

**THERMANO
WALL GK
INSTALLATION
INSTRUCTIONS**

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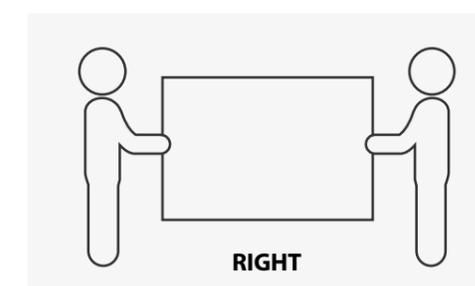
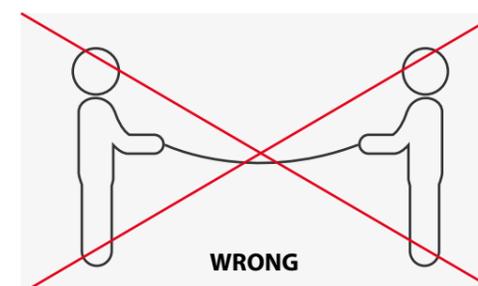
INITIAL NOTES

1. Safety precautions and installation conditions.

- Prior to commencing finishing works of a building interior using THERMANO WALL GK panels, apply standard precautions to protect the building from weather conditions that might affect the condition and quality of finishing materials.
- Due to the adhesives used and technical parameters of the plasterboard that forms an integral part of THERMANO WALL GK insulation panels, the panels are suitable for installation in rooms with a maximum relative humidity of 85% and temperature of $5^{\circ}\pm 20^{\circ}\text{C}$.
- Store THERMANO WALL GK on a flat surface, in a dry environment.

2. Unloading, storage.

- When unloading the boards from the transport vehicle, make sure to prevent the excessive bending of the boards and the following damage:
 - cracking of the PIR core
 - damage to the cladding
 - fracture of the Thermano WALL GK panels
 - damage to panel edges
- We recommend keeping the panels in a vertical position during handling



- Do not step on the panels while unloading the vehicle.
- Boards should be stored indoors under a roof; when storing the panels outdoors on a temporary basis, they should be covered with foil (tarpaulin) and slightly weighted to prevent their displacement and damage due to adverse weather conditions.
- Store the panels in a horizontal position.

MECHANICAL TREATMENT OF THERMANO WALL GK

- THERMANO WALL GK panels can be cut with a sharp knife (thin panels) by incising the PIR core and back lining of the GK boards and then snapping the panel along the incision line.



- Thicker THERMANO WALL GK boards are most conveniently cut using manual and power saws.
- We recommend using standard concrete or metal drill bits for drilling holes in THERMANO WALL GK panels.

INSTALLATION OF THERMANO WALL GK PANELS

- The choice of an installation method depends primarily on the type of the substrate and method of construction work used.
- THERMANO WALL GK panels can be used as a thermal insulation finishing layer on internal walls, ceilings and partition walls.
- When used for interior finishing, THERMANO WALL GK panels may be installed directly, by gluing to the wall or ceiling, or mechanically fixed to wooden, aluminium or steel sub-structure.
- Irrespective of the installation method used, THERMANO WALL GK panels should always be fixed at least 0.5 cm above the finished floor level to protect them against the effects of moisture. If this is not possible, the bottom of THERMANO WALL GK board should be protected using foil or appropriate elastic sealants.

