thermohouse

the low energy building system

‘exceed your
energy performance levels’

www.thermohouse.co.uk

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‘discover the
better way to build’

Welcome to Thermohouse

Thermohouse is one of the highest quality low energy building system available in Europe today. Thermohouse is an innovative modern method of construction, which combines the inherent strength of concrete with the excellent insulation properties of polystyrene to produce a highly cost-effective, durable home with an unsurpassable living environment.

The Thermohouse low energy building system is produced in our state of the art factory in Killarney, Co. Kerry, Ireland.

Thermohouse is part of the MC Group and has received European Technical Approval (No. ETA-09/0083) together with Irish Agrement Board Certification (080310/100349), LABC Certification, UAE Certification and is CE Marked (ISEN13163). Thermohouse guarantees a superior airtight insulated home for future living. The Thermohouse building system is suitable for the construction of residential, commercial, institutional, industrial properties and is certified for up to 6 storeys.

Whether you are building your own home or are an industry professional, our highly experienced team at Thermohouse will offer you a complete estimating service with guaranteed support on any queries you may have.

We invite you to visit our website www.thermohouse.co.uk for access to our technical details.

Signed

Michael Cronin

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Why thermohouse is great for you

Code for Sustainable Homes

The Thermohouse low energy building system is a complete airtight thermal envelope that will help to achieve code level 6 as per the code for sustainable homes.

Greater Energy Rating (EPC)

Thermohouse can achieve an “A” rated to passive standard, the highest performance rating today.

Greater Reduction on heating bills

The complete Thermohouse system can produce a considerable amount of savings on heating bills compared to traditional builds.

Greater Sound Insulation

Superior sound insulating performance from the outside environment.

Greater Design Opportunities

The Thermohouse system consists of lightweight materials which are easy to transport and install. The flexibility of the system encourages creative & innovative designs with considerable reductions on construction time.

Greater Durability

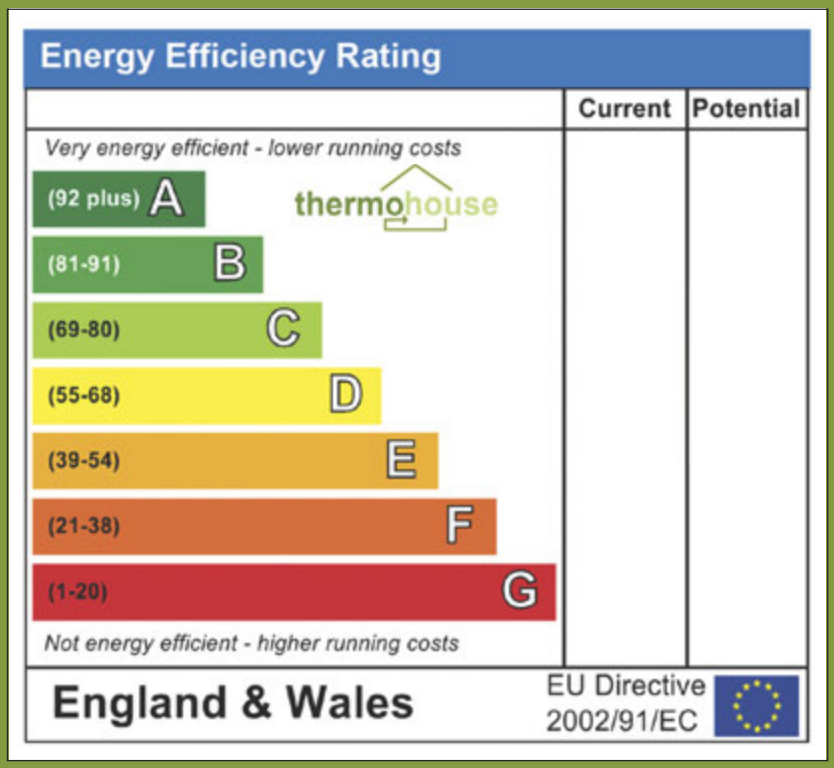
Long lasting, maintenance free, superior steel reinforced concrete structure with a lifetime guarantee, no rust, no rot, no leaks, no draughts, no mould, and no condensation.

