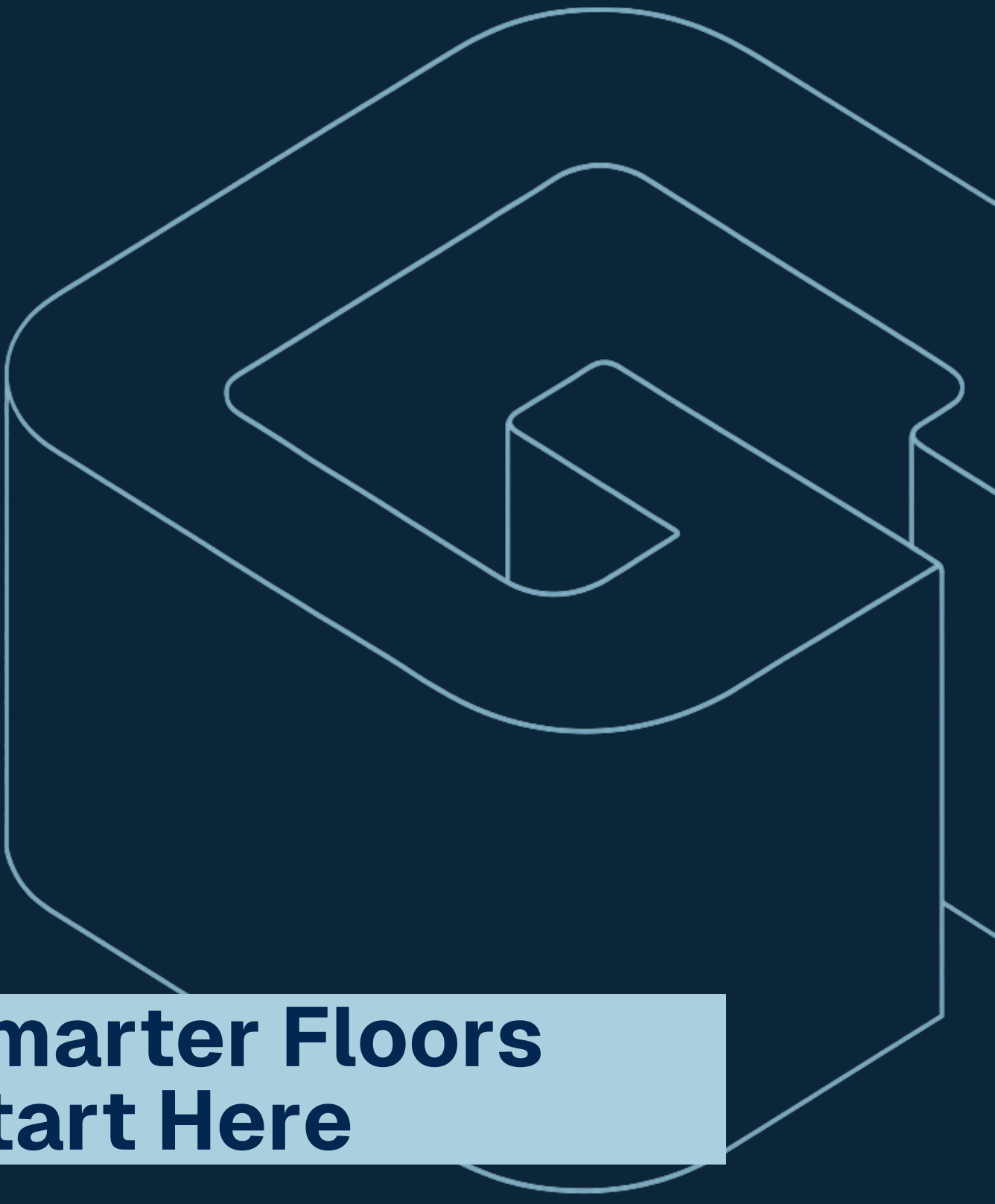
GDECK®



Smarter Floors Start Here

Transforming Pre-Stressed Concrete T-Beams into Insulated Composite I-Beams

GDeck® is designed to redefine the way the construction industry designs and builds suspended ground floors.

A GDeck suspended ground floor comprises of pre-stressed concrete beams, structural EPS beam rails and EPS insulation panels. The silver infill insulation panels provide high thermal performance and being 98% lighter than blocks, significantly reduce dead load on the beams. Combined with high density white EPS rails, which gives GDeck its unique strength, floors with a U-value as low as 0.09 W/m²K can be achieved. GDeck EPS rails offers support where it is needed the most, >200kPa above the beam, to ensure the floor stays within its elastic limits.

