

NVELOPE Installation Guide NV2.



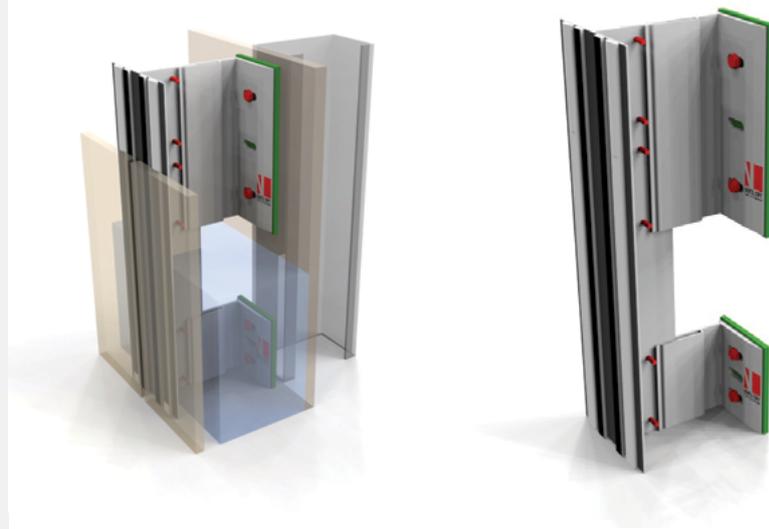
Sika Adhesive System.

NVELOPE brackets and framework are designed to provide a vertical support to most façade types. These brackets are anchored to the building using a purpose-designed bracket that allows final alignment and adjustment.

For further information,
please see:

www.nvelope.com

Also download/refer to:



NVELOPE Brackets

Brackets are supplied in different sizes ranging from 40mm – 300mm (see table for cavity depths that can be formed) with the NV2 system.

The brackets are available with hole-sizes 11mm or 6.5mm depending on the diameter of the primary anchor (11mm – Block/Masonry – 6.5mm – Steel/Timber).

Min – Max Adjustment – With Isolator

Bracket Size (mm)	Min (mm)	Max (mm)
NVELOPE 40	50	70
NVELOPE 60	65	105
NVELOPE 90	95	135
NVELOPE 120	125	165
NVELOPE 150	155	195
NVELOPE 180	185	225
NVELOPE 210	215	255
NVELOPE 240	245	285
NVELOPE 270	275	315
NVELOPE 300	305	345

Min – Max Adjustment – Without Isolator

Bracket Size (mm)	Min (mm)	Max (mm)
NVELOPE 40	45	65
NVELOPE 60	60	100
NVELOPE 90	90	130
NVELOPE 120	120	160
NVELOPE 150	150	190
NVELOPE 180	180	220
NVELOPE 210	210	250
NVELOPE 240	240	280
NVELOPE 270	270	310
NVELOPE 300	300	340

NVELOPE Primary Fixings.

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NVELOPE brackets are secured directly to a new or existing substrate of; concrete, brickwork, blockwork, steel frames or timber. Suitable primary anchors are employed to position the brackets to a pre-determined grid to suit the panel layout – please liaise directly with preferred NVELOPE Primary Fixing supplier re pull-out.

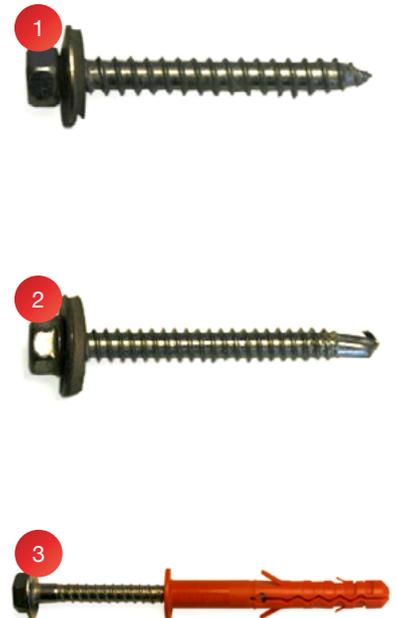
Primary Fixings

- 1 Timber substrate.
- 2 Steel substrate.
- 3 Concrete/block work substrate.

Suitable primary anchors are designed to fix the brackets to a pre-determined grid to suit the cladding panel layout. Please liaise directly with preferred primary fixing supplier and/or panel manufacturer re pull-out. NVELOPE can assist here.

