



**ROCKWOOL**

## Rockwool Cavity

Rockwool insulation for full cavity fill

Application type	Thermal, fire
Construction type	Cavity walls

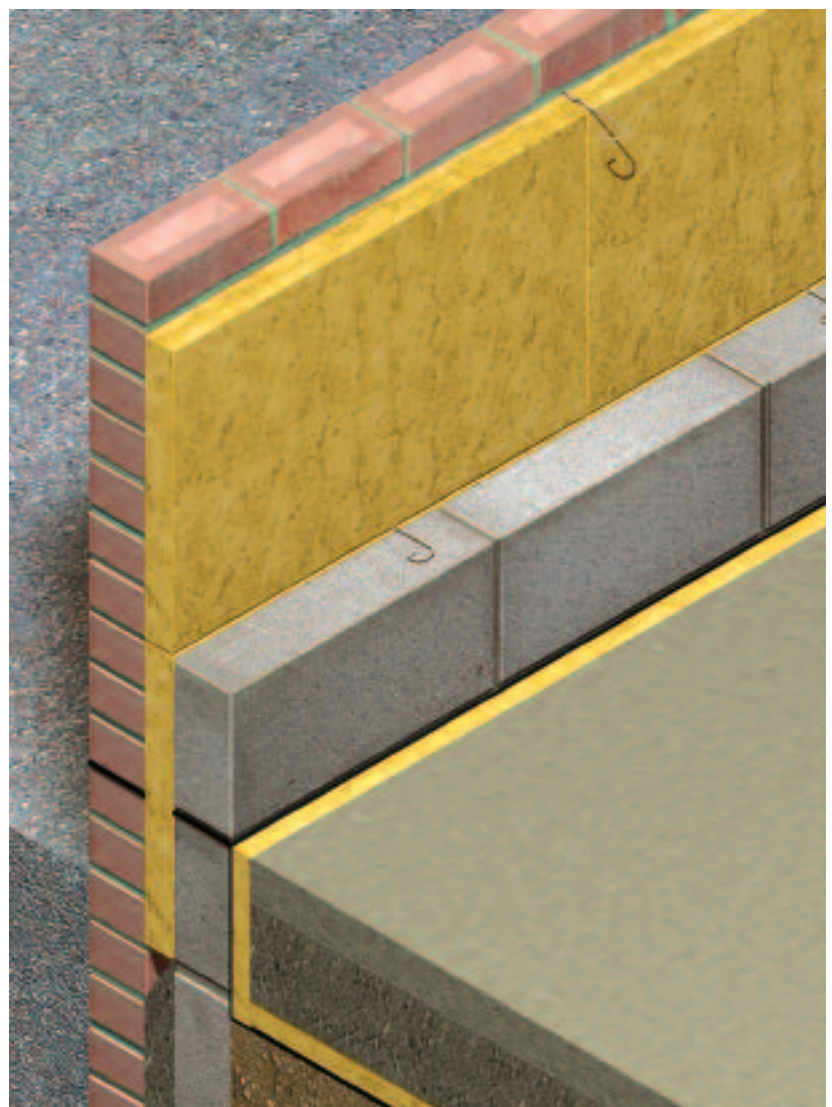
Rockwool Cavity provides a completely reliable and cost-effective method of insulating new masonry cavity walls.

The lightweight insulation batts considerably reduce heat loss without permitting water transmission from the outer to the inner leaf.

The risk of condensation is also reduced and intermittent heating systems will be more effective.

### Advantages

- Agrément certified for all exposure zones
- Act as a cavity barrier
- Water repellent
- Excellent thermal and fire insulation
- Superior fit against blockwork



Brick/block wall with second course of batts in place, showing outer leaf raised first and location of wall ties

# Construction and installation guidance

## 1 Designing the cavity wall

The use of Rockwool Cavity does not affect the choice of ties to BS 1243 (or DD140), which should be selected according to structural requirements.

