

JCW Stonefloor

MULTI PURPOSE THERMAL AND ACOUSTIC UNDERFLOOR INSULATION FOR CONCRETE SCREED, SLAB AND TIMBER FLOATING FLOORS

n55Plus

Datasheet 62

The Products

JCW Stonefloor Underfloor Insulation is a high compressive strength slab which offers a cost effective insulation solution. Its dual density (high and low combined) construction provides thermal insulation properties for ground floors and acoustic insulation properties for separating floors.

It has been designed to meet the thermal insulation requirements in Part L and the acoustic requirements in Part E of the Building Regulations.

The Facts

- High compressive resistance.
- Dual density structure (high and low combined)
- Excellent acoustic and thermal performance.
- Rigid structure makes handling and fitting simple and precise.
- Reduces thermal and acoustic bridging.
- Water resistant but DPM required in high water table or to protect against rising damp.
- High compressive strength enables JCW Stonefloor Underfloor Insulation to support normal floor loadings in domestic property, offices, shops and similar areas.
- Environmentally friendly and does not contain gases that have ozone depleting (ODP) or global warming potential (GWP). Compliant with Code for Sustainable Homes.
- Manufactured from mineral wool fibres that are not classified as a possible human carcinogen.

Specification

- Standard Panel size 1200mm x 600mm x 30mm.
- Other thicknesses can be manufactured to order.
- JCW Stonefloor Underfloor Insulation complies with the requirements of BS EN 13162:2001 for factory made mineral wool products.

Fire Performance

- Rated A1 when tested to EN 1350-1 classification using data from reaction to fire test.
- JCW Stonefloor Underfloor Insulation can be used in conjunction with flexi to construct a compartment floor giving 1 hour fire resistance together with acoustic isolation.



Thermal Performance and U-values

Applications

JCW Stonefloor Underfloor Insulation can be used on most floor constructions including:

- Flooring grade t&g chipboard, OSB, plywood etc and supported on concrete slabs (ground bearing and suspended etc) or on fully boarded timber joisted floors.
- Screeds laid in accordance with BS 8204:Part 1 and supported on levelled concrete slabs, plank, beam and block floors etc.
- Concrete ground bearing slabs over DPM, sand and hardcore.

The dual density structure of JCW Stonefloor Underfloor Insulation means it can be laid on a slightly uneven subfloor with the lower density absorbing imperfections and the high density surface providing excellent point load resistance. It can be placed over or under the oversite slab.

If placed under slab, an upstand of JCW Stonefloor perimeter edge insulation must be placed around the perimeter.

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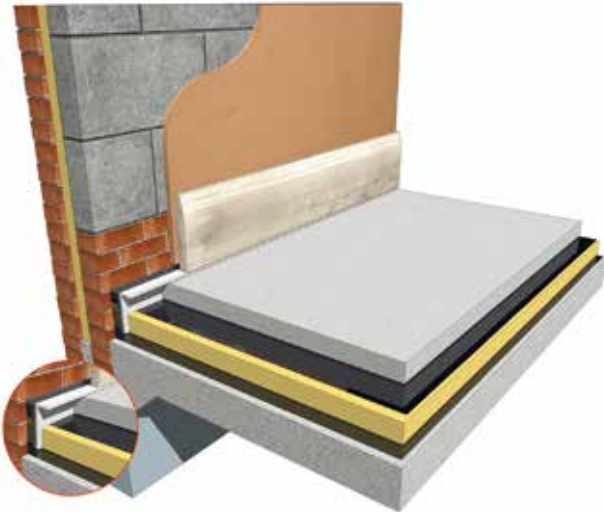
Anhydrite Screeds

40mm minimum thickness anhydrite screeds can be applied as a floating floor construction over JCW Stonefloor Underfloor Insulation, separated by a 250µm polythene membrane. This dramatically reduces installation time and offers significant floor to ceiling height advantages over traditional 65mm sand:cement screeds.