Greater Fire Safety

Increased protection against fire, with greater fire resistance.

Greater Re Sale Value

Ensuring Premium financial security and return on the re sale of your home.



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Environment

The materials manufactured by Thermohouse are environmentally sustainable and are an efficient use of natural resources. A reduction of the carbon footprint can be achieved by using up to 50% GGBS (ECO friendly cement). The high thermal mass of the concrete means more "fabric energy storage". There is minimal waste during construction and any waste is recyclable. The manufacture and the use of the Thermohouse building system does not generate any risk to your health or to the environment.

Airtightness

The Thermohouse low energy building system provides an airtight thermal envelope and eliminates any cold bridging. The Thermohouse system allows for an improved pressure test for air leakage. The high quality airtightness that the Thermohouse thermal envelope offers will also allow for continuous energy saving over the life span of the building. When installed correctly, the Thermohouse building system can achieve less than 0.050 AC-HR (Passive Standard).

Requirement	Thermohouse Standard
Building Fabric	Elemental U Values (W/m^2K)
1. Pitched Roof - Insulation at Ceiling	0.15
2. Pitched Roof - Insulation on Slope	0.15
3. Flat Roof	0.15
4. Walls	0.195
5. Ground Floors, Underfloor Heating	Thermoboard 0.12
6. Other Exposed Floors, Underfloor Heating	Thermoboard 0.12
7. External Doors, Windows & Rooflights	Tripled Glazed Windows & Doors
Airtightness	Less than $2m^3/hr/m^2$

U-Values under the Thermohouse Low Energy Building System.

Expanded Polystyrene (EPS)

The Thermohouse system is composed of Expanded Polystyrene (EPS). EPS is made up of 98% air and 2% polystyrene and has a minimum life span of 60 years. EPS uses less than 0.1% of global oil as a feedstock, allowing it to save up to 200 times its own resource in thermal energy savings. The energy payback of EPS thermal insulation is highly renowned. In the case of thermal renovation of a house with EPS insulation, the total primary energy for production of the EPS used is saved in just 2 to 4 months. For commercial construction, EPS applications get the highest possible A-plus summary rating in the BRE Global Green Guide to specification. In addition to the A-plus summary rating, EPS gains 'A' ratings across the majority of the critical environmental performance matrices. The lightweight, low impact qualities of EPS combined with its immense energy saving insulation properties has the potential to significantly reduce CO2 emissions. Approximately 85% of the environmental impact of a building is related to energy consumption in the building's occupation phase, mainly from the heating and cooling needs of the building user. Therefore, one of the most important environmental aspects of any insulation material is its thermal performance throughout the lifetime of the building and the design to ensure the longevity of this thermal performance.

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The Thermohouse wall forms, part of the low energy building system, are state of the art high density expanded polystyrene (EPS) elements with the inner and outer insulation leaves locked with galvinised steel bridges. It provides a very solid structure for the installation of the steel reinforced concrete and a high quality thermal envelope with no cold bridging.

