

Solid Masonry Wall - External Applications

Use [Celotex GA4000](#) and [Celotex XR4000](#) high performance thermal insulation in [external solid masonry wall](#) applications to minimise insulation thickness and give the following benefits:

- Reduces thermal bridges formed by mortar joints
- Ideal where no wall cavity exists
- Can be used to provide reliable long term energy savings for buildings
- Particularly suited to refurbishment projects
- Saves internal room space



Celotex GA4000 in a solid masonry wall

Celotex GA4000 Technical Data

Thickness (mm)	R-value (m ² K/W)	Maximum Board Weight (kg/m ²)
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 ² K/W)	Maximum Board Weight (kg/m ²)
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: solid masonry wall

Construction	Thickness (mm)
Outside surface resistance	-
Softwood weatherboarding	19
Cavity (ventilated)	-
Breather membrane	-
Variable layer	See below
Brickwork	215
Plaster, lightweight	13
Inside surface resistance	-

Variable Layer	Thickness (mm)	U-value (W/m ² K)
Celotex GA4000	60	0.30
Celotex GA4000	70	0.26
Celotex GA4000	75	0.25
Celotex GA4000	80	0.24
Celotex GA4000	90	0.21
Celotex GA4000	100	0.19
Celotex XR4000	110	0.18
Celotex XR4000	120	0.16
Celotex XR4000	130	0.15
Celotex XR4000	140	0.14
Celotex XR4000	150	0.13
Celotex XR4000	165	0.12
Celotex XR4000	200	0.10

U-value

For U-values see variable layer list. U-values will vary depending on application. To calculate a specific U-value, please visit our online calculator at celotex.co.uk

Installation Guidelines

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

- Prior to the installation of Celotex insulation boards, the substrate must be checked for soundness.
- Large, uneven projections should be removed and all holes filled and levelled. Loose material should be cleaned off to leave a sound, dry surface.
- Downpipes should be temporarily removed and, if necessary, relocated after completion of installation. Lengthening of overflow pipes should be allowed for, together with extensions to sills
- Starter batten and drip (for render finish) should be located at least one half brick above the damp proof course and fixed directly to the substrate with plugs and screws.
- The Celotex insulation should be fixed to the substrate using proprietary fasteners, which are driven into pre-drilled holes.
- All insulation board joints should be tightly butted and end joints staggered.
- Fix a breather membrane over the insulation with minimum 100mm laps
- Apply preservative-treated timber battens vertically over the face of the breather membrane and insulation, secured back to the underlying masonry.

Render finish:

- Fix stainless steel expanded metal lathing to the battens. Proprietary systems are available with reinforcing ribs to allow for a full span of 600mm between battens.
- The render system should then be applied in accordance with manufacturer's guidelines.

Tile hanging:

- Tilting fillets should be applied at horizontal junctions to suit the design requirements.
- Fix tile battens to vertical battens to suit tile gauge.
- Hang tiles in accordance with manufacturer's instructions.

Other cladding:

Timber or other lightweight cladding systems can be fixed to the vertical battens (see example U-value calculation)

Following the Independent Review of Building Regulations and Fire Safety (the Hackitt review), the UK government is considering changes to the Building Regulations. You should consult your building designer and Building Control Officer before specifying any particular product.

Installation guidelines

Installation of Celotex GA4000 and XR4000 will depend on application type.

For installation details please refer to our online '[applications](#)' pages.

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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