Because U-values of ground floors depend on multiple variables, quoting a specific U-value performance is impossible. However the following tables show the various insulation thicknesses required and associated U-value performance based on the perimeter to area (P/A) ratio of floor types.

Example 1: Ground Bearing Slab

JCW Stonefloor Underfloor Insulation can be installed under concrete slab or screed.



Product	JCW Stonefloor Underfloor Insulation			
U-value	0.25W/ m ² K	0.22W/ m ² K	0.20W/ m ² K	0.15W/ m ² K
P/A ratio	Thickness mm	Thickness mm	Thickness mm	Thickness mm
0.1	nil	nil	nil	40
0.2	30	50	65	125
0.3	60	80	95	150
0.4	75	95	110	170
0.5	85	105	120	180
0.6	90	110	130	190
0.7	95	115	130	200
0.8	105	120	140	200
0.9	105	125	140	200
1.0	110	130	145	---

Example 2: Suspended Beam and Block

JCW Stonefloor Underfloor Insulation is laid over the dense beam and block floor below screed or t&g grade chipboard where floor heights are limited.



Product	JCW Stonefloor Underfloor Insulation			
U-value	0.25W/ m ² K	0.22W/ m ² K	0.20W/ m ² K	0.15W/ m ² K
P/A ratio	Thickness mm	Thickness mm	Thickness mm	Thickness mm
0.1	nil	30	50	125
0.2	65	80	100	170
0.3	80	100	120	180
0.4	95	115	130	190
0.5	100	120	135	200
0.6	105	125	140	200
0.7	105	130	145	200
0.8	110	130	145	---
0.9	115	130	150	---
1.0	115	135	150	---

Part L (2006 edition) U-value requirement for ground floors:

Extensions: 0.22 W/m²K

Renovations and Repairs: 0.22 W/m²K

New build requirements range between 0.20 and 0.18W/m²K to achieve a 20 – 28% improvement in energy performance standards

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Building Regulations and Acoustic Performance

Separating Floors

Approved Document: Part E of the Building Regulations 2003 (England & Wales) sets out minimum airborne acoustic performance standards for separating floors as follows:

Dwelling Houses and Flats – performance standards for separating walls, separating floors and stairs that have a separating function

New Build	Airborne Sound Insulation DnT,w + Ctr dB (minimum)	Impact Sound Insulation L'nT,w dB (maximum)
Walls	45	
Floors and Stairs	45	62
Material Change of Use		
Walls	43	
Floors and Stairs	43	64

Rooms for Residential Purposes – performance standards for separating walls, separating floors and stairs that have a separating function.

New Build	Airborne Sound Insulation DnT,w + Ctr dB (minimum)	Impact Sound Insulation L'nT,w dB (maximum)
Walls	43	
Floors and Stairs	45	62
Material Change of Use		
Walls	43	
Floors and Stairs	43	64

Section 5 Scotland

Performance Standards

Airborne Sound Insulation	Mean Value DnT,w dB (minimum)	Individual Value D'nT,w dB (minimum)
Walls	53	49
Floors and Stairs	52	48
Impact Sound Insulation	Mean Value L'nT,w dB (maximum)	Individual Value L'nT,w dB (maximum)
Floors	61	65

Separating Floor - Concrete

Pre-cast concrete plank

E-FC-1

Robust Details Platform Floor finish FFT-4

T&g flooring board on 25mm JCW Stonefloor Insulation (shown)

Screed: 40mm (min) screed nominal 80 kg/m² mass

Structural floor: 150mm (min) pre-cast concrete floor plank, minimum 300 kgs/m² mass per unit area

Ceiling finish: See Robust Detail handbook for suitable ceiling options



Separating Floor - Concrete

Steel-concrete composite

In situ concrete slab supported by profiled metal deck.

