

Domestic Floor Insulation: Suspended Timber Floors

Jabfloor 70

Jabfloor 70 can be fitted between or below the joists to provide insulation to suspended timber ground floors.

- **Low thermal transmittance**

130mm thickness of Jabfloor 70 will typically improve the U-value of a 50m² ground floor from 0.8W/m²K to 0.22W/m²K

- **Versatile**

Jabfloor 70 can be fitted either between the joists, or if there is sufficient space, can be attached below the joists.

- **Permanent**

Jabfloor 70 is rot-proof and durable and will remain effective for the life of the building.

- **Rapid construction**

No specialised trades or equipment are required.

- **Easy to handle**

Jabfloor 70 is manufactured from expanded polystyrene (EPS), and is lightweight and easy to handle.

TYPE

Jabfloor 70 is supplied as EPS 70 as defined in BS EN 13163. Flame-retardant additive material is available to order.

DIMENSIONS

Standard size,
1200 x 2400mm.

Thickness, 25, 40, 50, 60, 75, 100 and 120mm other thicknesses available to order.

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.

Table 5. Jabfloor 70 and Jablo Flooring thickness requirements for a U-value of 0.22 W/m² K. Suspended Ground Floor Applications - Timber

P/A ratio	Jabfloor U=0.22 W/m ² K (mm)	Commercial Thickness (mm)	Actual U-value (W/m ² K)
0.15	38	40	0.22
0.2	66	75	0.22
0.25	84	100	0.21
0.3	96	100	0.22
0.4	112	120	0.22
0.5	122	130	0.22
0.6	129	150	0.22
0.7	134	135	0.22
0.8	138	140	0.22
0.9	141	150	0.22
1	144	150	0.22

Typically to achieve a U-value of 0.20W/m² K add 17mm to the corresponding Jabfloor 70 thickness for the required P/A value.

Approved Documents L1A, L1B, L2A & 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.

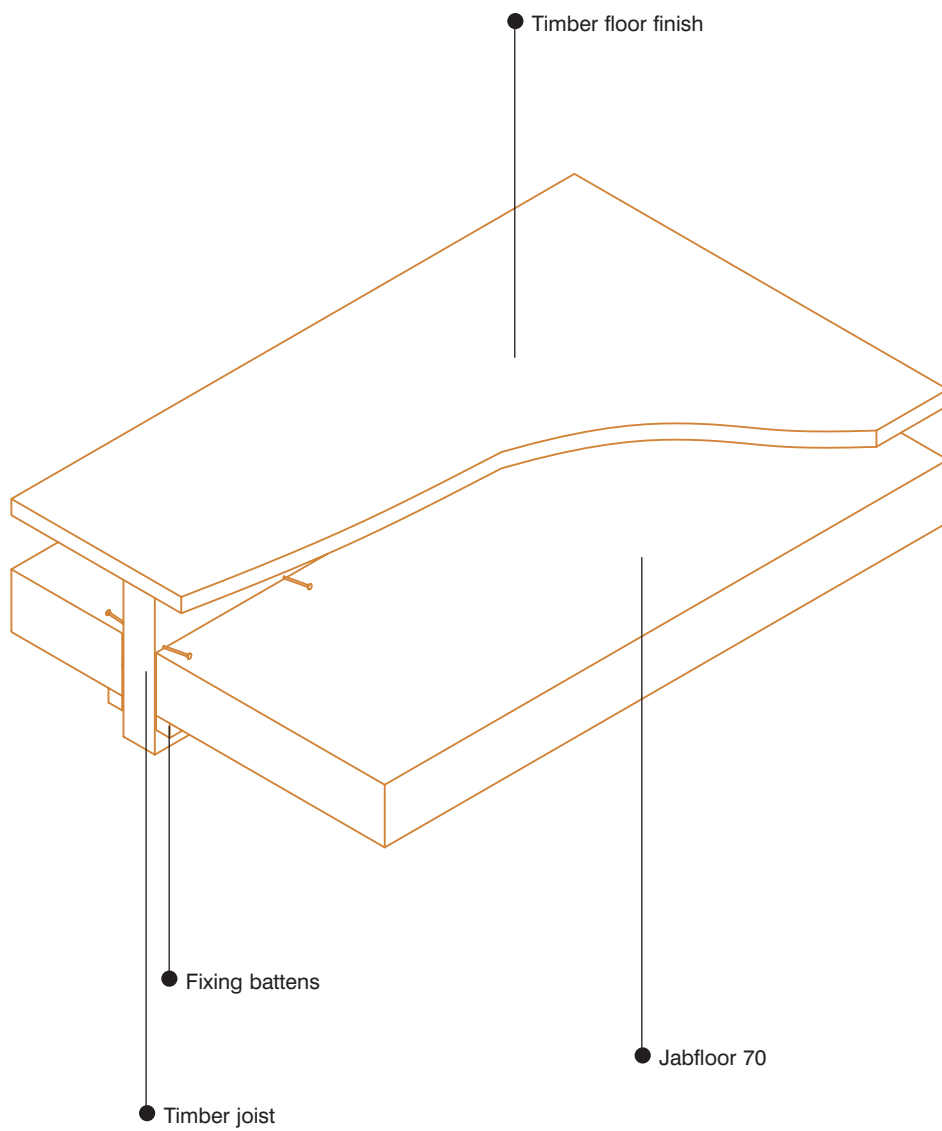
The measurement of both the floor area and perimeter should be made on the internal finished surface of the walls enclosing the heated space; unheated areas such as garages, porches and storage spaces need not be included. For buildings such as terraces or blocks of flats and apartments, the measurement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

