SAMRAT®
HPL
— Inspired by Nature —

INSTALLATION MANUAL OF SAMRAT HPL

INDEX

SAMRAT®
HPL
— Inspired by Nature —

THE ELEGANCE

Become one with the magic of refined craftsmanship having a touch of contemporary aesthetics.

SAMRAT HPL PRODUCTS

EXTERIOR SAMRAT HPL

INTERIOR SAMRAT HPL

SIZES OFFERED

- 1300 mm x 3050 mm
- 1220 mm x 3050 mm
- 1300 mm x 2800 mm
- 1220 mm x 2440 mm
- 900 mm x 2150 mm

} Other Size on Request

THICKNESS AVAILABLE IN STOCK

• 6 MM • 8 MM

Other Thickness on Request

CHARACTERISTICS ADVANTAGES OF TRENDOO HPL

Aesthetic Appeal
Uniform decors and colors enhance architectural design. Available in various shapes and sizes for creative freedom.

UV Resistance (3000 Hours Test Report)
Highly resistant to UV rays from sunlight.
Retains original color and hue,preventing fading over time.

Weather Resistance
Excellent dimensional stability in extreme weather conditions. Resistant to moisture, temperature fluctuations, and humidity.

Easy to Clean
Dust-resistant surface reduces maintenance effort. Easily cleaned with a damp cloth, requiring no special treatments.

Fire Retardant (EN 13501-1)
Difficult to ignite and prevents the spread of flames. Does not soften or release burning droplets in fire situations. Available in standard and fire-retardant grades for enhanced safety.

Cost Effective
Zero maintenance costs, making it a long-term investment.Individual panels can be replaced without affecting the entire façade.

ETB Approval in progress 04/25

Mechanical & Physical Properties
Scratch Resistant (EN - 438 - 2 - 25)
Abrasion Resistant (EN - 438 - 2 - 25)
High Impact Strength (EN - 438 - 3 - 2016)
Resistant to Cigarette Burns (EN 438 - 3 - 2016)
Heat Resistant (EN 438 - 3 -2016)
Lightfast and Fade Resistant

Chemical Properties
Stain-resistant (EN 438 - 2 - 2016)
Resistant to chemical exposure (EN 438 - 2 - 2016)
Withstands organic solvents (EN 438 - 2 - 2016)
Steam and boiling water-resistant (EN 438 - 3 - 2016)

Hygiene & Safety
Non-toxic and food-safe – HPL surfaces are hygienic, harmless, and suitable for food contact. Diffusion Barrier – When bonded to a substrate, HPL prevents the emission of volatile substances, ensuring a safe indoor environment.

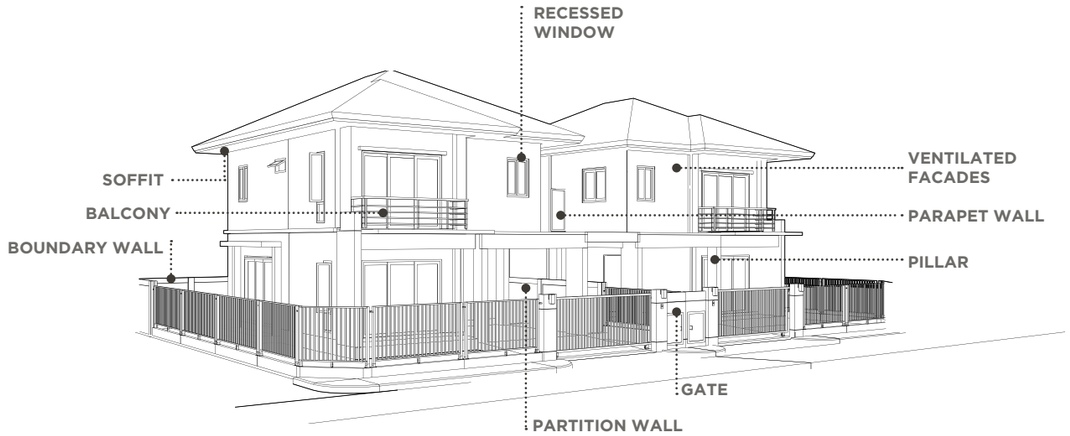
Durability
Compared to other decorative materials like paints, thermoplastic foils, and veneers, HPL offers an exceptionally long lifespan of over 15 years with no loss of appearance or performance.

Weather Barrier
Acts as a protective shield against wind, rain, and sunlight. Enhances the lifespan and performanceof buildings.

