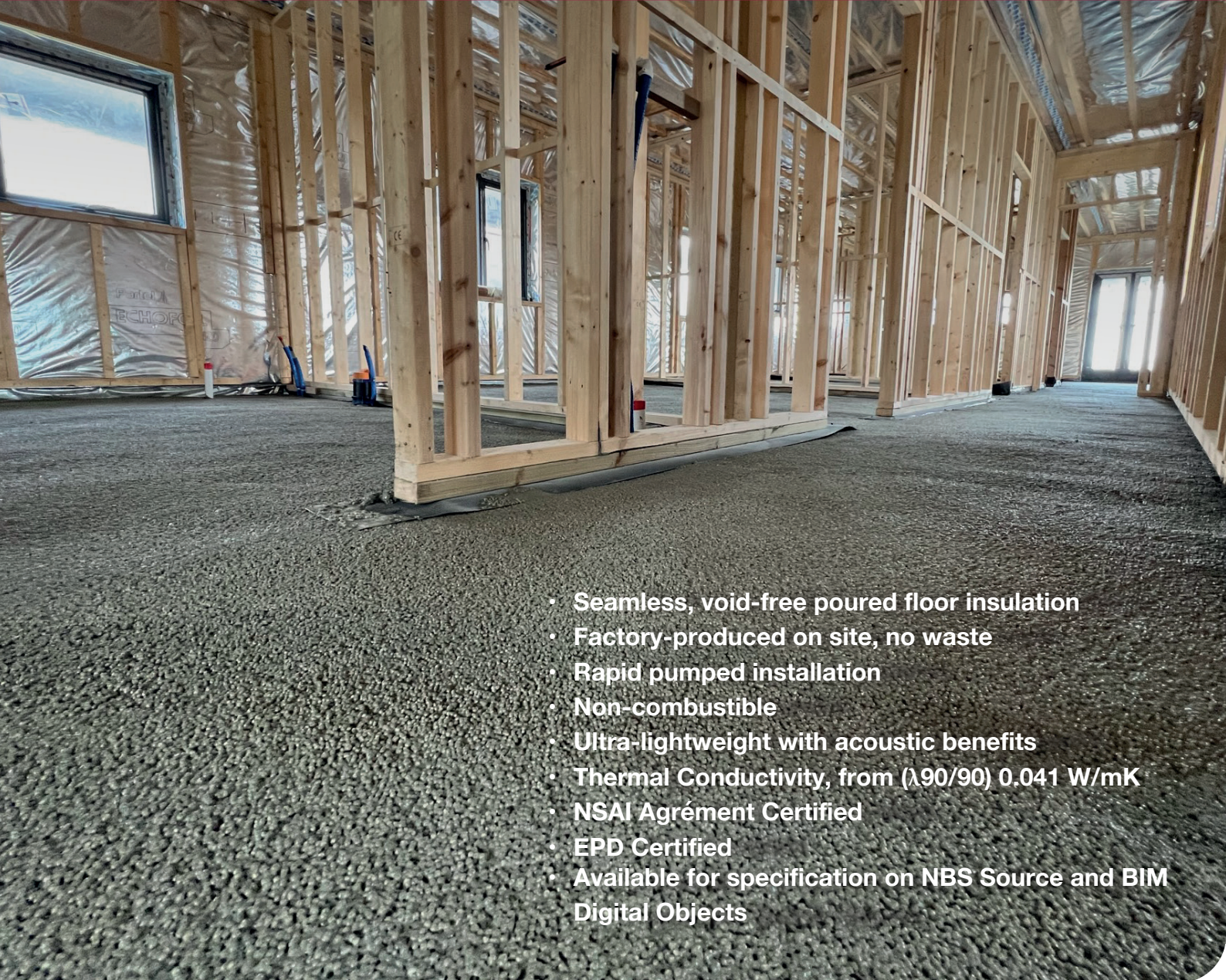


# baseTherm®



- Seamless, void-free poured floor insulation
- Factory-produced on site, no waste
- Rapid pumped installation
- Non-combustible
- Ultra-lightweight with acoustic benefits
- Thermal Conductivity, from ( $\lambda_{90/90}$ ) 0.041 W/mK
- NSAI Agrément Certified
- EPD Certified
- Available for specification on NBS Source and BIM Digital Objects





