3.0 | 3.5 | 2.6 | 5.0 | N/A | N/A |
| 110 | 3.2 | 3.6 | 4.2 | 5.0 | 3.4 | 5.3 | N/A | N/A |
| 160 | 3.2 | 3.8 | 6.2 | 7.1 | 4.8 | 5.3 | N/A | N/A |

Table 5
Performance of 60mm (depth) Palm Collar

| Pipe material | Maximum pipe O.D. | Maximum pipe wall thickness (mm) | Intumescent depth x thickness (mm) | Wall / floor | Fire resistance (mins) | |
|---|---|---|---|---|---|---|
| | | | | | Integrity | Insulation |
| Polypropylene (PP) | 200 | 7 | 60 x 24 | Wall or floor | 120 | 120 |
| PVC or HDPE | 200 | 6 | 60 x 24 | Wall or floor | 240 | 240 |

Table 6
Performance of 200mm (depth) Palm Collar

| Pipe material | Maximum pipe O.D. | Maximum pipe wall thickness (mm) | Intumescent depth x thickness (mm) | Wall / floor | Fire resistance (mins) | |
|---|---|---|---|---|---|---|
| | | | | | Integrity | Insulation |
| PVC or HDPE | 225 | 6 | 60 x 24 (Two pieces) | Surface mounted wall or floor | 240 | 240 |
| PVC or HDPE | 250 | 6 | 60 x 24 (Two pieces) | Surface mounted wall or floor | 240 | 240 |
| PVC, cPVC, PE, MDPE, HDPE, uPVC | 400 | 6 | 125 x 40 | Surface mounted wall or floor | 120 | 120 |
| Polypropylene (PP) | 225 | 22 | 60 x 24 (Two pieces) | Surface mounted wall only | 120 | 120 |
| Polypropylene (PP) | 225 | 22 | 60 x 24 (Two pieces) | Cast-in wall only | 180 | 180 |
| Polypropylene (PP) | 250 | 22 | 60 x 24 (Two pieces) | Surface mounted wall only | 90 | 90 |
| Polypropylene (PP) | 250 | 22 | 60 x 24 (Two pieces) | Cast-in wall only | 180 | 180 |
| Polypropylene (PP) | 400 | 6 | 200 x 42 | Surface mounted wall or floor | 120 | 120 |

# Technical information

## Maintenance

It is recommended that fire stopping is checked as part of the routine maintenance program to ensure that it has not been damaged, displaced, etc.

## Installation

### Installation of Pipe Collars in walls

1. Fill any annular gaps between the pipe and the substrate with either ROCKWOOL Acoustic Intumescent Sealant (min 10mm depth) for annular gaps not exceeding 7.5mm or Firestop Compound for gaps greater than 7.5mm.
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 32 x 8mm steel self-tapping screws, through the fixing tabs (or fire rated fixings to suit the substrate).
6. Repeat for the other side of the wall if required.

### Installation of Pipe Collars in floors

1. Fill any annular gaps between the pipe and the substrate with either ROCKWOOL Acoustic Intumescent Sealant (min 10mm depth) for annular gaps not exceeding 7.5mm or Firestop Compound for gaps greater than 7.5mm.
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 32 x 8mm steel self-tapping screws, through the fixing tabs.

### Installation of Palm Collars

1. Fill any annular gaps between the pipe and the substrate with either ROCKWOOL Acoustic Intumescent Sealant (min 10mm depth) for annular gaps not exceeding 7.5mm or Firestop Compound for gaps greater than 7.5mm.
2. Slide the Palm Collars around the pipe with the fixing tabs facing the solid wall/floor surface.
3. Secure the collar to the pipe using the either the steel toggles (60mm depth collars) or clasps (200mm depth collars).
4. Surface mount the collar to the solid wall/floor substrate with screws/bolts fitted through the fixing tabs. Fixings used to secure the collar should a minimum of 50mm in length.
5. Repeat for both sides of the solid wall.

### Cast in applications

Where 'cast-in' applications are approved, the Palm Collar is fitted in an enlarged hole within the structure, ensuring that at least 30mm of the collar is exposed on each face of the wall. The annular gap around the pipe collar is then filled with ROCKWOOL Firestop Compound.

## Specification clauses

FIREPRO® Firestop Pipe Collars are associated with the following NBS clauses:

P12 Fire stopping systems

- 370 Pipe collar: Concealed Intumescent sealant
- 380 Pipe collar: Surface mounted intumescent



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# FIREPRO®
# INSULATED FIRE SLEEVES

## 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

## Description

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

Supplied with a factory applied reinforced aluminium foil facing.

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 pipework or heat loss from hot pipes.

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

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.

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

## Applications

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

## Performance

### Standards and approvals

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 ROCKWOOL Ablative Coated Batts.

### Fire

Service Temperature and Limiting Service Temperature - Insulated Fire Sleeves are used to fire stop pipework operating at temperatures between 0°C and 180°C. At low temperatures, care should be taken to maintain the vapour barrier.

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) | FR insulation (minutes) | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Wall | Floor | Wall & floor | Wall | Floor | Report |
| Rectangular vent ducts | PVC | Other sizes available - see ROCKWOOL Oval Insulated Firesleeve Data Sheet | 1.6 to 3 | M/PB | Concrete | 120 | 90 | 120 | 1 |
| Square trunking | PVC | | 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 | Min diameter | Wall thickness (mm) | Max diameter | Wall thickness (mm) | Supporting construction | | FR integrity (minutes) | FR insulation (minutes) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Wall | Floor | Wall & floor | Wall | Floor | Report |
| Metal pipes (uninsulated) | Copper<br>Mild steel<br>Stainless steel | 22 | 2.5 | 165 | 14.2 | M/PB | Concrete | 120 | 0 | 0 | 1 |
| Pipes (plastic) | PVC/UPVC | 55 | 3.0 | 160 | 4.2 | M/PB/CB | Concrete | 120 | 120 | 120 | 1 |
| | PVC/UPVC | 160 | 3.0 | 110 | 4.2 | M/PB | Concrete | 120 | 90 | 90 | |
| | Polybutylene | 12 | 2.0 | 28 | 3.5 | M/PB/CB | Concrete | 120 | 120 | 120 | |

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

1 = Chilt/A12265 - 2 = Chilt/A08152 Rev D - 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 | 2 x 50mm Coated Batt | 50mm Coated Batt | 2 x 50mm Coated Batt |
| Pipes (plastic) | Polybutylene | 15-28 | 2.5 | 60 | 120 | 60 | 120 |
| | HDPE | 40 | 3 | 60 | 120 | 60 | 120 |
| | PVCu | 43 | 1.8 | 60 | 120 | 60 | 120 |
| | PVC | 55 | 2 | 60 | 120 | 60 | 120 |
| | HDPE | 56 | 2.3 | 60 | 120 | 60 | 120 |
| | ABS | 57 | 4 | 60 | 120 | 60 | 120 |
| | PVC, PVCu | 82 | 3.2-4.0 | 60 | 120 | 60 | 120 |
| | HDPE | 90 | 3.5 | 60 | 120 | 60 | 120 |
| | PVC, PVCu | 110 | 4.3 | 60 | 120 | 60 | 120 |
| | HDPE | 110 | 5 | 60 | 120 | 60 | 120 |
| | ABS | 110 | 5 | 60 | 120 | 60 | 120 |
| | PVC, PVCu | 160 | 3.2-4.5 | 60 | 120 | 60 | 120 |
| | HDPE | 160 | 6.2 | 60 | 120 | 60 | 120 |
| | ABS | 160 | 6.7 | 60 | 120 | 60 | 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.

### Acoustics

The use of Insulated Fire Sleeves can considerably reduce the noise emission from noisy pipework. ROCKWOOL Insulated Fire Sleeves have been tested to provide up to Rw 49 dB.

For higher standards of acoustic insulation, it is recommended that an increased length of the pipework either side of the compartment wall or floor is insulated with ROCKWOOL Techwrap 2 or Techtube.

## Product information

### Dimensions

Insulated Fire Sleeves are supplied 300mm long. They are manufactured to fit a range of standard pipe sizes, from 17mm to 169mm O.D. and in a standard thickness of 25mm. Other pipe sizes and thicknesses may be available to special order.

## Installation

### Installation instructions

Insulated Fire Sleeves are supplied 300mm 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 please refer to specification clause 2.

### Maintenance

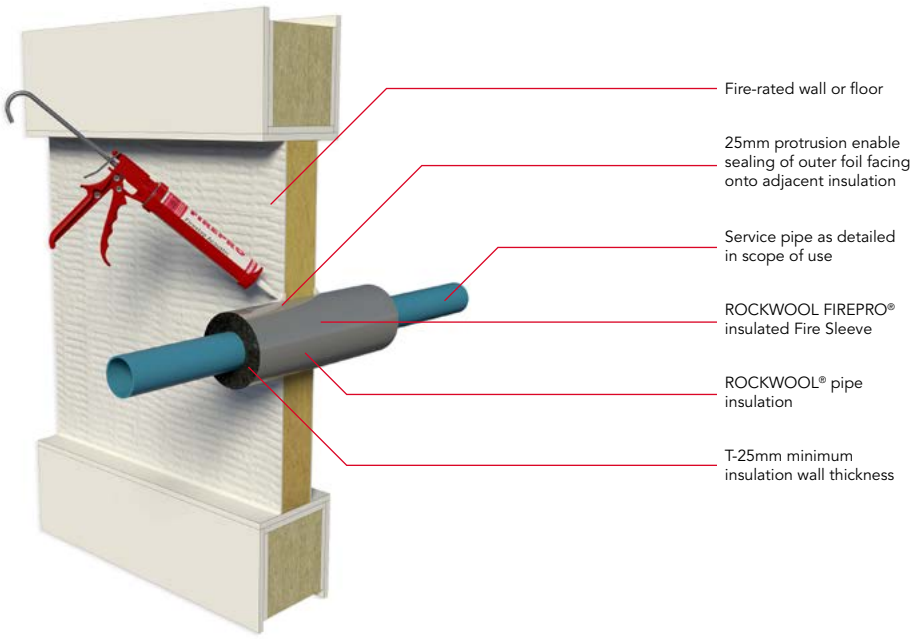
To maintain thermal efficiency, the Insulated Fire Sleeves should tightly abut any existing pipe insulation and where this is foil faced, all joints must be sealed with self-adhesive class O foil tape.

### Other install info e.g. ancillaries

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

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

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




## Specification clauses

1. Supporting construction designation:- Floors: Cast concrete between 1100 and 2400kg/m$^3$ density. M=Masonry between 600 and 1500kg/m$^3$ 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 60mm thick Ablative Coated Batt.
2. Insulated Fire Sleeves should project by at least 25mm beyond the visible face of each Coated Batt. There must be at least 50mm width of Coated Batt between any fire sleeve and the edge of the aperture and also between individual Fire Sleeves.
3. If gaps exceed 15mm around the aperture and the sleeve, the gap should be filled with ROCKWOOL Acoustic Intumescent or FIREPRO® Firestop Compound. If gaps exceed 8mm between the service and the sleeve, these can be infilled, locally where the service penetrates the aperture, with the Acoustic Intumescent Sealant.
4. The installed length of any Insulated Fire Sleeve shall be at least 60mm.

### NBS clauses

FIREPRO® Insulated Fire Sleeves are associated with the following NBS clauses:

P12 Fire stopping systems

- - 375 Pipe collar: Insulated Wrap



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# FIREPRO® INTUMESCENT PIPE WRAPS


## Advantages

- Simple to install with no mechanical fixings required
- Available to suit pipe sizes up to 160mm O.D.
- Fit most electrical trunking sizes
- Water resistant

## Description

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

## Applications

- Fire stopping plastic pipe penetrations in solid walls and floors only
- Can be applied to PVC, UPVC, Polypropylene, MDPE & HDPE pipe materials
- Electrical trunking penetrations

## Performance

### Fire performance

ROCKWOOL Intumescent Pipe Wraps can provide up to 4 hours fire protection to all plastic pipework and electrical trunking where they pass through fire rated walls and floors.

**Fire performance in masonry supporting wall & concrete floors**

| Maximum pipe O.D. (mm) | Maximum pipe wall thickness (mm) | Pipe wrap width (mm) | Pipe wrap thickness (mm) | Fire resistance – integrity (min) | Fire resistance – insulation (min) |
|---|---|---|---|---|---|
| 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 |

### Product information

| Property | Description |
|---|---|
| Pipe diameter | Up to 160mm O.D. |
| Width | 50, 75 & 100mm |
| Thickness | 4mm |
| Fire resistance | Up to 4 hours |

## Technical information

### Standards and approvals

FIREPRO® Intumescent Pipe Wraps have been tested to BS 476 Part 20:1987.

FIREPRO® Intumescent Pipe Wraps are third party accredited through IFC and Certifire.

## Installation

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 (See Figure 1 & 2).

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 solid walls and 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.

*Note: Intumescent pipe wraps are not suitable for use in coated batts or dry wall situations.*



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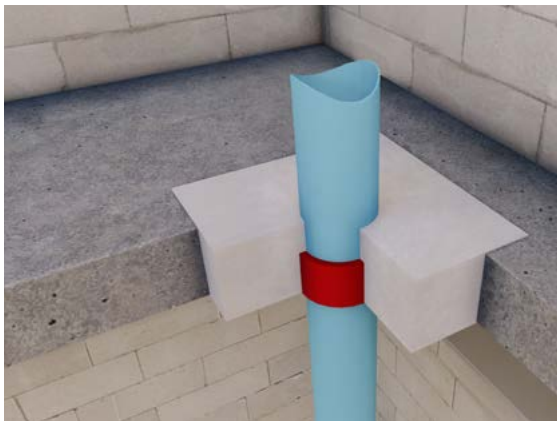


Figure 1
*Intumescent Pipe Wrap sealed into compartment floor with ROCKWOOL Firestop Compound*

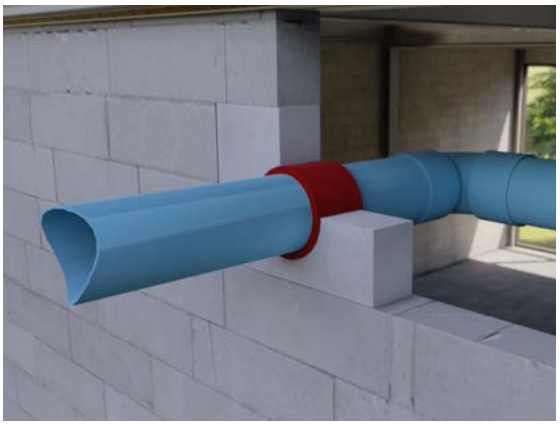


Figure 2
*Intumescent Pipe Wrap sealed into a compartment wall with ROCKWOOL Firestop Compound*

### Installation instructions

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 (See Figure 3).
5. Seal the pipe wrap into the structure with ROCKWOOL Firestop Compound.

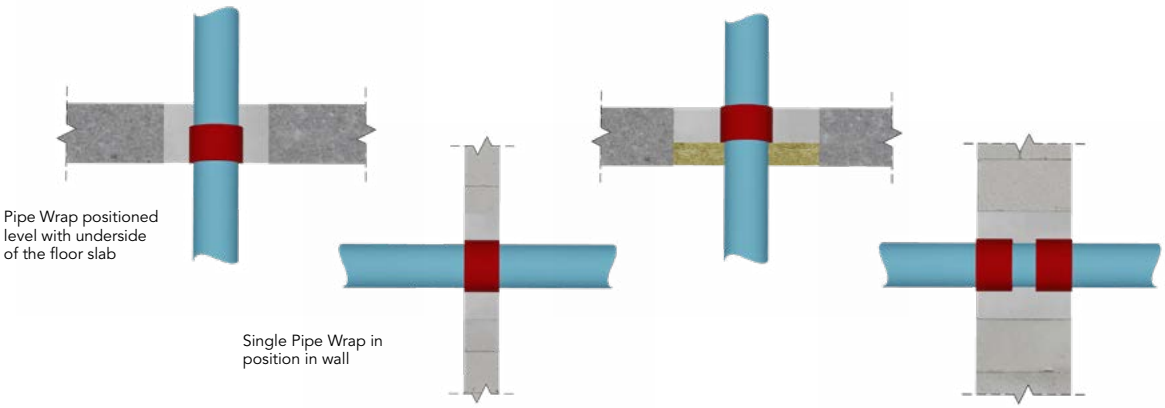



Figure 3

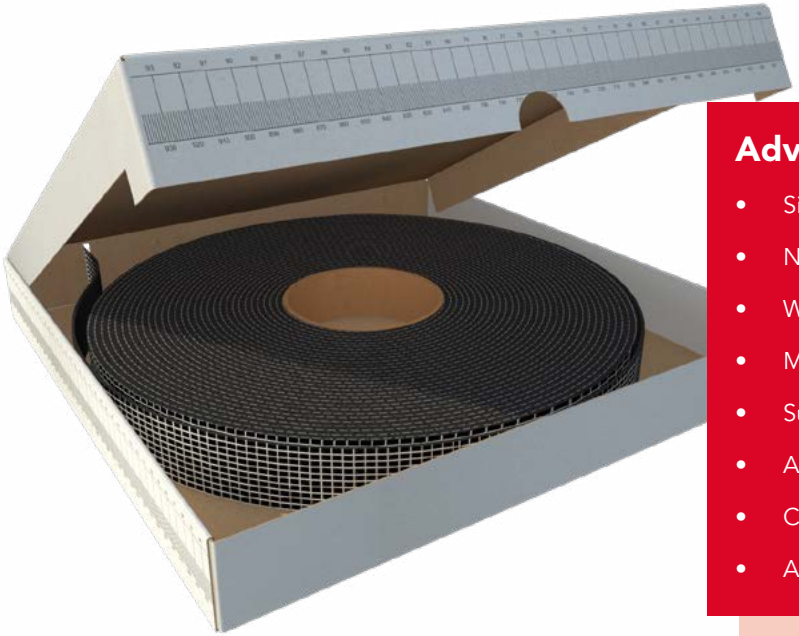
## Specification clauses

ROCKWOOL Intumescent Pipe Wraps are associated with the following NBS clauses:

P12 Fire stopping systems

- 375 Pipe Collar – Insulated Wrap

# INTUMESCENT PIPEWRAP ROLL



## Advantages

- Simple to install
- No mechanical fixings required
- Water resistant
- Maintenance free
- Supplied as a 25m long roll in box dispenser
- Available to suit pipes up to 200mm o.d.
- Comprehensively tested
- Available from stock

## Description

Intumescent Pipewrap Roll comprises an intumescent material made from elastomeric thermoplastic polymers combined with active components that provide a high volume expansion and pressure seal in the event of a fire.

Intumescent Pipewrap Roll is supplied on 25m roll. The product is 40mm wide and 2mm thick, with integral adhesive tape for securing around the pipe. Depending on the service to be protected and the fire resistance required, multiple layers of wrap may be required, the exact number and positioning of the product is detailed in the performance section of this data sheet.

## Applications

Install Intumescent Pipewrap Roll to provide up to 4 hours fire protection to tested plastic pipework and insulated pipes where they pass through fire rated walls and floors. Installation to be fully in accordance with manufacturer's instructions.

## Installation

The product is intended to be wrapped around the outside diameter of combustible pipework or the outside diameter of insulation on pipework and is secured by means of the integral self-adhesive strip.

1. Check that pipe surface and substrate are clean and clear of any debris.
2. Install the correct number of wraps for the service type and ensure the correct number of layers of wrap as detailed in the performance section of this data sheet.
3. Install the wrap into the wall or floor recessed by 5mm from the face of the wall or floor.
4. Fill the annular space with ROCKWOOL® FIREPRO® Acoustic Intumescent Sealant to seal off the 5mm gap to the edge of the substrate.
5. Maintain a record of the installation.

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

### Maintenance

During normal use, no maintenance is required.



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## Technical information

Table 1 - Pipes through suitable flexible walls

| Classification | | | | | Substrate | Wrap dimensions | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Service type | Diameter (ø) (mm) | Pipe wall thickness (mm) | Insulation type and thickness (mm) | Insulation fitting | Wall / floor type | Annular space (mm) | Depth (mm) | No. of layers | Supports | Capping | Classification |
| pVC | ≤200 | ≤9.6 | N/A | N/A | 100min flexible wall | Thickness of wrap | 40 Φ | See table 5 in data sheet | 400mm & 500mm | U/C | EI120 |
| PP | ≤200 | ≤18.2 | N/A | N/A | 100min flexible wall | Thickness of wrap | 40 Φ | See table 5 in data sheet | 400mm & 500mm | U/C | E120,EI90 |
| PE | ≤200 | ≤18.4 | N/A | N/A | 100min flexible wall | thickness of wrap | 40 Φ | See table 5 in data sheet | 400mm & 500mm | U/C | EI90 |
| PE | 50 | ≤4.6 | N/A | N/A | 100min flexible wall | thickness of wrap | 40 Φ | See table 5 in data sheet | 400mm & 500mm | U/C | EI120 |
| PE | 200 | 18.4 | N/A | N/A | 100min flexible wall | thickness of wrap | 40 Φ | See table 5 in data sheet | 400mm & 500mm | U/C | EI120 |


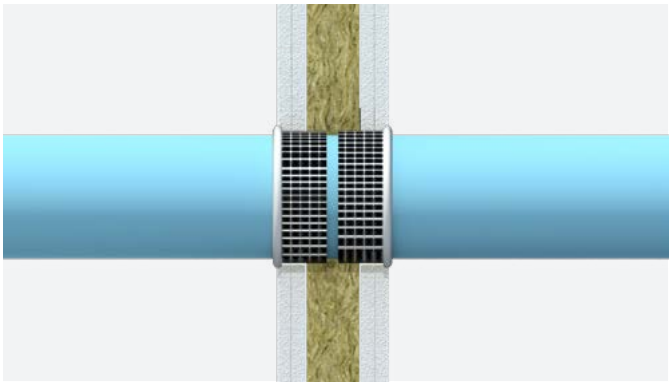

Table 2 - Pipes in concrete floors

| Classification | | | | | Substrate | Wrap dimensions | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Service type | Diameter (ø) (mm) | Pipe wall thickness (mm) | Insulation type and thickness (mm) | Insulation fitting | Wall / floor type | Annular space (mm) | Depth (mm) | No. of layers | Supports | Capping | Classification |
| pVC | ≤200 | ≤9.6 | N/A | N/A | 150mm rigid floor | Thickness of wrap | 40 † | See table 5 in data sheet | 400mm & 500mm | U/C | EI60 |
| PP | 50 | 2.9 | N/A | N/A | 150mm rigid floor | Thickness of wrap | 40 Φ | See table 5 in data sheet | 400mm & 500mm | U/C | EI120 |
| PP | 200 | 18.2 | N/A | N/A | 150mm rigid floor | Thickness of wrap | 40 Φ | See table 5 in data sheet | 400mm & 500mm | U/C | E120, EI90 |
| PE | ≤200 | ≤11.4 | N/A | N/A | 150mm rigid floor | Thickness of wrap | 40 Φ | See table 5 in data sheet | 400mm & 500mm | U/C | EI120 |
| PVC | ≤200 | ≤9.6 | N/A | N/A | 150mm rigid floor | Thickness of wrap | 40 † | See table 5 in data sheet | 400mm & 500mm | U/C | EI60 |
| PVC | 200 | 9.6 | N/A | N/A | 150mm rigid floor | Thickness of wrap | 40 † | See table 5 in data sheet | 400mm & 500mm | U/C | E240, EI180 |
| PVC | 50 | 3.7 | N/A | N/A | 150mm rigid floor | Thickness of wrap | 40 † | See table 5 in data sheet | 400mm & 500mm | U/C | E240, EI180 |
| PVC | 50 | 2.4 | N/A | N/A | 150mm rigid floor | Thickness of wrap | 40 † | See table 5 in data sheet | 400mm & 500mm | U/C | EI240 |
| PP | ≤200 | ≤18.2 | N/A | N/A | 150mm rigid floor | Thickness of wrap | 40 Φ | See table 5 in data sheet | 400mm & 500mm | U/C | EI120 |
| PP | ≤50 | ≤6.9 | N/A | N/A | 150mm rigid floor | Thickness of wrap | 40 Φ | See table 5 in data sheet | 400mm & 500mm | U/C | EI240 |
| PP | 200 | 4.9 | N/A | N/A | 150mm rigid floor | Thickness of wrap | 40 Φ | See table 5 in data sheet | 400mm & 500mm | U/C | EI240 |
| PE | ≤200 | ≤18.2 | N/A | N/A | 150mm rigid floor | Thickness of wrap | 40 Φ | See table 5 in data sheet | 400mm & 500mm | U/C | EI240 |


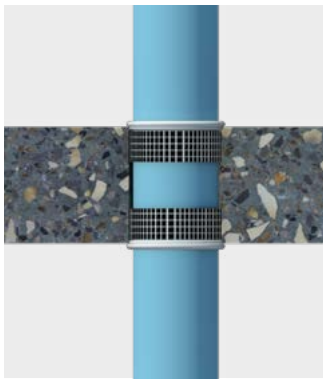

Table 3 - Pipes in suitable flexible wall using pattress installation of 50mm FIREPRO® ACB

| Classification | | | | | Substrate | Wrap dimensions | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Service type | Diameter (ø) (mm) | Pipe wall thickness (mm) | Insulation type and thickness (mm) | Insulation fitting | Wall / floor type | Annular space (mm) | Depth (mm) | No. of layers | Supports | Capping | Classification |
| Copper / steel | ≤159 | ≤14.2 | Elastomer-ic 13-25 | CS | 100min flexible wall | Thickness of wrap | 40 Φ | 2 layers of 2mm | 400mm & 500mm | U/C | E120, EI60 |
| Copper / steel | ≤108 | ≤14.2 | Phenolic 25-40 | CS | 100min flexible wall | Thickness of wrap | 40 Φ | 2 layers of 2mm | 400mm & 500mm | U/C | EI90 |
| Copper / steel | 42 | 1 | Phenolic 25-40 | CS | 100min flexible wall | Thickness of wrap | 40 Φ | 2 layers of 2mm | 400mm & 500mm | U/C | EI120 |
| Copper / steel | ≤108 | ≤14.2 | Phenolic 40 | CS | 100min flexible wall | Thickness of wrap | 40 Φ | 2 layers of 2mm | 400mm & 500mm | U/C | EI120 |
| Copper / steel | 42 | 1 | Elastomer-ic 13-25 | CS | 90min flexible wall | thickness of wrap | 40 Φ | 2 layers of 2mm | 400mm & 500mm | U/C | EI120 |
| Copper / steel | ≤159 | ≤14.2 | Elastomer-ic 25 | CS | 100min flexible wall | Thickness of wrap | 40 Φ | 2 layers of 2mm | 400mm & 500mm | U/C | EI90 |
| PVC | ≤200 | ≤9.6 | N/A | N/A | 100min flexible wall | thickness of wrap | 40 Φ | See table 5 in Data Sheet | 400mm & 500mm | U/C | EI60 |
| PP | ≤200 | ≤18.2 | N/A | N/A | 100min flexible wall | thickness of wrap | 40 Φ | See table 5 in Data Sheet | 400mm & 500mm | U/C | EI60 |
| PE | ≤200 | ≤18.4 | N/A | N/A | 100min flexible wall | thickness of wrap | 40 Φ | See table 5 in Data Sheet | 400mm & 500mm | U/C | EI60 |
| Copper / steel | 42 | 1 | Mineral wool 20-50 | CS | 100min flexible wall | thickness of wrap | 40 Φ | 2 layers of 2mm | 400mm & 500mm | U/C | EI120 |
| Copper / steel | ≤159 | ≤14.2 | Mineral wool 20-50 | CS | 100min flexible wall | thickness of wrap | 40 Φ | 2 layers of 2mm | 400mm & 500mm | U/C | EI90 |
| Copper / steel | ≤108 | ≤14.2 | Mineral wool 20-50 | CS | 100min flexible wall | thickness of wrap | 40 Φ | 2 layers of 2mm | 400mm & 500mm | U/C | EI90 |


Table 4 - Pipes in suitable flexible walls in double layer 50mm FIREPRO® ACB

| Classification | | | | | Substrate | Wrap dimensions | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Service type | Diameter (ø) (mm) | Pipe wall thickness (mm) | Insulation type and thickness (mm) | Insulation fitting | Wall /floor type | Annular space (mm) | Depth (mm) | No. of layers | Supports | Capping | Classification |
| copper / steel | ≤159 | ≤14.2 | Elastomer-ic 13-25 | CS | 100min flexible wall | thickness of wrap | 40 Φ | 2 Layers of 2mm | 400mm & 500mm | U/C | EI60 |
| Copper / steel | ≤108 | ≤14.2 | Phenolic 25-40 | CS | 100min flexible wall | thickness of wrap | 40 Φ | 2 Layers of 2mm | 400mm & 500mm | U/C | E120, EI60 |
| Copper / steel | 42 | 1 | Elastomer-ic 13-25 | CS | 100min flexible wall | thickness of wrap | 40 Φ | 2 Layers of 2mm | 400mm & 500mm | U/C | E120,EI90 |
| Copper / steel | 42 | 1 | Phenolic 25-40 | CS | 100min flexible wall | thickness of wrap | 40 Φ | 2 Layers of 2mm | 400mm & 500mm | U/C | E120,EI90 |
| PVC | ≤110 | ≤6.6 | Phenolic 20-25 | CS | 100min flexible wall | Thickness of wrap | 40 Φ | See table 5 in data sheet | 400mm & 500mm | U/C | EI90 |
| PVC | ≤110 | ≤6.6 | Elastomer-ic 13-25 | CS | 100min flexible wall | Thickness of wrap | 40 Φ | See table 5 in data sheet | 400mm & 500mm | U/C | EI90 |
| Copper / steel | ≤159 | ≤14.2 | Mineral wool 20-50 | CS | 100min flexible wall | Thickness of wrap | 40 Φ | 2 Layers of 2mm | 400mm & 500mm | U/C | EI60 |

## Key to Tables

ACB = Ablative Coated Batt
CS = Continuous Sustained
Φ = applied to both faces of seal
† = applied to upper face only
U/C = Upcapped / Capped

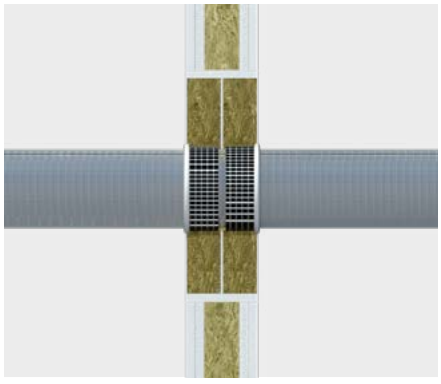



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Table 5 - Wrap configuration by size

| Pipe O.D. (mm) | No. of layers of wrap | Total wrap thickness (mm) |
|---|---|---|
| 40 | 1 | 2 |
| 55 | 2 | 4 |
| 63 | 2 | 4 |
| 75 | 2 | 4 |
| 82 | 2 | 4 |
| 90 | 3 | 6 |
| 110 | 3 | 6 |
| 125 | 4 | 8 |
| 160 | 4 | 8 |
| 200 | 5 | 10 |

Table 6 - Physical properties

| Width | 40mm |
|---|---|
| Length | 25m |
| Thickness | 2mm |
| Density | 1.3Kg/m³ |
| Volume expansion at 300°c | 25 times |
| Shelf life | 60 months |

# FIREPRO® HIGH EXPANSION INTUMESCENT SEALANT


## Advantages

- Simple solution for sealing combustible pipes and metal pipes with combustible insulation
- Suitable for both walls and floors
- Compatible with cPVC pipes
- Tested in multiple substrates

## Description

ROCKWOOL FIREPRO® High Expansion Intumescent Sealant is water based acrylic sealant containing graphite. In the event of a fire, the active components provide a high volume expansion and pressure seal, closing off the void left by combustible materials.

ROCKWOOL FIREPRO® High Expansion Intumescent Sealant is supplied in 310ml cartridges.

## Applications

FIREPRO® High expansion Intumescent Sealant is comprehensively tested for a wide range of applications which include:

- Combustible pipes
- Metal pipes insulated with combustible insulation
- Other permanent services



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# Performance

## Standards and approvals

FIREPRO® High Expansion Intumescent Sealant has been tested to BS EN 1366-3: 2009 and BS EN 1366-4: 2006 +A1:2010 and classified to EN 13501-2, providing up to 4 hours fire protection in joints up to 30mm.

FIREPRO® High Expansion Intumescent Sealant has been CE marked against ETAG026-2.

"FBC™ System Compatible indicates that this product has been tested, and is monitored on an ongoing basis, to assure its chemical compatibility with FlowGuard Gold®, BlazeMaster® and Corzan® pipe and fittings. FBC™, FlowGuard Gold®, BlazeMaster® and Corzan® are licensed trademarks of The Lubrizol Corporation or its affiliates."

FIREPRO® High Expansion Intumescent Sealant is third party accredited through IFC and Certifire.

This product has been authorised for use in LUL surface and sub-surface premises when installed in accordance with this datasheet - please refer to the LUL Approved Product Register website www.LU-apr.co.uk for specific details. LUL Ref. 2454.