Mounting on wooden substrate / sub-structure

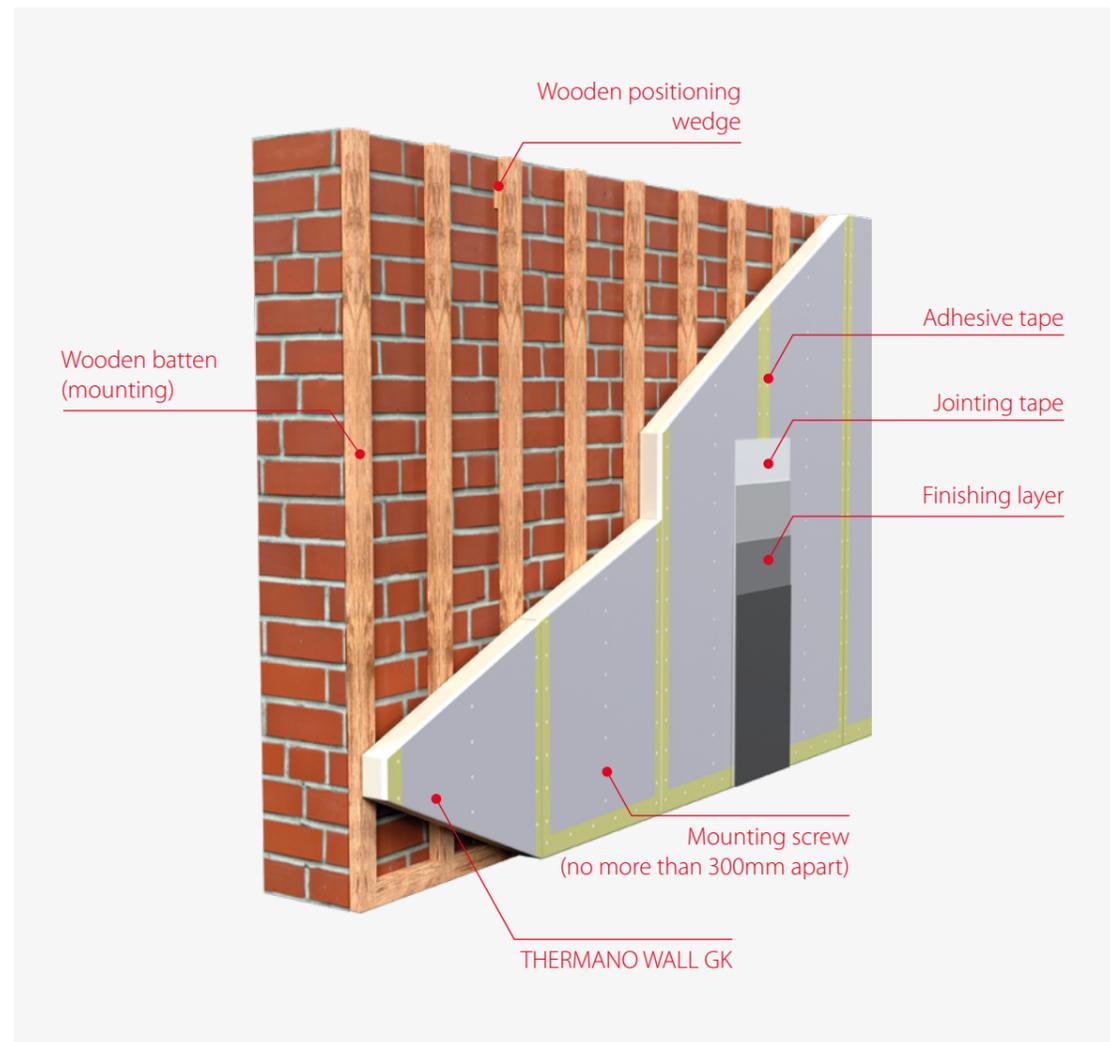
- THERMANO WALL GK panels can be installed on wooden frame structures of buildings or stable substructures fixed to internal walls or ceilings.
- The wooden battens forming the supporting substructure must always be fixed by adjusting their position using shims to create an even, planed surface for the installation of THERMANO WALL GK panels.
- The maximum spacing between elements of the wooden frame acting as the supporting substructure should not exceed 600 mm.
- Elements of the wooden frame must be fixed to the walls and/or ceiling and around any openings using the bead/spot method.
- Elements of the wooden frame must be mechanically fixed to a brick wall or the main structure. They should be made of softwood with dimensions of at least 25x40 mm. When fixed to a masonry wall or ceiling, they should be lined with a self-adhesive moisture seal.
- Every joint of a THERMANO WALL GK panel should be supported on elements of the wooden frame, and the panels should be firmly fixed to the supporting framework.
- THERMANO WALL GK insulation panels should be cut to a height of approx. 15 mm less than the nominal distance between the floor and the ceiling.
- THERMANO WALL GK insulation panels should be fixed using plasterboard screws, spaced at intervals of max. 300mm (max. 200 mm in the corners).
- The distance between the screws and the edges of THERMANO WALL GK panels should be at least 10 mm.

- Screws used to fix THERMANO WALL GK panels should be selected so that their working depth in wooden elements is no less than 22.5-25 mm. Screws should not pass through the entire length of the supporting elements.
- Thermano WALL GK insulation panels must be bead sealed with elastic sealants.
- The supporting substructure must be made of straight, dry wood members of at least class C20 for interior walls and C24 for ceilings, and the entirety of the substructure must be made of class C24 wood members in stairway enclosures.
- The wooden elements used in the supporting structure must not be treated with any type of impregnation that could negatively affect the fixing elements, the PIR thermal insulation or its adhesive bonding with the plasterboard due to diffusion.
- Joints, openings and corners should be finished in a manner prescribed for the treatment of plasterboards, in accordance with the manufacturer's recommendations.

Installation on an aluminium or steel substructure.

- Installation of THERMANO WALL GK panels on an aluminium or steel substructure should be carried out in a similar way as presented above, using appropriate assembly connectors designed for fixing in aluminium or steel.
- The spacings of substructure components and fasteners are the same as above.
- Finish joints, openings and corners in the manner specified for the treatment of plasterboards.

