

Marmox Thermoblock Specifications

Click the underlined reference code below to be hyper-linked to that particular specification.

Masonry Wall Specifications

[MW1](#) - Cavity masonry wall – slab on ground (insulation above slab OR insulation below slab)

[MW2](#) - Cavity masonry wall – suspended slab (insulation below slab)

[MW3](#) - Cavity masonry wall – beam + block floor (insulation below screed)

Timber Frame Wall Specifications

[TFW1](#) - Timber Frame wall – slab on ground (insulation above slab)

[TFW2](#) - Timber Frame wall – slab on ground (insulation below slab)

[TFW3](#) - Timber Frame wall - beam + block floor (insulation below screed)

Steel Frame Wall Specifications

[SFW1](#) -Steel Frame Wall – suspended + ground bearing slab (insulation below slab)

Other Specifications

[PPT 1](#) - Parapet Wall to roof junction

[THR 1](#) - Threshold junction

[OUT 1](#) – solid walls and external masonry leaf

ψ (psi) values



Thermoblock is a BRE certified thermal product and most of the example details given in these specifications have thermally modelled by BRE who have presented the γ values and temperature factors. This can be accessed through this link: <https://tools.bregroup.com/certifiedthermalproducts/>

Specification to eliminate or reduce thermal bridge at the junction of a masonry cavity wall with a ground floor (not suspended)
INSULATION ABOVE OR BELOW SLAB

Specification: MW 1
Product ref: Marmox Thermoblock (Standard Type)
Manufacturer: Marmox Ltd
Address: 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 at the wall to floor junction.
 Reduction in the ψ value used in SAP/SBEM or DEAP/NEAP calculations to enable compliance with UK / Irish building regulations.

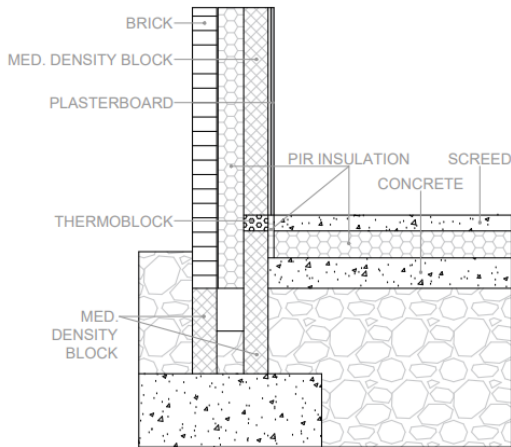
Description: Marmox Thermoblock is a load-bearing heat-insulating building block consisting of two rows of load-carrying epoxy-concrete columns of low thermal conductivity bonded to polymer concrete layers reinforced with fibreglass mesh which comprise the upper and lower surfaces. Thermally insulating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

Properties: Average λ value of 0.05W/mK (to EN13164/EN13167)
 Mean compressive strength of 9.0N/mm² (to EN772-1)
 Fire resistance >120minutes (to EN1365-1)
 Water Absorption <3.5% (to EN771-4).

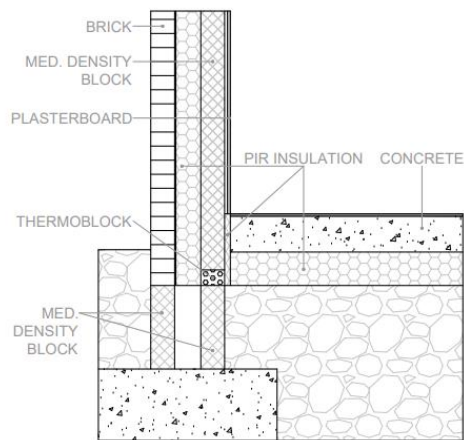
Dimensions: Length = 600mm, Thickness = 65mm or 100mm, Width = 100mm, 140mm or 215mm

Specification with a slab on the ground with either insulation below the screed or below the slab
 Thermoblock replaces one course of concrete or AAC blocks near the base of the inner leaf at the wall which ideally should connect the floor insulation to the cavity insulation.

Detail: Insulation under screed



Detail: Insulation under slab



Variations to the above examples can be used – ideally, the Thermoblock should be in a position where it connects the floor to the wall insulation when possible

**Specification to eliminate or reduce thermal bridge at the junction of a masonry cavity wall with a ground floor (not suspended)
INSULATION ABOVE OR BELOW SLAB**

A single course of Marmox Thermoblock: 600mm(l) x 100/140/215mm(w) x 65/100mm(ht) is used as the starter course of the inner leaf at a position where it connects the floor insulation to the cavity insulation.

- Thermoblock is fixed to the foundation blocks with normal bricklayers' mortar.
- 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
- Thermoblock edges are sealed together with a ribbon of Marmox MSP360 on the stepped edges to provide a waterproof barrier and improve air-tightness.
- Normal mortar is used to fix the subsequent courses of bricks/blocks on top of the Thermoblock.
- *Thermoblock is waterproof so can therefore be used either above or below the DPC.*

Authorities: BBA certified (10/4778)
ISO9001 (Bureau Veritas)
BRE – Certified Thermal Products Scheme, <http://www.bre.co.uk/certifiedthermalproducts/>
Fire Safety Report: 16781B (Warrington Fire)

Please note:

- Thermoblocks should be fully supported and not span voids.
- Thermoblocks must not overhang what they are fixed onto – they must not be wider than the base they are mortared on to.
- The blocks mortared on top of the Thermoblocks cannot be narrower. They should be approximately the same width or slightly wider.
- If using lightweight blocks, this initial layer of mortar on top of the Thermoblock layer should be at least 15mm.
- If necessary, two or even three Thermoblocks can be laid side by side to create a wide base.
- **Thermoblocks cannot be stacked** – only one single layer is permitted

Waterproofing: *Although when sealed together Thermoblock creates a permanent waterproof barrier, Thermoblock is not officially a DPM.* A separate Damp Proof Membrane should therefore 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. A permanent waterproof barrier is created by sealing the block edges to each other with a sealant: Marmox MSP360, supplied in **300ml tubes**: -

Marmox Thermoblock 100mm wide require 1 cartridge per 36 blocks

Marmox Thermoblock 140mm wide require 1 cartridge per 24 blocks

Marmox Thermoblock 215mm wide require 1 cartridge per 20 blocks

**Specification to eliminate or reduce thermal bridge at the junction of a masonry cavity wall with a suspended floor
 INSULATION BELOW SLAB**

Specification: MW 2
Product ref: Marmox Thermoblock (Standard Type)
Manufacturer: Marmox Ltd
Address: 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 at the wall to floor junction.
 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 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.