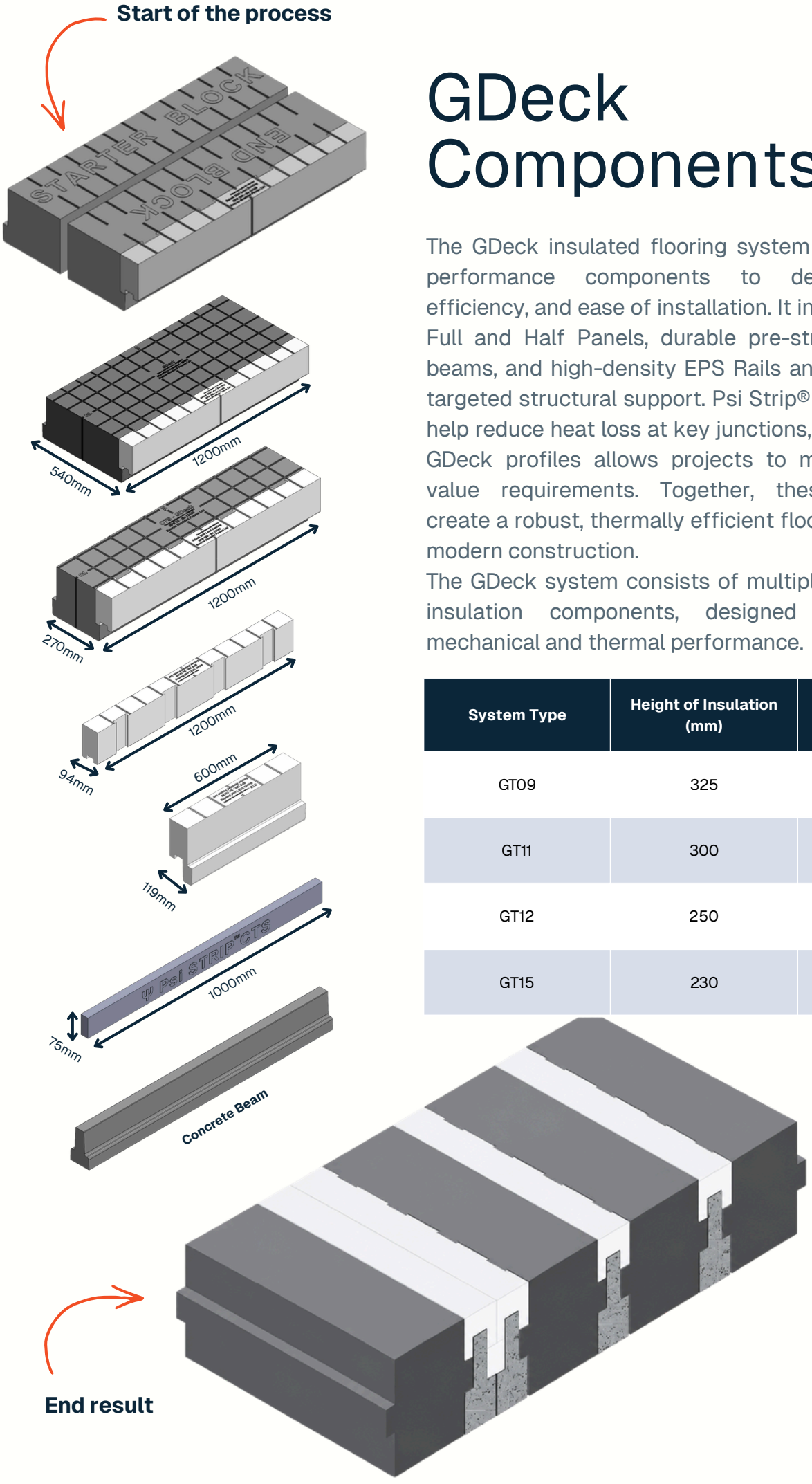


GDeck Components

The GDeck insulated flooring system combines high-performance components to deliver strength, efficiency, and ease of installation. It includes insulated Full and Half Panels, durable pre-stressed concrete beams, and high-density EPS Rails and Multi Rails for targeted structural support. Psi Strip® thermal barriers help reduce heat loss at key junctions, while a range of GDeck profiles allows projects to meet specific U-value requirements. Together, these components create a robust, thermally efficient flooring solution for modern construction.

The GDeck system consists of multiple beam-specific insulation components, designed for maximum mechanical and thermal performance.

System Type	Height of Insulation (mm)	Typical U-value W/m²K
GT09	325	0.09
GT11	300	0.11
GT12	250	0.12
GT15	230	0.15





Thermal Floor System

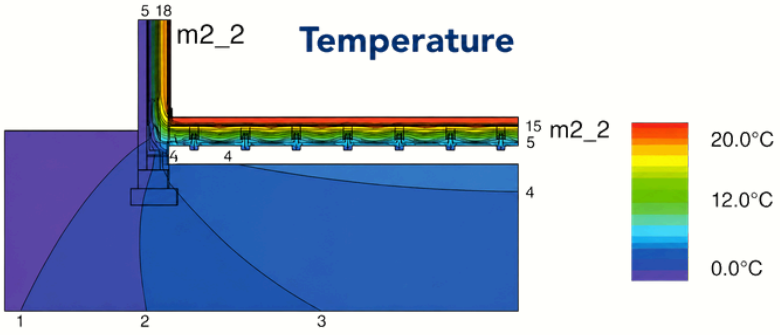
Building regulations define limiting U-values (the measurement of heat loss) for the fabric of a building; however, to ensure full compliance, the overall dwelling emission rate (DER) must be lower than the target emission rate (TER).

GDeck can achieve significantly better U-values based on different Perimeter/Area (P/A) ratios and the beam layout, thus reducing the overall DER of a building and improving architectural freedom.

Contact us for more details or help with heat loss calculations.

The heat loss associated with the non-repeated thermal bridge is called linear thermal transmittance or psi-value (pronounced ‘si’). This is the rate of heat flow per degree per unit length of the thermal bridge that is not accounted for in the U-value of the plain elements.

The GDeck Psi Strip® significantly reduces heat loss in this area. It is important to note that the correct location of the first beam and cut panel against the inner skin of the blockwork significantly reduces the risk of problems caused by cantilever forces at the edge of the floor.

