



INSTRUCTIONS FOR USE

bonding facade cladding with certified
bonding system **LijmTec®**

Product

LijmTec is an adhesive based on Hybrid Polymers. LijmTec is free of solvent and isocyanates.

Characteristics

- Rock hard, durable elastic adhesive that hardens quickly under the influence of atmospheric humidity.
- Unique composition so no adhesive primer is required.
- An optimum stress distribution to panels up to a diagonal of 4.5 m¹.
- Quality product with KOMO- and ATG quality certificate.
- Meets fire class B-s1,d0 to EN 13501-1.
- Unprecedented design possibilities leading to simplification of the total construction.
- Resistant to moisture and weather influences, maintenance-free.
- Can be used almost year round.
- Considerable increase of labour productivity.
- Durable.

Working details and design

This bonding system is meant for ventilated façade constructions. Ventilation is very necessary!

Between insulation and cladding an air space (cavity) of 20 mm is required:

- This avoids large temperature differences in front of and behind the panels.
- Condensation and penetrating moisture are evaporated due to the ventilation.
- This prevents the formation of mould, decay or corrosion of the supporting structure or its components and the insulation material does not become damp (thermal insulating capacity is retained).
- Do not place the metal trim directly against the façade panelling! Use the Tweha roof gutter clip!
- Consult the instructions of the panel manufacturer. Tweha therefore advises that the upper and lower side of the façade surface be provided with the following ventilation opening: minimum 100 cm²/m¹.

Weight of the façade panels

Loads due to the self weight of the panels are not significant when considering creep or ultimate strength. In horizontal applications such as ceilings or canopies the distance between the support rails must be reduced by half to a minimum of 300mm. The main support rails should be mounted square to the façade support rails. It will also be necessary to temporarily support the panels until the adhesive is fully cured.

Wind loads

Wind loads should be determined through the applicable Regulation.
Wind suction calculation according to EN 1991-1-4.

Fire behaviour

Tests performed according to EN 13823, conclude, that LijmTec meets the fire class B-s1,d0 as described in EN 13501-1.

Durability

To ensure sustainable security, we recommend bonding on an (anodized) aluminium substructure. The use of a metal (aluminium) supporting structure is a more sustainable application than the use of a wooden supporting structure.

Maximum panel size

The elastic properties of LijmTec prevent possible deformation of the façade panels due to thermal expansion. This means that façade panels with a maximum diagonal can be bonded with LijmTec. Please check our website for the exact dimensions.

Minimum joint width

Follow the guideline of the panel manufacturer. From an aesthetic point of view, we recommend a joint of 8 mm.

Supporting wall structure

The construction of the supporting wall structure is the essential element when bonding façade cladding. The supporting structure transmits the occurring loads to the supporting wall structure of load bearing brickwork, concrete, wood etc. This supporting structure is often executed in aluminium, wood or a combination of these materials and should be tested to valid national guidelines. Fixing structures need to be installed according to manufacturers' and suppliers' instructions.

- Determine the exact dimensions of the façade surface with regard to gridlines and levels.
- Check the supporting wall structure (concrete: pressure or tension zone, or brickwork).

Aluminium supporting structure EN-AW-6060 or 6063 (see detail drawing page 5)

- Attach the supporting point and sliding point upright to each other using the designated materials.
- Cut the insulating layer where a load bearing or restraint support will be fixed (this reduces the possibility of insulation leaks!)
- In the support the vertical elements, L-, T- or sleeve profiles are connected which sustain the cladding slabs. Note: one fixed anchorage and multiple restraint points by means of screws through slotted holes per length.
- Check the supporting structures regarding flatness and strength! The support centre distance depends on the bending tensile strength of the type of panel, thickness and the panel manufacturers' instructions. Every slab has to be bonded onto a minimum of two vertical elements.
- The number of fixing points per m² of the supporting structure is determined by the weight of the façade panel and the wind load/ tension to the façade panels.
- The panel can be bonded directly onto the aluminium L- or T-profiles after the LT-Cleaner has evaporated.
- Note: if the aluminium profiles are provided with a coating, should be determined whether both the adhesion of the coating on the aluminium as the adhesion of the adhesive product on the coating is sufficient.