### Table 1

2 hour dry wall (min. 120mm thick)

| Service penetration | Diameter (Ø) | Wall thickness | Annular space (mm) | Depth (mm) | Classification |
|---|---|---|---|---|---|
| Cables | 21 | N/A | 20 | 25Φ | EI 120 U/C |
| PVC pipes ǂ | 40 | 3 | 10 | 25Φ | EI 120 U/C |
| PVC pipes ΨǂΨ | 125 | 7.4 | 16 | 25Φ | EI 120 U/C |
| HDPE | 63 | 7.2 | 20 | 25Φ | EI 120 U/C |
| HDPE | 90 | 9.2 | 12.5 | 25Φ | EI 120 U/C |
| ABS | 90 | 6 | 12.5 | 25Φ | EI 120 U/C |
| Copper / steel pipe with Armaflex 32mm CS | 60 | 0.8-14.2 | 20 | 25Φ | E 120/EI 90 U/C |
| Copper / steel pipes with Armaflex 16mm CS | 15 | 0.8-7 | 15 | 25Φ | EI 120 U/C |

### Table 2

Wall with single 50mm FIREPRO® Ablative Coated Batt

| Service penetration | Diameter (Ø) | Wall thickness | Annular space (mm) | Depth (mm) | Classification |
|---|---|---|---|---|---|
| Pvc pipes ǂ | 125 | 7.4 | 20 | 50 | EI 30 U/C |
| Multi layer composite pipes | 110 | 10 | 20 | 50 | E45 EI30 U/C |
| 500mm perforated cable tray* | N/A | N/A | 20 | 50 | EI 30 |
| Medium cables* | 47 | N/A | 20 | 50 | EI 45 |

### Table 3

Masonry wall (min. 150mm) or flexible wall (min. 100m) with double 50mm FIREPRO® Ablative Coated Batt

| Service penetration | Diameter (Ø) | Wall thickness | Annular space (mm) | Depth (mm) | Classification |
|---|---|---|---|---|---|
| Pvc pipes ǂ | 125 | 7.4 | 20 | 25Φ | EI 120 U/C |
| Multi layer composite pipes | 110 | 10 | 20 | 25Φ | EI 120 U/C |
| 500mm perforated cable tray* | N/A | N/A | 20 | 25Φ | EI 120 |
| Medium cables* | 47 | N/A | 20 | 25Φ | EI 120 |

Table 4
Rigid floor (min. 150mm thick)

| Service penetration | Diameter (Ø) | Wall thickness | Annular space (mm) | Depth (mm) | Classification |
|---|---|---|---|---|---|
| Electrical cables ϕ | 80 | N/A | N/A | 25 ↑ | E120 |
| Non sheathed electrical cables ϕ | 24 | N/A | N/A | 25 ↑ | E180 |
| Telecom cables bundled ϕ | up to 21 | N/A | N/A | 25 ↑ | E180 |
| Copper / steel pipe with Armaflex 32mm cs ϕ | 159 | 14.2 | 20 | 25 | EI 120 U/C |
| Copper / steel pipe with Armaflex 16mm cs ϕ | 41 | 14.2 | 20 | 25 | E240/ EI 60 U/C |
| PP pipes ϕǂ | 110 | 10.7 | 20 | 25Φ | EI 120 U/C |
| PP pipes ϕǂ | 50 | 2.1 | 20 | 25Φ | EI 240 U/C |
| PE pipe ϕǂ | 40 | 4.1 | 20 | 25Φ | EI 240 U/C |
| PE pipe ϕǂ | 125 | 11.4 | 20 | 25Φ | EI 90 U/C |
| PVC pipe ϕǂ | 40 | 2 | 20 | 25Φ | EI 240 U/C |
| PVC pipe ϕǂ | 114 | 8.1 | 20 | 25Φ | EI 120 U/C |

Table 5
Rigid floor (min. 150mm thick) with double 50mm FIREPRO® Ablative Coated Batt

| Service penetration | Diameter (Ø) | Wall thickness | Annular space (mm) | Depth (mm) | Classification |
|---|---|---|---|---|---|
| PVC pipe ǂ | 50 | 7.4 | 20 | 25Φ | EI 120 U/C |
| PVC pipe ǂ | 125 | 7.4 | 20 | 25Φ | EI 120 U/C |
| Multi layer composite pipes | 110 | 10 | 20 | 25Φ | E120/EI 60 U/C |
| 500mm perforated cable tray* | N/A | N/A | 20 | 25Φ | EI 120 |
| Medium cables* | 47 | N/A | 20 | 25Φ | EI 120 |
| Multi service as follows (installed centrally in aperture) | | | | | |
| PE pipe ϕǂ | 125 | 7.6 | N/A | 25Φ | E120/EI 90 U/C |
| 60 pipe with cables ϕ | 21 | N/A | N/A | 25Φ | E120/EI 90 U/C |

Table 6
Linear joints

| Service penetration | Diameter (Ø) | Wall thickness | Annular space (mm) | Depth (mm) | Classification |
|---|---|---|---|---|---|
| PVC pipe ϖ | 50 | 7.4 | 20 | 25Φ | EI 120 U/C |

## Key to tables

ǂ = See assessment for other pipe sizes and wall thicknesses within field of application.

*C= All cables coated with 2mm DFT (Dry Film Thickness) of FIREPRO®

RW = Rigid Wall

ACB = Ablative Coated Batt

CS = Continuous Sustained

Φ = Applied to both faces of seal

↑ = Applied to upper face only

Ψ = Use RW4 as backing material, minimum 30mm deep.

ϕ = Use RWA45 as backing material, minimum 100mm deep.

ϖ = Use PE backing rod



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# Technical information

## Product information

| Property | Description |
|---|---|
| Form | Ready to use thixotropic paste |
| Cartridge size | 310ml |
| Curing system | Water based |
| Specific gravity | 1.5 |
| Extrusion rate | 350g/min |
| SAG | <3min |
| Open time | 30mins |
| Tack free time | 60mins |
| 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** |

# Installation

All surfaces must be clean and sound, free from dirt, grease and other contamination.

Prepare joint by cleaning as previously detailed and insert backer if required. Cut nozzle to the desired angle and gun firmly into the joint to give a good solid fill to the required depth. 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.


# Specification clauses

FIREPRO® High Expansion Intumescent Sealant is associated with the following NBS clauses:

- E40: Designed joints in in-situ concrete – 530 Sealant
- F30: Accessories/sundry items for brick/block/stone walling - 610 Movement joints with sealants
- L10: Windows/rooflights/screens/louvres – 790 Fire resisting frames
- L20: Doors/shutters/hatches – 820 Sealant joints
- P12: Fire stopping systems – 395 Sealant-One part fire resistance acrylic

**Important information**

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

A high expansion intumescent sealant is different to standard intumescent sealants, it is tested and installed within a defined annular space between the service and the substrate. Please refer to the ROCKWOOL Standard Details for a complete list of tested systems.

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.

**The ROCKWOOL technical solution team are readily available to provide technical guidance and advice on any aspect of the FIREPRO® range.**

Call the ROCKWOOL technical solution team on 01656 868490 or email technical.solutions@rockwool.co.uk

For our full suite of Firestopping Standard Details, download the Standard Details Guide at:

www.rockwool.co.uk/technical-resources/product-documentation

ROCKWOOL®



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# FIRE STOPPING
# Section 2 – Cavity barriers & cavity firestops

Concealed spaces or cavities within the construction of a building can provide a clear path for fire and smoke to spread. Cavity Barriers and Cavity Firestops provide two important functions:

### Cavity barriers
Used to close the edges of cavities, around openings (e.g. windows) or to sub-divide extensive cavities/ voids in accordance with building regulations.

### Cavity firestops
Used to continue the fire resistance of a compartment floor or wall within a cavity space or void e.g. junction between a compartment floor and external wall or above a compartment wall within a ceiling or roof void. It is important that the level of fire resistance achieved by the cavity firestop is equal to that of the compartment wall/floor.

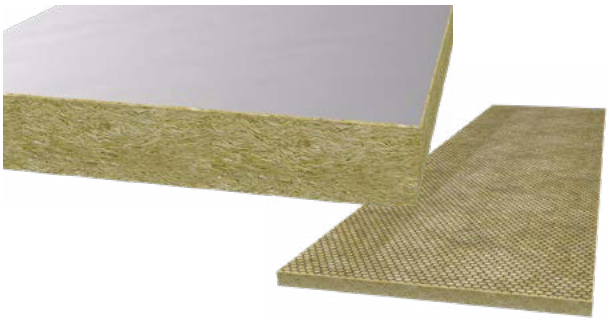
Whether its single storey dwellings or multiple occupancy high rise buildings, ROCKWOOL provide a wide range of products and systems that have been tested for use as cavity barriers, cavity firestops or for use in both functions.

FIREPRO®
SP Firestop
System

FIREPRO®
Soft Seal
System

FIREPRO®
Fire Barrier
System

## Core Products



- Fire Barrier System
- Fire Barrier Slab


- TCB Cavity Barrier
- PWCB Cavity Barrier

- SP Firestop System
- SoftSeal System
- SP Firestop OSCB

## Useful documents and standards

- ASFP Technical Guidance Document – TGD 17: Code of practice for the installation and inspection of fire stopping systems in buildings
- ASFP Red Book: Fire stopping and penetration seals for the construction industry
- ASFP: Ensuing best practice for passive fire protection in buildings
- ASFP: On-site guide to installing fire stopping
- BS 476-20: Fire test on building materials and structures. Method for determination of the fire resistance of elements of construction
- BS EN 1366-4: Fire resistance test for service installations. Linear joint seals
- BS EN 1363-1: Fire resistance tests. General Requirements
- BS EN 13501-2: Fire classification of construction products and building elements. Classification using test data from resistance to fire tests, excluding ventilation services.

*ASFP ( Association for Specialist Fire Protection) guidance documents can be sourced at www.asfp.org.uk*



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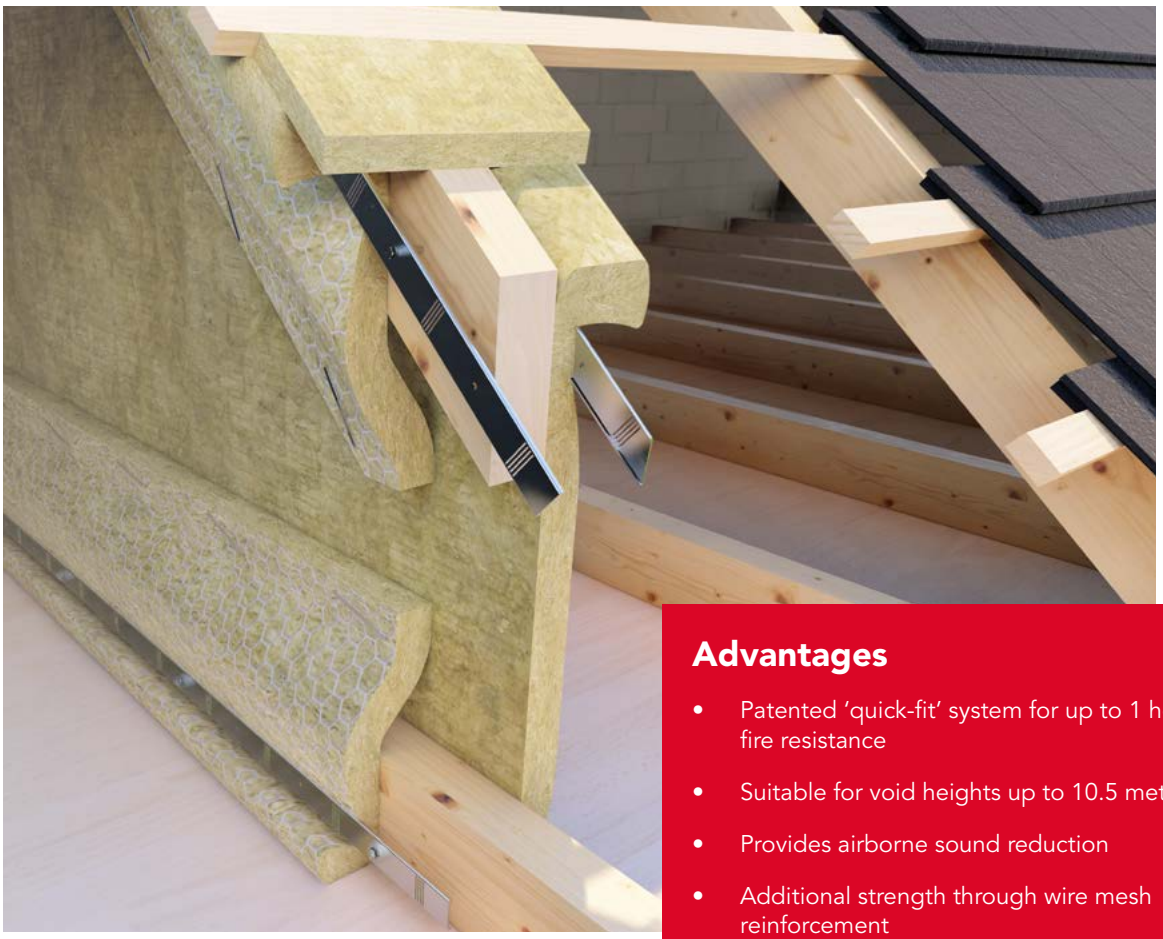
# FIRE BARRIER SYSTEM



## Advantages

- Patented 'quick-fit' system for up to 1 hour fire resistance
- Suitable for void heights up to 10.5 meters
- Provides airborne sound reduction
- Additional strength through wire mesh reinforcement
- Service penetration data available
- Fire resistance of up to 2 hours
- Flexible, accommodates movement

## Description

ROCKWOOL Fire Barrier is comprised of stone wool and has a galvanised wire mesh which is stitched to one side. Foil faced options and double sided wire mesh are also available. Fire Barrier systems have been developed to prevent the spread of flames and inhibit heat and smoke through concealed spaces in buildings and improve sound reduction.

## Applications

- Pitched roof voids
- Head of wall
- Concealed ceiling spaces
- Multiple substrates

## Performance

### Fire performance

| Rating required | Maximum drop without support frame | Maximum drop with additional support frame | Max width | Integrity | Insulation | Install specification | Supporting document |
|---|---|---|---|---|---|---|---|
| 30 min cavity barrier | 3m | 10.5m | 20m | 30 | 15 | Single 50mm layer FB, vertical joints butt jointed. | 116911 |
| | | - | | 60 | 15 | | |
| 30 min fire barrier | 6m | N/A | 20m | 60 | 30 | Single 60mm layer (plain or foil face) with a minimum 100mm overlapped and stitched joints on vertical joints*. | 11970 |
| 60 min fire barrier | 6m | 10.5m | 20m | 60 | 60 | 2 layers of 50mm back to back butt jointed with staggered vertical joints between the back to back layers. | 116912 |
| 90 min fire barrier | 3.5m | | 20m | 90 | 90 | | 51812 |
| 120 min fire barrier | 3.5m | 9m | 20m | 120 | 120 | 2 layers of 60mm (plain or foil face) butt jointed, incorporating a 40mm aircavity between the layers. | 44509 |

*N.B. All extensions in drop height must incorporate a minimum 100mm overlap between the sections and stitched with 1.5mm galvanised wire.*

**All stitching must be carried out using 0.9mm annealed and galvanised wire. Continuous wire stitching (100mm minimum) or separate lengths of wire secured by twisting ends together. Wire must penetrate through thickness of barrier.*

### Acoustic performance

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

| Room to room attenuation | $R_w$ dB |
|---|---|
| Typical lay-in grid suspended ceiling | 30 |
| Ceiling and 50mm ROCKWOOL Fire Barrier | 42 |
| Ceiling and 50mm ROCKWOOL Fire Barrier Foil Faced | 44 |
| Ceiling and 2x layers of 50mm ROCKWOOL Fire Barrier Foil Faced | 50 |

*Where plasterboard ceilings are used, add 2-3dB to above performances.*

*Note: Values quoted are approximate.*



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# Technical information

## Standard and approvals

Fire Barrier Systems have been independently tested and assessed to BS 476: Part 22 by UKAS accredited laboratories.

ROCKWOOL Fire Barrier system achieves a reaction to fire classification of A1 as defined in BS EN 13501:1

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.

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.co.uk for specific details – LUL ref: 2230.

## Product information

*One or two sided foil face options available.*

*Wired mesh is available to both sides if required.*

| Thickness | Length | Width |
|---|---|---|
| 50mm | 4000mm | 1000mm |
| 60mm | 3500mm | 1000mm |

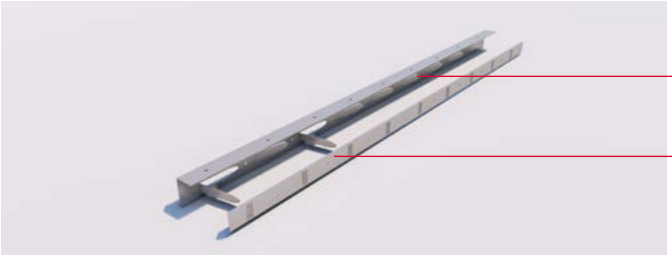
## Installation

### ½ hour cavity barrier

Figures 4-9 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 Figure 9).

The ROCKWOOL Fire Barrier Fixing System incorporates an angle support and clamping plate (up to one hour)




For fixing to timber, the ROCKWOOL clamping plate is used, compressing the barrier to the timber, fixed at 450mm centres using No. 10 woodscrews.

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 traverse to rafters*

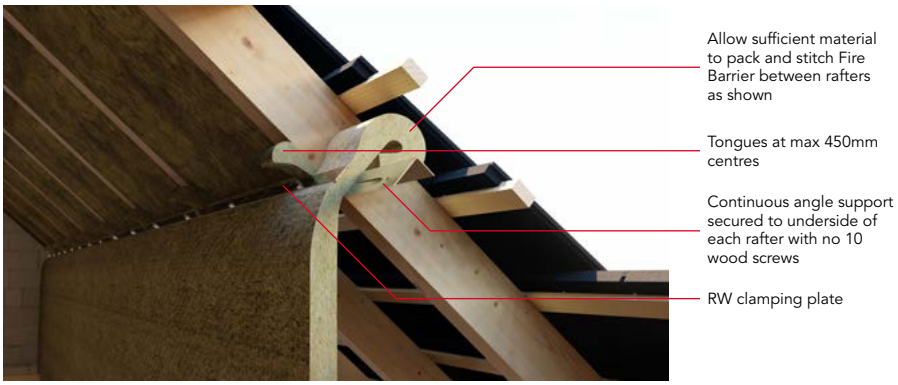



Figure 5

*Half hour protection for timber truss construction 50mm thick or more.*

*Note: Nail plate protection required - see Figure 6*

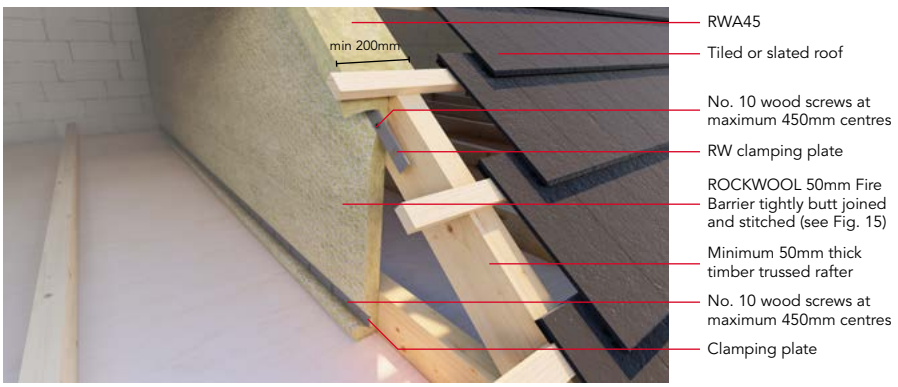





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Figure 6
*Half hour protection for timber truss construction 35 to 49mm thick.*

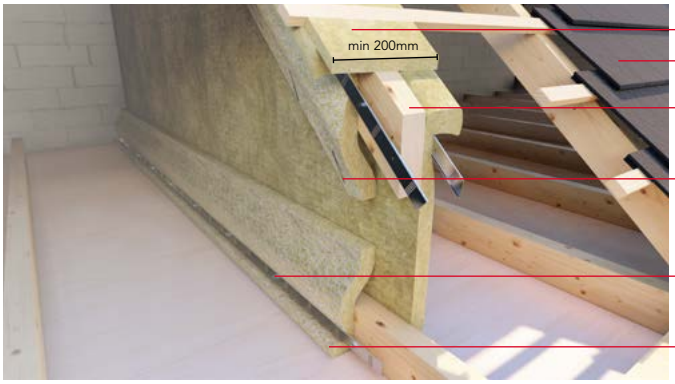



Figure 7
*Head of partition*

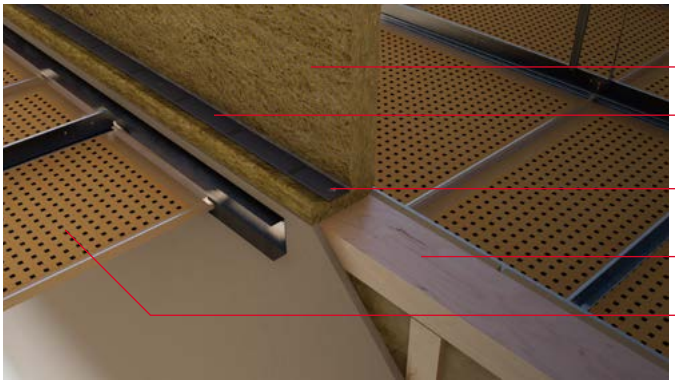



Figure 8
*Barrier fitted transversely to timber joisted ceiling*

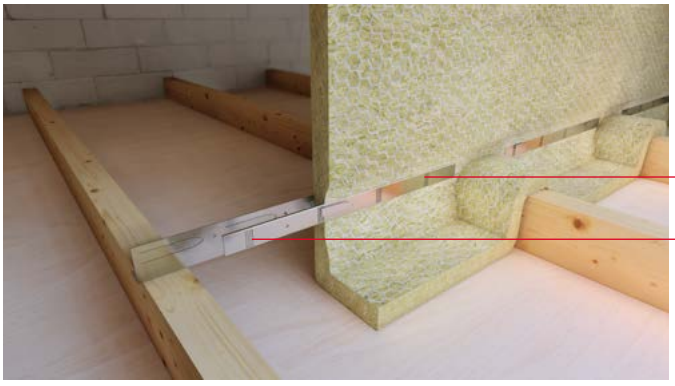



Figure 9
*Nail plate protection*

For fixing to concrete soffits (Figure 10-12), 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 maximum 450mm centre.

**Figure 10**
*50mm Fire Barrier fixed to concrete soffit.*

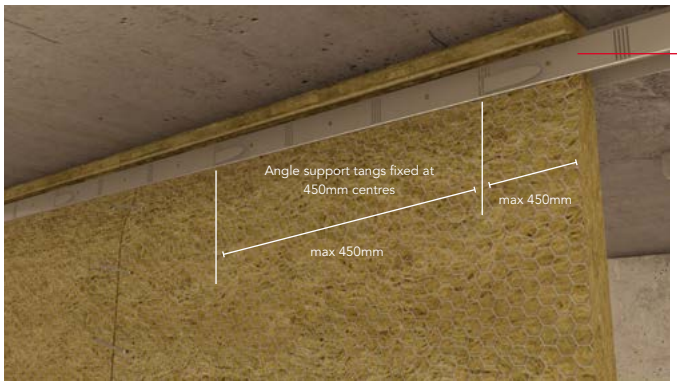



**Figure 11**
*50mm Fire Barrier running across ribbed soffit - Section*

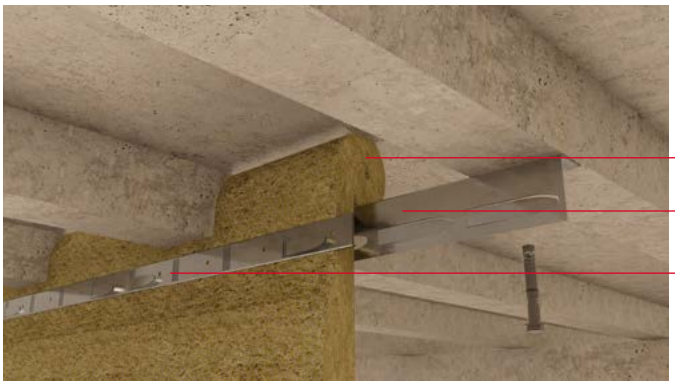
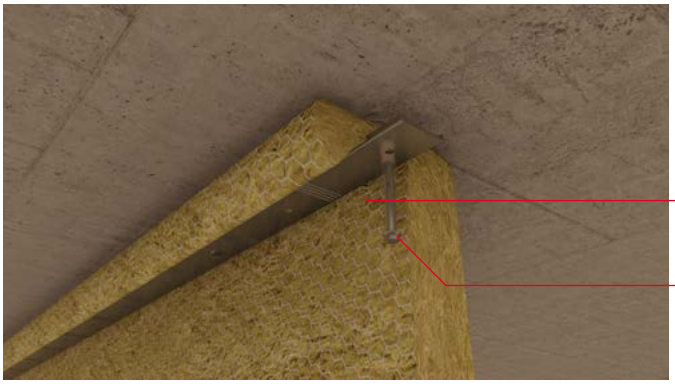



**Figure 12**
*Alternative fixing to flat soffit or perimeter, appropriate to barriers with a shallow drop*



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## 60-30 fire barrier

If 30 minutes insulation is required, use 1 layer of 60mm plain or foil-faced fire barrier with 100mm vertical over lapped joints (Figure 13 & 14). The barrier is otherwise fixed for timber construction as previously shown on Figures 4-9.

Figure 13

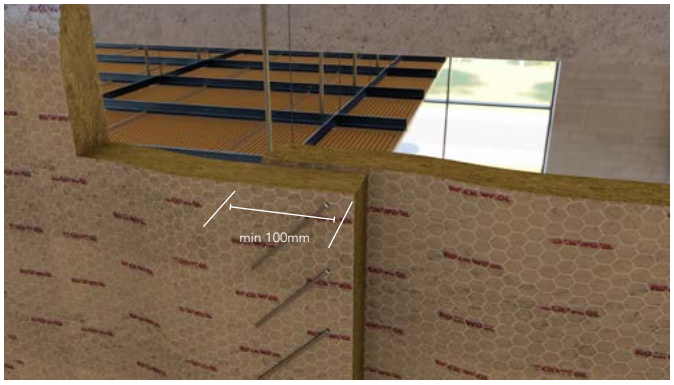
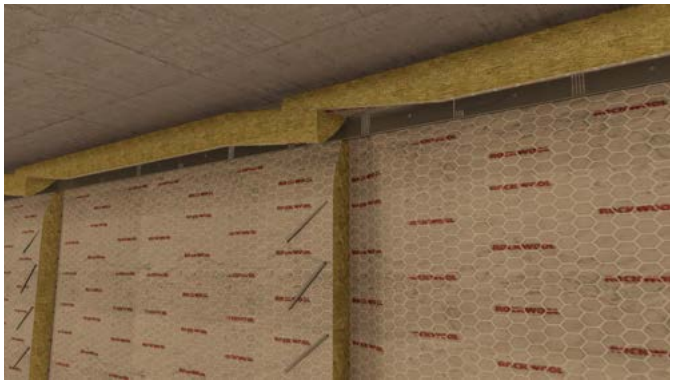



Figure 14



## 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 16. 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 (see Figure 15). 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 Figure 17). For extended drops, 1.5mm diameter galvanised and annealed wire is used (see Figure 16).

Figure 15

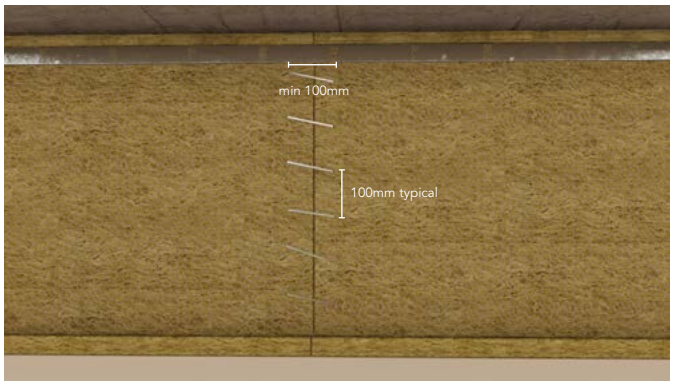
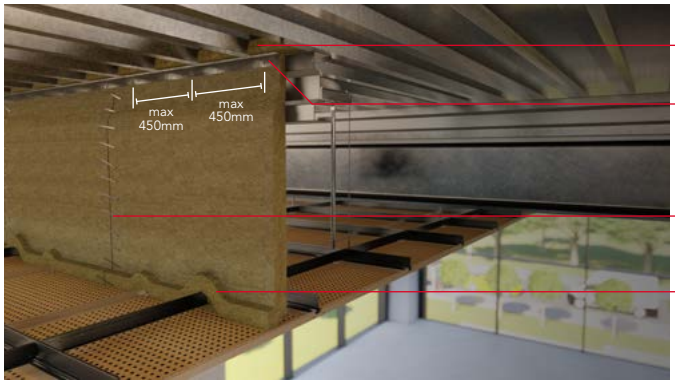



Figure 16


Figure 17



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## 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 18

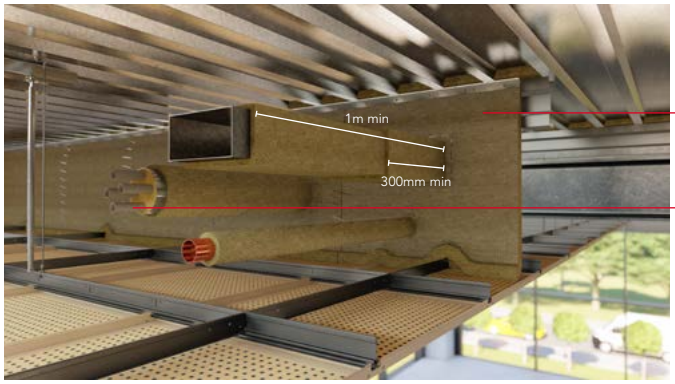


Figure 19


## 1 hour fire barrier

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 a cavity.

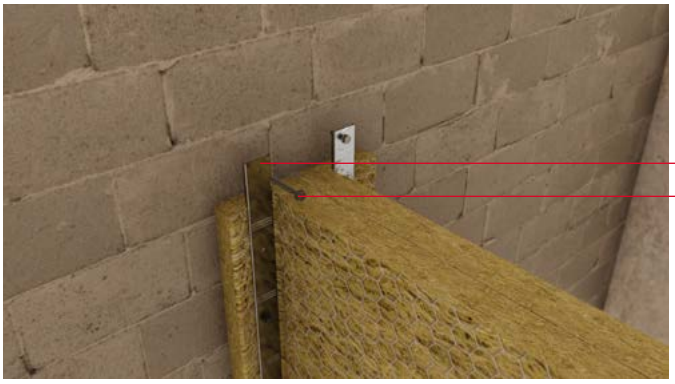
The ROCKWOOL support angle has tongues that are pushed out from opposite sides at 300mm max. centres. The ROCKWOOL Fire Barriers are then impaled on the tongues on both sides and clamped using the ROCKWOOL clamping plates. The tongues are finally bent over the clamping plates, completing the system.

The system uses 50mm Fire Barrier in a double layer with joints staggered.

*Note: Wire reinforced sides should be placed outwards.*

Figure 20


Figure 21



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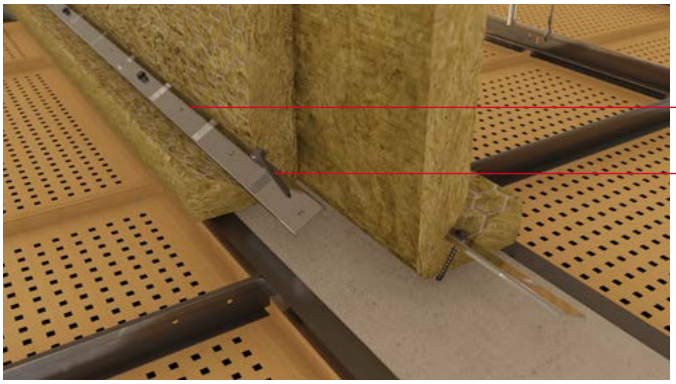
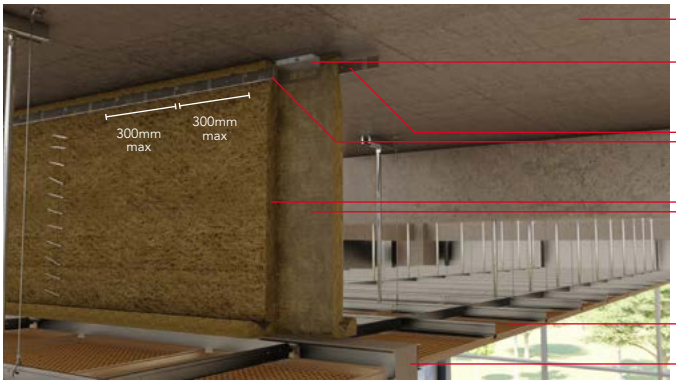
## Figure 22



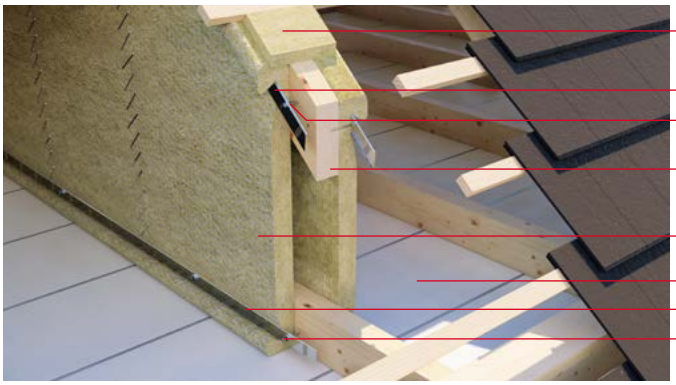

## Figure 23




## 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 24). Where timber thickness is 50mm or greater, 2 layers of 50mm Fire Barrier are sufficient.