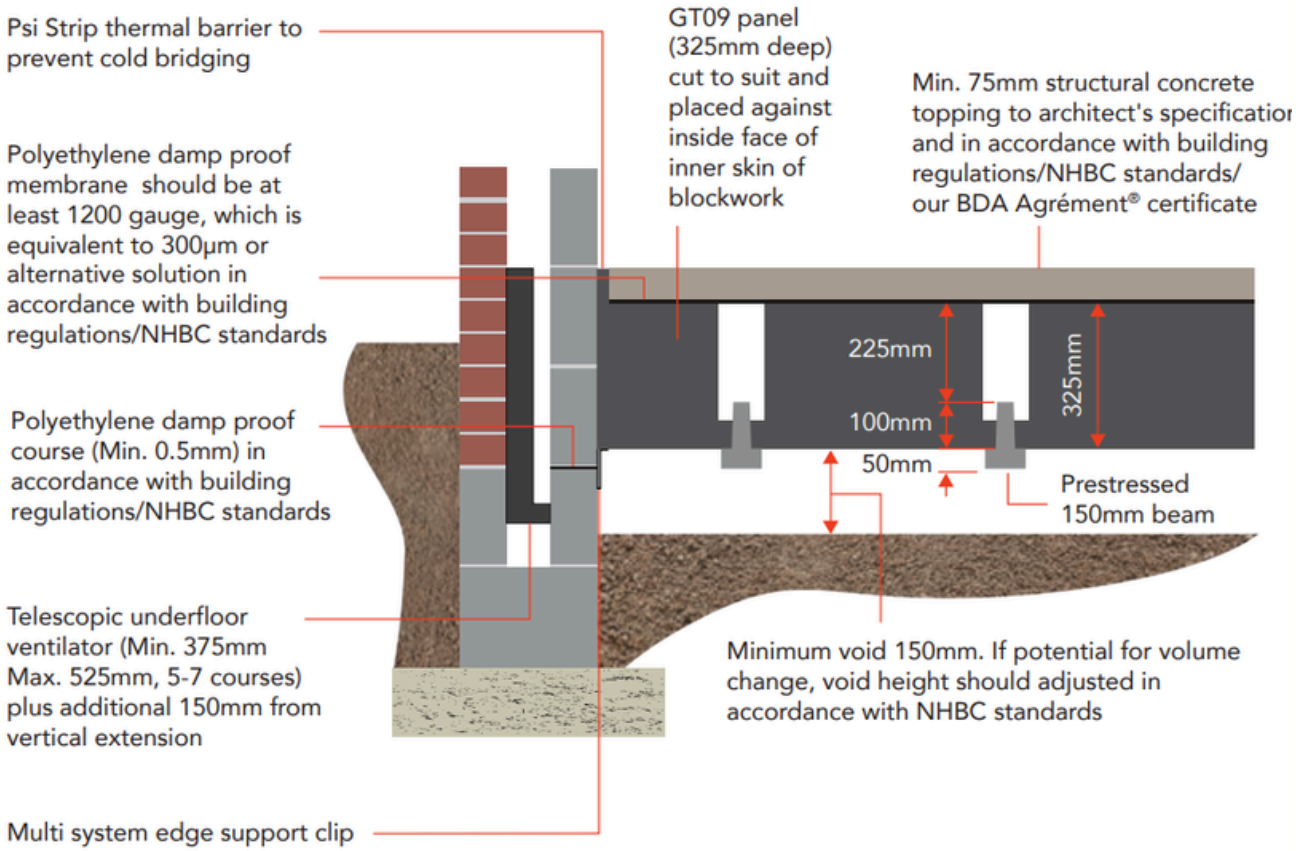




Thermal Performance Detail

GT09

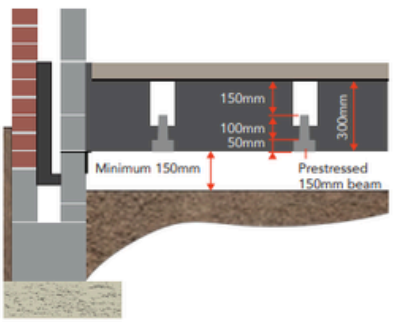
U-value 0.09 W/m²K



Typical connections with traditional masonry wall where beam is parallel

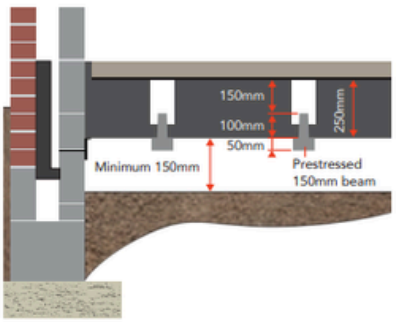
GT11

U-value 0.11 W/m²K



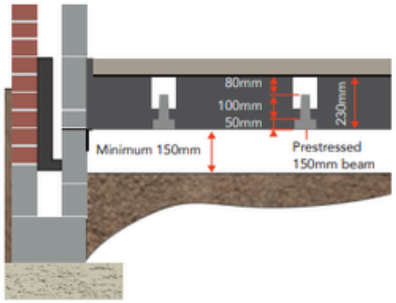
GT12

U-value 0.12 W/m²K



GT15

U-value 0.15 W/m²K



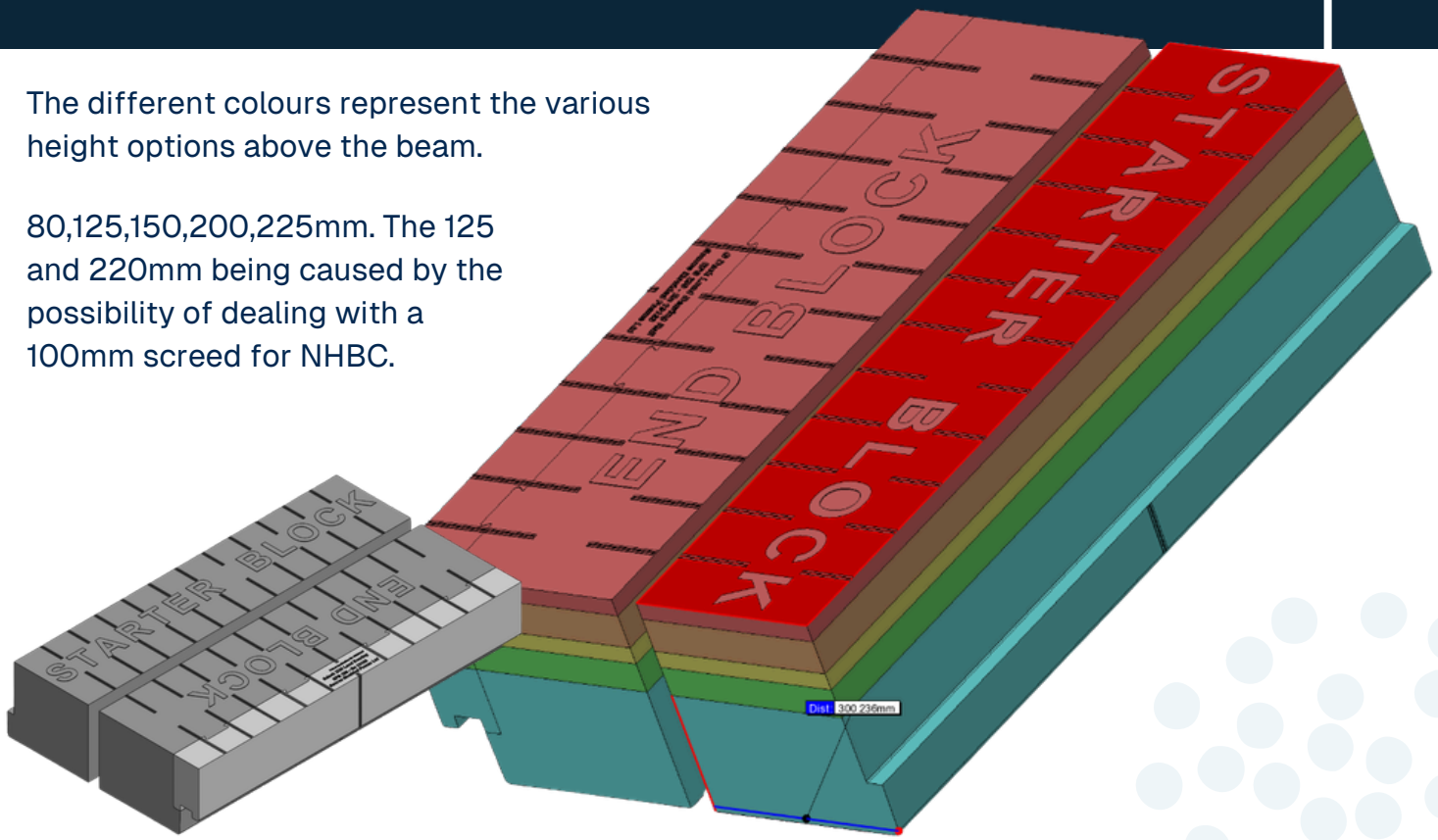
From Start to End with GDeck

Dedicated starter and end panels, developed to simplify installation, improve edge detailing, and enhance on-site efficiency and safety.

GDeck's innovation is underpinned by a clear commitment to ongoing research, testing, and site-led product development. Through extensive on-site trials and structured feedback from groundworkers and site teams, opportunities were identified to further simplify installation and reduce the need for technical cutting at floor edges. In response, GDeck has developed purpose-designed starter and end panels, enabling cleaner terminations, faster set-out, and greater installation consistency. These refinements reduce reliance on manual trimming and further enhance site safety by minimising cutting activities.

The different colours represent the various height options above the beam.

