

Jabfloor Premium below a Chipboard Finish

Table 1

Thickness	U-value					
	0.25 Ww/PC	0.27 Ww/PC	0.28 Ww/PC	0.30 Ww/PC	0.35 Ww/PC	0.40 Ww/PC
100	0.18	0.17	0.16	0.15	0.13	0.11
120	0.17	0.16	0.15	0.14	0.12	0.10
140	0.16	0.15	0.14	0.13	0.11	0.09
160	0.15	0.14	0.13	0.12	0.10	0.08
180	0.14	0.13	0.12	0.11	0.09	0.07
200	0.13	0.12	0.11	0.10	0.08	0.06
220	0.12	0.11	0.10	0.09	0.07	0.05
240	0.11	0.10	0.09	0.08	0.06	0.04
260	0.10	0.09	0.08	0.07	0.05	0.03
280	0.09	0.08	0.07	0.06	0.04	0.02
300	0.08	0.07	0.06	0.05	0.03	0.01

APPLICATION:

Floor insulation – below chipboard finish

Products: Jabfloor *Premium* 70 and 100

Jabfloor *Premium* insulation can be used in all floor constructions for both domestic and commercial buildings. The application will determine the grade of Jabfloor *Premium* required for your project. Jabfloor *Premium* 70 is mainly used for domestic floors, whereas Jabfloor *Premium* 100 is widely used for commercial floors where higher loadings are likely to be encountered.

Jabfloor *Premium*

Jabfloor *Premium* can be placed above a concrete slab or a pre-cast concrete floor in ground-floor constructions and finished with a wearing layer of chipboard to relevant U-value requirements.

Easy to handle

Jabfloor *Premium* is manufactured from low lambda expanded polystyrene (EPS) which is lightweight and easy to handle on site.

Permanent

Jabfloor *Premium* is rot-proof and durable and will remain effective for the life of the building. It also has the added advantage of being flood-proof.

Rapid construction

No specialised trades or equipment are required.

Versatile

Jabfloor *Premium* can be used above or below the damp-proof membrane.

Environment

Expanded polystyrene has been awarded an A+ rating by the BRE's Green Guide to Specification.

All-dry construction

The use of Jabfloor *Premium* with a chipboard finish provides an all-dry method of construction, saving up to one week in site time compared to a wet screed.

Type

Jabfloor *Premium* is supplied as EPS 70 and 100 as defined in BS EN 13163 – Reaction to Fire Class E, containing a flame retardant additive.

Approvals

Jabfloor *Premium* has been assessed and approved by the British Board of Agrément for use above the concrete slab with timber floor finishes in solid ground floors; Certificate number 87/1796.

Dimensions

Standard size: 2400 x 1200mm.

Standard thicknesses: 25, 30, 40, 50, 60, 75, 100, 120, 150 and 200mm (Other thicknesses available to order)

Fire

Solid ground floors are not required to provide fire resistance. When properly installed, the EPS insulation is fully protected by the chipboard and will have no adverse effect on the fire performance of the floor.

U-values

The rate of heat loss through a ground floor varies with its size and shape. The thickness of insulation required to meet a given U-value will similarly depend on the size and shape of the floor. Approved Documents L1A, L1B, L2A and L2B guide you to BS EN ISO 13370 as the method for determining floor U-values based on the floor perimeter and floor area where: "P" is length of exposed perimeter in metres and "A" is floor area in square metres.

The measurement of both the floor area and perimeter should be made on the internal finished surface of the walls enclosing the heated space; unheated areas such as garages, porches and storage spaces need not be included. For buildings such as terraces or blocks of flats and apartments, the measurement should be taken over the total gross ground-floor area.

Table 5.1 shows the required thicknesses of Jabfloor *Premium* 70 and 100 to meet U-values of 0.25, 0.22, 0.20, 0.18, 0.15 and 0.10W/m²K.