## Figure 24



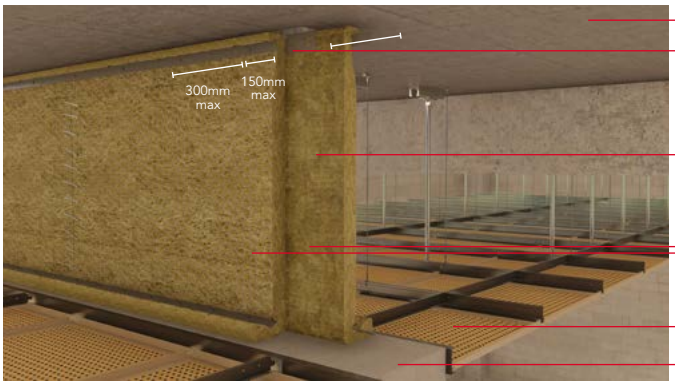
## 1.5 & 2 hour fire barriers

### 1.5 hour fire barrier

The ROCKWOOL 1.5 hour Fire Barrier system uses 2 layers of 50mm Fire Barrier with staggered joints fixed as Figures 25-27.

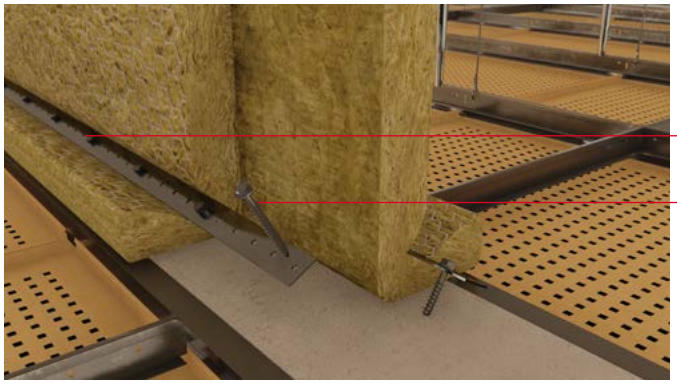
*Note: Wire reinforced faces should be placed outwards.*

### Figure 25




### Figure 26


### Figure 27



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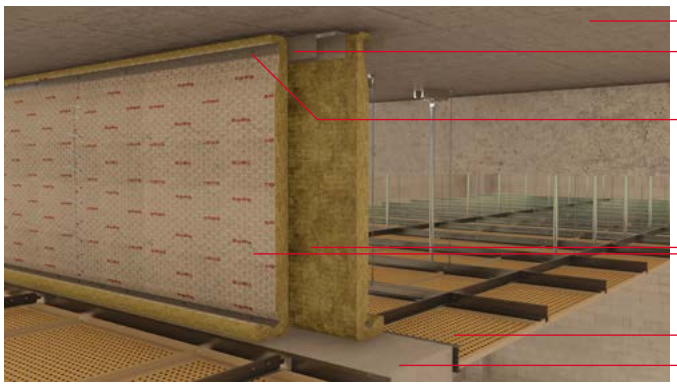
## 2 hour fire barrier

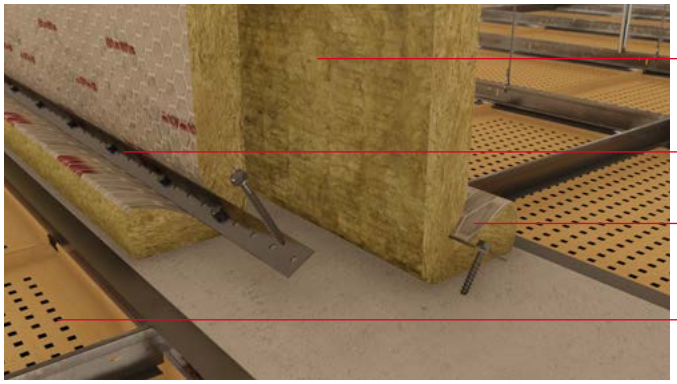
The ROCKWOOL 2-hour Fire Barrier (see Figures 28-30) consists of two layers of 60mm (plain or foil-faced), wire stitched Fire Barrier with staggered vertical joints, separated by a nominal 40mm air space. The base or perimeter to which the barrier is fixed must be capable of remaining in place for 2 hours.

### Figure 28




### Figure 29


### Figure 30




## Angle and strap for 1.5% and 2 hour fire barriers

The following specification for slotted angles and straps is suitable for supporting ROCKWOOL Fire Barriers for 1.5 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/ in$^2$) and conforming to BS 4345: 1968 (1986) - Specification for slotted angles (inc. flat strap).

# Other installation information

## General design considerations

A cavity fire barrier must be designed to restrict the passage of both hot smoke and flames 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 16 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 Figure 31).

Further details are available from ROCKWOOL Technical Solutions Team.

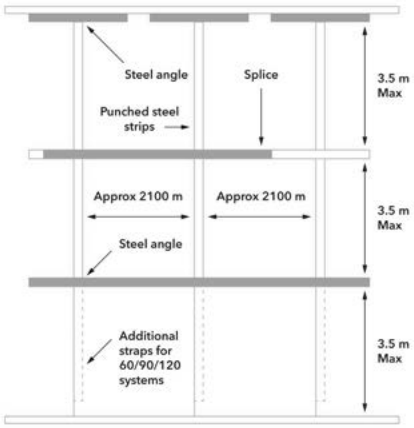



Figure 31

## 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.

## 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.



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## Ancillaries

### ROCKWOOL ancillaries

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

### Proprietary fixings

All steel hammer set expansion anchors for soffit fixings are available from Hilti, or Ejot. 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.

### 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

If other hardware is used to support the barriers, we recommend that the respective specifier, supplier or installer should be certain that the chosen fixing system has been both tested and approved, for the required period of fire resistance and drop height.

## 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.

### Packaging of fire barrier

Shrink wrapped in polyethylene

### Handling

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.

## Specification clauses

ROCKWOOL Fire Barrier System is associated with the following NBS clauses:

- K10: Gypsum board dry linings/partitions/ceilings
  - 530 – Cavity fire barriers within partitions/wall linings
  - 545 – Cavity fire barriers within suspended ceilings
- K40: Demountable suspended ceilings
  - 287 – cavity barriers
  - 425 – Installing cavity barriers
  - 431 – Installing sound barriers
- P10: Sundry insulation/proofing work
  - 410 – Flexible cavity barriers
  - 430 – Wired mineral wool small cavity barriers
  - 440 – Fire protection



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# FIRE BARRIER SLAB

## Advantages

- Simple, butt-jointed and friction fit application
- No fixings, fasteners or angles required
- Suitable for closing voids of up to 1m in height and 20m in length
- Provides airborne sound reduction
- Service penetration data available
- Fire resistance of up to 4 hours integrity
- LUL approved in combination with ROCKWOOL LUL Intumescent Sealant

## Description

ROCKWOOL Fire Barrier Slab comprises a high density stone wool core which is foil-faced on both sides. Fire Barrier slab has been developed to prevent the spread of flames, inhibit heat and smoke through concealed spaces in buildings and improve sound reduction.

## Applications

- Head of wall
- Concealed voids
- Service penetrations

## Performance

### Fire performance

Achieves 240min integrity; 60 min insulation without service penetrations. Where service penetrations are present Fire Barrier slab can achieve 90min integrity; 60min insulation dependent on service penetration type. For further information of specific service penetration details please contact ROCKWOOL Technical Support.

### Acoustic performance

ROCKWOOL Fire Barrier Slab has been tested in accordance with BS EN ISO 10140-2:2010 achieving Rw 23dB. Test Report N° C/23667/T01.

## Technical Information

### Standards and approvals

Fire Barrier Slab has been independently tested and assessed to BS 476: Part 20 and Part 22 by accredited laboratories.

ROCKWOOL Fire Barrier system achieves a reaction to fire classification of A1 as defined in BS EN 13501:1

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/02.

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.co.uk for specific details – LUL ref: 2231.

## Product information

| Thickness | Length | Width |
|---|---|---|
| 100mm | 1000mm | 666mm |



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## Installation

1. Fire Barrier Slab should be cut to the appropriate height and friction fitted within the opening.
2. ROCKWOOL Acoustic Intumescent Sealant or ROCKWOOL LUL Intumescent Sealant should then be applied to both the butt joints and perimeter of the barrier seal.

### Service penetrations

ROCKWOOL Fire Barrier Slab can be penetrated by steel pipes of ≤ 33 mm external diameters and steel cable trays of ≤ 305mm x 50mm.

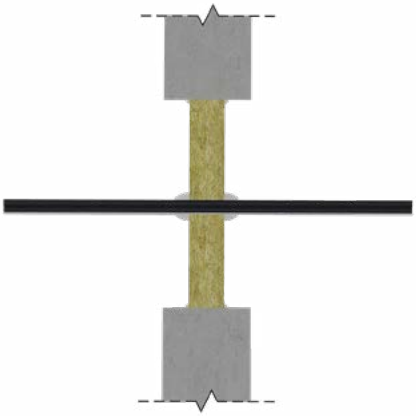
Penetrating services must be independently supported by a maximum of 150mm from the face of the slabs.

### Handling

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



## Specification clauses

- ROCKWOOL Fire Barrier Slab is associated with the following NBS clauses:
- K10: Gypsum board dry linings/partitions/ceilings
  - 530 – Cavity fire barriers within partitions/wall linings
  - 545 – Cavity fire barriers within suspended ceilings
- K40: Demountable suspended ceilings
  - 287 – Cavity Barriers
  - 425 – Installing cavity barriers
  - 431 – Installing sound barriers
- P10: Sundry insulation/proofing work
  - 410 – Flexible cavity barriers
  - 430 – Wired mineral wool small cavity barriers
  - 440 – Fire protection

# TCB & PWCB CAVITY BARRIERS


## Advantages

- Easy to install
- Fire resistance up to 60 minutes (EI)
- Reduce acoustic flanking transmission
- Improves air leakage & heat loss
- Unaffected by building movement
- Suitable for vertical and horizontal applications
- Site durable & weather protected

## Description

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.

## Applications

ROCKWOOL TCB & PWCB Cavity barriers can be used in both vertical and horizontal applications, providing an effective fire, acoustic and thermal barrier within external wall cavities and separating party walls.

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).

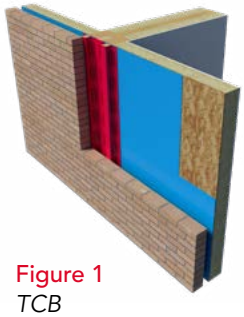


Figure 1
*TCB*

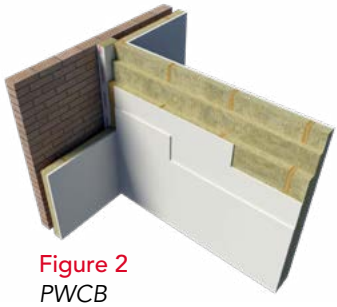


Figure 2
*PWCB*



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# Performance

## Fire performance

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.

## Fire performance – BS 476: Part 20: 1987 (TCB & PWCB)

### Table 1

PWCB

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

### Table 2

TCB

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

## Fire performance - BS EN 1366-4: 2006 +A1 2010 (TCB only)

### Fire performance

Table 3
Wall

| Cavity size (mm) | TCB range (mm) | Masonry to masonry (mins) | Masonry to steel (mins) | Masonry to timber (mins) | Masonry to ROCKWOOL (100Kg/m³) (mins) |
|---|---|---|---|---|---|
| 50-285 | Min: 65x65<br>Max: 300x150 | Integrity: 60<br>Insulation: 30 | Integrity: 180<br>Insulation: 30 | Integrity: 60<br>Insulation: 60 | Integrity: 120<br>Insulation: 20 |

Table 4
Floor

| Cavity size (mm) | TCB range (mm) | Masonry to masonry (mins) | Masonry to steel (mins) | Masonry to timber (mins) |
|---|---|---|---|---|
| 50-285 | Min: 65x65<br>Max: 300x150 | Integrity: 120<br>Insulation: 90 | Integrity: 120<br>Insulation: 20 | Integrity: 60<br>Insulation: 20 |

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

**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).

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 appropriate mineral wool insulation, and effective perimeter edge sealing is provided around all exposed edges.

### Acoustic performance

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

Table 5

| Cavity type in party wall | U-value claim for SAP |
|---|---|
| Unfilled cavity with no effective edge sealing | 0.5 W/m²K |
| Unfilled cavity with effective edge sealing only | 0.20 W/m²K |
| Fully filled cavity and effective edge sealing | 0.00 W/m²K |



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# Technical Information

### Standards and approvals

TCB & PWCB Cavity Barriers have been tested and assessed BS476: Part 20: 1987 and can achieve a fire resistance rating of up to 60 minutes (EI).

TCB Cavity Barriers have been tested to BS EN 1366-4: 2006 +A1 2010 using the general principles of BS EN 1363-1:2012 achieving a fire resistance rating of up to 60 minutes (EI).

TCB & PWCB Cavity Barriers are manufactured using non-combustible stone wool which is classified A1 in accordance with BS EN 13501-1: 2007 +A1 2009.

TCB Cavity Barriers 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: 022b (3).

### Product information

| Property | Description |
|---|---|
| Length | 1200mm |
| Width | TCB – Up to 150mm<br>PWCB – 200mm |
| Thickness | TCB – Up to 300mm<br>PWCB – Up to 160mm |
| Cavity sizes | TCB – Up to 285mm<br>PWCB – Up to 150mm |
| Reaction to fire | Euroclass A1 (ROCKWOOL Core) |
| Fire resistance | 60 minutes (EI) |

# Installation

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

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.

### 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 be closed at eaves level with the ROCKWOOL TCB Cavity Barrier.

# Specification clauses

ROCKWOOL TCB & PWCB Cavity Barriers are associated with the following NBS clauses:

F30 Accessories/sundry items for brick/block/stone walling

- 180 Cavity Closers

K10 Gypsum board dry linings/partitions/ceilings

- 530 Cavity barriers within partitions/wall linings

P10 Sundry insulation/proofing work

- 420 Sleeved mineral wool small cavity barriers

# FIREPRO®
# SP FIRESTOP SYSTEMS


## Advantages

- Easy to install, dry fit system
- Can accommodate limited movement
- Tested to provide up to 2 hours of fire resistance
- Resists the passage of smoke – aluminium foil faced on both sides
- Suitable for cavity widths up to *1000mm

*Please contact ROCKWOOL Technical Solutions for fire resistance ratings in voids over 600mm wide.

## Description

ROCKWOOL SP Firestop System comprises of both the SP Firestop Slab and SP Firestop fixing brackets. The SP Firestop Slab is a medium density stone wool slab which incorporates a foil facing to both sides. The foil facing includes cutting lines to support accurate installation.

## Applications

SP Firestop System may be installed horizontally or vertically and is suitable for cavity widths between 50mm and 600mm. SP Firestop can also be used horizontally in cavity widths up to 1000mm for further information please contact ROCKWOOL Technical Solutions.

SP Firestop System is suitable for:

- Masonry constructions
- Curtain walling systems
- Large cavity voids
- Rainscreen facades (vertical use only)

SP Firestop System is not suitable for use as a horizontal fire barrier in ventilated façade systems. For these applications consider using the ROCKWOOL SP Firestop VRB



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# Performance

## Standards and approvals

SP Firestop System has been tested and assessed to BS 476: Part 20. It has also been tested to BS EN 1366-4: 2006 and classified to BS EN 13501-2.

Achieves Euroclass A1 in accordance with BS EN 13501-1.

SP Firestop System is third party approved with LPCB – certificate no. 022b.

This product has been authorised for use in LUL surface and sub-surface premises when installed in accordance with this datasheet. Please refer to the LUL Approved Product Register at www.LU-apr.co.uk for specific details. LUL Ref: 2244.

## Fire performance

The SP Firestop System can achieve a fire resistance rating of up to 2 hours in voids of up to 600mm.

| Product | Wall | Floor | Cavity (mm) | Test standard |
|---|---|---|---|---|
| SP60 (standard) | EI60 | EI60 | 400 | BS 476 Part 20 |
| SP120 (standard) | EI120 | EI120 | 400 | BS 476 Part 20 |
| Fire performance with +/- 3% Movement | | | | |
| SP60 (standard) | | EI60 | 300 | BS EN 1366-4 |
| SP120 (standard) | | EI120 | 300 | BS EN 1366-4 |
| | | | | |
| SP Plus (with XL bracket) | EI120 | EI120 | 600 | BS EN 1366-4 |
| SP Plus (with XL bracket) | | EI60 | 1000 | BS EN 1366-4 |

## Movement testing

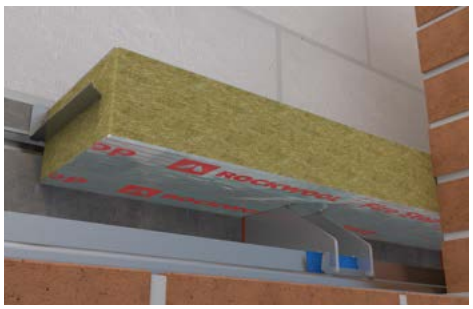
SP Firestop Slab has been tested with movement applied in accordance with the provisions set out in Annex B of BS EN 1366-4: 2006. SP60 and SP120 can accommodate +/- 3% movement in cavities up to 300mm

## Masonry support bracket penetration

The SP Firestop System has been tested in conjunction with the AnconOptima Masonry Support System where the Masonry Support System penetrated the SP 60 Firestop Slab.

For further information on the use of masonry support brackets with the SP Firestop System please contact ROCKWOOL Technical Solutions.

| Product | Bracket penetration | Fire resistance | Cavity (mm) | Test standard |
|---|---|---|---|---|
| SP60 Firestop Slab | 50% | EI60 | 400 | BS EN 1366-4 |
| SP60 Firestop Slab | 100% | EI60 | 400 | BS EN 1366-4 |



### Acoustic performance

ROCKWOOL products have excellent acoustic properties and can significantly reduce the levels of airborne sound transmission through wall and floor cavities. For further information please contact ROCKWOOL Technical Support.

### Product information

| Property | Description |
|---|---|
| Length | 1000mm |
| Width | 650mm |
| Thickness | 75 & 90mm |
| Fire resistance | Up to 2 hours |

### 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.

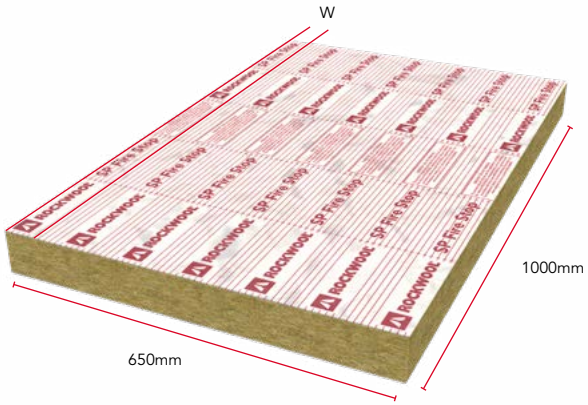
## Installation

ROCKWOOL SP Firestop Slabs are designed for cutting on site with a sharp knife or saw and a straight edge. The cavity to be fire stopped 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 length 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 – see Figures 2 and 3.

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




SP Firestop Slab - direction of cut to produce 1000mm long Firestop strips to suit cavity width W

**Figure 1**
Cutting method for SP Firestop Slab

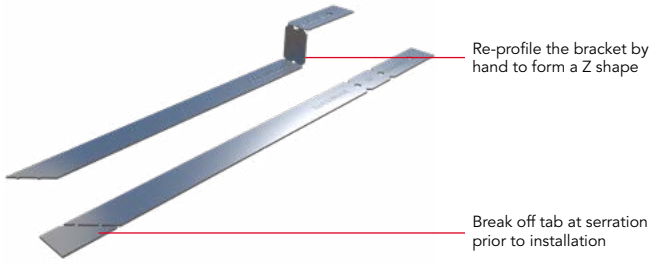



**Figure 2**
SP Firestop Fixing Bracket

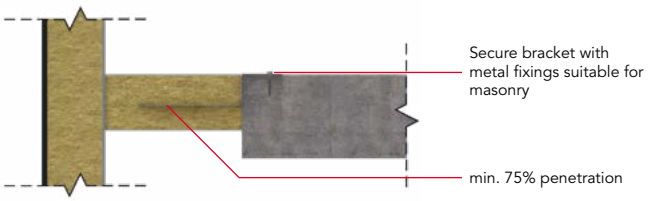



**Figure 3**
Sectional view of Firestop Slab and Bracket



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## Fixing within cladding & curtain walling systems

1. Cut the ROCKWOOL SP Firestop Slab to suit the *cavity size, allowing for additional compression of up to 10mm.
2. The ROCKWOOL SP60 or SP120 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 4. The SP Fixing Brackets should be placed 250mm ±10mm in from each end of the ROCKWOOL SP Firestop Slab.
3. The product should then be fitted securely into the void and tightly butted to the adjacent ROCKWOOL SP Firestop Slab.
4. Once the ROCKWOOL SP Firestop Slab has been accurately fitted, the SP Fixing Brackets must then be fitted to the edge of the concrete floor slab with metal fixings suitable for masonry.

## Fixing into masonry wall cavities

5. Cut the ROCKWOOL SP Firestop Slab to suit the *cavity size ensuring a tight fit.
6. 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.
7. The ROCKWOOL SP Firestop Slab is then impaled onto the SP Fixing Bracket after the next lift of inner leaf masonry.
8. Work on both leaves can then be continued and must include either a vertical damp proof course (vertical installation) or a cavity tray (horizontal installation) installed over the SP Firestop Slab as shown in Figure 5.

*For cavity widths of 250mm or more, joints between adjacent lengths of SP Firestop Slab should be sealed on the top surface with aluminium foil tape.

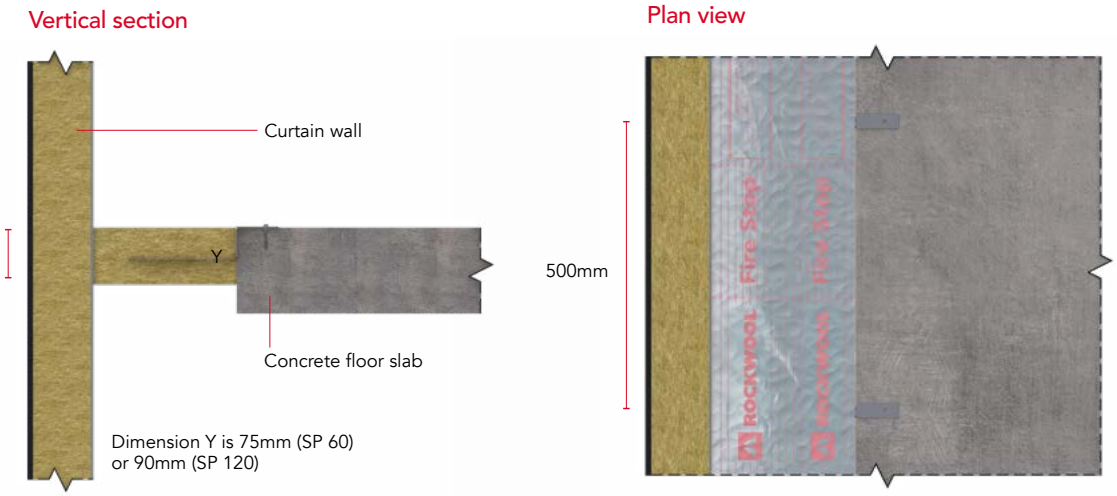
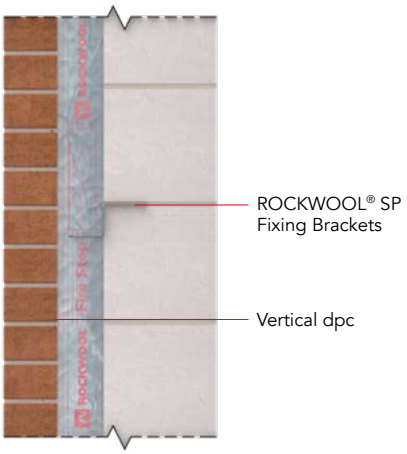



Figure 4
ROCKWOOL SP Firestop Slab between floor and curtain wall

Vertical installation




Horizontal installation

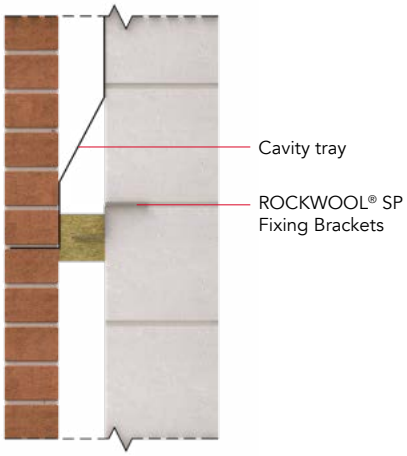



Figure 5
ROCKWOOL SP Firestop Slab between masonry leaves

## Ancilliaries

### SP Firestop Fixing Brackets

| Bracket type | Cavity size (up to mm) | Pieces / pack |
|---|---|---|
| SP/S | 100 | 50 |
| SP/L | 400 | 50 |
| SP/XL | 600 | 50 |

ROCKWOOL SP Fixing Brackets are supplied in three standard sizes; SP/S (small), SP/L (large) and *SP/XL for cavity widths up to 600mm. The brackets are supplied in cardboard boxes of 50 pieces, flat packed and designed to be easily re-profiled by hand on site.

* SP/XL brackets are designed for use with SP Firestop Plus Slab for 2 hours fire resistance in cavities up to 600mm.

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.

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

## Specification clauses

The SP Firestop System is associated with the following NBS Clauses:

F30 Accessories/sundry items for brick/block stone walling

- 180 Cavity Closers

P10 Sundry insulation/proofing work

- 432 cavity Barriers

P12 Fire stopping systems

- 360 Mineral Wool Rigid Batts



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# FIRE STOPPING
## Section 3 – Linear joint seals

Sealing construction joints between fire resistance elements within a compartment is vital. Products and systems used in this application should achieve the same level of fire resistance as the compartment elements, whilst also maintaining integrity during the expansion and contraction (movement) of construction materials.

ROCKWOOL provide a range of tested products that are designed for sealing linear joints between different construction materials, that can also accommodate movement where required. Within our product range there are products suitable for:

- Fire stopping junctions between compartments walls and floors or roof decks
- Fire stopping expansion joints within the construction
- Sealing narrow joints between different substrates

FIREPRO® Expansion Joint Seals

FIREPRO® Linear & Trapezoidal Firestops

FIREPRO® Fire Rated Silicone Sealant & FIREPRO® Acoustic Intumescent Sealant

## Core products

- Linear & Trapezoidal Firestops

- Intumescent Expansion Joint Seals


- Acoustic Intumescent Sealant & Fire Resistant Silicone Sealant

## Useful documents and standards

- ASFP Technical Guidance Document – TGD 17: Code of practice for the installation and inspection of fire stopping systems in buildings
- ASFP Red Book: Fire stopping and penetration seals for the construction industry
- ASFP: Ensuring best practice for passive fire protection in buildings
- ASFP: On-site guide to installing fire stopping
- BS 476-20: Fire test on building materials and structures. Method for determination of the fire resistance of elements of construction
- BS EN 1366-4: Fire resistance test for service installations. Linear joint seals
- BS EN 1363-1: Fire resistance tests. General Requirements
- BS EN 13501-2: Fire classification of construction products and building elements. Classification using test data from resistance to fire tests, excluding ventilation services.

*ASFP ( Association for Specialist Fire Protection) guidance documents can be sourced at www.asfp.org.uk*



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# FIREPRO® SOFTSEAL SYSTEM

## Advantages

- Suitable for penetration and linear joints
- Acoustically absorbent
- CE Marked
- Easy to handle and install
- Both vertical and horizontal joint applications
- Tested for durability to current EU guidelines
- Supplied pre-coated

## Description

Part of the ROCKWOOL FIREPRO® range, FIREPRO® SoftSeal System incorporates a product specifically designed to accommodate movement within buildings in linear joint seals and penetration seals.

## Applications

The FIREPRO® SoftSeal System has been specifically developed for two key applications areas:

Penetration seals

Linear joint seals

# Penetration seals

## Description

As part of the comprehensive ROCKWOOL FIREPRO® range of fire protection products, FIREPRO® SoftSeal System incorporates a product specifically designed to apply to penetration seals within buildings, where the design needs to accommodate movement in the services.

The FIREPRO® SoftSeal System can be installed into apertures within masonry or drywall partitions as a standalone seal for openings up to 1000mm x 1000mm or as part of a larger ROCKWOOL Ablative Coated Batt seal (2 layers) to accommodate movement of services. *

A FIREPRO® SoftSeal Coated Strip comprises a low-density stone wool SoftSeal Lamella Strip, pre-coated with SoftSeal Flexible Coating.

The FIREPRO® SoftSeal Coated Strip is supplied in strips 1200mm x 200mm x 100mm.

The FIREPRO® SoftSeal flexible Coating is also available in 5L, 10L and 20L tubs to enable site repairs to FIREPRO® SoftSeal Coated Strips and FIREPRO® SoftSeal Linear Joint Seals, that may have been damaged during installation.

To complement the FIREPRO® SoftSeal Coated Strip, ROCKWOOL also supplies FIREPRO® SoftSeal High Expansion Intumescent Sealant (310ml) and FIREPRO® SoftSeal Flexible Acoustic Intumescent Sealant (310ml).

FIREPRO® SoftSeal Coated Strip is intended to reinstate the fire resistance, acoustic and air seal 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 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.

*Higher levels of service movement may be accommodated by installing the product under higher compression rates, please contact ROCKWOOL Technical Solutions for guidance.

## Performance

### Fire performance

ROCKWOOL FIREPRO® SoftSeal Coated Strip has been tested to the dedicated fire resistance standard for penetration seals BS EN1366-3.

Table 1

Fire performance - Linear joint seals

| Max. Seal Width (mm) | Min. Seal Depth (mm) | Integrity (mins) | Insulation (mins) |
|---|---|---|---|
| 350 | 100 | 120 | 120 |
| 375 | 100 | 120 | 120 |
| 200 | 100 | 240 | 180 |
| 150 | 100 | 240 | 180 |

*The fire performances quoted in table 1 are subject to varying application techniques and movement levels. For further information please contact ROCKWOOL Technical Support*

Standard details, showing the full scope of fire performance, are available from the ROCKWOOL Technical Solutions Team on 01656 862621.

FIREPRO® SoftSeal Coated Strip fire resistance tests were conducted using FIREPRO® SoftSeal Flexible Acoustic Intumescent Sealant and/or FIREPRO® SoftSeal High Expansion Intumescent Sealant.

For vertical applications the FIREPRO® SoftSeal Coated Strips are coated on both sides.

### Movement

As part of the testing to BS EN 1366-4, FIREPRO® SoftSeal was assessed for its movement capabilities, prior to conducting the fire test. The product was tested to accommodate movement (expansion and contraction) of +/-15%*.

*See ROCKWOOL standard details for specific Ablative Coated Batt sizes.



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### Acoustic performance
Tested to EN 10140 with the following results:

- Rw 30 dB: When installed with 100mm thick SoftSeal Batt
- Dn,e,w 40 dB: When installed with 100mm thick SoftSeal Batt

### Water permeability
Tested to EN 1027 - No leakage observed up to 300Pa.

### Air permeability

- Tested to EN 1026 up to 600Pa.
- Leakage at 50Pa - 0.1/1.4 $m^3/m^2/h$.

## Technical information

### Standards and approvals
FIREPRO® SoftSeal has been tested and assessed to BS EN1366-3 2009 and classified to EN 13501-2.
FIREPRO® SoftSeal Coated Strip System has been CE marked against ETAG026-2.