80,125,150,200,225mm. The 125 and 220mm being caused by the possibility of dealing with a 100mm screed for NHBC.





Using Underfloor Heating?

GDeck is compliant and proven to work with Underfloor Heating Systems

Providing a high-performance solution for underfloor heating systems across suspended floors for residential and commercial construction across the UK.
GDeck is a fully compliant, proven solution for UFH in new-build construction, designed to work seamlessly with underfloor heating systems while delivering dependable performance and peace of mind.

GDeck allows for efficient installation, improved thermal performance and the flexibility to cover all DPM and gas membrane requirements.
In addition, due to the innovative design GDeck creates the ability to have a 50mm-75mm screed covering the UFH pipework and protect the coursing height whilst remaining quicker to install, less labour intensive and providing a working platform for loading out and working upon.



PERIMETER DPM

IMPORTANT

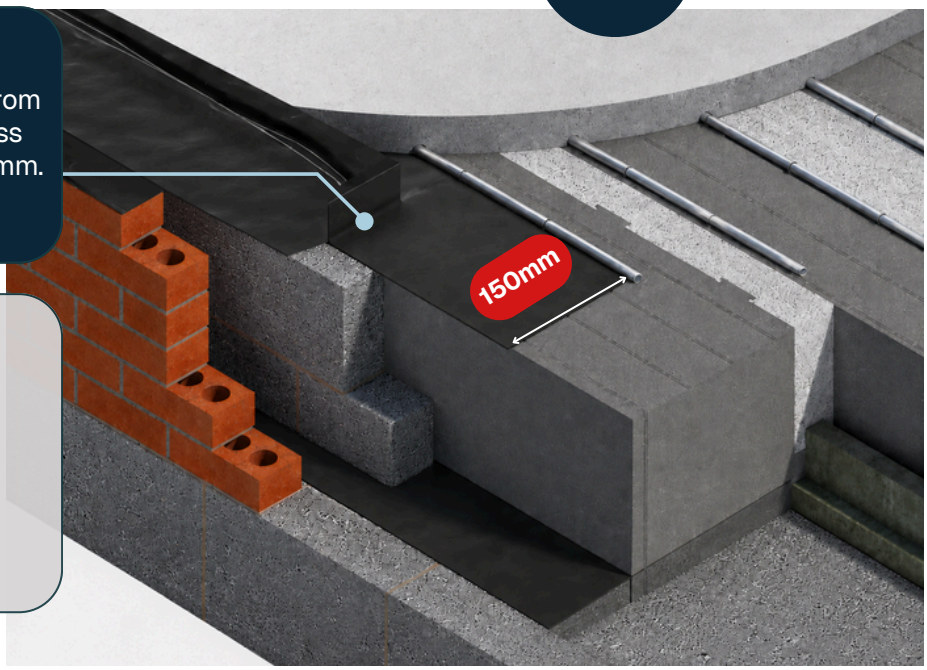
150mm

Clips should not penetrate within 150mm of perimeter walls

DPM

A DPM is required on the wall and floor junction. This should extend from the coursing height down and across the GDeck floor by a minimum 150mm.