In most cases, the actual thickness of Jablite required according to this calculation will not correspond with the nominal thicknesses available. The next thickest nominal size should be used in order to provide a performance which better the required U-value.

Table 5 shows the required thickness of Jabfloor 70 to meet a U-value of 0.22W/m²K. These values are based on a k-value (Lambda value) of 0.038W/mK for the insulation. A U-value of 0.20W/m²K can typically be achieved by adding a thickness of 17mm of Jabfloor 70 to the figure shown in Table 5 for the corresponding P/A value.

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Figure 30.



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FIRE

Suspended timber ground floors are not required to provide fire resistance. When properly installed, the EPS insulation is fully protected by the timber floor covering and will have no adverse effect on the fire performance of the floor. Euroclass E, flame-retardant additive material, is available to order.

INSTALLATION

Support

To prevent sagging, Jabfloor 70 should be adequately supported along its length. Suitable supports consisting of 25 x 25mm timber battens are nailed to the sides of the joists. The battens should be spaced to provide sufficient height to accommodate the insulation and an air gap beneath the floor covering. A 25mm air gap between the insulation and the floor covering will improve the thermal resistance of the floor.

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The boards should be cut to fit snugly between the joists and should be push-fitted into position, with the ends of adjacent boards tightly butted.

Once the boards are in place, they should be restrained by being pinned from above using 50mm galvanised-steel or Sherardized round-head nails; this will prevent the boards from being lifted in strong underfloor air currents.

REFERENCES

BRE Report 262. Thermal insulation: avoiding risks - Third edition 2002.

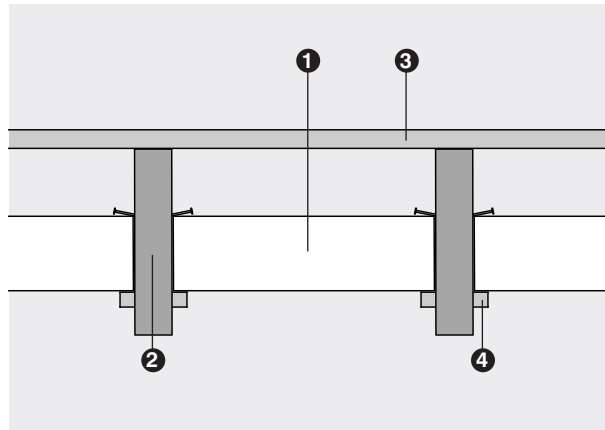
BS EN ISO 13370 Thermal performance of buildings - Heat transfer via the ground - Calculation methods.

BS EN 13163 Thermal insulation products for buildings - Factory made products of expanded polystyrene (EPS) - Specification.

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Figure 31.
Insulation beneath
suspended timber floor



1. Jabfloor 70
2. Timber joist
3. Timber floor finish
4. Fixing battens