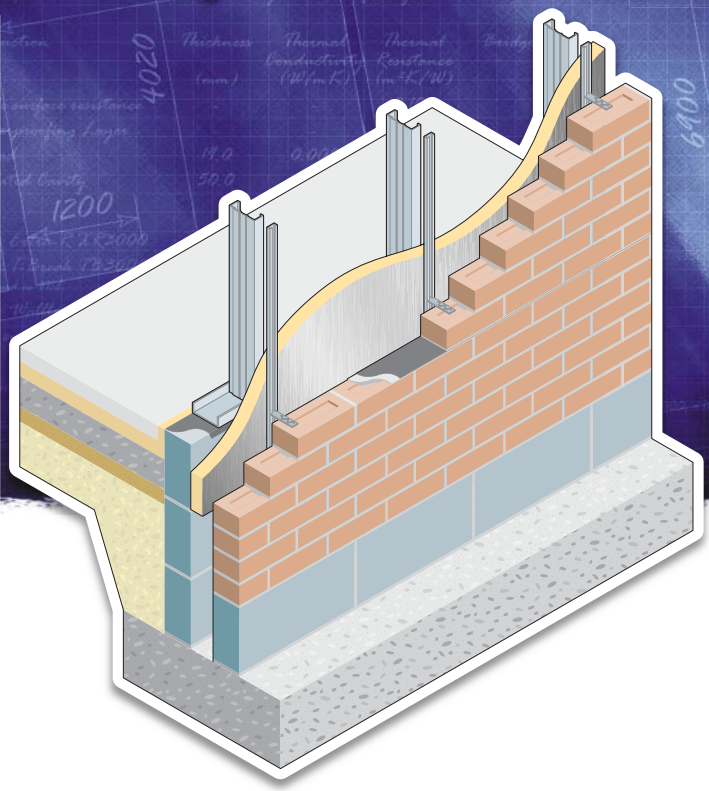
Steel stud framed walls



Use **Celotex *tuff-R™ GA3000*** 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 facers give improved thermal insulation with 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

Installation guidelines

- 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 width and height to ensure that the edges are fully supported by the frame studs or horizontal runners.
- Trim boards to fit around 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. Joints may be sealed with self-adhesive aluminium foil tape to improve airtightness, if required.
- 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.
- Fit cavity barriers between the brickwork and the face of the insulation board as required.

Other forms of cladding: Rainscreen, Blockwork, Render, Tile hanging, etc.

Example U-value calculation 1

	Thickness (mm)	Thermal conductivity (W/mK)	Thermal resistance (m^2K/W)	Pitch & Bridge Details
Outside surface	–	–	0.040	
Brick	103.0	0.770	0.134	17.2%
Cavity (low emissivity)	50.0	–	0.665*	
Celotex tuff-R GA3000	40.0	–	1.739	delta U" = 0.01
Cavity (low emissivity)	100.0	–	0.622*	0.3%
Gypsum wallboard	12.5	0.179	0.070	
Gypsum wallboard	12.5	0.179	0.070	
Inside surface	–	–	0.130	

U-value = 0.30 W/m^2K

Example U-value calculation 2

	Thickness (mm)	Thermal conductivity (W/mK)	Thermal resistance (m^2K/W)	Pitch & Bridge Details
Outside surface	–	–	0.040	
Brick	103.0	0.770	0.134	17.2%
Cavity (low emissivity)	50.0	–	0.665*	
Celotex tuff-R GA3000	55.0	–	2.391	delta U" = 0.01
Cavity (low emissivity)	100.0	–	0.622*	0.3%
Gypsum wallboard	12.5	0.179	0.070	
Gypsum wallboard	12.5	0.179	0.070	
Inside surface	–	–	0.130	

U-value = 0.26 W/m^2K

* 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.

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 (λ_D) 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^2K/W)
TB3012	12	0.50
TB3020	20	0.85
TB3025	25	1.05
TB3030	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 (λ_D) 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^2K/W)
GA3035	35	1.50
GA3040	40	1.70
GA3045	45	1.95
GA3050	50	2.15
GA3055	55	2.35
GA3060	60	2.60
GA3065	65	2.80
GA3070	70	3.00
GA3075	75	3.25
GA3080	80	3.45
GA3090	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.

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** 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** or by contacting our **Technical Advisory Service**.

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*Calls are charged at 30p per minute and lines are open Monday - Friday from 9:00am - 1:00pm and 2:00pm - 5:00pm. Calls from some networks may cost more. Details and pricing are correct at date of publication – September 2006.