Installation of THERMANO WALL GK panels to a wooden substructure



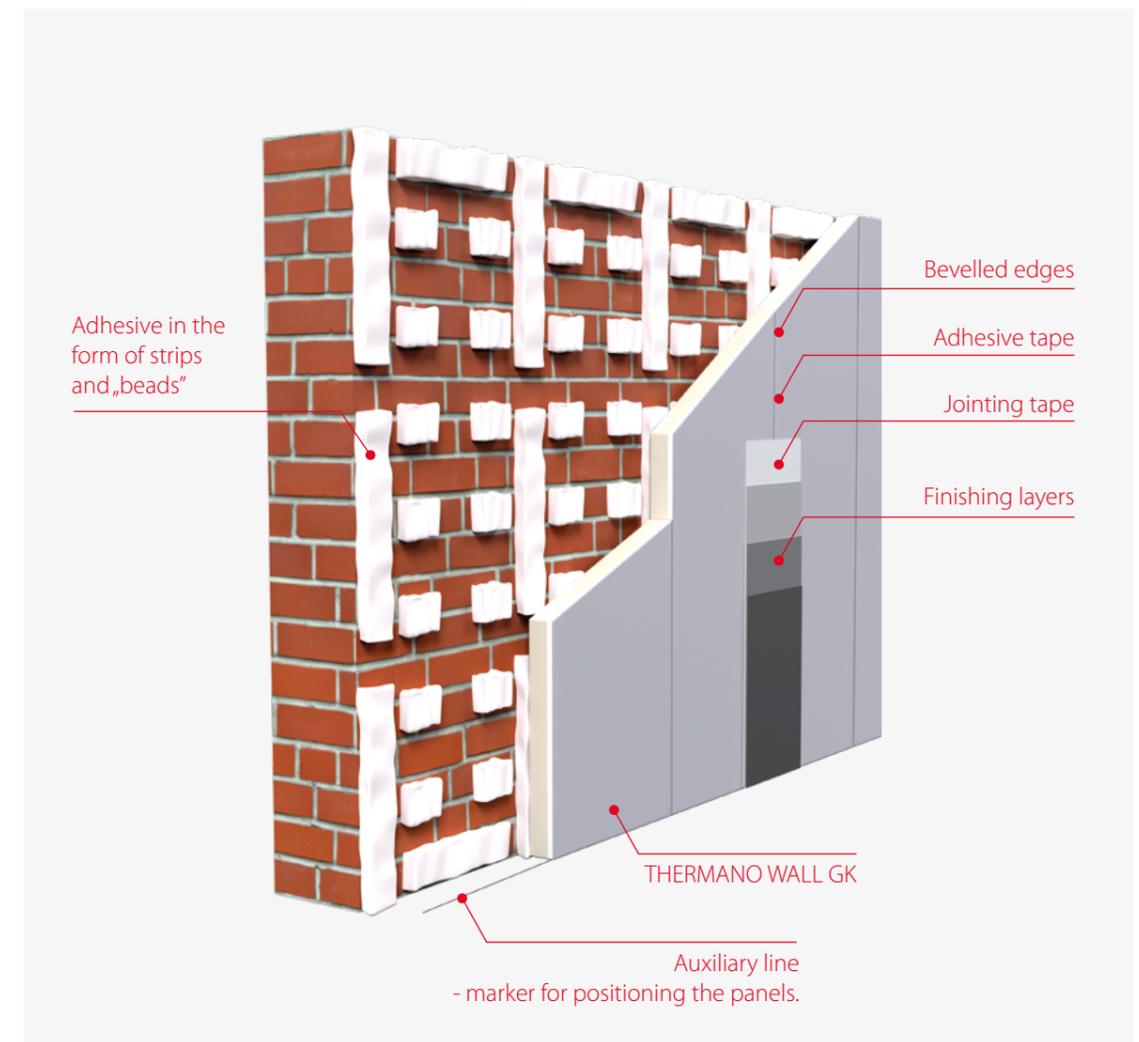
Installation by bonding

Gypsum-based adhesives:

