

LINITHERM®

insulation systems

LINZMEIER

building elements



Interior wall insulation

■ PAL SIL

■ PAL SIL L

■ PAL SIL Coign

■ PAL SIL Reveal coign

Don't give mould a chance: space-saving insulation with LINITHERM



LINITHERM is now offering a sophisticated complete programme for buildings which cannot be insulated on the outside. The highly effective protection against cold, heat, moisture and mould growth via interior wall insulation is particularly suited to:

- listed and intact façades;
- façades where external insulation is problematic due to the height and style of the building;
- irregularly heated rooms such as hobby rooms, halls and churches;
- cellars which have been converted to living spaces;
- etc.



Reliable solution against mould development

With silicate panel

Highly insulating PUR/PIR rigid foam

Minimal thickness (TCL 022)

Quick and easy installation



Those who live in older buildings and want to reduce their consumption of heating energy while still living comfortably need to insulate in order:

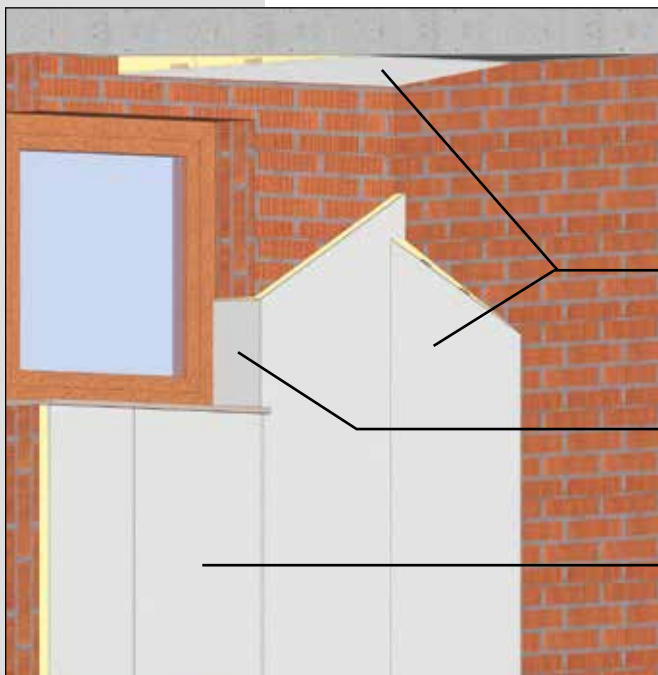
- to keep wall surfaces warm;
- to combat draughts;
- to prevent cooling and reducing heating times;
- to combat formation of condensation;
- to avoid damages due to moisture; and
- to prevent the growth of mould.

Insulation plus mould protection

In renovations, people usually invest in new windows with heat-absorbing glass. As a result, the coldest surface is no longer the window, but now the outside wall, which is where the room humidity accumulates. Combined with poor heating/ventilation and furniture, this can cause mould to grow.

The solution: insulation with LINITHERM PAL SIL. This increases the surface temperature of the walls and gives the mould nowhere to take hold.

Preserve façades and insulate ready for the future – with LINITHERM PAL SIL



Special elements for different connections

LINITHERM PAL SIL Coign for flanking insulation

LINITHERM PAL SIL Reveal coign for insulation of windows and doors

LINITHERM PAL SIL for the interior insulation of exterior walls with a groove on all sides for plug-in connection with tongue.

Insulation without sacrificing living space

PUR/PIR 60 mm TCL 022

EPS / XPS 80 mm TCL 030

Mineral fibre 90 mm TCL 035

Wood fibre 100 mm TCL 040

Mineral foam / foam glass 110 mm TCL 045

Silicate 150 mm TCL 060

PUR/PIR insulating core compared with other insulating materials (in relation to a total thermal resistance of $R = 2.5 \text{ (m}^2\text{K)/W}$)

U-values for typical wall compositions from construction periods when insulating with LINITHERM PAL SIL

