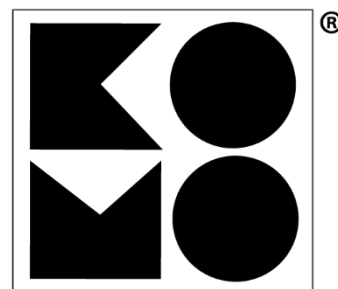


INSTALLATION GUIDELINES:

**BONDING OF FAÇADE PANELS FOR VENTILATED
FAÇADE STRUCTURES WITH KOMO CERTIFICATE**



JAMES HARDIE

HARDIE PANEL

More info:



Version:

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Materials and supplies required

Materials required:

- **TWINBOND PANEL:** high-strength, permanently elastic adhesive based on MS polymers
- **TWINBOND CLEAN:** universal cleaner and degreaser for chemical contamination
- **TWINBOND FOAM:** universal cleaner and degreaser for natural soiling
- **TWINBOND TAPE:** double-sided adhesive tape for primary bonding of the panel and to ensure the 3 mm adhesive thickness is maintained.
- **TWINBOND WP 1K:** wood preservative
- **TWINBOND SIP 2K-FAST:** 2-component substrate reinforcement by impregnation

Consumption

TWINBOND PANEL 310 ML CARTRIDGE	7.5 m of 9 x 9 mm V-groove
TWINBOND PANEL 600 ML SAUSAGE	15 m of 9 x 9 mm V-groove
TWINBOND CLEAN 500 ML AEROSOL	Depending on the level of soiling, 20 m ²
TWINBOND CLEAN 5-LITRE TIN	Depending on the level of soiling, 200 m ²
TWINBOND FOAM 500 ML AEROSOL	Depending on the level of soiling
TWINBOND TAPE 25 M ROLL 12x3 MM	25 lm
TWINBOND WP 1K 1 L TIN	250 to 300 lm
TWINBOND SIP 2K-FAST 1 KG TIN (A+B)	100 LM based on a 100 MM wide epoxy layer

Environmental factors and conditions

Apply the TwinBond Panel adhesive system at temperatures between +5°C and +40°C.

Prevent condensation from forming on the surfaces to be bonded (condensation is not the same as a damp substrate).

- Relative humidity < 90% and substrate temperature > +3°C above the dew point. (see Table 1)
- If conditions differ, please seek our advice.

In addition to the TwinBond Panel application guidelines and the panel manufacturer's specifications, the installer must also comply with the requirements set out in BRL 4104.

The TwinBond system is used as a complete system (TwinBond Panel, TwinBond Tape, TwinBond Clean, TwinBond SIP, TwinBond Foam and TwinBond WP 1K).

Fig. Table 1:

TEMP °C	RELATIVE HUMIDITY %										
	50	55	60	65	70	75	80	85	90	95	100
35	23	25	26	27	29	30	31	32	33	34	35
30	19	20	21	23	24	25	26	27	28	29	30
26	15	16	17	19	20	21	22	23	24	25	26
25	14	15	16	18	19	20	21	22	23	24	25
24	13	14	15	17	18	19	20	21	22	23	24
22	11	12	13	15	16	17	18	19	20	21	22
20	9	11	12	13	14	15	16	17	18	19	20
18	7	9	10	11	12	13	14	15	16	17	18
16	6	7	8	9	10	11	12	13	14	15	16
15	5	6	7	8	9	10	10	12	13	14	15
14	4	5	6	7	8	9	10	11	12	13	14
12	2	3	4	6	7	8	9	10	10	11	12
10	0	1	3	4	5	6	7	7	8	9	10
8	-2	0	1	2	3	4	5	6	6	7	8
6	-3	-2	-1	0	1	2	3	4	4	5	6
4	-5	-3	-2	-2	-1	0	1	1	1	3	4
2	-7	-5	-4	-3	-2	-1	0	0	0	1	2
	No dew point, safe to use										
	Dew may form on materials; take care during application										
	High risk of dew, application not recommended										

Novatech is not responsible for calculating or providing advice regarding building physics properties (dew point, building nodes, etc.).