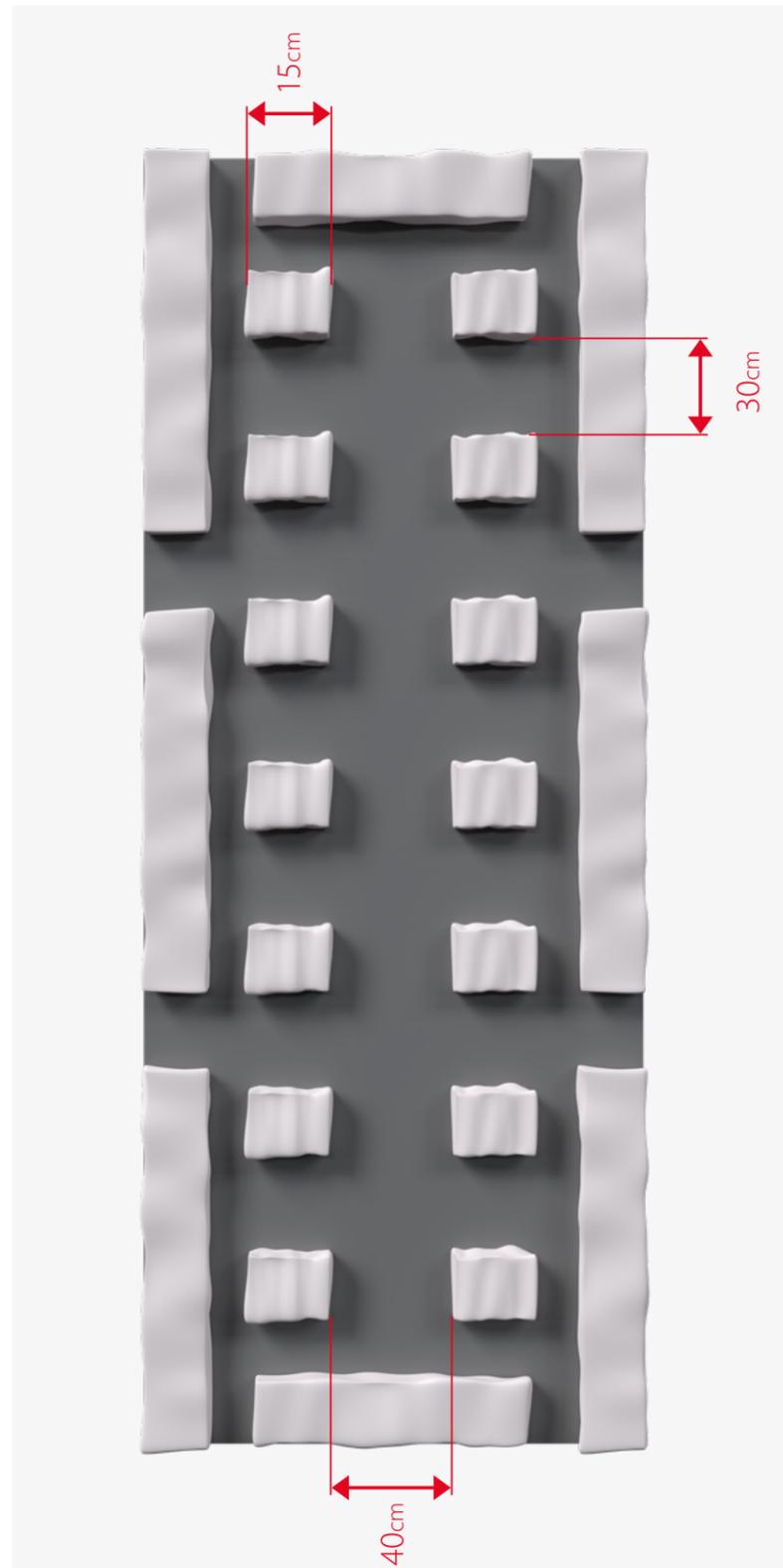
- THERMANO WALL GK panels can be installed by bonding only on dry, stable and moisture-free walls made of bricks, blocks, concrete or finished with a stable layer of plaster.
- The bonding method is not suitable for direct use on unrendered solid masonry walls, where a risk of moisture penetration exists, or on a wood or steel substrate.
- Before applying an adhesive layer to a substrate, first clean it of any residual rust, grease, dust, remains of old wallpaper and old, loose plaster.
- Dry surfaces should be moistened for 15 minutes before commencing bonding with gypsum adhesive.
- Substrates made of plasterboards should not be moistened.
- Minor irregularities in the substrate can be partially sanded down to the thickness of the adhesive layer. Normally, gypsum-based adhesive should be applied in 40-50mm thick patches, therefore the existing substrate should not have a deviation in flatness exceeding a value of 15mm from the highest point of the substrate between the edges.
- After finding the highest point of the wall, draw markers on the floor and ceiling to indicate the position of the edge of the Thermano WALL GK panel.
- The adhesive used to bond the Thermano WALL GK panels should be suitable for use with the substrate on which the panels are installed.
- Thermano WALL GK insulation panels should be cut to a height of approx. 15 mm less than the nominal distance between the floor and the ceiling.
- Apply a continuous strip of adhesive to the Thermano WALL GK boards using the bead method, along the circumference of the entire wall, as well as around any openings to ensure proper partition integrity and fire protection.
- Adhesive near the panel joints should be applied approx. 25 mm from the edge of the board in order to prevent the adhesive from penetrating into the slit between the Thermano WALL GK panels and forming a thermal bridge.
- **Apply adhesive patches directly to the Thermano WALL GK panel and not to the wall surface.**
- Each adhesive strip should be between 50 and 75 mm wide and approximately 250 mm long, spaced vertically about 300 mm apart and horizontally about 600 mm apart.
- The total area of the adhesive applied to the panel should cover at least 40% of the panel surface. The exact amount of adhesive used depends on the condition of the substrate and must be selected to ensure the required adhesion.
- If the adhesive patches are too thick, strips of plasterboard can be used instead.
- To correctly position the panel during installation, adjust it using a wooden batten and a rubber mallet, making sure to never directly hit the surface of the panel.
- Lift the panels firmly to the ceiling using a foot jack and support it with battens until the adhesive sets.
- The adhesive should set after approximately 1.5 - 3.5 hours. While waiting for the adhesive to set, use appropriate additional fixings to support the panels. The fixings must be positioned not less than 15 mm from the edge of the panel.

- Seal the circumference of the Thermano WALL GK panel and the skirting joint using flexible polyurethane foam and/or an elastic sealant
- It is important that water accumulated in the adhesive mass be allowed to evaporate after the panel is bonded, therefore we recommend starting grouting after all the panels have been installed and the gypsum adhesive has dried.
- The panels may not be bonded to wet surfaces. Do not bond the panels in temperatures below 5°C or to frozen substrates.

THERMANO WALL GK panels bonded using a gypsum based adhesive.