These values are based on the following k-values:

Jabfloor 70	0.030W/mK
Jabfloor 100	0.030W/mK

Floor insulation – below chipboard finish

Table 5.1

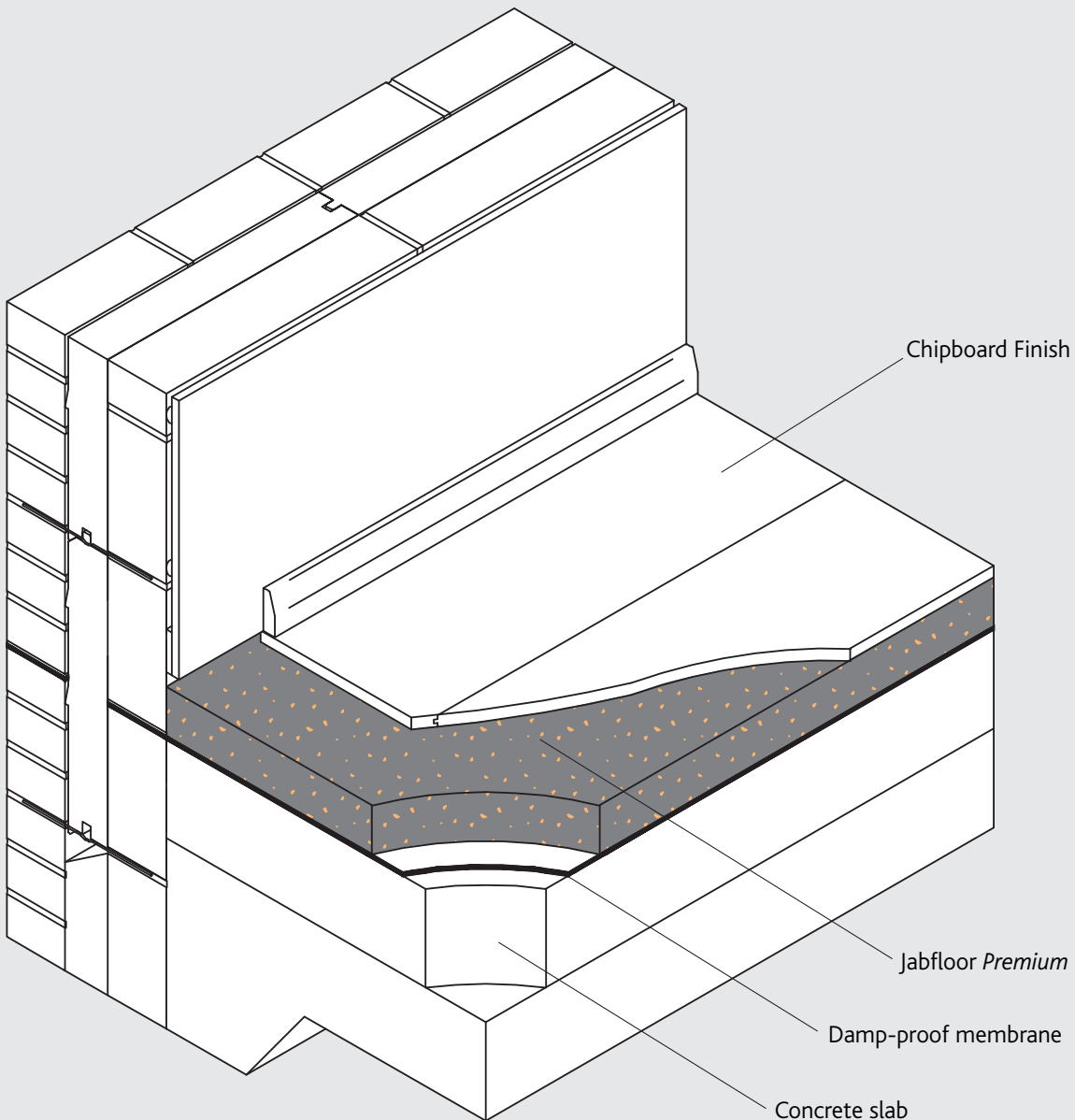
P/A Ratio	U-values					
	0.25 W/m ² K	0.22 W/m ² K	0.20 W/m ² K	0.18 W/m ² K	0.15 W/m ² K	0.10 W/m ² K
1.00	85	100	115	130	160	260
0.90	85	100	110	130	160	250
0.80	80	100	110	125	160	250
0.70	80	100	105	120	160	250
0.60	75	90	100	120	150	240
0.50	65	85	100	110	145	240
0.40	60	75	85	105	135	230
0.30	50	65	75	90	120	210
0.25	40	55	65	80	110	200
0.20	25	40	50	65	100	180
0.15	25	25	30	50	70	160

