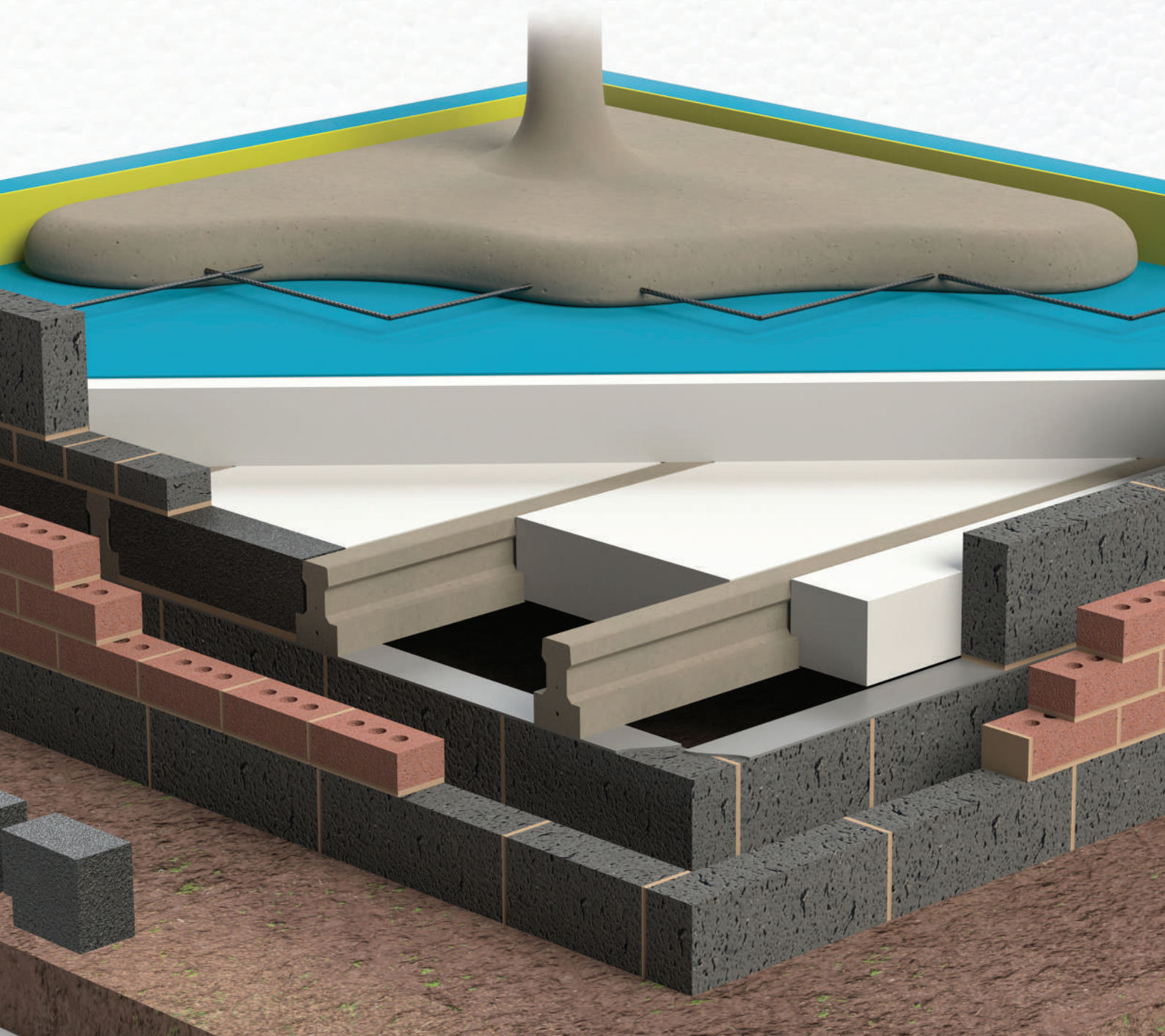


# **WarmFloor** PRO

## **Insulated Thermal Ground Flooring**



**MILBANK**





# WarmFloor PRO

**WarmFloor Pro offers home builders a simple, cost effective solution to quickly assemble a thermally insulated ground floor. Reduced initial construction costs and a lower heating expenditure make WarmFloor Pro a compelling alternative to a standard beam and block floor.**

WarmFloor Pro is suitable for almost any structure with an imposed load of up to  $3\text{kN/m}^2$ , but is perhaps most commonly used in housing, from a single dwelling to a complete housing development. Milbank Concrete Products WarmFloor Pro offers a simple, cost effective, insulated ground flooring solution to self-builders and construction professionals alike and represents a compelling alternative to the present market-leader.

WarmFloor Pro works by combining rigid insulation modules (EPS panels) manufactured from lightweight closed-cell expanded polystyrene which is laid in between our pre-stressed concrete beams (either 155mm or 225mm deep) and finished with an EPS top sheet, membrane and concrete topping.

Since every structure differs, we design your flooring to deliver the targeted U-Value (as low as  $0.07\text{W/m}^2\text{K}$ ) and the layout of the floor to meet stated requirements. Once manufacturing of the precast concrete elements is complete, they are delivered direct to your site alongside the EPS components. With WarmFloor Pro you can choose either supply only, or supply and installation – harnessing our knowledgeable and experienced team of installation professionals.