Important

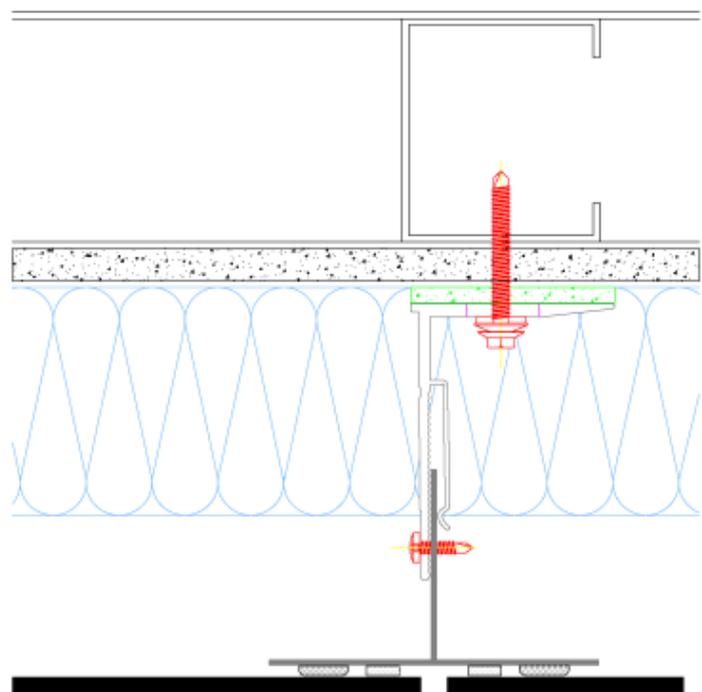
The size and type of primary fixing for the brackets will always be determined by the dynamic and dead loads they have to resist.



In addition, if there is no sheathing board, the isolation of two different metals must be considered for two reasons; 1: bimetallic corrosion 2: thermal bridging. The use of NVELOPE isolator pad will achieve this.

Please see:
www.nvelope.com/documents/Nvelope_Isolator_M

Or please liaise with NVELOPE
Technical Department:
project@nvelope.com



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Vertical Rails.



Vertical Rails

Once a line of vertical brackets is installed, a 60 x 40 'L' profile/'T' profile can be attached using the helping hand at each bracket position. (As the panels will follow any irregularity or miss-alignment of profiles, it is important that time is taken to align/level the framework to a high standard).

- Each 'L' or "T" profile should be cut to the required length.
- Place the profiles in each of the brackets using the helping hand.
- Move the profile into its vertical position – allowing 10mm 'expansion' between profiles.
- The profile can then be eased outwards to form the specified cavity depth.
- Check for line and level.
- Secure the profile using screws in the 'holes' or 'slots'**. The correct combination or 'mix' of single brackets/double brackets may be determined by our response to a completed 'Project Builder' (see www.nvelope.com) which will differentiate between single/double brackets/fixed point/sliding point fixing and horizontal/vertical bracket positioning – speak to NVELOPE Technical: project@nvelope.com

Important

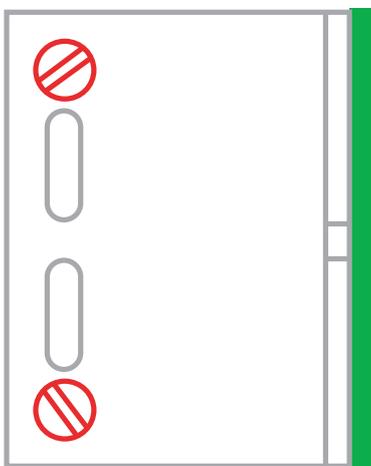
Generally, profiles are cut to lengths that reflect the height of the panel(s) that are going to be hung on them. Typically storey-height profiles are cut so that the panel(s) are located on one set of vertical profiles and do not 'bridge' an expansion gap between two profiles.

**As each profile is secured to the brackets, one near the centre of the profile must be connected with fixings going through the holes. (Fixed Point) all other brackets should then be fixed in the slots (Sliding Point).

For precise fixed point and sliding points – speak to NVELOPE for a project specific static calculation to be prepared.