ACCREDITATION

- 12 YEAR WARRANTY*
- CHEMICAL RESISTANCE
- ANTI-DUST
- LOW VOC EMISSION (ASTMD 6191)
- TERMITE RESISTANCE
- EXCELLENT ANTI GRAFFITI PROPERTIES
- SALT CORROSION RESISTANCE (Test Report Available)
- Matching Screws
- ENVIRONMENT FRIENDLY
- FIRE RETARDANT (EN 13501 - 7)
- ENERGY EFFICIENT
- MOISTURE RESISTANCE
- RESISTANCE TO ACID RAINS
- ANTI - BACTERIAL AND ANTi - FUNGAL (Test Report Available)
- CAN WITHSTAND EXTREME TEMPERATURE CONDITION FROM - 25C TO +55C
- SUPERIOR LIGHT FASTNESS PERFORMANCE (UV RESISTANCE) (3000 Hours Test Report Available)

APPLICATION FIELDS FOR SAMRAT HPL




1 SOFFIT


2 RECESSED WINDOW


3 VENTILATED FACADES


4 PARAPET WALL


5 RAL 8014


6 BALCONY


7 PARTITION WALL


8 PILLOR


9 GATE


10 RAL 6009

Market Segments

- Private and residential housing
- Hospital and laboratories
- Public buildings
- Railway staton and airport terminal/infrastructure
- Transportation
- Hotels
- Education
- Retail and commercial buildings
- Sports and recroation contres
- Industrial bulldngs

Application areas interior

- Walls and partitions
- Ceilings
- Doors
- Flooring
- Stairs
- Furniture/chairs
- Trims
- Window slims
- Tables
- Work tops, counter tops
- Vanity units
- Cubicles
- Display/shop systems

Exterior

- Balconies
- Facades
- Furniture and signs
- Urban elements
- Orientation systers

MAINTENANCE

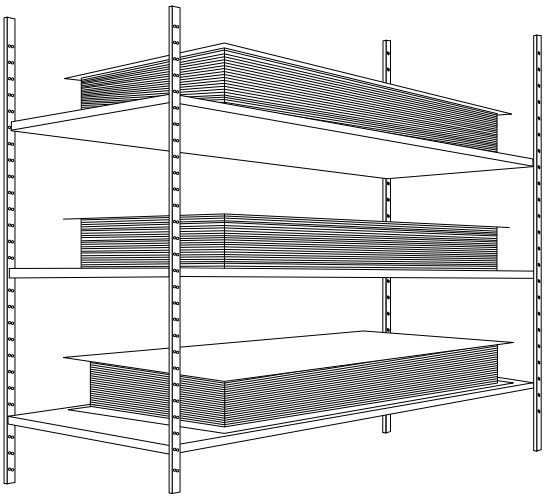
Cleaning

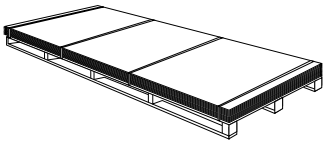
Maintaining Samrat Hpl panels is effortlessly achieved by wiping away most dirt with a dampened cloth or sponge. Stubborn stains can be addressed with a suitable household detergent. For UV-resistant panels, alcohol-based cleaners can be used, though it's advisable to test-clean a discreet area before a comprehensive cleaning. Abrasive-containing products are not recommended. Pressure washing is safe, with the jet directed bottom to top and laterally at a distance of 20-30 cm. Finish with a clean water rinse. Ensure the jet wash pressure does not exceed 100 bar, and water temperature stays below 90-100°C.

Transport and handling

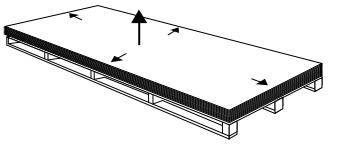
While Samrat Hpl panels exhibit exceptional durability once installed, handling during storage demands care to avoid damage to surfaces and edges. Panels are delivered with protective foil covering, and when stacking, it's advisable to remove dust and larger particles from between the boards. Stack the panels with thicker ones at the bottom and lighter ones on top, ensuring not to overload the stack. Secure the boards to prevent slipping during transit, and protect the foil from continual direct sun or heat exposure.

Storage

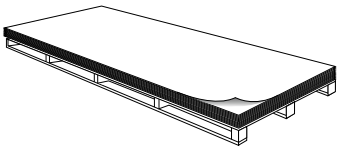




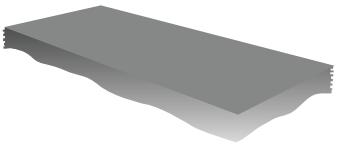
Samrat Hpl panels should be horizontally stacked on a flat and stable support surface. To preserve the surface integrity, ensure that covering plates are left on the top of the stack. Incorrect storage practices may result in permanent deformation of the boards.



During loading and unloading, lift the panels and avoid pushing or pulling them over edges.



Do not stack panels with damaged protective foil, and refrain from removing the foil if the panels will be stored before mounting or cutting.



Keep the pallet securely covered to prevent dust or dirt from accumulating on or between the panels.

Processing

Safety Precautions

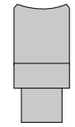
When operating machinery, adhere to best-practice rules, ensuring the use of appropriate personal protection and hi-vis clothing. Tools must be in good condition. Due to sharp edges on unbeveled boards, wear suitable anti-slip gloves. Cutting generates dust, requiring protective eyewear and a dust mask. Ear defenders are necessary when using machinery.