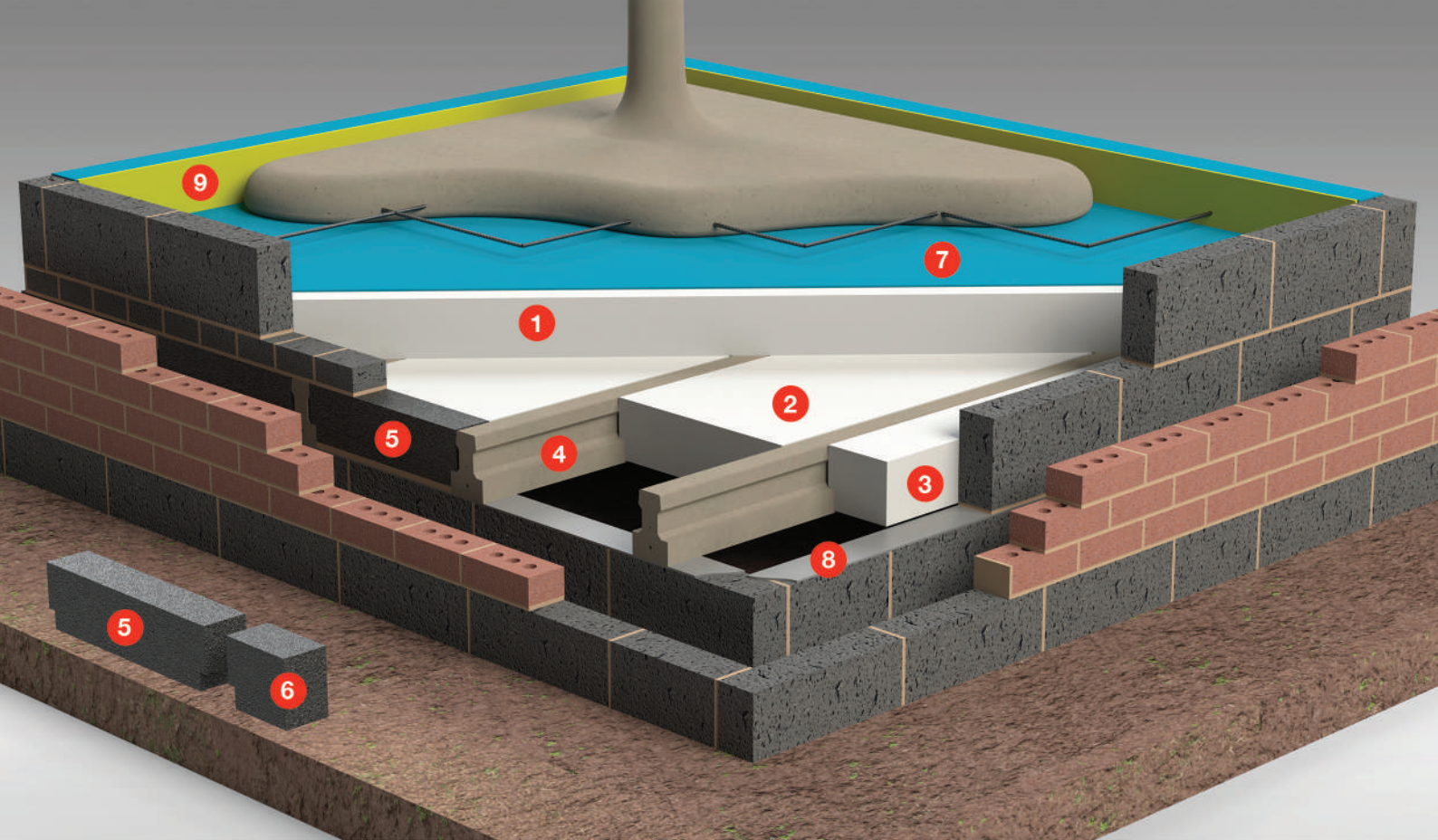




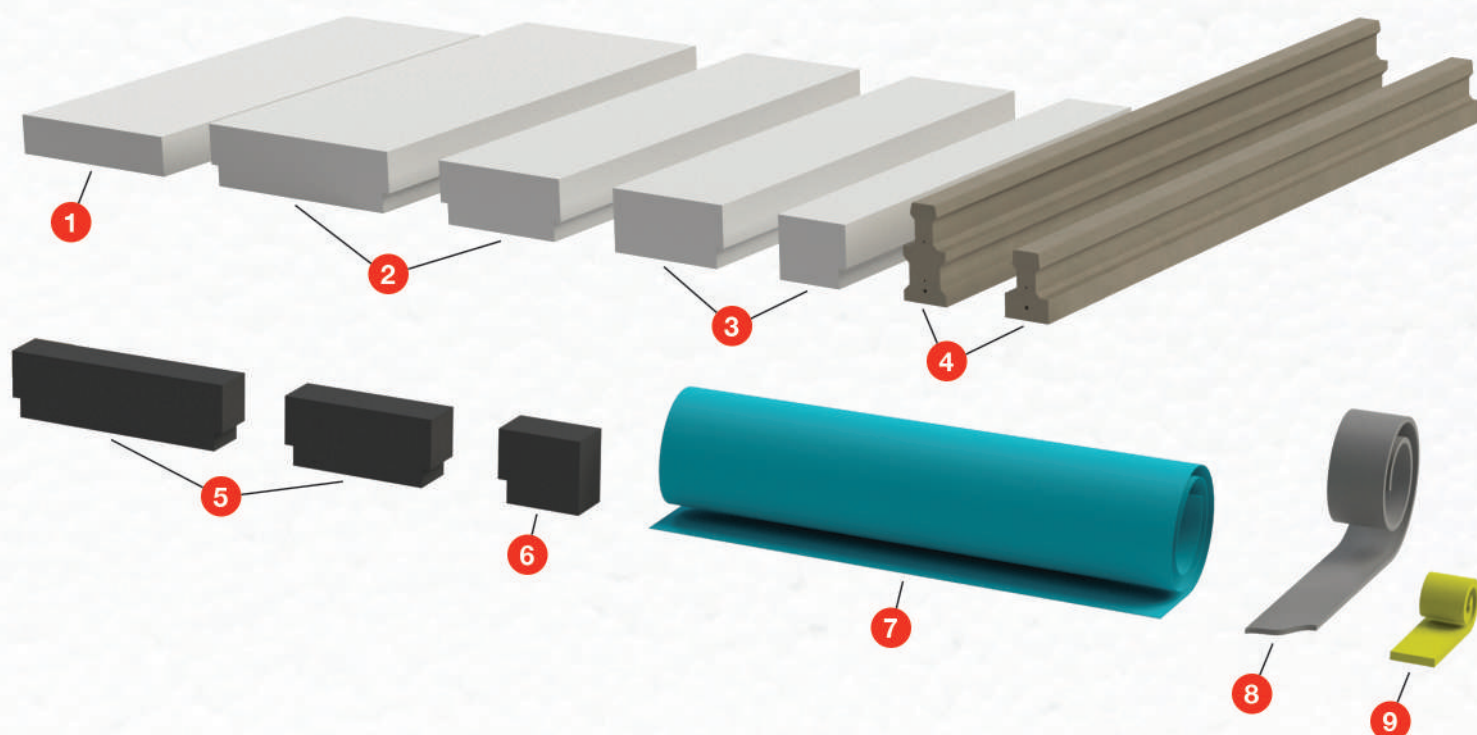
# A cut above the rest

- ✓ **Simple to install** – No specialist tools or skills are necessary.
- ✓ **Fast to install** – EPS panels are the same length as five regular concrete blocks.
- ✓ **Sustainable** – WarmFloor Pro is designed to last the lifetime of the building while maintaining its exceptional thermal performance.
- ✓ **Clean, easy and safe to work with** – EPS panels weigh just 2Kg (approx.).
- ✓ **Compatible with underfloor heating** – Plastic pegs push into the EPS panel and hold heating pipes in-situ.
- ✓ **Proven, Trusted Technology** – Used now for over a decade.
- ✓ **Industry compliant** – Milbank WarmFloor Pro is fully certified and has an A+ green guide rating.
- ✓ **Cost effective** – WarmFloor Pro is designed to save you money: faster installation speeds combined with reduced waste and excavation removal allow for an increase in overall savings.
- ✓ **Bespoke** – A wide range of EPS panel depths and grades are available to satisfy your U-value or budget requirements.





# Component breakdown





**Included with WarmFloor Pro**

**Not included with WarmFloor Pro**

# Component summary

**WarmFloor Pro is made up of the following components designed to work in synergy to achieve exceptional thermal performance, lower construction costs at the outset and improved energy savings for all.**

- 1 EPS Top Sheet** – The EPS top sheet has been designed to separate the concrete screed from the prestressed concrete beams, improving PSI Values, increasing overall thermal performance and isolating the damp proof membrane.
- 2 EPS Insulation Module (Infill Panel)** – The EPS infill panels are available in both 343mm and 533mm sizes and are designed to replace your standard concrete infill block.
- 3 EPS Insulation Module (End Panel)** – The EPS end panels are available in both 178mm and 300mm sizes and are designed specifically to fit snugly up against the internal wall.
- 4 Prestressed Concrete Beam** – Milbank Concrete Products manufacture both 150mm and 225mm deep lightweight prestressed concrete beams, suitable for spans up to 6.5m.
- 5 Closure Block** – Closure blocks (provided as an optional extra if required) are used to finish the row of EPS insulation infill panels.
- 6 End Block** – End blocks (also provided as an optional extra if required) are used to finish the row of EPS insulation end panels.
- 7 Damp Proof Membrane** – The damp proof membrane shown is for guidance purposes only and should be specified from an additional source and installed in accordance with the manufacturer's instructions.
- 8 Damp Proof Course** – The damp proof course is rolled into place onto the base of the bearing wall before the concrete beams are laid to prevent the spreading of moisture from the ground.
- 9 Perimeter Strips** – The perimeter strips are installed to line the edge of the floor solution, preventing any thermal bridging between the interior wall and the concrete topping.