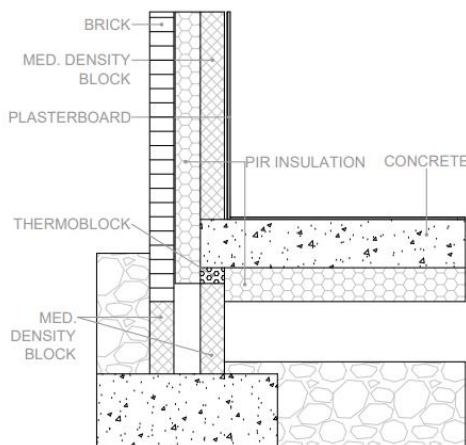
Properties: Average λ value of 0.05W/mK (to EN13164/EN13167)
 Mean compressive strength of 9.0N/mm² (to EN772-1)
 Fire resistance >120minutes (to EN1365-1)
 Water Absorption <3.5% (to EN771-4).

Dimensions: Length = 600mm, Thickness = 65mm or 100mm, Width = 100mm, 140mm or 215mm

Specification with a suspended slab with insulation below

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

Example: Insulation under suspended slab



Variations to the above examples can be used – ideally, the Thermoblock should be in a position where it connects the floor to the wall insulation when possible

Specification to eliminate or reduce thermal bridge at the junction of a masonry cavity wall with a suspended floor
INSULATION BELOW SLAB

- A single course of Marmox Thermoblock: 600mm(l) x 100/140/215mm(w) x 65/100mm(ht) is used to replace the top foundation block immediately below the suspended slab.
- Thermoblock is fixed to the blocks with normal bricklayers' mortar.
- 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
- Thermoblock edges are sealed together with a ribbon of Marmox MSP360 on the stepped edges to provide a waterproof barrier and improve air-tightness.
- Ideally, the insulation in the cavity should extend down to the level of the Thermoblock to create continuous insulation.
- Normal mortar is used to secure the floor onto top of the Thermoblock.

Authorities: BBA certified (10/4778)
ISO9001 (Bureau Veritas)
BRE – Certified Thermal Products Scheme, <http://www.bre.co.uk/certifiedthermalproducts/>
Fire Safety Report: 16781B (Warrington Fire)

Please note:

- Thermoblocks should be fully supported and not span voids.
- Thermoblocks must not overhang what they are fixed onto – they must not be wider than the base they are mortared on to.
- The blocks mortared on top of the Thermoblocks cannot be narrower. They should be approximately the same width or slightly wider.
- If using lightweight blocks, this initial layer of mortar on top of the Thermoblock layer should be at least 15mm.
- If necessary, two or even three Thermoblocks can be laid side by side to create a wide base.
- **Thermoblocks cannot be stacked** – only one single layer is permitted

Waterproofing: *Although when sealed together Thermoblock creates a permanent waterproof barrier, Thermoblock is not officially a DPM.* A separate Damp Proof Membrane should therefore 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. A permanent waterproof barrier is created by sealing the block edges to each other with a sealant: Marmox MSP360, supplied in **300ml tubes**: -

Marmox Thermoblock 100mm wide require 1 cartridge per 36 blocks
Marmox Thermoblock 140mm wide require 1 cartridge per 24 blocks
Marmox Thermoblock 215mm wide require 1 cartridge per 20 blocks

**Specification to eliminate or reduce thermal bridge at the junction of a masonry cavity wall with a beam + block floor
 INSULATION BELOW SCREED**

Specification: MW 3
Product ref: Marmox Thermoblock (Standard Type)
Manufacturer: Marmox Ltd
Address: 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 at the wall to floor junction.
 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 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.

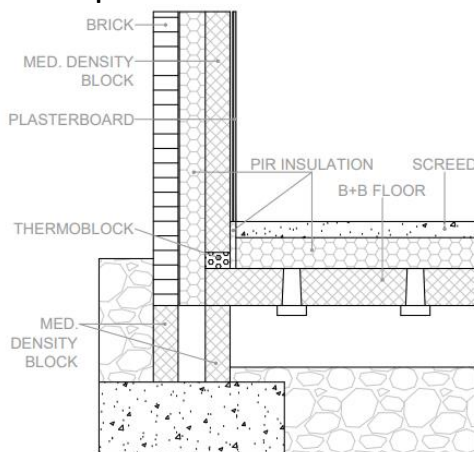
Properties: Average λ value of 0.05W/mK (to EN13164/EN13167)
 Mean compressive strength of 9.0N/mm² (to EN772-1)
 Fire resistance >120minutes (to EN1365-1)
 Water Absorption <3.5% (to EN771-4).

Dimensions: Length = 600mm, Thickness = 65mm or 100mm, Width = 100mm, 140mm or 215mm

Specification with a beam + block floor

A course of Thermoblock replaces the first course of concrete / AAC blocks directly on the B+B floor.

Example: Insulation above B + B floor



Variations to the above examples can be used – for example a course of Thermoblock can be used on top of the foundation blocks directly supporting the b+b floor.