Preferred Tools

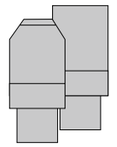
Given the high durability of Samrat Hpl panels, it is crucial to employ good-quality tools for clean cutting and drilling. Diamond-tipped drills and sharp, hardened metal blades are recommended. When machining boards, place them on clean, flat, well-supported surfaces. Promptly remove chips and particles to prevent marking on the panels.

Tooth forms

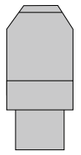
HZ/FA (Beveled concave tooth)
Similar to WZ/FA and HZ/DZ but providing a higher machine longevity.



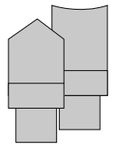
FZ/TR (Flat tooth/Trapezoid tooth)
Suitable for cutting Samrat panels as well as laminates.



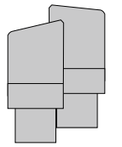
TR/TR (Trapezoid tooth/ Trapezoid tooth)
Best for cutting hard, abrasive laminates.



HZ/DZ (Pendulum tooth/ Concave tooth)
Useful when cutting on machines. where scoring unit is not available.



WZ/FA (Variable beveled tooth)
This type can be used interchangeably with the Pendulum/Concave tooth.



Machining of panels

For optimal results in cutting, it is essential to maintain the right ratio of feed rate (Vf) to cutting speed (Vc). This balance not only enhances the final cutting result but also prolongs the lifespan of the machine. To further improve cutting effectiveness, we recommend using diamond-tipped tools. Additionally, as cutting a single board may cause vibrations, precautions should be taken to ensure a stable and fixed position during the process.

Cutting speed formula

Vc = D • π • n/60
Vc - cutting speed
D - tool diameter [m]
n - tool rotational speed [min.-1]

Feed speed

Vf = fz • n • z/1000
Vf - feed rate [m/min.]
fz - tooth feed
n - tool rotational speed [min.-1]
z - number of teeth

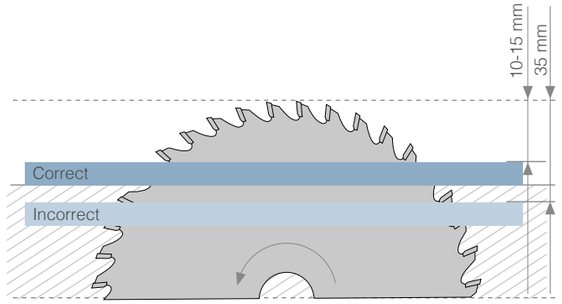


Fig. *Circular, positive rake angle sawblades with a saw shaft under the workpiece.*

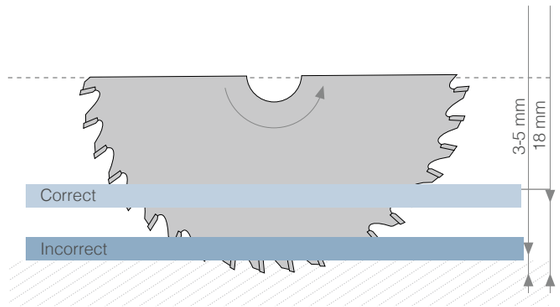
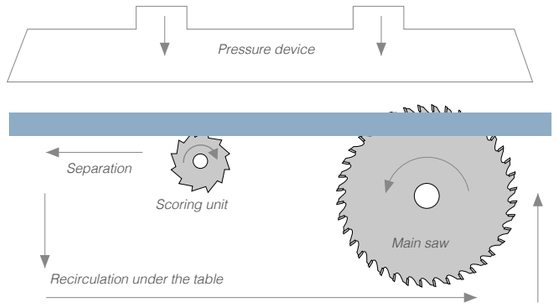


Fig. *Circular, negative rake angle sawblades with a saw shaft under the workpiece.*

Cutting with handheld tools

For a single cut, consider using hard metal handheld saws with sharp blades and low-set teeth. To enhance precision, utilize guiding rails. Depending on the desired cut, select a blade with an appropriate tooth type. Refer to our saw tooth guide in this section for guidance.



Cutting with table saws

When using a table saw, be cautious of potential jagged edges. We recommend employing a machine with a scoring unit and a pressure-applying device. This setup ensures that the scoring blade clears the board's surface, allowing for a clean cut by the main saw blade. The thicker scoring blade prevents direct contact with the cut edges. Combining a pressure device with a scoring unit secures the board for a precise cut. Proper alignment of both widths is crucial for maintaining a circular saw with a conical scoring unit.

