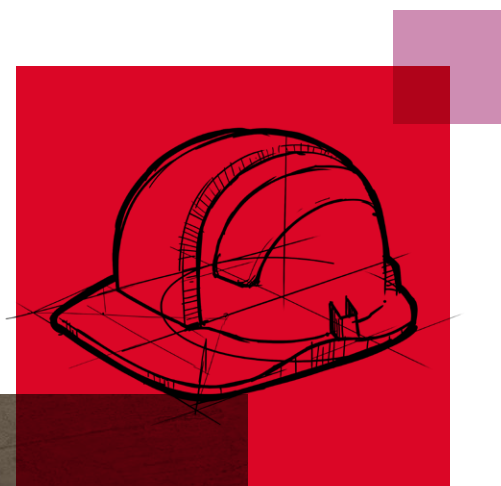


FIREPRO[®] **DUCTROCK[®]** **SLAB**

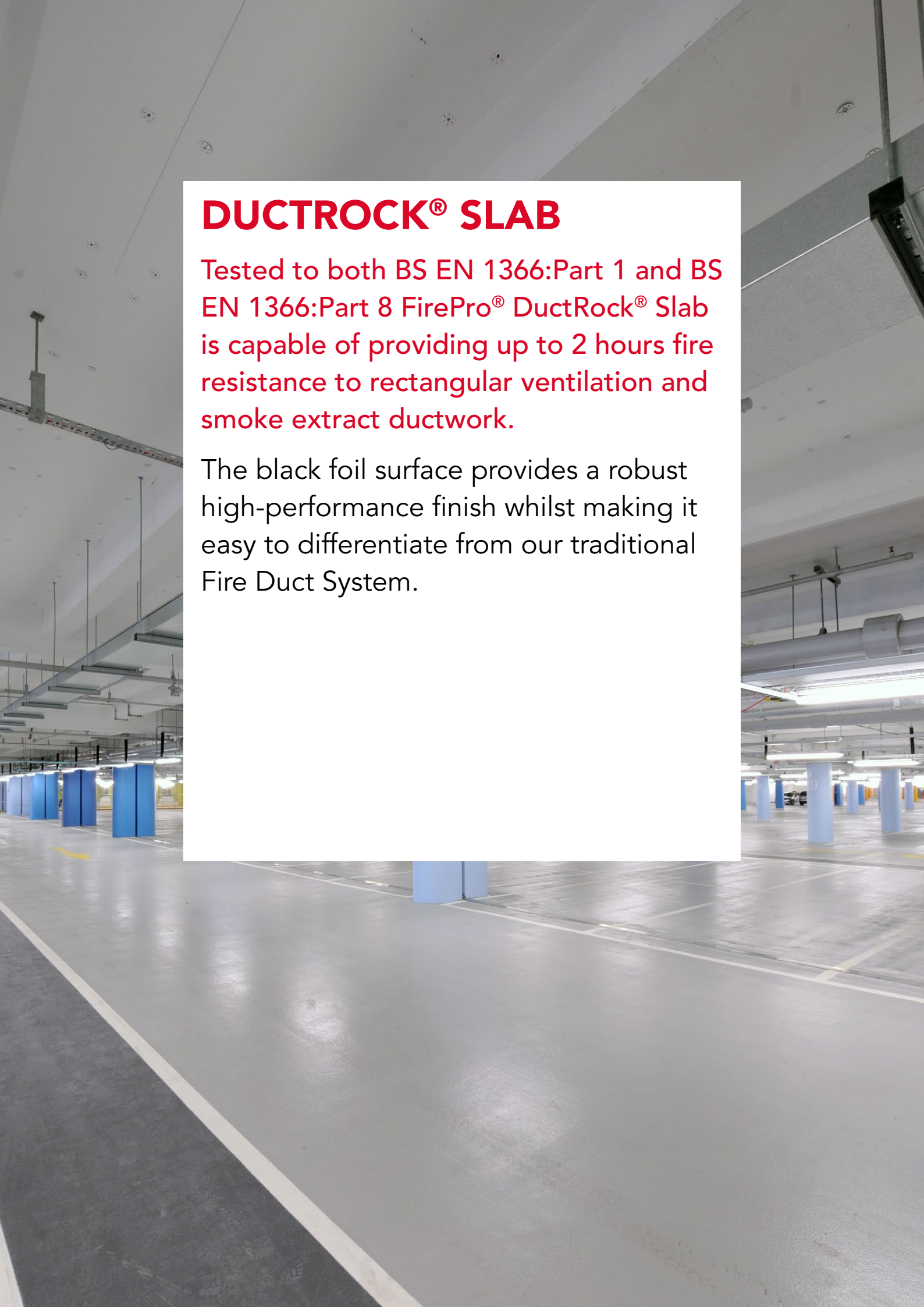
Fire protection for ventilation, smoke extract
and kitchen extract ducts.