# baseTherm®

NSAI Agrément certified baseTherm® Floor Insulation System is a pumpable, light-weight thermal and insulating screed mortar consisting of EPS beads, fast-drying cements and proprietary additive. It is mixed on site using a purpose-built mobile EPS mortar delivery system to meet the requirements of I.S. EN 16025-1 and I.S. EN 16025-2.

baseTherm® is used as a thermally insulating, non-structural, bound expanding polystyrene system (BEPS) which can contribute to the thermal and acoustic performance of floors in either new or existing buildings.

## The product may be installed:

- Below a concrete floor slab.
- Below a floor screed on a concrete slab with a hardcore base.
- Above a suspended concrete floor (e.g., block and beam) with a floor screed.

baseTherm® is suitable for internal application to ground-supported and suspended floors in existing and new domestic and non-domestic building applications. The system is available in four grades, baseTherm® Low Lambda, baseTherm® 150, baseTherm® 200, and baseTherm® 250.

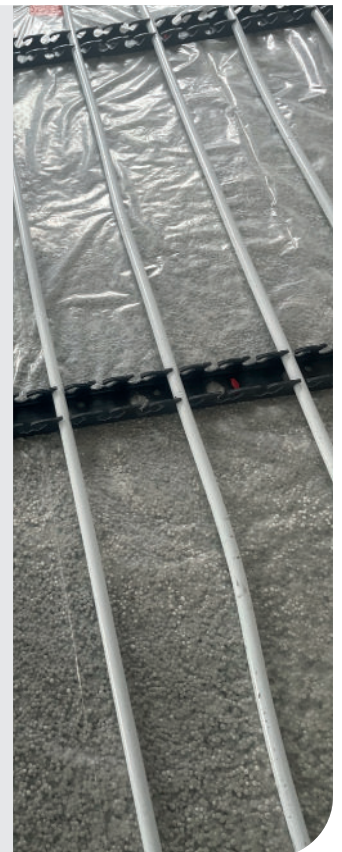
## baseTherm® Low Lambda U-values:

Ground Floor Construction Typical U-values (W/m<sup>2</sup>K)  
New Buildings Part L

baseTherm® Low Lambda |  $\lambda$  90/90 = 0.041 W/mK |  $\lambda$  Ground 2.0 (soil)

Perimeter/Area (m<sup>2</sup>)

Insulation Thickness	0.2	0.3	0.4	0.5	0.6	0.7
100mm	0.20	0.23	0.25	0.27	0.28	0.29
110mm	0.19	0.22	0.24	0.25	0.26	0.27
120mm	0.18	0.20	0.22	0.23	0.24	0.24
130mm	0.17	0.20	0.21	0.22	0.23	0.24
140mm	0.16	0.19	0.20	0.21	0.22	0.22
150mm	0.16	0.18	0.19	0.20	0.21	0.21
160mm	0.15	0.17	0.18	0.19	0.20	0.20
170mm	0.15	0.17	0.18	0.18	0.19	0.19
180mm	0.14	0.16	0.17	0.18	0.18	0.18
190mm	0.14	0.15	0.16	0.17	0.17	0.17
200mm	0.13	0.15	0.15	0.16	0.17	0.16
210mm	0.13	0.14	0.15	0.16	0.16	0.16
220mm	0.12	0.14	0.15	0.15	0.15	0.16
230mm	0.12	0.13	0.14	0.14	0.15	0.15
240mm	0.12	0.13	0.14	0.14	0.14	0.15
250mm	0.11	0.12	0.13	0.14	0.14	0.14