Specification to eliminate or reduce thermal bridge at the junction of a masonry cavity wall with a beam + block floor
INSULATION BELOW SCREED

- A single course of Marmox Thermoblock: 600mm(l) x 100/140/215mm(w) x 65/100mm(ht) is mortared onto the infill b+b block that is built into the wall (it is replacing the first course of blocks of the inner leaf)
- Thermoblock is fixed to the floor with normal bricklayers' mortar.
- 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
- Thermoblock edges are sealed together with a ribbon of Marmox MSP360 on the stepped edges to provide a waterproof barrier and improve air-tightness.
- *Thermoblock is waterproof so can therefore be used either above or below the DPC.*

Authorities: BBA certified (10/4778)
ISO9001 (Bureau Veritas)
BRE – Certified Thermal Products Scheme, <http://www.bre.co.uk/certifiedthermalproducts/>
Fire Safety Report: 16781B (Warrington Fire)

Please note:

- Thermoblocks should be fully supported and not span voids.
- Thermoblocks must not overhang what they are fixed onto – they must not be wider than the base they are mortared on to.
- The blocks mortared on top of the Thermoblocks cannot be narrower. They should be approximately the same width or slightly wider.
- If using lightweight blocks, this initial layer of mortar on top of the Thermoblock layer should be at least 15mm.
- If necessary, two or even three Thermoblocks can be laid side by side to create a wide base.
- **Thermoblocks cannot be stacked** – only one single layer is permitted

Waterproofing: *Although when sealed together Thermoblock creates a permanent waterproof barrier, Thermoblock is not officially a DPM.* A separate Damp Proof Membrane should therefore 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. A permanent waterproof barrier is created by sealing the block edges to each other with a sealant: Marmox MSP360, supplied in **300ml tubes:** -

Marmox Thermoblock 100mm wide require 1 cartridge per 36 blocks
Marmox Thermoblock 140mm wide require 1 cartridge per 24 blocks
Marmox Thermoblock 215mm wide require 1 cartridge per 20 blocks

Specification to eliminate or reduce thermal bridge at the base of a solid masonry wall OR an outer leaf

Specification: OUT 1

Product ref: Marmox Thermoblock (Standard Type)
 Manufacturer: Marmox Ltd
 Address: 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/Reduction of cold bridge base of a wall exposed to the outside in contact with the ground.

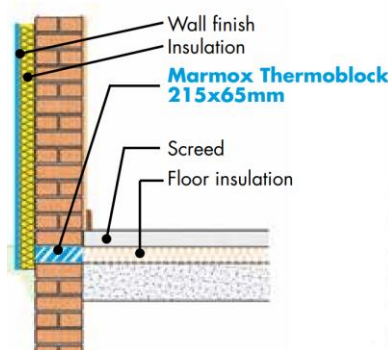
Description: Marmox Thermoblock is a load-bearing heat-insulating building block consisting of two rows of load-carrying epoxy-concrete columns of low thermal conductivity bonded to polymer concrete layers reinforced with fibreglass mesh which comprise the upper and lower surfaces. Thermally insulating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

Properties: Average λ value of 0.05W/mK (to EN13164/EN13167)
 Mean compressive strength of 9.0N/mm² (to EN772-1)
 Fire resistance >120minutes (to EN1365-1)
 Water Absorption <3.5% (to EN771-4).

Dimensions: Length = 600mm, Thickness = 65mm or 100mm, Width = 100mm, 140mm or 215mm

Thermoblock is positioned at the base of the solid wall or outer leaf of a wall at a height where it can connect with the floor insulation.
 Thermoblock does not absorb moisture, it can therefore be used above and below ground level.
 A protective cement-based layer must be applied to the exposed face.

Example Specification



- Using standard sand/cement mortar, a single course of Thermoblock is mortared onto the foundation blocks of the outer leaf or solid masonry wall in line with the floor insulation.
- It is essential that the stepped edges are sealed together using a bead of Marmox MSP-360
- If the vertical surface is to be subsequently rendered: A piece of mesh/scrim tape should be folded over the top of the Thermoblock when mortaring the blocks on top so that it falls down covering the exposed polystyrene face. Not necessary is EWI is to be subsequently placed over the vertical surface
- Lay bricks/blocks on top using a standard mortar. If using aircrete blocks or Porotherm blocks, this initial layer of mortar should be at least 15mm.
- Apply a cement-based render or cementitious boarding over the vertical face of the Thermoblock if it is exposed.

Specification to eliminate or reduce thermal bridge at the base of a solid masonry or cellular clay wall or an outer leaf

Treatment: The vertical sides of the Marmox Thermoblock must not be left exposed. *It is unaffected by moisture and weather but is susceptible to long-term UV radiation and can also be damaged by impact and gnawing rodents.*

The exposed face must be completely covered either with: -

- External insulation, continued from the rest of the wall
- A sand/cement + polymer render which keys onto the mesh/scrim tape.
- Decorative stone, ceramic tiles or brick slips fixed to the vertical polystyrene surface (+ scrim) with a sand/cement + polymer mortar (or flexible tile adhesive)

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.

Important notes:

- Thermoblocks should be fully supported and not span voids.
- The upstand of the outer leaf/solid wall must have the same footprint area as the footprint of the Thermoblock layer which is mortared onto it. The length of Thermoblocks can be cut down and they can be laid side by side to create a wider base if required.
- The footprint of the wall mortared on top of the Thermoblocks cannot be smaller than the footprint of the Thermoblock layer. *i.e. the wall above and below the layer of Thermoblocks should be the same depth and width as the each other and also be the same as the Thermoblock layer.*
- **Thermoblocks should not be stacked.** If part of a supporting wall, use only one course.
- If used on an outer leaf, it should not be in a location where the blocks may come into regular contact with petroleum or organic solvents.

