marmox thermoblock
Reduce heat loss at the base of walls

Specifications at the base of Steel Frame Walls

This document contains TWO specifications using Thermoblock when used at the base steel frame walls with the following floor types

Junction Detail	Click the Hyper-link	SAP default ψ value	SBEM default ψ value	Guideline ψ values with Thermoblock
E5 Ground Floor to External Wall				
Steel Frame Wall – suspended + ground bearing slab (*insulation below slab*)	SFW1	0.32	0.36	0.12
Steel Frame Wall – suspended + ground bearing slab (*insulation below slab*)	SFW2	0.32	0.36	

The final column on the right shows the calculated ψ value in **BRE's Certified Thermal Details** using a typical BRE junction design into which Marmox Thermoblock has been incorporated.

Specification to eliminate or reduce thermal bridge at the junction of a steel frame wall with a suspended OR ground bearing slab

INSULATION BELOW SLAB

Specification:	**SFW1** *(Steel Frame Wall #1)*
Product ref:	**Marmox Thermoblock (Standard Type)**
Junction Type:	**E5**
Manufacturer:	**Marmox UK, Caxton House, 101 Hopewell Drive, Chatham, Kent ME5 7NP. 01634 835290; Email: sales@marmox.co.uk; http://www.marmox.co.uk/.**

Product Use: Elimination or reduction in cold bridging where the base of a steel frame wall is attached to a suspended concrete floor slab.
Reduction in the ψ value used in SAP/SBEM or DEAP/NEAP calculations to enable compliance with UK / Irish building regulations.

Description: Marmox Thermoblock is a load-bearing thermal break for use in walls. It comprises load-carrying epoxy-concrete columns which are bonded to the upper and lower surfaces which are polymer-concrete reinforced with fibreglass mesh. Thermally insulating Extruded Polystyrene surrounds these columns.

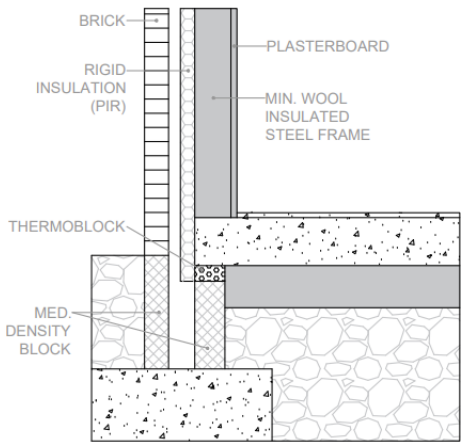
Properties: Declared λ value of 0.05W/mK (*to EN13164/EN13167*)
Mean compressive strength of 9.0N/mm^2 (*to EN772-1*)
Water Absorption <3.5% (*to EN771-4*).

Dimensions: Length = 600mm, Thickness = 65mm or 100mm, Width = 100mm, 140mm or 215mm
(*140mm high blocks can be produced and supplied for certain projects upon request*)

Specification with a suspended slab with insulation below
Thermoblocks are placed below the slab - The base track plate is not fixed directly onto the Thermoblocks.

A course of Thermoblock sits on top of the foundation blocks supporting the slab connecting the floor insulation to the cavity insulation.

Example: ground bearing slab



Example of ψ values with various wall types

Block conductivity (W/mK)	Wall U-value (W/m^{2}K)	Y value (W/mK)	Temperature factor
0.85	0.18	0.121	0.91

These ψ values are guaranteed when used as with the materials and dimensions detailed in the BRE document: 'Certified Thermal Details' For variations and other details, Marmox UK is approved to calculate specific ψ values.

It would be a similar application with a suspended slab

Specification to eliminate or reduce thermal bridge at the junction of a steel frame wall with a suspended OR ground bearing slab

INSULATION BELOW SLAB

- One course of Marmox Thermoblock (*600mm x 100mm/140mm/215mm x 65 or 100mm*) is fixed on the concrete/aircrete foundation blocks using 10 – 15mm of ordinary bricklayers' mortar. It should be positioned so that as much of the floor insulation is in contact with the Thermoblock.
- The length of Thermoblocks can be cut using a brick saw.
- At corners where a 90 degree angle is required, a flat short edge can be achieved either by cutting the block with a brick saw or cutting off the overlap which can be done using a hand saw
- To provide a continuous waterproof barrier and improve airtightness, Thermoblock are sealed together with the sealant Marmox MSP-360 by applying a couple of vertical and horizontal stripes to the stepped polystyrene edges. *Approximately 1 tube (300ml) of MSP-360 will be sufficient for 25 blocks.*
- The concrete slab sits directly on the Thermoblock and must extend over the whole width of the Thermoblock.
- The top and bottom surfaces of the Thermoblock are cement-based therefore the slab can, if necessary, be fixed to the Marmox blocks using ordinary bricklayers' mortar.

Authorities: ISO9001 + ISO14001 + European Technical Assessment 20/0744
BRE – Certified Thermal Products Scheme, *http://www.bre.co.uk/certifiedthermalproducts/*

Important notes:

1. Thermoblocks should be fully supported and not span voids.
2. The Thermoblock must be approximately the same width as the blocks they are on top of.
3. **Use one course only**. Thermoblocks should not be laid on top of each other in any load-bearing wall.
4. **The base track plate is not fixed directly onto the Thermoblocks**
5. If adhering a DPM to the vertical side of the Thermoblock (*the blue polystyrene*), do not apply a solvent-based primer to the surface. Priming the XPS is not necessary, the DPM will adhere to the XPS without being primed and some primers can make the surface powdery.