The outer leaf is the first line of defence against rain. Its effectiveness will be improved if attention is paid to the following points:

- 1 The width of the cavity should be designed after consideration of the dimensional tolerances of the components which make up the wall. An extra 5 mm above the nominal batt thickness will normally be sufficient.
- 2 Select porous bricks, which in periods of brief, heavy showers will absorb the moisture. A non-absorbent brick will channel water into the mortar joints (see BS 5628: Part 3: 1985, para 21.3.2.2).
- 3 Select a lime mortar mix that does not contain detergent-type plasticisers, which reduce the water resistance of the joints.
- 4 Specify weather-struck, flush or bucket-handle joints. Recessed joints increase the risk of water penetration. Ensure all bed joints and perpend joints in the external wall are fully filled with mortar.
- 5 Cavity trays should incorporate stop ends and have weep holes at approximately 450 mm centres (max 900 mm centres).
- 6 Cavity trays should be continuous across closely spaced openings (Figure 1) and stop ends provided.
- 7 Vertical DPCs at wall openings should project at least 25 mm into the cavity. (See Rockwool Cavity Closers Data Sheet for details.)

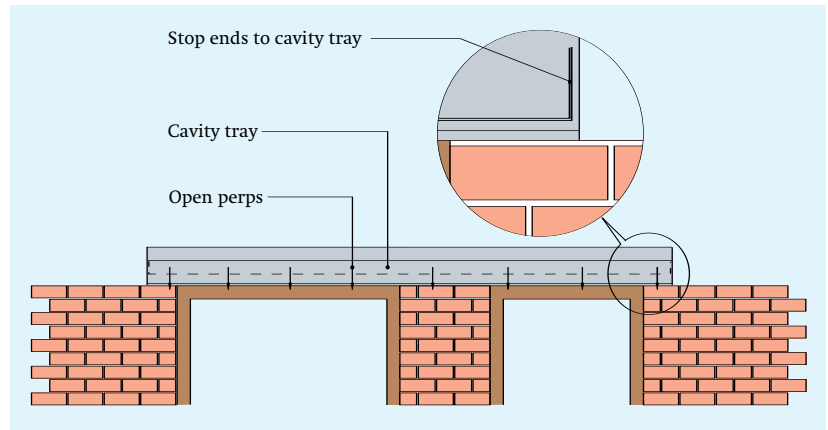


Figure 1 Cavity trays

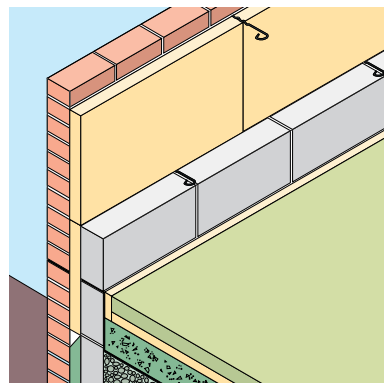


Figure 2

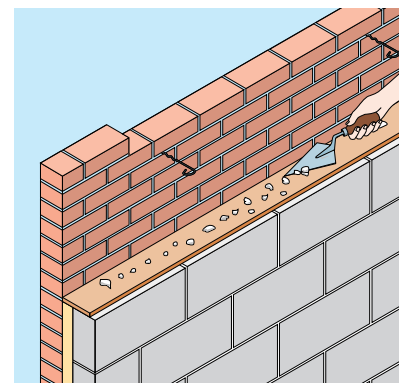


Figure 3

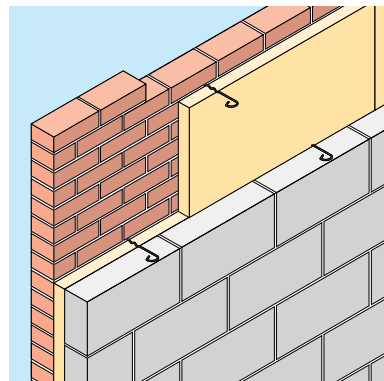


Figure 4

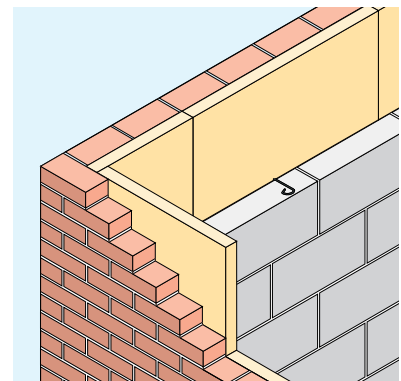


Figure 5 Batts close butted at corners

## 2 Installing Rockwool Cavity

It is the contractor's responsibility to ensure that Rockwool Cavity is fitted in accordance with the recommendations of this data sheet.

- 1 The installation of the batts should commence below the DPC (preferably by at least 150mm) with no risk of capillary action to minimise cold bridging. The bottom row of ties should be at 450 mm centres horizontally. If necessary, the width of the first course of batts can be cut to suit the height of the next row of wall ties. The width of cut batts should always be 5 mm greater than the width to be insulated, eg wall tie centres.
- 2 It is recommended that the external leaf be constructed ahead of the internal leaf so that any mortar protruding into the cavity space from the back of the external leaf can be cleaned off before installing the batts.
