



Application type **Thermal**

Construction type **Cavity walls**

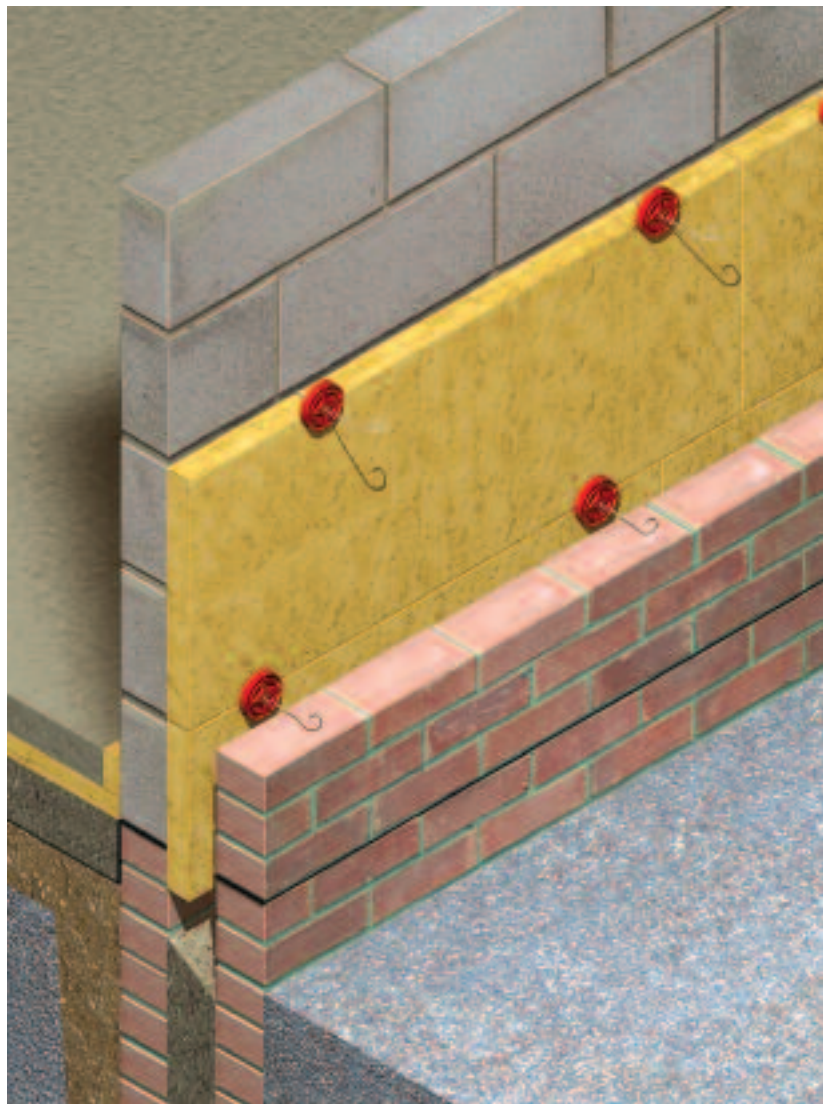
ROCKWOOL

High performance Partial Fill Cavity Slab

Rockwool HP Partial Fill Cavity Slabs comprise a robust outer surface (designed to withstand on-site rigours) engineered to a resilient inner face (designed to absorb irregularities of the inner leaf). The robust surface maintains a more clearly defined cavity whilst the resilient inner surface eliminates 'stand off' from the inner leaf, maximising thermal performance. Due to the nature of the material, the slabs will knit together when tightly butt jointed. Extraneous heat loss caused by gaps is eliminated, ensuring a thermally efficient system.

Advantages

- Robust front face resists damage
- Slabs knit together to eliminate gaps
- Maximises thermal performance
- Water repellent
- Can be used in high rise buildings



Brick/block wall with second course of slabs in place. Inner leaf continued up two courses above installed slabs.



0086-CPD-461281

The following NBS Plus clauses include
HP Partial Fill Cavity Slab: F30:12, F30:151

NBS Plus

Description, performance and properties

Description

Dimensions

Rockwool HP Partial Fill Cavity Slabs are produced in a standard size of 1200 x 455mm to suit a vertical wall-tie spacing of 450mm, and in standard thicknesses of 40, 50, 60, 70, 80, 90 and 100mm. For other thicknesses please contact Rockwool.

Standards and approvals

Rockwool Partial Fill Cavity Slabs comply with the requirements of BS EN 13162: 2001 'Thermal insulation products for buildings – Factory made mineral wool products – specification', where appropriate.