Facade construction: Ventilation

Comply with the ventilation guidelines to ensure a uniform temperature on both sides of the façade panels and to prevent condensation and trapped moisture. Always ensure that the battens are installed vertically.

- An uninterrupted air gap of at least 20 mm between the façade or the insulation and the façade panels.
- An unbroken ventilation opening of at least 100 cm² per linear metre at the top and bottom of the façade surface.
- The roof edge finish must never be flush against the cladding.
- Refer to the panel manufacturer's installation instructions.
- The supporting structure must always be erected vertically.
- In the case of double battens, the vertical battens must be fixed to the cladding surface.



Facade construction: Centre-to-centre distances

The supporting structure is very important when bonding façade cladding, as it transfers the load from the façade panels to the substrate, whether this be masonry, concrete or timber.

This supporting structure is usually made of aluminium, timber or a combination of the two, and must comply with the applicable Eurocodes. Supporting structures must always be installed in accordance with the specifications of the cladding panel manufacturer and the supplier of the relevant fixings.

Check the flatness and stability of the supporting structure. The centre-to-centre spacing of the battens depends on the panel's tensile and flexural strength, its thickness and the panel manufacturer's specifications, but must never exceed 600 mm. Each cladding panel must be bonded to at least two vertical profiles.

- Determine the correct dimensions of the façade surface in relation to the grid and the reference level (axis and reference level).
- Check the stability of the anchoring substrate (concrete: compression and tension zones).

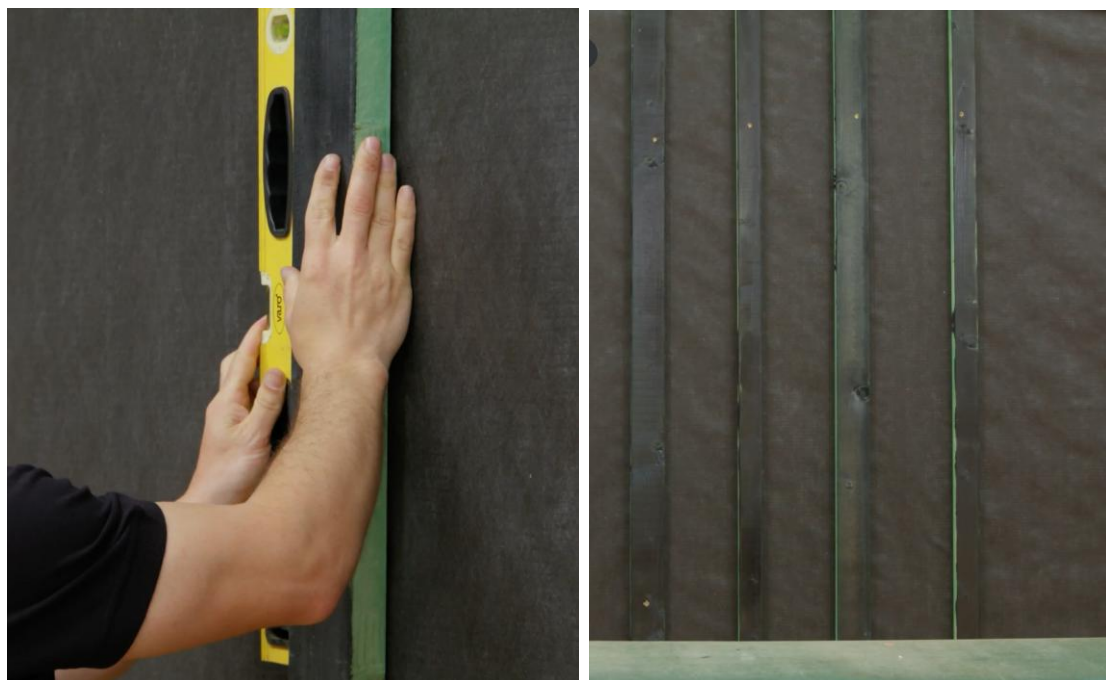
Aluminium support structure (EN-AW-6063)