Authorities: ISO9001 (Bureau Veritas)
BRE – Certified Thermal Products Scheme, <http://www.bre.co.uk/certifiedthermalproducts/>
Fire Safety Report: 16781B (Warrington Fire)

**Specification to eliminate or reduce thermal bridge at base of a Parapet Wall
 INSULATION ABOVE SLAB (WARM ROOF)**

Specification: PPT 1
Product ref: Marmox Thermoblock (Standard Type)
Manufacturer: Marmox Ltd
Address: 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 of the cold bridge of the parapet wall with the internal surfaces in the room below.
The parapet wall insulation slab is not needed when using Thermoblock
 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 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.

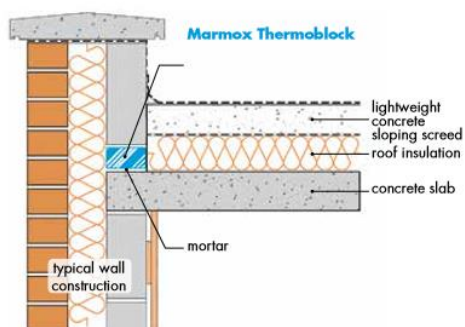
Properties: Average λ value of 0.05W/mK (to EN13164/EN13167)
 Mean compressive strength of 9.0N/mm² (to EN772-1)
 Fire resistance >120minutes (to EN1365-1)
 Water Absorption <3.5% (to EN771-4).

Dimensions: Length = 600mm, Thickness = 65mm or 100mm, Width = 100mm, 140mm or 215mm

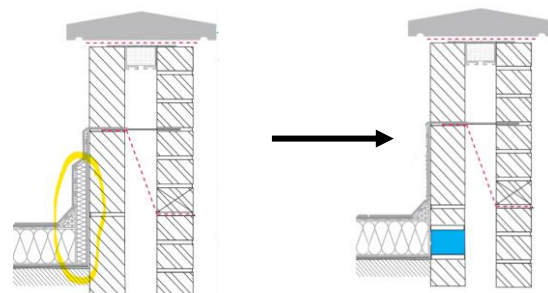
With insulation Above the Roof Slab

Thermoblock is used as the parapet wall's starter course on the roof slab. It is positioned so that it connects the insulation above the slab
 It can also be used in the location on the right as part of the extending inner leaf.

Typical Detail (parapet wall built on slab)



Detail with Thermal break in inner leaf
 showing that the upstand insulation is not needed



Specification to eliminate or reduce thermal bridge at base of a Parapet Wall INSULATION ABOVE SLAB (WARM ROOF)

A single course of Marmox Thermoblock: 600mm(l) x 100/140/215mm(w) x 65/100mm(ht) is used as the starter course of the inner leaf at a position where it connects the roof insulation to the cavity insulation if present.

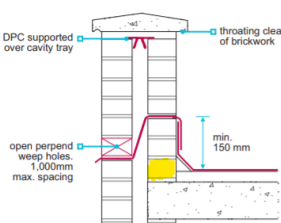
- Thermoblock is fixed to the slab with c.10mm normal bricklayers' mortar.
- The length of Thermoblocks can be cut using a brick saw.
- At corners where a 90 degree angle is required, a flat short edge can be achieved either by cutting the block with a brick saw or cutting off the overlap which can be done using a hand saw
- Thermoblock edges are sealed together with a ribbon of Marmox MSP360 on the stepped edges to provide a waterproof barrier to protect the insulation within the wall.
- Normal mortar is used to fix the subsequent courses of bricks/blocks on top of the Thermoblock.

Authorities: ISO9001 (Bureau Veritas)
 BRE – Certified Thermal Products Scheme, <http://www.bre.co.uk/certifiedthermalproducts/>
 Fire Safety Report: 16781B (Warrington Fire)

Important notes:

1. Thermoblocks should be fully supported and not span voids.
2. The width of the Thermoblocks should be approximately the same width as the blocks which are being laid on top of them.
3. **Thermoblocks cannot be stacked** – only one single layer is permitted
4. Thermoblocks must not be used when there would be potential contact with flame applied bitumen membranes. (*heat applied with a flame gun could distort the shape*)

DPM: Although when sealed together with MSP-360 a row of Thermoblocks creates a permanent waterproof barrier, a DPM is still required. This can be applied to the parapet wall design as though the Thermoblock were simply just another brick in the wall. Typically, the DPM is fixed to the brick/block one or two courses above the Thermoblock: -



However, if necessary, a DPM can be fixed directly on to the surface of a Thermoblock using standard bricklayers' mortar.

Marmox MSP360, supplied in **300ml tubes**: -

- Marmox Thermoblock 100mm wide require 1 cartridge per 36 blocks
- Marmox Thermoblock 140mm wide require 1 cartridge per 24 blocks
- Marmox Thermoblock 215mm wide require 1 cartridge per 20 blocks

**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: SFW 1
Product ref: Marmox Thermoblock (Standard Type)
Manufacturer: Marmox Ltd
Address: 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.

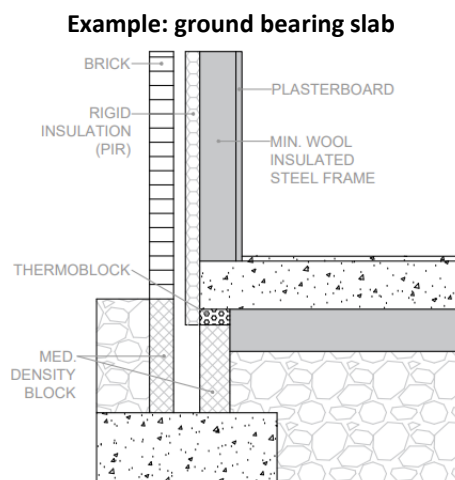
Description: Marmox Thermoblock is a load-bearing heat-insulating building block consisting of two rows of load-carrying epoxy-concrete columns of low thermal conductivity bonded to polymer concrete layers reinforced with fibreglass mesh which comprise the upper and lower surfaces. Thermally insulating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

Properties: Declared λ value of 0.05W/mK (to EN13164/EN13167)
 Mean compressive strength of 9.0N/mm² (to EN772-1)
 Fire resistance >120minutes (to EN1365-1)
 Water Absorption <3.5% (to EN771-4).