Thermohouse - 250 Standard Element Internal Load Bearing Wall

1200 x 250 x 250

50 - 150 - 50

Thermohouse - 300 Standard Element External Wall

1200 x 250 x 300

100 - 150 - 50

U Value + 0.20W/m²K

Thermohouse - 300 Standard Element Party Wall

1200 x 250 x 300

50 - 200 - 50

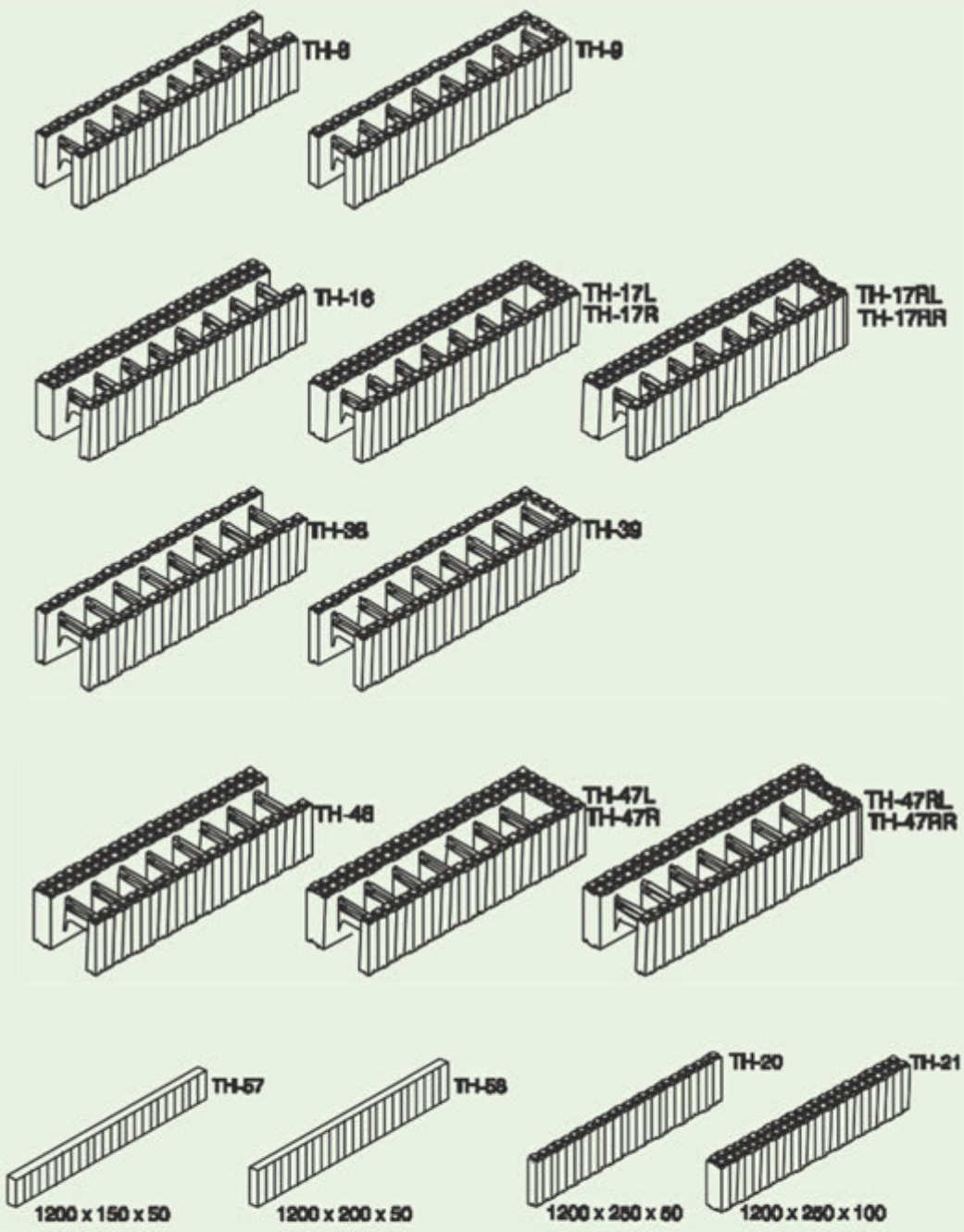
Thermohouse - 350 Standard Element External Basement Wall

1200 x 250 x 350

100 - 200 - 50

U Value + 0.20W/m K

Lintel Inserts and Special Elements



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Thermohouse ICF Rising Walls / Dead Work