- Install the support and sliding points vertically one above the other using the specified fixing materials.
- Cut into any façade insulation where a support or sliding point is provided to minimise insulation gaps.
- Fit the vertical L- or T-profiles and provide one fixed fixing point and several sliding points per length using screws through slotted holes.
- The number of fixing points per m² of the supporting structure is determined by the weight of the cladding panel and the wind load and tensile force acting on the cladding panels. Always follow the installation instructions provided by the relevant manufacturer or supplier.
- On coated aluminium, it is necessary to test the adhesion of the coating to the aluminium and the adhesion of the **TWINBOND PANEL** to the coating.

Smooth-planed spruce timber supporting structure (preserved)

- When using a double battens system, the timber to be installed horizontally must be secured at the top and bottom using statically tested corner anchors.
- The timber sub-frame must be adequately protected against rot in accordance with NBN EN-335 and EN-350:2016
- Install the façade insulation and any vapour-permeable membrane in accordance with the relevant manufacturer's or supplier's instructions.
- The minimum thickness for the vertical panel-supporting battens is 28 mm. Determine the minimum thickness of the battens in accordance with the applicable national guideline.
- The timber must be dry and planed smooth (moisture content < 18%, dryness class 2, air-dried), and must always be treated with the wood preservative **TWINBOND WP 1K**. Timber is a natural product and varies in composition. Always carry out an adhesion test.
- Please ask us for advice on bonding to other types of treated timber.

➔ End posts and corner joints:	70 mm.
➔ Battens:	min. 45 mm.
➔ At joints:	95 mm.
➔ When using a joint profile:	min. 95 mm.

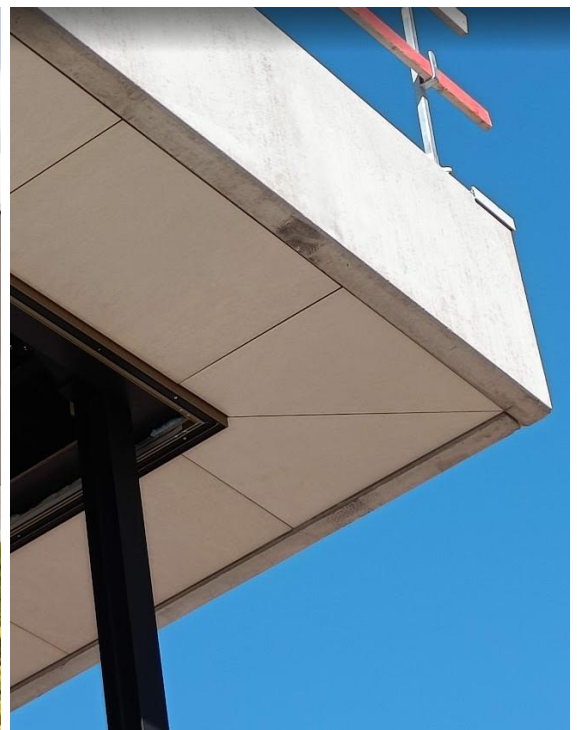


Facade construction: Fascia boards and canopies

For fascia boards, a ventilated cavity must always be provided. Always refer to the panel manufacturer's installation instructions

For horizontal applications (such as ceiling or canopy cladding), observe a maximum centre-to-centre distance of 400 mm.

Support may be required until the adhesive has fully cured. For canopy applications, install the battens at right angles to the façade



1

Preparing the battens



ALUMINIUM

OR



TIMBER

No maximum processing time

COVERAGE

TWINBOND CLEAN 500 ML AEROSOL	Depending on the level of soiling, 20 m ²
TWINBOND CLEAN 5-LITRE TIN	Depending on the level of soiling, 200 m ²
TWINBOND WP 1K 1 L TIN	250 to 300 linear metres

Preparing aluminium framework

Clean with TwinBond Clean and/or TwinBond Foam: apply, leave to soak in, wipe off with a clean cloth, polish with a dry cloth and allow to evaporate.

