

## Rockwool Flexi

Unique flexi-edged slab for framed constructions

Rockwool 'Flexi' is a unique insulation product with a patented flexible edge along one side.

This unique edge has been developed to ensure a perfect fit is maintained between the product and its supporting framework, ensuring the insulation's integrity.

Flexi is designed for use between floor joists, timber or metal studs, set at standard 600 & 400 mm centres. The 'flexi' edge allows the product to be tightly fitted between timber or metal frames, without cutting and without buckling or rounding of the product.

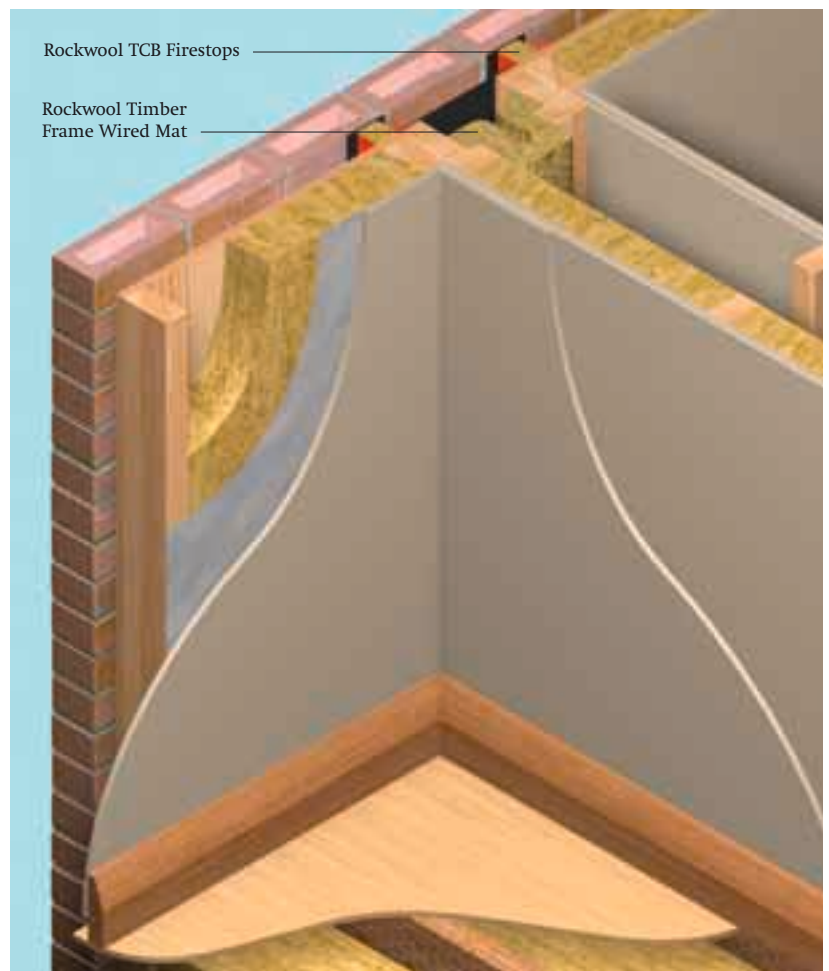


Diagram showing typical application for Rockwool Flexi and other Rockwool Firestop products

### Advantages

- unique 'flexi' edge offers accurate fit to all widths
- multi-application, fits all typical metal and timber frame spacing
- no waste
- excellent thermal, acoustic and fire properties
- easy to handle and install without gaps

# General description

Rockwool Flexi is a unique semi-rigid slab with a flexible edge along one side.

The Flexi product is now available 1200 mm long x 600 mm wide and 1200 mm long x 400 mm wide, to suit standard stud and floor joist spacings.

## Product Dimensions

Length x Width	Standard available thickness (mm)
1200 mm x 600 mm	50, 60, 75, 90, 100, 140
1200 mm x 400 mm	50, 100

The flexible long edge of the slab allows for the 600 mm wide product to be flexed into the 590 mm space between metal studs or into the 562mm space between 38 mm wide timber studs (see figs. 1 & 2).