- 3 Build up a complete section of the leading leaf to one course above the next row of wall ties spaced at max. 900 mm horizontally (Figure 2). Ensure that all mortar joints are properly filled, particularly the perpends.
- 4 Before installation of each course of batts, excess mortar must be removed from the inside face of the leading leaf and mortar droppings cleaned from the exposed edges of the batts. This is made easier by the use of a cavity board (Figure 3). This sequence should be maintained progressively up to wallplate (or cavity tray) level. It is important that the insulation is carried to the highest level possible in either case (Figure 6).

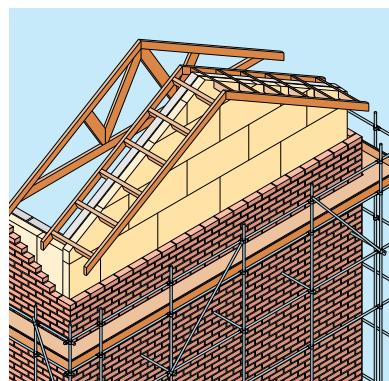


Figure 6 Installation of Batts in gable end wall

## Thermal performance and U values

- 5 Fit Rockwool Cavity by compressing between the two rows of wall ties to form a clean and tight butt jointed course (Figure 4). Wall tie drips should be located centrally in the Batts (Figure 3). Ties must be inclined downwards towards the outer leaf.
- 6 It is essential that all joints between Rockwool Cavity batts are clean and tightly butted.
- 7 Raise the second leaf to the same level as the batts.
- 8 The as-built cavity width must not exceed the following dimensions:

Nominal Batt thickness (mm)	Maximum as-built clear cavity width (mm)
65	75
80	95
90	105
100	115
110	125

- 9 Repeat this sequence to the top of the wall (see Fig 6). If not, protect the top of the batts with a cavity tray.
- 10 To prevent water penetration to the inner leaf during driving rain, it is essential that no gaps are left between the batts.
- 11 Cut the batts cleanly, using a sharp, long bladed knife and a straight edge.
- 12 Fit the batts closely around wall openings. Slit the batts neatly where additional wall ties occur. Do not impale or tear them. At corner joints, edges must be cut accurately to ensure close butting (see Fig 5).
- 13 Cut the batts accurately to fit between wall ties, if not conventionally coursed. Ensure closely butted joints by cutting the batts 5 mm larger in size than the wall-tie centres.
- 14 Avoid the build up of mortar on cavity trays.
- 15 Where make-up pieces have to be used, ensure that they are installed with the same direction of grain.
- 16 Protect the top of the cavity wall insulation at the end of the work period with a waterproof covering.
- 17 Store or cover Rockwool Cavity not in use and protect from site damage.