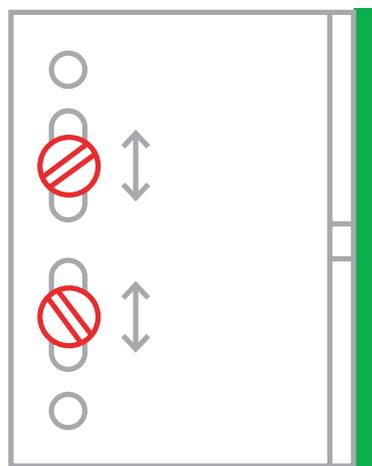
FIXED POINT

Absorbs dead loads.



FLOATING POINT

Absorbs dynamic loads & expansion.



NVELOPE Installation.


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Once all brackets and rails are installed to an area of cladding, final checks should be carried out:

- On the primary anchor torque settings.
- To the line and level of the NVELOPE profiles in relation to each other.
- To the number of screws and their position in each NVELOPE bracket.

Sika Adhesive

Sika Tack – panel adhesive needs to be applied in accordance with Sika LTD BBA certification ref 05/4218 for more information please talk to SIKa LTD and refer to SIKa installation documents (we can make these available).

Insulation

Where insulation is specified, it should be cut and tightly butted around the brackets and secured with the appropriate fixings. Sufficient insulation fixings should be provided to ensure that the insulation cannot block the ventilated cavity.

Panel Installation (General)

- Check profile positions in relation to actual panel positions and joints.
- Raise the panel and support in vertical position.
- Adjust level and height of panel before fitting next panel above.
- Repeated on next panels.
- Panel joints should follow the manufactures recommendations re joint gaps horizontal and vertical.



NVELOPE

SikaTack Panel.



Additional Product Information (API) to the Product Data Sheet
Version 01- July 2015



SikaTack Panel

The panel fixing system for 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

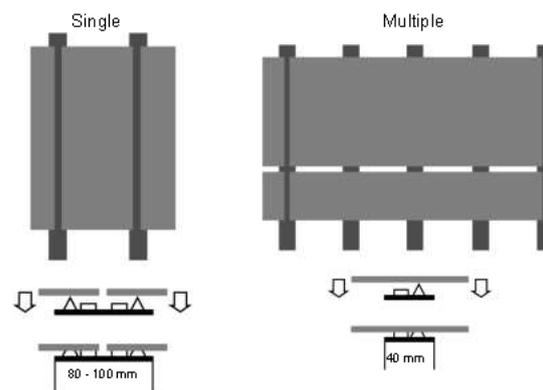
Perpendicular battens made of spruce or pine, planed, smooth and with a max. Moisture content of the wood < 14% in accordance with DIN 1052. The adhesive area must be untreated. The joints between the individual battens must be at least 1 cm wide.

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 Adhesive system.

Examples



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

Further information available at:
www.sika.com

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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 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.

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Application Details

Consumption / Dosage

Material	Application	Consumption
SikaTack [®] -Panel Cartridge 300 ml Sausage 600 ml	Triangular bead 8 x 10mm	~ 44 ml / m, corresponds to 6.5 m / cartridge or 13 m / sausage
Sika [®] Aktivator-205 (Sika [®] Cleaner-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

Substrate Temperature For 5 hours after mounting, the temperature should not fall below the minimum temperature of +5°C.

Ambient Temperature +5°C min. / +35°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%

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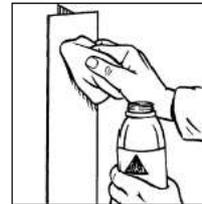


Application Instructions

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).

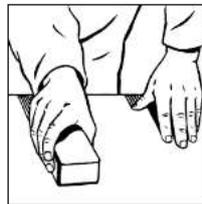


Caution

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 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 (e.g. Scotch Brite very fine) or mechanical grinding of the surfaces to be bonded with a very fine grinder, (grain 80).



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- Clean the surface to be bonded with a clean, grease free and fluff free cloth or cleaning paper soaked in Sika® Aktivator-205 by wiping in one direction only (dirty cloths must be replaced).
- Allow a flash off time of 10 minutes.
- Ceramics and cementitious panels must always be cleaned by grinding. Vacuum clean all surfaces after grinding.
Note: Ceramic and cementitious panels do not clean with Sika® Aktivator-205.
- 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 (max. 8 hours).