ICF Curved Wall Construction

Concrete pour to ICF Walls

Concrete pour to ICF Walls

Two Storey Construction

First Floor Dormer Window and Gable Wall Construction

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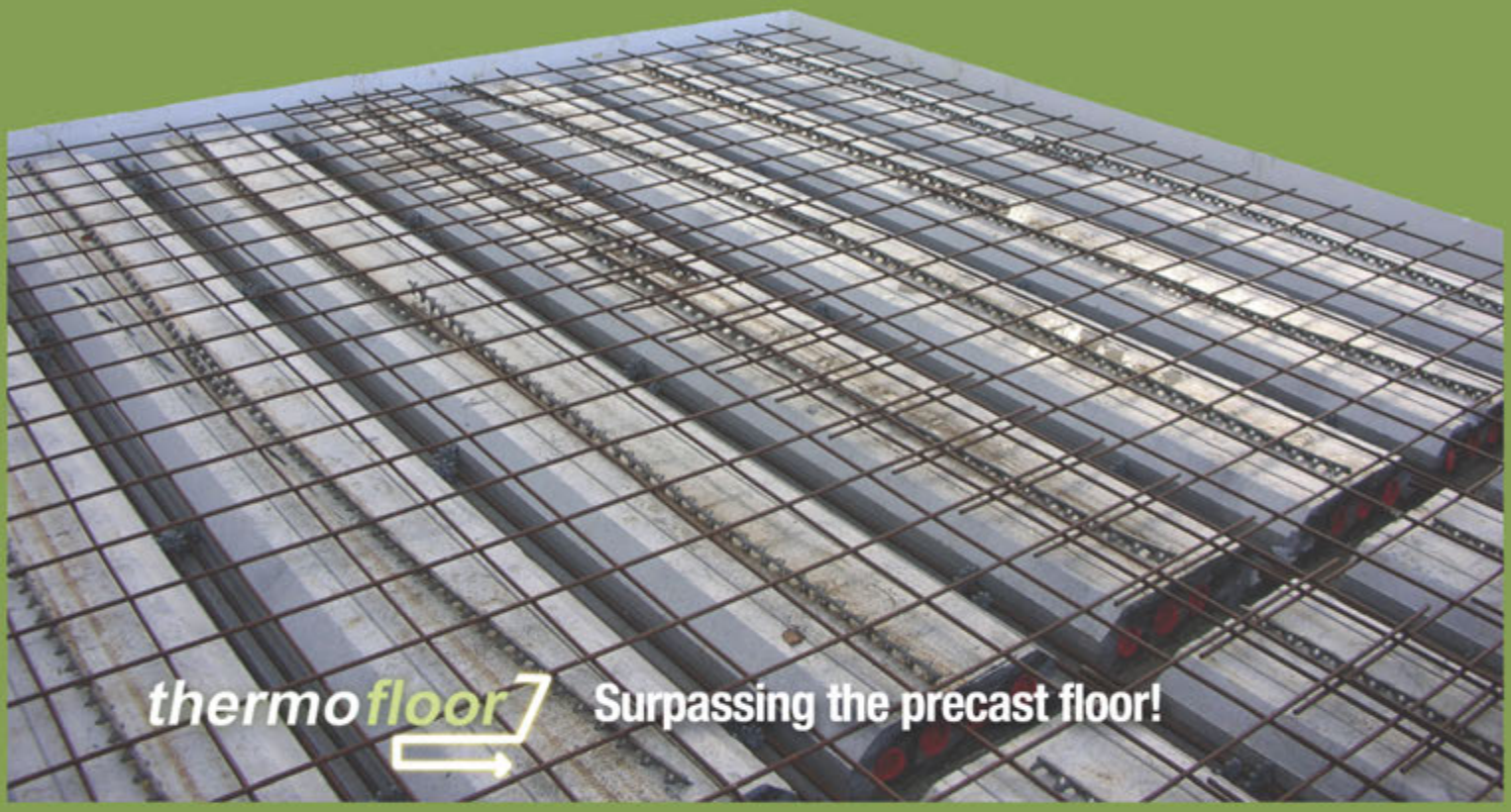
thermofloor



When installed, the unique flooring system from Thermohouse, part of the low energy building system, is less than half the weight of hollowcore precast floors, but also provides the same load capacity. A superior end product with excellent insulation properties, at a competitive price, installed in record time!!