### Product information

| Property | Description |
|---|---|
| Length | 1200mm |
| Width | 200mm |
| Thickness | 100mm |
| Fire resistance | Up to 2 hours |
| Coating | 2 sides |
| Density | 80kg/$m^3$ |
| Movement | +/- 15% |

## Installation

1. Measure the height of the aperture to be sealed.
2. Cut the FIREPRO® SoftSeal Coated Strips 15% bigger than the height of the void to be filled, so when installed they are under compression.
3. Ensure substrate is clean and free of dust and debris.
4. Apply a bead of FIREPRO® SoftSeal Acoustic Intumescent Sealant around the internal edges of the aperture.
5. Install the FIREPRO® SoftSeal Coated Strips horizontally, so that the lamellas are running horizontally.
6. Apply a bead of FIREPRO® SoftSeal Acoustic Intumescent Sealant to butt joints between different sections of SoftSeal Coated Strip and around services.
7. FIREPRO® SoftSeal High Expansion Intumescent Sealant shall be used around plastic pipes in accordance with ROCKWOOL standard details.
8. Apply FIREPRO® SoftSeal Flexible Coating to the face of all joints between SoftSeal Coated Strip and substrate/Ablative Coated Batt.

*Note: Ensure adequate space above and below services to accommodate the FIREPRO® SoftSeal product, for the movement levels required.*

# Linear joint seals

## Description

As part of the comprehensive FIREPRO® range of fire protection products, ROCKWOOL FIREPRO® SoftSeal System incorporates a product specifically designed to form a linear joint seal within buildings, where the design needs to accommodate movement in the joint.

It may be installed horizontally or vertically and is suitable for linear joint widths up to 300mm*. FIREPRO® SoftSeal Linear Joint Seal 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. FIREPRO® SoftSeal Linear Joint Seal can be used in conjunction with ROCKWOOL Ablative Coated Batt for head-of-wall applications.

A FIREPRO® SoftSeal Linear Joint seal comprises a low-density stone wool FIREPRO® SoftSeal batt, pre-coated with FIREPRO® SoftSeal Flexible Coating. Depending on the application, FIREPRO® SoftSeal Linear Joint Seal can be supplied on either one or both sides. (Single Sided for Horizontal Applications. Double sided for Vertical Applications).

The FIREPRO® SoftSeal Flexible Coating is also available in 5L, 10L and 20L tubs to enable site repairs to FIREPRO® SoftSeal Coated Strips and FIREPRO® SoftSeal Linear Joint Seals, that may have been damaged during installation.

The FIREPRO® SoftSeal Linear Joint Seal is supplied in strips 1200mm x 200mm x 100mm.

*Linear Joints over 300mm wide can be accommodated, with the addition of steel Z brackets.
For further information and advice on sizes or applications, please contact Rockwool Technical Solutions Team on 01656 862621.

## SoftSeal installed as a linear joint seal

## Performance

### Fire performance

ROCKWOOL FIREPRO® SoftSeal Linear Joint Seal has been tested to the dedicated fire resistance standard for linear joint seals BS EN1366-4 and shown to provide up to 4 hours fire performance (E240 & EI80).

### Movement

As part of the testing to BS EN 1366-4, FIREPRO® SoftSeal was assessed for its movement capabilities, prior to conducting the fire test. The product was tested to accommodate movement (expansion and contraction) of +/-25%.



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### Acoustics
Tested to EN 10140 based on two thicknesses with the following results:

- Rw 30 dB: When installed with 100mm thick SoftSeal Batt
- Rw 39 dB: When installed with 200mm thick SoftSeal Batt
- Dn,e,w 40 dB: When installed with 100mm thick SoftSeal Batt
- Dn,e,w 49 dB: When installed with 200mm thick SoftSeal Batt

### Water permeability
Tested to EN 1027 - No leakage observed up to 300Pa.

### Air permeability

- Tested to EN 1026 up to 600Pa.
- Leakage at 50Pa - 0.1/1.4 $m^3/m^2/h$.

## Technical information

### Standards and approvals
FIREPRO® SoftSeal has been tested and assessed to BS EN1366-4: 2006 + A1: 2010 and classified to EN 13501-2.

FIREPRO® SoftSeal Linear Joint Seal system has been CE marked against ETAG026-3.

### Product information

| Property | Description |
|---|---|
| Length | 1200mm |
| Width | 200mm |
| Thickness | 100mm |
| Fire resistance | Up to 4 hours |
| Coating | 1 side |
| Density | 80Kg/$m^3$ |
| Movement | +/- 25% |

## Installation

1. Measure the width of the linear joint to be sealed.
2. Cut the FIREPRO® SoftSeal Coated Strips up to 25% bigger than the joint width (dependent on movement required), so when installed they are under compression.
3. Ensure substrate is clean and free of dust and debris.
4. Install the FIREPRO® SoftSeal Linear Joint Seal with the coating on the top surface.
5. Apply FIREPRO® SoftSeal Flexible Coating to the face of all joints between the seal and the substrate, overlapping by 20mm.
6. Apply FIREPRO® SoftSeal Flexible Coating to the faces of all butt joints between pieces of Soft Seal Linear Joint Seal.

# Specification clauses

FIREPRO® SoftSeal System is associated with the following NBS clauses:

P12 Fire stopping systems

- 160 – Linear gap sealing

# LINEAR & TRAPEZOIDAL FIRESTOP SYSTEM

## Advantages

- Up to 4 hours fire resistance
- Suitable for walls ranging from 400kg/m$^3$
- Manufactured for a wide range of profiles
- Easy installation

## Description

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

The Linear and Trapezoidal Firestop System can be manufactured to suit a wide range of steel profile 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

Figure 1 – *Linear Firestop 2A*

Figure 2 – *Linear Firestop 2A and 2B*

Figure 3 – *Linear Firestop 2A and Dovetail Infill Strip*

## Applications

Linear and Trapezoidal Firestop Systems have been developed to provide up to 4 hours firestopping at the junctions of compartment walls and floors.

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.



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# Performance

## Fire performance

All fire ratings apply to gaps over walls constructed of dense aggregate blocks, lightweight aggregate concrete, clay bricks or concrete blocks with a minimum density of 400kg/$m^3$

For further information on dry wall systems, please contact ROCKWOOL Technical Support.

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

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

| Min. wall thickness/ fire stop width | Fire resistance (integrity and insulation) |
|---|---|
| 100mm | 2 hours |
| 150mm | 3 hours |
| 200mm | 4 hours |

## Chemical

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

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

## Biological

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).

# Technical information

## Standards and approvals

Linear and Trapezoidal Firestops have been tested to BS 476: Part 20: 1987 and can provide up to 4 hours fire protection.

Achieves Euroclass A1 in accordance with BS EN 13501-1.

Linear and Trapezoidal Firestops are third party approved with LPCB – certificate no. 022b.

This product has been authorised for use in LUL surface and sub-surface premises when installed in accordance with this datasheet. Please refer to the LUL Approved Product Register at www.LU-apr.co.uk for specific details.

## Product information

| Property | Description |
|---|---|
| Length | 1000mm |
| Width | Up to 400mm |
| Thickness | 12.5 – 100mm |
| Deck profiles | Various |
| Density | 110 Kg/m$^3$ |
| Fire resistance | Up to 4 hours |

## Handling / storage

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.

## Other information

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



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## 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 fire stopping should be achieved using ROCKWOOL SP Firestop Systems.


Figure 4 – *Profiled metal deck over blockwork wall*

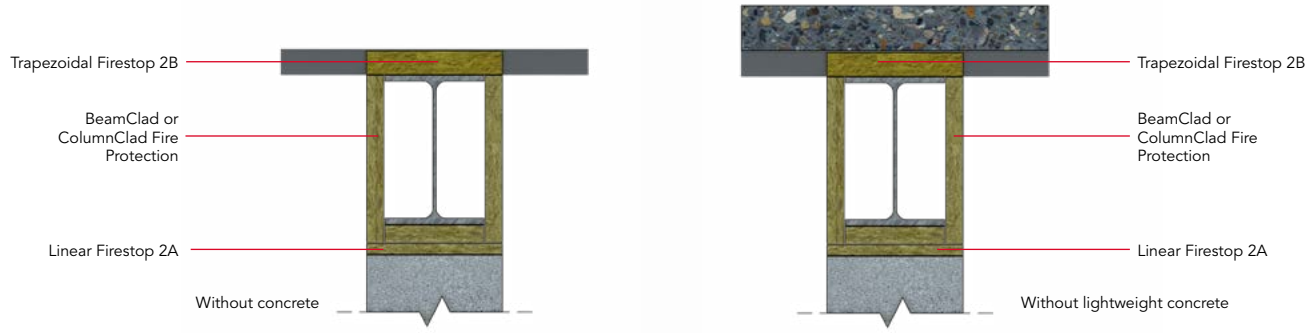


Figure 5 – *Profiled metal deck with/without concrete over a universal beam*

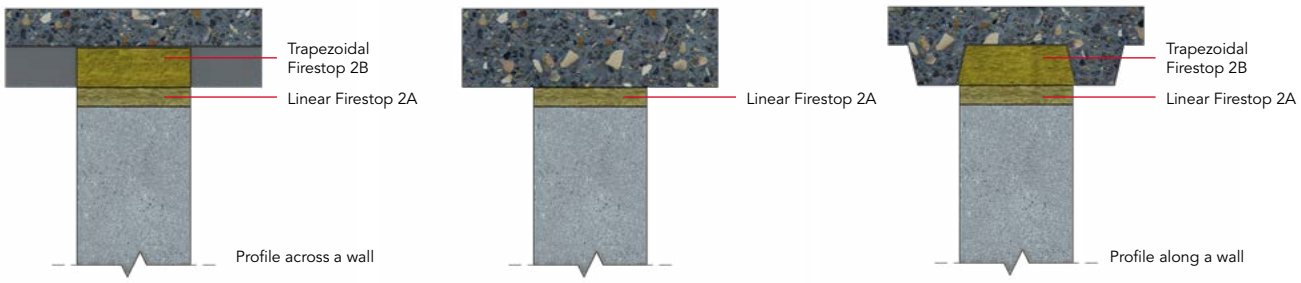


Figure 6 – *With / without profiled metal deck under a lightweight concrete slab*

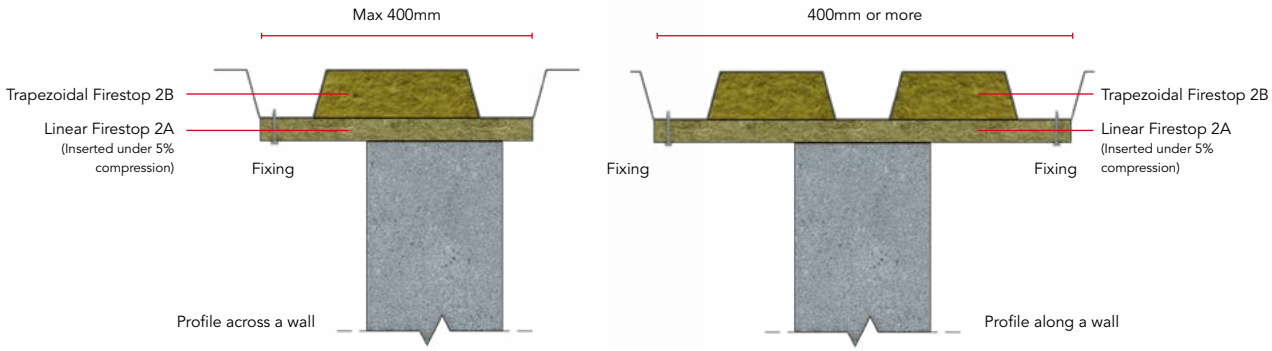


Figure 7a & 7b – *Metal profiles parallel but offset from the wall line*

Fig 7a: The 'overhang' of the Linear Firestop 2Ashould 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.

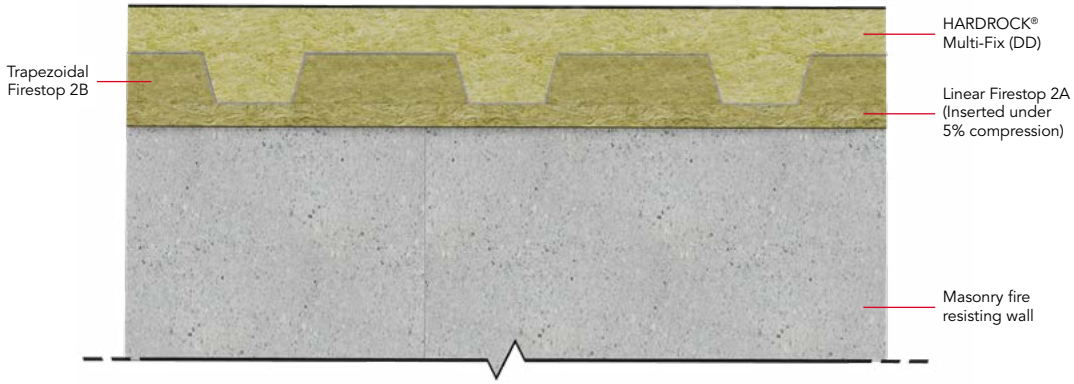


Figure 8 – *ROCKWOOL Insulated flat roof deck with profiles perpendicular to the wall line*

When fire stopping between the head of a fire resistant wall and the underside of a perforated roof deck insulated with ROCKWOOL HARDROCK® Multi-Fix [DD] flat roof insulation, it should be considered best practice to fill both the upper and lower deck profiles 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.

## Specification clauses

Linear and Trapezoidal Firestops are associated with the following NBS clauses:

F30 Accessories/sundry items for brick/block/stone walling

- 670 Tops of non-loadbearing walls

G30 Metal profiled sheet decking

- 240 Fire resisting profile fillers



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# FIREPRO® INTUMESCENT EXPANSION JOINT SEAL

## Advantages

- Up to 4 hours fire resistance
- Easy to install compression fit
- Dry fix solution
- Water resistant

## 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).

## Applications

FIREPRO® Intumescent Expansion Joint 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

# Performance

## Fire performance

ROCKWOOL Intumescent Expansion Joints to provide up to 4 hours rating for linear joints in walls & floors.

### Table 1

Fire resistance performance

| Seal depth 'X' (mm) [thickness of seal in brackets] | Gap width 'Y' (mm) | | | |
|---|---|---|---|---|
| | 10-14 | 15-30 | 31-50 | 51-75 |
| | Integrity rating (minutes) | | | |
| 25 [x16] single | 120 | NA | NA | NA |
| 50 [x16] single | 240 | NA | NA | NA |
| 25 [x32] double | NA | 120 | NA | NA |
| 50 [x32] double | NA | 240 | NA | NA |
| 50 [x52] double | NA | NA | 240 | NA |
| 50 [x78] double | NA | NA | NA | 240 |

*Note: The thickness of the seal (in brackets) is designed to ensure compression when installing the seal into the gap.*

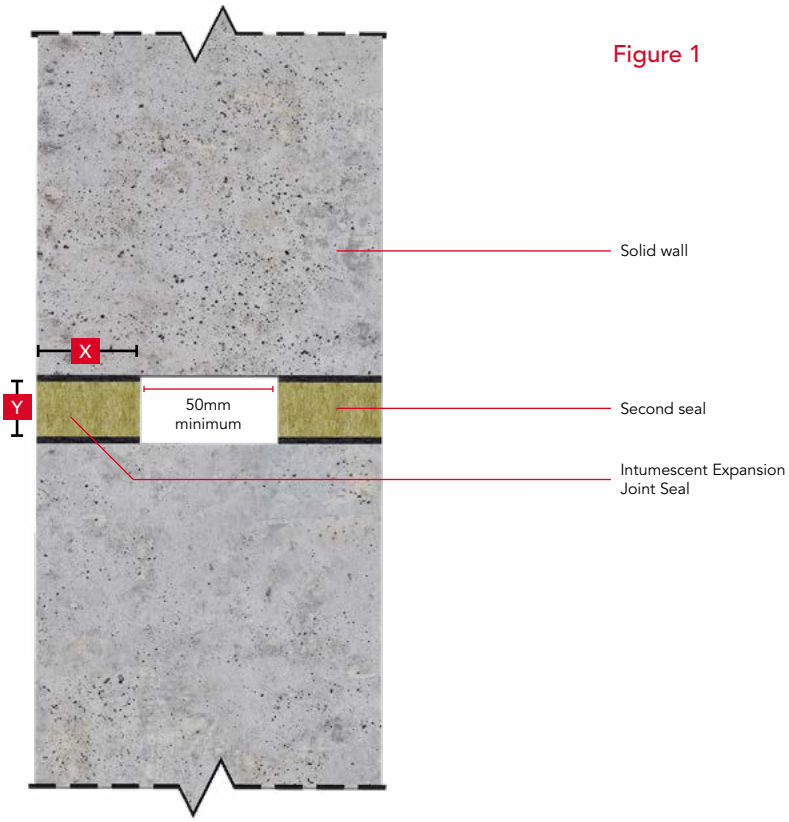


Figure 1



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# Technical information

## Standards and approvals

FIREPRO® Intumescent Expansion Joint Seal has been tested to BS 476: Part 20: 1987 and can provide up to 4 hours fire protection in joints.

FIREPRO® Intumescent Expansion Joint Seal is third party accredited through IFC and Certifire.

## Product Information

| Property | Description |
|---|---|
| Length | 1000mm |
| Width | 15-78mm |
| Thickness | 25mm, 50mm |
| Fire resistance | Up to 4 hours |

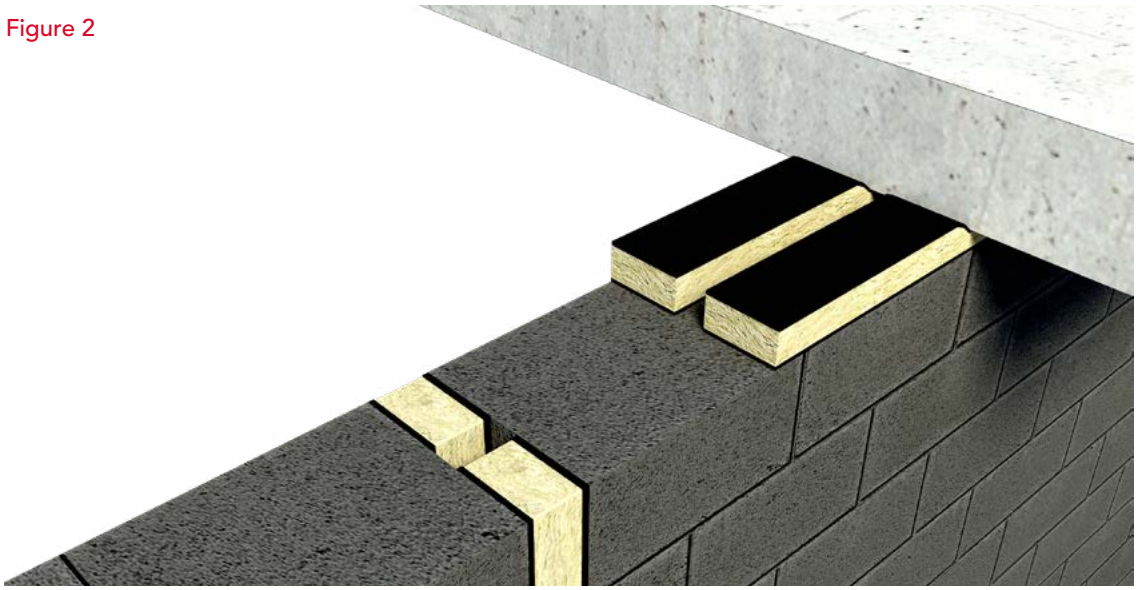
# Installation

## Installation In floors

Intumescent Expansion Joint is used to prevent fire penetration through movement joints and gaps in walls and concrete floors (Figure 2) for a specified period up to 4 hours. They are manufactured oversize to fit under compression.

1. Remove all loose debris and loose debris from within 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

Figure 2



# Specification clauses

FIREPRO® Intumescent Expansion Joint Seal is associated with the following NBS clauses:

E40 Designed joints in in-situ concrete

- 545 Compressible sealing strip system

F30 Accessories/sundry items for brick/block/stone walling

- 616 Fire resistant movement joints without sealant
- 670 Tops of non-loadbearing walls

# FIREPRO® ACOUSTIC INTUMESCENT SEALANT


## Advantages

- Up to 4 hours fire protection
- Acoustically tested
- Air leakage tested
- Suitable for linear joints up to 50mm wide
- Suitable with multiple substrates and services
- Increased movement capability
- Available as a trowel grade option

## Description

Acoustic Intumescent Sealant is a high specification, one part water based acrylic sealant. Acoustic Intumescent Sealant is designed for use in the installation of ROCKWOOL Ablative Coated Batt, sealing linear joints and some individual service penetrations passing through various substrates.

## Applications

Acoustic Intumescent Sealant is comprehensively tested for a wide range of applications which include:

- Sealing service penetrations
- Linear joint seals
- Installation of Ablative Coated Batt



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# Performance

## Standards and approvals

Acoustic Intumescent Sealant has been tested to BS EN 1366-3: 2009 and BS EN 1366-4: 2006 +A1:2010 and classified to EN 13501-2, providing up to 4 hours fire protection in joints up to 30mm.

Acoustic Intumescent Sealant has been CE marked against ETAG026-2.

Acoustic Intumescent Sealant is third party accredited through IFC and Certifire.

Acoustic Intumescent Sealant is third party approved with LPCB – certificate no. 022b(4)

## Fire performance

### AIS Tables – Fire protection

| BS & EN Data for aerated concrete walls and floors with substrates | | | | | | |
|---|---|---|---|---|---|---|
| Approval | Application | Gap width | Substrate combination | Integrity | Installation | Certifier document place |
| BS 476-20 | Floor | up to 50mm | Variable | up to 120 mins | Single sided | CF5577 - PG 4 |
| EN 1366-3 | Floor | up to 50mm | Variable | up to 240 mins | Upper face | CF5577 - PG 7 |
| EN 1366-4 | Wall | up to 50mm | Variable | up to 120 mins | single sided | CF5577 - PG 5 & 6 |

Substrates include AAC, Softwood and Steel – please refer to CF5577 for combinations and individual ratings

### CERTIFICATE No CF 5577 - EN1366-4 +A1 Approval Matrix

| ROCKWOOL® FIREPRO® Acoustic Intumescent Sealant | | | | | | | |
|---|---|---|---|---|---|---|---|
| Configuration | | Max. joint width (mm) | Min. seal depth (mm) | Backing material | Integrity (mins) | Insulation (mins) | Movement % |
| Wall constructions (min 150mm thick) | Autoclaved aerated concrete | 60* | 20 (both faces) | Polyethylene 20mm & 50mm diameter | 240 | 120 | 24 Shear 8.3 Lateral |
| | | 60* | 5 (either face) | 75mm deep, compressed 15%, stonewool 60kg/m$^3$ | 240 | 60 | 25 Shear 12.5 Lateral |

* Pre movement

**Application technique:** For good adhesion the surfaces of the building element shall be free of any dust or grease and may need to be primed. On good clean, virgin concrete & masonry, no priming required.

### CERTIFICATE No CF 5577 - EN1366-4 +A1 Approval Matrix

| ROCKWOOL® FIREPRO® Acoustic Intumescent Sealant | | | | | | | |
|---|---|---|---|---|---|---|---|
| Configuration | | Max. joint width (mm) | Min. seal depth (mm) | Backing material | Integrity (mins) | Insulation (mins) | Movement % |
| Floor constructions (min 150mm thick) | Autoclaved aerated concrete | 60* | 20 (both faces) | Polyethylene 20mm & 50mm diameter | 180 | 60 | 16.6 Lateral |
| | | 60* | 5 (either face) | 100mm deep, compressed 15%, stonewool 60kg/m$^3$ | 240 | 240 | 25 Lateral |

* Pre movement

**Application technique:** For good adhesion the surfaces of the building element shall be free of any dust or grease and may need to be primed. On good clean, virgin concrete & masonry, no priming required.

| EN 1366-3:2009 – Rigid and flexible wall min 120 mm thick | | | | | |
|---|---|---|---|---|---|
| Service type | Pipe O/D | Pipe wall thickness | Annular gap | Depth of sealant | Classification |
| Copper and steel pipes | 15 mm ≥ 159 mm | 0.8 mm ≥ 14.2 mm | 10 mm | 25mm (both faces) | E120* |

* for insulation ratings please contact Rockwool Technical solutions

## CERTIFICATE No CF 5577 - EN1366-3 Approval Matrix

| Wall installations: Double sided seals - ROCKWOOL® FIREPRO® Acoustic Intumescent Sealant | | | | | | |
|---|---|---|---|---|---|---|
| Cable and cable tray size | | Cut out (mm) | Minimum seal depth (mm) | Backing material | Integrity (mins) | Insulation (mins) |
| Flexible or rigid wall constructions (min 150mm thick) | Cables ≥ to 21mm | 490mm long x 100mm high | 25 (both faces) | 75mm x 80kg/m³ stone wool | 120 | 90 |
| | Perforated cable tray 450 x 50mm | 490mm long x 100mm high | 25 (both faces) | 70mm x 80kg/m³ stone wool | 120 | 90 |
| | Cables ≥ 21-60mm | 200mm long x 100mm high | 25 (both faces) | N/A | 90 | 60 |

**Application technique:** For good adhesion the surfaces of the building element shall be free of any dust or grease and may need to be primed. On good clean, virgin concrete & masonry, no priming required.

**Rigid walls:** The wall must have a minimum thickness of 150mm and comprise concrete, aerated concrete or masonry with a minimum deity of 450kg/m3.

**Flexible walls:** The walls must have a minimum thickness of 120mm and comprise timber or steel studs lined on both faces with a minimum of 2 layers of 12.5mm thick "Type F" Gypsum board according to EN 520. In timber stud walls no part of the penetration shall be closer than 100mm to a stud, the cavity must be closed between the penetration seal and the stud and a minimum of 100mm of insulation of Class A1 or A2 according to EN 13501-1 must be provided within the cavity between the penetration and the stud.

For further information, please refer to the ROCKWOOL standard details'

## CERTIFICATE No CF 5577 - Air Permeability

| ROCKWOOL® FIREPRO® Acoustic Intumescent Sealant- Approval Matrix | | | | | |
|---|---|---|---|---|---|
| Air Permeability: EN1026 | Pressure (PA) | Positive pressure ($m^3/h/m^2$) | Negative pressure ($m^3/h/m^2$) | Weather capability | Not evaluated by this approval |
| | 50 | 0 | 0 | | |
| | 100 | 0 | 0 | | |
| Acoustic Rating: BS EN ISO 10140-3:1995 | $R_w(C;C_{tr})$ :38(-2;-7) dB | | | Movement capability | Movement parameters provided in the scope above |
| Smoke Toxicity BS 6853: 1999 Annex B.1 Incorporating Amendment No.1 | R value of 0.19 | | | Smoke Density BS 6853 D.3: 1999 Incorporating Amendment No.1 | Ao (max) value 0.004 |



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### Acoustic performance

**Weighted Sound Reduction Index (Rw) of up to 57dB dependant on:**

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

**For specific information on acoustic performance please contact ROCKWOOL Technical Solutions on 01656 868490 or technical.solutions@rockwool.co.uk.**

### Product information

| Property | Description |
|---|---|
| Application temperature | >5°C |
| Yield | up to 5.9lm |
| Weighted sound reduction index | up to 57dB |
| Fire resistance | up to 4 hours |
| Shelf life | 12 months |

## Installation

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.

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

| 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 |

## Specification clauses

FIREPRO® Acoustic Intumescent Sealant is associated with the following NBS clauses:

- E40: Designed joints in in-situ concrete – 530 Sealant
- F30: Accessories/sundry items for brick/block/stone walling - 610 Movement joints with sealants
- L10: Windows/rooflights/screens/louvres – 790 Fire resisting frames
- L20: Doors/shutters/hatches – 820 Sealant joints
- P12: Fire stopping systems – 395 Sealant-One part fire resistance acrylic

# FIREPRO® FIRE RESISTANT SILICONE SEALANT


## Advantages

- Up to 4 hours fire resistance
- Easily applied cartridge application
- Sealing joints up to 40mm
- Suitable with multiple substrates
- Suitable in joints with high movement capability
- Durable – Up to 25 years service

## Description

ROCKWOOL Fire Resistant Silicone Sealant is a one party alkoxy cure silicone supplied in 310ml cartridges. ROCKWOOL Fire Resistant Silicone Sealant offers excellent adhesion to a number of substrate types which include steel and masonry.

## Applications

ROCKWOOL Fire Resistant Sealant is a high performance silicone which has been designed for use in joints with high movement capability or where joints are formed between multiple substrate types. ROCKWOOL Fire Resistant Silicone Sealant is suitable for joints up to 40mm and can provide up to 4 hours fire resistance.

## Performance

### Fire performance

Table 1 - Fire performance

| 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/m²) | 15mm thick x 10mm depth | Dual | 240 | 240 |
| 25 | 15 | PE | 30mm diameter | Single | 240 | 120 |
| 40 | 25 | Mineral wool (density 90kg/m²) | 40 x 25mm depth | Dual | 240 | 240 |



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# Technical information

## Standards and approvals

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

Fire Resistant Silicone Sealant is third party accredited through IFC and Certifire.

## Product information

| Property | Description |
|---|---|
| Pack size | 310ml cartridge |
| Colour | White |
| Application temperature | ≥ 5°C |
| Yield | 27lm/L |
| Fire resistance | Up to 4 hours |

# Installation

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.

## Coverage

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

| Joint size (mm) | Metres per litre |
|---|---|
| 6x6 | 27.75 |
| 9x6 | 18.50 |
| 12x9 | 9.25 |
| 18x12 | 4.75 |
| 25x10 | 4.00 |

# Specification clauses

ROCKWOOL Fire Resistant Silicone Sealant is associated with the following NBS clauses:

E40 Designed joints in in-situ concrete

- 530 Sealant

F30 Accessories/sundry items for brick/block stone walling

- 610 Movement joints with sealant

L10 Windows/Rooflights/Screens/Louvres

- 790 Fire resisting frames

L20 Doors/Shutters/Hatches

- 820 Sealant joints

P12 Fire stopping systems

- 395 Sealant: One part fire resisting acrylic

# SP FIRESTOP OSCB 60 & 120


## Advantages

- Fully tested to "ASFP Technical Guidance Document 19: Fire resistance Test for 'open-state' cavity barriers used in the external envelope or fabric of buildings"
- Up to 120 minutes fire integrity and insulation
- Provides 25mm or 44mm airspace
- Satisfies NHBC and CWCT guidance for ventilation gaps at cavity barrier locations
- Weather resistant
- Easy site storage and handling
- Combined with ROCKWOOL RAINSCREEN DUO SLAB® it simplifies the design of high rise buildings above 18m

## Description

Specifically designed for use only in conjunction with ROCKWOOL RAINSCREEN DUO SLAB®, SP Firestop OSCB forms an open-state cavity barrier within the building facade, which allows for ventilation and drainage of the cavity under service conditions.

SP Firestop OSCB is available in two variants giving up to 60 and 120 minutes' fire performance respectively: SP Firestop OSCB 60 and SP Firestop OSCB 120.

Each comprises of a continuous intumescent strip fixed to the leading edge of a foil faced stone wool barrier, encapsulated by a weather-resistant polythene sleeve – coloured white for OSCB 60 and red for OSCB 120.

Fully tested to ASFP TGD 19, the combination of non-combustible insulation with an effective intumescent supports the construction of safe façade systems and aids the design of high-rise buildings over 18m in height.

Installed horizontally and designed to ensure an appropriate open air space is maintained, the SP Firestop OSCB is suitable for cavity widths up to 425mm (see under 'Performance' for full details).

## Applications

SP Firestop OSCB is suitable for use within ventilated façade systems.



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## Performance

Please note that SP Firestop OSCB 120 must be specified at least 6mm thicker than the total thickness of RAINSCREEN DUO SLAB® within in the cavity.

| Product | Maximum dimensions (mm) | | Fire performance (minutes) | |
|---|---|---|---|---|
| | Overall void | Open cavity | Integrity | Insulation |
| SP Firestop OSCB 60 | Up to 425 | Up to 25 | 60 | 60 |
| SP Firestop OSCB 120 | Up to 300 | Up to 44 | 120 | 120 |

- SP Firestop OSCB 60 achieves up to 60 minutes, with a maximum open cavity of 25mm and maximum overall void of 425mm.
- SP Firestop OSCB 120 achieves up to 120 minutes, with a maximum open cavity of 44mm and maximum overall void of 300mm.

