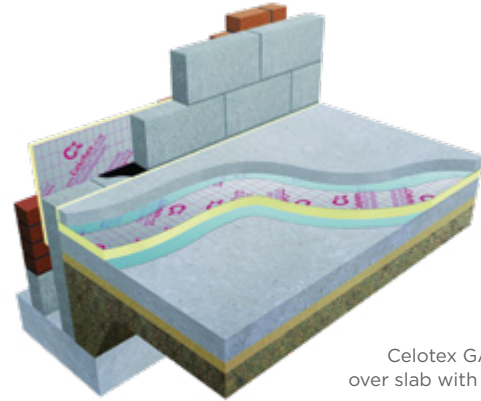


Use [Celotex GA4000](#) or [Celotex XR4000](#) high performance thermal insulation in basement refurbishment projects to minimise insulation thickness and give the following benefits:

- Easy to cut boards to fit in most spaces
- Provides reliable long term energy savings for buildings
- Excellent dimensional stability
- No thermal bridging at floor edges
- Tightly butted joints for insulation continuity



Celotex GA4000 over slab with screed

### Celotex GA4000 Technical Data

Thickness (mm)	R-value (m <sup>2</sup> K/W)	Maximum Board Weight (kg/m <sup>2</sup> )
GA4050	2.25	1.92
GA4060	2.70	2.26
GA4070	3.15	2.61
GA4075	3.40	2.78
GA4080	3.60	2.96
GA4090	4.05	3.31
GA4100	4.50	4.15

### Celotex XR4000 Technical Data

Thickness (mm)	R-value (m <sup>2</sup> K/W)	Maximum Board Weight (kg/m <sup>2</sup> )
XR4110	5.00	4.54
XR4120	5.45	4.93
XR4130	5.90	5.32
XR4140	6.35	5.71
XR4150	6.80	6.10
XR4165	7.50	6.69
XR4200	9.05	8.06

For product information for your project, please contact either our [technical team](#) or our [specification team](#).



We have an experienced team of energy assessors who can carry out SAP calculations, water calculations, airtightness testing and much more. [Contact us](#).



Celotex presents a comprehensive range of thermal bridging models featuring our PIR insulation products. This tool helps you identify the build-up required to reduce heat loss through a typical junction of elements or at openings. [Sign up now](#).

### Example U-value calculation: Ground Floor - Concrete Slab

Celotex Product	Thickness (mm)	Perimeter / Area Ratio									
		0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Celotex GA4000	50	0.11	0.16	0.19	0.20	0.22	0.23	0.23	0.24	0.25	0.25
Celotex GA4000	60	0.11	0.15	0.17	0.19	0.20	0.21	0.21	0.22	0.22	0.22
Celotex GA4000	70	0.10	0.14	0.16	0.17	0.18	0.19	0.19	0.20	0.20	0.20
Celotex GA4000	75	0.10	0.14	0.15	0.17	0.17	0.18	0.19	0.19	0.19	0.19
Celotex GA4000	80	0.10	0.13	0.15	0.16	0.17	0.17	0.18	0.18	0.18	0.19
Celotex GA4000	90	0.09	0.12	0.14	0.15	0.16	0.16	0.16	0.17	0.17	0.17
Celotex GA4000	100	0.09	0.12	0.13	0.14	0.15	0.15	0.15	0.16	0.16	0.16
Celotex XR4000	110	0.09	0.11	0.12	0.13	0.14	0.14	0.14	0.15	0.15	0.15
Celotex XR4000	120	0.08	0.10	0.12	0.12	0.13	0.13	0.13	0.14	0.14	0.14
Celotex XR4000	150	0.07	0.09	0.10	0.11	0.11	0.11	0.11	0.11	0.12	0.12

Based on 65mm screed and 20mm insulation as perimeter upstand. A basement depth of 2.00m with all walls fully retained to earth and a surrounding soil of clay / silt

## U-value

For U-values see variable layer list, or for more options, refer to our online U-value calculator at [celotex.co.uk](http://celotex.co.uk)

Requirements to meet target U-values for a basement floor are determined by a number of variable factors.

- Type of surrounding retaining soil. This can be clay / silt or sand / gravel or rock
- The thickness of the basement walls
- The height of basement walls from finished floor level to ground level
- The ratio of exposed floor perimeter to the total floor area (PA ratio)

In addition to the above, basement walls take into account the thermal performance of the basement floor.

Please contact the [Celotex Technical Centre](#) to confirm which boards meet target U-values.

## Installation Guidelines

Celotex insulation boards should not be installed when the temperature is at or below 4°C and falling.

### Basement floors - above concrete slab

- The surface of the slab should be smooth, flat and free from projections. If required use a thin layer of sand blinding on a rough slab to ensure the insulation boards are continuously supported.
- Ensure the basement floor is protected from external ground water penetrating the floor with a suitable waterproof system.
- A 500 gauge separating layer is laid over the Celotex boards to prevent screed migration, act as a vapour barrier and prevent a reaction between the wet screed and the foil facer.
- 20mm TB4000 is positioned around the exposed perimeter as an upstand. It is usually the depth of the screed.
- Apply a sand/cement or self levelling screed over the VCL and Celotex insulation boards to a minimum thickness of 65mm.

### Basement walls

- Ensure the basement wall is protected from external ground water penetrating the wall with a suitable waterproof system.
- Following manufacturer guidelines to maintain waterproof seal, fix 25mmx47mm battens to the masonry at 600mm vertical centres to coincide with the board edges with suitable fixings.
- Celotex PL4000 is then mechanically fixed to the battens using suitable fixings. Specific advice on fixings should be sourced directly from the fixing manufacturer.
- Joints between boards should be tightly butted and finished by taping and jointing using appropriate tape and jointing material to create the VCL.

Where building regulation approval is required, you should take advice from your local building control authority and the building designer.

### Certifications and accreditations

Celotex products GA4000 and XR4000 are covered by BBA Agrément Certificate No [17/5405](#). To download a copy of this certificate, visit the 'literature' pages on our website.

### Further information

If you wish to contact Celotex, please do so through the ['contact us'](#) page on our website.

For information regarding storage, installation and handling of Celotex products, or for health & safety information, please refer to our online 'literature' pages.

Celotex has a policy of continuous product development and reserves the right to alter product designs or specifications without prior notice.

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