- Lightweight, ease of use, results in a considerable time reduction for the installation.
- Offers improved control of the thermal insulation and air tightness between floors.
- Customised cut to length panels that can span up to 8 metres or more.
- No need for shuttering or lifting cranes.
- Excellent noise reduction which acts as an additional sound barrier between floors.
- Clean sites, no waste or messy wet trades required.
- Unique design with channels for service and ventilation, eliminating cold bridging.
- Cold and wet weather does not interfere with construction.
- Installation in complete safety.

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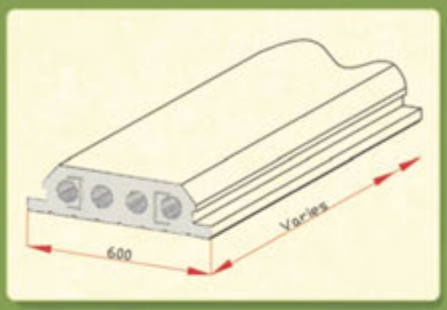
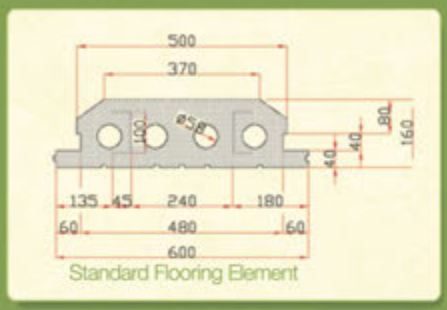
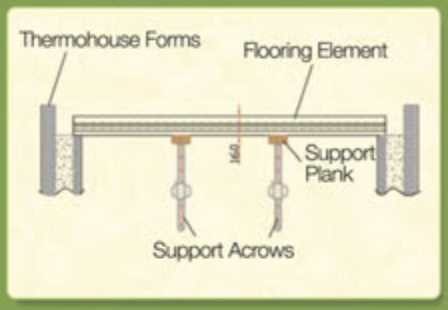
Flooring Element



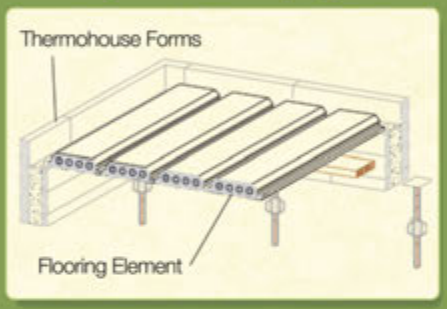
Flooring Element Cross Section



Flooring Element Placement



Flooring Element Laying



Flooring Element Reinforcement

Flooring Element Concrete Floor

Thermohouse Floor Type Th-160

Steel Requirement

Span(m)	Concrete Depth 100mm Live Load 2.5KN Screed 1.0KN	Concrete Depth 150mm Live Load 2.5KN Screed 1.0KN
2.0	2T8	2T8
3.0	2T8	2T8
4.0	2T10	2T10
5.0	2T16	2T12
6.0	2T20	2T16
7.0	2T20	2T20

Thermohouse Floor Type Th-210

Steel Requirement

Span(m)	Concrete Depth 100mm Live Load 2.5KN Screed 1.0KN	ConcreteDepth 150mm Live Load 2.5KN Screed 1.0KN
2.0	2T8	2T8
3.0	2T8	2T8
4.0	2T10	2T10
5.0	2T12	2T12
6.0	2T16	2T16
7.0	2T20	2T16
8.0	-	2T20

For loads and spans outside of the above table, contact our technical office.

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Typical Floor Installation

Typical Floor Installation with insitu beam

Shuttering to edge of floor and concrete pour

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Improve your Energy Rating with thermoroof

Ideal for use with any Building System

Setting New Performance Standards -
Thermoroof = U Value 0.15 – Meets Passive Standard

The Thermohouse Roof System panel, part of the low energy building system, is a highly insulated panel supported by two steel C-Sections to take all design loads. Its unique structural strength, ease of installation and excellent insulation properties enables the occupier to benefit from a superior airtight system with considerable savings on energy bills.