## Technical information

### Standards & approvals

Fully tested to ASFP TGD 19, SP Firestop OSCB can comply with the following building regulations:

- England and Wales — Approved Document B
- Scotland—Technical Handbook Section 2
- Northern Ireland—Technical Booklet E
- Republic of Ireland—Technical Guidance Document B

### Dimensions

**Length:** 1000mm
**Thickness:** 90mm

| | | SP Firestop OSCB 60 | | SP Firestop OSCB 120 | |
|---|---|---|---|---|---|
| Total cavity size (mm) | Rainscreen Duo Slab (mm) | Product width (mm) | Open cavity (mm) | Product width (mm) | Open cavity (mm) |
| 100 | 50 | 75 | 25 | 56 | 44 |
| 110 | 60 | 85 | 25 | 66 | 44 |
| 120 | 70 | 95 | 25 | 76 | 44 |
| 125 | 75 | 100 | 25 | 81 | 44 |
| 130 | 80 | 105 | 25 | 86 | 44 |
| 140 | 90 | 115 | 25 | 96 | 44 |
| 150 | 100 | 125 | 25 | 106 | 44 |
| 160 | 110 | 135 | 25 | 116 | 44 |
| 170 | 120 | 145 | 25 | 126 | 44 |
| 175 | 125 | 150 | 25 | 131 | 44 |
| 180 | 130 | 155 | 25 | 136 | 44 |
| 190 | 140 | 165 | 25 | 146 | 44 |
| 200 | 150 | 175 | 25 | 156 | 44 |
| 210 | 160 | 185 | 25 | 166 | 44 |
| 220 | 170 | 195 | 25 | 176 | 44 |
| 230 | 180 | 205 | 25 | 186 | 44 |
| 240 | 190 | 215 | 25 | 196 | 44 |
| 250 | 200 | 225 | 25 | 206 | 44 |
| 260 | 210 | 235 | 25 | 216 | 44 |
| 270 | 220 | 245 | 25 | 226 | 44 |
| 275 | 225 | 250 | 25 | 231 | 44 |
| 280 | 230 | 255 | 25 | 236 | 44 |
| 290 | 240* | 265 | 25 | 246 | 44 |
| 300 | 250* | 275 | 25 | 256 | 44 |
| 310 | 260* | 285 | 25 | - | - |
| 320 | 270* | 295 | 25 | - | - |
| 330 | 280* | 305 | 25 | - | - |
| 340 | 290* | 315 | 25 | - | - |
| 350 | 300* | 325 | 25 | - | - |
| 360 | 310* | 335 | 25 | - | - |
| 370 | 320* | 345 | 25 | - | - |
| 380 | 330* | 355 | 25 | - | - |
| 390 | 340* | 365 | 25 | - | - |
| 400 | 350* | 375 | 25 | - | - |
| 410 | 360* | 385 | 25 | - | - |
| 420 | 370* | 395 | 25 | - | - |
| 425 | 375* | 400 | 25 | - | - |

*Thicknesses of RAINSCREEN DUO SLAB® over 230mm comprise two layers.



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## Ancillary products

### SP Fixing Brackets

Required for installation, these galvanised steel brackets are supplied with SP Firestop OSCB at a rate of two per metre length. Brackets are packaged in a separate cardboard box located within the main SP Firestop OSCB packaging.

SP Fixing Brackets are designed to be easily re-profiled by hand on site, and should be cut as necessary to ensure they penetrate the barrier by approximately 75% of its width.

Stainless steel brackets are available as an option.

### Pigtail screws

These are required only for SP Firestop OSCB 60, and are used to secure the front-facing intumescent strip. These are supplied at a rate of 3 per metre length and will be packaged with the SP Firestop fixing brackets.

Care should be taken to ensure that the pigtail screws protrude from the front face of the firestop by a maximum of 25mm.

## Installation

SP Firestop OSCB is only certified for use in conjunction with RAINSCREEN DUO SLAB®.

Note that the polythene wrap covering each section of barrier is not to be removed.

SP Firestop OSCB is supplied ready to install with two galvanised steel fixing brackets and four pigtail screws per meter length.

The brackets should be mechanically and securely fixed to the wall at a maximum of 500mm centres using non-combustible fixings.

The product is impaled mid-barrier depth onto the fixing brackets, which should penetrate the barrier by approximately three-quarters of the product width. The barrier must be pushed back sufficiently to ensure full contact with the supporting wall.

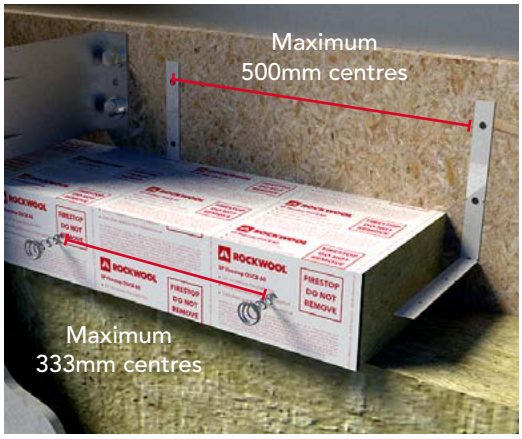
For SP Firestop OSCB 60 only, the front facing intumescent strip is secured to the barrier using the supplied pigtail screws, three per metre length at a maximum of 333mm centres. These screws should protrude from the front face of the barrier by a maximum of 25mm.

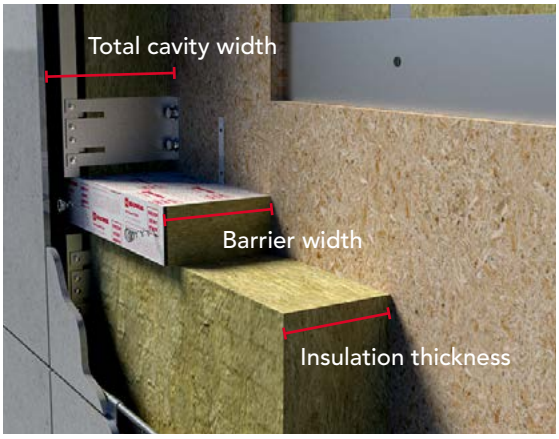
SP Firestop OSCB 120 should oversail the front face of the insulation, protruding into the cavity by at least 6mm.

Adjacent lengths of barrier should be tightly butt jointed together.

For cut lengths, a minimum of two fixing brackets should be used.

Imperfections of up to 10mm can be filled with ROCKWOOL Acoustic Intumescent Sealant.



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# FIRE PROTECTION
## Section 1 – Structural steel / concrete

Many building materials can lose significant strength when exposed to high temperatures. Providing fire resistance to the load bearing structure of a building ensures that the building remains structurally stable in the event of a fire.

The ROCKWOOL® range of fire protection products can withstand temperatures in excess of 1000°C providing protection to steel and concrete structures for periods of up to 4 hours. This vital protection ensure occupants can escape and firefighters can operate without the risk of collapse.

BEAMCLAD®
Systems

Soffit Slab

## Core products

- ROCKWOOL BEAMCLAD® Systems

- ROCKWOOL Soffit Slab

## Useful documents and standards

- ASFP Technical Guidance Document – TGD 14: Code of practice for the installation and inspection of board systems for the fire protection of structural steel
- ASFP Yellow Book: Fire protection for structural steel in buildings
- ASFP: Ensuring best practice for passive fire protection in buildings
- BS 476-21: Fire test on building materials and structures. Method for determination of the fire resistance of load bearing elements of construction
- BS EN 1365-2: Fire resistance test for load bearing elements. Floors & roofs
- BS EB 1365-3: Fire resistance test for load bearing elements. Beams
- BS EN 1365-4: Fire resistance test for load bearing elements. Columns
- BS EN 1363-1: Fire resistance tests. General Requirements
- BS EN 13501-2: Fire classification of construction products and building elements. Classification using test data from resistance to fire tests, excluding ventilation services.

*ASFP ( Association for Specialist Fire Protection) guidance documents can be sourced at www.asfp.org.uk*



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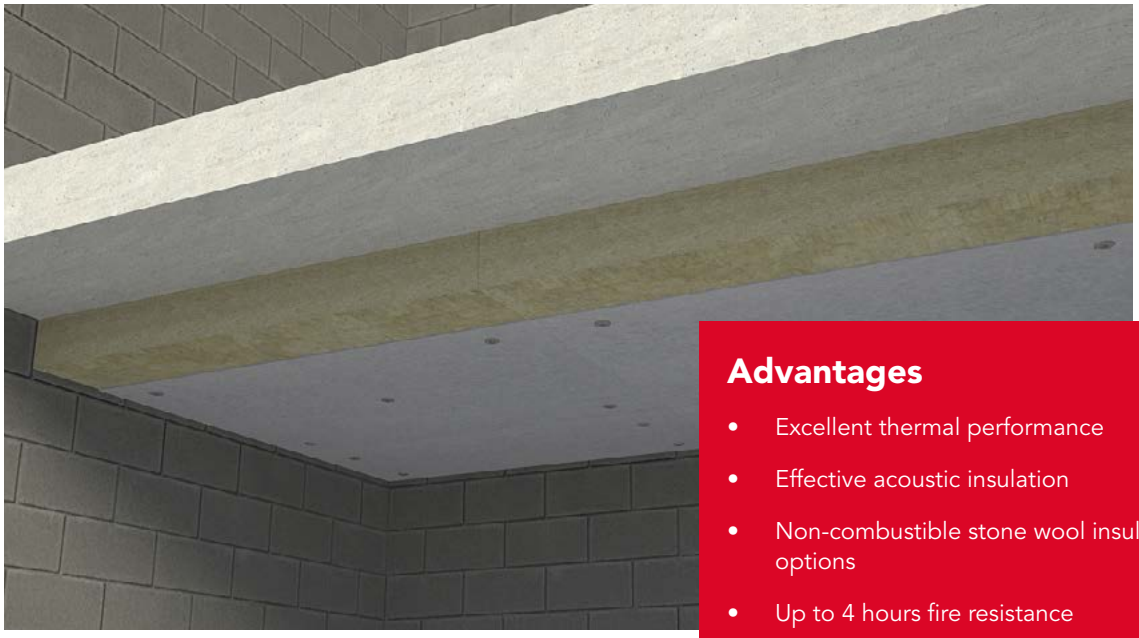
# SOFFIT SLAB



## Advantages

- Excellent thermal performance
- Effective acoustic insulation
- Non-combustible stone wool insulation and facing options
- Up to 4 hours fire resistance
- Water repellent
- Easily cut to accommodate services
- Simply butt together at joints
- Hi-impact option for durability

## Description

ROCKWOOL Soffit Slab is manufactured using high performing, non-combustible stone wool insulation. Available with a plain, foil or tissue facing which can provide up to 4 hours fire protection to the underside of concrete soffits.

### Hi-impact Soffit Slab

With a 6mm rigid fiber cement board facing, this combination of two non-combustible products provides increased impact resistance and durability. Available in various thicknesses, the off-white facing can be easily decorated to match design and colour schemes.

## Applications

Suitable for use with concrete soffits where a thermal, fire or acoustic performance is required.

## Performance

### Fire performance

Soffit Slabs have been tested to BS EN 1363-1 to offer fire protection to reinforced concrete soffits. When applied to the soffit using the recommended fixings and pattern, 130 and 140mm thick products, with and without facings, provide 3 hours fire insulation and integrity to a minimum 90mm thick floor slab. 150 and 160mm thicknesses provide 4 hours to a minimum 150mm thick slab.

### Thermal performance

ROCKWOOL® Soffit Slab has a thermal conductivity (k value) of 0.034 W/mK.

Thermal resistance of un-faced Soffit Slab:

- 130mm Soffit Slab: 3.82 $m^2K/W$
- 145mm Soffit Slab: 4.26 $m^2K/W$
- 160mm Soffit Slab: 4.70 $m^2K/W$

A typical construction comprising of a 150mm concrete floor slab underlined with 130mm thick Soffit Slab would achieve a U-value of 0.25$W/m^2K$. A U-value of 0.20$W/m^2K$ can be achieved using 160mm thick Soffit Slab.

## Technical information

### Standards and approvals

ROCKWOOL® Soffit Slab achieves a reaction to fire classification of A1 as defined in BS EN 13501-1.

### Compatibility

ROCKWOOL® Soffit Slabs are chemically inert and compatible with most materials with which they are likely to come into contact in normal building applications.

### Biological

ROCKWOOL® Soffit Slabs offer no sustenance to vermin and do not encourage the growth of fungi, moulds or bacteria.

### Product information

| Property | Description |
|---|---|
| Length | 1000mm (High Impact – 1200mm) |
| Width | 600mm |
| Thickness | 130, 145, 160mm |
| Thermal conductivity | 0.034 W/mK |
| Reaction to fire | Euroclass A1 |
| Fire resistance | Up to 4 hours |

## Installation

When fixing a tile or modular system, it is advisable to start with a focus reference slab in the centre of the soffit with subsequent slabs being fixed working towards each edge. The use of string lines or laser alignment equipment will assist in ensuring alignment and squareness of the installation.



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### Mechanical fixings

Soffit Slabs should be fixed direct to the concrete soffit using Ejot DDS fixings with the Ejot DDT70 washer or similar. Recommended number and pattern of fixings for each slab size are shown in figures 1 and 2 below. Care should be taken not to over-tighten fixings to prevent damage to slab surface. For further information on fixing type and suitability, please refer to the fixing manufacturer.

### Fixing size guide

| | High impact Soffit Slab | | Plain, foil & tissue faced Soffit Slab | | |
|---|---|---|---|---|---|
| Thickness | 136mm | 166mm | 130mm | 145mm | 160mm |
| Ejot fixing | DDS 7.3 x 175mm | DDS 7.3 x 200mm | DDS 7.3 x 175mm | DDS 7.3 x 175mm | DDS 7.3 x 200mm |
| Ejot washer | DDT 70mm | | | | |

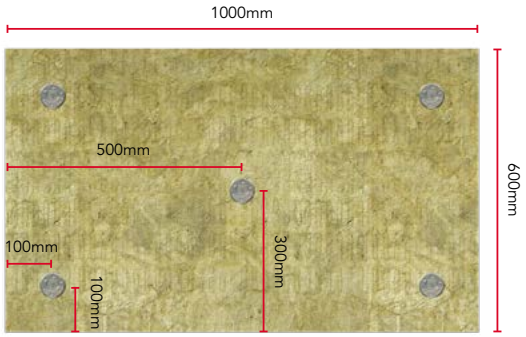


Figure 1

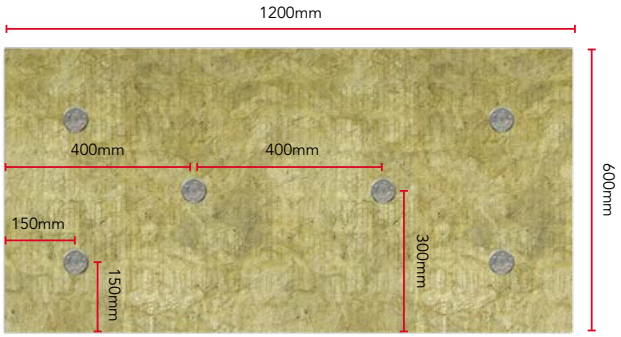


Figure 2

### Light fittings and services

Soffit insulation products should not be used for supporting light fittings or services. Such installations should be supported from the concrete soffit.

## Specification clauses

The insulation/fire protection of the concrete soffit is to be ROCKWOOL® Soffit Slab alu-faced / High impact / white tissue / black tissue / un-faced[1] .....mm thick[2], as manufactured by ROCKWOOL® Limited, Pencoed, Bridgend CF35 6NY and installed in accordance with the manufacturer's recommendations.

[1]Delete as necessary. [2]Insert required thickness.

### NBS specification clauses

ROCKWOOL® Soffit Slab is associated with the following NBS Specification clauses:

- K11 Rigid sheet flooring/sheathing/decking/sarking/linings/casings
  - 885 Fire Protection Board
  - 890 Board

# FIREPRO® GLUE


## Advantages

- LUL Approved
- Easy to apply
- Sets in as little as 4 hours
- Can be used from -10°C upward

## Description

ROCKWOOL FIREPRO® Glue is a water based, fire resistant adhesive which is supplied in 17kg tubs and 300ml cartridges.

## Applications

FIREPRO® Glue is suitable for use with FIREPRO® BEAMCLAD and ROCKWOOL Fire Duct Systems where glued joints or noggins are required. FIREPRO® Glue can also be used in conjunction with other ROCKWOOL Stone Wool products where there is a requirement for a fire resistant adhesive.

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 in-situ 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)

*Note: The temperature of FIREPRO® glue must be 5°C or more when applied to surfaces at lower temperatures.*



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## Performance

FIREPRO® Glue has been widely used in fire tests conducted on ROCKWOOL FIREPRO® Fire Protection Systems where fire ratings of up to 4 hours have been achieved. For further information tested applications please contact ROCKWOOL.

## Technical information

### Standards and approvals

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

### Product information

| Property | Description: Tub | Description: Cartridge |
|---|---|---|
| Pack Size | 17kg Tub | 300ml Cartridge |
| Application Temperature | Surface temperature of ≥ -10°C (Glue must be ≥ 5°C) | Surface temperature of ≥ -10°C (Glue must be ≥ 5°C) |
| Ph | 11 | 11 |
| Shelf Life | 12 months | 18 months |
| Fire Rating | Up to 4 hours (When tested with ROCKWOOL Fire Protection Systems) | Up to 4 hours (When tested with ROCKWOOL Fire Protection Systems) |

## Installation

Application of glue from tub is typically made by a pallet knife or trowel before pressing surfaces together. The product must always be stirred before use to ensure a uniform product consistency. Application of glue from cartridge is made using a sealant gun and spread evenly over the surface with a spatula or similarly flat bladed tool. Fixing boards together is supplemented by nails, pins or staples through noggin board joints and 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.

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.

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.

*Note: When friction fitted glued joints are exposed to sub-zero temperatures either immediately, or at some time during the curing process, 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.*

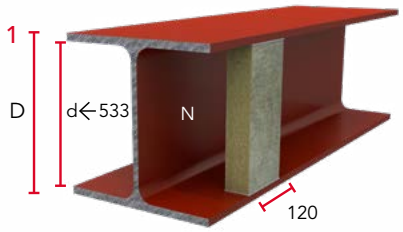
## Noggins to steelwork

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 Figures 1-3).

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.

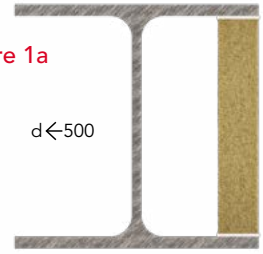
Again a nominal 0.5mm interference fit is recommended for all ambient conditions, but particularly for winter working. All noggin edges in contact with steelwork must be glued.

Figure 1



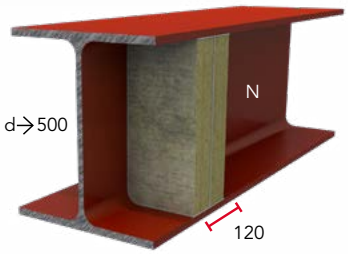

Soldier noggin depth
N = d + 0.5mm, approx

Figure 1a




BeamClad
N = d + 0.5

Figure 2




Soldier noggins may be laminated provided FIREPRO® Glue is used between laminated surfaces

Figure 2a


BeamClad
N = d + 0.5

Figure 3

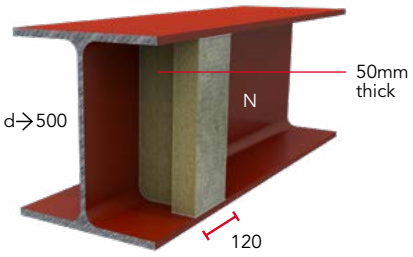



Figure 3a

Noggins at least 50mm thick
N = d + 0.5

## Ambient conditions & curing times

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.

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.

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.

Table 1
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 |

## Storage

Generally storage should be made in frost free conditions. Should frost exposure occur, the glue should be thawed out and thoroughly stirred.



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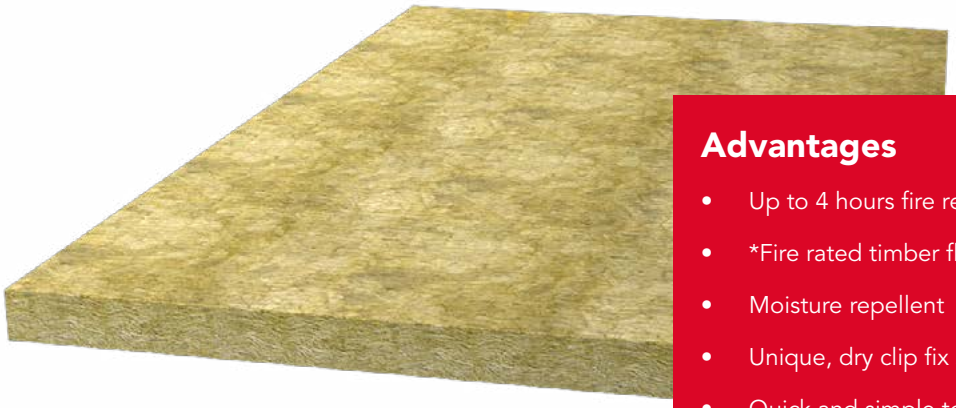
# FIREPRO® BEAMCLAD® SYSTEMS



## Advantages

- Up to 4 hours fire resistance
- *Fire rated timber floor applications
- Moisture repellent
- Unique, dry clip fix system
- Quick and simple to apply
- No maintenance

## Description

ROCKWOOL BEAMCLAD® is manufactured using high performing, non-combustible stone wool insulation. Available in a plain, foil or tissue faced finish BEAMCLAD® can provide up to 4 hours fire protection to structural steel.

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

## Applications

FIREPRO® BEAMCLAD® Systems have been specially designed to provide fire protection to structural steel for periods of up to 4 hours. BEAMCLAD® Systems provide a flexible range of fixing solutions for all applications, these include:

- Dry, clip fix system
- Glued noggins/dry joint system
- Complete glued system
- Welded pins/glued joint system

FIREPRO® BEAMCLAD® can also be used to provide fire protection to timber floor systems for periods of up to 90mins with a complete dry fixed system.

### High air flow applications

Un-faced 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.

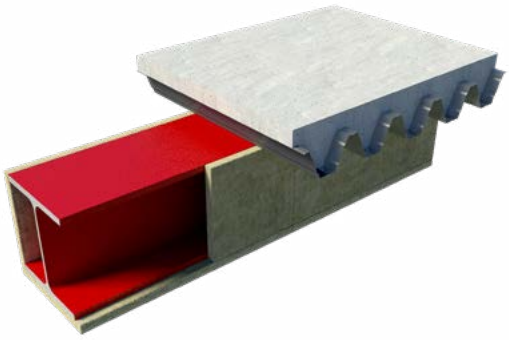


Figure 1
FIREPRO® BEAMCLAD® Systems

*For further information on fire rated timber floor applications please contact ROCKWOOL Technical Support.

# Performance

## Fire performance

BEAMCLAD® Systems provide 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 non-combustible definitions as referenced in UK Building Regulations.

Table 1
Fire performance of BEAMCLAD® Systems

| | Fire resistance (mins) | | | | | |
|---|---|---|---|---|---|---|
| System | 30 | 60 | 90 | 120 | 180 | 240 |
| Clip fixed, dry application, dry board joints | ✓ | ✓ | ✓ | ✓ | | |
| Glued noggins, dry application, dry board joints | ✓ | ✓ | ✓ | ✓ | | |
| Welded pins, 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

# Technical information

## Standards and approvals

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® achieves a reaction to fire classification of A1 as defined in BS EN 13501:1

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.

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

## Product information

| Property | Description |
|---|---|
| Length | 2000mm |
| Width | 1200mm |
| Thickness | 25 – 60mm |
| Density | 167 – 180kg/m$^3$ |
| Reaction to fire | Euroclass A1 |
| Fire resistance | Up to 4 hours |



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# Installation

FIREPRO® BEAMCLAD® Systems provide a flexible range of fixing options to meet a variety of site requirements. BEAMCLAD® Systems can be broken down into two main types:

### 1) ROCKWOOL BEAMCLAD® Dry Joint Systems

These use purpose-made clips, glued mineral wool noggins or stud welded pins to secure the insulation to all 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.

### 2) 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 option 1: 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. A combined clip and stud welded pin dry joint system can be used where it is not possible to clip fix, e.g. beneath concrete soffits. In this instance stud welded pins (at the same fixing centres) are used in lieu of the clip fixing.

*Note: A/V limit for 2 hours = 200*

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)

### 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.

The thickness of the noggin must be at least the thickness of the board being applied.

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

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)

### 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.

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)



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## Installation option 2: Glue joint 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.

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

**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.

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

## FIREPRO® Glue – Coverage rates for glued joint systems

FIREPRO® Glue is an inorganic, non-toxic product with a pH of 11. FIREPRO® Glue is supplied pre-mixed in 17kg 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 usage 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.

| 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 35m$^2$ of applied board.

*Note: Care should be taken when using FIREPRO® Glue with foil faced BEAMCLAD® as the alkalinity of the glue is very high and can react with the foil. Avoid any contact between the glue and the foil layer, if contact occurs remove the glue immediately with a damp cloth.Care should be taken when using FIREPRO® Glue with foil faced BEAMCLAD® as the alkalinity of the glue is very high and can react with the foil. Avoid any contact between the glue and the foil layer, if contact occurs remove the glue immediately with a damp cloth.*



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## Board jointing options

**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 non-return washers.

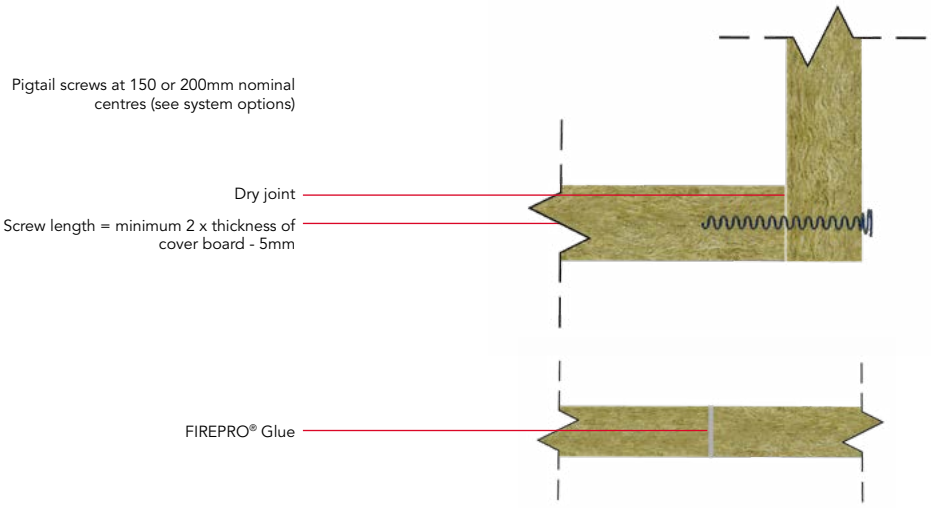


Figure 10

## Cellular beams

### Thickness calculation method

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.

## Installation options – Cellular beams

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

Figure 12 - Beam with square or rectangular holes (boxed and 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)

Noggins located either side of beam aperture (required for pin or noggin systems and may be in addition to normal noggins, depending on size and frequency of apertures)

### FIREPRO® BEAMCLAD® System Ancillaries

- 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 boxes of 750 - large for 35mm & 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.



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## Specification clauses

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

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

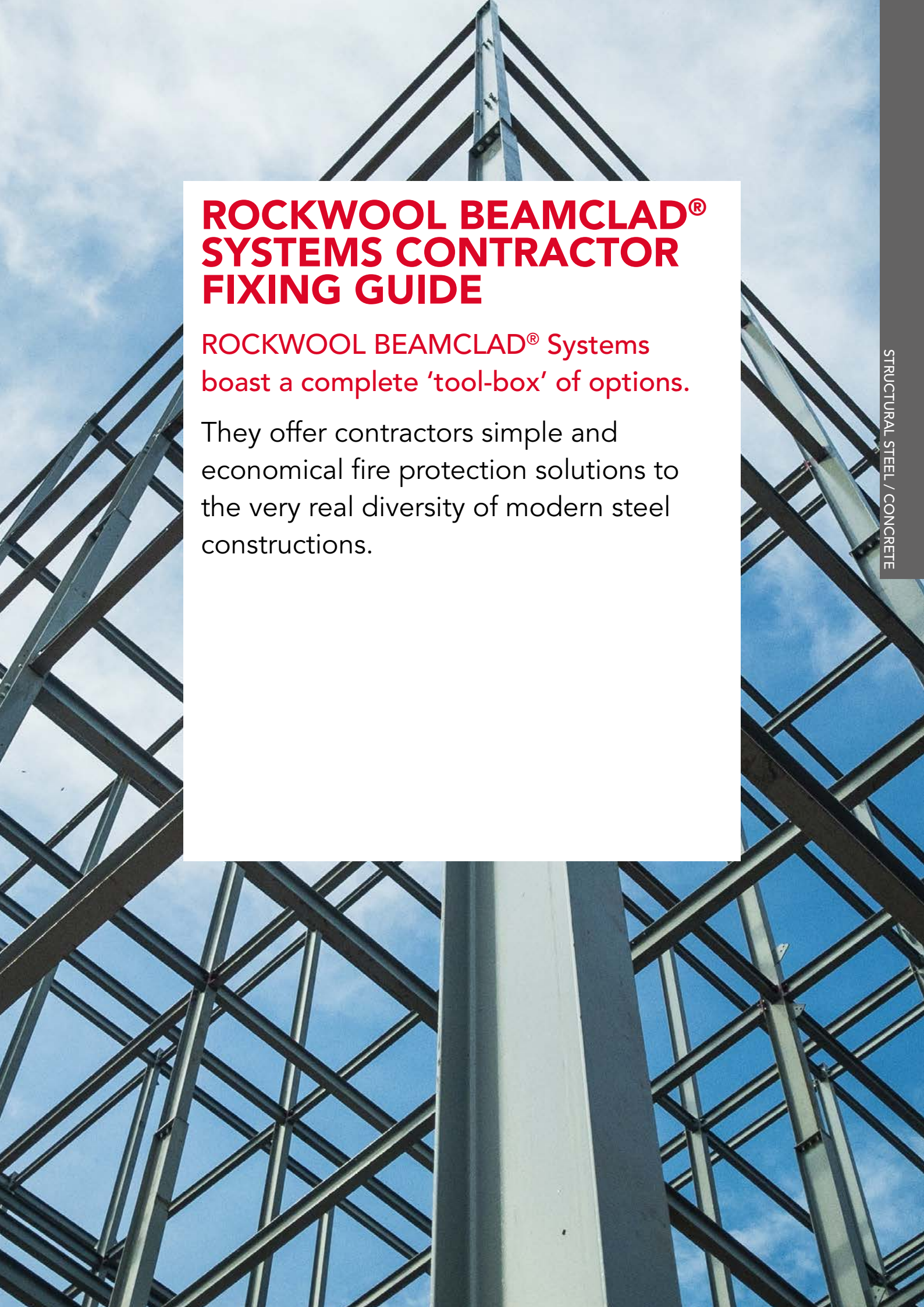
[h] insert period of fire resistance

### NBS specification clauses

FIREPRO® BEAMCLAD® Systems are associated with the following NBS Specification clauses:

K11 Rigid sheet flooring/sheathing/decking/sarking/linings/casings

- 885 Fire protection board
- 890 Board



# ROCKWOOL BEAMCLAD® SYSTEMS CONTRACTOR FIXING GUIDE

## ROCKWOOL BEAMCLAD® Systems boast a complete ‘tool-box’ of options.

They offer contractors simple and economical fire protection solutions to the very real diversity of modern steel constructions.

# ROCKWOOL BEAMCLAD® SYSTEMS CONTRACTOR FIXING GUIDE

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

BEAMCLAD boards are available with facings of glass tissue and reinforced aluminium foil as well as plain product. Size: 2000 x 1200mm. Standard thicknesses: 23, 30, 35, 40 and 50mm

### 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 from 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
Glued noggins, dry joint 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



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# ROCKWOOL BEAMCLAD®
# Clip fix dry joint board system

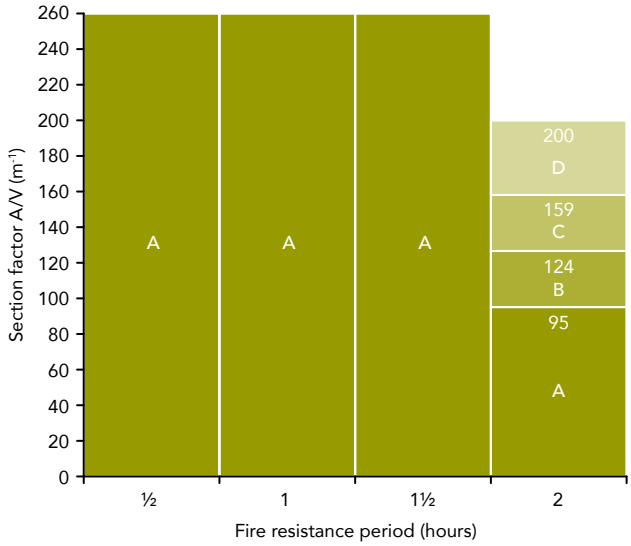
The unique ROCKWOOL BEAMCLAD® clip fixing system is designed for ultimate speed of application. Its design features allow it to be used with standard steel deck types. The ROCKWOOL BEAMCLAD® clip fixing solution can be used to provide 2, 3 and 4-sided beam protection for up to 2 hours*.