Aluminium Torv Z-profile EN-AW-6060 (see detail drawing page 5)

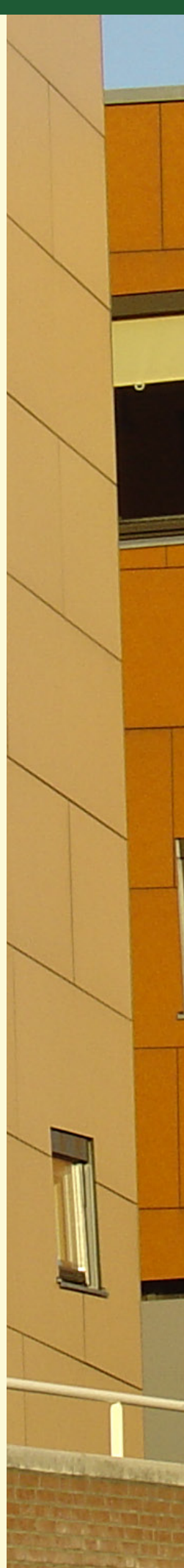
- When using a double-layer fixing structure the basic wooden structure, made of horizontally placed squared timber, must be fixed using static tested angle brackets on top and bottom.
- Place insulation and damp proof foil according to the manufacturers instructions.
- Apply the Torv Z-profile. Note: one fixed anchorage, use the Z-Clicker and multiple restraint points by means of screws through slotted holes per length.
- Check the supporting structures regarding flatness and strength! The support centre distance depends on the bending tensile strength of the type of panel, thickness and the panel manufacturers' instructions. Every slab has to be bonded onto a minimum of two vertical elements.
- The panel can be bonded directly onto the Torv Z-profile after the LT-Cleaner has evaporated.

Supporting structure: untreated pinewood or preserved wood (see detail drawing page 5)

- When using a double-layer fixing structure the basic wooden structure, made of horizontally placed squared timber, must be fixed using static tested angle brackets on top and bottom.
- Place insulation and damp proof foil according to the manufacturers instructions.
- Apply the vertical fixing structure. The minimal thickness of the vertical supporting batten is 19 mm. Determine the minimal thickness of the vertical supporting batten according the applicable national guidelines.
- When bonding onto (impregnated) wood always use for preserving the LT-Houtprep. Please ask Tweha for more information. Wood is a natural product and therefore has various changing components. For that reason, an adhesion test has to be performed.
- The wood must be dry (humidity percentage < 18%, drying class 2, air dried).
- Check the supporting structures regarding flatness and strength! The support centre distance depends on the bending tensile strength of the type of panel, thickness and the board manufacturers' instructions. Every slab has to be bonded onto a minimum of two vertical elements.
- For bonding onto other types of (preserved) wood: consult our helpdesk.

Required width of the supporting structure

End battens and angle joints:	70 mm.
Vertical muntins:	min. 45 mm.
When open joints applicable:	95 mm.
When LT-Profile joint applicable:	min. 95 mm.



Application bonding system

An adhesion test has to be performed at all times to determine whether or not a surface improver should be applied to the substrate.

Necessary materials

LijmTec	Hybrid Polymer
LT-Cleaner	Universal cleaner and degreaser
LT-Tape	Double sided self-adhesive foam tape for the first (temporary) bonding of the cladding thickness 3 mm, width 12 mm
LT-Prefix	Surface improver for fibre cement panels
LT-Houtprep	Preserving material for (impregnated) wood

Optional

Black anodized aluminium
Length 2500 mm and width 30 mm
Height "V" 6 mm and width "V" 4 mm

Needed quantity

Product	Output by centre-distance of 500 mm
LijmTec 310 ml cartridge	2,5 m ² / 7,5 m ¹ (based op a V-incision of 9x9 mm)
LijmTec 600 ml aluminium sausage	5 m ² / 15 m ¹ (based op a V-incision of 9x9 mm)
LT-Cleaner 500 ml aerosol	20 m ²
LT-Cleaner 5 litre can	200 m ²
LT-Tape roll 25 m, 12x3 mm (wxt)	8 m ²
LT-Prefix can 1 kg	100 m ¹ / 36 m ¹ (based on 100 mm wide surface of LT-Prefix)
LT-Houtprep can 1 litre	300 m ¹ (based on layer 19x45 mm)

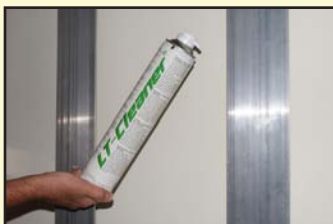
Working conditions

Recommended working temperature of the LijmTec system is between +5°C and + 40°C. The surfaces to be bonded must be clean, dry, and free from dust and grease. During the bonding process the relative humidity must not be higher than 90% and the substrate temperature must be 3°C higher than the dew point. Note: condensation is something different than a moist surface. A moist surface is due to the surface tension, while condensation means that the moisture is on the surface as water droplets. In the event of diverging conditions we advise you to contact our helpdesk.