## baseTherm® Technical Characteristics:

baseTherm® meets the requirements of I.S. EN 16025-1 and I.S. EN 16025-2

### baseTherm® Characteristics to I.S. EN 16025-1

	Low Lambda	150	200	250	-
Particle size group of EPS N	≤ 6mm	≤ 6mm	≤ 6mm	≤ 6mm	EN 933-1
Apparent density of fresh mortar ± 10%	± 178 kg/m <sup>3</sup>	± 246 kg/m <sup>3</sup>	± 297 kg/m <sup>3</sup>	± 353 kg/m <sup>3</sup>	EN 12350-6
Thermal Conductivity λ 90/90	0.041 W/mK	0.052 W/mK	0.059 W/mK	0.069 W/mK	EN 12667
Bound EPS Density ± 10%	± 85 kg/m <sup>3</sup>	± 150 kg/m <sup>3</sup>	± 200 kg/m <sup>3</sup>	± 250 kg/m <sup>3</sup>	EN 1602
Reaction to Fire	Class A2	Class A2	Class A1	Class A1	EN 13501-1
Compressive Strength σ <sub>10</sub>	CS (10)100	CS (10)150	CS (10)400	CS (10)600	EN 826
Compressibility	≤ 2mm	≤ 2mm	≤ 2mm	≤ 2mm	EN 12431
Creep	CC(2/2/10)3.5	CC(3/3/10)3.5	CC(2/2/10)3.5	CC(2/2/10)3.5	EN 1606
	CC(2/2/10)6.5	CC(3/3/10)6.5	CC(1.5/1.5/10)6.5	CC(1.5/1.5/10)6.5	
	CC(2/2/10)6.5	CC(3/3/10)6.5	CC(1.5/1.5/10)6.5	CC(1.5/1.5/10)6.5	
Water Vapour Diffusion Resistance	5 to 20	5 to 20	5 to 20	5 to 20	EN 12086
Water absorption by short term partial immersion	≤ 2.6 kg/m <sup>2</sup>	≤ 2.0 kg/m <sup>2</sup>	≤ 1.6 kg/m <sup>2</sup>	≤ 0.8 kg/m <sup>2</sup>	EN 1609
Dynamic Stiffness	127 MN/m <sup>3</sup>	226 MN/m <sup>3</sup>	253 MN/m <sup>3</sup>	475 MN/m <sup>3</sup>	EN 29052-1

## QUALITY

As a supplier of high-quality building products and services, we recognise that our operations must be carried out to the highest standards. In order to achieve this, we operate a BSI and SCS registered ISO 9001: 2015 Quality Management System, BSI registered ISO 14001: 2015 Environmental Management System, and a BSI registered ISO 45001:2018 Occupational Health and Safety Management System. These management systems define our working procedures and processes, underpinning our commitment to providing excellence in all our services, systems, and products. Our aim is to achieve total client satisfaction for every aspect of our work.

## GENERAL INSTALLATION PROCEDURES

Prior to installation, the building shall be inspected by the installer, in order to determine whether it is suitable for application of baseTherm®.

The installation of baseTherm® is carried out in accordance with I.S. EN 16025-2 Thermal and/or sound insulating products in building construction – Bound EPS ballasting Part 2: Processing of the factory premixed EPS dry plaster and the following recommendations.

## LOCATION OF SERVICES

When pipes and conduits are laid within the thickness of the BEPS, they should be firmly anchored in position and the material well compacted around and over them to a minimum thickness of 50mm above the pipes.

## SITE CONDITIONS & PREPARATION

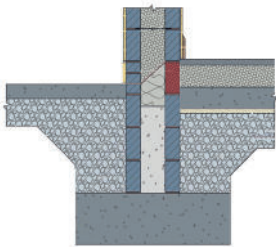
The ambient temperature and the temperature of the supporting substrate should have a minimum of 5°C and a maximum of 30°C. The substrate should be clean, reasonably dry, free of grease and other impurities. The supporting substrate and structure shall be sufficiently stable and comply with I.S. EN 1991-1-1.

## PRODUCTION

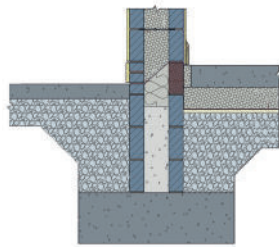
baseTherm® BEPS mortar is manufactured on site to the required quantity by a purpose built mobile screed factory (e.g. Bremat) using approved production recipes for baseTherm® Low Lambda, 150, 200 and 250. The mortar must be mixed for an adequate period of time in order to obtain a homogeneous mixture and must be pumped by means of an (on-board) rotor/stator pump.