* 2 hour A/V limitation: 200m-1

## Installation sequence

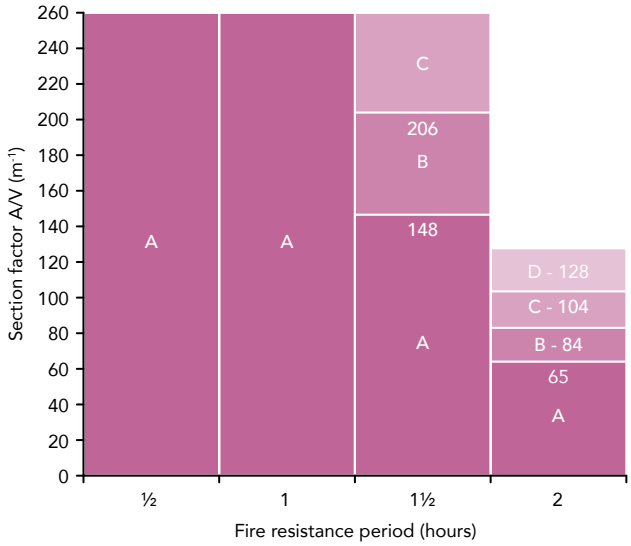
1. Friction fit the correct length clips (see A/V chart) onto the top and bottom flange tips at max. 600mm centres for the top flange (A) & max. 900mm centres for the bottom flange. (D) The first clip is positioned at max. 100mm in from the beam edge (B).
2. Cut the ROCKWOOL BEAMCLAD® boards to suit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

## Chart 1




**ROCKWOOL BEAMCLAD® clip system:**
Critical steel tempeature 620°C, 3 sided protection for beams

## Chart 2




**ROCKWOOL BEAMCLAD® clip system:**
Critical steel tempeature 550°C, 4 sided protection for beams & columns

**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



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## Typical details

Figure 4
3-sided box

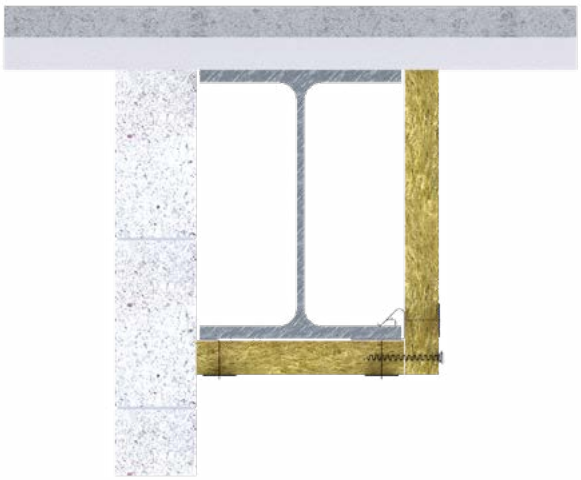

Figure 5
2-sided box

## Fixing patterns

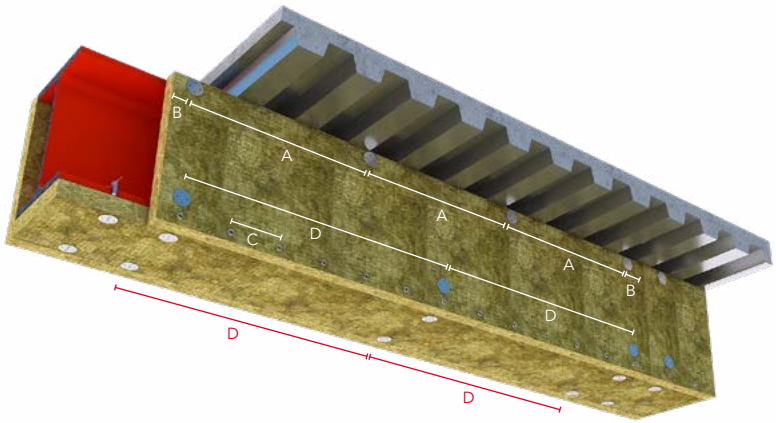


Figure 6
3-sided box with ROCKWOOL BEAMCLAD® clip fixing

**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.

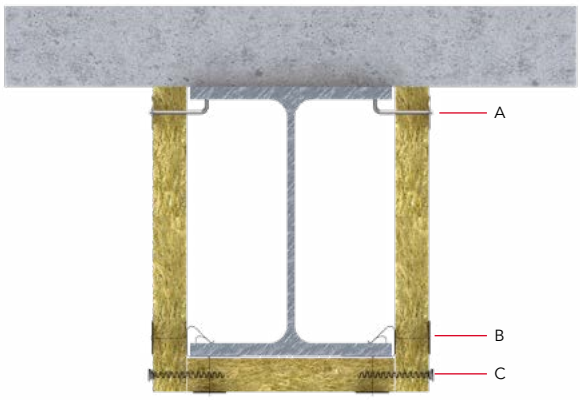


Figure 7
**Combined clip and stud welded pin dry joint systems**
With concrete decks it may be necessary to fix stud welded pins to the top flange in place of clips.

**Dimensions**

A = Pins at max. 600mm centres

B = Clips at max. 900mm centres

C = Pigtail screws at max .150mm centres

D = Steel supporting angle

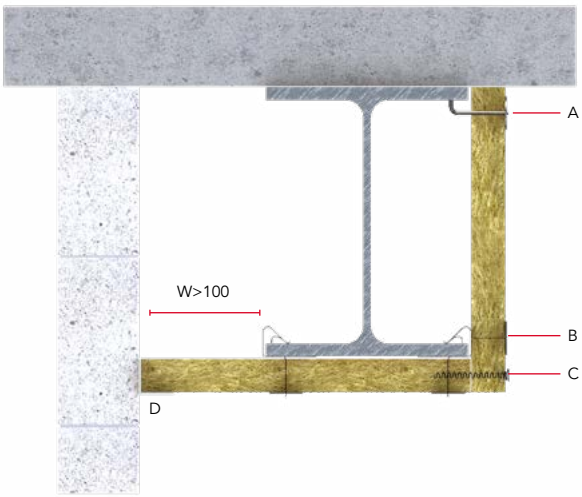


Figure 8
3-sided box

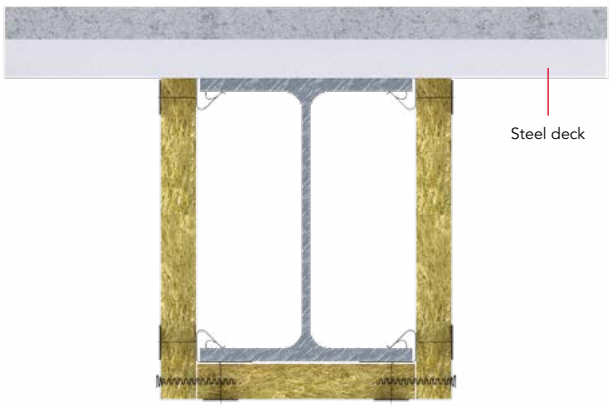


Figure 9
3-sided box

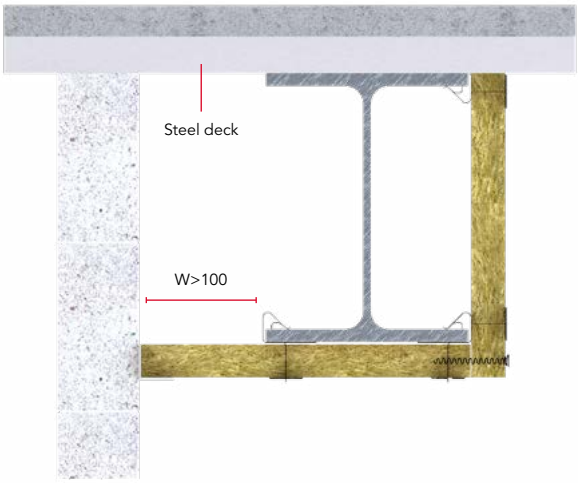


Figure 10
3-sided box



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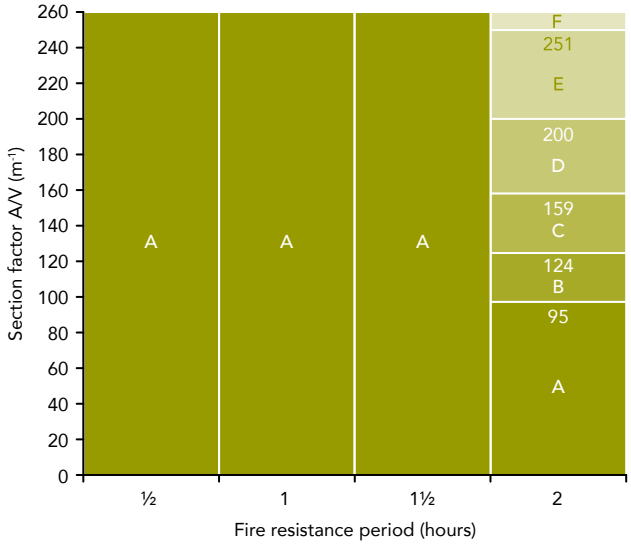
# ROCKWOOL BEAMCLAD®
# Stud welded pin dry joint board system

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

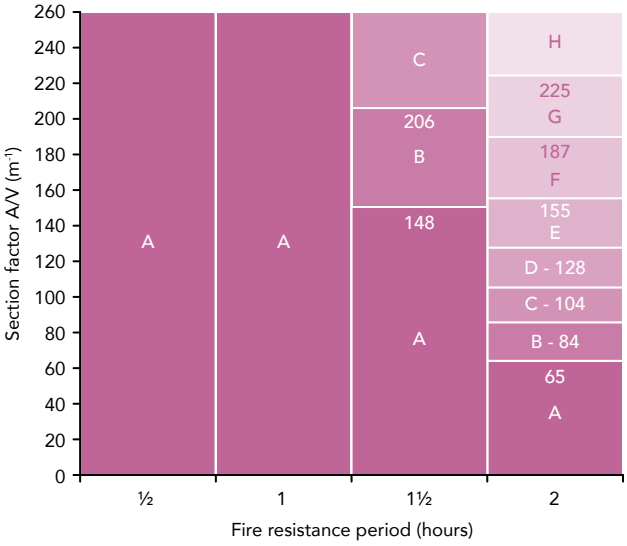
1. Clean the local area for pin welding and fix stud pin using arc or CD welds, ensuring a good contact has been achieved. Test weld by bending pin.
2. Impale the ROCKWOOL BEAMCLAD® boards onto the stud welded pins using the deck soffit as a guide.
3. Push 38mm diameter sprung steel non-return washers onto the exposed pin until tight to the cover board face. Crop pins as necessary.
4. 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.

## 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 Chart 3 & 4

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

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

## Typical details


Figure 11
3-sided box

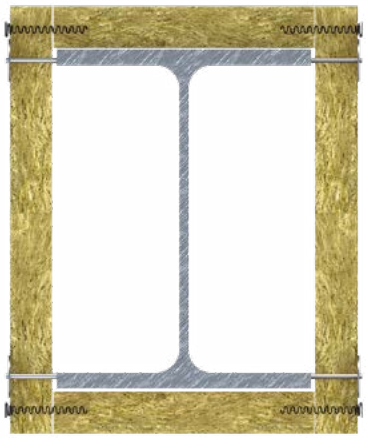


Figure 12
4-sided box

## Fixing Patterns

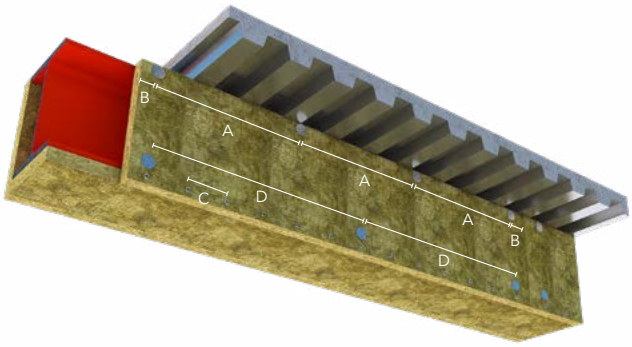



Figure 13
3-sided box with stud welded pins

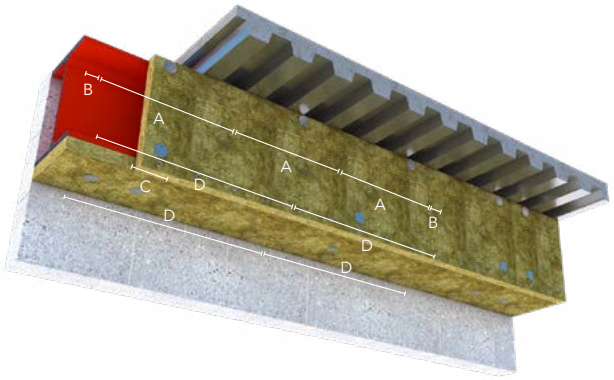



Figure 14
2-sided box with stud welded pins

### Dimensions

A = Stud welded pins at max. 600mm centres for 2000mm board (500mm centres for 1200mm boards)

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



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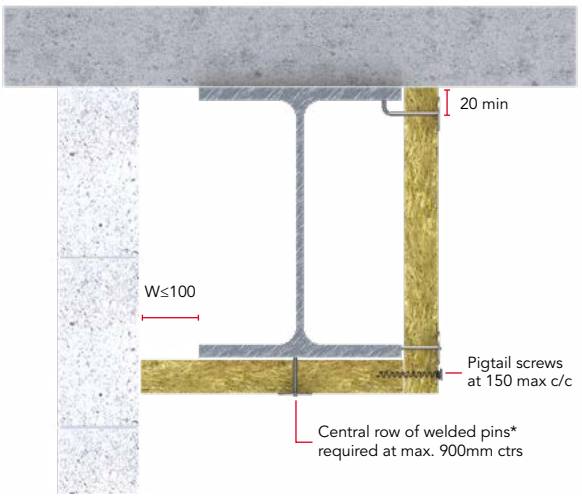



Figure 15
2-sided box

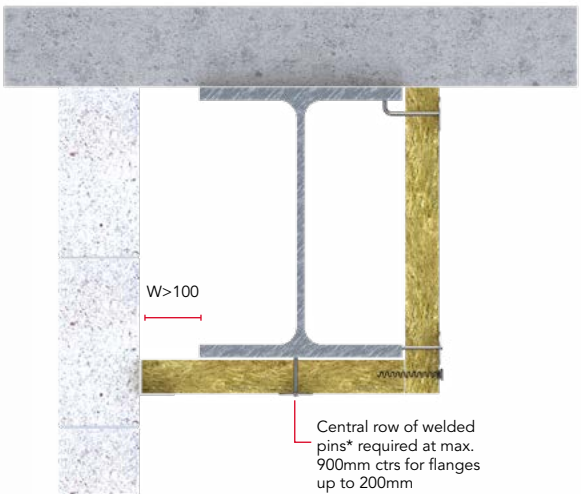



Figure 16
2-sided box - W limit is 100mm. Where W >100mm a shelf angle or similar should be fixed to the wall

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

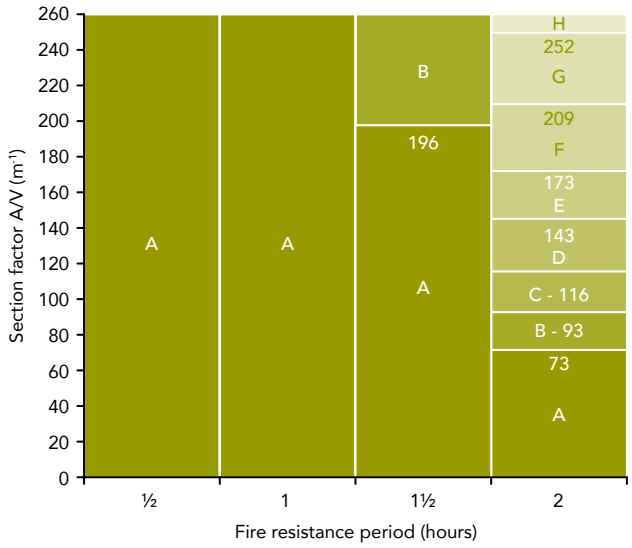
# ROCKWOOL BEAMCLAD®
# Glued noggin dry joint board system

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

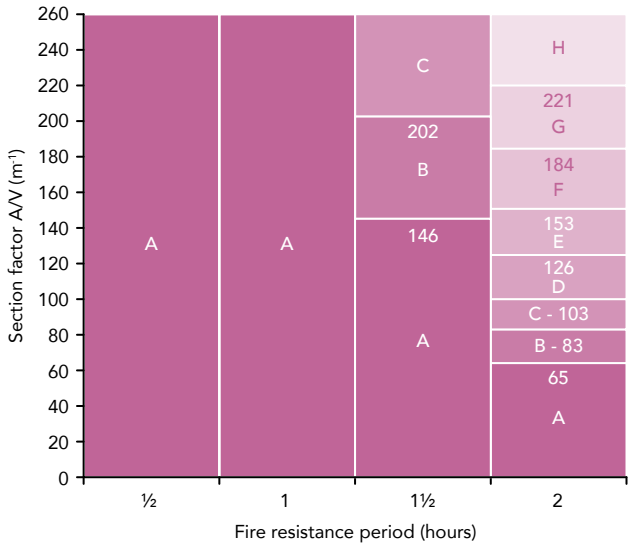
1. Cut 120mm wide noggins (C) to suit web depth, using same thickness material as the cover protection. For web depths of 500mm and above use either solid noggins or 'T' shaped noggins made from cover board thickness. These are then glued into position at 1000mm centres (D).
2. Cut the ROCKWOOL BEAMCLAD® boards to suit the depth of the beam whilst allowing for the additional flange cover board thickness.
3. Push board tight to deck soffit and fix pigtail screws through the coverboards and into the noggins at maximum 100mm centres (B).
4. 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.

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 Chart 5 & 6**

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

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



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## Typical details

Figure 17
3-sided box

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

## Fixing patterns

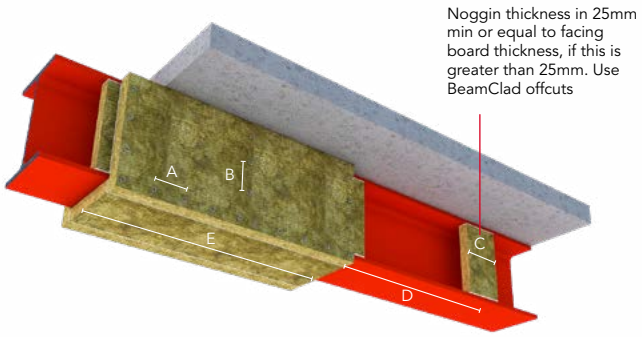


Figure 19
3-sided box using glued noggins

### 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

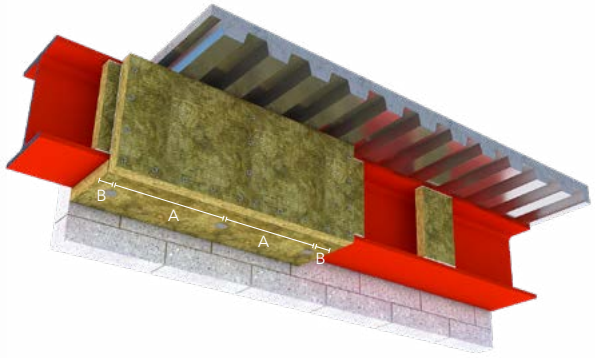


Figure 20
2-sided box with stud welded pins

### 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

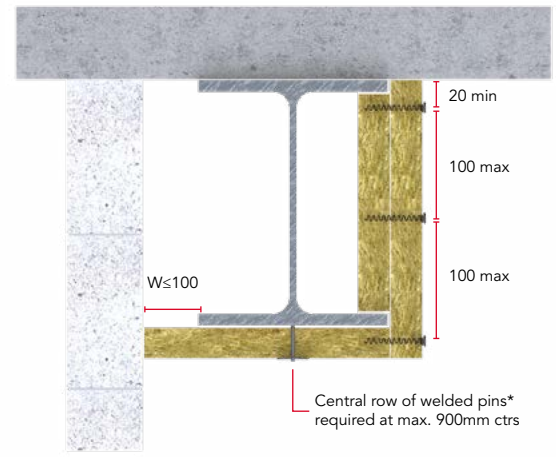


Figure 21
2-sided box

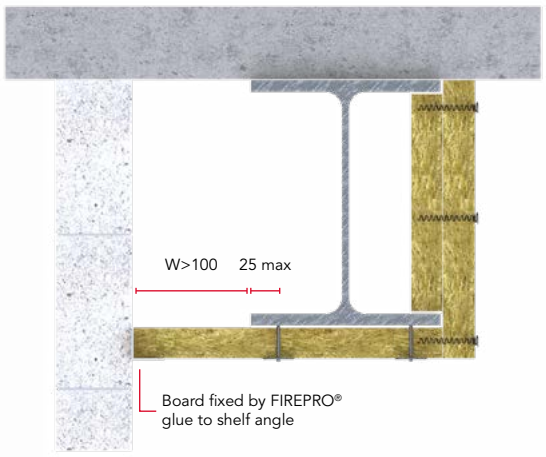


Figure 22
2-sided box - W limit is 100mm. Where W >100mm a shelf angle or similar should be fixed to the wall

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



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# ROCKWOOL BEAMCLAD®
# Glued joint 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)

1. Fit stud welded pins (3mm diameter) as indicated opposite.
2. A selection of pins should be mechanically tested by bending from the vertical and returning it to the original position.
3. Sprung steel non-return washers to secure boards.
4. Apply FIREPRO® glue to all board-to-board joints.
5. Offer up flange boards and nail through glued corner joints at 400mm maximum centres.
6. 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).

## Typical details

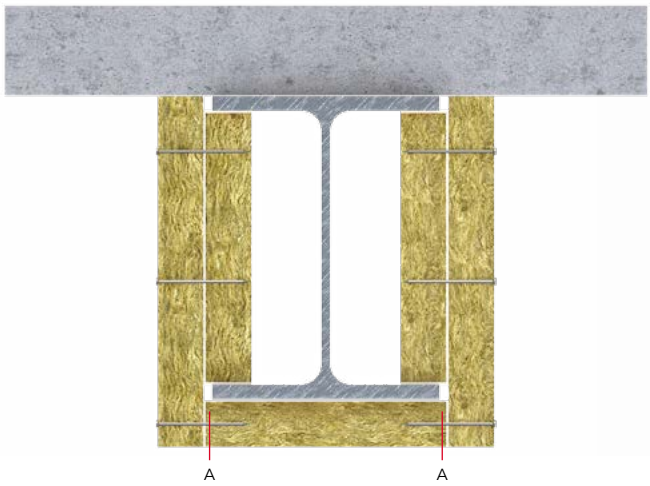


Figure 23
3-sided box, noggins to project slightly beyond flange

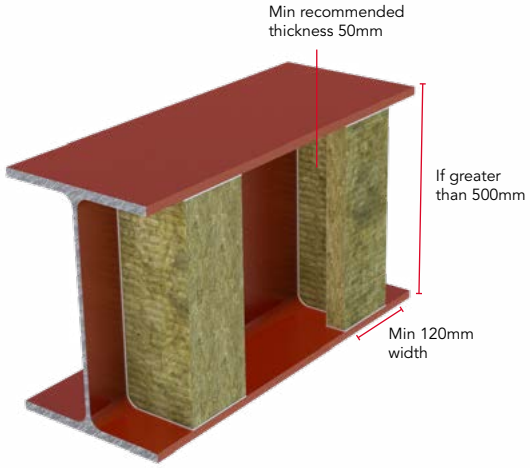


Figure 24
Full depth noggin or Tee-noggin for web depths greater than 500mm

## Fixing patterns

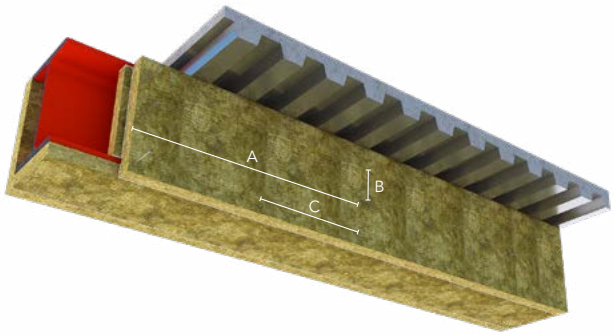


Figure 25
Fixing method using glued noggins, nails and glued board-to-board joints

**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)

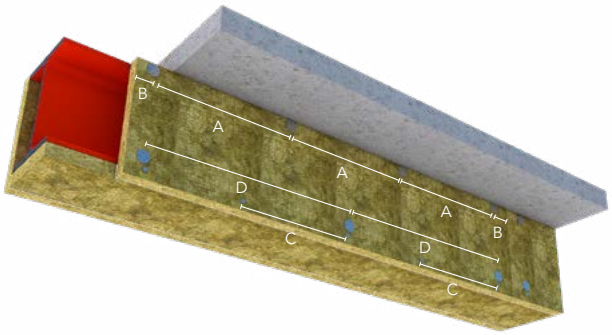


Figure 26 - Stud welded pin fixing arrangement
3-sided box with stud welded pins

**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



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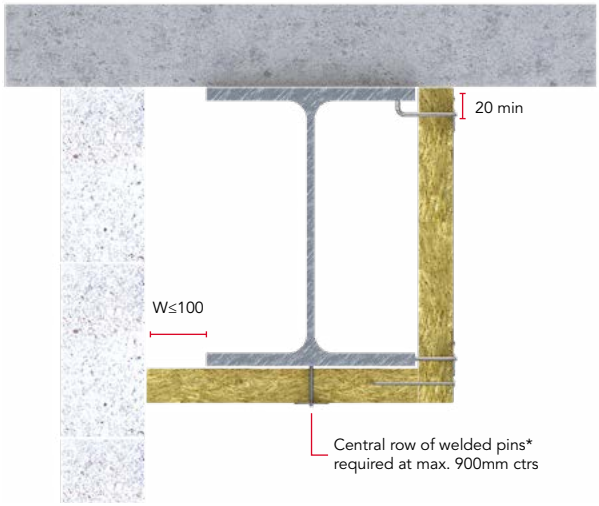



Figure 27
2-sided box

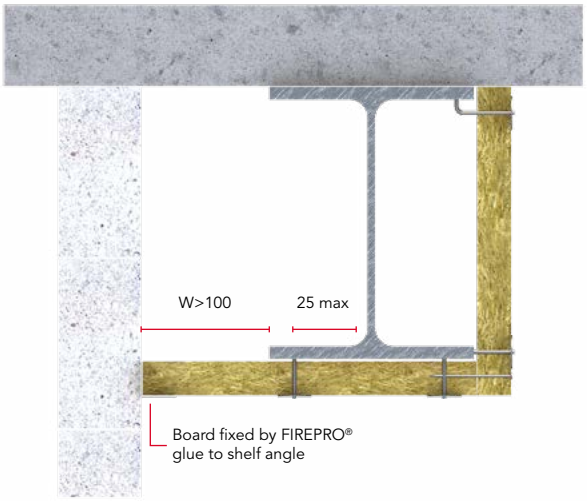
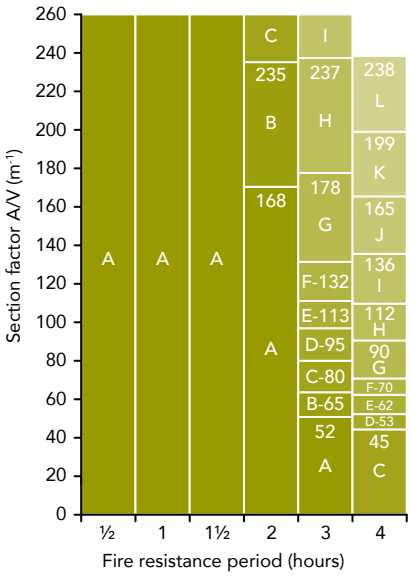



Figure 28
2-sided box - W. Limit is 100mm. For W>100mm, a shelf angle or similar should be fixed to the wall

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

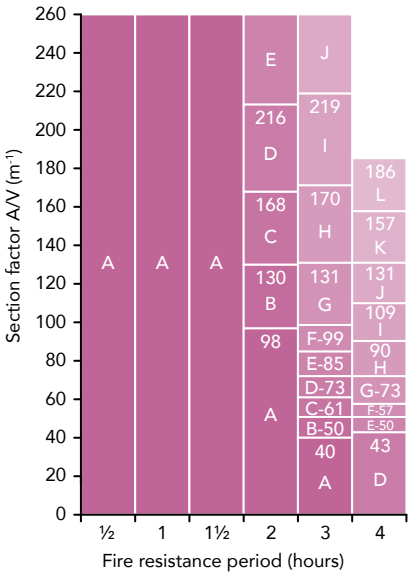
## Selecting the thickness of ROCKWOOL BEAMCLAD® Board for glued systems

### Chart 7



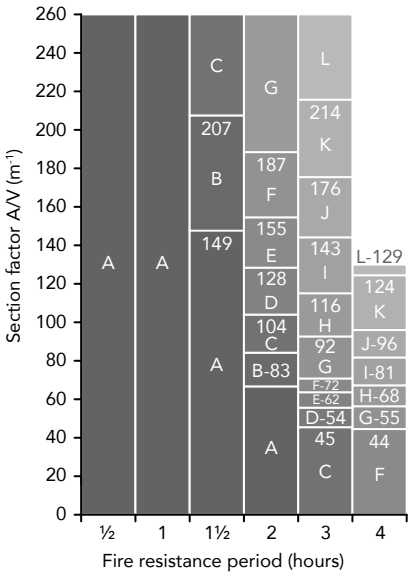

**Steel beam sections ROCKWOOL BEAMCLAD® glued joint systems:** Critical steel temperature 620°C

### 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 & 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 | E = 45mm | I = 80mm |
| B = 30mm | F = 50mm | J = 90mm |
| C = 35mm | G = 55mm | K = 100mm |
| D = 40mm | H = 60mm | 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.



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# 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.

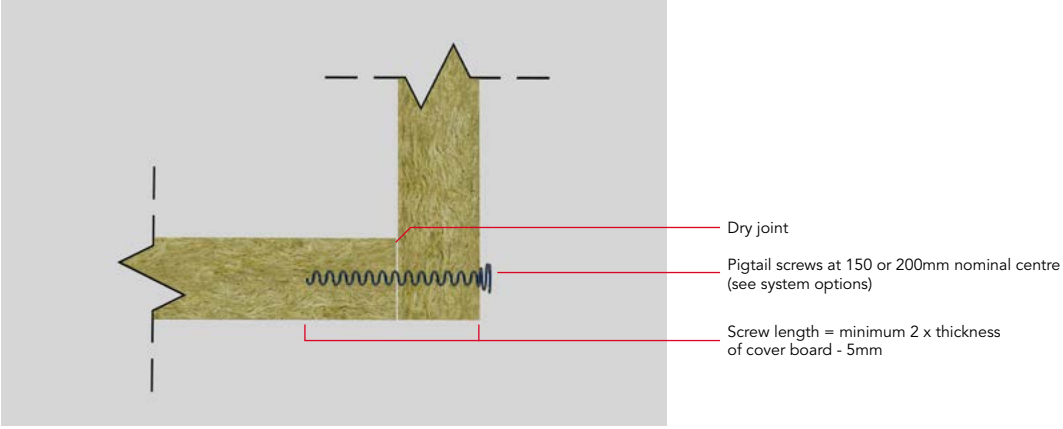


Figure 29

### 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.

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

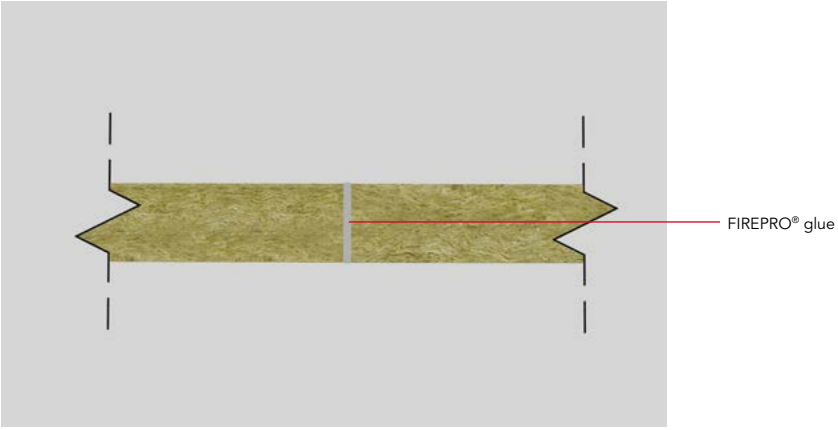


Figure 30

### 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

Glue FIREPRO® Glue is required between all board-toboard 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 17kg 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 35m$^2$ of applied board.



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## Table 2 - Universal beams A/V table (as per 2006)

| 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 ($cm^2$) | $m^{-1}$ | $m^{-1}$ |
|---|---|---|---|---|---|---|---|---|
| 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 |
| 533x210 | 122 | 544.6 | 211.9 | 12.8 | 21.3 | 155.8 | 85 | 95 |
| | 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 |
| 457x191 | 98 | 467.4 | 192.8 | 11.4 | 19.6 | 125.3 | 90 | 105 |
| | 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 |
| 457x152 | 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 |
| | 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 |
| 406x178 | 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 |
| | 54 | 402.6 | 177.6 | 7.6 | 10.9 | 68.4 | 145 | 170 |
| 406x140 | 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 |
| 203x133 | 30 | 206.8 | 133.8 | 6.3 | 9.6 | 38.0 | 145 | 180 |
| | 25 | 203.2 | 133.4 | 5.8 | 7.8 | 32.3 | 170 | 210 |

## 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.



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## 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.