Where studs are spaced spaced at 400 mm centres, 1200 mm x 400 mm wide Rockwool Flexi should be used.

The new 400 mm Rockwool Flexi is also the ideal product to meet the new Part E acoustic requirements for internal timber or metal floor joists spaced at 400 mm centres (see page 3). Unlike roll products, 100 mm thick x 400 mm wide Rockwool Flexi can be more easily friction fitted between the joists from below, prior to fixing the plasterboard ceiling.

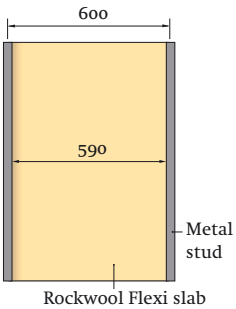


Figure 1

For standard metal 'C' stud profiles, the thickness of the flexi product should be specified as being 10 mm less than the actual stud depth, e.g 60 mm flexi should be specified for use in a standard 70 mm deep metal stud.

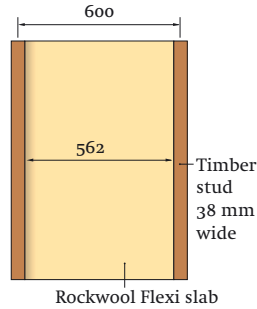


Figure 2

If 38 mm thick studs are used, 562 mm space remains.  
 If 50 mm thick studs are used, 550 mm space remains.  
 Note: if stud is not plumb, for example, 560 mm space at base and 590 mm space at top, Flexi will fit space accurately without cutting.

## Performance & properties

### Work on site

#### Handling and storage

Rockwool Flexi Slabs are light and easy to cut to any shape with a sharp knife. They are shrink wrapped in polyethylene for short term protection. For long term protection they should be stored indoors or under a waterproof covering.

### Maintenance

Once installed Rockwool Flexi needs no maintenance.

### Metal studs



Push-in 'Flexi' edge...

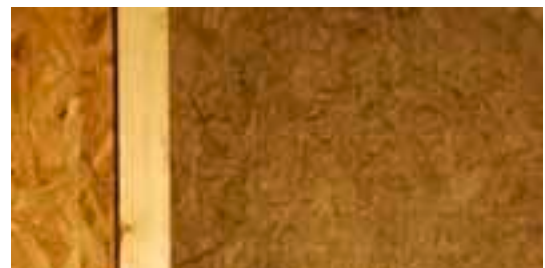


...and let go for perfect fit

### Timber studs



Push-in 'Flexi' edge...



...and let go for perfect fit

1 hr timber fire floor (see fig 3, page 4)



# Acoustic applications

## Acoustics

Rockwool Flexi works in two distinct ways to reduce noise, either by impeding the transmission of sound through an element of the structure, or by absorption of sound at the surface.

Noise absorption is expressed as a factor between 0 and 1.0. The more sound that a surface absorbs, the higher its absorption coefficient.

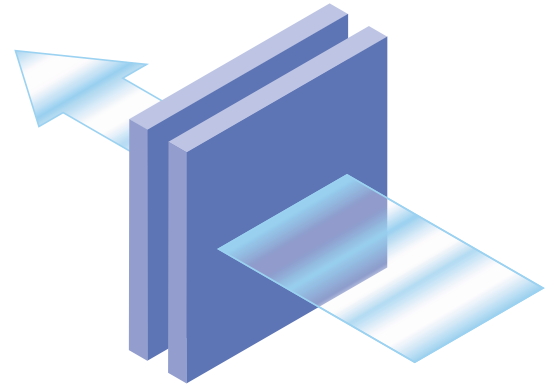
The structure of the fibres in Rockwool Flexi slabs make them ideal for use as a sound absorber, with characteristically high coefficients over a wide frequency range (see table below).