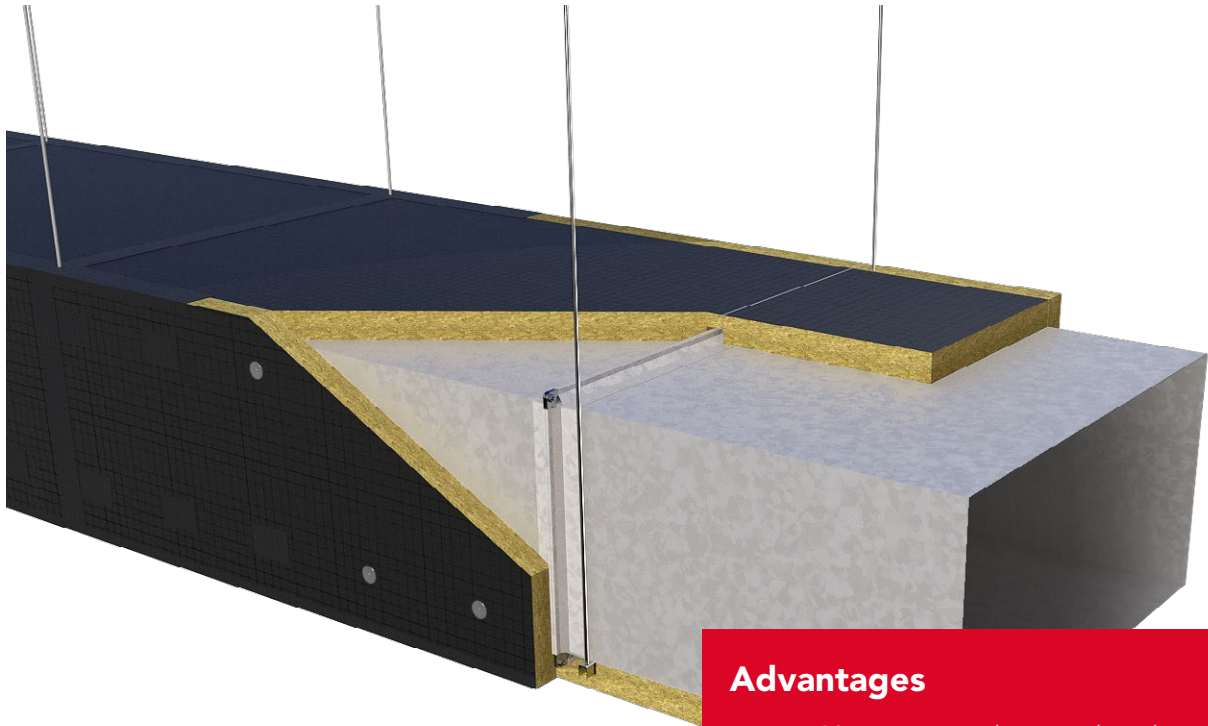


DUCTROCK® SLAB

Tested to both BS EN 1366:Part 1 and BS EN 1366:Part 8 FirePro® DuctRock® Slab is capable of providing up to 2 hours fire resistance to rectangular ventilation and smoke extract ductwork.

The black foil surface provides a robust high-performance finish whilst making it easy to differentiate from our traditional Fire Duct System.