Always clean the aluminium framework with TwinBond Clean to remove any dirt, rolling oils, etc.

Adhesives can be applied directly to aluminium and anodised aluminium without the need for additional primers.



Smoothly planed pine

Treat all exposed wood with the wood preservative TwinBond WP 1K.

Treat the side of the treated timber to be bonded with TwinBond WP 1K.

The vertical battens must be dry.

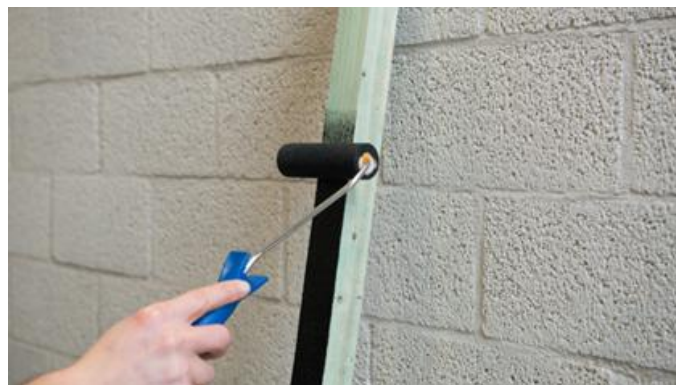
Wood moisture content <18%, dryness class 2 (NEN-EN 5461), air-dried.

Apply TwinBond WP 1K to clean timber.

- Shake TwinBond WP 1K well before use.
- Apply one thin but even coat.
- Allow to dry for 1 hour before bonding with TwinBond Panel.

TwinBond WP 1K is not a primer and can be applied beforehand. Never apply to painted timber, plywood, aluminium or other metals.

Use planed timber only.



2

Preparing cladding panels



REMOVAL

Removing sticker residue



REMOVAL

Skin oils, (grinding) dust, sand



SUBSTRATE REINFORCEMENT

No maximum working time

COVERAGE

TWINBOND CLEAN 500 ML AEROSOL	Depending on the level of soiling, 20 m ²
TWINBOND CLEAN 5 L TIN	Depending on the level of soiling, 200 m ²
TWINBOND FOAM 500 ML AEROSOL	250 to 300 linear metres
TWINBOND SIP 2K-FAST 1 KG TIN (A+B)	100 M based on a 100 MM wide epoxy layer

Preparing façade panels

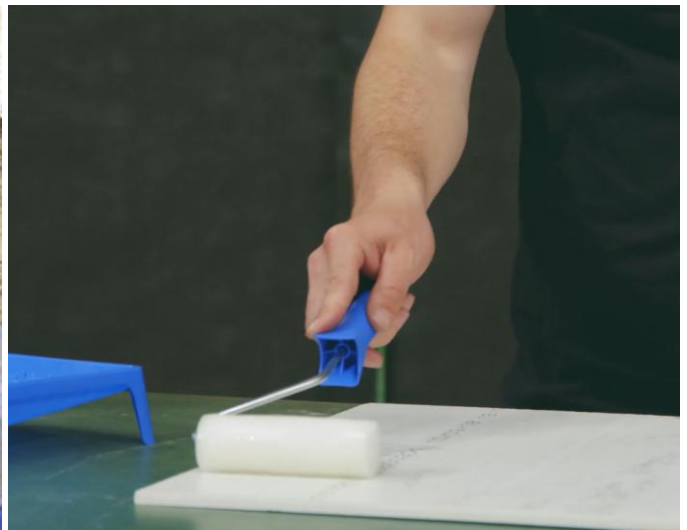
Ensure the substrate is clean and stable. Clean if necessary using TwinBond Clean and/or TwinBond Foam: apply, leave to soak in, wipe off with a clean cloth, polish with a dry cloth and allow to evaporate. Both cleaners are safe for use on the cladding panels.

