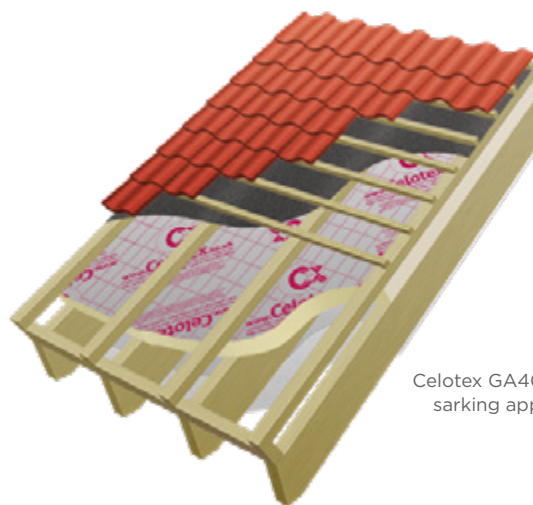


Use [Celotex GA4000](#) or [Celotex XR4000](#) high performance thermal insulation in pitched roof [sarking applications](#) to minimise insulation thickness and give the following benefits:

- Highly efficient 'warm roof' insulation over rafters
- Provides reliable long term energy savings for buildings
- Low emissivity foil facers give improved thermal insulation performance within cavity air spaces
- Helps to eliminate thermal bridging
- Optional single layer system
- Ideal for new build or major refurbishment projects
- Air-tight construction method



Celotex GA4000 in a sarking application

## 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: Over Rafters

Construction		Thickness (mm)
Outside surface resistance		-
Tiling including batten space		-
Counter batten		38
Breather membrane		-
Variable layer		See below
Cavity (low emissivity) rafter space (11.7% brg)		150
Polythene 1000 gauge, VCL		-
Plasterboard		12.5
Inside surface resistance		-
Variable Layer	Thickness (mm)	U-value (W/m <sup>2</sup> K)
Celotex GA4000, over rafter	70	-
Celotex GA4000, over rafter	75	-
Celotex GA4000, over rafter	80	-
Celotex GA4000, over rafter	90	0.20
Celotex GA4000, over rafter	100	0.19
Celotex XR4000, over rafter	110	0.17
Celotex XR4000, over rafter	120	0.16
Celotex XR4000, over rafter	130	0.15
Celotex XR4000, over rafter	140	0.14
Celotex XR4000, over rafter	150	0.13
Celotex XR4000, over rafter	165	0.12
Celotex XR4000, over rafter	200	0.10

### 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)

## Installation Guidelines

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

### Insulation over the rafters

- Note that specific fixing requirements should be determined for each roof, taking into account roof design and location.
- Fix a treated timber stop batten equal in thickness to the Celotex insulation across the rafters at the eaves. Butt boards directly against this batten.
- Install Celotex insulation boards with both edges supported by rafters.
- Cut the boards using the Celotex Insulation Saw to rake and splay at ridge and verges to ensure close butted joints.
- Use large headed nails to temporarily fix board in place, until permanently secured by counter battens.
- Install a breather membrane over the insulation.
- Position a preservative-treated timber counter batten (minimum 38mm x 50mm) over the breather membrane and insulation on the line of each rafter. Nail the lower end of each counter batten directly into the stop batten.
- Calculate the length of the suitable fixings required by adding together the counter batten depth, the insulation thickness and depth of penetration required to the rafter (usually minimum 38mm).
- Fix at maximum 400mm centres along the counter batten. Pre-drill pilot holes in the counter battens to ensure ease of nailing and to reduce the possible splitting of the timber.
- Fix the tile battens to the counter battens at an appropriate gauge to suit the slates or tiles selected.
- A vapour control layer (VCL) should be installed to the underside of the rafters. A polythene sheet of higher vapour resistance is recommended for high humidity areas such as kitchens or bathrooms.
- Finish with plasterboard or other suitable sheet material, fixed to the rafters.
- NB: Where exposed rafters are required, plasterboard (or any other suitable decorative board) may be laid over the rafters before fixing the insulation. Select longer fasteners to suit. Plasterboard should be protected from rain during the installation. A polythene vapour control layer (VCL) must be installed directly over the plasterboard.

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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