Building Regulations

Rockwool HP Partial Fill Cavity Slabs satisfy the following requirements of the Building Regulations:

Approved document C (2004 edition) Resistance to moisture

The product does not absorb water by capillary action and may therefore be used in situations where it bridges the DPC.

C2, Para 5.15 allows Rockwool HP Partial Fill Cavity Slabs to be used to partially fill masonry walls constructed from brick, block or dressed stone.

Conservation of fuel and power

Tests made in accordance with EN 12667 and EN 12939 for thermal resistance and thermal conductivity show that Partial Fill Cavity Slabs installed in a cavity wall can achieve very low U values.

Agrément certificate

Rockwool HP Partial Fill Cavity Slabs have been laboratory and site tested by the British Board of Agrément and awarded Certificate No. 93/2884.

For use in buildings up to 12m in height, the exposure zone is unrestricted provided a residual cavity width of 25mm is maintained.

Use in tall buildings

Agrément Certificate No. 93/2884 also permits the use of HP Partial Fill Cavity Slabs in buildings over 12m and up to 25m in height, provided the following conditions are achieved:

- 1 The width of the residual clear cavity must not be less than 50mm.
- 2 From ground level the maximum height of continuous cavity walls must not exceed 12m. Above 12m, the maximum height of continuous cavity wall must not exceed 7m.
- 3 The specifier must take extra care when detailing to ensure that the introduction of the insulation does not affect the weather resistance of the wall. Good site supervision is recommended during the installation of the product.
- 4 The exposure factor does not exceed 120.
- 5 Where, for structural reasons, the cavity width is reduced (eg by the intrusion of ring beams), a minimum residual cavity width of 25mm must be maintained and extra care must be taken with fixings and weatherproofing (eg inclusion of a cavity tray).

For buildings over 25m in height it is necessary to submit drawings to the BBA for assessment and approval. The design of the cavity walls should be as required for 12m to 25m in height.

Performance and properties

Condensation control

When calculating vapour diffusion through a structure, the vapour resistivity of Rockwool is negligible and is usually considered to be the same as for air (typically 5MNs/gm). HP Partial Fill Cavity Slabs therefore reduce the risk of condensation and allow natural drying out of a wall construction due to their ability to 'breathe'.

Fire classification

Rockwool HP Partial Fill Cavity Slabs achieve a reaction to fire classification of A1 as defined in BS EN 13501-1.

Workability

Rockwool HP Partial Fill Cavity Slabs are light and easy to handle. They are easily cut to shape or size with a sharp knife. Their resilience enables tight joints to be obtained easily on site.

Construction

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 or BS 5390: 1976 as appropriate, and the workmanship on site must comply with BS 8000: Part 3: 1989.

The following guidance is given in good faith but is not intended to override any such good practice recommendations. Refer also to the Agrément Certificate, available on request from Rockwool's Marketing Services Department.

Wall ties

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

Wall ties should always be inclined downwards towards the outer leaf, bedded in fresh mortar and have the drip part of the tie near the centre of the open cavity. Ties with multi drip can often be positioned centrally and part of the drip will normally be near the centre of the open section of the partially filled cavity.

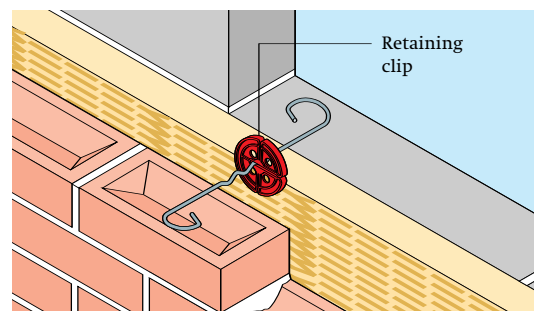


Figure 1 Wall tie between slabs with retaining clip.

Insulation retention clips

The specifier must ensure that the retaining clips used are suitable for the selected wall ties.

Tie and clip manufacturers

Ancon Clark Ltd Tel 01142 755 224

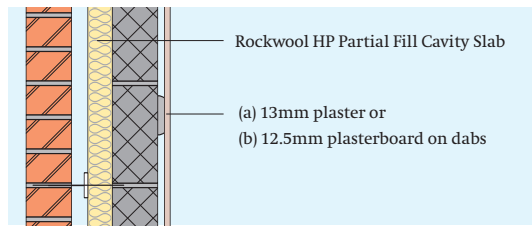
Vista Engineering Ltd Tel 01663 736 700

Caradon Catnic Ltd Tel 029 2088 5955

Thermal performance and U values

Construction 1

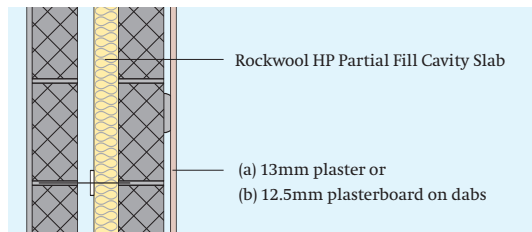
102mm Facing brick outer skin, cavity, Rockwool High Performance Partial fill, internal concrete block 100mm. Internal finishes: (a) plaster (b) plasterboard on dabs