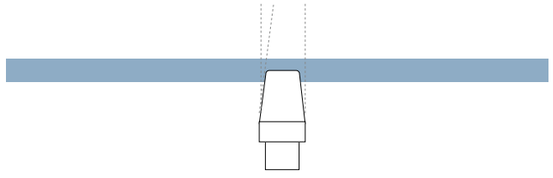


Fig. *Cutting width rare of the scoring saw equals main saw's cutting width.*

Drilling

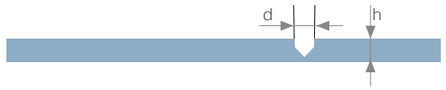
For drilling blind or through-holes, opt for high-durability twisted metal drills. The optimal drilling parameters range between 2000-4000 RPM with a feed rate of 1-3 m/min. Ensure the board is securely fastened and correctly aligned during drilling. To prevent damage to the board's surface coating, reduce RPMs by 50% when retracting the drill.

Parallel mounting holes

Maintain a minimum hole depth of 25 mm for parallel connections. The distance between the hole's edge and the board's edge should be at least 3 mm thick (b-2•a).

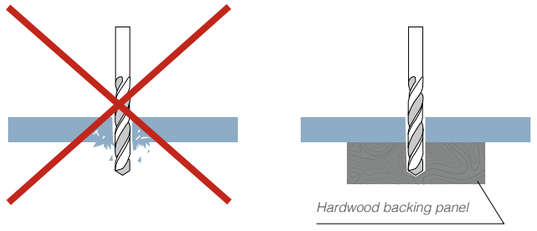
Perpendicular blind holes

h - hole depth (board thickness 1-1.5 mm)
d - hole diameter (optimal size = 1 screw diameter ~1 screw channel depth)
Correct screw placement depth equals drilling depth plus 1 mm.



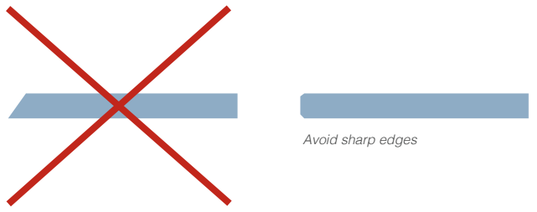
Manual drilling

Ensure maximum rotation speed to avoid chipping and heating. Advance the drill smoothly, preferably on a drillable backing panel like dense Particleboard or MDF. While the edges do not necessitate special treatment, they can be machined for a unique finish.



Additional Edge Considerations

- The edge of the compact can undergo calibration, chamfering, or beveling.
- Grinding down sharp edges is essential to prevent cuts during installation and after completion.

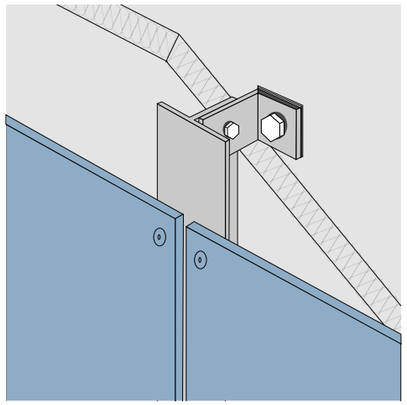


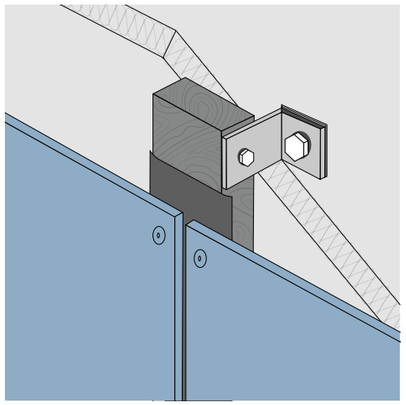
Rules of installation for elevation panels

Installation Guidelines for Elevation Panels:

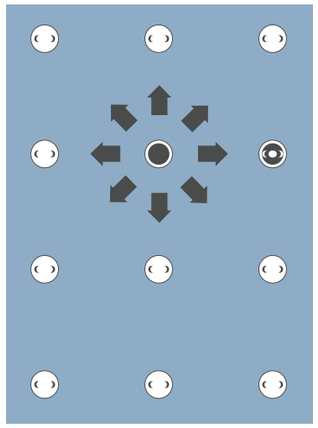
1. Installation of the panels must be conducted exclusively by qualified individuals.
2. The panels can be secured to the bearing structure through various methods, including rivets, bolts/ elevation screws, adhesive systems, or staples fixed to the rear side (utilizing invisible mechanical fixing).
3. Ensure that all joints of panels with other elements and the substrate are firmly and securely made.

The Samrat Hpl panels can be fixed to metal substructure (aluminum, galvanized steel) or wooden substructure.





Fixing elements should be spaced so as to enable the panel moving (by appropriate arrangement of fixed and non-fixed holes).