Key: Standard thickness 2 layers of Standard thickness

Standard thicknesses: 25, 30, 40, 50, 60, 75, 100, 120, 150, 200mm

APPLICATION: Floor insulation – below chipboard finish

Figure 5.1



NOTE: Damp-proof membrane can be positioned above or below Jabfloor Premium.

Floor insulation – below chipboard finish

INSTALLATION

Concrete slab

The concrete slab should have a level, evenly-tamped surface; a floated or screeded finish is not necessary. The slab should be left as long as possible after laying to allow it to dry out.

Damp-proof membrane

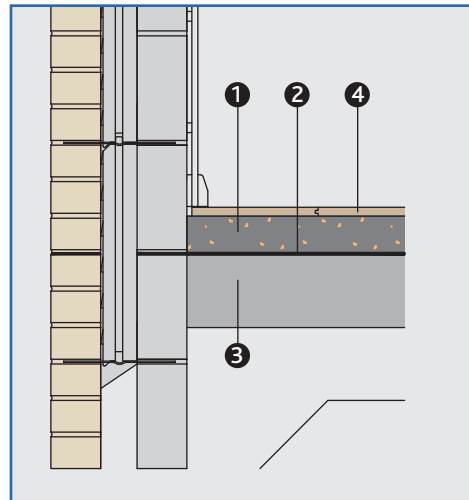
Jabfloor *Premium* should not be regarded as a damp-proof membrane (DPM), and a suitable DPM must be used to protect floors in contact with the ground. The membrane may be positioned either above or below the concrete slab; (See figures 5.2 and 5.3). Liquid membranes are positioned above the concrete slab.

If a liquid DPM is used, care should be taken that it is compatible with Jabfloor *Premium*, and that it is completely dry before the insulation is laid.

Where the DPM is positioned below the concrete slab, a vapour-control layer, of minimum 1000g polythene or equivalent, should be laid over the Jabfloor *Premium*. All edges should be overlapped a minimum 150mm and taped, and the material should be turned up 100mm at the perimeter and fixed behind the skirting.

Figure 5.2

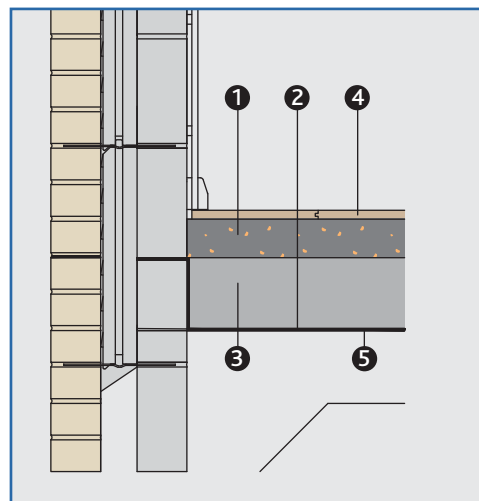
Damp-proof membrane above concrete slab



1. Jabfloor *Premium*
2. Damp-proof membrane
3. Concrete slab
4. Chipboard

Figure 5.3

Damp-proof membrane below concrete slab



1. Jabfloor *Premium*
2. Damp-proof membrane
3. Concrete slab
4. Chipboard
5. Vapour-control layer

APPLICATION: Floor insulation – below chipboard finish

Services

Providing the work is carried out in accordance with the relevant Byelaws or Regulations, electrical conduits, gas and water pipes can be accommodated within the thickness of the concrete slab.