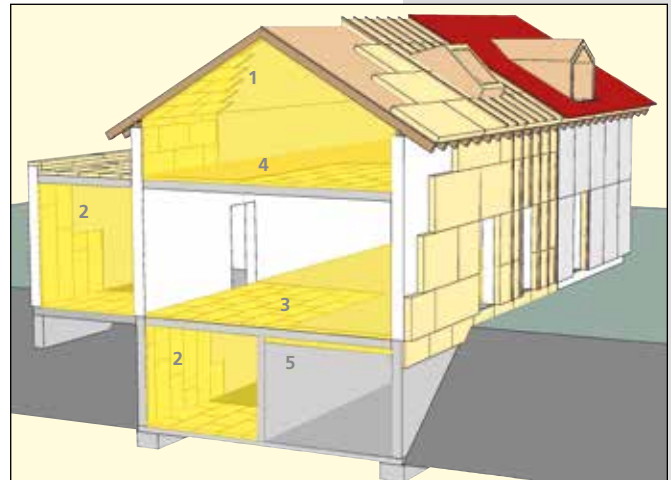
Construction period (approx.)	Built before 1918	Built before 1960	Built in the 1960s	Built in the 1970s
Example wall composition*	24 cm solid brick, thickness = 2,400 kg/m ³ $\lambda = 1.4 \text{ W/(mK)}$	36.5 cm full brick, thickness = 1,400 kg/m ³ $\lambda = 0.63 \text{ W/(mK)}$	36.5 cm concrete, thickness = 1,800 kg/m ³ $\lambda = 1.15 \text{ W/(mK)}$	36.5 cm light honeycomb brick, thickness = 1,000 kg/m ³ $\lambda = 0.45 \text{ W/(mK)}$
U-value of old wall	2.8 W/(m ² K)	1.3 W/(m ² K)	2.0 W/(m ² K)	1.00 W/(m ² K)
Thickness PAL SIL	66 mm	66 mm	66 mm	66 mm
U-value with PAL SIL	0.32 W/(m ² K)	0.29 W/(m ² K)	0.31 W/(m ² K)	0.27 W/(m ² K)

* To some extent, wall compositions with poorer or better U-values are possible in the respective construction periods; the wall compositions must be assessed on a case-by-case basis

Every insulation measure must achieve the value of the new German Energy Saving Ordinance (EnEV 2009), which specifies a U-value of 0.35 W/(m²K) for old buildings. Those who want to insulate reliably for the future select a higher insulating thickness.

LINITHERM PAL SIL – the slim interior insulation for outside walls

- With its composite structure, LINITHERM PAL SIL unites all the necessary functions for highly efficient interior wall insulation. The interior insulation without thermal bridges is installed in just one step – without the usual timber frame construction and additional vapour barriers.
- The insulation core is composed of highly insulating PUR/PIR rigid foam clad on both sides with aluminium foil as an integrated vapour barrier.
- The silicate panel absorbs excess humidity and releases it back into the room when the humidity drops again.
- The insulating elements are installed continuous directly on the brickwork or plaster.
- As LINITHERM PAL SIL L the composite elements have an integrated batten system for screwing with frame screws in case walls are to be tiled or for installation on a concrete ceiling or flat roof, for example.



1 LINITHERM PAL GK below-rafter insulation, 2 LINITHERM PAL SIL interior wall insulation 3 LINITHERM PGF dry screed, 4 LINITHERM P OSB attic insulation, 5 LINITHERM PAL KD cellar roof insulation

Reliable interior insulation in just a few steps

High installation rates thanks to handy, light panels and simple processing



Cut LINITHERM PAL SIL to size with standard wood-working tools, cover completely with adhesive (or only apply spots of glue if the substrate is uneven) and apply with edge bead.



Stick the panels continuous with no gaps directly against the brickwork or the load-bearing plaster, avoiding cross joints.



Insert the tongue along the horizontal and vertical edges ...



... and insert the next insulation panel.



Affix mechanically in the area of the tongue using disappearing frame screws ...



... fill the cavities of the connection joints with spray foam and seal the panel joints.