Block density (kg/m ³)	1400–1450	750	600	470				
Block type	Med/Light	Aircrete 7N	Aircrete	Aircrete				
Block λ (W/mK)	0.510	0.190	0.160	0.110				
Internal finish	a	b	a	b	a	b	a	b
HP Partial Fill Thickness (mm)	U values W/m ² K		U values W/m ² K		U values W/m ² K		U values W/m ² K	
70	0.36	0.34	0.33	0.31	0.32	0.31	0.30	0.29
80	0.32	0.31	0.30	0.29	0.29	0.28	0.28	0.27
90	0.30	0.29	0.28	0.27	0.27	0.26	0.26	0.25

Construction 2

Render on 100mm 7N Aircrete block outer skin, cavity, Rockwool High Performance Partial fill, 100mm 7N Aircrete block inner skin. Internal finishes: (a) plaster (b) plasterboard on dabs



Block density	750 kg/m ³	
Block type	Aircrete 7N	
Block λ	0.190 W/mK	
Internal finish	a	b
HP Partial Fill Thickness (mm)	U values W/m ² K	
60	0.32	0.31
70	0.29	0.28
80	0.27	0.26
90	0.25	0.24

Designing the cavity wall

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

- The width of the cavity should be designed after consideration of the dimensional tolerances of the components which make up the wall and the width of the residual airspace.

Specify weather-struck, flush or bucket handle joints. Recessed joints increase the risk of water penetration in

high exposure zones. Ensure all bed joints and perpend joints in the external wall are fully filled with mortar.

- Vertical DPCs at wall openings should project at least 25 mm into the cavity (Fig 2).

Minimising thermal bridging at door and window openings

See Rockclose & RockReveal fire rated cavity closer data sheet.

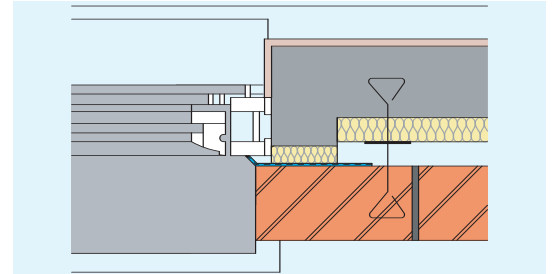


Figure 2 Plan view at jamb, showing Rockwool Rockclose with Aluminium frame in rebated 'check' reveal.

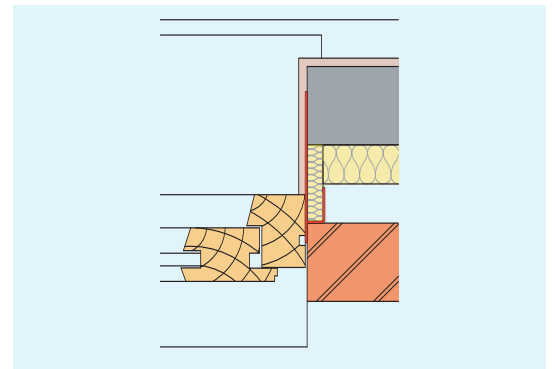


Figure 3 Plan view at jamb, showing RockReveal Cavity Closer door reveals (masonry wall).

Work on site

Construction procedure

Construct the cavity wall in accordance with conventional bricklaying practice using the recommendations of BS 5628: Part 3: 1985, BS Code of Practice for use of masonry and BS 5390: 1976 (1984): Code of Practice for stone masonry, and also bearing in mind the design considerations previously stated.

Position the first row of wall ties as near as possible to the damp proof course level. To minimise cold bridging at ground level the HP Partial Fill Cavity Slabs may be installed to extend below the damp proof course.

Build up a section of the inner leaf to one or two block courses above the next row of wall ties (this will normally entail a slight vertical compression of the slabs) and secure with retaining clip.

Note To obtain the optimum performance of the system, the slabs should be placed with the patterned side outwards.

