



Upgrading Solid Walls (Internally)

Wall Insulation

Celotex
Insulation Specialists

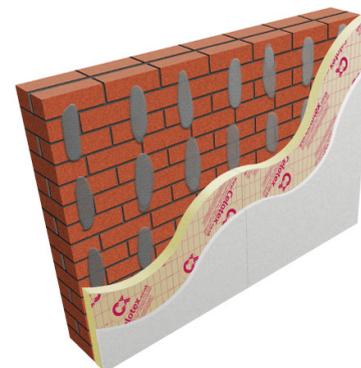
Introduction

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 PL4000** high performance thermal insulation in solid masonry wall applications to minimise insulation thickness and give the following benefits:

- Reduces thermal bridges formed by mortar joints
- Ideal where no cavity exists
- Provides reliable long term energy savings for buildings
- Offers the installer maximum flexibility and installation speed due to the tapered edge plasterboard
- Is suitable for both direct bonding ('dot and dab') and mechanical fixing installation
- Provides a vapour control layer (VCL) when board joints are taped and jointed
- Particularly suited to refurbishment projects



Celotex PL4000 dot and dab

Celotex PL4000 Technical Data

Product Code	Thickness (mm)	R-value (m ² K/W)	Weight (kg/m ²)
PL4015	15 + 9.5	0.70	6.62
PL4025	25 + 12.5	1.20	9.06
PL4040	40 + 12.5	1.85	9.52
PL4045	45 + 12.5	2.10	9.67
PL4050	50 + 12.5	2.30	9.86
PL4055	55 + 12.5	2.55	10.01
PL4060	60 + 12.5	2.75	10.15
PL4065	65 + 12.5	3.00	10.30

12.5mm tapered edge plasterboard is laminated to the specified insulation

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



cont...



Upgrading Solid Walls (Internally)

Wall Insulation

Celotex
Insulation Specialists

Example U-value Calculation: Internal Solid Walls

		Dot & Dab	Direct fix	Timber battens	Metal lining system
Outside surface resistance		-	-	-	-
Brick		215	215	215	215
Cavity		15	-	25	25
Variable layer		See below	See below	See below	See below
Board joints sealed to VCL		-	-	-	-
Inside surface resistance		-	-	-	-
Variable Layers	Thickness (mm)	U-value (W/m ² K)			
Celotex PL4000. Joints taped as VCL	60 + 12.5	0.30	-	0.29	0.29
Celotex PL4000. Joints taped as VCL	65 + 12.5	0.28	0.29	0.27	0.27

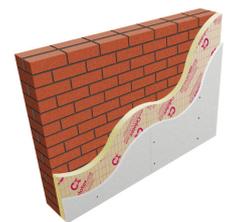
U-value
For U-values see variable layer list

Installation Guidelines

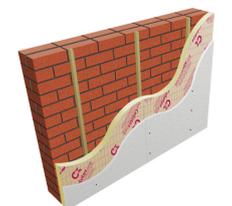
Celotex insulation boards should not be installed when the temperature is at or below 4°C and falling.

Installation guidelines for internal lining systems using dot and dab

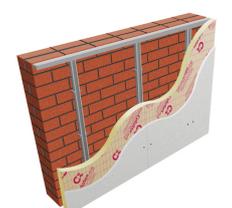
- Ensure that existing walls are permeable. Strip any gloss paint or vinyl wallpaper.
- Use the Celotex Insulation Saw to cut the 1200mm x 2400mm Celotex PL4000 boards to fit the floor-to-ceiling height of the room.
- Ensure a continuous seal at skirting, ceiling level and at openings by applying a continuous band of gypsum adhesive. Gypsum adhesive at perimeter edges can be replaced with thin timber battens.
- Apply further dabs of gypsum adhesive. This should be in accordance with the adhesive manufacturer's instructions.
- Align sheets against the dabs and secure into correct position.
- Once the dabs are set, it is recommended that additional secondary fixings be applied to the Celotex PL4000. Exact fixing details should be in accordance with the recommendations of the fixing manufacturer.
- Joints between the boards must be tightly butted, taped and jointed using appropriate tape and jointing material to create the vapour control layer (VCL).
- Line window and door reveals with thinner Celotex TB4000 boards to reduce the risk of thermal bridging. Fix a batten around the edge of the opening and scribe the board to fit the reveal. Cut the dry lining to suit and mechanically fix into the masonry reveal using proprietary fixings. Finish using an angle fillet at the frame and an angle bead or scrim tape at external corners.
- Please note that to avoid the load being directly applied to the Celotex PL4000, suitable mechanical fixings should be used for other internal fittings. Advice on suitable fixings should be sought directly from the fixing manufacturer.



Direct fix



Timber battens



Metal

cont...



Upgrading Solid Walls (Internally)

Wall Insulation

Celotex
Insulation Specialists

Installation guidelines for internal lining systems using mechanical fixings

- Ensure that existing walls are permeable. Strip any gloss paint or vinyl wallpaper.
- Use the Celotex Insulation Saw to cut the 1200mm x 2400mm Celotex PL4000 boards to fit the floor-to-ceiling height of the room.
- Secure Celotex PL4000 with suitable mechanical fixings. Fixing details should be in accordance with the fixing manufacturer's instructions.
- Joints between the boards must be tightly butted, taped and jointed using appropriate tape and jointing material to create the vapour control layer (VCL).
- Line window and door reveals with thinner Celotex TB4000 boards to reduce the risk of thermal bridging. Fix a batten around the edge of the opening and scribe the board to fit the reveal. Cut the dry lining to suit and mechanically fix into the masonry reveal using proprietary fixings. Finish using an angle fillet at the frame and an angle bead or scrim tape at external corners.

Installation guidelines for internal lining systems using mechanical fixings to timber battens

- Ensure that existing walls are permeable. Strip any gloss paint or vinyl wallpaper.
- Fix treated softwood timber battens to the masonry. They should be set out a maximum of 600mm vertical centres to coincide with the edges of the boards. As a minimum requirement, horizontal battens should be used to support the top and bottom of the board edges.
- Galvanised clout nails or timber drywall screws should then be used to fix the boards to the battens. Specific advice on suitable fixings should be sourced directly from the fixings manufacturer.
- Joints between the boards should be tightly butted and finished by taping and jointing using appropriate tape and jointing material to create the VCL.

Installation guidelines for internal lining systems using mechanical fixings to metal lining systems

- Celotex PL4000 boards can be fixed to a number of proprietary metal frame lining systems. The system should be fixed in accordance with the manufacturer's instructions.

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.