



Steel Stud Framed Wall Applications

Wall Insulation

Celotex
Insulation Specialists

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 TB4000** and **Celotex GA4000** high performance thermal insulation in steel stud framed wall applications to minimise insulation thickness and give the following benefits:

- Ideal for lightweight, steel framed commercial and industrial buildings
- Provides reliable long term energy savings for buildings
- Low emissivity foil facer gives improved thermal insulation performance within cavity air spaces
- Rapid, accurate construction on site
- Facilitates off-site fabrication of framed panels
- Warm frame construction eliminates thermal bridging through studs
- Thin overall construction depth

Celotex TB4000 Technical Data

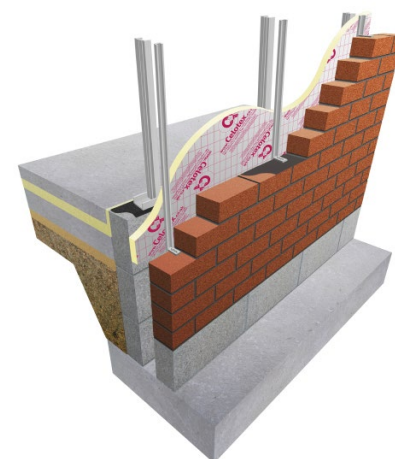
Product Code	Thickness (mm)	R-value (m ² K/W)	Weight (kg/m ²)
TB4012	12	0.50	0.50
TB4020	20	0.90	0.72
TB4025	25	1.10	0.85
TB4030	30	1.35	0.98
TB4035	35	1.55	1.11
TB4040	40	1.80	1.26
TB4045	45	2.00	1.40

Celotex GA4000 Technical Data

Product Code	Thickness (mm)	R-value (m ² K/W)	Weight (kg/m ²)
GA4050	50	2.25	1.55
GA4055	55	2.50	1.74
GA4060	60	2.70	1.90
GA4065	65	2.95	2.05
GA4070	70	3.15	2.19
GA4075	75	3.40	2.34
GA4080	80	3.60	2.48
GA4085	85	3.85	2.62
GA4090	90	4.05	2.76
GA4100	100	4.50	3.27



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



Celotex GA4000

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



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Example U-value Calculation: Steel Stud Framed Walls

Construction	Thickness (mm)	
Outside surface resistance	-	
Brick	103	
Cavity (low emissivity)	50	
Variable layer (over studs)	See below	
Cavity (low emissivity)	100	
Polythene 1000 gauge, VCL	-	
Plasterboard	12.5	
Plasterboard	12.5	
Inside surface resistance	-	
Variable layer	Thickness (mm)	U-value (W/m ² K)
Celotex TB4000	30	0.34
Celotex TB4000	35	0.31
Celotex TB4000	40	0.29
Celotex TB4000	45	0.28
Celotex GA4000	50	0.26
Celotex GA4000	55	0.24
Celotex GA4000	60	0.23
Celotex GA4000	65	0.22
Celotex GA4000	70	0.21
Celotex GA4000	75	0.20
Celotex GA4000	80	0.19
Celotex GA4000	85	0.18
Celotex GA4000	90	0.18
Celotex GA4000	100	0.17

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.

- Install the steel stud framework in accordance with the manufacturer's instructions.
- For optimum thermal performance, the unprinted foil surface should face the air cavity.
- If necessary, trim the Celotex insulation boards to a width and height to ensure that the edges are fully supported by the frame studs or horizontal runners.
- Trim boards to fit around the window and door openings.
- Place the boards directly against the external face of the steel frame and temporarily fix with suitable self-tapping screws and washers.
- Adjacent boards must be tightly butted to minimise heat loss.
- Where the frame is to be faced with brickwork, place wall tie retaining channels over the boards at stud positions and fix through the insulation into the studs with fasteners as recommended by the channel manufacturer.
- Construct the brickwork facing incorporating twist-in ties at recommended intervals.
- Where cavity fire barriers are required by national Building Regulations, they should be installed in line with the manufacturer's instructions.

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.

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.

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