The bonding surfaces of the panels must be treated with TwinBond SIP 2K-FAST in accordance with the application instructions in the technical data sheet.

- TwinBond SIP 2K-FAST: Mix the entire contents of components A and B to form a homogeneous mixture. Once mixed, use within 60 minutes (at 20°C). Apply to a clean and dry surface using a roller or brush. Minimum application temperature +5°C, relative humidity 90%. After a minimum of 2 to 3 hours' functional* drying time, the product is ready for further processing. ALWAYS check with a piece of TwinBond Tape whether TwinBond SIP 2K-FAST has sufficiently set/dried for further processing. Fully cured after 12 hours and chemically resistant after 7 days.

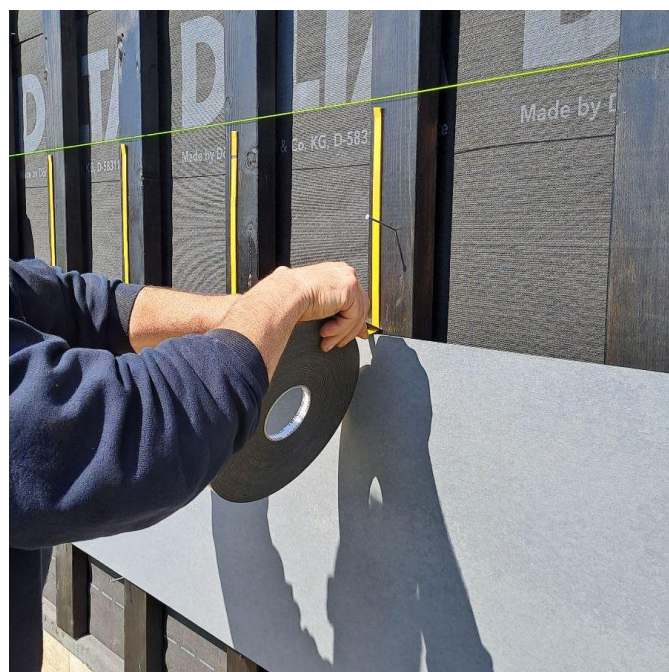
Apply to the rear of the board at the level of the underlying battens. A maximum of 50 per cent of the rear of the board may be covered with SIP 2K-FAST.

*Functional drying time: this is the time the product needs to dry before it can be further processed



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Installing panels



COVERAGE

TWINBOND PANEL 310 ML CARTRIDGE	7.5 m of 9 x 9 mm V-groove
TWINBOND PANEL 600 ML SAUSAGE	15 m of 9 x 9 mm V-groove
TWINBOND TAPE 25 M ROLL, 12 x 3 MM	25 m

Applying tape and adhesive

APPLYING TWINBOND TAPE

- Apply to a clean and stable substrate; TwinBond WP 1K must be completely dry and TwinBond Clean must have evaporated completely.
- Apply TwinBond Tape in a continuous strip to the vertical battens.
- Press down firmly along the entire length and trim off any excess.
- Remove the protective film before applying the TwinBond Panel.

APPLYING TWINBOND PANEL

- Using the supplied nozzle ensures the specified adhesive width and thickness of 12 mm $\pm$ 3 mm after pressing the panel into place. The V-shape prevents air pockets and adhesive wastage.
- Cut open the tube and fit the nozzle; this happens automatically with the sausage nozzle. Apply the adhesive using a suitable glue gun.
- When applying the TwinBond Panel, position the nozzle at a 90° angle to the surface to achieve the perfect V-shape.
- Apply the adhesive in a continuous bead approximately 1 cm from the TwinBond Tape.