- U-Value of 0.15 which substantially exceeds current Building Regulations and also meets passive standard
- Fast, versatile and easy to install.
- Fully insulated attic space which removes the traditional cold space and also eliminates the risk of burst pipes in the attic.
- No roof trusses required which transforms the full attic space into an additional living area.
- Manufactured with two steel C-Sections to take all design loads.
- Designed to takes all types of roof covers, tiles and slates.

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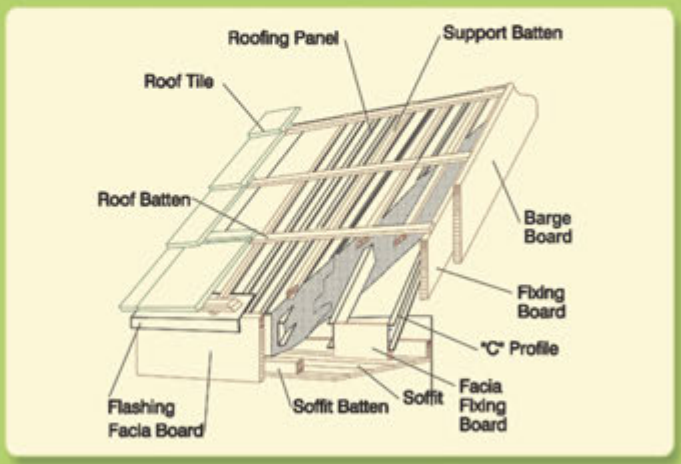
thermoroof



Thermoroof can also be used with Concrete block Builds.

registered LABC

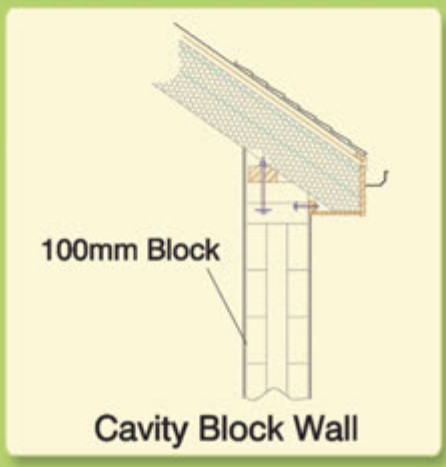


Table of Maximum Spans for Double Span Roof

Roof Finish	Wind Load Type	ROOF SLOPE Span (m) 10°	20°	30°	40°	50°	60°
Slate Roof	Exposure 1	4.06	3.85	3.75	3.73	3.70	3.82
	Exposure 2	3.86	3.75	3.63	3.59	3.54	3.64
	Exposure 3	3.64	3.68	3.54	3.50	3.44	3.52
Tiled Roof	Exposure 1	3.89	3.71	3.64	3.64	3.62	3.75
	Exposure 2	3.84	3.63	3.53	3.51	3.47	3.58
	Exposure 3	3.75	3.57	3.45	3.42	3.38	3.47

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thermoboard

the underfloor energy saver

Thermoboard is manufactured from expended polystyrene (EPS) in a variety of thicknesses to achieve U-Values up to 0.12w/m²k. The Thermoboard panels have an overlap on all joints which enables them to lock together during installation.

Benefits of using Thermoboard in underfloor heating requirements

- Current Building Regulation Part L 1.3.2.2 requires floors to have a u value of 0.15w/m²K when installing UFH
- Thermohouse offers a single 180mm Insulation board, u value 0.15w/m²K, with 16mm and 20mm pipe retainers for UFH
- Piping can be laid at 150mm, 225mm and 300mm centres
- Rail fix and clips no longer required
- Polythene sheet is no longer required

Technical Information

Thermal Conductivity	0.030W/mK
Maximum Compression	Compression of 10%
U Value	0.12 for 225mm board 0.15 for 180mm board 0.33 for 100mm board 0.45 for 80mm board 0.68 for 60mm board
Panel Thickness	60 - 225mm
Type	EPS

Thermoboard

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Sample Completed Constructions

Community Residential Centre

Housing Estate

Hostel Extension

Private Dwelling

Visitors Centre

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Private Dwelling

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