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

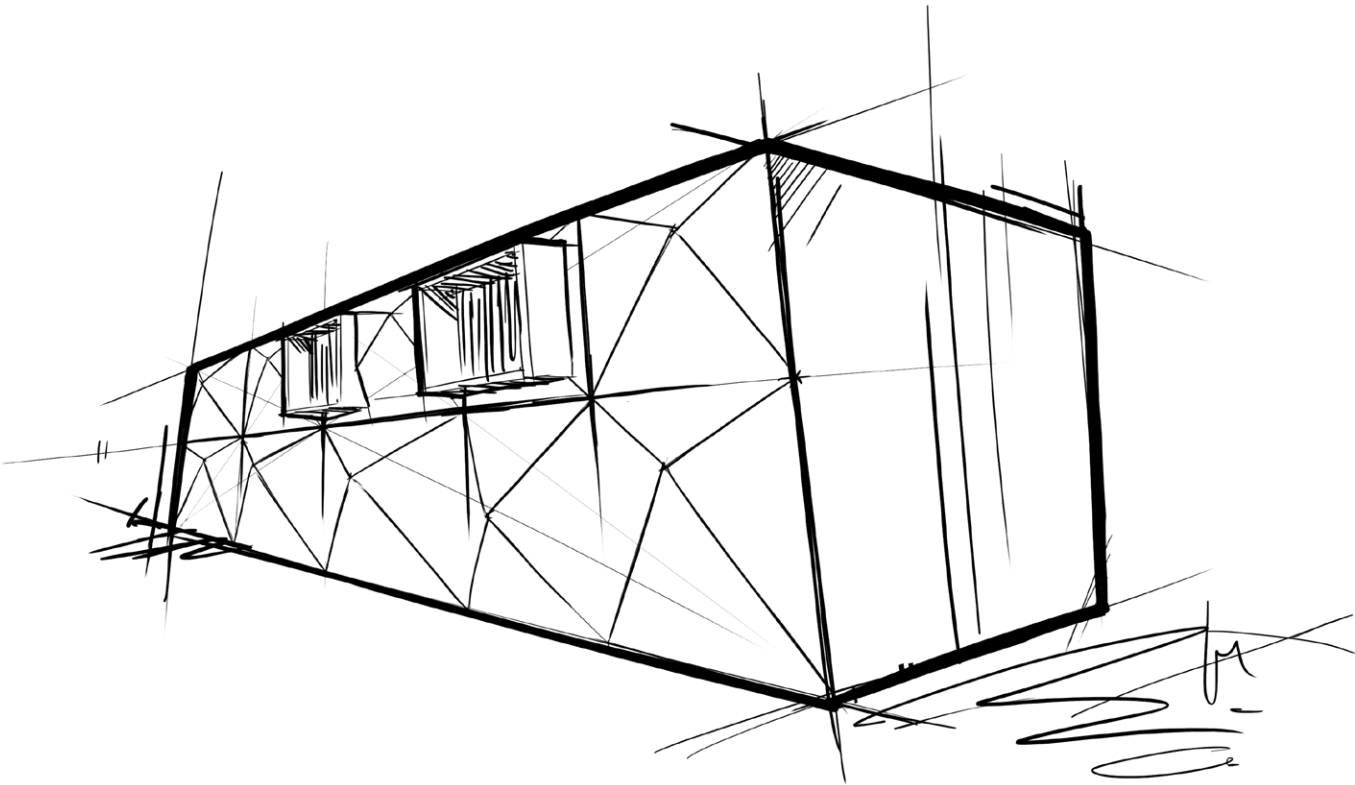
FIREPRO® DuctRock® Slab can achieve fire resistance ratings; Integrity (E) and Insulation (I) of EI 30 to EI 120 with only 3 thicknesses. Table 2 provides a summary of fire performance.

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.

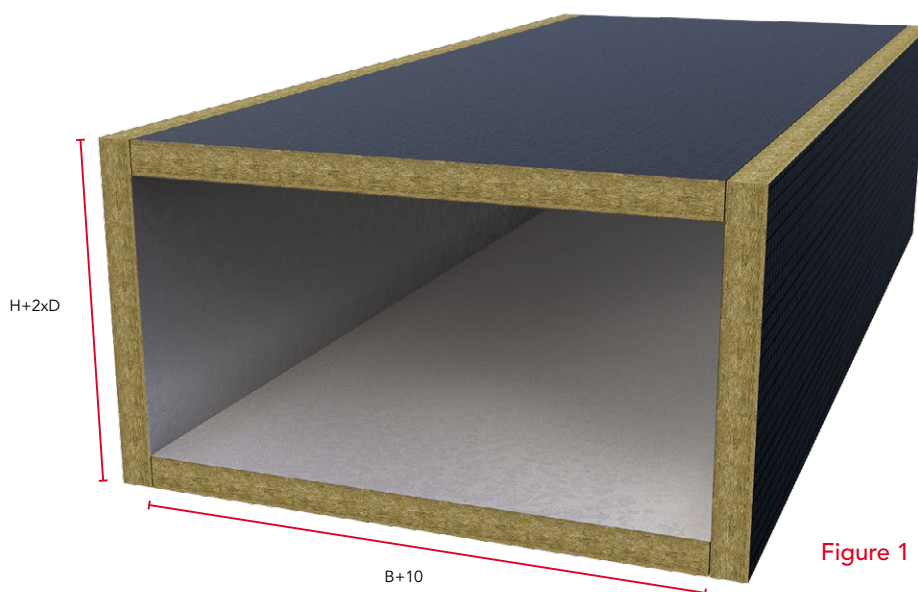


Figure 1

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 400mm centres across the depth as shown in Figure 2.