Specification to eliminate or reduce thermal bridge at the base of a steel frame wall with a suspended OR ground bearing slab

INSULATION ABOVE SLAB

Specification:	**SFW2** (*Steel Frame Wall #2*)
Product ref:	**Marmox Thermoblock (Standard Type)**
Junction Type:	**E5**
Manufacturer:	**Marmox UK, Caxton House, 101 Hopewell Drive, Chatham, Kent ME5 7NP. 01634 835290; Email: sales@marmox.co.uk; http://www.marmox.co.uk/.**

Product Use: Elimination or reduction in cold bridging where the base of a steel frame wall is attached to a suspended concrete floor slab.
Reduction in the ψ value used in SAP/SBEM or DEAP/NEAP calculations to enable compliance with UK / Irish building regulations.

Description: Marmox Thermoblock is a load-bearing thermal break for use in walls. It comprises load-carrying epoxy-concrete columns which are bonded to the upper and lower surfaces which are polymer-concrete reinforced with fibreglass mesh. Thermally insulating Extruded Polystyrene surrounds these columns.

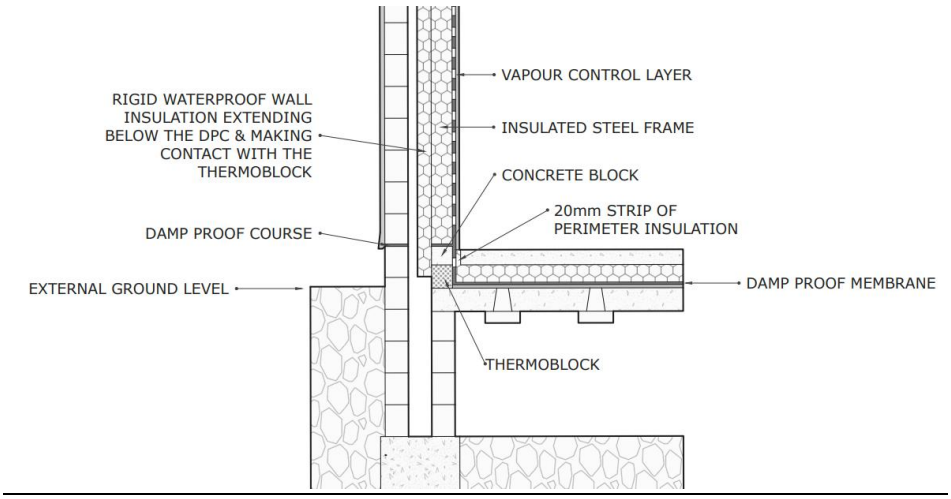
Properties: Declared λ value of 0.05W/mK (*to EN13164/EN13167*)
Mean compressive strength of 9.0N/mm^2 (*to EN772-1*)
Water Absorption <3.5% (*to EN771-4*).

Dimensions: Length = 600mm, Thickness = 65mm or 100mm, Width = 100mm, 140mm or 215mm
(*140mm high blocks can be produced and supplied for certain projects upon request*)

Specification with a suspended OR ground bearing slab with insulation above
The base of the steel frame is not placed directly on top of the Thermoblock.

Thermoblocks are used as part of the upstand.
Thermoblocks should not be placed directly below the sole plate but typically one block/brick below it as shown in the example.

An example



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Specification to eliminate or reduce thermal bridge at the base of a steel frame wall with a suspended OR ground bearing slab

INSULATION ABOVE SLAB

DPM: A separate Damp Proof Membrane should be included in the detail.
The DPM can be fixed directly above or below the Thermoblock but because Thermoblock is waterproof, typically it is fixed above the Thermoblock layer.

If adhering a DPM to the vertical side of the Thermoblock (*the blue polystyrene*), do not apply a solvent-based primer to the surface. Priming the XPS is not necessary, the DPM will adhere to the XPS without being primed and some primers can make the surface powdery.

- One course of Marmox Thermoblock (600mm x 100mm/140mm/215mm x 65 or 100mm) is mortared on the foundation blocks or bricks or concrete slab using c.10mm of bricklayers' mortar.
- It should be positioned so that as much of the floor insulation is in contact with the Thermoblock as possible.
- The concrete block on top of the Thermoblock that is level with the screed should ideally be insulated on the side opposite to the screed.
- The length of Thermoblocks can be cut using a brick saw.
- At corners where a 90 degree angle is required, a flat short edge can be achieved either by cutting the block with a brick saw or cutting off the overlap which can be done using a hand saw
- To provide a continuous waterproof barrier and improve airtightness, Thermoblock are sealed together with the sealant Marmox MSP-360 by applying a couple of vertical and horizontal stripes to the stepped polystyrene edges. *Approximately 1 tube (300ml) of MSP-360 will be sufficient for 25 blocks.*

Authorities: ISO9001 + ISO14001 + European Technical Assessment 20/0744
BRE – Certified Thermal Products Scheme, http://www.bre.co.uk/certifiedthermalproducts/

Important notes:

1. Thermoblocks should be fully supported and not span voids.
2. The Thermoblock must be approximately the same width as the blocks they are on top of, *they must not be significantly wider*.
3. **Use one course only**. Thermoblocks should not be laid on top of each other in any load-bearing wall.
4. **The base track plate is not fixed directly onto the Thermoblocks**