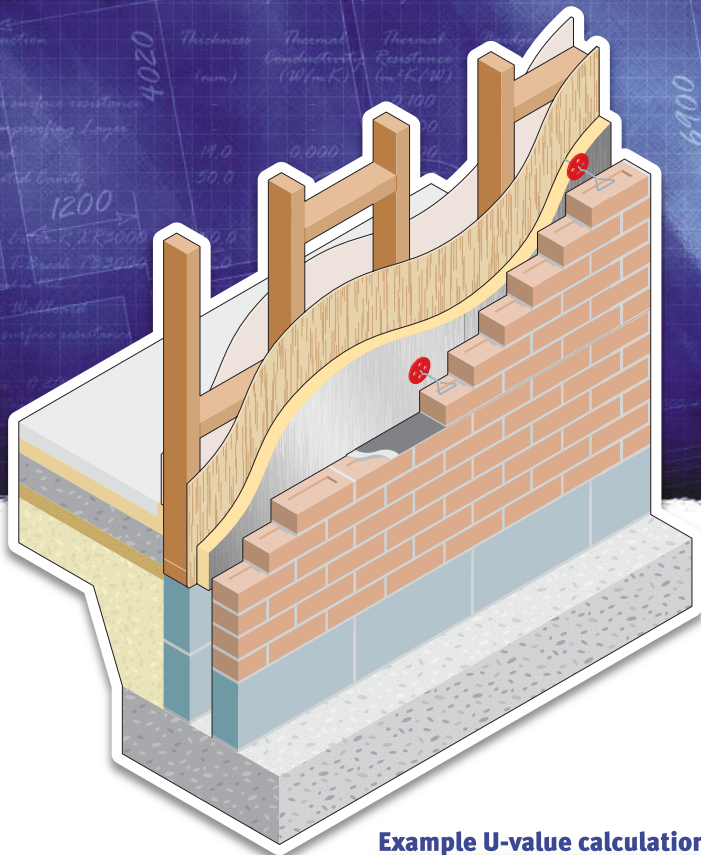


# Timber frame wall sheathing



Use **Celotex tuff-R™ GA3000** 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 with cavity air spaces
- Sheathing encapsulates the timber frame
- No threat of interstitial condensation
- No need for internal vapour check
- Voids between studs free for services

## Example U-value calculation

	Thickness (mm)	Thermal conductivity (W/mK)	Thermal resistance (m²K/W)	Pitch & Bridge Details
Outside surface	–	–	0.040	
Brick	103.0	0.770	0.134	17.2%
Cavity (low emissivity)	50.0	–	0.665*	
<b>Celotex tuff-R GA3000</b> see table below				delta U* = 0.01
Plywood	9.0	0.143	0.063	
Cavity	89.0	–	0.180	15%
Gypsum wallboard	12.5	0.160	0.080	
Inside surface	–	–	0.130	

## Thickness required

Using <b>Celotex tuff-R GA3045</b>	achieves	0.30 W/m²K
<b>Celotex tuff-R GA3055</b>		0.27 W/m²K
<b>Celotex tuff-R GA3060</b>		0.25 W/m²K
<b>Celotex tuff-R GA3065</b>		0.24 W/m²K

\* Airspace resistance calculated in accordance with BS EN ISO 6946: 1997 Annex B.2. Based on BBA certified emissivity values. Applicable only when using Celotex product.

## Installation guidelines

- Make sure all studs and rails are flush, with no projections.
- Fix sheets of **Celotex tuff-R™ GA3000** to the external sheathing using galvanised clout nails at 400 mm centres in the centre of the board and at 300 mm 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.
- Install horizontal cavity barriers, usually in the form of mineral wool ‘sausages’, to the surface of the **Celotex** insulation board at all intermediate floors.
- Apply vertical and horizontal cavity barriers in a similar fashion around window and door openings.
- Taping the joints of the **Celotex** insulation with self adhesive aluminium foil tape provides a good vapour control layer and improves air tightness.

## 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 250 mm above the ceiling. The top edge of the insulation should be protected with a cavity tray.

## Brick cladding

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 approx. 10 mm to 20 mm 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.

## Tile hanging

Ensure that the timber frame is correctly braced to support the weight of tile hanging.

Apply vertical preservative-treated timber battens over the face of **Celotex** sheathing boards, secured into each underlying stud by means of suitable fasteners.

Tilting fillets should be applied at horizontal junctions to suit design requirements.

Fix a breather membrane horizontally behind the battens with minimum 100 mm laps and nail tile battens to vertical battens to suit the tile gauge.

Apply vertical damp proof membranes at all junctions and hang tiles in accordance with the manufacturer’s instructions.

## Other cladding

Lightweight cladding, such as PVC-u, timber and aluminium, can be fixed to vertical battens, utilising a breather membrane as previously described.

Render finishes require rigid metal lathing fixed to the vertical battens.

# Product descriptions

**Celotex T-Break™ TB3000** is a thin, foil faced insulation board with un-reinforced core foam and thicknesses ranging from 12 to 30 mm. The **T-Break** name stems from the design function of the range; which is to provide simple solutions to overcome localised thermal bridges. **Celotex** is unique in being able to offer boards as thin as 12 mm to the market for this purpose.