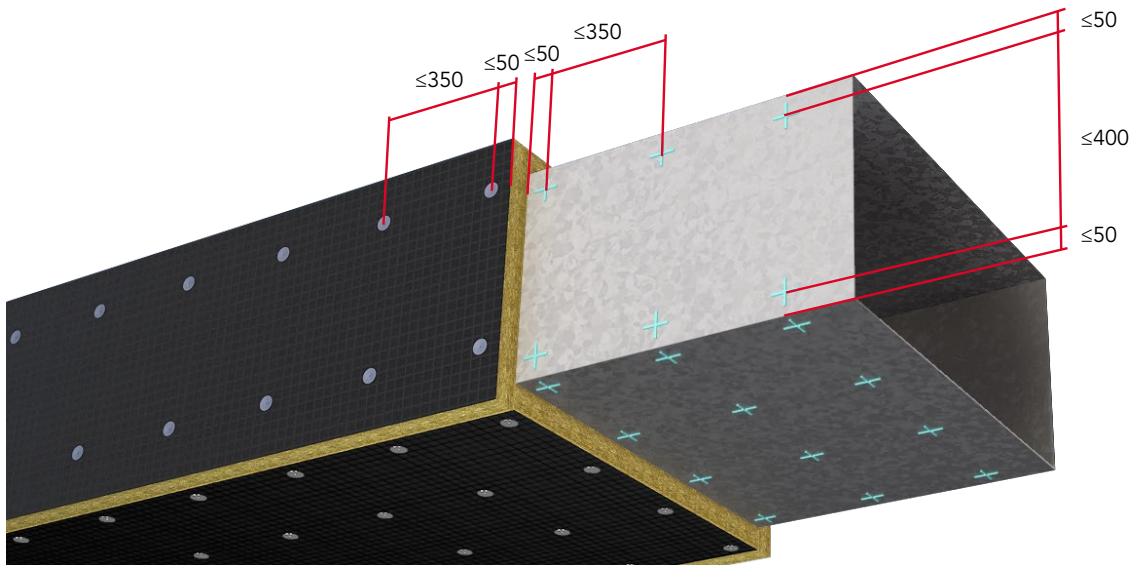


Figure 2

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.

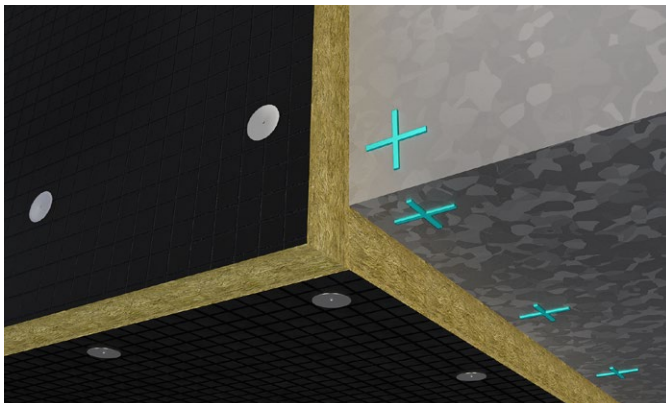
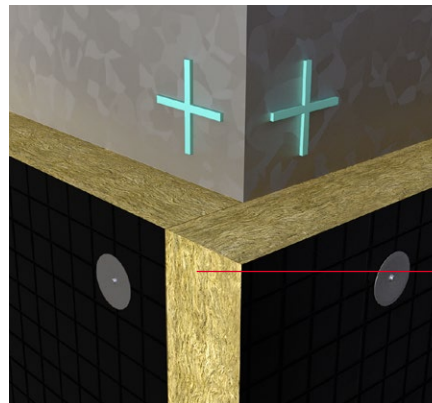


Figure 3
Cross joint horizontal duct



Board edges must be covered with ROCKWOOL Black Foil Tape

Figure 4
Cross joint vertical duct

Important: 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 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.