As shown here ->

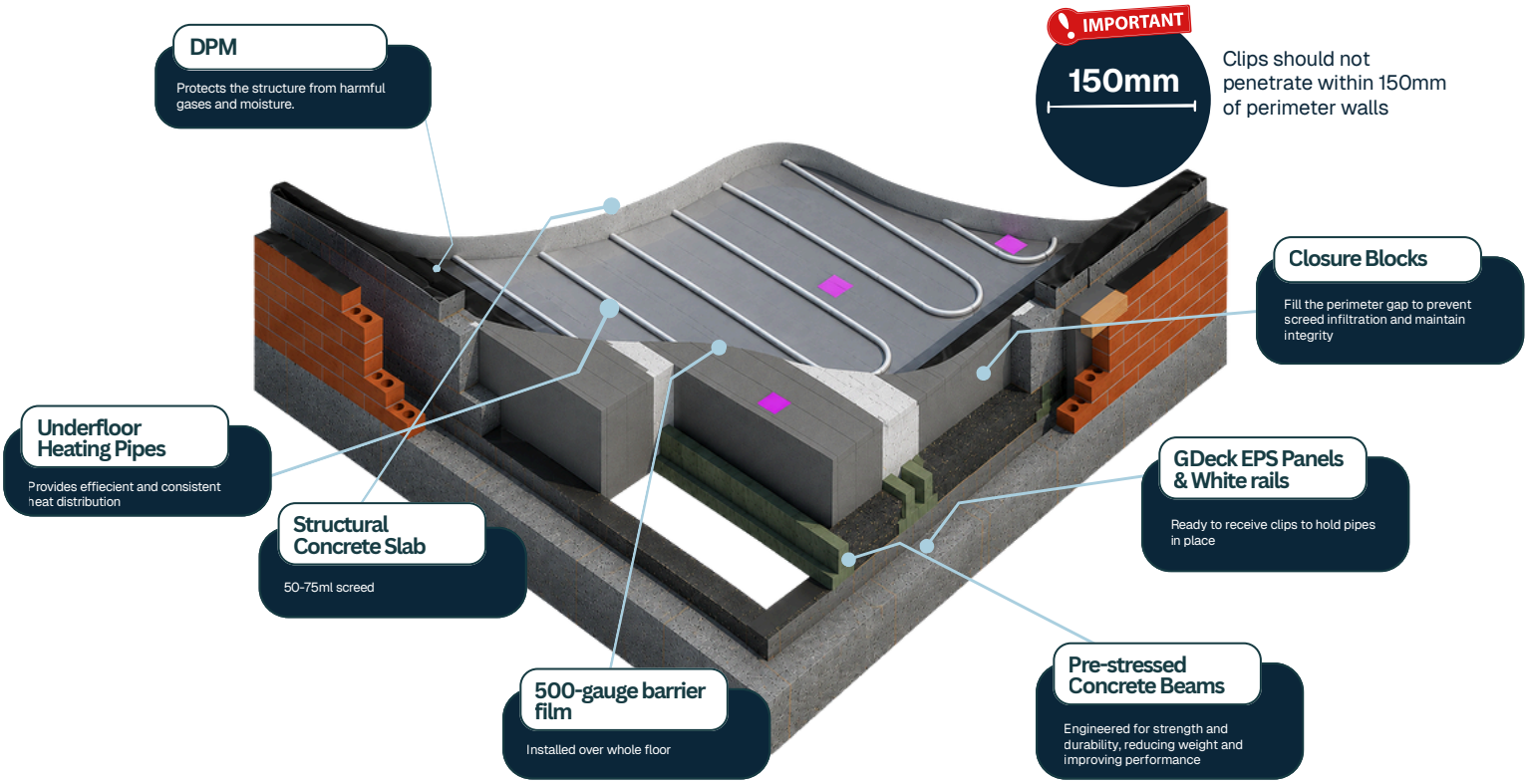


WHY IT MATTERS

Extending the DPM across the wall and over the GDeck floor helps prevent moisture ingress, protecting the structure and ensuring long-term performance.

DPM is not necessary beyond 150mm from the inner leaf. Clips can be pushed in to GDeck to secure pipework.

PERIMETER DPM & BARRIER FILM 500-GAUGE



A separating barrier film can be used. The barrier film will help the screed flow across the Gdeck floor. It will also separate the foam from the screed. This will support end-of-life recycling requirements. Clips can penetrate through barrier film.