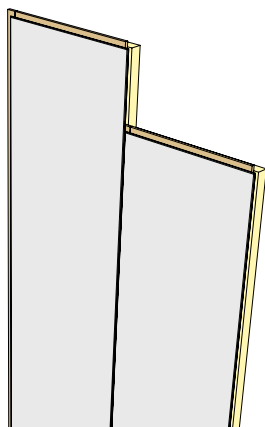


Construction elements extending into external masonry such as ceiling and interior walls should be insulated with LINITHERM PAL SIL Coigns, doors and windows with LINITHERM PAL SIL Reveal coigns



... and the surface is ready to be plastered, painted or wallpapered.

LINITHERM PAL SIL

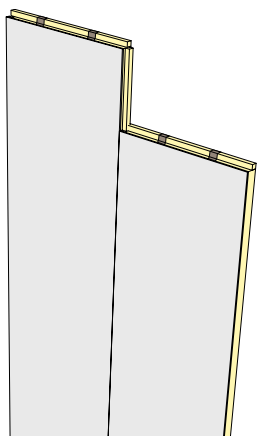


Insulating core: PUR/PIR rigid foam as per DIN EN 13165, class E aluminium foil on both sides
Facing: Silicate panel on room side, thickness 6 mm
Edge joints: Thickness 26 mm, untrimmed
 Thickness 36-66 mm: grooved on all sides for wooden tongue (included in delivery), silicate panel bevelled
Overall dimension: Thickness 26 mm: 2500 x 1200 mm (= calculation measurement)
 Thickness 36-66 mm: 2500 x 600 mm (= calculation measurement)

Total thickness mm	Thickness mm PUR/PIR	Thickness of silicate panel	Pallet contents Quantity	m ²	TCL PUR/PIR	U-value* [W/(m ² K)] Element
26	20	6	45	135.0	022	0.91
36	30	6	45	67.5	022	0.64
46	40	6	36	54.0	022	0.50
66	60	6	26	39.0	022	0.34

Other thicknesses on request

LINITHERM PAL SIL L for walls to be tiled or under flat roofs



Insulation core: PUR/PIR rigid foam as per DIN EN 13165, class E aluminium foil on both sides
System: With integrated battens for mechanical fixation
Facing: Silicate panel on room side, thickness 6 mm, affixed to the integrated battens with clips
Edge joints: Tongue & groove press-fit joints on long sides, short sides with rabbet edge, silicate panel bevelled
Overall dimension: 2,500 x 620 mm (= calculation measurement) (coverage 2 cm smaller)

Total thickness mm	Thickness mm PUR/PIR	Thickness of silicate panel	Pallet contents Quantity	m ²	TCL PUR/PIR	U-value* [W/(m ² K)] Element
46	40	6	36	54.0	022	0.54
66	60	6	26	39.0	022	0.37

Other thicknesses on request

LINITHERM PAL SIL Coign flanking insulation



Insulating core: PUR/PIR rigid foam as per DIN EN 13165, class E
System: With integrated battens for mechanical fixation
Facing: Silicate panel on room side, thickness 6 mm, affixed to the integrated battens with clips
Edge joints: Butt joint on all sides
Overall dimension: 2,500 x 600 mm

Total thickness mm	Thickness mm PUR/PIR	Thickness of silicate panel	TCL PUR/PIR
66/6	60/0	6	028

LINITHERM PAL SIL Reveal coign



Insulation core: PUR/PIR rigid foam as per DIN EN 13165, class E
Facing: Silicate panel on room side, thickness 6 mm
Edge joints: Butt joint on all sides
Overall dimension: 2,500 x 300 mm

Total thickness mm	Thickness mm PUR/PIR	Thickness of silicate panel	TCL PUR/PIR
26/10	20/4	6	028

* U-value calculation takes the thermal resistances $R_{si} = 0.13$ [m²K/W] and $R_{se} = 0.04$ [m²K/W]. Building-specific peculiarities for example as per DIN EN ISO 6946 are not taken into account.

Linzmeier Bauelemente GmbH
 Industriestrasse 21
 88499 Riedlingen, Germany
 T +49 (0)7371 1806-0
 F +49 (0)7371 1806-96

Königshofen
 Schorntalstrasse 24
 07613 Heidelberg
 b. Eisenberg/Th., Germany
 T +49 (0)36691 722-0
 F +49 (0)36691 722-20

Info@Linitherm.com
 www.Linitherm.com