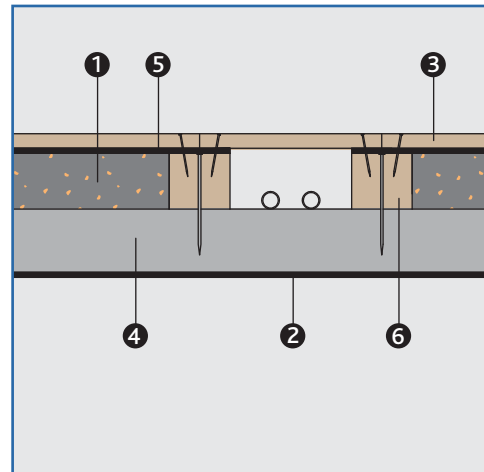
If this is not possible, it is permissible to accommodate the services within the thickness of the insulation providing the pipes etc are securely fixed to the slab. Jabfloor should not be allowed to come into direct contact with PVC-sheathed cable, nor closer than 12mm to hot-water pipes; pipes should be haunched with a sand/cement mix or lagged using a proprietary material intended for this purpose.

Where subsequent access is required to the services, a removable panel should be provided by cutting out an appropriate area of chipboard finish and supporting it on the battens. The battens should be of preservative-treated timber, securely attached to the concrete slab using masonry nails or screws and plugs, and the chipboard screwed to the batten. (See figure 5.4).

Jabfloor Premium

Jabfloor *Premium* should be loose-laid over the prepared surface; all joints should be tightly butted. The boards should be cut with a sharp knife to fit accurately around services, and taped as necessary.

Figure 5.4
Access panels



1. Jabfloor *Premium*
2. Damp-proof membrane
3. Chipboard
4. Concrete slab
5. Vapour-control layer
6. Treated timber batten

Floor insulation – below chipboard finish

Partitions etc.

Where masonry partitions or other heavy structures are to be built directly onto the chipboard floor, the insulation should be interrupted and a solid batten provided along the line of the partition, beneath the chipboard, to provide support. The batten should be of preservative-treated timber, securely attached to the concrete slab using masonry nails or screws and plugs. (See figure 5.5).

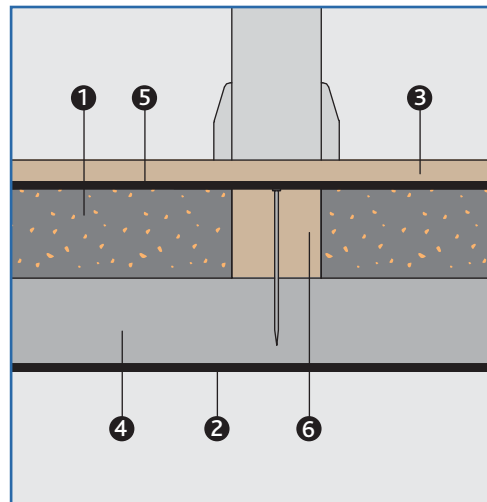
Doorways

The chipboard should be positively supported at external doorways by the use of a solid batten spanning at least the width of the door. The batten should be of preservative-treated timber, securely attached to the concrete slab using masonry nails or screws and plugs. (See figure 5.6). At internal doorways, if the tongued-and-grooved joint of the chipboard is lost, a batten should be used to provide support as described above for external doorways.