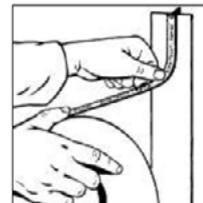
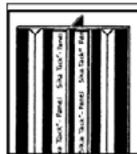
Always comply with the panel manufacturers instructions with regard to storage of the panels. Prior to bonding the panels avoid exposure to heat or direct sunlight.

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 manufacturers instructions.

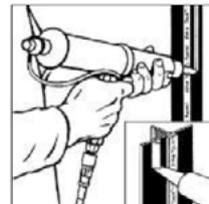
Banding-Tape Application:

- 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 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 or compressed air guns.



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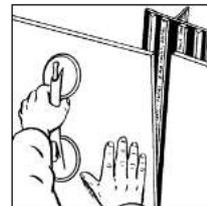
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Panel placing:

- 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.

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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	<p>This product may only be used by professional and experienced applicator.</p> <p>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 on trial area first.</p> <p>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 +35°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.</p> <p>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 close to ignition sources.</p> <p>Consultation of the local fire insurance might be necessary in some cases.</p>
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.

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Cladding Installation and Handling - Daily Record

General	<i>Contractor</i>		<i>Project</i>		
	Company:		Project name:		
	Address:		Address:		
	Names of operatives:		Start date:	End date:	
		Training obtained: Y / N		When:	
	Sunny: <input type="radio"/>	Overcast: <input type="radio"/>	Rainy: <input type="radio"/>		
Weather Conditions	Air temp: Min.	*F / C (morning) Min.	*F / C (midday)	Indicate °C or °F	
	Air humidity:	%		Relative humidity	
Construction Details	<i>Panel</i>				
	Material of panel:		Adhesion tested by:		
	Max. length:		mm / in	Indicate mm or in	
	Max. width:		mm / in	Indicate mm or in	
	Thickness:		mm / in	Indicate mm or in	
	Max. weight:		kg / lb	Indicate kg or lb	
Note: Panel and under-construction must be clean, dry, free from grease and dust. Paint, laitance and other poorly adhering particles must be removed.					
Grid Reference					
Cladding panel treatment	<i>Pre-treatment of the cladding panels</i>				
	Grinding (i.e. Scotch Brite very fine):	Y / N	Flash off time		
	Sika®Aktivator-205:	Y / N	Time:	min.:	
	SikaTack®-Panel Primer:	Y / N	Time:	min.:	
	Wood*:	Dry on surface <input type="radio"/>	Dust free <input type="radio"/>	None impregnation <input type="radio"/>	Planned <input type="radio"/>
	Aluminium:	Dry <input type="radio"/>	Dust free <input type="radio"/>	Free of grease <input type="radio"/>	Smooth <input type="radio"/>
*Note: Moisture content of wood < 14%					
Substructure treatment	<i>Pre-treatment of the substructure</i>				
	Grinding (i.e. Scotch Brite very fine):	Y / N	Flash off time		
	Sika®Aktivator-205:	Y / N	Time:	min.:	
	SikaTack®-Panel Primer:	Y / N	Time:	min.:	
Bonding the panel to the substructure	SikaTack®-Panel Fixing Tape:	Yes <input type="radio"/>	Applied on full length	Y / N	
	SikaTack®-Panel Adhesive:	Cartridge <input type="radio"/>	Unipac <input type="radio"/>		
	Batch nr:		Best before:		
	Place and date:				
	Signature:				

Disclaimer
The results are based exclusively on the tests and measurements which we performed on the specific samples and under the given conditions and testing standards. They do not imply any warranty, guarantee or representation or liability in any way as to the suitability of the samples for any given application. 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 as a result of the variability in respect of mechanical properties of these for a particular purpose, may vary. 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 user hereby agrees that no claims must be covered. 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.

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NVELOPE Site Checklist.

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Site Checklist

To help with a smooth installation of our rainscreen support systems there are a few things to be taken into account. Please see check list below:



Has a project specific project builder been completed?

➤ www.nvelope.com/project-builder-landing



If you or colleagues are new to our system, have you requested a tool box talk?

➤ www.nvelope.com/nvelope-contact-us



Have you referred to our data sheets and installation guides available on our website?

➤ www.nvelope.com/nvelope-our-downloads-system-guide



Has a successful pull out test been completed?

➤ www.nvelope.com



Once these tasks have been completed and installation starts you can send our team a photo of a selection of brackets for technical to sign off or advise.

➤ sitesupport@nvelope.com

➤ 01707 333 396

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