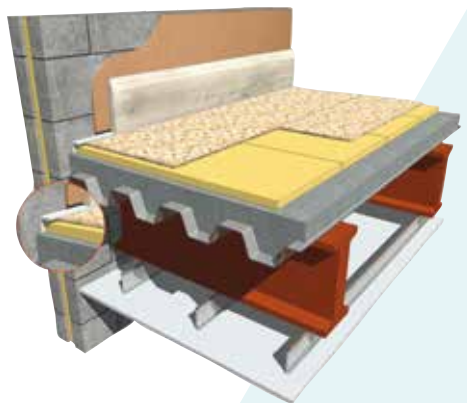
E-FS-1

Robust Details Platform Floor finish FFT-4

T&g flooring board on 30mm JCW Stonefloor Insulation (shown)

Structural floor: In situ concrete slab, minimum density 2200 kgs/m³, supported by profiled metal decking. Concrete thickness: 80mm (min) at shallowest point and 130mm (min) at deepest point

Ceiling Finish: See Robust Detail handbook for suitable ceiling options



Separating Timber Floor Upgrade

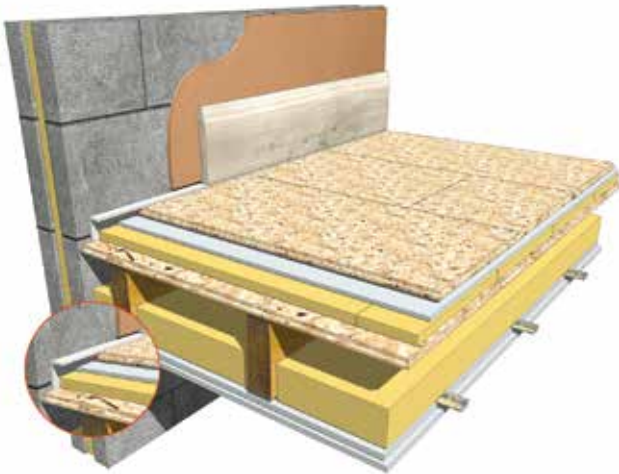
Material Change of Use: Approved Doc E Section 4

Airborne: DnT,w + Ctr 43 dB (or more)

Impact: L'nT,w 64 dB (or less)

- Floating layer: Minimum 2 layers of board material to provide minimum total mass of 25 kg/m² spot bonded together with joints and staggered (i.e. combination of 18mm t&g flooring grade chipboard & 19mm plasterboard plank).
- Floating layer is loose laid over JCW Stonefloor.
- 25mm minimum JCW Stonefloor resilient layer laid on existing floor deck on existing timber floor joists.
- Existing ceiling upgraded to 20 kg/m² mass. If existing ceiling is of lath and plaster it should be retained, provided it satisfies Part B – Fire Safety. If there is any doubt, fix an additional layer of 12.5mm plasterboard using plated screws.
- Pre-completion site testing is required under Approved Document E.

Note: Where existing ceiling is being replaced, an enhanced acoustic performance will be achieved by using resilient bars to isolate the ceiling from the floor structure.



General Installation Guidance

JCW Stonefloor Underfloor Insulation boards are laid lengthways to the longest wall in a brick bond or staggered joint pattern. The off cut at the end of the first row can then be used to start the next row and so on.

Chipboard

Starting from one corner of the room, lay the boards lengthwise, parallel to the longest wall and with a perimeter gap to all adjacent walls. The boards are laid with staggered joints, working towards the opposite corner of the room. Ensure the perimeter gap is maintained to the final boards.

Edge Detail

To allow for the expansion of the chipboard, a minimum 10mm gap should be provided around the room perimeter. Self adhesive isolation strips should be used to pack this gap. Where acoustic insulation is required, a gap of approximately 5mm should be left between the chipboard and the bottom edge of the skirting to be filled by acoustic sealant.

Thresholds

At thresholds, stair landings or where a change in floor construction occurs, the insulation should be cut back and a timber batten of the same thickness as the insulation inserted to reinforce the edge. Where acoustic insulation is required, the batten thickness should be reduced to include a 6mm thick isolation strip bonded to the batten.