



Timber Frame Wall Sheathing Applications

Wall Insulation

Celotex
SAINT-GOBAIN

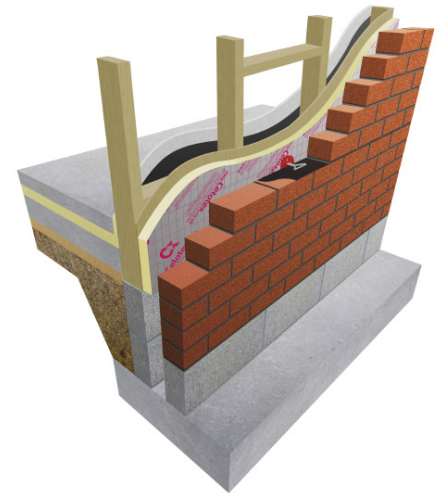
Introduction

Celotex is the brand leading manufacturer of PIR insulation boards, with its range encompassing the thinnest and thickest boards available to the construction industry today. All of the Company's products are manufactured at its plant in Suffolk, from where the dedicated Celotex Technical Centre offers advice and calculations for compliance with current regulations and legislation.

Celotex: We know insulation inside and out.

Use **Celotex GA4000** high performance thermal insulation in timber frame wall sheathing applications to minimise insulation thickness and give the following benefits:

- Eliminates thermal bridging of timber
- Provides reliable long term energy savings for buildings
- Low emissivity foil facers give improved thermal insulation performance within cavity air spaces
- Sheathing encapsulates the timber frame
- No threat of interstitial condensation
- Voids between studs free for services



Celotex GA4000

Celotex GA4000 Technical Data

Product Code	Thickness (mm)	R-value (m ² K/W)	Weight (kg/m ²)
GA4050	50	2.25	1.55
GA4060	60	2.70	1.90
GA4070	70	3.15	2.19
GA4075	75	3.40	2.34
GA4080	80	3.60	2.482
GA4090	90	4.05	2.76
GA4100	100	4.50	3.27

Sustainable Insulation

Celotex PIR insulation has been independently assessed by BRE Global and has been accredited with an A+ rating when compared to the BRE Green Guide.

The results also show that Celotex offers a lower environmental impact than other typical PIR manufacturers.

For further information about Celotex' sustainable insulation solutions, visit the sustainability pages of the website at celotex.co.uk



For premium performance including Class O fire performance Celotex FR5000 is suitable for this application.

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Example U-value Calculation: Timber Frame Wall Lining

Construction	Thickness (mm)	
Outside surface resistance	-	
Brick	103	
Cavity (low emissivity)	50	
Variable layer	See below	
Plywood	9	
Cavity between studs	89	
Polythene 1000 guage, VCL	-	
Plasterboard	12.5	
Inside surface resistance	-	
Celotex Product - Variable layer	Thickness (mm)	U-value (W/m ² K)
Celotex GA4000	50	0.28
Celotex GA4000	60	0.25
Celotex GA4000	70	0.22
Celotex GA4000	80	0.21
Celotex GA4000	90	0.19
Celotex GA4000	100	0.18
U-value		
For U-values see variable layer list, or for more options, refer to our online U-value calculator at celotex.co.uk		

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Installation Guidelines

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

- Make sure all studs and rails are flush, with no projections.
- Fix sheet of Celotex GA4000 to the external sheathing using galvanised clout nails at 400mm centres in the centre of the board and at 300mm centres around the perimeter.
- For optimum thermal performance, the unprinted foil surface should face the air cavity.
- Care must be taken to align the fixings with underlying studs, sole plates and head rails.
- Tightly butt boards together and use off-cuts to fill in around waist rails.
- Brickwork should be tied back to the timber framing using helical stainless steel wall ties, driven through the Celotex insulation into the studs.
- Insert ties approximately 10mm to 20mm above the brick course so that a slight 'crank' can be applied. This ensures that the tie slopes downward from the sheathing to the outer brickwork.
- Where cavity fire barriers are required by national building regulations, they should be installed in line with the manufacturer's instructions.

NB: Some building insurance companies may require additional third party approval when using insulation in timber frame applications. Advice should be sought from the relevant parties prior to specifying the insulation required. Celotex insulation is covered by BBA certificate number 09/4667.

Gable walls

At gable walls, it is recommended that the insulation be taken up to the underside of the roof verges. However, if a cold roof construction is intended, the cavity insulation should extend at least 250mm above the ceiling. The top edge of the insulation should be protected with a cavity tray.

Other cladding

Tile hanging, render finish, weather boarding and other cladding types are all suitable for this type of application. In this situation, Celotex boards can be protected with a breather membrane. However, advice and information on the installation of these cladding systems should be sought from the manufacturer or provider of the cladding system.

Certifications and Accreditations

Celotex product GA4000 is covered by BBA Agreement Certificate No 09/4667. To download a copy of this certificate, visit the 'literature' pages of the website at celotex.co.uk

Further Information

If you wish to contact Celotex, please visit celotex.co.uk and click on the 'contact us' page.

For information regarding [storage, installation and handling](#) of Celotex products, or for [Health and Safety](#) advice, please refer to the 'literature' pages of the website at celotex.co.uk

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

Celotex
Lady Lane Industrial Estate,
Hadleigh, Ipswich
Suffolk IP7 6BA

T: 01473 820850

W: celotex.co.uk

Saint-Gobain Construction Products UK Limited trading as Celotex.
Registered Office: Saint-Gobain House, Binley Business Park, Coventry, CV3 2TT
Registered in England and Wales No 734396

Celotex Technical Centre: 01473 820850

celotex.co.uk