Dimensions: Length = 600mm, Thickness = 65mm or 100mm, Width = 100mm, 140mm or 215mm

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.



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
- Thermoblock edges are sealed together with a ribbon of Marmox MSP360 on the stepped edges to provide a waterproof barrier and improve air-tightness.
- 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 (Bureau Veritas)
BRE – Certified Thermal Products Scheme, <http://www.bre.co.uk/certifiedthermalproducts/>
Fire Safety Report: 16781B (Warrington Fire)

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**

Waterproofing: A permanent waterproof barrier is created by sealing the block edges to each other with a sealant, **Marmox MSP360** (300ml tubes).

- Marmox Thermoblock 100mm wide require 1 cartridge per 36 blocks
- Marmox Thermoblock 140mm wide require 1 cartridge per 24 blocks
- Marmox Thermoblock 215mm wide require 1 cartridge per 20 blocks

**Specification to eliminate or reduce thermal bridge at the junction of a
 timber frame wall with the floor (not suspended)
 INSULATION ABOVE SLAB**

Specification: TFW 1
Product ref: Marmox Thermoblock (Standard Type)
Manufacturer: Marmox Ltd
Address: 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 timber frame wall (sole plate) meets the floor.
 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 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.

Properties: Declared λ value of 0.05W/mK (to EN13164/EN13167)
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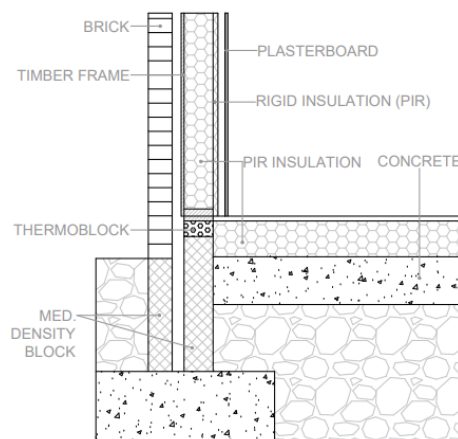
Dimensions: Length = 600mm, Thickness = 65mm or 100mm, Width = 100mm, 140mm or 215mm

Specification with a slab on the ground with insulation above the slab (under screed)

Thermoblock is mortared into position directly underneath the sole plate which is mechanically fixed through the Thermoblock into the blocks below.

(Inclusion of Thermoblock means that perimeter insulation between the slab and the foundation wall is not necessary)

Example: on a floor with insulation above



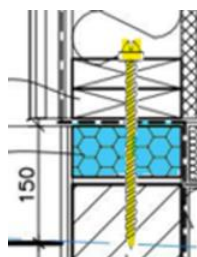
**Specification to eliminate or reduce thermal bridge at the junction of a
 timber frame wall with the floor (not suspended)
 INSULATION ABOVE SLAB**

A single course of Marmox Thermoblock: 600mm(l) x 100/140/215mm(w) x 65/100mm(ht) is used as the base onto which the sole plate sits. It should be positioned where it connects the floor insulation to the cavity insulation.

- Thermoblock is fixed to the foundation blocks with normal bricklayers' mortar.
- 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
- Thermoblock edges are sealed together with a ribbon of Marmox MSP360 on the stepped edges to provide a waterproof barrier and improve air-tightness.
- The damp proof membrane from the floor is usually lapped over the row of Thermoblock (*secured in place with a bead of sealant, Marmox MSP-360*)

The top of the Thermoblock layer should be at least 150mm above ground height. If this is not the case, concrete/AAC blocks should be used beneath the Thermoblock to raise to timber sole plate to the required level.

- If levelling is necessary to provide a flat bed for the sole plate, packing with mortar on top of the Thermoblock (or DPM) can be done. If the Thermoblock base is completely flat, a bead of sealant/adhesive Marmox MSP-360 should be applied along the length of the Thermoblock layer to seal to the sole plate.
- The sole plate is now fixed directly onto the Thermoblock using mechanical fixings or straps.
- Fixing bolts / resin anchors are placed through the sole plate and then the Thermoblock halfway across its width into the solid base underneath. These *must penetrate the concrete / foundation blocks by at least 60mm*



Screw, bolt or resin fixing (shown in yellow) penetrating through the centre of the Thermoblock (shown in blue) into the blockwork below

- To avoid penetrating the DPM or when it is not possible to place a bolt halfway across the Thermoblock's width, straps or brackets are used. These must be fixed to the masonry components directly underneath the Thermoblock, not the Thermoblock itself

Authorities: BBA certified (10/4778)
 ISO9001 (Bureau Veritas)
 BRE – Certified Thermal Products Scheme, <http://www.bre.co.uk/certifiedthermalproducts/>
 Fire Safety Report: 16781B (Warrington Fire)

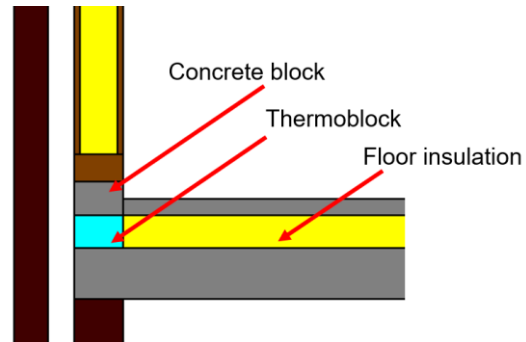
Specification to eliminate or reduce thermal bridge at the junction of a timber frame wall with the floor (not suspended)
INSULATION ABOVE SLAB

Important notes:

1. Thermoblocks should be fully supported and not span voids.
2. The sole plate on top of the Thermoblock cannot be more than 15mm narrower than the width of the Thermoblock.
3. The sole plate can be wider than the Thermoblock but should be placed centrally. If it has to be placed eccentrically then the over-sail should be no more than 20% of the width of the Thermoblock.
4. **Use one course only.** Thermoblocks should not be laid on top of each other – a 140mm height can be achieved by using a Thermoblock on top of a coursing block.