*Always install Celotex T-Break TB3000 in accordance with the instructions supplied by Celotex Limited.*

## Standard board dimensions

1200 mm x 2400, 450, 300 & 150 mm\*  
(with grid markings to assist installation)

## Physical properties

Thermal resistance (R) values for Celotex products are declared in accordance with BS EN 13165: 2001. These R-values equate to a Thermal Conductivity ( $\lambda_p$ ) value of 0.023 W/mK.

## Fire

Reaction to fire in accordance with  
BS EN 13823: 2002 = Class D/s2/do  
Surface spread of flame in accordance with  
BS 476: 1997 Part 7 = Class 1

## Product range

Product code	Thickness (mm)	R-value (m <sup>2</sup> K/W)
<b>TB3012</b>	12	0.50
<b>TB3020</b>	20	0.85
<b>TB3025</b>	25	1.05
<b>TB3030</b>	30	1.30

**Celotex tuff-R™ GA3000** has long been at the heart of the **Celotex** product range, providing a range of thermal insulation solutions to the builder. The **Celotex tuff-R GA3000** product is a foil faced thermal insulation board which has core foam uniquely reinforced with glassfibre. These products still feature the best reaction-to-fire performance (Euroclass D/S2/do) measured in accordance with new European Standards of any similar product on the market.

*Always install Celotex tuff-R GA3000 in accordance with the instructions supplied by Celotex Limited.*

## Standard board dimensions

1200 mm x 2400 mm\*  
(with grid markings to assist installation)

## Physical properties

Thermal resistance (R) values for Celotex products are declared in accordance with BS EN 13165: 2001. These R-values equate to a Thermal Conductivity ( $\lambda_p$ ) value of 0.023 W/mK.

## Fire

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BS EN 13823: 2002 = Class D/s2/do  
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BS 476: 1997 Part 7 = Class 1

## Product range

Product code	Thickness (mm)	R-value (m <sup>2</sup> K/W)
<b>GA3035</b>	35	1.50
<b>GA3040</b>	40	1.70
<b>GA3045</b>	45	1.95
<b>GA3050</b>	50	2.15
<b>GA3055</b>	55	2.35
<b>GA3060</b>	60	2.60
<b>GA3065</b>	65	2.80
<b>GA3070</b>	70	3.00
<b>GA3075</b>	75	3.25
<b>GA3080</b>	80	3.45
<b>GA3090</b>	90	3.90

*\*Note:* Products listed above are generally available ex-stock.

Other sizes and thicknesses are available, subject to minimum order quantity. Please check for availability before ordering.

# General information

## Storage and handling

- **Celotex** insulation boards should be stored dry, flat and clear of the ground. Only as much material as can be installed during a single working period should be removed from storage at any one time. If boards are stored under tarpaulins, care should be taken to prevent rope damage to the boards.
- Care should also be taken to ensure that packs are not dropped onto corners or edges.
- Where possible, cut the product using a trimming knife, rather than a saw, to minimise dust creation.
- If using a saw, dust extraction equipment, eye protection and face masks must be provided. Dust or particles in the eyes should be washed out with liberal quantities of water.
- Aluminium foil edges may be sharp. Avoid sliding bare hands along board edges.

Characteristics, properties or performance of materials described herein are derived from data obtained under controlled test conditions. **Celotex Limited** makes no warranty, express or implied as to their characteristics under any variations from such conditions in actual constructions.

All products are supplied subject to our standard terms and conditions of sale, a copy of which is available on request.

Typical details shown in this brochure are provided for guidance only and are not to scale. **Celotex Limited** makes no warranty, express or implied as to the suitability of such details for any particular project. It is the responsibility of the designer to ensure that any design or construction details used are suitable for the project, having due regard to the environmental and structural factors which are beyond the control of **Celotex Limited**.

Notwithstanding the foregoing, nothing herein stated shall exclude or restrict:

- 1 The liability of **Celotex Limited** in respect of death or personal injury pursuant to the relevant provisions of the *Unfair Contract Terms Act 1977*, or
- 2 The liability of **Celotex Limited** in respect of any damage caused by a defect to the extent that such comes within the relevant provisions of the *Consumer Protection Act 1987*.

## Health and safety

Full guidance on the appropriate measures to be taken by an employer in accordance with the *COSHH Regulations* is provided in the **Celotex Health and Safety Data Sheet** which can be downloaded from our web site.

## Quality assurance

Product and application development is a priority at **Celotex**, with a focus on high performance, durability and usability. This is achieved through a quality management system which has been fully assessed and certified as meeting the requirements of BS EN ISO 9001: 2000.



## Other products

**Celotex** offers a comprehensive range of insulation products for floor, wall and roof applications. For information please visit [www.celotex.co.uk](http://www.celotex.co.uk) or contact our **Sales Department**.

## Ancillary components

A list of suppliers of ancillary components for the fixing and sealing of **Celotex** products is available from [www.celotex.co.uk](http://www.celotex.co.uk) or by contacting our **Technical Advisory Service**.

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