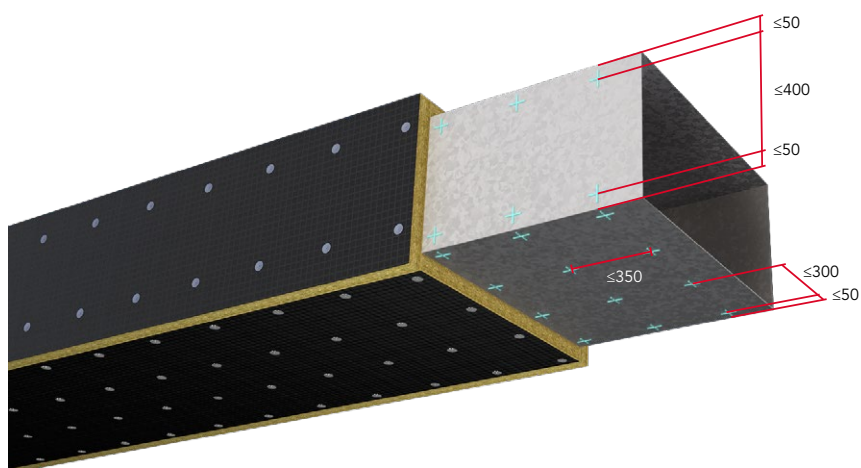


Figure 5
Horizontal duct

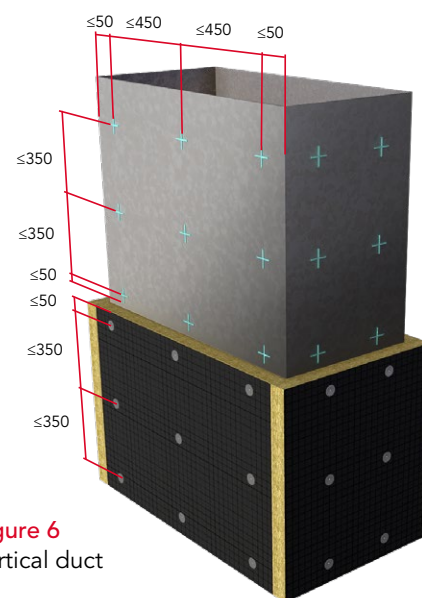


Figure 6
Vertical duct

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.

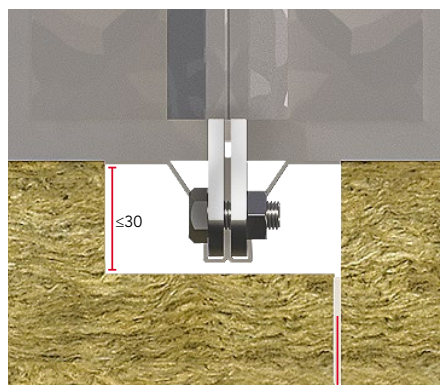


Figure 7a
Glue the joints with FIREPRO® Glue

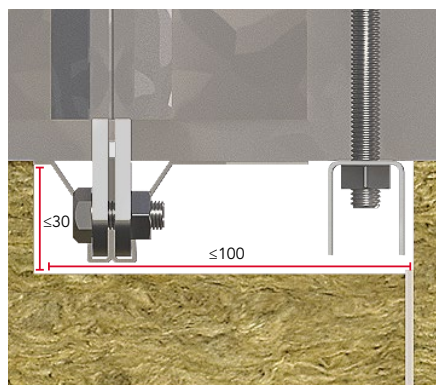


Figure 7b

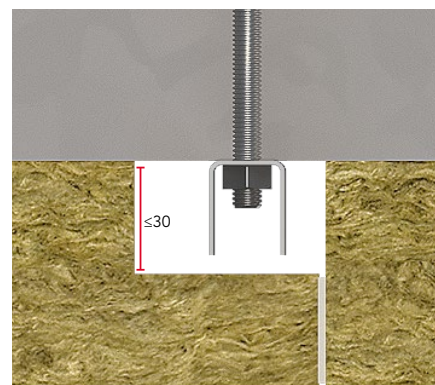


Figure 7c

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.

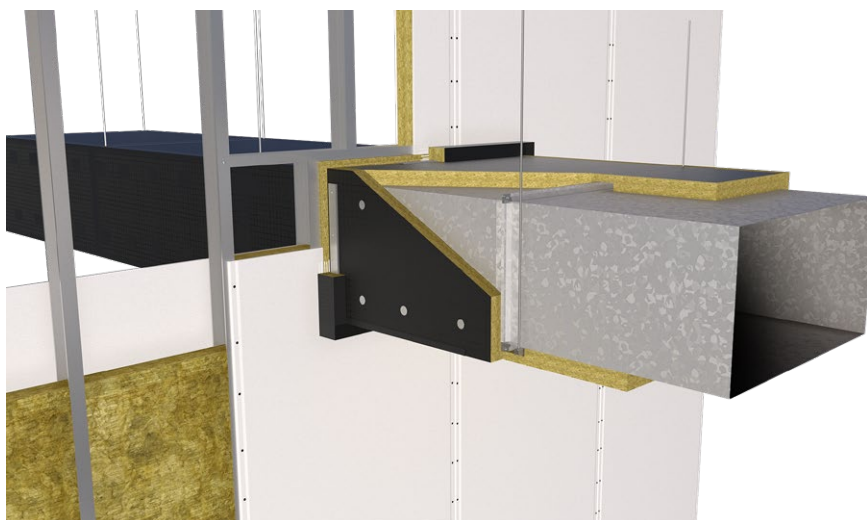


Figure 8
ROCKWOOL Patented Dry Wall Penetration Detail

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:

$$\text{Duct Width/Height} + (2 \times \text{Insulation Thickness}) - 50\text{mm}$$

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.

