

The panel fixing system for Bonding Panels to Ventilated Facades

System Information

System Structure Aluminium vertical carrier rail system:

The substructure must be approved by the construction supervisory authority (L, T or H shapes or equivalent) consisting at least of the alloy AlMgSi 0.5 F 22 in accordance with DIN 1748-1. Framing solutions must be non-elemental and supplied from a proprietary source and as a single responsibility and in accordance with EN 9001.

Timber vertical carrier rail system

Perpendicular battens made of spruce or pine, planed, smooth and with a max. Moisture content of the wood < 14% in accordance with DIN 1052. The adhesive area must be untreated.

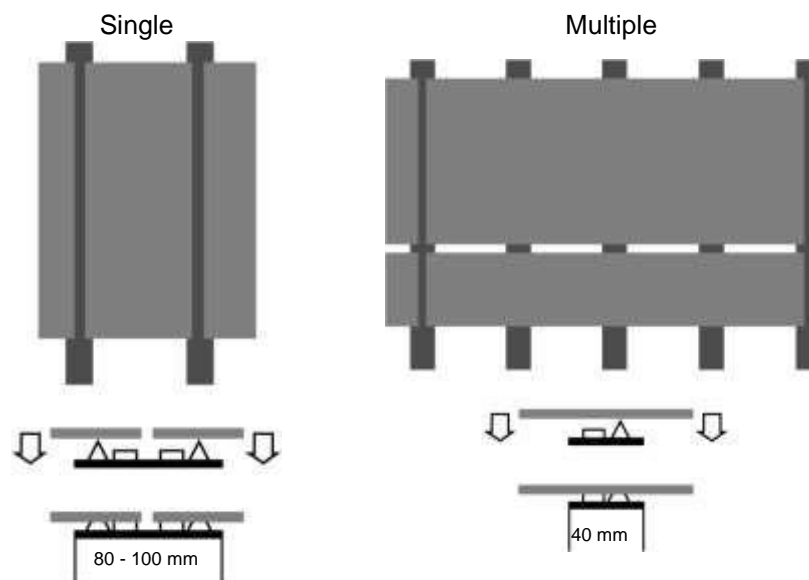
The joints between the individual battens must be at least 1 cm wide.

Design and dimensions:

The dimensions of the perpendicular substructure depends on the façade construction. The distances between the substructure battens and their width are determined by the load requirements and by the type of panel used.

N.B Each project requires specific design detailing. The framing must be designed by others in accordance with all relevant standards and appropriate consideration granted to design and manufacture. Project specific documented calculations and drawings should be issued by a qualified and competent person. N.B Sika are unable to provide or approve designs other than the specific interface between rainscreen panels and the vertical carrier rail component incorporating the SikaTack®-Panel 50 Adhesive system.

Examples



Required width of substructure battens for the use of the SikaTack®-Panel 50 System.
The full height of the façade panel must be bonded.

Panels

The rainscreen panel brand must have proof of suitability for use ideally with BBA accreditation and manufactured in accordance with EN 9001. Relevant panel manufacturers instructions with respect to structural adhesive fixation must be adhered to and incorporated within the full rainscreen build up design (Design by others than Sika Limited)

Calculated permissible values of load bearing capacity:

Width of adhesive: 10 mm

Tensile stress: ~ 0.15 Mpa

Shear stress: ~ 0.12 Mpa (permissible reduction factor $S = 1.0$)

According to the BBA requirements the maximum sheer movement of the joint (between panel and substructure) must be limited to 1 mm

The temperature related material behaviour of the SikaTack[®]-Panel 50 adhesive has to be considered in every calculation

Movement joints:

For the correct design and dimensioning of the system and for correct anchoring of the vertical aluminium or timber substructure, all standard building regulations for cladding apply.

The vertical aluminium or wooden battens must be parallel and even in order to ensure uniform, stress free adhesion of the cladding panels. Joints in the substructure must not be bonded over by panels. The distances between the panels at joints must be sufficiently wide to avoid compression of the panels due to thermal movement. The data of the panel manufacturer are to be compiled with expansion coefficient of the substructure. Sufficiently large openings for ventilation must be provided at the top and bottom of the system.

For the fixation of the direct substructure on the load bearing building shell, any transfer of loads or movements from the building shell to the vertical substructure and the adhesive joint has to be avoided.