Chipboard finish

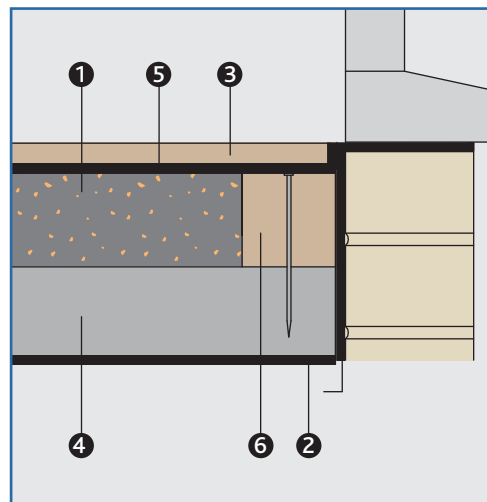
The chipboard should be Type P5 minimum 18mm-thick, with tongued-and-grooved edges, as described in BS EN 312. It is important that the recommendations given in BS EN 312 are followed regarding protection of the chipboard from water spillage in bathrooms, kitchens and utility areas. Laying should proceed from one corner of the room ensuring that a 10-12mm gap is provided at the perimeter to allow for expansion. Temporary wedges should be placed in expansion gaps during laying to allow the chipboard joints to be tightened; the wedges must be removed after the adhesive has dried.

Figure 5.5
Partitions



1. Jabfloor *Premium*
2. Damp-proof membrane
3. Chipboard
4. Concrete slab
5. Vapour-control layer
6. Treated timber batten

Figure 5.6
Doorways



1. Jabfloor *Premium*
2. Damp-proof membrane
3. Chipboard
4. Concrete slab
5. Vapour-control layer
6. Treated timber batten

The boards should be laid with staggered cross joints, and all edges should be glued as laying proceeds using a PVA-based woodworking adhesive.

In corridors, or wherever there are long uninterrupted runs of flooring, the inclusion of a 20mm expansion gap at 10m centres is required in addition to the 10-12mm perimeter gap.

A suitable solid timber batten should be installed beneath the expansion joint to provide support. The batten should be of preservative-treated timber, securely attached to the concrete slab using masonry nails or screws and plugs.

References

- BRE Report 262. Thermal insulation: avoiding risks – Third edition 2002.
- BS EN 312 – Particleboards, Specification.
- BS EN ISO 13370 Thermal performance of buildings – Heat transfer via the ground – Calculation methods.
- BS EN 13163 Thermal insulation products for buildings – Factory made products of expanded polystyrene (EPS) – Specification

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Table 2.1

R-value	U-values					
	0.25 W/m ² K	0.22 W/m ² K	0.20 W/m ² K	0.18 W/m ² K	0.15 W/m ² K	0.10 W/m ² K
0.05	0.0	0.0	0.0	0.0	0.0	0.0
0.10	0.0	0.0	0.0	0.0	0.0	0.0
0.15	0.0	0.0	0.0	0.0	0.0	0.0
0.20	0.0	0.0	0.0	0.0	0.0	0.0
0.25	0.0	0.0	0.0	0.0	0.0	0.0
0.30	0.0	0.0	0.0	0.0	0.0	0.0
0.35	0.0	0.0	0.0	0.0	0.0	0.0
0.40	0.0	0.0	0.0	0.0	0.0	0.0
0.45	0.0	0.0	0.0	0.0	0.0	0.0
0.50	0.0	0.0	0.0	0.0	0.0	0.0
0.55	0.0	0.0	0.0	0.0	0.0	0.0
0.60	0.0	0.0	0.0	0.0	0.0	0.0
0.65	0.0	0.0	0.0	0.0	0.0	0.0
0.70	0.0	0.0	0.0	0.0	0.0	0.0
0.75	0.0	0.0	0.0	0.0	0.0	0.0
0.80	0.0	0.0	0.0	0.0	0.0	0.0
0.85	0.0	0.0	0.0	0.0	0.0	0.0
0.90	0.0	0.0	0.0	0.0	0.0	0.0
0.95	0.0	0.0	0.0	0.0	0.0	0.0
1.00	0.0	0.0	0.0	0.0	0.0	0.0

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