If it is necessary to 'nail fix' the sole plate, it can be fixed conventionally to a row of blocks which have been mortared on top of the row of Thermoblock.

This method may also allow the floor insulation to be continuous with the Thermoblock.



Waterproofing: *Although when sealed together Thermoblock creates a permanent waterproof barrier, Thermoblock is not classified as a DPM. A separate Damp Proof Membrane should therefore 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.*

A permanent waterproof barrier is created by sealing the block edges to each other with a sealant, **Marmox MSP360** (300ml tubes). Also used to seal the top surface of Thermoblock to the DPM.

- Marmox Thermoblock 100mm wide require 1 cartridge per 36 blocks
- Marmox Thermoblock 140mm wide require 1 cartridge per 24 blocks
- Marmox Thermoblock 215mm wide require 1 cartridge per 20 blocks

If used also to seal the top of the Thermoblock layer to the underside of the Sole plate, the amount of sealant required will be double these quantities.

**Specification to eliminate or reduce thermal bridge at the junction of a timber frame wall with a suspended floor
 INSULATION BELOW SLAB**

Specification: TFW 2
Product ref: Marmox Thermoblock (Standard Type)
Manufacturer: Marmox Ltd
Address: Marmox UK, Caxton House, 101 Hopewell Drive, Chatham, Kent ME5 7NP.
 01634 835290; Email: sales@marmox.co.uk; <http://www.marmox.co.uk/>.

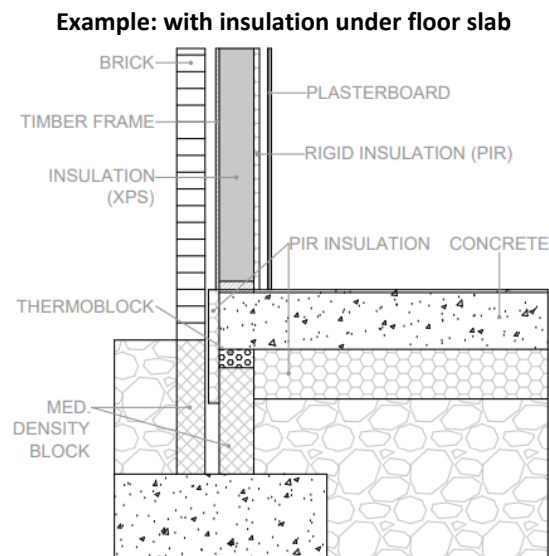
Product Use: Elimination or reduction in cold bridging where the base of a timber frame wall (sole plate) meets the floor.
 Reduction in the ψ value used in SAP/SBEM or DEAP/NEAP calculations to enable compliance with UK / Irish building regulations.

Description: Marmox Thermoblock is a load-bearing 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.

Properties: Declared λ value of 0.05W/mK (to EN13164/EN13167)
 Mean compressive strength of 9.0N/mm² (to EN772-1)
 Fire resistance >120minutes (to EN1365-1)
 Water Absorption <3.5% (to EN771-4).

Dimensions: Length = 600mm, Thickness = 65mm or 100mm, Width = 100mm, 140mm or 215mm

Specification with a suspended slab with insulation below
 A course of Thermoblock sits on top of the foundation blocks supporting the slab ideally connecting the floor and cavity insulation.



Specification to eliminate or reduce thermal bridge at the junction of a timber frame wall with a suspended floor
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 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
- Thermoblock edges are sealed together with a ribbon of Marmox MSP360 on the stepped edges to provide a waterproof barrier and improve air-tightness.
- 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: BBA certified (10/4778)
ISO9001 (Bureau Veritas)
BRE – Certified Thermal Products Scheme, <http://www.bre.co.uk/certifiedthermalproducts/>
Fire Safety Report: 16781B (Warrington Fire)

Important notes:

1. Thermoblocks should be fully supported and not span voids.
2. The foundation blocks which the Thermoblock are on must not be narrower.
3. **Use one course only.** Thermoblocks should not be laid on top of each other.

Waterproofing: A permanent waterproof barrier is created by sealing the block edges to each other with a sealant, **Marmox MSP360** (300ml tubes). Also used to seal the top surface of Thermoblock to the DPM.

- Marmox Thermoblock 100mm wide require 1 cartridge per 36 blocks
- Marmox Thermoblock 140mm wide require 1 cartridge per 24 blocks
- Marmox Thermoblock 215mm wide require 1 cartridge per 20 blocks

**Specification to eliminate or reduce thermal bridge at the junction of a
 timber frame wall with a beam + block floor
 INSULATION BELOW SCREED**

Specification: TFW 3
Product ref: Marmox Thermoblock (Standard Type)
Manufacturer: Marmox Ltd
Address: 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 timber frame wall (sole plate) meets the floor.
 Reduction in the ψ value used in SAP/SBEM or DEAP/NEAP calculations to enable compliance with UK / Irish building regulations.