Rockwool Cavity has a thermal conductivity (K value) of 0.037W/mK.

### U values

Approved Document L (2006 edition) U value requirements:

Extension: 0.30W/m<sup>2</sup>k. Renovation and Repair: 0.35W/m<sup>2</sup>k.

New build ranges between: 0.28 and 0.25W/m<sup>2</sup>k to achieve 20 – 28% improvement in energy performance standard.

#### Construction 1

102 mm Facing brick outer skin, Rockwool Cavity full fill,

Internal concrete block 100 mm.

Internal finishes: (a) plaster (b) plasterboard on dabs

Block density (kg/m <sup>3</sup> ) Block type Block λ	1900-2250 Dense		1400-1450 Med/Light		750 Aircrete 7N		600 Aircrete		470 Aircrete	
	a	b	a	b	a	b	a	b	a	b
Int. finishes	U value		U value		U value		U value		U value	
Insul. thickness	U value		U value		U value		U value		U value	
65 mm	0.45	0.43	0.43	0.41	0.39	0.37	0.38	0.36	0.35	0.34
80 mm	0.38	0.37	0.37	0.35	0.34	0.32	0.33	0.32	0.31	0.30
90 mm	0.35	0.34	0.34	0.32	0.31	0.30	0.30	0.29	0.29	0.28
100 mm	0.32	0.31	0.31	0.30	0.28	0.27	0.28	0.27	0.26	0.26
110 mm	0.29	0.28	0.28	0.28	0.26	0.26	0.26	0.25	0.25	0.24
120 mm	0.27	0.26	0.27	0.26	0.25	0.24	0.24	0.24	0.23	0.23

#### Construction 2

Render, 100 mm medium dense block outer skin, Rockwool

Cavity full fill, Internal concrete block 100 mm.

Internal finishes: (a) plaster (b) plasterboard on dabs

Block density (kg/m <sup>3</sup> ) Block type Block λ	1400-1450 Med/Light		750 Aircrete 7N		600 Aircrete		470 Aircrete	
	a	b	a	b	a	b	a	b
Int. finishes	U value		U value		U value		U value	
Insul. thickness	U value		U value		U value		U value	
65 mm	0.42	0.40	0.37	0.36	0.36	0.35	0.34	0.33
80 mm	0.36	0.34	0.33	0.31	0.32	0.31	0.30	0.29
90 mm	0.33	0.32	0.30	0.29	0.29	0.28	0.28	0.27
100 mm	0.30	0.29	0.28	0.27	0.27	0.26	0.26	0.25
110 mm	0.28	0.27	0.26	0.25	0.25	0.25	0.24	0.24
120 mm	0.26	0.25	0.24	0.24	0.24	0.23	0.23	0.22

#### Construction 3

Render, 100 mm Aercrete 7N block outer skin (0.190 W/mK),

Rockwool Cavity full fill, 100mm Aercrete 7N block inner

skin. (0.190 W/mK). Internal finishes: (a) plaster (b) plasterboard

on dabs

Block density (kg/m <sup>3</sup> ) Block type Block λ	750 Aircrete 7N	
	a	b
Int. finishes	U value	
Insul. thickness	U value	
65 mm	0.34	0.33
80 mm	0.30	0.29
90 mm	0.28	0.27
100 mm	0.26	0.25
110 mm	0.24	0.23
120 mm	0.23	0.22

# Description, performance and properties

## Description

### Dimensions

Rockwool Cavity is 1200 mm long and 455 mm wide. Standard thicknesses are 50, 65, 80, 90, 100, 110 and 120 mm.

The product width shown above is suitable for wall ties placed at 450 mm vertical spacing.

