

## Specification to eliminate or reduce thermal bridge at the junction of a timber-frame or steel-frame wall with the floor

<b>Product ref:</b>	<b>Marmox Thermoblock (Standard Type)</b>
<b>Manufacturer:</b>	<b>Marmox Ltd</b>
<b>Address:</b>	<b>Marmox UK, Caxton House, 101 Hopewell Drive, Chatham, Kent ME5 7NP. 01634 835290; Email: <a href="mailto:info@marmox.co.uk">info@marmox.co.uk</a>; <a href="http://www.marmox.co.uk/">http://www.marmox.co.uk/</a>.</b>

**Description:** Marmox Thermoblock is a load-bearing heat-insulating building block consisting of two rows of load-carrying epoxy-concrete columns of low thermal conductivity bonded to polymer concrete layers reinforced with fibreglass mesh which comprise the upper and lower surfaces. Thermally insulating Extruded Polystyrene surrounds the columns.

**Dimensions:** Length = 600mm, Thickness = 65mm (100mm upon request),  
Width = 100mm, 140mm or 215mm

**Product Use:** Reduction in the  $\psi$  value used in SAP, SBEM or DEAP calculations to enable compliance with building regulations by reducing the cold bridge at the wall to floor junction.

### Specification for Typical Positions of Thermoblock

#### **1) Under sole plate, directly on the concrete slab / foundation blocks**

One course of Marmox Thermoblock (600mm x 100mm/140mm/215mm x 65mm) on slab fixed with conventional sand/cement mortar. Blocks are sealed together with a ribbon of Marmox MSP360 on the stepped edges to provide a waterproof barrier. Sole plate fixed mechanically to the floor using bolts placed through the Thermoblock halfway across its width into the concrete below. *Prior to inserting the bolt, squirt sufficient MSP360 into the hole to waterproof it. Additionally, apply a single ribbon of Marmox MSP360 to the surface of the Thermoblock so it seals to the underside of the sole plate.*

#### **2) Under sole plate on top of masonry blocks / bricks**

*The Thermoblock layer may be laid on top of a row of bricks/blocks to raise the height and ensure that the DPM is not pierced by the fixing bolts*

Ensure that these bricks/blocks are: -

- 1) No narrower than the width of the Thermoblock
- 2) Solid design so that the mechanical fixings have something to anchor to.

Follow instructions in method 1

#### **3) Under sole plate on top of masonry blocks / bricks**

*If it is necessary to "nail fix" sole plate to a masonry unit, a course of bricks or blocks can be laid on top of the row of Thermoblocks. Note: this method slightly reduces the thermal efficiency of the junction.*

Ensure that these bricks/blocks are: -

- 1) No narrower than the width of the Thermoblock

Follow instructions in method 1

#### **4) Under concrete slab**

See separate specification document

**Properties:** Average  $\lambda$  value of 0.047W/mK (to EN13164/EN13167)  
 Mean compressive strength of 9.0N/mm<sup>2</sup> (to EN772-1)  
 Fire resistance >120minutes (to EN1365-1)  
 Water Absorption <3.5% (to EN771-4).

**Authorities:** BBA certified (10/4778)  
 ISO9001 (Bureau Veritas)  
 BRE – Certified Thermal Products Scheme, <http://www.bre.co.uk/certifiedthermalproducts/>

**Waterproofing Requirements**

With timber/steel frames, a waterproof barrier is created by sealing the edges to each other **and** also the top surface of the block to the sole plate with **Marmox MSP360**.

**Application:** 1 tube will cover approximately 15 of the 100mm wide blocks, 13 of the 140mm wide blocks or 11 of 215mm wide blocks

Joint size (mm)	6x6	9x6	12x6	25x10	7x7 fillet	10x10 fillet
linear metre/ cartridge	8.3	5.3	3.9	1.1	1.9	5.8

**Treatment:** The vertical sides of the Marmox Thermoblock must not be left visible. For typical installation, the exposed face must be completely covered with the floor screed. If installed in other areas, this internal vertical surface must be covered, for example by plaster/render.

**DPM:** When sealed together, Thermoblock creates a permanent waterproof barrier. In the UK however, a Damp Proof Membrane must be applied to the wall design as though the Thermoblock were simply another normal block in the wall. The DPM can be fixed above the layer of Thermoblock, either directly on top or on top of the next block above it using standard brick layers’ mortar. The Thermoblock can also be mortared on top of a DPM in which case, care must be taken to ensure that the hole drilled through the sole plate, Thermoblock and DPM is sealed using Marmox MSP360.

**Limitations:**

- 1) That which is on top of the Thermoblock must be flat and at least the same width as the Thermoblock.
- 2) Thermoblocks cannot be laid on top of each other.
- 3) Temperatures in excess of 80°C are not appropriate (for temperatures above 80°C, use the PIR version)
- 4) Must not be used in environments where organic solvents such as petrol may come into contact with them.
- 5) If bricks are used beneath the course of Thermoblocks (Specification #2), these must be of solid bricks, not hollow or with holes, to provide anchorage for the mechanical fixings. The following photograph shows the wrong type of bricks to be used – you cannot anchor into these because of the holes.