# Installation guidance

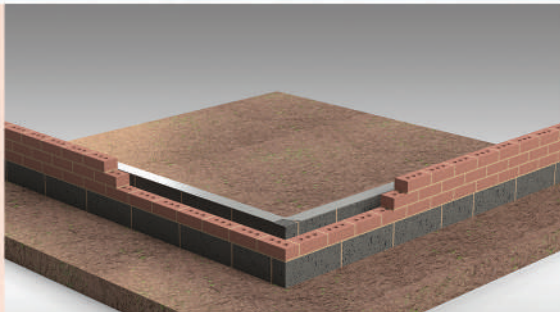


Included with  
WarmFloor Pro



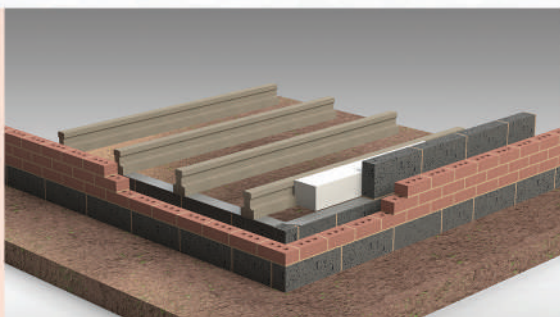
Not included with  
WarmFloor Pro

1



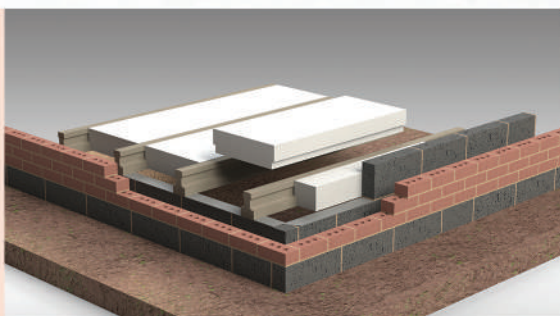
**Bearing Wall Construction** – The bearing wall is constructed to act as the structural base for the floor. The end walls will need to be erected equal to or greater than the top of the beams. This will provide enough friction/anchorage to support the EPS end panel. The damp proof course is rolled into place to prevent the spreading of moisture from the ground.

2



**Laying the Beams** – The beams are laid in accordance with the layout drawings. The first end panel is laid firmly into place ensuring it sits onto the lip of the beam and vertically flush against the end wall. This is continued until the end row is filled. To reduce chance of creep, it is advised to slide the beam inwards towards the EPS end panel to achieve a snug fit.

3



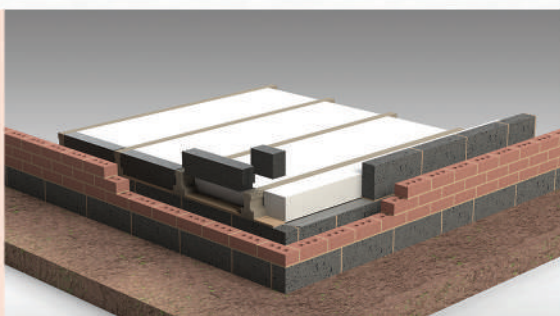
**Laying the Infill Panels** – The remaining EPS infill panels are laid in between the concrete beams. As with the EPS end panels, use a handsaw to cut a portion off a full-length unit (or use an existing offcut) to achieve the desired amount to complete the row. Any penetrations such as plumbing within the floor can easily be accommodated by cutting access ports using a handsaw.

4



**Laying the End Panels** – The final row of EPS end panels are laid in accordance with the layout drawings. Slight creep may occur at this stage and the remaining cut to the end wall may differ slightly to that indicated on the layout drawings. Cut the end panel using a handsaw to achieve the correct width and install the remaining end panels until the row is complete.

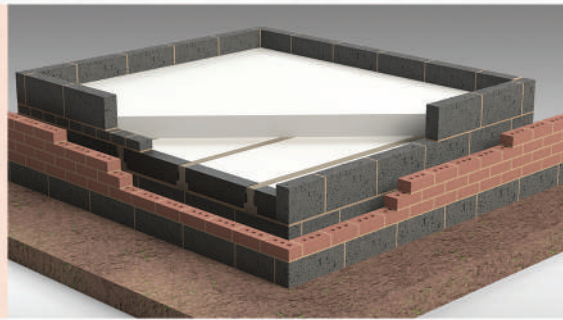
5



**Laying the Closure Blocks** – The (optional) concrete closure blocks are designed to correspond with the width of the EPS infill and end panels. A bed of mortar is placed onto the wall in between the beams and the blocks are placed, ensuring the top of the block matches that of the beam level.

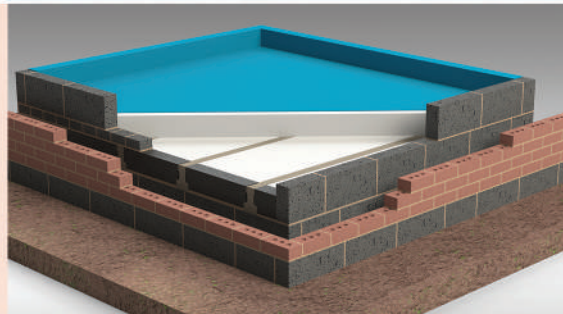


**Top Sheet & Screed Rail** – Brick or block courses are laid to bring the internal wall up to finished floor level. This wall is to be used as a screed rail to ensure the concrete topping is laid to the required depth. The EPS top sheets are placed to cover the entire floor layout, taking care when walking on EPS infill panels. This stage represents the last of the components supplied with the WarmFloor Pro solution.