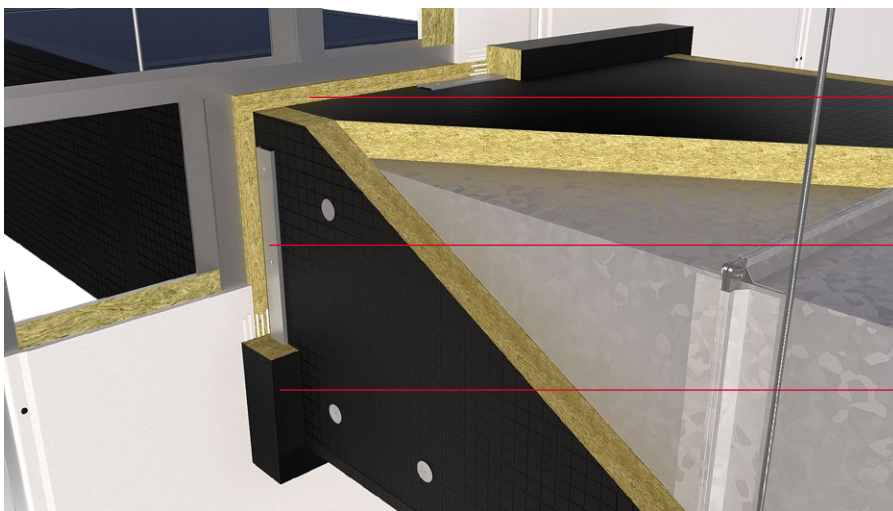


Figure 9

Annular space filled with ROCKWOOL RWA45

Steel u-profile fixed 20mm from the wall

60mm x 100mm DuctRock collars bonded to the substrate with FIREPRO® Glue

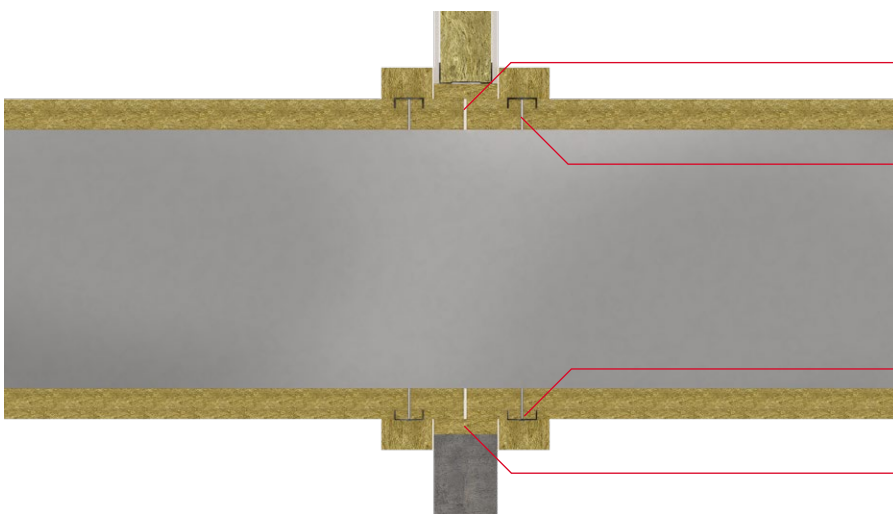


Figure 10

DuctRock joint at the centre of the aperture bonded with FIREPRO® Glue

100mm self tapping screws

25mm (depth) slits cut into the DuctRock slab to accommodate the legs of the u-profile

Annular space filled with ROCKWOOL RWA45

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.