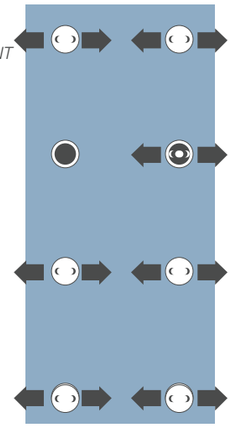


NONFIXED POINT

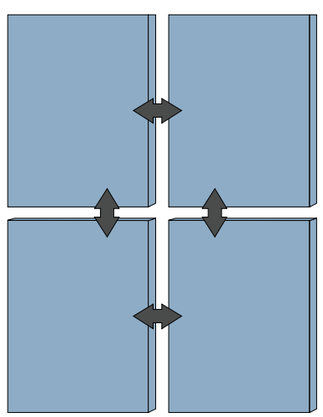
FIXED POINT

SLIDING POINT

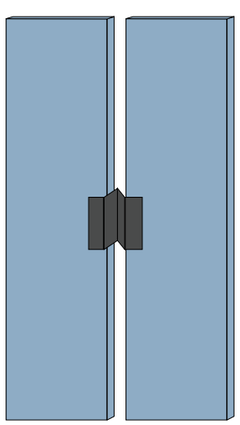
Installation of the panel should be always commenced from its center.



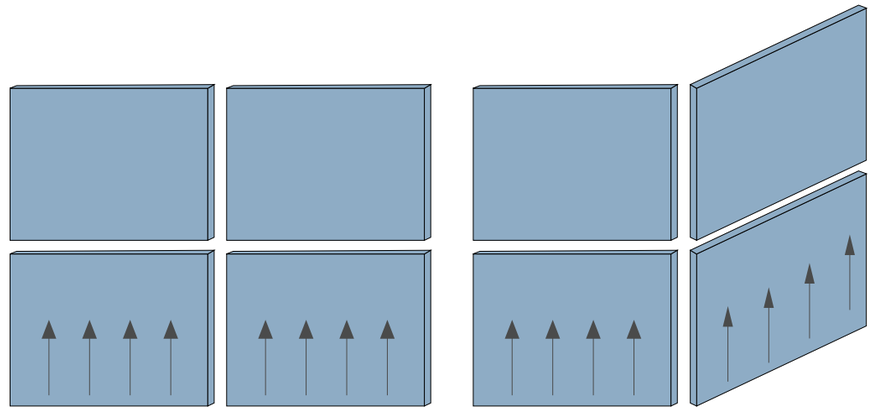
The line expansion crosswise and lengthwise should be taken into account when selecting the gap between subsequent formats assuming that the dimension of material can increase by about 2.5 mm per one current meter of the lining.



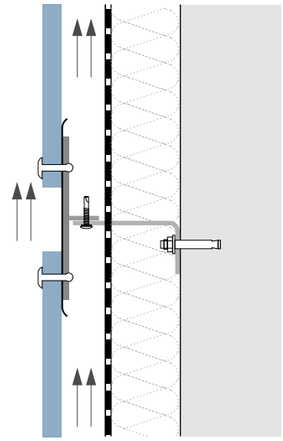
The spacers should be mounted only when necessary.



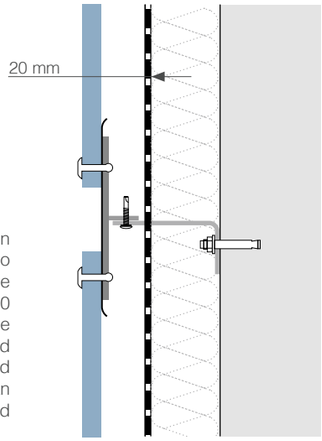
It's important to factor-in expected wind pressure exposure when selecting fixings, along with adhering to local building regulations. Calculations should be based on installation data for high pressure laminates.



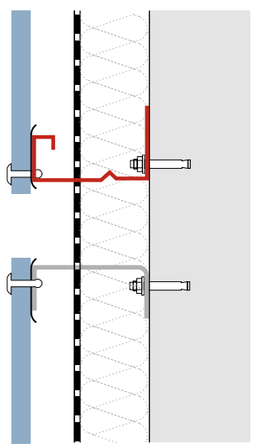
Installation of the lining from the Samrat panels should be carried out assuring constant ventilation of the elevation material from both sides.



Recommended ventilation distance between thermo insulating board and the panel should be min, 20 mm. Lack of distance between the panel and the bearing structure and thermal insulation can cause condensation and deformation of the panels.



No panels should be fixed one on top of another to two differing substructure profiles - this is likely to compromise the expansion joint's effectiveness.

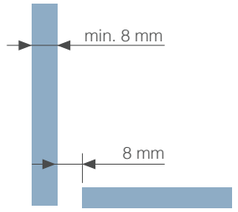


Solutions for corners

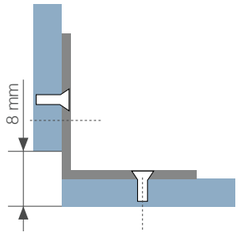
Choosing the optimal method for corner formation depends on the panel's thickness. We advise a thickness of 8 mm or more as it provides sufficient material depth for precise screw setting or the creation of a groove for the 3 mm thick tongue. The quantity and spacing of fixings depend on the substructure's layout.