### Absorption coefficients for Rockwool Flexi

Thickness (mm)	Mounting	Frequency (Hz)					
		125	250	500	1K	2K	4K
50	Direct	0.15	0.60	0.90	0.90	0.90	0.85
100	Direct	0.35	0.95	1.00	0.92	0.90	0.85

The absorption coefficients shown above are typical figures that can be achieved by Rockwool Flexi. They have been obtained from a comprehensive range of measurements.

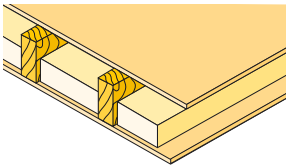
Note: Differences in coefficients of less than 0.15 are not significant.



## NEW BUILD E2 INTERNAL WALLS AND FLOORS

The Approved Document E 2003 Edition – Resistance to the passage of sound, introduced standards for internal walls and floors in dwelling houses, flats and rooms for residential purposes. By adopting the Rockwool Flexi solutions detailed below, you can meet the required acoustic standards for internal walls and floors.

### TIMBER FLOOR CONSTRUCTION NBS Plus Clause P10:240



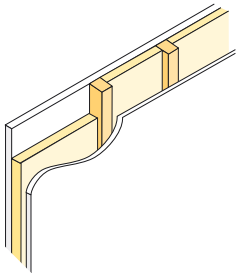
ADE Section 5, internal floor type C

**Rw 40dB**

- T & G Chipboard 18 mm.
- Timber joists @ 400 mm (min) centres.
- Rockwool Flexi slab (min) 100 mm thick x 400 mm wide.
- Single layer standard 12.5 mm plasterboard (min. 8.5 Kg/m<sup>2</sup>).

BRE test L03-258, July 2003

### TIMBER STUD WALL CONSTRUCTION NBS Plus Clause P10:230



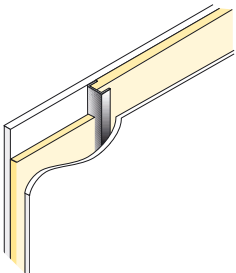
ADE Section 5, internal wall type B

**Rw 40dB**

- Nominal 38 mm x 75 mm studs @ 600 mm centres.
- Rockwool Flexi Slab 50 mm thick x 600 mm wide.
- Single layer plasterboard (11 Kg/m<sup>2</sup>) both sides. (eg. 12.5 mm dBcheck wallboard)

Report ref: PT63112S RQ

### METAL STUD WALL CONSTRUCTION NBS Plus Clauses K10:115, K10:125



ADE Section 5, internal wall type B

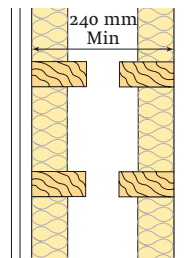
**Rw 41dB**

- Minimum 60 mm lightweight metal studs @ 600 mm centres.
- Rockwool Flexi Slab 50 mm thick x 600 mm wide.
- Single layer plasterboard (8 Kg/m<sup>2</sup>) both sides. (eg. 12.5 mm standard wallboard)

BRE test L03-185

## NEW BUILD E1 SEPARATING PARTY WALLS

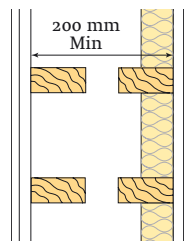
### TIMBER FRAME SEPARATING WALL CONSTRUCTIONS NBS Plus Clause P10:230



#### Construction 1\*

**Robust Detail: Twin timber frame walls E-WT-1 and E-WT-2. Average D<sub>nT,w</sub> + C<sub>tr</sub> 50 dB**

- Linings to be 240 mm apart.
- Each lining to consist of 2 layers plasterboard (overall 22 Kg/m<sup>2</sup>) both sides.
- 60 mm (min) Rockwool Flexi Slab placed between each frame.