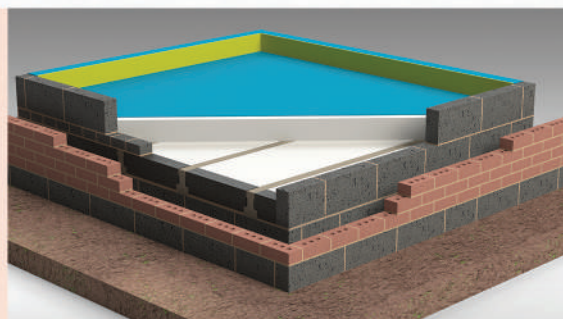
6

**Laying the Damp Proof Membrane** – The membrane is pulled tight to ensure that it lies flat over the EPS top sheets and all folds, ripples or creases are removed. To maintain the full depth of the topping at the edges of the floor, care is taken to ensure the membrane sits flush where the floor meets the wall. It is then pulled over the screed rail to complete installation.



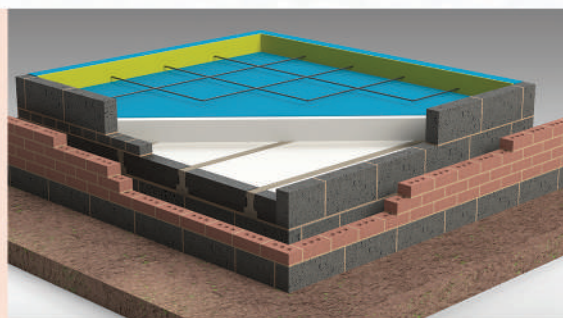
7

**Laying the Perimeter Strips** – EPS perimeter strips are installed throughout the screed rail and to any internal walls of the development to eliminate thermal bridging between the walls and the concrete topping.



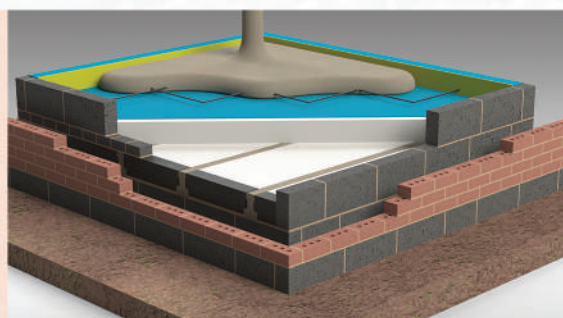
8

**Laying the Structural Mesh** – A structural mesh is laid in accordance with the concrete topping specification. Please note, image is for illustration purposes only and must be carried out by a professional.



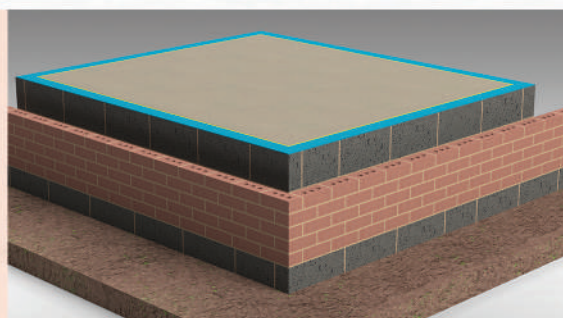
9

**Laying the Concrete Topping** – The specified structural concrete topping is poured to the required depth ensuring the EPS infill panels and top sheet are not disturbed during the flow of the concrete. Please note, image is for illustration purposes only and must be carried out by a professional.



10

**WarmFloor Pro Is Complete** – The insulated thermal flooring solution from Milbank Concrete Products is now successfully installed and complete. Once the concrete topping has cured, the floor is ready for follow on trades to continue with required building works.