Distribution of adhesive on a THERMANO WALL GK panel during installation

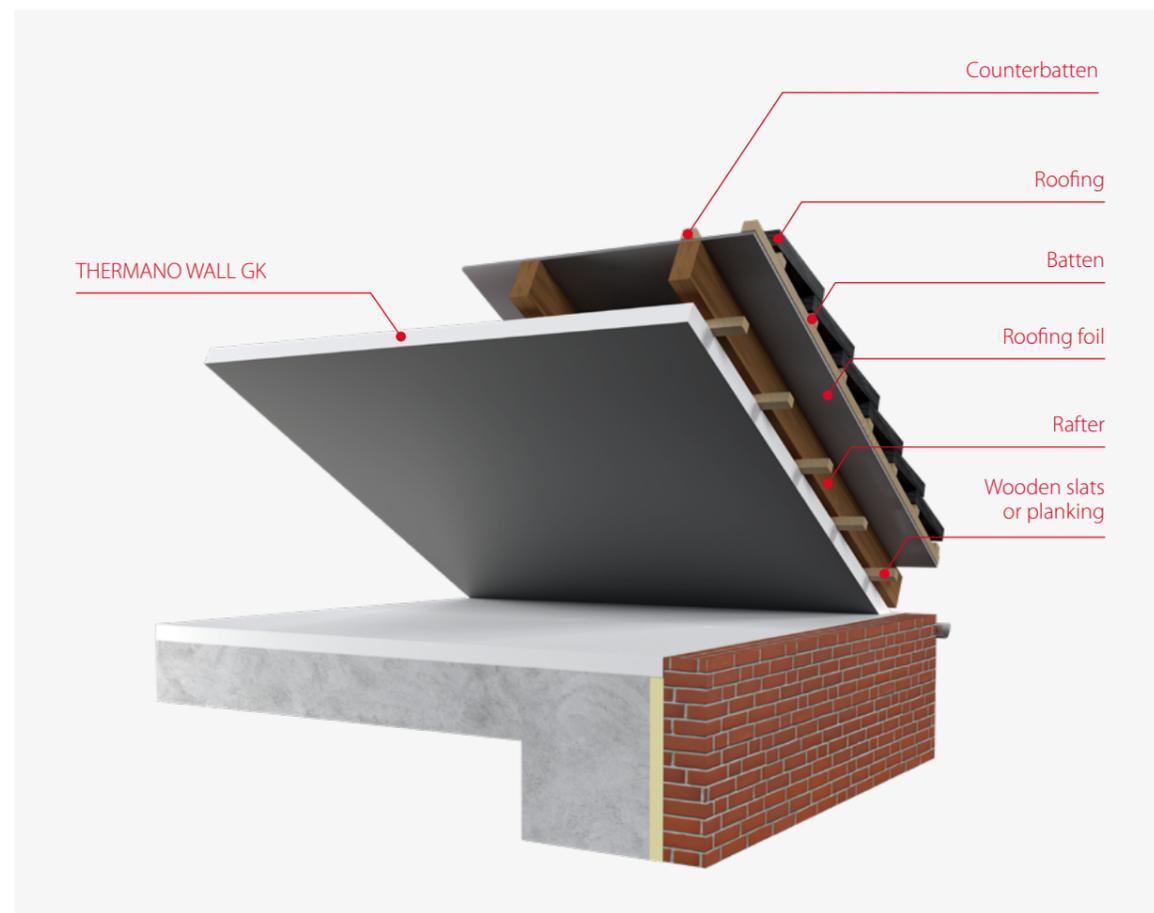


Polyurethane and acrylic adhesives:

- THERMANO WALL GK panels can be bonded using PU and acrylic adhesives on dry, stable and moisture-free walls, made of bricks, blocks and concrete, or finished with a stable layer of plaster and gypsum coating and plasterboard panels.
- Using a polyurethane adhesive is recommended for use with coated substrates.
- The bonding method is not suitable for direct use on unrendered solid masonry walls, where a risk of moisture penetration exists, or on a wood or steel substrate.
- Any irregularities in the substrate should be sanded down so that the permissible flatness tolerance checked with a 2-metre long straightedge does not exceed 5 mm.
- If the substrate is weak or too absorbent, a primer may be required.
- After finding the highest point of the wall, draw markers on the floor and ceiling to indicate the position of the edge of the Thermano WALL GK panel.
- The adhesive used for bonding Thermano WALL GK panels should be suitable for use on the intended substrate.
- Thermano WALL GK insulation panels should be cut to a height of approx. 15 mm less than the nominal distance between the floor and the ceiling.
- Apply acrylic sealing glue to the wall or the back of the Thermano WALL GK panel using a glue gun, at horizontal and vertical intervals of 300 mm.
- Apply polyurethane glue to the wall or the back of the panel using a glue gun, in 20 - 25 mm wide continuous strips. Apply a minimum of 3 vertical strips to the panel (unless otherwise specified by the manufacturer of PU foam glue). Apply horizontal continuous strips of PU foam adhesive to the top and bottom of the panel as well.
- Adhesive near the panel joints should be applied approx. 25 mm from the edge of the board in order to prevent the adhesive from penetrating into the slit between the Thermano WALL GK panels.
- Lift the panels firmly to the ceiling using a foot jack and support it with battens until the adhesive sets.
- In addition to the adhesive, suitable additional mechanical fasteners should be used at a distance of not less than 15 mm from the edge of the panel.
- Seal the circumference of the Thermano WALL GK panel and the skirting joint using flexible polyurethane foam and/or an elastic sealant.