#### Construction 2\*

ADE Section 2: Wall type 4: Framed walls with absorbent material

Min D<sub>nT,w</sub> + C<sub>tr</sub> 45 dB

**Pre-completion site testing required**

- Linings to be 200 mm (min) apart.
- Each lining to consist of 2 layers plasterboard. Each layer to have min. mass 10 Kg/m<sup>2</sup>.
- One layer 50 mm (min) Rockwool Flexi Slab.

\* Both these constructions may also be used with cavity sheathing boards

# Fire applications

## Standards and approvals

Rockwool Flexi conforms to BS EN 13162:2001 'Specification for factory-made mineral wool products'.

Rockwool Flexi can also be used to firestop small voids, in particular the gap between the top of separating walls and roof structures (see fig 6).

### Fire classification

Rockwool Flexi offers a significant contribution towards improved fire safety. Under the new European Classification for Construction Products, Rockwool Flexi achieves a reaction to fire classification of A1 as defined in BS EN 13501-1.

If exposed to fire, Rockwool products will not release dense smoke and will withstand temperatures in excess of 1000°C.

The Loss Prevention Council's advice to Insurers is to regard Rockwool insulation as being non-combustible.

## Fire protection constructions

### Floors

#### NBS Plus Clause P10:250

Based on a test to BS 476: Part 8: 1972, 100 mm thick x 400 mm wide Rockwool Flexi laid between joists and supported by galvanised wire mesh, in a loadbearing timber floor will provide 1 hour fire protection, (see Figure 3).