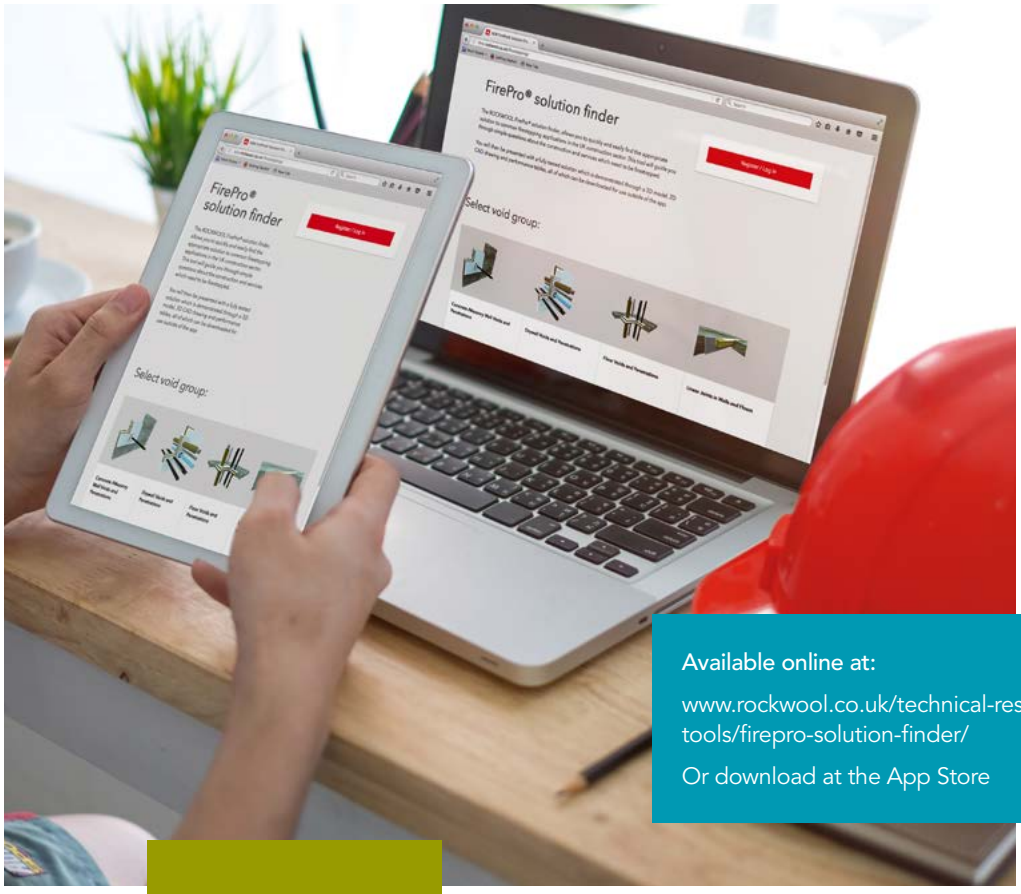
## Supply

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.

## The ROCKWOOL FIREPRO® Solution Finder allows you to quickly and easily find appropriate solutions to common firestopping applications.




Available online at:

www.rockwool.co.uk/technical-resources/tools/firepro-solution-finder/

Or download at the App Store

ROCKWOOL®



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# FIRE PROTECTION
## Section 2 – Building services

Building services are an essential part of nearly every building, whether it's the distribution of cold and warm air through HVAC systems or providing active measures of fire protection through sprinkler systems they play an important role in all building types.

As building services often reach out to all parts of a building it is common for these services to pass through compartment walls and floors. In addition, some building services like smoke extract systems or sprinkler systems provide active measures of fire protection which often require their own level of fire resistance.

Ensuring that building services can operate safely and do not contribute towards the spread of fire within the building are key considerations for any fire safety strategy.

ROCKWOOL® provide a range of products which have been specially designed for fire protecting ductwork systems, sprinkler and service pipes for periods up to 2 hours on ductwork and 4 hours on service pipes.

Fire Tube

FIREPRO®
DuctRock

## Core products

- Fire Duct Systems
- FIREPRO® DuctRock® Slab

- Fire Tube



## Useful documents and standards

- ASFP Technical Guidance Document – TGD 18: Code of practice for the installation & inspection of fire resisting duct systems
- ASFP Blue Book: Fire Resisting Ductwork
- ASFP Grey Book: Fire and smoke resisting dampers
- ASFP: Ensuring best practice for passive fire protection in buildings
- BS 476-24: Fire test on building materials and structures. Method for determination of the fire resistance of ventilation ducts
- BS EN 1366-1: Fire resistance test for service installations. Ventilation ducts
- BS EN 1366-8: Fire resistance test for service installations. Smoke extraction ducts
- BS EN 1363-1: Fire resistance tests. General requirements
- BS EN 13501-3: Fire classification using test data from resistance to fire tests on products and elements used in building service installations. Fire ducts and dampers
- BS EN 13501-4: Fire classification using test data from resistance to fire tests on components of smoke control systems

*ASFP ( Association for Specialist Fire Protection) guidance documents can be sourced at www.asfp.org.uk*

# FIRE DUCT SYSTEMS

## Advantages

- Specified with confidence
- Quick and easy to install
- Fully certified to BS 476–24 (duct types A and B)
- ½, 1, 1½ and 2hour 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

## Description

### Fireduct systems

Three products are available in the Fire Duct Systems range:

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

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

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.

# Applications

## 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 350mm maximum centres along the length of the duct and at 500mm 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 on page 10.

Longitudinal corner joints fixed with pigtail screws at 250mm 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 500mm max. centres.

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

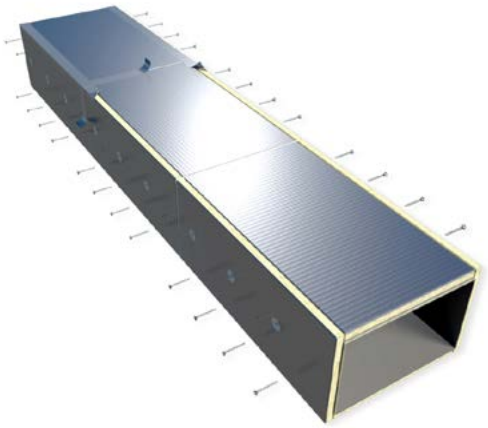


Figure 1
*Stud-welded pins, pigtail screws*

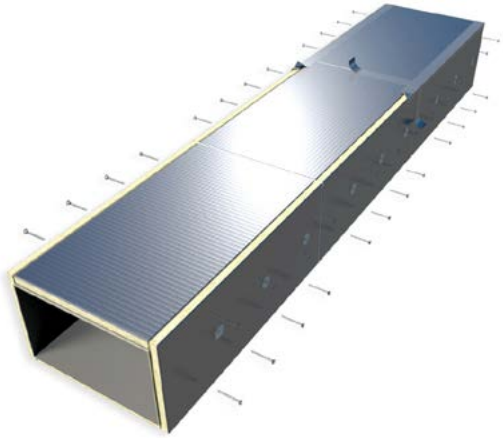


Figure 2
*Stud-welded pins, nail and glue*

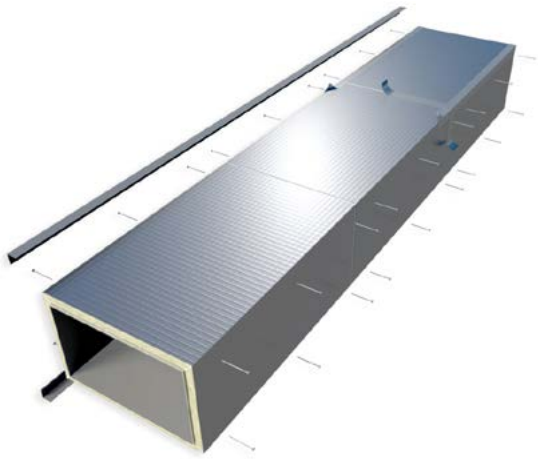


Figure 3
*Mitre joint, nails and glue*

## System options – Circular ducts

### Fire Duct Section

Circular steel ducts of between 60mm and 356mm 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 300mm 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 75mm 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 on page 66 of our FIREPRO® Brochure and as shown in Figures 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 on page 8 of 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 406mm 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 300mm 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.

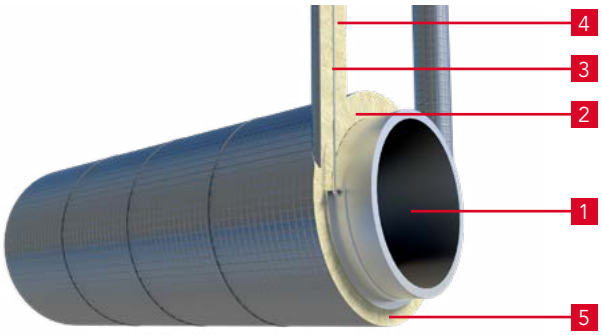



**Figure 1**
*Fire Duct Section applied to circular duct*

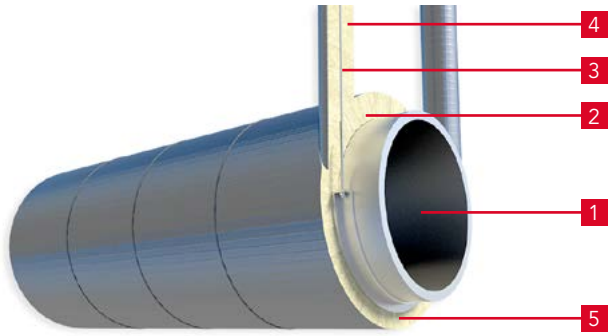



**Figure 2**
*Fire Duct PSM applied to circular duct*

**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 1500mm maximum centres
4. Fire Duct Slab/Section – protection to hanger system
5. 30 x 30 x 3mm minimum steel angle bearer

# Performance

## Fire

### Fire Duct Slab & Fire Duct PSM

- Non-combustibility: Class A1 to BS EN 13501-1

### Fire Duct Section

- Non-combustibility: Class A2 to BS EN 13501-1

### Fire resistance

Performance summary – Fire Duct Slab, Section and PSM.

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

### Fire 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.

### pH neutrality

ROCKWOOL insulation is chemically compatible with all types of pipes, ducts, 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).

### Standards & approvals

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.co.uk for specific details.

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

### 'Kitchen Extract' ducts

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

| Fire resistance (hours) | Duct type | Required Fire Duct thickness (mm) | Joint options | 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 |
| 1 ½ | HVAC & smoke extract | 70 | ABC | 50 | 17 x 50 | 1200 x 1200 |
| 2 | HVAC & smoke extract | 90 | ABC | 60 | 17 x 70 | 1000 x 1000 |

# Product information

### Dimensions
### Fire Duct Slab

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

### Fire Duct Section

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

### Fire Duct PSM

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

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

### Fire Duct section for use on hangers

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

### Durability

ROCKWOOL stone wool insulation products have been proven in service for over 60 years, in a wide range of climates and degrees of exposure. ROCKWOOL insulation will generally perform effectively for the lifetime of the building, plant or structure.

### Biological

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

*Some thicknesses may be subject to minimum order quantities. Some combinations of diameter and thickness may not be available or may be subject to a minimum order quantity.

## Installation instructions

### 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 B&ES 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.

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).

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.

| | Duct size (mm) | | |
|---|---|---|---|
| Item | Up to 1500 x 1500 | Up to 2000 x 2000 | Up to 3000 x 3000 |
| Max hanger centres (mm) | 1500 | 1500 | 1500 |
| Min drop rod size | M10 | M10 | M12 |
| Min angle bearer (mm) | 30 x 30 x 3 | 50 x 50 x 5 | 50 x 50 x6 |

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

### Protection of hangers outside Fire Duct System

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.

### Other J joints

If type J1 or J2 cross joints are fitted, then the joints must be upgraded to at least the J3 specification. This can be done by adding steel fixing bolts and fastenings in line with the J3 joint type. Also a minimum S3 stiffener should be fitted to the duct adjacent to the cross joint. This will upgrade the cross-sectional stiffness of the duct.

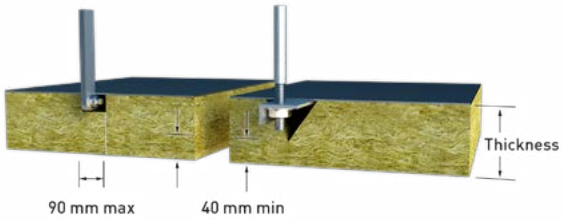
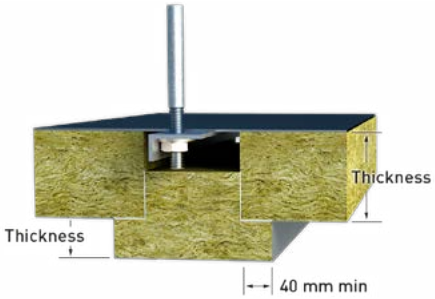
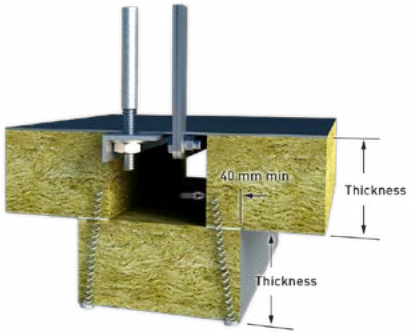



Figure 3
*Joint Option A - Rebated protection*




*Joint Option B - Protection using 'T' section*




*Joint Option C - Protection using block cover strip*

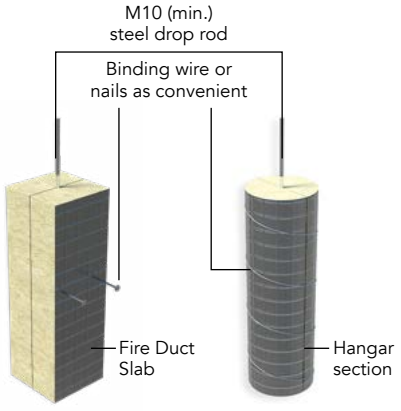



Figure 4
*Isometric view of drop rod protection options*



To contents page >

## 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, 1–1.5mm 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 FIREPRO® Glue. Take care to remove any FIREPRO® Glue from all aluminum 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 250mm 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 de-greased. 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.

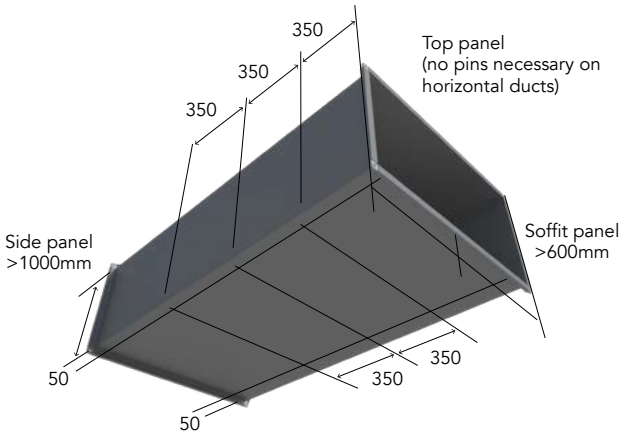



Figure 5

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

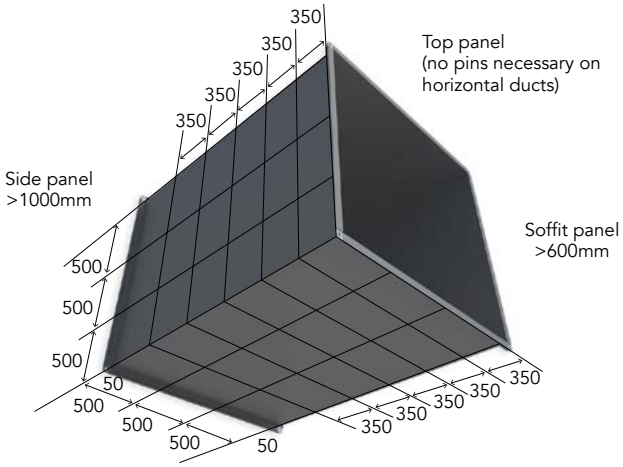



Figure 6

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

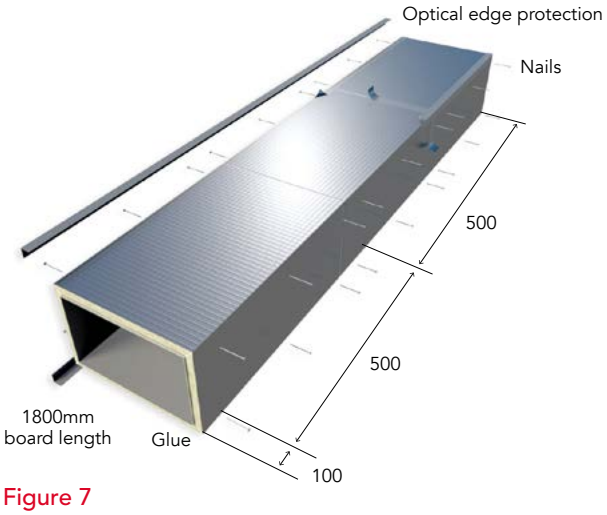



Figure 7

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

In all cases, low density ROCKWOOL stone wool, typically RWA45, is packed tightly into the void between the Fire Duct product and the wall opening.

120mm 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).

### Proprietarypenetration 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).

### 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.

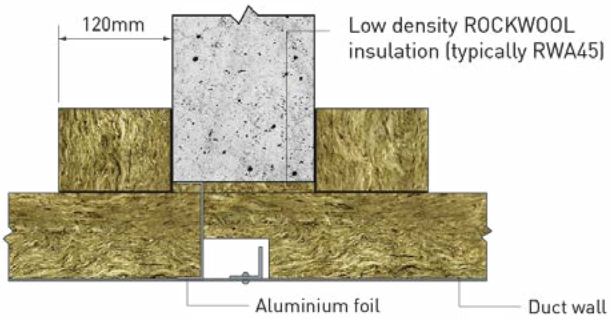



**Figure 8**
*Steel angle frame support to duct at penetration mid point*

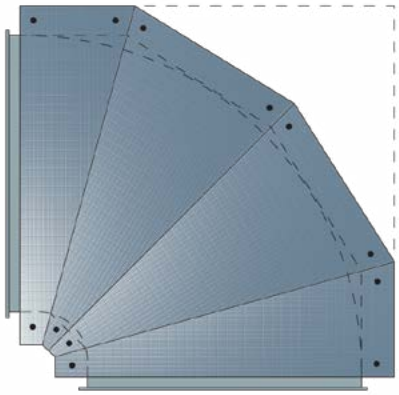


**Figure 9**
*Typical elbow detail for rectangular ducts*

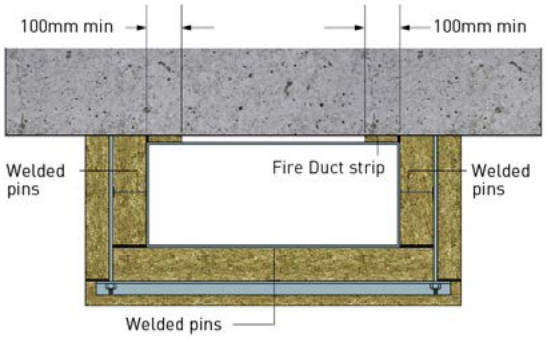



**Figure 10**
*Three sided protection for rectangular ducts, using welded pin fixing method*

## 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 50mm 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.

## Handling

The Fire Duct range of products is light, easy to handle and simple to fix. The products can be cut and shaped using knives, saws, etc.

## Ancillaries

## Welded steel pins

Welded pins are generally spaced at 350mm maximum centres along the length of the duct and at 500mm 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.

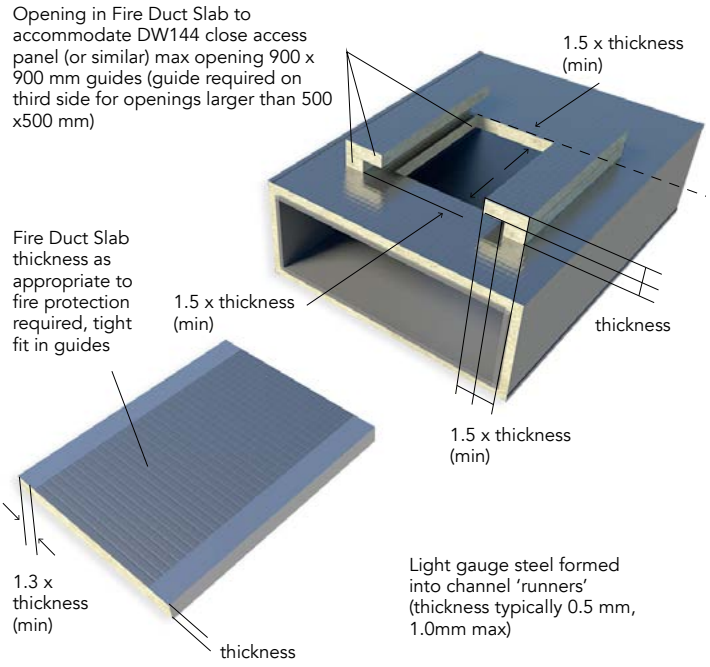



**Figure 11**
*Removable cover panel for steel access hatch*

## 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 B&ES 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 | 0.8mm or greater. See DW/144 for ducts larger than 1500mm | | |
| 3a. Welded pin fixing methods | Up to 1500 x 1500 mm: no additional system modifications | | |
| | Up to 2000 x 2000mm: increase angle bearer size to 50 x 50 x 5mm min | | |
| | Up to 3000 x 3000mm: increase angle bearer size to 50 x 50 x 6mm min | | |
| | Increase drop rod diameter to M12 min | | |
| | Up to 4000 x 4000mm: 50 x 50 x 6mm 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 4000mm: 50 x 50 x 6mm bearer. M12 min. drop rod | | |
| | Incorporate additional drop rods through duct and bearer to ensure 1500mm max. spacing along bearer*. Weld (or fas- ten with nuts and large washers) M15 min. strengthening rod at each flanged joint and penetration point to ensure 1500mm 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 | | |
| 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 | 1500mm x 1500mm | | |
| ½ hr kitchen extract | 1500mm x 1500mm | | |
| 1 hr HVAC & smoke extract | 1500mm x 1500mm | | |
| 1 hr kitchen extract | 1500mm x 1500mm | | |
| 1½ hr HVAC & smoke extract | 1200mm x 1200mm | | |
| 2 hr HVAC & smoke extract | 1000mm x 1000mm | | |
| 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 3mm (min.) steel angle. See item 3a for ducts larger than 1500mm | | |
| 8. Drop rods | | | |
| 9. Drop rod anchors | | | |
| Fixed through steel suspension frame | Steel frame to be independently fire rated | Fire protect steelwork | |
| Fixed into concrete | Anchors to have confirmed fire rating. M10 (min.) mild steel. See item 3a for ducts larger than 2000mm | If fire rating is un-confirmed and anchor is all-steel, ie without plastic or chemical components; affix 300mm x 300mm collar of unfaced Fire Duct Slab to soffit with FIRE- PRO® 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. | |
| 10. Spacing of suspension system | | | |
| 10a. Horizontal ducts | 1500mm max. centres | | |
| 10b. Vertical ducts: 2 or 3 sided protection | 1500mm max. centres | Install additional supports | |
| 10c. Vertical ducts: 4 sided protection | Support at every floor (4 m max. centres) | | |
| 11. Stiffening of duct at penetration detail | Duct flange or 30 x 30 x 3mm steel angle frame fixed with steel fixings at 300mm max. centres. To be positioned within the width of the penetration. See item 3a for ducts larger than 3000mm. | 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 system options on pages 4 and 5

### 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 2.5mm diameter welded steel pins and 38mm 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 250mm 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 1500mm maximum centres and to be M10 steel rod and 30 x 30 x 3mm steel angle respectively. Ductwork is to be generally in accordance with B&ES 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 soft 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 ROCKWOOL FIREPRO® Glue and held tightly closed. Use nails at 500mm 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 100mm 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 250mm 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 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 1200mm length of mitred joint and at 5 points per 2000mm length.
6. Drop rods and bearers are to be at 1500mm maximum centres and to be M10 steel rod and 30 x 30 x 3mm steel angle respectively. Ductwork is to be generally in accordance with B&ES 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.

### NBS specifications

ROCKWOOL Fire Duct Systems are associated with the following NBS clauses:

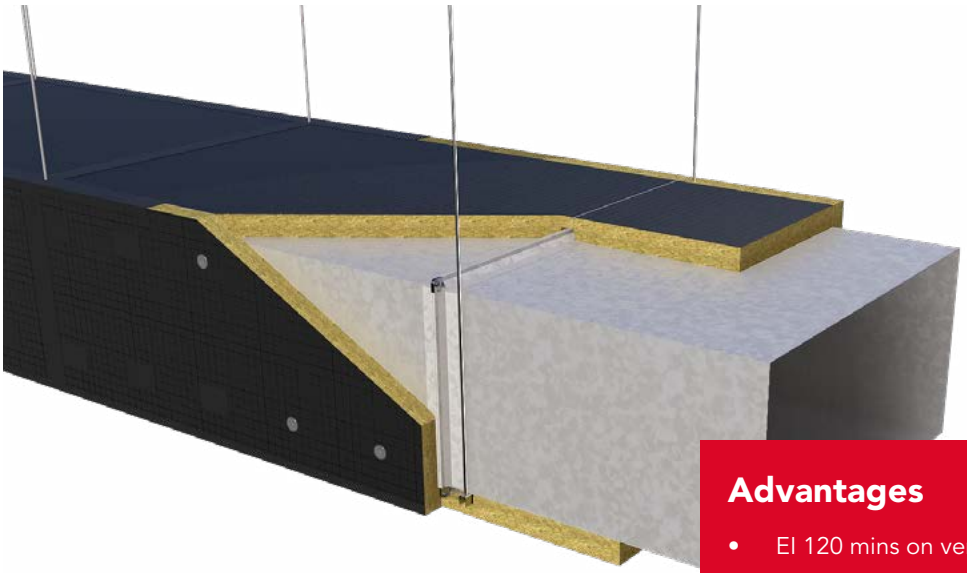
U90 General ventilation - domestic

- 490 Site applied insulation to ductwork

Y30 Mechanical thermal insulation

- 340 Mineral fibre slabs insulation

# DUCTROCK® SLAB



## Advantages

- EI 120 mins on ventilation and smoke
- Tested on both vertical and horizontal ducts
- Wide ranging scope for many duct types
- High quality black foil finish
- Patented horizontal penetration detail



## Description

FIREPRO® DuctRock® Slab is manufactured with high density, non-combustible stone wool insulation and finished with a high emissivity black foil facing. Available in three thicknesses DuctRock® Slab is easy to handle, simple to install and capable of achieving fire resistance of up to EI 120.

FIREPRO® Glue and a high performance Black Aluminium Foil Tape are also readily available from ROCKWOOL for sealing all board joints.

## Applications

DuctRock® Slab has been designed for use with rectangular and square steel ductwork systems and has been fire tested in conjunction with the following duct types shown in table 1.

Table 1

| Ventilation duct: Type A | | Ventilation duct: Type B | | Smoke extract duct: Type C |
|---|---|---|---|---|
| Horizontal | Vertical | Horizontal | Vertical | |
| ✓ | ✓ | ✓ | ✓ | ✓ |

## Performance

### Fire performance

FIREPRO® DuctRock® Slab can achieve fire resistance ratings; Integrity (E) and Insulation (I) of EI 30 to EI 120 with only 3 thicknesses. Table 2 provides a summary of fire performance.

Table 2

| FIREPRO® DuctRock® Slab (mm) | Ventilation duct: Type A | | Ventilation duct: Type B | | Smoke extract duct: Type C | Ducts with a combustible lining |
|---|---|---|---|---|---|---|
| | Horizontal | Vertical | Horizontal | Vertical | | |
| *60 | EI 60 | EI 60 | EI 60 | EI 60 | EI 60 | N/A |
| 80 | EI 90 | EI 90 | EI 90 | EI 90 | EI 90 | N/A |
| 90 | EI 120 | EI 120 | EI 120 | EI 120 | EI 120 | **EI 60 |

*Use 60mm FIREPRO® DuctRock® Slab for EI 30 fire ratings

**DuctRock slab has been tested in accordance with the criteria set out in section 11.2.2 of BS EN 1366-1:2014 (Ducts with combustible lining) where additional thermocouples were positioned within the duct to record the average and maximum temperature rise. Insulation failure was defined in accordance with EN 1363-1.

# Technical information

## Standards and approvals

DuctRock® Slab has been tested in accordance with BS EN 1366: Part 1 for ventilation ducts and also BS EN 1366: Part 8 for smoke extraction ducts achieving up to EI 120 minutes.

DuctRock® Slab has been classified in accordance with EN 13501-3:2005 +A1: 2009.

Fire Resistance Classification: up to **EI 120 (ve, ho, i ↔ o) S**

DuctRock® has been classified in accordance with EN 13501-4:2016.

Fire Resistance Classification: up to **EI 120 multi (ho/ve) S 500**

| Property | Description |
|---|---|
| Length | 1200mm |
| Width | 1000mm |
| Thickness | 60, 80 & 90mm |
| Facing | Black Aluminium Foil |
| Fire resistance | Up to EI 120 |

## pH neutrality

ROCKWOOL insulation is chemically compatible with all types of pipes, ducts, 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 stone wool insulation products have been proven in service for over 60 years, in a wide range of climates and degrees of exposure. ROCKWOOL insulation will generally perform effectively for the lifetime of the building, plant or structure.

## Biological

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

# Installation

## Fire performance

FIREPRO® Ductrock® Slab can be rapidly installed onto rectangular and square steel ductwork using a combination of Ø2.7 - Ø3.0mm stud welded pins, Ø30mm steel washers and ROCKWOOL FIREPRO® Glue. All board abutments and cross joints must be covered with ROCKWOOL black aluminium foil tape.

| DuctRock Slab thickness (mm) | Stud welded pin length (mm) |
|---|---|
| 60 | 62mm |
| 80 | 82mm |
| 90 | 92mm |

FIREPRO® DuctRock® is easily cut with a hand saw or alternatively a circular/table saw. The top and bottom slabs should be cut 10mm wider than the width of the duct to ensure a tight cross joint with the side slabs. The side slabs should be cut to the height of the duct (H) + 2 x the insulation thickness as shown in Figure 1.

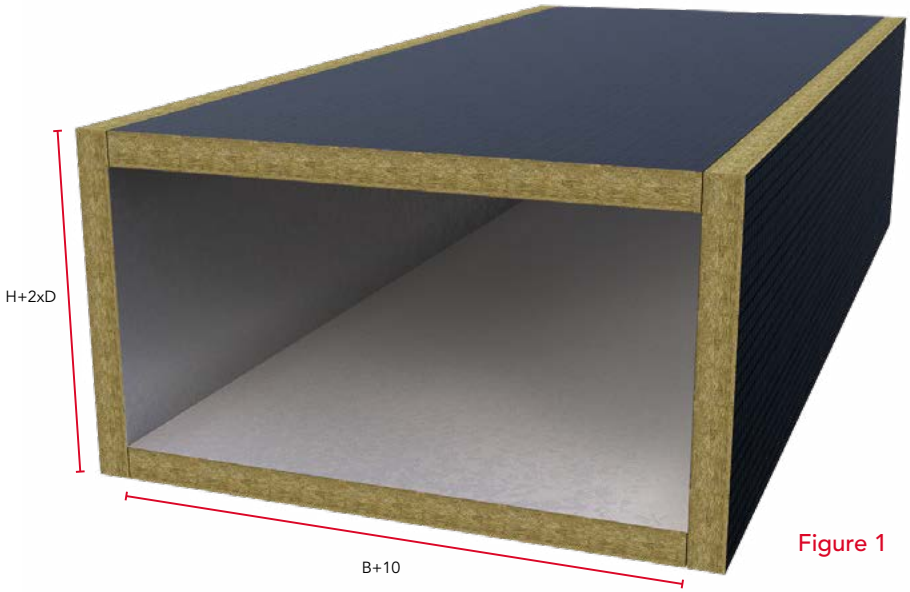



Figure 1

## Top slab

When installed within horizontal applications the top boards do not require any stud welded pins and is simply positioned onto the duct with all board joints bonded with FIREPRO® Glue. Board joints must be covered using ROCKWOOL black foil tape.

## Side wall slabs

The side wall slabs are installed using stud welded pins with 350mm maximum centres along the length of the duct and 400m centres across the depth as shown in Figure 2.