If the vertical spacing of the first two rows of wall ties is less than the conventional 450 mm, the slab width (height) should be reduced accordingly. Build the remaining leaf to the level of the top edge of the installed HP Partial Fill Cavity Slabs, ensuring that the desired residual cavity width is achieved.

Complete successive sections of wall up to the roof line, incorporating Rockwool HP Partial Fill Cavity Slabs and fixings as the work proceeds. It is important to continue the

insulation to the highest level of the wall unless the top of the insulation and the cavity are protected by a cavity tray. The cavity tray may be omitted if the maintained cavity width is at least 50 mm.

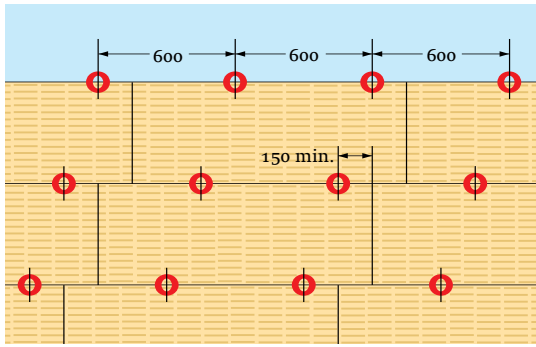


Figure 4 Wall tie and retaining clip pattern

Note This pattern of wall tie stagger ensures that no more than 450 mm of Slab overhangs a fixing. To obtain the optimum performance of the system, the slabs should be placed with the patterned side outwards as shown above.

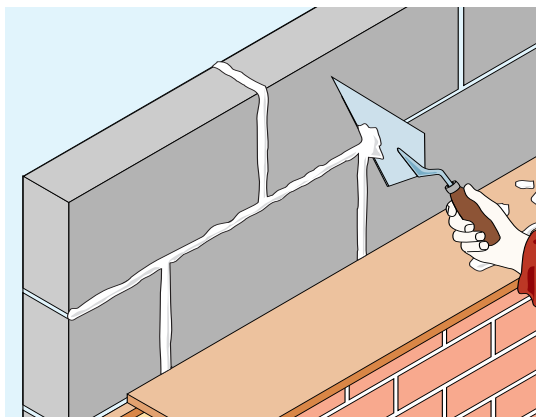


Figure 5 Use of cavity board

Important notes

Protection

- All building involving the cavity boards, particularly interrupted work, must conform to BS 5628: Part 3: 1985, Sections 4.3 'Storage on site', 4.13 'Protection against damage' and 4.14 'Supervision'.
- All areas of wall must be insulated – do not leave gaps. Ensure that the patterned side faces outwards.
- Close butt the slabs at all horizontal and vertical joints. Cut slabs carefully to fit around any protrusions into the cavity, eg. soil pipes.
- Close butt joints at corners, do not bend slabs.
- Clean off excess mortar from the cavity face of the wall before installing the slab.
- Do not allow mortar to drop on top of the slabs positioned in the cavity. Protect top of slabs with a batten during installation.
- Do not allow mortar to drop into the cavity. After each section of the inner leaf is built, excess mortar should be removed from the cavity face and mortar droppings cleaned from exposed edges of the installed board, before installation of the next run of boards. Use of a cavity board is recommended to protect board edges and make cleaning easier. Also, a cavity batten will protect the installed boards and help to keep the cavity clean as the outer leaf is built up (see Figure 5).
- Where cut slabs of less than full length are installed, a minimum of 2 clips should be provided to support the lower edge of the slab.

Handling and storage

High Performance Partial Fill Cavity Slabs are very light and easy to handle. They are supplied compression wrapped in polyethylene which will provide short term protection. For long term protection, they should be stored indoors or under waterproof covering.

Maintenance

Once installed, the Slabs need no maintenance.

Specification clause

The partial fill cavity wall insulation is to be mm* thick Rockwool High Performance Partial Fill Cavity Slabs manufactured by Rockwool Limited Bridgend, Mid Glamorgan, installed as work proceeds in accordance with the requirements of British Board of Agrément Certificate No. 93/2884.

- Size to suit wall tie spacing.
- Fix securely to inner leaf as BS 8000: Part 3: Clause 3.4.5 and in accordance with Rockwool Limited's recommendations.
- Slabs to be fixed with the robust (patterned) face outwards.

* Insert 40, 50, 60, 70, 80, 90 or 100mm, as required.

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/m³, 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 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 HP Partial Fill Cavity Slabs. Rockwool Limited does not accept responsibility for the consequences of using HP Partial Fill Cavity Slabs 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

Rockwool Limited

Pencoed. Bridgend. CF35 6NY

E info@rockwool.co.uk
www.rockwool.co.uk