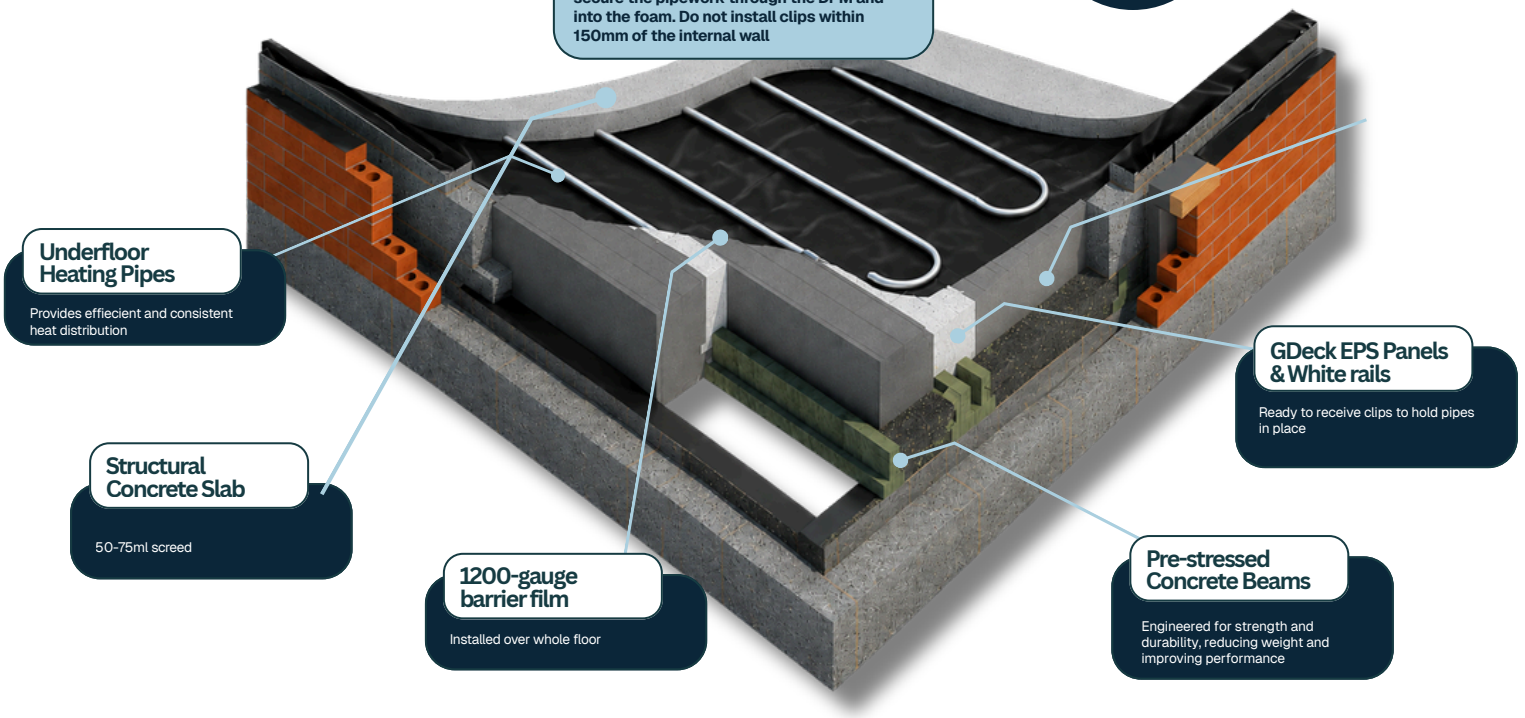
1200-GAUGE DPM

A 1200-gauge DPM can be installed and extended over the floor and across to the wall at coursing height. This allows for separation of the screed and foam plus and added protection as a full DPM. The UFH clips can secure the pipework through the DPM and into the foam. Do not install clips within 150mm of the internal wall

IMPORTANT

150mm

Clips should not penetrate within 150mm of perimeter walls



Underfloor Heating Pipes

Provides effiecient and consistent heat distribution

GDeck EPS Panels & White rails

Ready to receive clips to hold pipes in place

Structural Concrete Slab

50-75ml screed

1200-gauge barrier film

Installed over whole floor

Pre-stressed Concrete Beams

Engineered for strength and durability, reducing weight and improving performance

A 1200-gauge DPM can be installed to act as a seperating barrier film. The barrier film will help the screed flow across the Gdeck floor. It will also separate the foam from the screed. This will support end-of-life recycling requirements. Clips can penetrate through barrier film.

GAS MEMBRANE

IMPORTANT

Pipework should be secured to mesh or pipe tracks as preferred

IMPORTANT

Gas membranes can not be perforated by clips at any point across the floor.

STEEL MESH OR RADON BARRIER

Where a Gas membrane or Radon barrier is required, we would recommend the use of a steel mesh above to avoid penetrating the membrane.

Gas Membrane

Gas membrane installed over whole floor, overlapped and taped

Where a Gas membrane or Radon barrier is required, we would recommend the use of a steel mesh over the membrane or the use of pipe tracks stuck to the membrane to avoid penetration in any area. UFH pipework should be secured to the mesh with the use of ties or to the pipe tracks as preferred.



Why GDeck?

Because we're stronger, faster, lighter.

Redefining industry thinking

Constantly evolving Part L regulations will mandate house designers away from defaults on estimated psi-values, to a physical calculation. Effectively this means every floor junction will need to be 2D modelled. Moulded Foams already offers this service. GDeck insulates above and between beams to create better thermal performance to reduce insulation dependent coursing height. Together with already well insulated, walls and roofs, GDeck further improves thermal performance of the building due to extra performance in the floor. GDeck designs accurately calculate U-values specific to each floor configuration at quotation that guarantees SAP assessment calculations. GDeck has at least 200kg/m2 less dead weight the floor needs to support, compared to traditional block. This offers the potential for additional beam spans and increased architectural freedom. GDeck rails remove joint issues in peak stress zone. GDeck can be used as a work platform (load spreading required).

Safer sites

No silica dust produced. Installed with hand tools, reducing PPE requirements and removing the need for power tools. Weighing only 2.4kg for a full panel, the lightweight GDeck system helps prevent back strain and finger injuries during installation. Light weight pallets of GDeck are easily and quickly moved around site, without the need for heavy lifting machinery.

Lead times

All GDeck insulation components are stocked items, available as quickly as next day. Our beam partners also offer excellent service, one has the fastest industry lead time, 3-5 working days from order to product delivered to site. Quotes and drawings returned within a few days, regularly less than 48 hours.

Quick and easy installation

Extremely quick install times, with no sheet insulation or special skills required. Installed with hand tools – no need for power tools. At 2.4kg per GDeck panel, installers will handle approximately 70 linear metres of GDeck for the equivalent weight of 7 typical blocks (1 GDeck panel length). Precise moulded parts give secure fit with no gaps – no taping of joints to do and no cementing between double beams. No working around top sheet joint issues for installed line loads. Location of beams is easily identifiable due to the white rails, meaning instant photographic evidence can be taken to prove correct installation. GDeck white rails are easily removed and replaced for NHBC drainage inspections.

Reducing carbon footprint

Unlike some materials, EPS can be recycled many times over. GDeck panels have a minimum of 15% recycled EPS content. EPS is recycled cleanly and efficiently with a simple mechanical process. At end of life, processes and equipment now exist to separate EPS from the concrete layer where no separation layer was installed.

Less waste

GDeck parts are manufactured to be installed in a single direction (row by row) and GDeck floors are designed accurately, so waste is minimal. Where appropriate, collection of off cut waste from site can be arranged. Clean off-cuts are then used for recycling into new products.

Fully recylable

GDeck works with some of the most carbon efficient beams on the market. This is achieved by reducing the beam weight (lower concrete content), using water from rainwater harvesting and manufacturing with renewable energy sources. EPS has a relatively low amount of embodied carbon – it's 98% air. GDeck saves the manufacturing, packaging, transporting, carrying, and installing of an average of 7 tonnes of block per plot. Creating EPS insulation products for construction is an efficient use of a natural resource. Every 1kg of oil used to make EPS insulation, will save the environment from burning 150kg of oil for heating the building over a service life of 50 years. EPS achieves A+, the best possible environmental impact rating in the BRE green guide to specification. This ensures maximum points are scored in the BREAAM assessment of the project having low environmental impact. EPS is recyclable at end of life and all stages before. GDeck can potentially be reused at the end of life of a building.