## Standards and approvals

Rockwool Cavity has been examined by the British Board of Agrément and granted BBA Certificate 94/3079 for use in all exposure zones for buildings up to 12 m in height and for buildings over 12 m and up to 25 m in height in zones where the exposure factor does not exceed 120.

To comply with the requirements of the Agrément Certificate, and to ensure trouble free performance, the masonry walls must be built in accordance with BS 5628: Part 3: 1985 and the workmanship on site must comply with BS 8000: Part 3: 1989.

### Building Regulations

In the opinion of the British Board of Agrément, Rockwool Cavity will satisfy the following requirements of the 2000 Building Regulations:

#### Approved Doc 'B'

##### B3 Section 10:

Resistance to fire spread between and within cavities.

Rockwool Cavity is non-combustible and therefore may be used in buildings of every purpose group. They may also be considered as a cavity barrier when tightly fitted between masonry leaves where an insulated wall connects with the cavity of a wall without cavity insulation.

#### Approved Doc 'C' (2004 edition)

##### C2:

Resistance to moisture. Rockwool Cavity does not absorb water by capillary action and may therefore be used in situations where they bridge the DPC.

Para 5.13 allows Rockwool Cavity to fully fill the cavity of masonry walls (brick, block or dressed stone).

For buildings from 12 m – 25 m high the agreement certificate imposes additional requirements.

Note: Rockwool Cavity may be used above the BBA certified height, subject to an assessment waiver by the BBA of the building in question.

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

## Performance and Properties

### Fire Classification

Rockwool Cavity achieves a reaction to fire classification of A1 as defined in EN 13501-1.

### Thermal performance

Rockwool Cavity has a thermal conductivity (K value) of 0.037W/mK.

### Water resistance

The orientation of the water repellent fibres will prevent water crossing the wall construction. Provided the batts are correctly installed and sound building techniques are applied to the cavity wall construction (see Installation Notes), any water penetrating the outer leaf will drain down the surface of the batts.

### Use in tall buildings

Agrément Certificate No. 94/3079 covers the use of Rockwool Cavity in buildings up to 12 m in height, and permits the use of Rockwool Cavity in buildings from 12 m to 25 m in height, provided the exposure factor does not exceed 120, and subject to a detailed project assessment by Rockwool Limited in association with the architect.

A written approval form is to be completed and returned to Rockwool, together with an on-site examination of the work in progress by Rockwool Limited.

Above-average site supervision is recommended during construction.

### Workability and fitability

Rockwool Cavity is extremely easy to install; cutting is simple (preferably with a long bladed knife and straight edge).

The construction of the batts, and flexibility along their length and width, allows tight 'knitted' joints to be obtained easily on site.

If a batt requires cutting, its width should always be 5 mm greater than the width to be insulated, eg wall-tie centres, ensuring a tight/closely butted installation.

### Durability

Rockwool Cavity has been proven in service for over 30 years in all types of climate and degrees of exposure. They will give effective insulation for the lifetime of the building.

## Specification clause

The full-fill cavity wall insulation is to be .....\* mm thick Rockwool Cavity, manufactured by Rockwool Limited, Pencoed, Bridgend, CF35 6NY, installed as work proceeds in accordance with the recommendations of British Board of Agrément Certificate no. 94/3079.

\* Insert thickness to correspond with the cavity width, within the tolerance limits shown in Table 1 in BS 6676: Part 2: 1986.

## 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 5mg/m<sup>3</sup>, 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).

## Environment

Rockwool insulation relies on entrapped air for its thermal properties; air is not a VOC and it does not have Global Warming Potential (GWP) or Ozone Depleting Potential (ODP).



## Technical Information

For further details visit our website at [www.rockwool.co.uk](http://www.rockwool.co.uk) or phone the Technical Hotline on 0871 222 1780

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 Rockwool Cavity. Rockwool Limited does not accept responsibility for the consequences of using Rockwool Cavity 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.

**ROCKWOOL**

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