Installation on the inside surface of a pitched roof

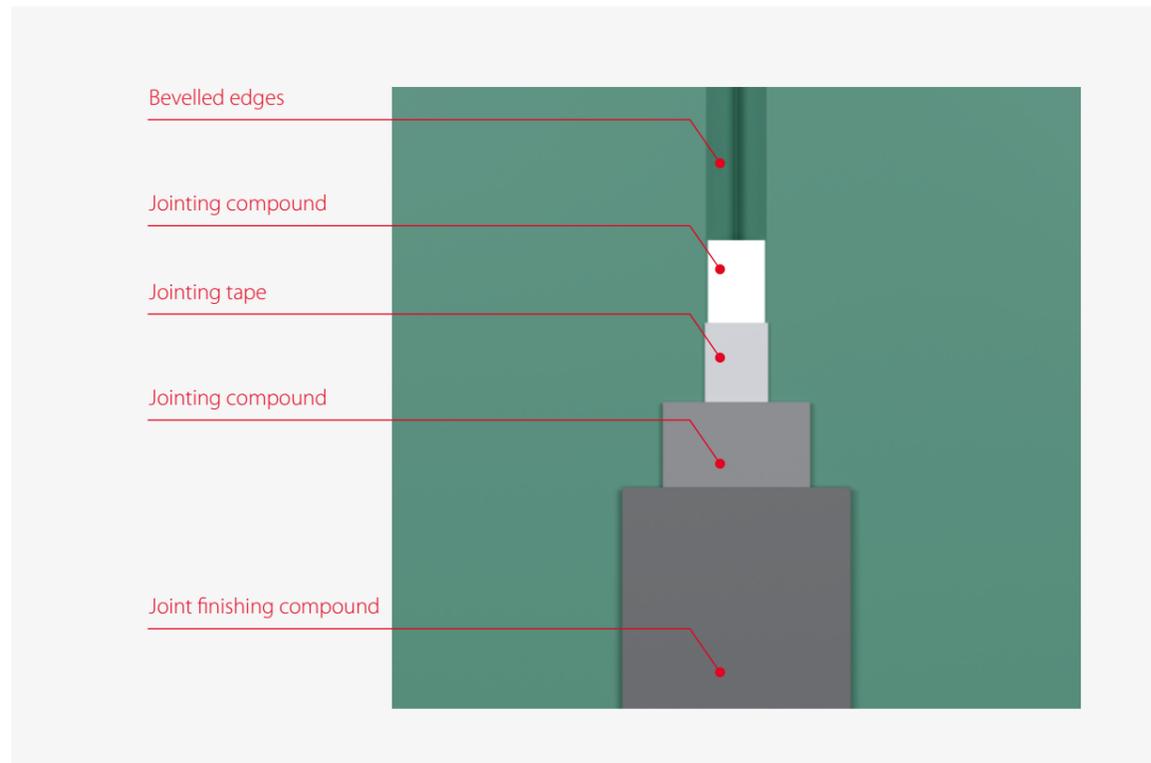
- Thermano WALL GK panels can be used for internal finishing of attic ceilings in rafter framing.
- For this purpose, fix battens or full boarding (boards, OSB, MFP, etc.) to the roof structure under the rafters to compensate for rafter movements.
- This substrate for the installation of Thermano WALL GK panels should form a flat surface.
- When used for this purpose, THERMANO WALL GK panels should be fixed using screws.