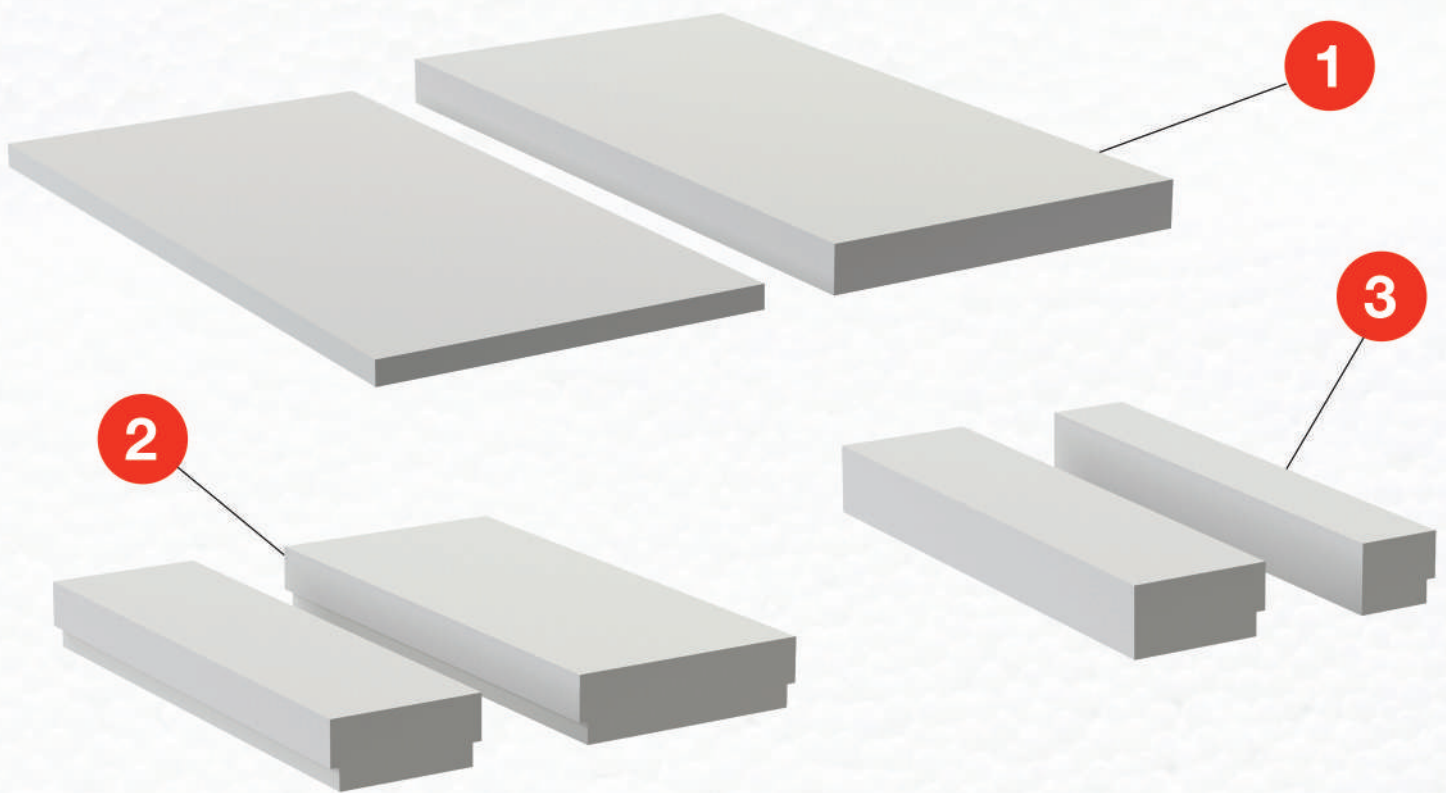


11



# EPS module information

WarmFloor Pro is comprised of 6 main EPS components that are available in two types of EPS; standard issue in white (0.038W/m<sup>2</sup>K) or an alternative high-performance platinum in grey (0.031W/m<sup>2</sup>K).



The 6 components are made up of **Top Sheets** ① - available in depths of 75-150mm, **Infill Panels** ② - available in 533mm for nominal 600mm beam centres and 343mm for reduced beam centres, and **End Panels** ③ - available in both 178mm and 300mm.

EPS end panels are used for both the start and end of the flooring installation. The end panels are inserted at the start of the row with the straight (1200mm edge) opposite to the beam.

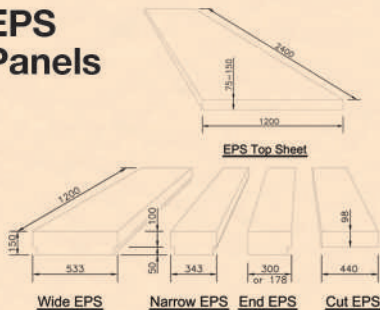
All units are 1200mm long and can be cut on site to the required length using basic tools such as a handsaw; (minimum 300mm long).