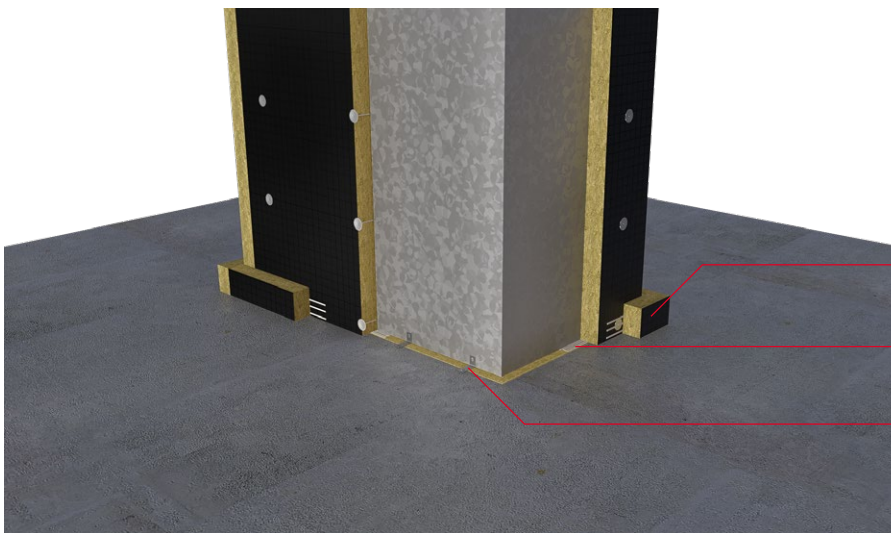


Figure 11a

60mm x 100mm DuctRock collars bonded with FIREPRO® Glue

Seal the ROCKWOOL Slab within the aperture space with FIREPRO® Glue

Secure the duct to the substrate using 4 no. 50 x 50 x 45 x 2.5mm galvanised steel angles fixed with 3.2 x 25mm self tapping screws

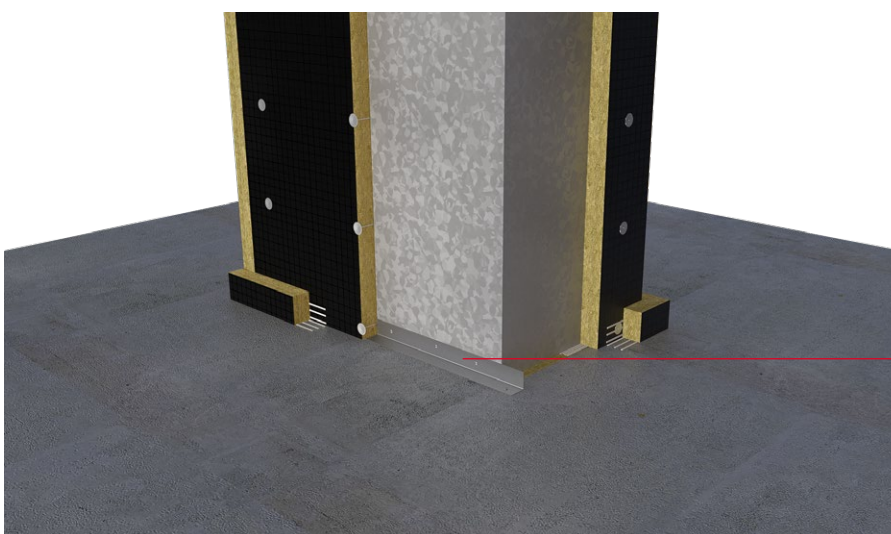


Figure 11b

40 x 40 x 3mm galvanised steel L-profile fixed with 3.2 x 15mm self tapping screws to the duct and 7.5 x 62mm screws to the floor.

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.

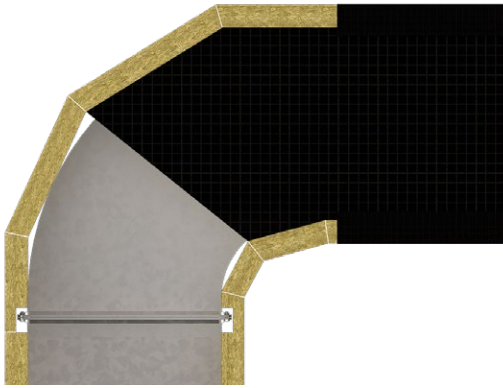


Figure 12a

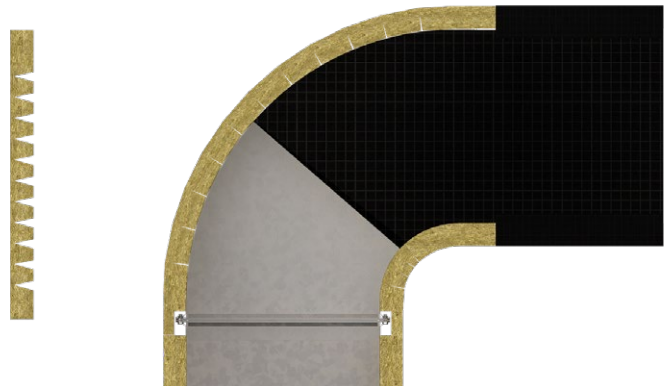


Figure 12b

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.