Independent Opinion

Top-level comparison

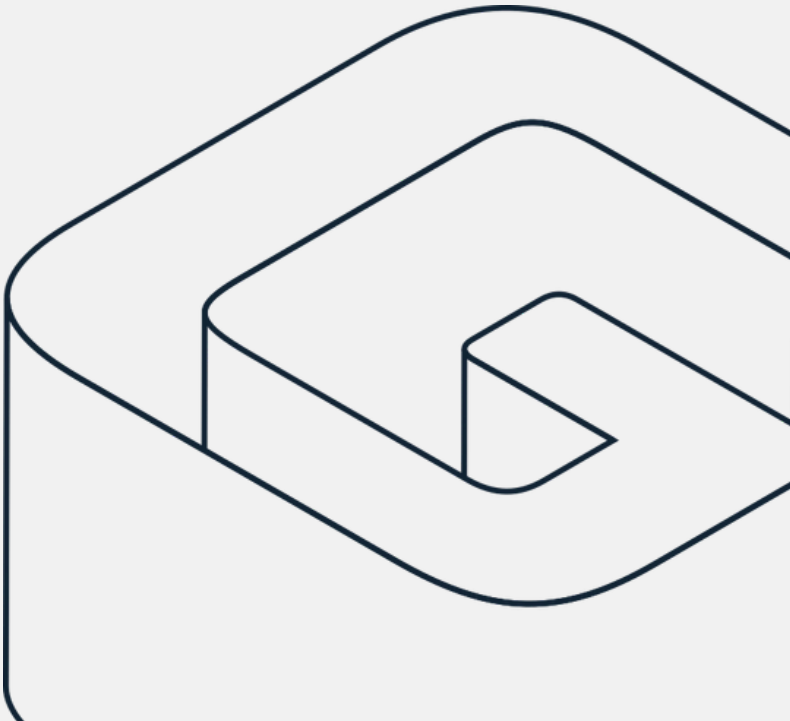
GDeck EPS flooring systems combine expanded polystyrene (EPS) foam blocks with concrete beams and a final concrete layer. This system provides a high level of insulation and is designed to be a lightweight yet strong flooring solution.

Advantages

- Thermal efficiency: excellent U-values due to the EPS insulation, leading to significant energy savings.
- Lightweight: easier handling and installation compared to all-concrete systems.
- Environmental impact: lower environmental impact due to reduced concrete usage.
- 98% lighter and 30% faster to install.
- Install with hand tools, removing the need for power tools.
- Guaranteed U-values at the point of design due to EPS design leading to significant energy savings.
- 200kg/m² less deadweight compared to traditional beam and block.
- No need for top sheet installation.
- No silica dust produced.
- Minimum on-site and 100% recyclable. Lightweight installation requiring no power tools.

Disadvantages

- Fire resistance: lower resistance compared to all-concrete systems. EPS is only suitable for ground-floor installations with no habitable spaces below.



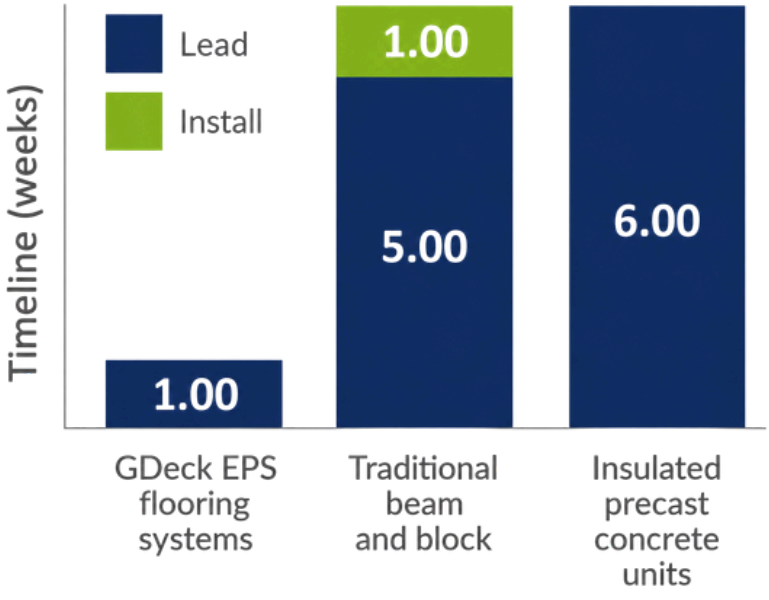
Cost comparison

The below table evaluates the total estimated cost per square meter (m²) for each flooring system, from ground level excavation to the final screed finish. It breaks down the costs into several components, including ground preparation, sub-base preparation, material costs, additional insulation, installation and screed finish.

Cost Component	GDeck flooring systems	Top sheet systems	Traditional beam and block	Insulated precast units
Ground preparation and excavation per m²	£15	£15	£15	£15
Sub-base preparation per m²	£10	£10	£10	£10
Material cost per m²	£34	£34	£35	£98
Additional insulation cost per m²	N/A	N/A	£14	N/A
Additional concrete layer cost per m²	N/A	N/A	£16	N/A
Installation cost per m²	£7	£14	£16	£10
Screed finish per m²	£20	£20	£20	£20
Total estimated cost per m²	**£86**	**£93**	**£126**	**£153**

Lead & installation timeframes

This graph outlines the total time required to procure and install each flooring system. It includes both the lead time for manufacturing, or procuring the materials, and the on-site installation time.



Where the green install time is not shown, this indicates installation takes less than 1 week, and for the case of GDeck EPS flooring systems, is around two days. Research and analysis conducted by TWG Associates LTD on behalf of Moulded Foams



Persimmon
Together, we make your home

“As a Welsh housebuilder we are required to adhere to stricter energy efficiency standards and lower (better) U-value, or "backstop," limits compared to the rest of the UK (specifically England) under the updated Approved Document Part L (2022).
GDeck consistently achieves an impressive U-Value of 0.11 W/m²K—well above the mandatory 0.15 W/m²K—without requiring changes to building fabric or coursing heights.
This high-performance design has strengthened our SAP outputs and supported our commitment to building net-zero-ready homes.