Note: These system configurations must be fully complied with as described and details and may not be changed.

Application Details

Consumption / Dosage

Material	Application	Consumption
SikaTack®-Panel 50 Sausage 600 ml	Triangular bead 8 x 10mm	~ 44 ml / m, corresponds to 13 m / sausage
Sika® Aktivator-205 250 ml bottle 1000 ml bottle	Width 50 mm	~ 3.5 ml / m, corresponds to ~ 71 m / 250 ml bottle to ~285 m / 1000 ml bottle
SikaTack®-Panel Primer 1000 ml bottle	Width 50 mm	~ 8 ml / m, corresponds to ~125 m / 1000 ml bottle
SikaTack®-Panel Fixing Tape, Roll 33 m		1 m / m

Substrate Quality

Clean and dry, homogeneous, even, free from oils and grease, dust and loose or friable particles.

Paint, laitance and other poorly adhering particles must be removed.

Standard construction rules must be observed.

Applications Conditions / Limitations

Ambient Temperature

+5°C min. / +40°C max.

Material Temperature

The temperature of the building components to be bonded (cladding panels, sub structure etc.) must be at least 3°C higher than the dew point temperature of the air in order to avoid the formation of condensation on the surfaces.

Substrate Humidity

Dry, wood moisture content < 14%.

Relative Air Humidity

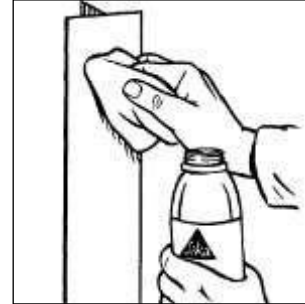
Max. 75%

Application Instructions

Application method/Tools

Aluminium substructures:

- Clean with a fine abrasive pad e.g. Scotch Brite very fine.
- Clean the surface with a clean, grease- and fluff free cellulose cloth or cleaning paper soaked in Sika® Aktivator-205 by wiping the surface in one direction only (dirty cloths must be replaced).
- Allow a flash off time of at least 10 minutes.
- Shake the SikaTack®-Panel Primer thoroughly (the movement of the steel balls in the container must be clearly audible).
- Apply one thin coat of SikaTack®-Panel Primer uniformly all over the surface with a Sika Power Clean Aid foam pad.
- Allow a flash off time of at least 30 minutes (maximum 8 hours).



Timber substructures:

- Remove dust.
- Shake SikaTack®-Panel Primer thoroughly (the movement of the steel balls in the container must be clearly audible).
- Apply one thin coat of SikaTack®-Panel Primer uniformly over the whole surface with a Sika Power Clean Aid foam pad.
- Allow a flash off time of at least 30 minutes (maximum 8 hours).

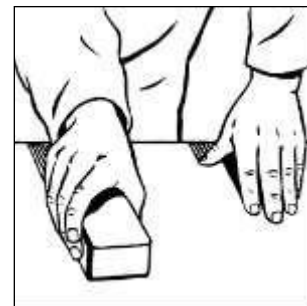


Caution

Do not use cloudy or whitish Sika® Aktivator-205 or any old, contaminated, gelled or non-homogeneous Primer. Fully cured Primer can only be removed mechanically. Sika® Aktivator-205 leaves a cloudy film. Only the surface to be bonded must be treated. Under all circumstances minimum flash off times for Sika primers and cleaners must be complied to. Splashes on visible surfaces must be removed immediately with a clean cloth or cleaning paper.

Pre-treatment of Fibre Cement cladding panels:

- The surface to be bonded must be clean, dry and free from grease. After the application of the primer, surfaces must be protected against dirt, dust, grease etc..
- Manual cleaning with an abrasive pad or mechanical grinding of the surfaces to be bonded with a very fine grinder, (80 grit).



- Cementitious panels must always be cleaned by grinding. Vacuum clean all surfaces after grinding.
- Note: Porous substrates and panels *do not* prepare with Sika® Aktivator-205.
- Apply one thin coat of *SikaPanel Primer* uniformly over the whole abraded area with a Sika PowerClean Aid foam pad or brush.
- Allow a flash off time of at least 30 minutes (max. 8 hours).