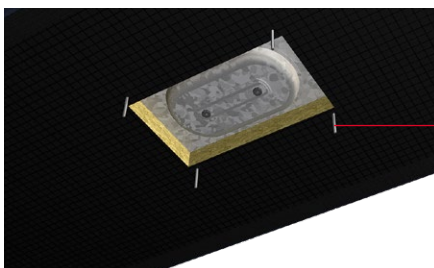


Figure 13a

4 x M8 threaded rods secured to both sides of the duct.

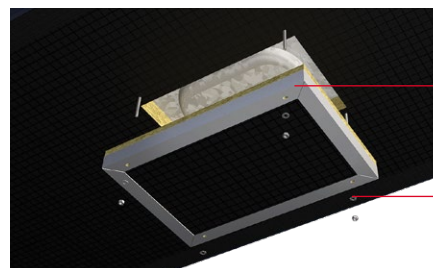


Figure 13b

Steel frame for housing the removable insulated cover.

Removable cover secured to the threaded rods with M8 nuts and washers.

Ancillaries

- 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/mm ²	15 N/mm ²	150mm
EI 60	9 N/mm ²	15 N/mm ²	150mm
EI 90	6 N/mm ²	10 N/mm ²	150mm
EI 120	6 N/mm ²	10 N/mm ²	150mm
EI 120 (Smoke Extract)	6 N/mm ²	10 N/mm ²	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

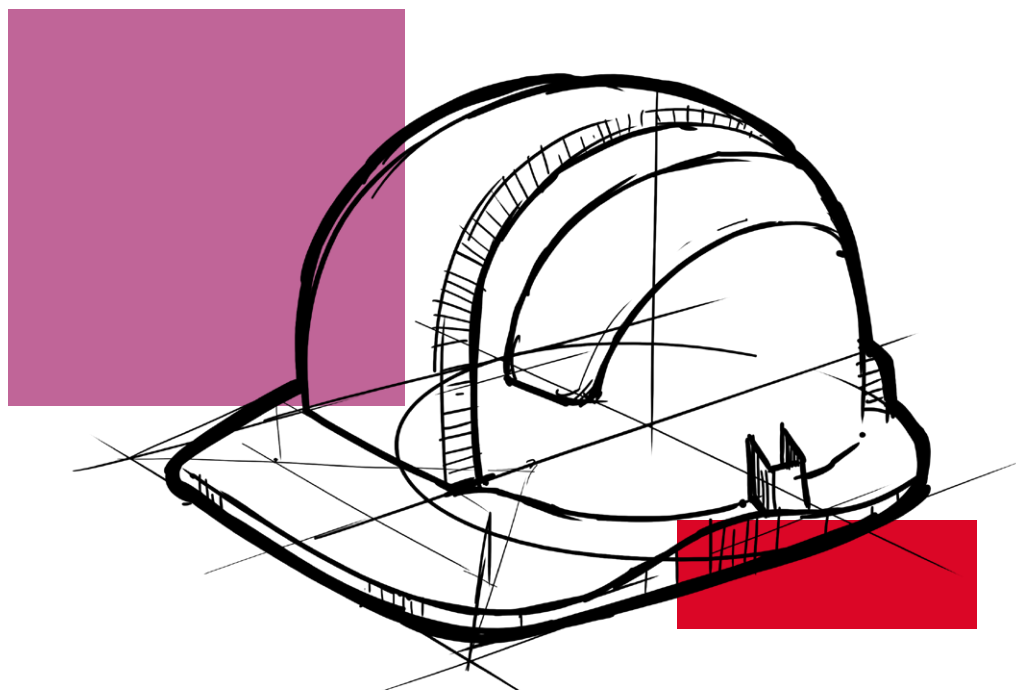
- 340: Mineral fibre slab insulation

Disclaimers

This product should only be utilised for applications as outlined in the relevant ROCKWOOL product datasheet and in accordance with the relevant ROCKWOOL Fire Resistance Testing. Additionally the product must be installed in accordance with the current ROCKWOOL guidelines. For further information please visit www.rockwool.co.uk or contact our Technical Solutions Team on 01656 868490.

Supporting Information

For further information relating to any aspect of the FirePro range, please refer to the applicable ROCKWOOL standard details at www.rockwool.co.uk or contact the ROCKWOOL technical solution team on 01656 868490 or technical.solutions@rockwool.co.uk.



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.

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Notes

Notes

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May 2018

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