Sustainability is further reinforced through GDeck’s BRE Green Guide A+ rated EPS system, which is 100% recyclable and substantially reduces unnecessary site skip waste.
As a local manufacturer in Blackwood GDeck was the obvious choice as it supports our ambitions, minimizes transport emissions, and enables a reliable 3–5 day delivery, reducing the need for on-site storage and ensuring consistent production flow.

From a commercial perspective, GDeck delivers meaningful cost and time savings. Installation is up to 30% faster than traditional methods, enabling teams to complete around 250 m² per day—an invaluable advantage amid rising labour costs and growing build-rate demands.
It’s distinctive white rails support efficient NHBC inspections, allowing beams to be easily identified, removed, and reinstated with clear photographic evidence of compliance.

Overall, GDeck provides Persimmon Homes West Wales with a high-performance, sustainable, and future-ready flooring solution.
It’s combined benefits in safety, thermal performance, environmental responsibility, and installation efficiency make it a standout example of innovative construction practice and a valuable partner for delivering the next generation of our energy-efficient homes.”

ELLIS JONES
Technical Manager
Persimmon Homes West Wales



gleeson

“GDeck has been used on my site for over two years, very good system, so light weight, easy to move about on site and install, and saves time, effort, not back breaking for the ground workers! Compared to concrete block and beam systems. I like that it is installed all in one and no need for top sheet to be laid afterwards. It is a lot quicker to install floors with, for example a 2 -man crew to install two floors in 2 semi detached houses would take a full day with block and beam and top sheet, with GDeck both the semi’s floors would be installed by lunch, saving half the amount of time.”

GRAHAM RODGERS

Site Manager
Rainsborough Park Gleeson Homes
Gleeson Homes – Affordable New Build Homes



Llanmoor Homes

“Been using GDeck on my sites for many years now, it is a great insulated floor system, with so many advantages over block and beam, and top sheet systems. It saves on install time, it saves costly space in my skip as minimal waste and this is collected for recycling. It’s such an easy system to install, complimented by easy to follow designs, which gives me piece of mind that whoever is installing it, there will be no major problems.
I like that the GDeck white rails mark out the beam locations against the grey infill panels, and are easily removed and replaced for NHBC drainage inspections. I would recommend GDeck for its labour saving, time saving, cost saving, and the performance it delivers.”

DAVE HODGES

Site Manager
Llanmoor homes
www.Llanmoor-homes.com

GDECK® Installation

1.



Starter Panel
The approved drawing will highlight the measurement of the first beam position and the location of the dedicated starter panel. This will normally be cut from a full panel. The cut off from the starter panel can be used as the end panel unless the approved drawing states otherwise.

2.



Once the starter panels are in place the next row can be installed. The approved drawing will specify if a full or half panel is needed. The GDeck rail sits on the beam and the silver infill panel will rest on the shoulders of 2 beams filling the void.

3.



When the row of panels has been installed there may be excess. Once marked, the panel can be cut to fit the floor. This offcut can then be used to begin the next row.

4



Multi Rails
Where drawings specify multiple beams the GDeck multi rail is used. This is simply installed along the top of the beams. The multi rail has a toe piece which fits into the gap between the beams. You therefore do not need to screed between multiple beam locations when using GDeck. Once the multi rails are installed the next panel will fit as normal.

5.



Cut Rows – sometimes an approved drawing will designate a row which is not a full or half panel. This is called a ‘cut row’. On these occasions, you will need to simply cut the panel to the desired width to fit the row as required. You begin by marking the required width on the panel. You then cut along the silver panel as above.

6.



Service Pipes – all penetrations including service pipes should be cut as neatly as possible. Any gaps around the service pipes should be filled using a polyurethane expanding foam. Excess expanding foam should be removed to leave a sealed neat finish.

7. End Panel – complete the installation as per approved drawing. The offcut from the starter panel should be used where possible as the end panel which will again rest on steel edge clips if they are being used.

8. Closure Blocks – concrete closure blocks are used to sit between the ends of the beams on either end of the floor. These will need to be mortared in place.

9. Membrane Sheets – a gas or damp proof membrane can be installed if required.

10. Psi Strip® – before applying concrete topping, a Psi Strip must be fitted to the perimeter wall. Psi Strip is supplied, minimum 25mm thickness and 75mm height to match perimeter screed height.

TIP

Install the cut panel as normal. The cut panel will then sit flush against the beam which prevents the next rail going onto the beam. To avoid cutting the rail profile into the silver panel, remove part of the next white rail before fitting.

SCAN ME

Scan to see installation



Moulded Foams
Cellular foam solutions

Built on a foundation of inherent product quality, innovation and unrivalled customer experience, Moulded Foams continues to establish cellular foams as essential materials for the 21st century.

With over 30 years' experience of developing cellular foam product solutions and being a key supplier to the brown goods, white goods, pharmaceutical, medical, aviation, automotive, mechanical services, marine and food sectors, we offer much more than pieces of white plastic packaging. Our expertise and innovative thinking have helped our customers to protect people from head and body injuries, improve medical treatment and protect critical systems on land, in the air and at sea.

Modern construction is also benefitting from the use of cellular foam. Our GDeck system – structural insulation for pre-stressed concrete beams – is redefining the design and construction of suspended ground floors. GDeck's unique design allows architects and housebuilders to be confident the thermal performance of the as-built ground floor will meet or exceed the designed performance, whist providing greater architectural freedom by reducing the dead load of the floor.

As the largest privately owned cellular foam moulder in the UK, we mould and convert EPS, EPP, EPE and other dynamic foams. Our in-house product design and toolmaking centre works with the latest cushioning, thermal and CAD software, enabling us to progress from CNC machined prototypes to production components in a matter of weeks.

Get in touch

If you are interested in finding out more about GDeck or any of our other products, please get in touch.

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GDECK®