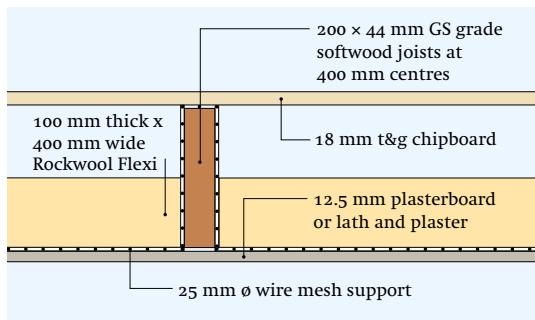


Figure 3 One hour fire resisting floor

### Lightweight domestic timber stud partition

#### NBS Plus Clause P10:230 (see Figure 4)

**Fire resistance:** 30 minutes

**Rw 40dB**

Studs: 38 x 75 timber studs @ 600 mm centres

Facings: 12.5 mm Lafarge dBcheck wallboard both sides

Insulation: 50 x 600 mm wide Flexi

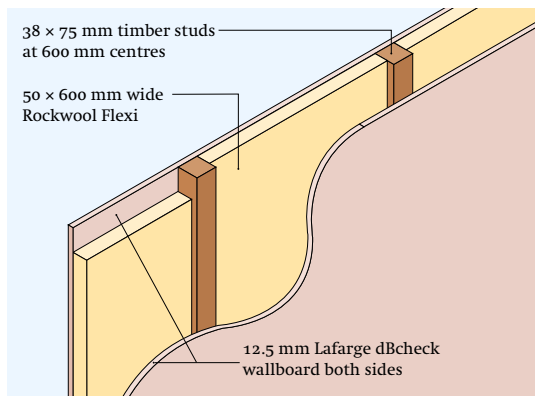


Figure 4

### Typical office partition adjacent to factory

#### NBS Plus Clause P10:230 (see Figure 5)

**Fire resistance:** 60 minutes

**Rw 46dB**

Studs: 38 x 75 timber studs @ 600 mm centres

Facings: Two layers of 12.5 mm Lafarge Standard Wallboard both sides

Insulation: 50 x 600 mm wide Flexi

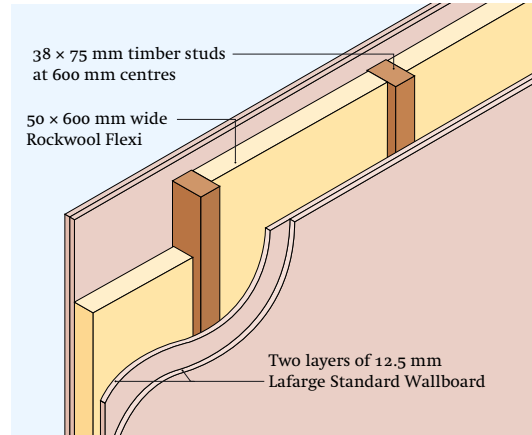


Figure 5

### Fire stops at separating walls

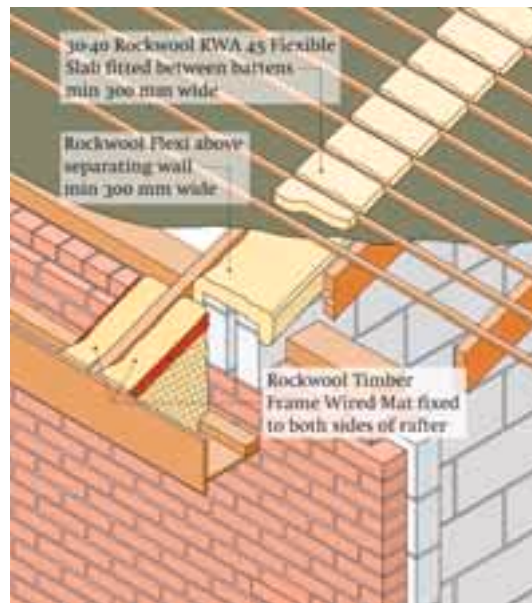


Figure 6

## Design considerations

### Fire stop locations

- 1 At junctions of separating wall and external cavity wall.
- 2 At junctions of compartment wall and compartment floor. Rockwool Timber Frame Wired Mat is supplied in a special width of 333 mm for both these applications.
- 3 At junctions between the top of separating walls and under roofing felt, Rockwool Flexi may be used, min 300 mm wide (see Figure 6). For fire stopping between tile battens and tiles, 30 or 40 mm Rockwool RWA45 slabs may be used, min 300 mm wide (select thickness only slightly greater than the depth to be filled).
- 4 Within boxed eaves at separating wall position (see Figure 6), Rockwool Timber Frame Wired Mat is used in this application.

# Thermal applications

Thermal Conductivity (K Values)

Flexi	0.038 W/mK
HP Partial Fill	0.034 W/mK

## Walls

Rockwool Flexi is designed to provide the perfect friction fit between both timber and metal framed systems. The unique flexi edge ensures that the integrity of the insulation can be maintained at the edges of the abutting framework. Shown below are some typical applications for Rockwool Flexi.