Types of corner finishing

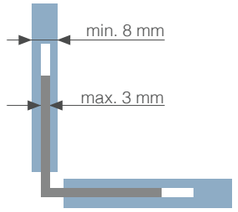
Open corner



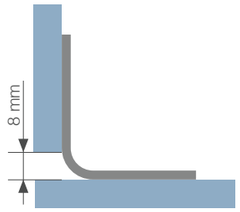
Closed corner, straight joining from inside by metal profile and rivets.



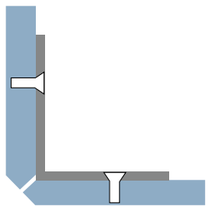
Corner with tongue and groove joint system



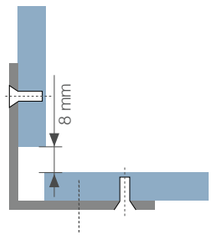
The corner joined using gap tape



Closed corner, slantwise connection from inside by metal profile and rivets

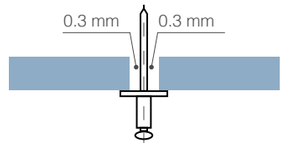


Closed corner, straight connection from outside by metal profile and rivets

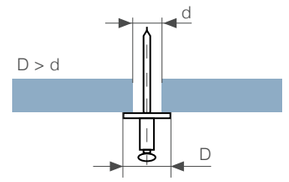


Fixing and connector elements

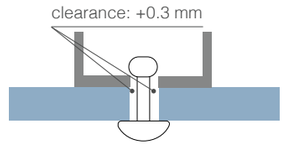
During installation and joining of elevation panels all elements should always be fixed observing one direction of fibres



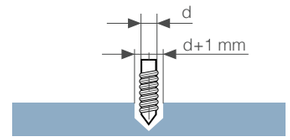
The head of the fixing element should be of such size that the hole in the panel is always covered. The fixing element of the non-fixed point should be positioned so as to enable movement of the panel



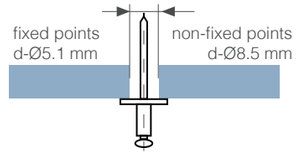
Rivets should be put using the articulated fixtures
The set distance from rivet head should make possible movement of elements in the drilled hole (clearance: +0.3mm).



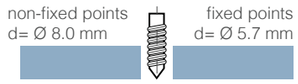
It is a good practice guaranteeing flexible fixing to make precise preliminary drilling with exactness to one millimeter.



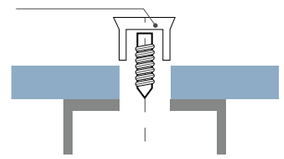
For rivets the recommended hole diameter in the facade panel for the fixed point is Ø5.1 mm, and for the non-fixed point is Ø 8.5 mm
The diameter of the hole in the structure is Ø5.1 mm.



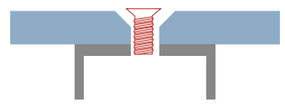
For torx screws the recommended diameters for:
non-fixed points are Ø8.0 mm,
fixed points - Ø5.7 mm.



The center of the hole in the supporting structure should line up with the center of the hole in the panel. The holes should be drilled using the centering sleeve.

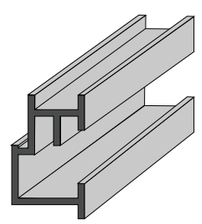


Do not use the sunk head screws!

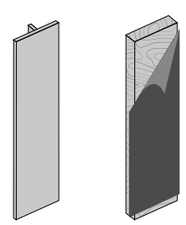


Dimensions of the profiles used depend on the thickness of panels (6, 8, 10 mm or more).

Only aluminium or from galvanized steel profiles should be used because of the resistance to corrosion and durability. In the case of other material of the substructure, care must be taken to protect it appropriately against weather conditions.



In order to obtain better cooperation in places of connections one can use rubber profiles from flexible EPDM



Installation through visible fittings

General Information

Samrat Hpl panels exhibit characteristics similar to wood in response to changing weather conditions—they expand when absorbing moisture and contract in dry air when discharging moisture. Recognizing these properties, it is crucial to incorporate suitable compensation clearances during installation, with recommended expansion gaps between panels set at 8-10 mm. Ensuring uniform panel expansion is achievable by establishing one fixed point, while the remaining fixing points can be designated as non-fixed points.