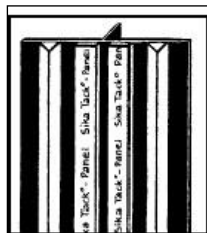
Always comply with the panel manufacturer's instructions with regard to storage of the panels. Prior to bonding the panels avoid exposure to heat or direct sunlight.

Important Note:

These are general pre-treatment instructions. For the many different façade cladding panels available on the market, different or additional pre-treatments may be required. Thus always refer to the panel manufacturer's instructions.

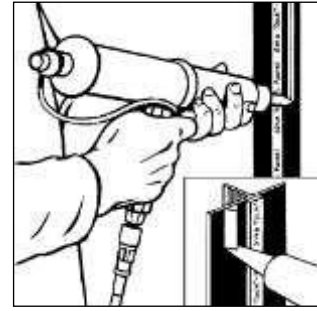
Bonding-Tape Application:

- Apply SikaTack® -Panel Fixing Tape over the whole length of the vertical sections and parallel to the edges. Do not pull off the protective foil at this time.



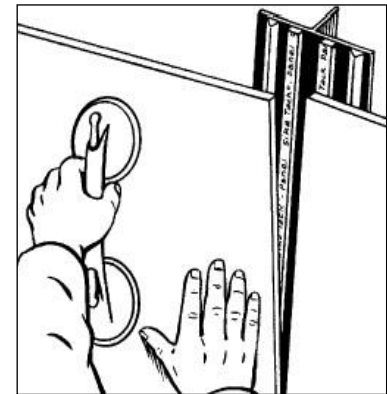
Bonding-Adhesive Application:

- Apply SikaTack®-Panel 50 Adhesive in a triangular bead by using the triangular nozzle supplied (width 8 mm, height 10 mm) with at least 5 mm gap to the fixing tape and to the side of the batten.
- Application should be with Sika® hand battery or compressed air guns.



Panel Placing:

- Remove the protective foil on the SikaTack®- Panel Fixing Tape. Place the cladding panel in the required position on the adhesive bead without the panel touching the fixing tape. To simplify mounting, the panels should be carefully designed. Position the panels precisely and press them firmly until they contact the SikaTack Panel fixing tape.



Important Note:

Placing of the panels must be completed within 10 minutes after application of the adhesive to the battens of the supporting substructure.

Cleaning of Tools

Clean all tools and application equipment with Sika® Remover-208/Thinner C immediately after use. Hardened / cured material (adhesive) can only be mechanically removed.

**Notes on Application /
Limitations**

This product may only be used by professional and experienced applicator.

All panel bonding / fixing works should only be carried out by suitably qualified, trained and experienced contractors and their operatives. Always ensure proper treatment of panels and apply SikaTack®-Panel 50 on trial area first.

Bonding work can be carried out in the workshop or at site. The work must be protected from weather and dust. During application, the air temperature must not fall below +5°C or exceed +40°C. The relative air humidity must not be more than 75%. For 5 hours after mounting, the temperature should of fall below the minimum temperature of +5°C. The temperature of the building part to be bonded (facade panels, sub construction) must be at least 3°C higher than the dew point temperature of the air in order to avoided the formation of condensation on the surface.

For indoor application the SikaTack® Panel Primer may only be applied in good ventilated rooms. During application smoking is prohibited. Do not apply SikaTack® Panel Primer or Sika Primer 210 close to ignition sources.

Consultation of the local fire insurance might be necessary in some cases.

Value Base

All technical data stated in this Product Data Sheet are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control.

Local Restrictions

Please note that as a result of specific local regulations the performance of this product may vary from country to country. Please consult the local Product Data Sheet for the exact description of the application fields.

**Health and Safety
Information**

For information and advice on the safe handling, storage and disposal of chemical products, users shall refer to the most recent Material Safety Data Sheet containing physical, ecological, toxicological and other safety-related data.

Legal Notes

The information, and, in particular, the recommendations relating to the application and end-use of Sika products, are given in good faith based on Sika's current knowledge and experience of the products when properly stored, handled and applied under normal conditions in accordance with Sika's recommendations. In practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any written recommendations, or from any other advice offered. The user of the product must test the product's suitability for the intended application and purpose. Sika reserves the right to change the properties of its products. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users must always refer to the most recent issue of the local Product Data Sheet for the product concerned, copies of which will be supplied on request.