### Timber frame cavity wall

NBS Plus clause: P10:210

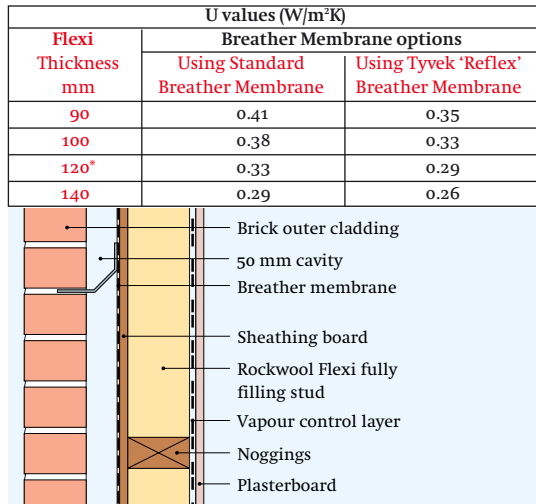


Figure 7

### Timber frame cavity wall with tile hanging

NBS Plus clause: P10:210

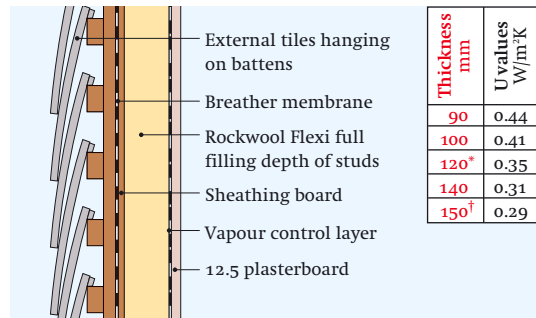


Figure 8

### Solid Wall with dry lining

NBS Plus clause: P10:210

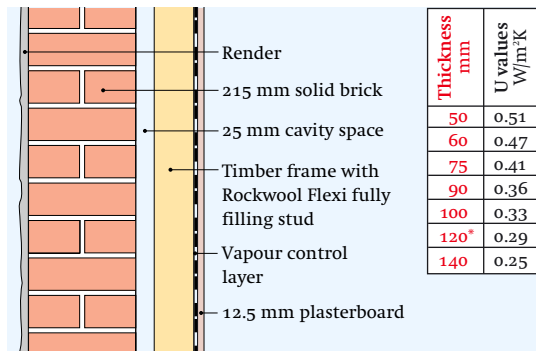


Figure 9

Note: Figure 9 uses 6.5% timber fraction in this construction. All other wall constructions shown use 15% timber fraction

\* denotes 2 x 60 mm Flexi  
 † denotes 2 x 75 mm Flexi

### HP Partial Fill slab option (warm frame solution)

To achieve higher thermal performance whilst still maintaining minimum frame size, Rockwool recommend the use of their HP Partial Fill slab in conjunction with Flexi product, (fully filling the depth of the studs).

This method of construction will not only minimise cold bridging through the timber frame, but will also improve its acoustic performance.

### Warm Timber Frame cavity wall (with Rockwool HP Partial Fill)

NBS Plus clause: P10:210

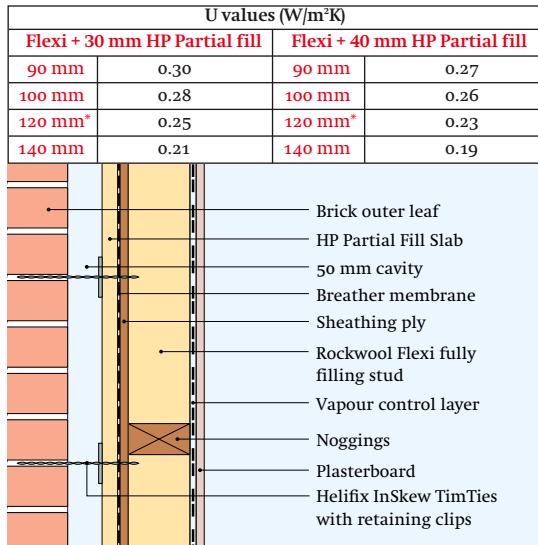


Figure 10

After erecting the timber frame, the Rockwool HP Partial Fill slab is fitted to the external surface in conjunction with the brick outer leaf. The brickwork should be tied back to the main stud framing using Helifix InSkew TimTies, which may be driven through the HP Partial Fill slabs into the underlying studs. The HP Partial Fill slabs should be closely butted and retained against the frame using plastic wall tie retaining clips.

## Floors

Rockwool Flexi insulation laid between the joists and supported by polypropylene netting. The top of the insulation should be fitted as close as possible to the underside of the timber flooring deck to avoid any air gaps.

### Suspended timber joisted floor

NBS Plus clause: P10:250

The P/A table below indicates the Flexi thickness required to achieve an elemental U value of 0.25.