Supporting structure: aluminium EN-AW-6060 or 6063

Aluminium, anodized or not, can be bonded onto directly.

- The surfaces to be bonded must be dry, dust- and grease free. To achieve this use LT-Cleaner.
- Cover the front of the metal base construction with LT-Cleaner and wipe off in one direction, preferably using a paper tissue or a clean lint free cloth.
- Allow the LT-Cleaner to evaporate fully for 10 minutes.
- Ensure that the treated adhesive surface is fully protected against dirt.



Supporting structure: untreated pinewood or preserved wood

- In case of an exterior application, the untreated pinewood has to be protected all round with LT-Houtprep.
- Preserved wood (creosoted, celcurised or improsol-treated as per (NEN 3251 / BRL0601) has to be pretreated on the bondable side with LT-Houtprep.
- The vertical frame construction must be dry (wood moisture percentage < 18%, drying class 2 (NEN-EN 5461), air dried) and free from dust and grease.
- The vertical frame construction must be dry (wood moisture percentage < 18%, drying class 2 (NEN-EN 5461), air dried), dust- and grease free.
- For the application of LT-Houtprep use a paint tray with a clean, fine structure roller. Shake LT-Houtprep thoroughly before use.
- Apply LT-Houtprep in one thin, full-cover layer (never more!).
- Do not use LT-Houtprep on painted wood, multiplex, aluminium or other types of metal.
- LT-Houtprep is not a primer and can be pre-processed. Bonding of the façade panel can take place 2 hours after applying the LT-Houtprep.



Degreasing façade panels with LT-Cleaner

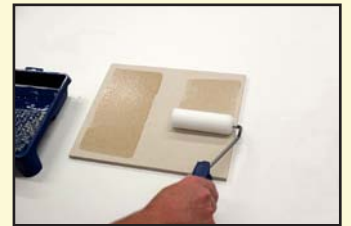
The façade panel must be dry, clean, and free from dust and grease.

- If the back of the façade panels are covered with a protective foil, lightly paper sand this area after removing foil to prevent possible residue from providing strong adhesion.
- Cover the back of the façade panel with LT-Cleaner and wipe off in one direction, preferably using a paper tissue or a clean lint free cloth.
- Allow the LT-Cleaner to evaporate fully for 10 minutes.
- Ensure that the treated adhesive surface is fully protected against dirt.
- LT-Cleaner is not an aggressive degreaser and using it has no appreciable effect on the surface of the façade panels. Besides degreasing the surfaces to be bonded, LT-Cleaner can also be used to remove adhesive residue (before it is cured).

Important: pre-treatment of fibre cement façade panels with LT-Prefix

For optimum bonding, pre-treatment with LT-Prefix surface improver is necessary.

- Before treatment the fibre cement façade panel must be clean, dry, and free from grease. To achieve this use LT-Cleaner.
- Add the full contents of LT-Prefix component B (hardener) to the full contents of LT-Prefix component A (resin). Mix both components well for **minimum 2 minutes** with a stirrer until the colour is evenly mixed and string free. Then pour the substance over into a bowl to check if the components are completely mixed. Do not add water or other products. **Note: do not subdivide the supplied contents of the package!**
- Apply LT-Prefix vertically to the area to be bonded (± 10 cm wide) with a brush or fine structure paint roller in one thin, but full-cover layer.
- Apply and process the LT-Prefix within 30 minutes!
- **Note: bonding of the fibre cement façade panels is only possible after the prescribed drying time of 12 hours minimum.**
- Ensure that the treated adhesive surface is fully protected against dirt.



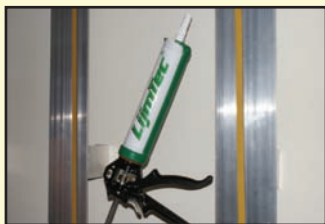
Application of LT-Tape

- LT-Tape provides the initial bond and guarantees the minimum required glue bead thickness of 3 mm.
- Apply the LT-Tape after complete drying of the LT-Cleaner or LT-Houtprep.
- Position the LT-Tape vertically in an unbroken strip on the vertical frame construction of the (pre-treated) wood or cleaned metal. Then press down the LT-Tape firmly and cut with a sharp knife. For the correct positioning and the length of the LT-Tape take into account the size of the support posts, the dimensions of the façade panel and the necessary space for the glue bead. Remove the protective layer only after applying the glue bead!