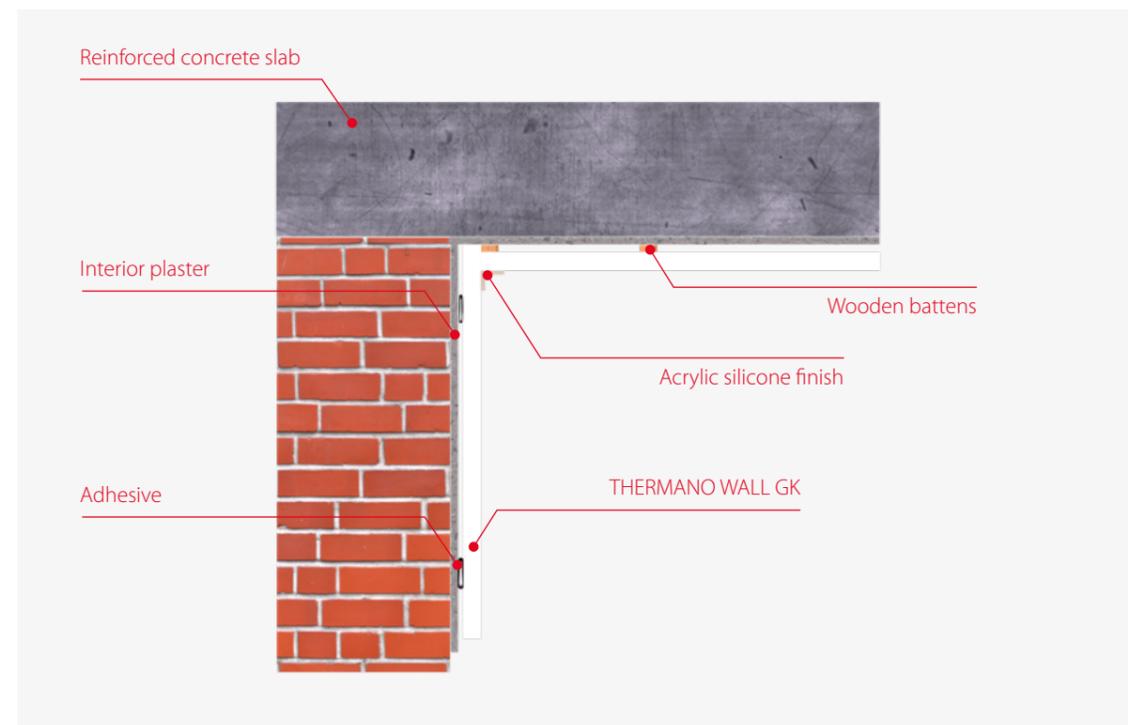
JOINTING THERMANO WALL INSULATION PANELS

- After the installation of all THERMANO WALL GK panels, works related to finishing the panel joints (jointing) can commence.
- This is ideally done in a temperature of approximately 20°C and a relative humidity of 55-60%.
- The jointing compound should not be prepared at temperatures below 5°C.
- Furthermore, do not prepare more jointing compound than you can process in 30-40 minutes.
- The first layer of the jointing compound is used to close the gaps between the tiles and to remove any damage. This work is best done using a 100 mm wide spatula.
- After the jointing compound has completely set (about 2 hours), apply an approximately 2 mm thick and 60 mm wide layer of jointing compound using the same 100 mm wide spatula. Sink a jointing tape as deep as possible into this layer of jointing compound while it's still wet to secure the joints between the plasterboards.
- Remove any excess compound squeezed out during this step with a spatula and spread it evenly on the tape.
- After the compound hardens, apply another layer, approximately 200-300 mm wide. The surface of the jointing compound should this time be even with the surface of THERMANO WALL GK panel.
- After drying (approx. 10 hours), sand down the largest irregularities using dry sandpaper with grit size 80.
- After removing the dust, you may apply a very thin layer (at least 100 mm wider than the layer filling the joint) of finishing joint plaster. After drying, sand down the surface using sandpaper with grit size 120.
- The long side edges of plasterboards are factory-bevelled. If the edges of the panels are not factory-bevelled, e.g. due to using recut panels, you can bevel the edges using a sharp knife, cutting the edge of the plasterboard at 45 degrees to a width of at least 10-15 mm

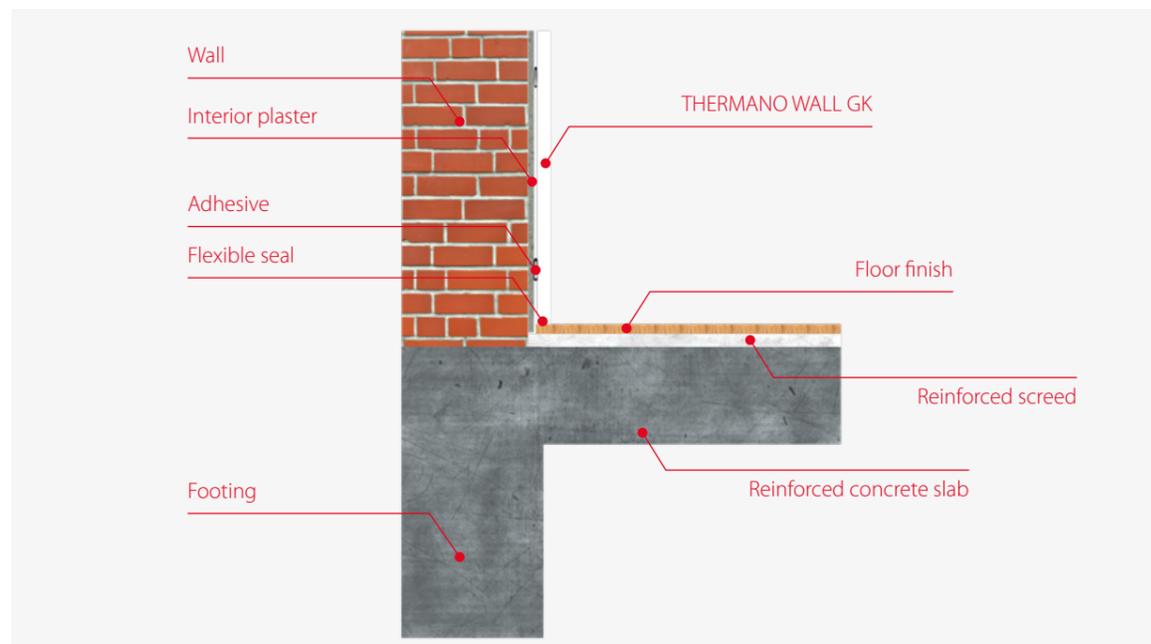
Individual layers of joint finishes between Thermano WALL GK panels