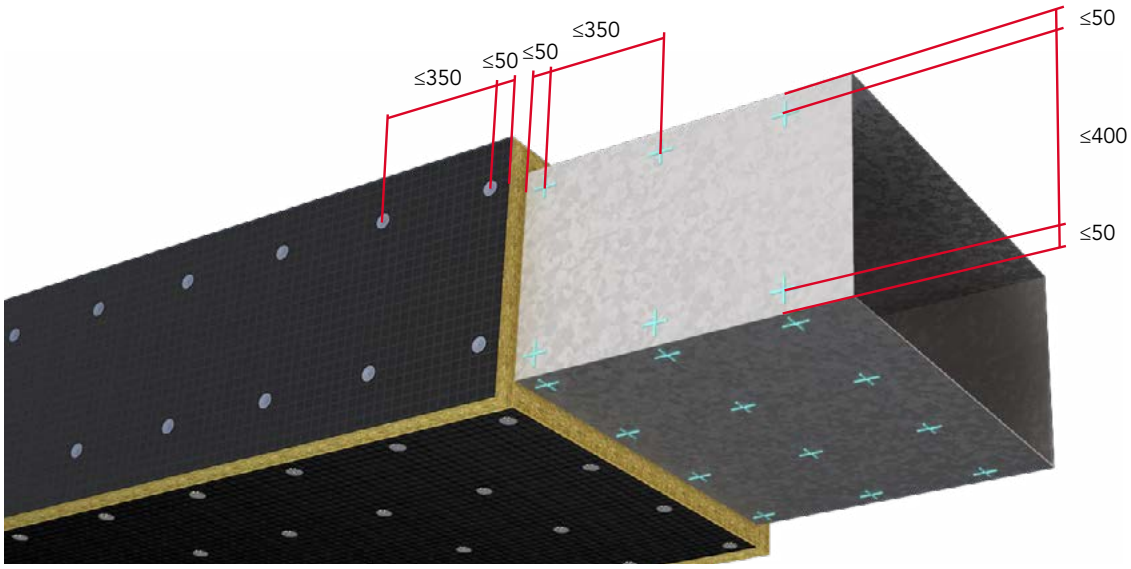



Figure 2

Side wall slabs must overlap the top and bottom boards as shown in Figures 3 & 4. All cross joints must be bonded with ROCKWOOL FIREPRO® Glue.

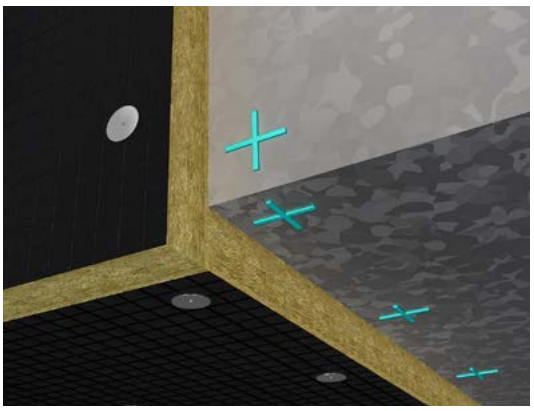


Figure 3
Cross joint horizontal duct

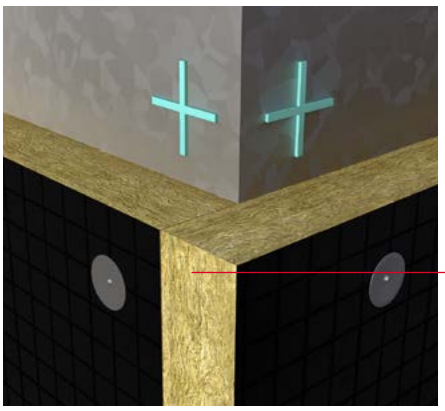



Figure 4
Cross joint vertical duct

*Note: To ensure that there is a strong bond between the welded pin and the duct, always ensure that the welded pin is sufficiently isolated from for the foil surface of the insulation during welding.*

## Base slab

Install the base slabs with stud welded pins at a maximum of 350mm centres along the length of the duct and 300mm centres across the width of horizontal ducts and 450mm across the width of vertical ducts as shown as shown in Figures 5 and 6.

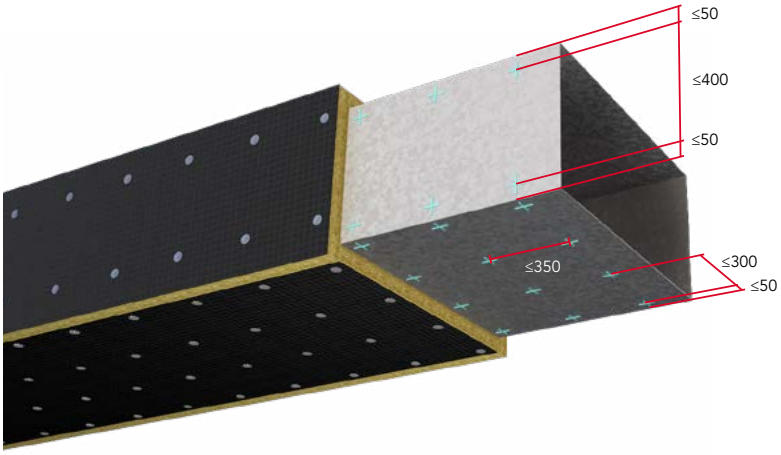



Figure 5
Horizontal duct

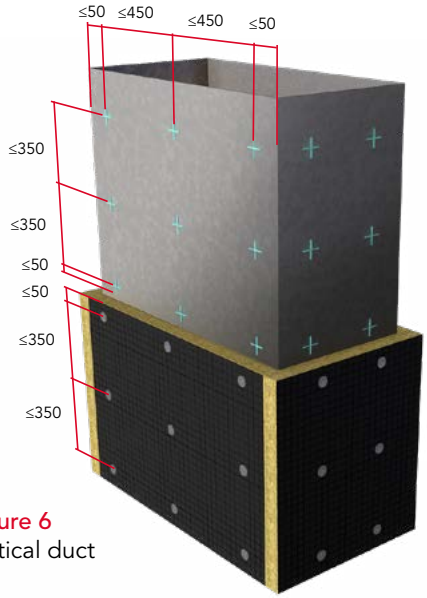



Figure 6
Vertical duct

## Detailing around flanges and drop rod hangers

Where the DuctRock® Slab bypasses a flange, drop rod hanger or both, cut a notch into the insulation as shown in Figure 7a-c. The insulation can easily be cut with a sharp knife or hand saw. All board joints must be bonded with FIREPRO® Glue.

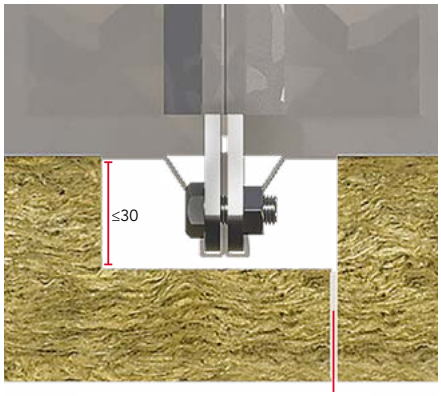



Figure 7a

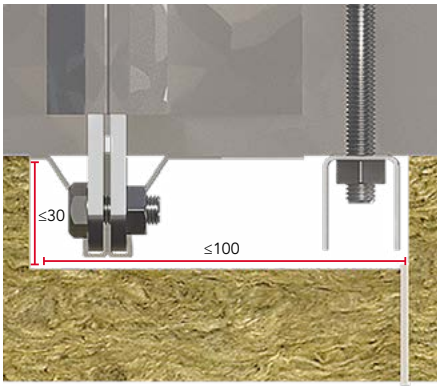



Figure 7b

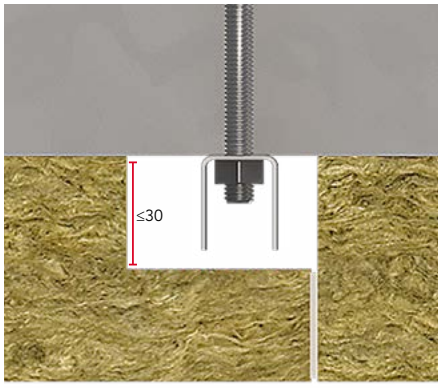



Figure 7c



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## Dry wall penetration

In order to maintain fire performance, provide stability and minimise noise transfer, ROCKWOOL have developed a patented solution for installing DuctRock® Slab at the point where the duct penetrates a dry wall system.

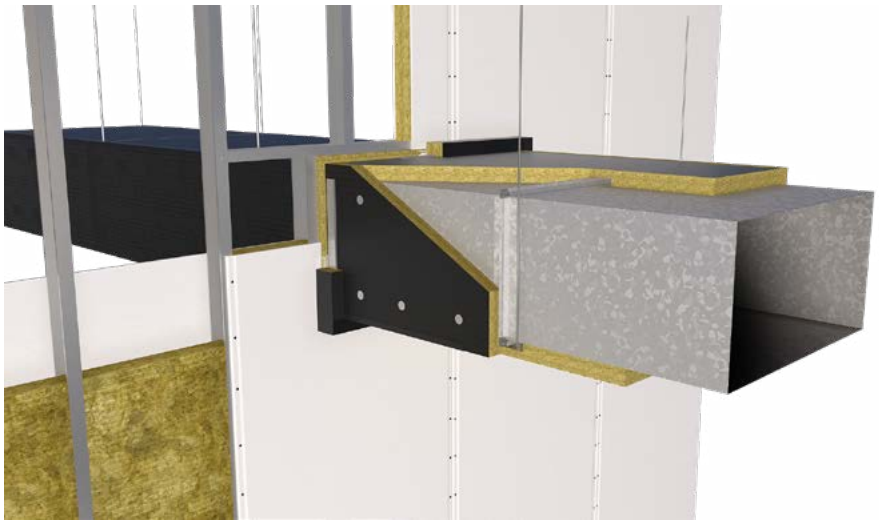

Figure 8
ROCKWOOL patented dry wall penetration detail

## Installation procedure - Dry wall penetration

1. A joint in the DuctRock® Slab must be accommodated at the centre point of the aperture, as shown in Figure 10.
2. Fill the remaining annular space between the DuctRock® Slab and supporting structure of the dry wall system with ROCKWOOL RWA45 as shown in Figure 9.
3. To stiffen the duct around the penetration a 1.5mm thick steel u-profile (60 x 25 mm) must be fitted approx. 20mm from the wall, to both the vertical and horizontal sides of the duct (both sides of the aperture) the length of the profile can be determined using the following formula:

**Duct width / height + (2x insulation thickness) – 50mm**

Examples shown in table below:

| Duct size (mm) | Insulation thickness (mm) | U-profile length (mm) | |
|---|---|---|---|
| | | Horizontal | Vertical |
| 1500 (L) x 1000 (W) x 500 (H) | 90 | 1130 | 630 |
| 1500 (L) x 1000 (W) x 250 (H) | 90 | 1130 | 380 |

4. Before applying the u-profile to the DuctRock® Slab slits must be cut into the insulation to allow the profile sides to penetrate the insulation (Figure 10). The u-profile can be attached to the ductwork using 100mm self-tapping screws. 4No to the top and bottom slabs and 2No to the vertical slabs.
5. Once the u-profiles have been applied an insulated collar must be installed around the perimeter of the aperture. The collar can be simply cut from the DuctRock® Slab. Fix the collars in place with FIREPRO® Glue as shown in Figure 9. Use nails to temporarily hold the collars in place whilst the glue cures.
6. ROCKWOOL Black foil tape can be used to cover any exposed edges of the collars.

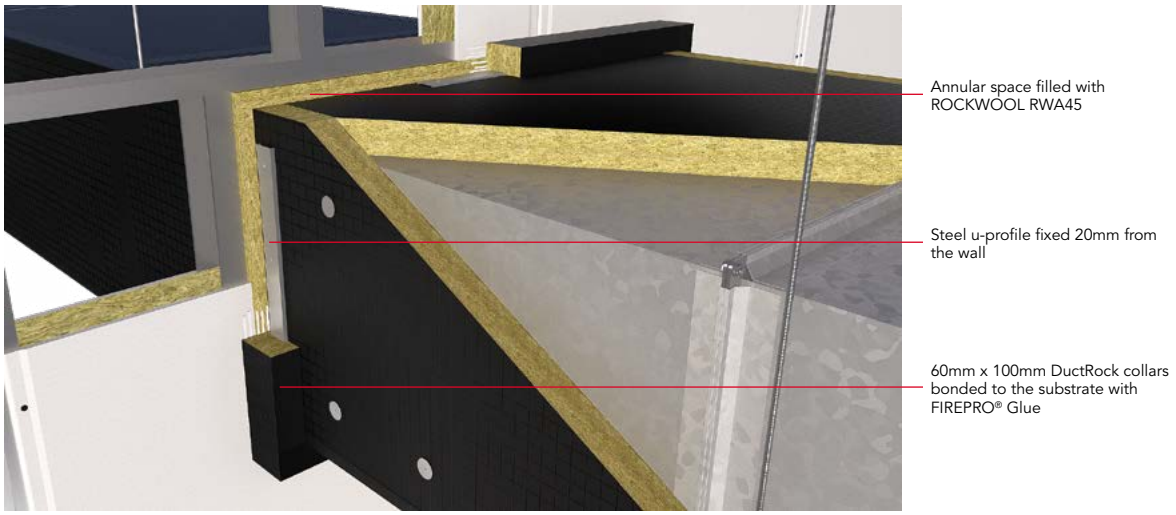


Figure 9

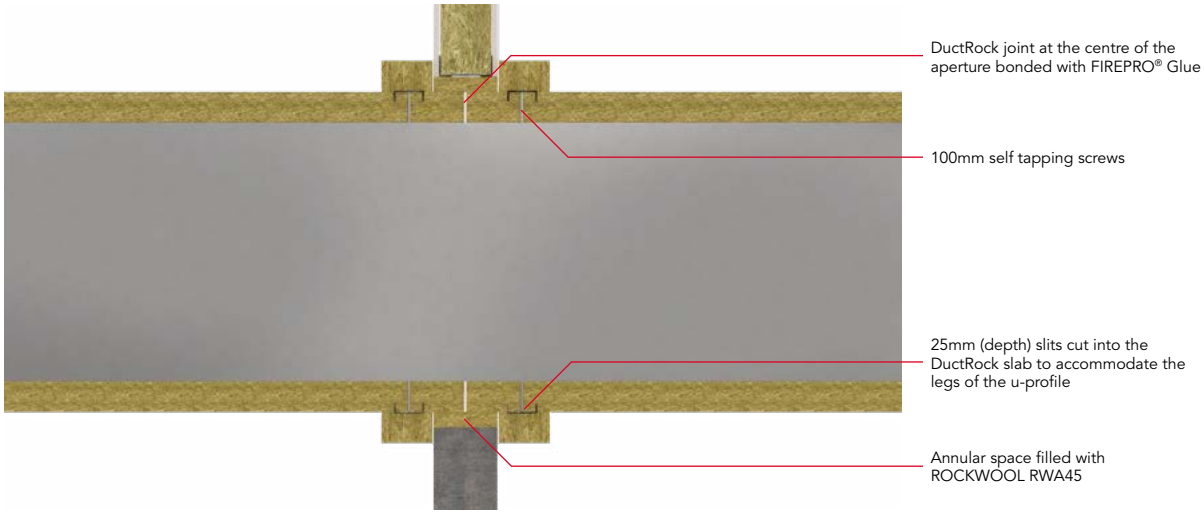


Figure 10

## Installation procedure - Floor penetration

1. Maintain a 30mm gap between the ductwork and floor structure. Fill the gap between the duct and the floor structure with a ROCKWOOL Slab e.g. ROCKWOOL RWA45 as shown in Figure 11a. The flexible slab can be sealed within the void using FIREPRO® Glue.
2. Secure the duct to the floor structure using 4 no. 50 x 50 x 45 x 2.5mm galvanised steel angles to both sides of the aperture. The angles can be fixed using 2No 3.2 x 25mm self-tapping screws. Alternatively, the duct can be secured with a 40 x 40 x 3mm L profile as shown in Figure 11b. The length of the L profile should be equal to the width of the duct and installed to both sides (duct width).
3. Apply a DuctRock® collar to the perimeter of the aperture and on both sides as shown in Figure 11a. The collars can be fixed using FIREPRO® Glue and temporarily held in place with nails until the glue cures.

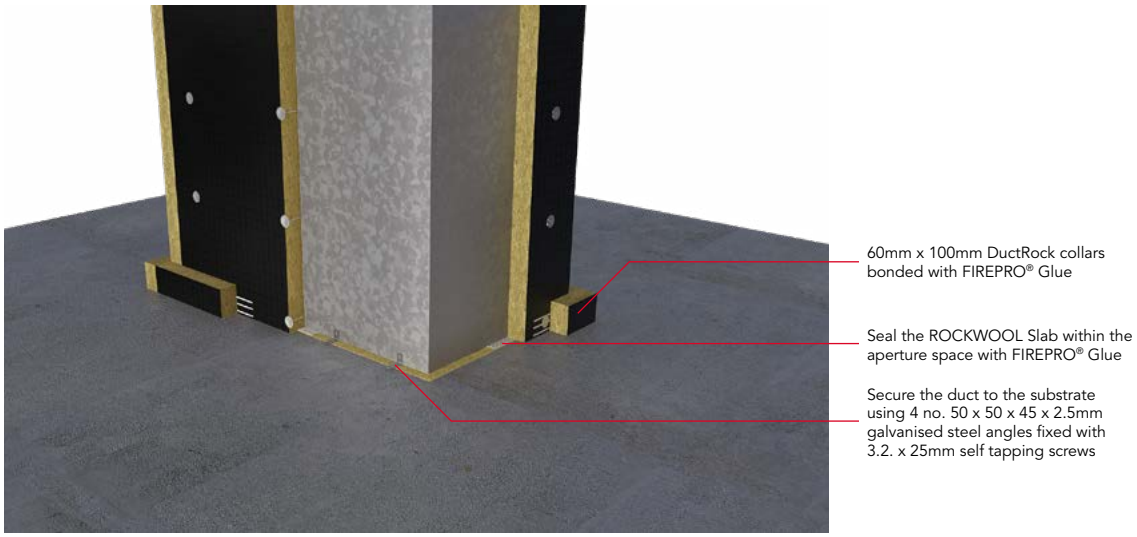


Figure 11a

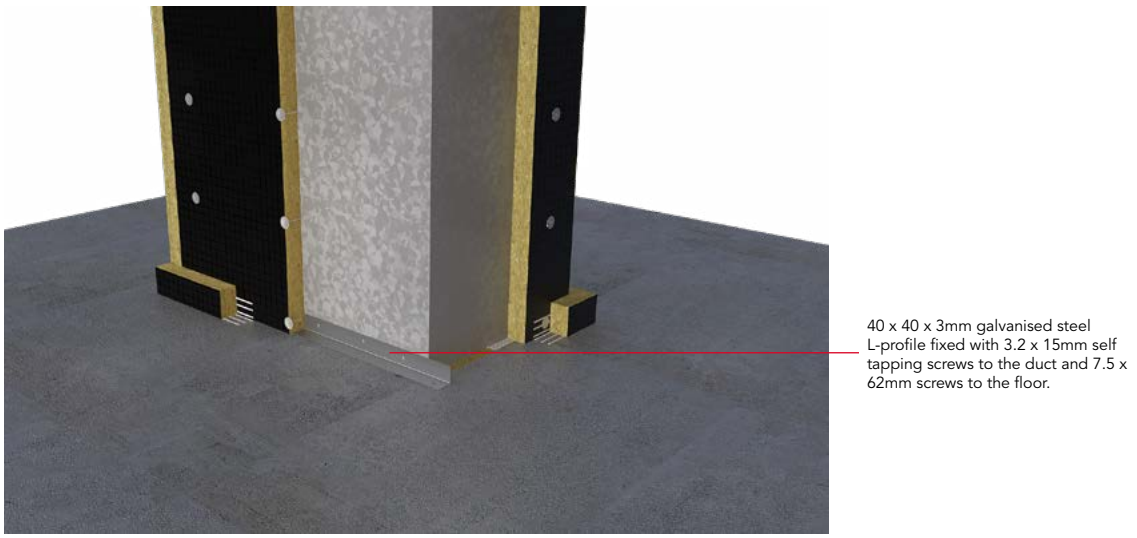


Figure 11b



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## Elbows

Elbows can be protected by cutting the DuctRock® Slab into fan shaped segments as shown in Figure 12a. Alternatively v-shaped slits can be cut into the back of the DuctRock Slab allowing it to wrap around the elbow as shown in Figure 12b. Fill the v-shaped channels with FIREPRO® Glue before applying to the duct and use nails to temporarily hold the insulation in place whilst the glue cures.

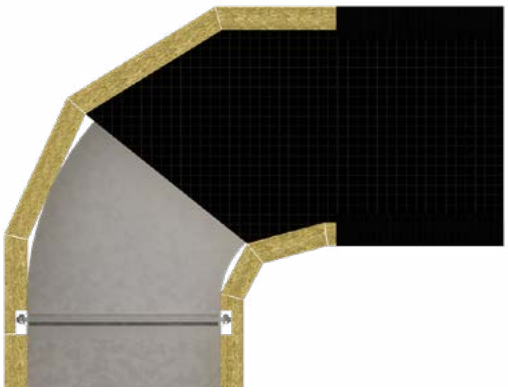

Figure 12a

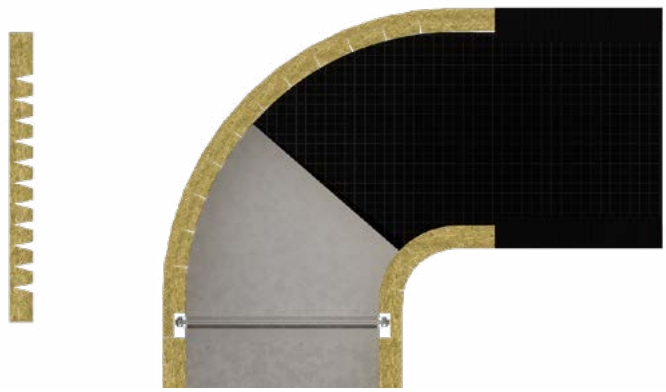

Figure 12b

## Access hatches

DuctRock® Slab can be cut and positioned within a steel frame to form a removable cover in the location of the steel access hatch. The insulated cover can be attached to the duct using 4N° M8 threaded rods (Figure 13a) ensuring the rods are secured on both sides of the duct. The cover is then fixed to the rods using steel M8 nuts and washers. The thickness of insulation should be appropriate to the fire resistance required.

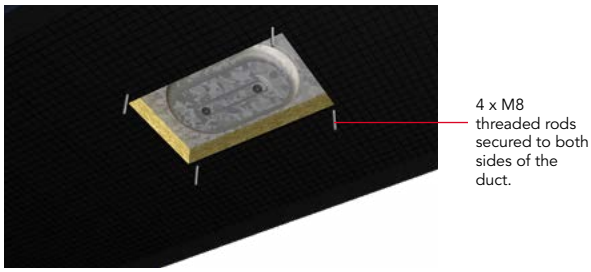


Figure 13a

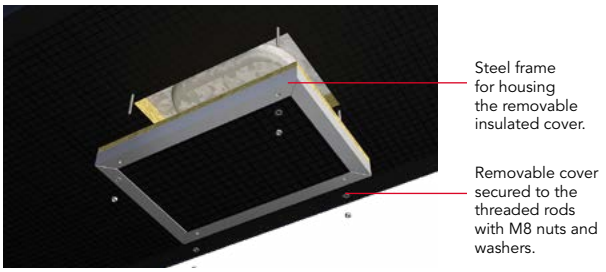


Figure 13b

## Ancilliaries

- FIREPRO® Glue and ROCKWOOL Black Foil Tape is available from ROCKWOOL Stockists
- Stud welded pins and self-tapping screws are available through CEVaC Limited, Tel: +44 (0) 1403 786503


## Specification clauses

Typical specification clauses for rectangular and square ducts to be read in conjunction with the installation guidelines provided within this datasheet.

- All ductwork is to be insulated with……* mm ROCKWOOL FIREPRO® DuctRock® Slab, having a factory applied reinforced black aluminium foil to one face and tested in accordance with BS EN 1366: Part 1 and/or BS EN 1366:Part 8.
- DuctRock® Slab is to be fixed to the duct using 2.7 - 3.0 mm diameter welded steel pins and 30 mm spring steel washers in accordance with the ROCKWOOL Product Data Sheet 'FIREPRO® DuctRock®'.
- All joints are to be filled with FIREPRO® Glue and held tightly closed.
- Installed to steel ductwork which complies with the following specification criteria:
  - Steel duct dimensions up to 1000x1250 (height x width) and 1500mm in length
  - With leakage class B in accordance with EN 1507. Further information on leakage classes can also be found in DW/144: Specification for Sheet Metal Ductwork low, medium and high pressure/velocity air systems.
  - With an under-pressure or over-pressure up to 500Pa
  - Steel flanges to be spot welded to the duct:
    - Ventilation Duct - 20mm flange
    - Smoke Extract Duct - 30mm flange
  - Flanges to be held together with either a 20mm flange joint profile (duct types A & B) or 30mm flange joint profile (duct type C). All flange joints to be sealed with sealing grease.
  - With stiffeners as follows:
    - EI 120 – Ventilation Duct: 1 x Ø 15mm steel pipe in each duct segment
    - EI 120 – Smoke Extract Duct: 2 x Ø 15mm steel pipe in each duct segment
  - Sealed with and appropriate duct sealant and 5 x 15mm EPDM tape

- The duct suspension system complies with the following specification criteria:
  - Horizontal ducts:

| Fire resistance | Max tensile stress of suspension device | Max shearing stress of screws | Max distance from suspension device to duct joint |
|---|---|---|---|
| EI 30 | 9 N/mm² | 15 N/mm² | 150mm |
| EI 60 | 9 N/mm² | 15 N/mm² | 150mm |
| EI 90 | 6 N/mm² | 10 N/mm² | 150mm |
| EI 120 | 6 N/mm² | 10 N/mm² | 150mm |
| EI 120 (Smoke Extract) | 6 N/mm² | 10 N/mm² | 150mm |

    - With distance between suspension devices not exceeding 1500mm
    - The lateral distance between the outer vertical surface of the steel duct and the centre line of the suspension rod shall not exceed 50mm
  - Vertical ducts:
    - With distance between supporting structures not exceeding 5m

- Any duct penetrations comply with the following specification criteria:
  - Horizontal:
    - Penetrating in rigid wall constructions or flexible walls with a minimum thickness of:
      - EI30 – 70mm
      - EI 60 – 95mm
      - EI 90 – 95mm
      - EI 120 – 130mm
      - And with a fire resistance equal to or greater than the tested DuctRock® slab thickness.
    - For horizontal penetrations, the gap between the DuctRock® Slab and supporting structure will not exceed 20mm.
    - For horizontal penetrations U-profiles 1.5mm thick, with dimensions 60 x 25mm must be installed approximately 20mm from the wall and on both sides of the wall. The legs of the u-profiles are lowered into slits cut into DuctRock®Slab and fixed to the duct by means of
      - Ø 4.8mm x 100mm for EI 30 & EI 120
        self-tapping screws;  4 on the top and bottom profiles and 2 on the vertical profiles.
  - Vertical
    - Penetrating rigid floor constructions with a minimum thickness of:
      - EI 30 – 100mm
      - EI 60 – 100mm
      - EI 90 – 150mm
      - EI 120 – 150mm
      - And with a fire resistance equal to or greater than the tested DuctRock® slab thickness.
    - For vertical penetrations the duct is to be stabilised using 4 no. 'L' galvanised steel angles of 50 x 50 x 45 x 2.5mm or a 40 x 40 x 3mm L profile which are fixed to the vertical steel duct and the supporting structure on both sides of the floor.

## NBS specification clauses

FIREPRO® DuctRock® Slab is associated with the following NBS specification clauses:

U90 General Ventilation – Domestic

- 490: Site applied insulation to ductwork

Y30 Mechanical Thermal Insulation

- 340: Mineral fibre slab insulation

# FIREPRO® FIRE TUBE

## Advantages

- Available in a range of wall thicknesses to accommodate specific fail temperatures
- Manufactured to accommodate pipes and CHS sizes up to 610mm Ø
- Up to 4 hours fire resistance
- Excellent thermal and acoustic insulation
- A1 Non-combustible
- Water repellent

## Description

FIREPRO® Fire Tube is a preformed cylindrical section which is manufactured using high density ROCKWOOL stone wool. Fire Tube is available in both plain and foil faced options.

Fire Tube is available to suit common steel structural column and pipe diameters in the range between 21mm - 610mm and is supplied in lengths of 1000mm.

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

## Applications

Fire Tube has been designed to provide fire protection of up to 4 hours and is suitable for use with:

- Structural steel
- Circular Hollow Sections (CHS)
- Solid bars
- Sprinkler pipes
- Process pipework

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

# Performance

## Fire performance

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.

## 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
- Where thk = wall thickness in m

## Worked example for hollow section

- 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.

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

| 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 |

## 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.

Table 3
Critical steel temp 550°C (for load-bearing structural building frameworks)

| 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 |

# Technical information

## Standards and approvals

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

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.

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

## Product information

| Property | Description |
|---|---|
| Length | 1000mm |
| Internal diameter range | 21 – 610mm |
| Thickness range | 25 – 100mm |
| Reaction to fire classification | Euroclass A1 |
| Fire resistance | Up to 4 hours |

# Installation

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

Abutted sectional joints/ tube ends of the Fire Tube (including the partially split 'hinge' and the tube ends) are to be applied with FIREPRO® Glue prior to application. All joints should 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.

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

# Specification clauses

FIREPRO® Fire Tube is associated with the following NBS clauses:

P12 Fire stopping systems

- 375 Pipe collar: Insulated wrap

## ROCKWOOL firestopping principles

1. ROCKWOOL will not support mixing fire protection of differing manufacturers systems/products of any type in line with ASFP recommendations, unless proven by fire testing.
2. ROCKWOOL products should be installed in accordance with the relevant product data sheet and within the field of application identified on the standard details. For applications that fall outside the parameters identified in the standard details or data sheets please contact ROCKWOOL for further guidance.
3. Engineering Judgements are an appraisal of the likely performance of the installed ROCKWOOL products in that application when subjected to a fire resistance test. It is offered in lieu of direct formal testing and is based upon ROCKWOOL's experience of product performance during fire resistance testing. For this reason, before installation engineering judgements used on site should be reviewed and accepted by Building Control and / or the scheme Fire Office or the overseeing body for the project.
4. All penetrations within the dry lining system shall be framed and lined. a pattress fit option with ROCKWOOL Batts is available, but please check for its suitablility.
5. Design of the penetration and its fire stopping should consider and correspond to the Integrity and Insulation requirements of the host wall or floor, unless leniency on the insulation rating is provided by the Fire Officer or overseeing body via a derogation.
6. Services of different types can pass through the same penetration, with the exception of ventilation (ducts and dampers) which should pass through exclusively through its own penetration, as per the EN test guidance.
7. Fire dampers and smoke dampers are to be independently supported from the soffit, therefore care should be taken where other services pass above the ventilation penetrations. Please refer to the damper manufacturers details and specification.
8. Support for services passing through walls should be within 500mm on each side. Services passing through floors should be supported at each level, as per industry and ASFP Guidance.
9. With reference to penetration spacings, please refer to the ROCKWOOL Spacing Guidelines Document

## Sustainability

As an environmentally conscious company, ROCKWOOL promotes the sustainable production and use of insulation and is committed to a continuous process of environmental improvement.

All ROCKWOOL products provide outstanding thermal protection as well as four added benefits:

- **Fire resistance**
- **Acoustic comfort**
- **Sustainable materials**
- **Durability**

## Health & Safety

The safety of ROCKWOOL stone wool is confirmed by current UK and Republic of Ireland health & safety regulations and EU directive 97/69/EC:ROCKWOOL fibres are not classified as a possible human carcinogen.

A Material Safety Data Sheet is available and can be downloaded from www.rockwool.co.uk to assist in the preparation of risk assessments, as required by the Control of Substances Hazardous to Health Regulations (COSHH).

## Environment

Made from a renewable and plentiful naturally occurring resource, ROCKWOOL insulation saves fuel costs and energy in use and relies on trapped air for its thermal properties.

ROCKWOOL insulation does not contain (and has never contained) gases that have ozone depletion potential (ODP) or global warming potential (GWP).

ROCKWOOL is approximately 97% recyclable. For waste ROCKWOOL material that may be generated during installation or at end of life, we are happy to discuss the individual requirements of contractors and users considering returning these materials to our factory for recycling.

## Interested?

For further information, contact the Technical Solutions Team on 01656 868490 or email technical.solutions@rockwool.co.uk

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

## The ROCKWOOL trademark

ROCKWOOL® - our trademark

The ROCKWOOL trademark was initially registered in Denmark as a logo mark back in 1936. In 1937, it was accompanied with a word mark registration; a registration which is now extended to more than 60 countries around the word.

The ROCKWOOL trademark is one of the largest assets in the ROCKWOOL Group, and thus well protected and defended by us throughout the world.

If you require permission to use the ROCKWOOL logo for your business, advertising or promotion. You must apply for a Trade Mark Usage Agreement. To apply, write to:
marketcom@rockwool.com

### Trademarks

The following are registered trademarks of the ROCKWOOL Group:

ROCKWOOL®

ROCKCLOSE®

RAINSCREEN DUO SLAB®

HARDROCK®

ROCKFLOOR®

FLEXI®

BEAMCLAD®

FIREPRO®

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## Product disclaimer

ROCKWOOL fire protection and stopping products should only be installed by 'competent persons' as outlined in the UK and Ireland Building Regulations.

All products listed should be utilised only for applications as outlined in this guide, in accordance with the current ROCKWOOL guidelines, and in accordance with the relevant ROCKWOOL Fire Resistance Testing.

For further information please visit www.rockwool.co.uk, contact our Technical Solutions Team on 01656 868490, or email:
technicalsolutions@rockwool.co.uk

## Photography and illustrations

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