Installation of façade panels

INSTALLATION OF THE CLADDING PANEL

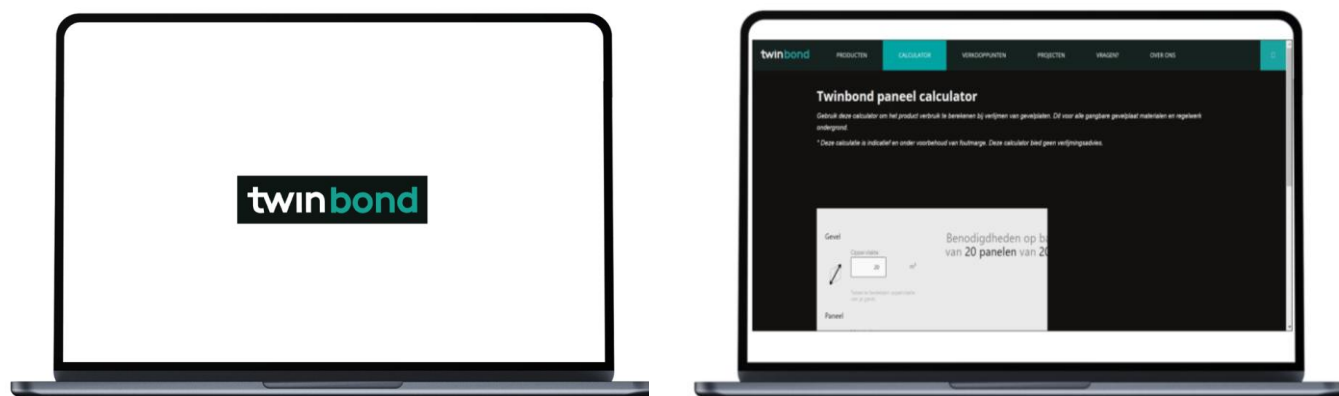
Fix the cladding panel in place before the TwinBond Panel skin forms (+/- 10 minutes) to ensure an optimal bonding surface.

Gently press the clean side of the cladding panel against the adhesive and adjust the position if necessary. Once the cladding panel is correctly positioned, press down firmly so that the panel makes full contact with the entire surface of the TwinBond Tape. The use of shims and a support beam may be helpful here.

After installation, any dirt on the visible side of the panel can be removed using TwinBond Clean and/or TwinBond Foam: apply, leave to take effect, wipe off with a clean cloth, polish with a dry cloth and allow to evaporate. Both cleaners are safe to use on the façade panels.



Website



Visit www.twinbond.com for:

- Interactive quantity calculator
- Instructional videos
- Technical Data Sheets (TDS)
- Safety Data Sheets (SDS)
- Technical Data Sheets (TF)
- ...

We're here for you

With TwinBond, you can rely on our comprehensive installation and dismantling insurance:

In the event that damage is caused by the use of our product, we will reimburse all costs necessary to dismantle and rebuild the façade. We only ask that you work with the TwinBond system AND follow the installation guidelines

Installation and dismantling insurance means:

- Open & transparent
- Coverage of all reinstallation costs in the event of omissions
- No distinction based on project size
- No unnecessary paperwork
- No application forms or other documents



Details available

Work is carried out strictly in accordance with the processing guidelines, unless it can reasonably be assumed that these are incorrect in a particular case; if necessary, Novatech will be contacted for assistance (always request written confirmation).

This version supersedes the previous version and contains the most recent updates. Products manufactured in accordance with earlier guidelines remain guaranteed and comply with the quality standards applicable at the time. The changes in this version include updated guidelines, refined technical specifications and amendments based on recent regulations. Ensure that you always consult this latest version when carrying out façade panel bonding to comply with the applicable standards and quality requirements.

The correct installation and structural suitability of the underlying assembly, including the load-bearing structure, insulation layer, fixing methods and other structural aspects, are deemed to comply with the applicable building codes and regulations relating to building physics, stability and structural behaviour. Responsibility for the conformity and correct application of the underlying structure lies with the relevant construction partners and must comply with the applicable regulations and quality requirements.

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More info:



BONDING OF CLADDING PANELS FOR VENTILATED FAÇADE STRUCTURES WITH KOMO CERTIFICATE

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