## INSTALLATION

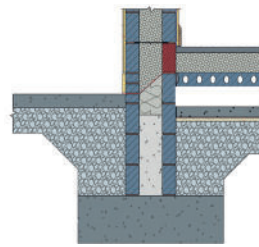
baseTherm® can be installed directly bonded onto a suitable load bearing floor or unbonded on a separating membrane (polyethylene). When installing baseTherm® in multi-storey buildings, ensure the substrate is watertight, as water may be released from the wet mortar. In such instances the baseTherm® can be installed unbonded on a separating membrane (polyethylene), with min. 100mm overlaps and taped. Highly absorbent substrates i.e. dehydrated concrete should be pre-dampened, prior to bonded installations. Structural movement joints in the substrate should be followed through in the baseTherm® BEPS mortar.



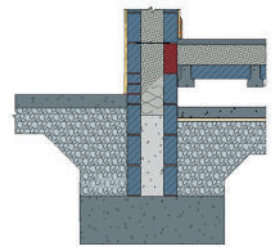
above slab below floor screed



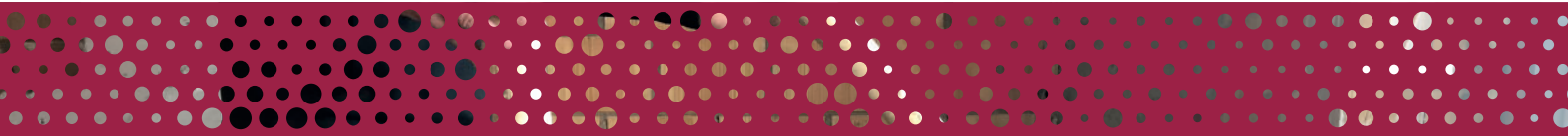
below floor slab



above hollow core slab below floor screed



above block and beam below floor screed



### APPARENT DENSITY OF THE INSTALLED FRESH MORTAR

During installation, the installer shall examine the apparent density of the fresh mortar at least every 10m<sup>3</sup>. For that purpose, at least 10 l of fresh mortar shall be put into a suitable vessel in accordance with I.S. EN 1602:2013. The volume of the mortar contained in the vessel shall be determined with an accuracy of ± 0,5% and its mass with an accuracy of ± 1g.

### DECLARED INSTALLED THICKNESS OF THE INSTALLED BOUND EPS (BEPS)

Minimum required thickness is pre-determined by datum and continuously measured by staff and laser level during installation. The declared installed thickness shall be indicated on the completion report.

### DECLARED INSTALLED THERMAL RESISTANCE

The declared installed thermal resistance (R-value) is determined from the installed thickness and the declared thermal conductivity ( $\lambda_{90/90}$ ) in accordance with I.S. EN 12667. The corresponding floor U-value is determined from the project-specific calculation to I.S. EN ISO 6946 and I.S. EN ISO 13370.



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basetherm.com

### DECLARED INSTALLED BOUND EPS DENSITY

The declared installed bound EPS density shall be determined with an accuracy of 1 kg/m<sup>3</sup> and shall be recorded on the completion report as per I.S. EN 16025-2.

### (HEATED) FLOOR SCREED

Depending on site conditions, when baseTherm<sup>®</sup> mortar is fully dry, a 500-1000 gauge (125-250 micron) separation membrane is installed, prior to installation of underfloor heating pipes (if applicable). Edge insulation of 8mm minimum with a minimum thermal resistance of 1.0 m<sup>2</sup>K/W should be formed around the perimeter (walls, columns, etc.). After completion of these preparation works a self-smoothing screed to BS 8204-7 or sand & cement screed to BS 8204-1 may then be installed.

The heating pipes or cables should be fully secured to the surface of the BEPS to prevent flotation during screeding. The manufacturer of the heating system should provide their installation details, but it is essential to ensure that the heating elements cannot float. Please refer to baseTherm<sup>®</sup> AFTERCARE for further detailed information.



REGISTERED ON