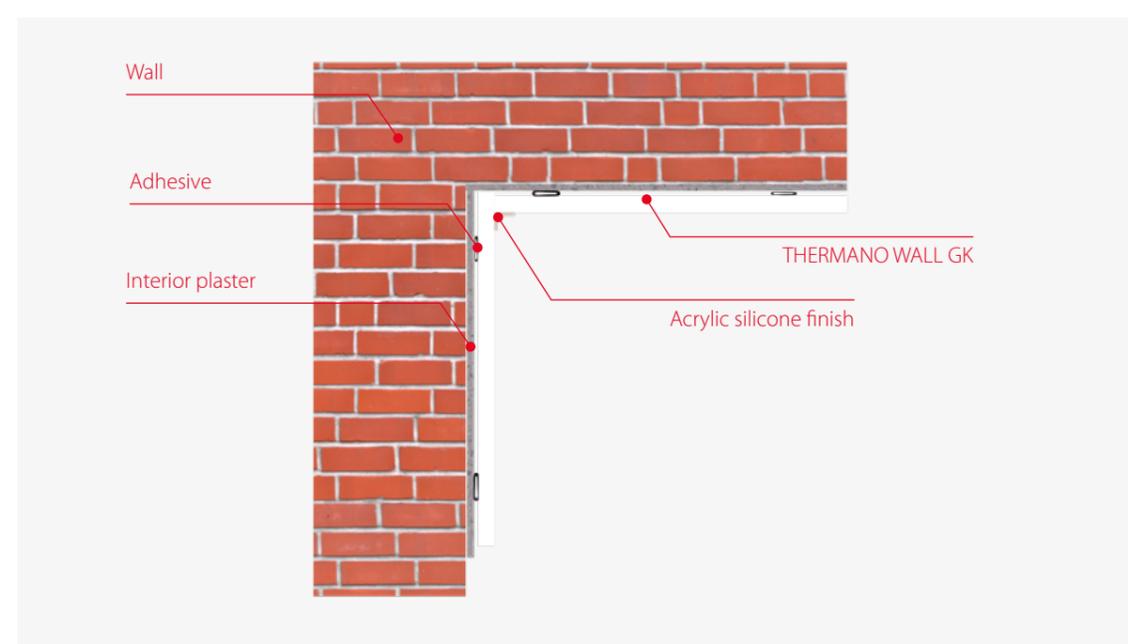
Finishing near the ceiling



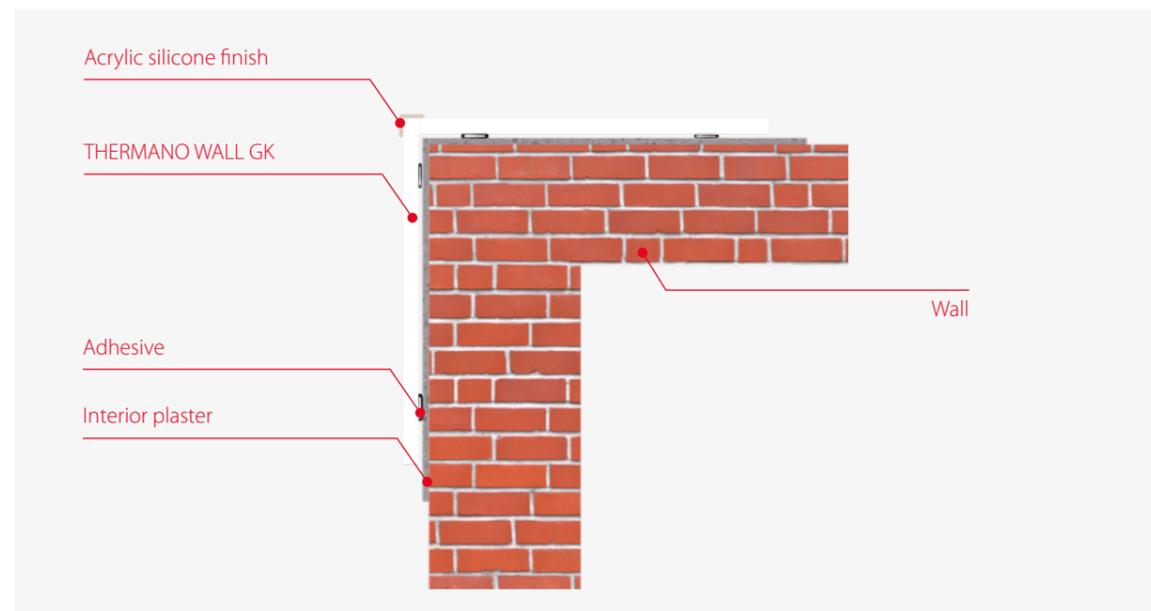
Finishing near the floor



Inner angle (horizontal cut)



External angle (horizontal cut)



Internal corners

- Apply the jointing compound on both wall surfaces simultaneously, using an angle trowel.
- Apply the jointing tape as described above. Cover at least 100 mm of the tape along both edges with jointing compound.
- Sand down and apply a layer of jointing compound of about 50mm wide beyond the previous joint layer.

External corners

- In this case, use aluminium corners with mesh sides.
- First, apply jointing compound to both edges of the wall, approximately 50 mm wide.
- Next, position the corner by pressing it into the previously applied compound.
- Remove any excess jointing compound before applying the second layer, which should be spread over a width of approximately 200 mm on each side of the corner.
- When dry, sand off any excess with sandpaper and apply a coat of jointing compound on each side, at a width approximately 50 mm beyond the joint compound strip.

Panel leading edges

- The leading edges of THERMANO WALL GK panels are straight.
- During the installation process, bevel these edges at a width of approximately 100 mm to allow for the application of jointing tape.
- Any damage to the plasterboard and openings formed as a result of applying screws or nails must be covered with at least two coats of jointing compound.

FINISHING

- Practically any finishing materials can be used for the external finishing of THERMANO WALL GK panels, with the exception of those which contain lime.
- After the jointing compound dries, remove any dust from the panel and cover it with a coat of primer (except where the panel is to be covered with tiles).
- Before applying wallpaper we recommend pre-painting THERMANO WALL GK panel, which will make it much easier to remove the wallpaper should you need to replace it.
- If the panel is to be painted, we recommend priming the substrate.
- The type of primer used should be consistent with the type of paint chosen.
- Ceramic tiles are usually bonded to the surface of THERMANO WALL GK panels using synthetic resin-based adhesives.
- Tiles should be applied in accordance with the manufacturer's recommendations.

FIXING OBJECTS TO THE SURFACE OF THERMANO WALL PANELS

- If you need to fix any objects to the surface of a THERMANO WALL GK panel, use metal or plastic mounting pins.
- The maximum load per one mounting is 5 kg for ceiling-mounted panels and 25 kg for wall-mounted panels.
- Fix heavier objects to the substrate to which THERMANO WALL GK panel has been fixed (walls, ceilings, wooden, steel or aluminium substrate).

Balex Metal Sp. z o. o.

ul. Wejherowska 12C
84-239 Bolszewo, Poland
NIP (TIN) 588-11-30-299
Regon 191112216
KRS 0000176277

kontakt@balex.eu
+48 58 778 44 44 / 801 000 807

balex.eu

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