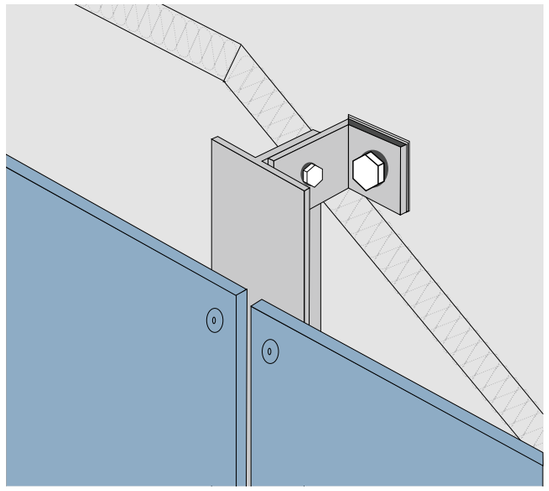


Fig. *Visible fixing on metal substructure*

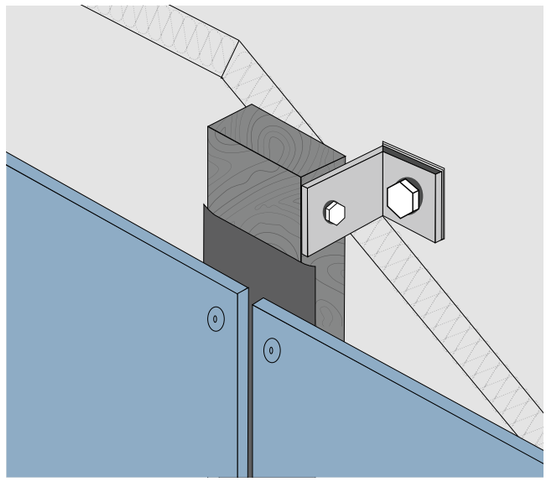


Fig. *Visible fixing on wooden substructure*

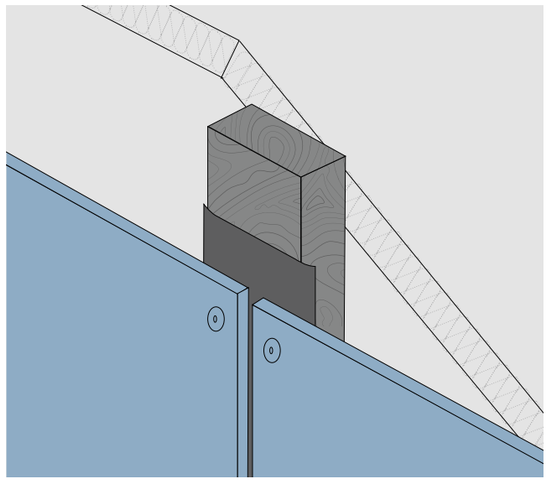
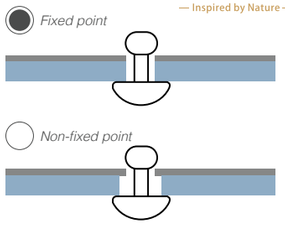


Fig. *Visible fixing on timber frame buildings*

Fixed point / Non-fixed point

Making a fixed point always guarantees even facing of panels both lengthwise and crosswise. For rivets the recommended diameter of a hole in the facade panel for the fixed point is Ø 5.1 mm, and for the non-fixed point is Ø8.5 mm. The hole diameter in the construction: Ø 5.1 mm. For Torx screws the recommended diameters of holes for non-fixed points is Ø 8.0 mm, and for fixed points Ø 5.7 mm.



Distribution of installation holes

Below are given the suggested distances of fixings for the one-span installation of elevation panels.

	Thickness [mm]	max. D1 [mm]	max. D2 [mm]	a [mm]	b [mm]
One-span fixing					
	6	400	400	20 - 40	20
	8	550	500	20 - 40	20
	10	700	600	20 - 40	20

Tab. *Distribution of joints – one span fixing*

In the case of multi-span fixing of panel, it is recommended to distribute the installation holes as given in the table below.

	Thickness [mm]	max. D1 [mm]	max. D2 [mm]	a [mm]	b [mm]
Multi-span fixing					
	6	550	400	20 - 60	20 - 50
	8	700	500	20 - 80	20 - 60
	10	800	600	20 - 100	20 - 80

Tab. *Distribution of joints – multi span fixing*

Generally, it can be assumed that the distance of joints from the panel edge should be maximum 10-fold of panel thickness and minimum 20 mm. For panels placed near the building corners the distance between the joints should be less than in the center part (taking into account the suction forces of wind).

Bending

Samrat Hpl panels can be formed into a curve without any special preparation the physical and chemical properties of its laminate structure make this possible. The minimum bend radius achievable is: R=2m.

Sizes of installation panels

It is recommended not to exceed the elevation format surface over 4 m^2, whereas the maximum acceptable side length should not exceed 3050 mm.

