Steel Stud Framed Wall Applications

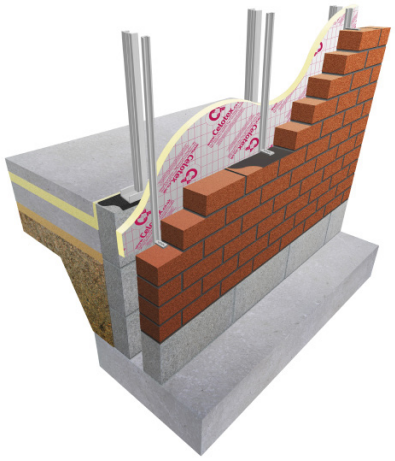
Wall Insulation

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 to assist in achieving compliance with current regulations and legislation.

Use Celotex TB3000, Celotex GA3000 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
- Can be used to provide 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 GA3000

Celotex TB3000 Technical Data

Product Code	Thickness (mm)	R-value (m²K/W)	Weight (kg/m²)
TB3012	12	0.50	0.50
TB3020	20	0.85	0.72
TB3025	25	1.05	0.85
TB3030	30	1.30	0.98
TB3040	40	1.70	1.26

Celotex GA3000 Technical Data

Product Code	Thickness (mm)	R-value (m²K/W)	Weight (kg/m²)
GA3050	50	2.15	1.55
GA3060	60	2.60	1.90
GA3070	70	3.00	2.19
GA3075	75	3.25	2.34
GA3080	80	3.45	2.48
GA3090	90	3.90	2.76

Celotex GA4000 Technical Data

Product Code	Thickness (mm)	R-value (m²K/W)	Weight (kg/m²)
GA4100	100	4.50	3.73

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.

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

* TB and GA are not suitable for a building deemed to have a storey height greater than 18m*

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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) between studs	100	
Polythene 1000 gauge, VCL	-	
Plasterboard	12.5	
Plasterboard	12.5	
Inside surface resistance	-	
Variable layer	Thickness (mm)	U-value (W/m²K)
Celotex TB3000	30	0.35
Celotex TB3000	40	0.30
Celotex GA3000	50	0.27
Celotex GA3000	60	0.24
Celotex GA3000	70	0.22
Celotex GA3000	75	0.21
Celotex GA3000	80	0.20
Celotex GA3000	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 and the relevant provisions of Building Regulations. You should consult your building designer and building control officer regarding compliance with the relevant provisions of the Building Regulations.

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.

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

T: 01473 820850
W: celotex.co.uk