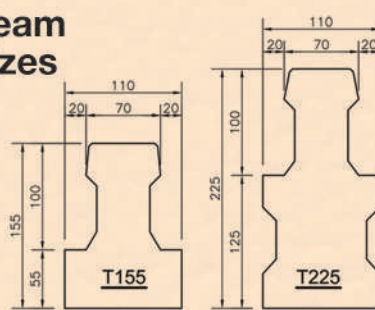


# Additional Information

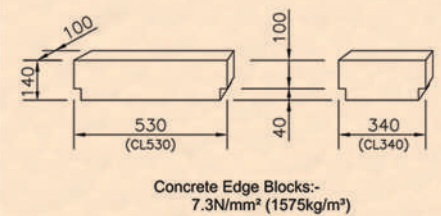
## EPS Panels



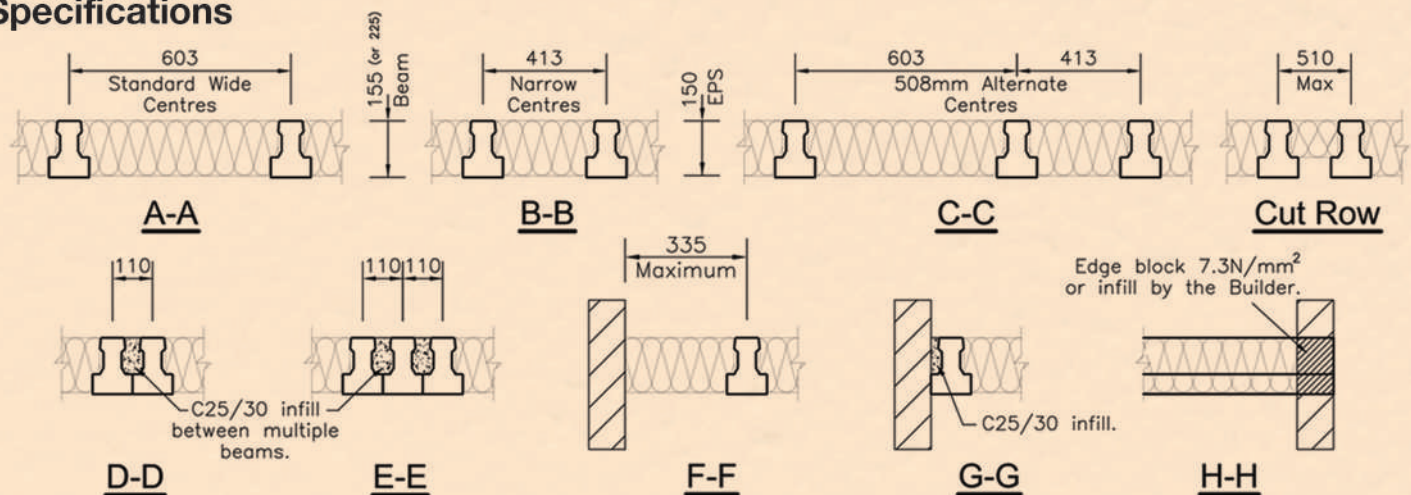
## Beam Sizes



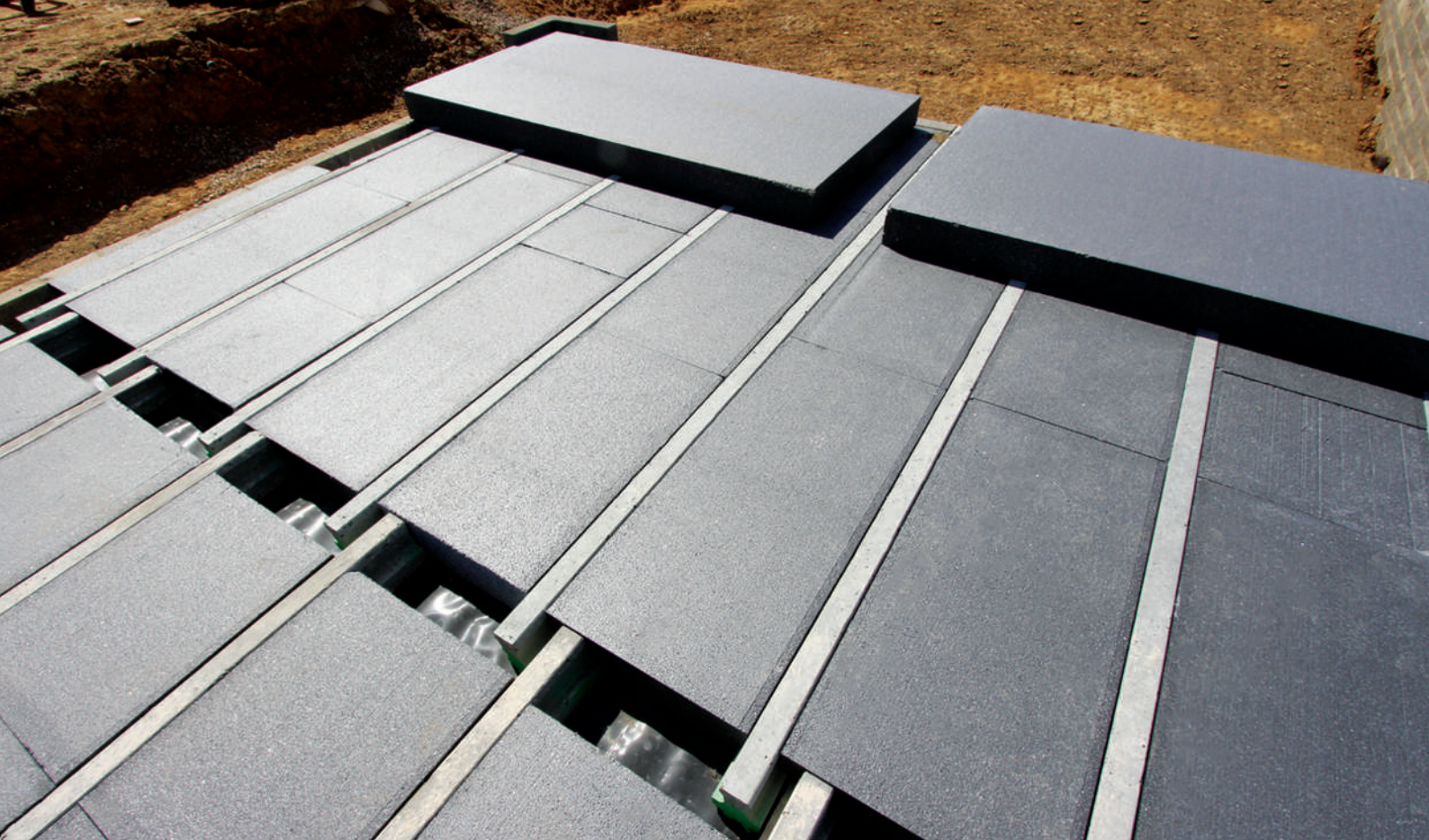
## End Blocks



## Layout Specifications







# Frequently asked questions

**1 What concrete topping should be used?**

*The overall depth of concrete topping above the services is to be 75mm. For standard concrete, the slump should be Class S3 (100 to 150mm) or S4 (for spot samples taken from initial discharge, 140 to 230mm).*

**2 Can I use an underfloor heating system?**

*Yes, an underfloor heating system is completely safe to use in conjunction with WarmFloor Pro. Plastic pegs push into the EPS panels and hold heating pipes securely in-situ before the concrete topping is applied.*

**3 Can I walk on the EPS panels during installation?**

*Yes, the EPS panels compressive strength allows for light foot traffic to be applied during the installation process. Always ensure that the panels are securely in place before walking across to avoid injury.*

**4 What holds up the end panels against the wall?**

*Due to their positioning against the internal wall, the EPS end panels are restricted from rotating, ensuring a solid and fixed position is maintained at all times.*