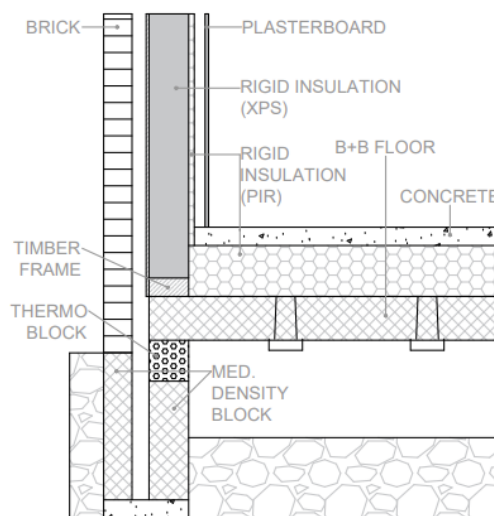
Description: Marmox Thermoblock is a load-bearing heat-insulating building block consisting of two rows of load-carrying epoxy-concrete columns of low thermal conductivity bonded to polymer concrete layers reinforced with fibreglass mesh which comprise the upper and lower surfaces. Thermally insulating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

Properties: Declared λ value of 0.05W/mK (to EN13164/EN13167)
 Mean compressive strength of 9.0N/mm² (to EN772-1)
 Fire resistance >120minutes (to EN1365-1)
 Water Absorption <3.5% (to EN771-4).

Dimensions: Length = 600mm, Thickness = 65mm or 100mm, Width = 100mm, 140mm or 215mm

Specification for timber frame wall with a beam + block floor

A course of Thermoblock sits on top of the foundation blocks supporting the floor.



Variations to the above examples can be used – for example a course of Thermoblock can be used on top of the b+b floor, in which case Specs TFW1 or TFW2 may be more appropriate.

Specification to eliminate or reduce thermal bridge at the junction of a timber frame wall with a suspended floor
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 ordinary bricklayers' mortar.

- 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
- Thermoblock edges are sealed together with a ribbon of Marmox MSP360 on the stepped edges to provide a waterproof barrier and improve air-tightness.
- 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.

An improvement in the ψ value may be achieved by having insulation in the wall cavity adjacent to the Thermoblock and running up to a height above the location of the sole plate.

Authorities: BBA certified (10/4778)
ISO9001 (Bureau Veritas)
BRE – Certified Thermal Products Scheme, <http://www.bre.co.uk/certifiedthermalproducts/>
Fire Safety Report: 16781B (Warrington Fire)

Important notes:

1. Thermoblocks should be fully supported and not span voids.
2. The foundation blocks the Thermoblocks are on must not be narrower.
3. **Use one course only.** Thermoblocks should not be laid on top of each other.

Waterproofing: A permanent waterproof barrier is created by sealing the block edges to each other with a sealant, **Marmox MSP360** (300ml tubes). Also used to seal the top surface of Thermoblock to the DPM.

- Marmox Thermoblock 100mm wide require 1 cartridge per 36 blocks
- Marmox Thermoblock 140mm wide require 1 cartridge per 24 blocks
- Marmox Thermoblock 215mm wide require 1 cartridge per 20 blocks

Specification to eliminate or reduce thermal bridge at a door Threshold

Specification: **THR 1**
 Product ref: Marmox Thermoblock (Standard Type)
 Manufacturer: Marmox Ltd
 Address: 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/Reduction of cold bridge at threshold junction.

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.

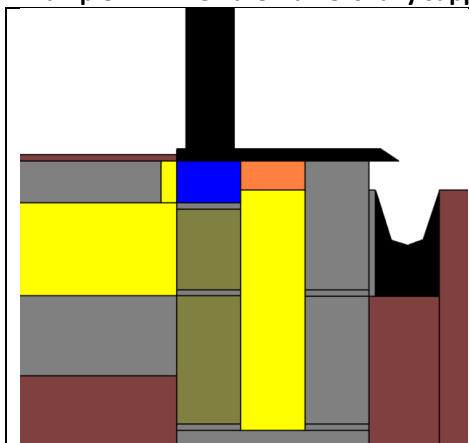
Properties: Average λ value of 0.05W/mK (to EN13164/EN13167)
 Mean compressive strength of 9.0N/mm² (to EN772-1)
 Fire resistance >120minutes (to EN1365-1)
 Water Absorption <3.5% (to EN771-4).

Dimensions: Length = 600mm, Thickness = 65mm or 100mm, Width = 100mm, 140mm or 215mm

Authorities: ISO9001 (Bureau Veritas)
 BRE – Certified Thermal Products Scheme, <http://www.bre.co.uk/certifiedthermalproducts/>
 Fire Safety Report: 16781B (Warrington Fire)

Thermoblock is fixed to the blockwork or concrete ideally directly below the base of the door or window frame in a position where both its vertical faces are concealed or covered.
 Thermoblock does not absorb moisture, it can therefore be used above and below ground level.

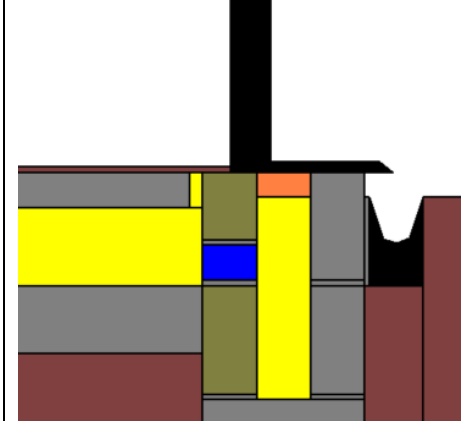
Example 1 – When the frame is fully supported on the inner leaf



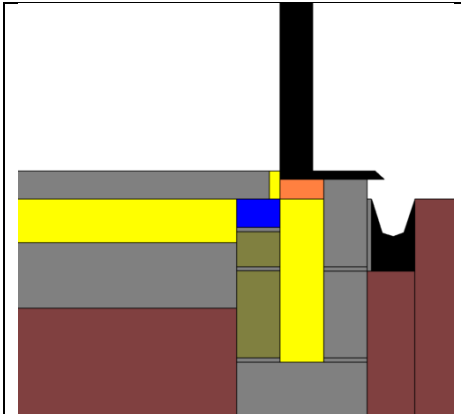
- Using standard sand/cement mortar, a single course of Thermoblock is mortared onto the inner leaf blocks directly underneath the door frame.
- The row of Thermoblock is not in line with the floor insulation therefore a perimeter insulation strip (e.g. 25mm PIR/XPS) is required.
- The frame is mechanically fixed through the centre of the Thermoblock (*approx. half-way across its width*) into the blockwork that the Thermoblock is on top of.
- Marmox MSP360 is used to seal the base of the frame to the Thermoblock's top surface, to seal the bolt holes and to seal the interlocking edges of the Thermoblocks together.