Apply glue bead

- To obtain the prescribed glue width/thickness of minimum 12 x 3 mm cut the supplied nozzle, if necessary, in an V-shape of minimum 8 x 8 mm. The V-shape is necessary to prevent air bubbles being trapped and unnecessary loss of adhesion.
- Then cut open the cartridge or sausage, fit the nozzle and by using a glue gun apply the glue bead .
- Apply the adhesive 10 mm away from the LT-Tape in an unbroken required V-shape bead.
- Place the Eternit synthetic fibre cement façade panel within 10 minutes, otherwise a skin will form on the adhesive!



Attach façade panel

- After the prescribed drying time of LT-Prefix the façade panel can be applied.
- Remove the protective layer from the LT-Tape.
- Press the cleaned side of the panel gently against the adhesive to enable subsequent correction. Press down the panel firmly when it is correctly positioned, so that the façade panel makes good contact with the LT-Tape.
- If necessary also bond an LT-Profile to the façade. Contact our helpdesk for advise.
- For an optimum ventilation, use the Tweha roof gutter clip!

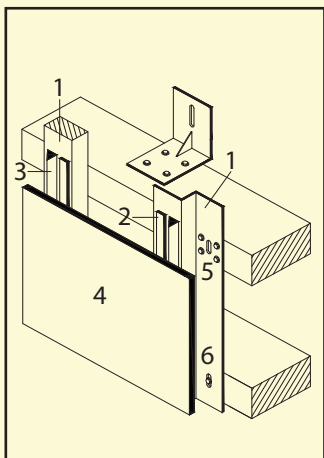
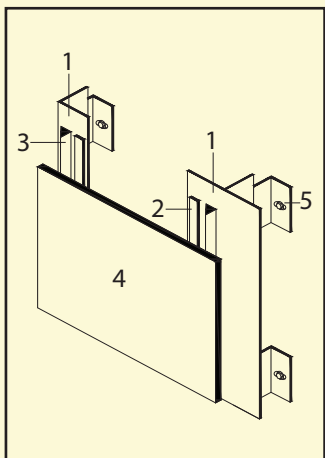


Guarantee

Tweha guarantees that the LijmTec bonding system meets the technical specifications as described in the relevant technical information sheets.

Primary conditions:






- The applier has to meet and follow the instructions for use from Tweha and the guidelines from the panel manufacturer.
- The products are used as a system (LijmTec, LT-Tape, LT-Cleaner, LT-Houtprep, LT-Prefix).
- Processing is carried out strictly in conformity with the processing guidelines, unless it can be reasonably assumed that in a particular case this is not (fully) justified: in this case contact our helpdesk and always ask for a written confirmation of an application method which deviates from the guidelines!



Explanation of numbers

1. Wood, Aluminium L-, T- or Torv Z-profile
2. LT-Tape
3. LijmTec
4. Façade panel
5. Supporting point
6. Sliding point



	<i>LijmTec</i>	<i>LT-Tape</i>	<i>LT-Cleaner</i>	<i>LT-Houtprep</i>	<i>LT-Prefix</i>
					
Base	Hybrid Polymer	Double sided self-adhesive tape	Cleaner and degreaser	Mixture for the treatment of non-preserved wood	2-component surface improver
Colour	Black / White	Black / White	Transparent	Black	Transparent
Working temperature	+5°C to +40°C	+5°C to +40°C	+5°C to +40°C	+5°C to +40°C	+5°C to +40°C
Type of surface	Hpl, polyester concrete, fibre cement panels	Every surface	Every surface	Non-preserved wood	Fibre cement panels
Condition of the surface	Clean, dry and free of grease	Clean, dry and free of grease	N.a.	Clean, dry and free of grease	Clean, dry and free of grease
Drying time	Ca. 3-4 mm per 24 hours	N.a.	5 - 10 minutes to evaporate	2 hours	12 hours
Packaging	310 ml cartridge 600 ml sausage	Roll à 25 meter (12 x 3 mm)	Aerosol 500 ml Can 5 L	Can 1 L	Can 1 Kg
Shelf life	18 months *	12 months *	12 months *	12 months *	12 months *
Details	Applying time is 10 minutes	None	None	Wood moisture percentage < 18%	Apply within 30 minutes

* in original closed and undamaged packaging stored at a cool and dry place.

For detailed information consult the material safety data sheets on:

www.tweha.nl

For questions please contact our helpdesk:

+31 497 530790

When applying according to these instructions for use and the guidelines of the panel manufacturer, the adhesive joint will be guaranteed for a maximum period of 10 years. The guarantee is limited to the technical characteristic of the components of the bonding system. Under no circumstances can Tweha accept responsibility for the application that its products are used for. To ensure the obligations forthcoming of this warranty a product guarantee policy is effected.

This document is a translation from the Dutch guideline. In case of conflict the Dutch guideline is decisive.