**5 What's the best U-Value achievable?**

*As stated on WarmFloor Pro's certification, the best U-value achievable is 0.07w/m<sup>2</sup>K by using a combination of EPS panels in a variety of depths.*

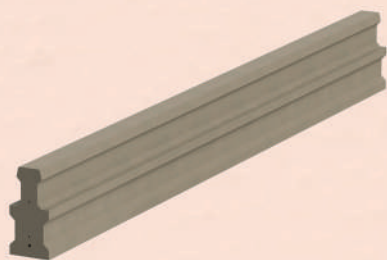
**6 How long can I leave it before applying the topping?**

*To avoid damaging the EPS panels, the concrete topping should be laid as soon as possible after installation. This stage must be completed to allow the construction of the building to proceed.*



# About Milbank

**Milbank Concrete Products** offer the most comprehensive precast concrete product service in the UK, providing a range of products encompassed within a complete full-package solution, including design, manufacture, delivery and installation.



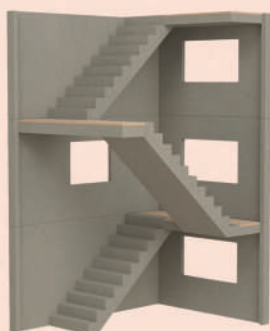
**Beam & Block  
Flooring**



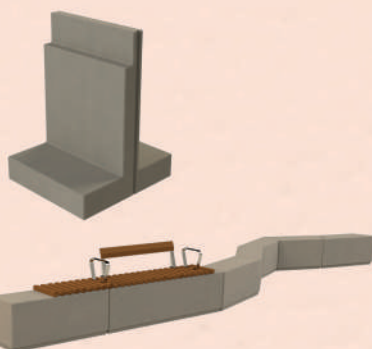
**Hollowcore  
Flooring**



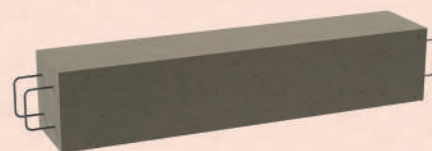
**Winder &  
Dogleg Stairs**



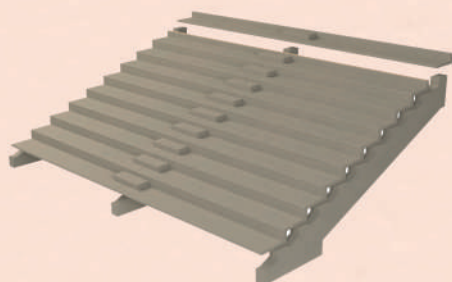
**Stairs, Landings &  
Balconies**



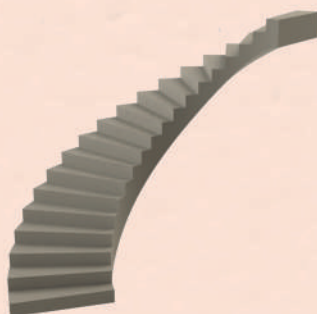
**Bespoke Concrete  
Products**



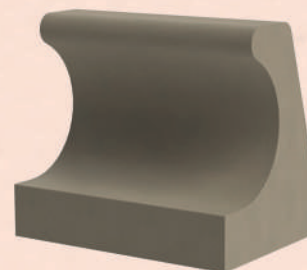
**Ground Beams &  
Structural Precast**



**Stadia  
Components**



**Kallisto Helical &  
Curved Stairs**



**Sea Defence  
Solutions**



# WarmFloor

PRO

[milbank.co.uk](http://milbank.co.uk) | 01787 223931

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