Specification to eliminate or reduce thermal bridge at a door Threshold

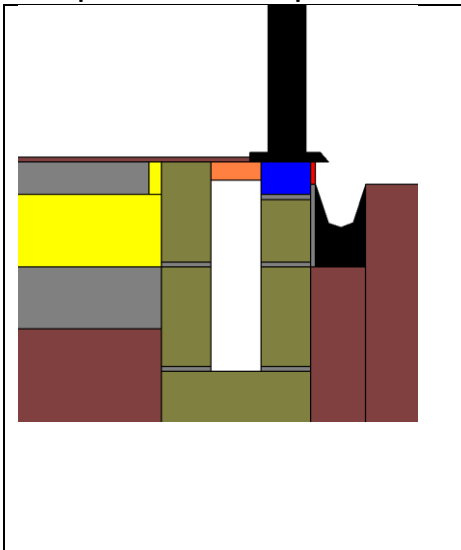
Example 2 – When the frame is partially supported on the inner leaf

	<ul style="list-style-type: none"> Using standard sand/cement mortar, a single course of Thermoblock is laid onto the inner leaf blocks <u>in line with the floor insulation</u>. A concrete or AAC block is mortared on top of the row of Thermoblocks up to floor height. The frame would subsequently be fixed into the concrete block which is above the Thermoblocks. <i>A perimeter insulation strip (as shown) can be included however this makes only a very minimal improvement to the insulation.</i>
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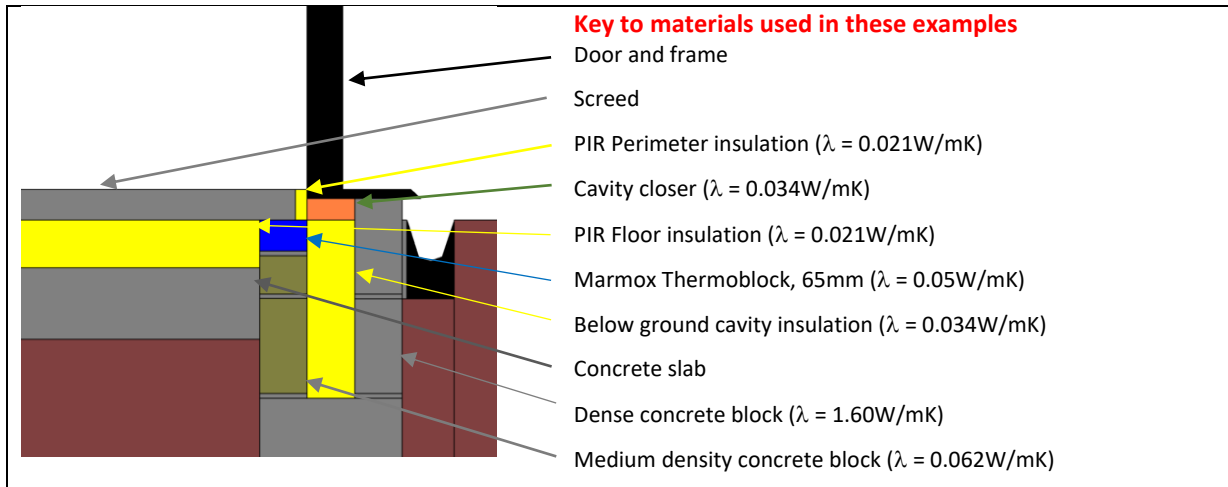
Example 3 – When the frame is supported on the outer leaf

	<ul style="list-style-type: none"> Using standard sand/cement mortar, a single course of Thermoblock is mortared onto the inner leaf blocks <u>in line with the floor insulation</u>. The screed is placed above. <i>A perimeter insulation strip (as shown) can be included however this makes only a very minimal improvement to the insulation</i>
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Example 4 - Alternative Specification on the outer leaf

	<ul style="list-style-type: none"> Using standard sand/cement mortar, a single course of Thermoblock is mortared onto the outer leaf blocks directly underneath the door frame. A perimeter insulation strip (e.g. 25mm PIR/XPS) is required with this detail. The frame is mechanically fixed through the centre of the Thermoblock (<i>approx. half-way across its width</i>) into the blockwork that the Thermoblock is on top of. Marmox MSP360 is used to seal the base of the frame to the Thermoblock's top surface, to seal the bolt holes and to seal the interlocking edges of the Thermoblocks together. The exposed face of the Thermoblock must be covered with a cement-based render (<i>shown in red in this diagram</i>). To aid adhesion to the polystyrene face, a piece of mesh/scrim tape should be folded over the top of the Thermoblock when fixing the door frame on top so that it falls down covering the exposed polystyrene face.
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Specification to eliminate or reduce thermal bridge at a door Threshold



Waterproofing:

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. Additionally, Marmox MSP-360 should be used to seal the short edges of the Thermoblocks together. This creates a permanent waterproof barrier.

Important notes:

- 1) If fixing the frame directly on top of the Thermoblocks, the width of the frame must not be narrower than the width as the Thermoblock.
- 2) **Thermoblocks should not be laid on top of each other if part of a supporting wall** - use only one course.
- 3) If used on an outer leaf, it must be covered and should not be in a location where the blocks may come into regular contact with petroleum or organic solvents.