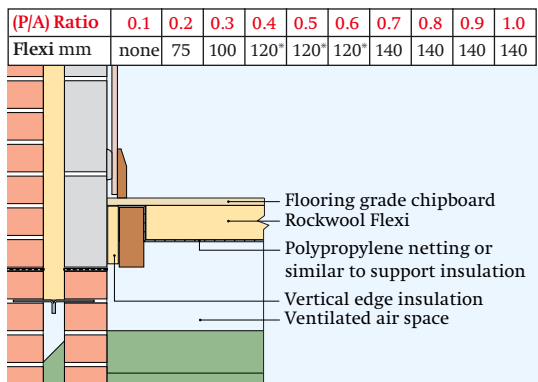


Figure 11

## Special specification clauses

### Thermal insulation

#### 1 Flexi slab

Thermal insulation to be Rockwool Flexi 600 mm wide x ..... (\*insert 50, 60, 75, 90, 100, and 140 mm thickness), width to suit stud centres of ..... (insert 400 or 600 mm), applied between studs or joists to a friction fit. All material joints shall be tightly butted.

#### 2 HP Partial Fill slab (warm timber Frame)

Thermal insulation to be Rockwool (insert HP Partial Fill slab) ..... (insert 30, 40 or 50) mm thickness, 1200 mm width applied over studs. All material joints must be tightly butt jointed.

#### 3 Dry lining using Flexi

The thermal insulation is to be Rockwool Flexi ..... \* mm thick x 600 or 400 mm wide (delete which is not required), applied between timber/metal frame. A vapour control layer is applied before fixing the plasterboard. If a plasterboard with a vapour check is used a vapour control layer may not be required. It is important that the vertical joint in the plasterboard lining should coincide with the centre line of the main frame.

### Fire protection

#### 4 One hour fire resisting floor using Rockwool Flexi

Remove floor boards and install a continuous run of 25 mm  $\phi$  chicken wire mesh across the whole floor. Form the mesh so that it follows the profile of the joists and the top face of the ceiling lining. 100 mm Rockwool Flexi to fit tightly between the joists and supported by the mesh. Lay new floor of either (a) 18 mm flooring grade t & g chipboard or (b) square edged softwood boards plus a layer of 3 mm hardboard above or below the boards.

### Acoustic insulation

#### 5 Rockwool Flexi as acoustic infill to stud partition

The acoustic infill is to be Rockwool Flexi ..... \* mm thick x 600 or 400 mm wide (delete which is not required) installed to a tight fit between the studs and cut to close fit above and below horizontal noggings as necessary.



## Environment

Rockwool insulation products are, and always have been, free from gases that are harmful to the environment, such as CFCs, HCFCs, HFCs, pentane or any gases that have Ozone Depleting Potential (ODP) or Global Warming Potential (GWP).

## Health and safety

Current HSE 'CHIP' Regulations and EU directive 97/69/EC confirm the safety of Rockwool mineral wool; Rockwool fibres are not classified as a possible human carcinogen.

The maximum exposure limit for mineral wool is  $5\text{mg}/\text{m}^3$ , 8 hour time-weighted average.

A Material Safety Data Sheet is available from the Rockwool Marketing Services Department to assist in the preparation of risk assessments, as required by the Control of Substances Hazardous to Health Regulations (COSHH).

### Ordering

Rockwool Flexi:

Please quote thickness, width and area required.

Rockwool HP Partial Fill Slabs:

Please quote thickness and area required.

Rockwool Timber Frame Wired Mat:

Please quote number of rolls or linear metres required.

### Packaging

Rockwool Flexi is supplied compression packed in a polyethylene bag.

Rockwool Limited reserves the right to alter or amend the specification of products without notice as our policy is one of constant improvement.

The information contained in this data sheet is believed to be correct at the date of publication. Whilst Rockwool will endeavour to keep its publications up to date, readers will appreciate that between publications there may be pertinent changes in the law, or other developments affecting the accuracy of the information contained in this data sheet.

The above applications do not necessarily represent an exhaustive list of applications for Flexi. Rockwool Limited does not accept responsibility for the consequences of using Flexi in applications different from those described above. Expert advice should be sought where such different applications are contemplated, or where the extent of any listed application is in doubt.



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