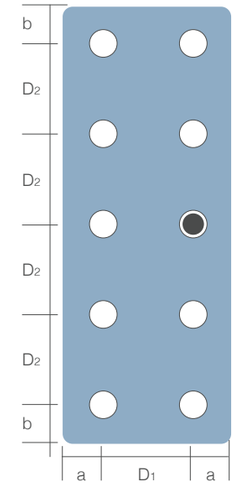


Fig. *One-span fixing*

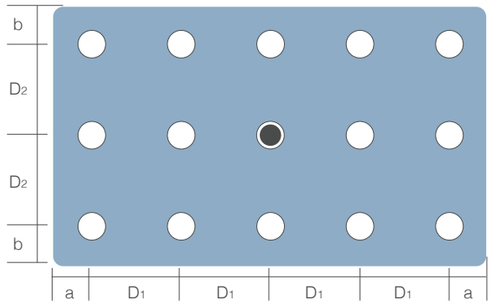


Fig. *Multi-span fixing*

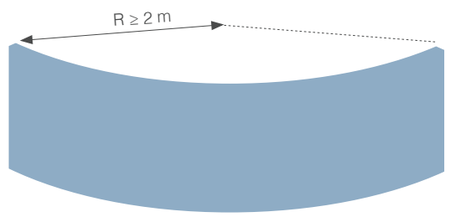


Fig. *Bending of Panels*

Fixing Elements

Coated rivets

Large head powder-coat rivets should be used on systems with visible fixings, attached to aluminum framework according to certificated parameters.

Element	Type of material	No of material
Sleeve	Al Mg 5	3.3555.10
Stem	stainless steel	1.4541 (Alfo®); 1.4301 (SFS)

Tab. *Parameters of blind rivals*

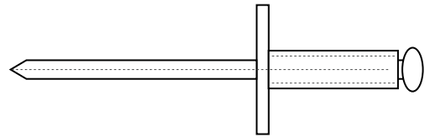


Fig. *Blind rivet, closed from one side, painted*

Diameter Ø d / Length L [mm]	5/18	5/21
Max thickness of material [mm]	12	15
Diameter Ø d1 [mm]	2.7	2.7
Diameter Ø D [mm]	14	14
Catalogue no. (Alfo®)	12250180/14	12250210/14
Catalogue no. (SFS)	AP14-50180-S	AP14-50210-S
Quantity	500/carton	500/carton

Tab. *Technical data of the recommended connectors*

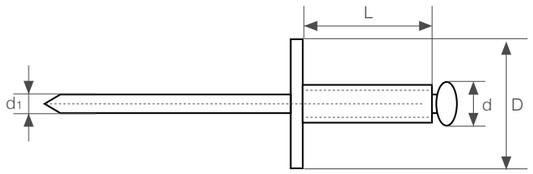


Fig. *Bind rivet – construction and dimensions*

Breaking force of the rivets is 4.4 5.2 kN.
In the majority of cases the specifications listed above can be followed for adequate fixing. Riveting tools and accessories are available, including manual and machine riveting options, distancing tips, centering tools for drilling, and a positioning tip for centering the preliminary hole.

Torx 20 screws

These are intended for use with timber supporting frames. They're made from corrosion resistant austenitic stainless steel, finished in powder coated colors. They can be used without washers, with single or double threads.

No of material	1.4301
Diameter Ød2 [mm]	12
Diameter Ø d1 [mm]	5.2
Length L [mm]	24
Screw driver tip	TORX T20W
Pitch of the screw P [mm]	2.2

Tab. *Technical data of fixing screws Torx*

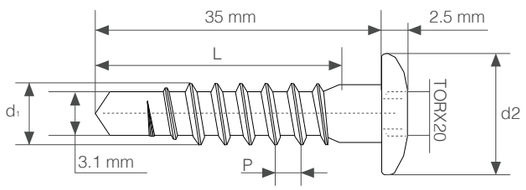


Fig. *Fixing screw Torx – construction and dimensions*

d1 thread diameter
d2 head diameter
L length
P pitch of the screw

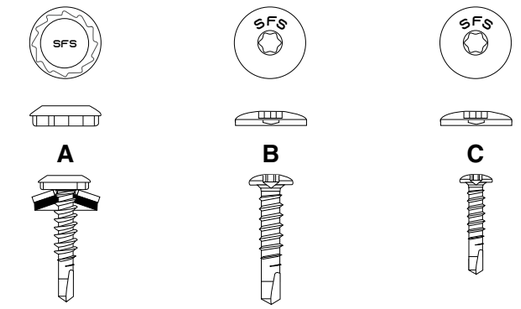
Self-drilling stainless fasteners

SX-L12 (SFS) fasteners achieve a neat, almost invisible finish, with the flat screw heads being powder coated in colors to match the panels. They may be utilized with steel or aluminum support structures.

Element	Type of material	No of material
Connector SX	Austenitic stainless steel	grade acc. to AISI 304 (1.4301 wg. PN-EN)
Washer S	Austenitic stainless steel	grade acc. to AISI 304 (1.4301 wg. PN-EN)

Tab. *Sell-drilling connectors-materials used.*

Heads of connectors, depending on version:
- L12-irius Ø 12 mm,
- D12-flat head Ø 12 mm with a seat T25.
- D10-flat head Ø 10 mm with a seat T20.



irius Ø 12 mm | flat head Ø 12 mm with a seat T25 | flat head Ø 10 mm with a seat T20

Product	Type	VD	KL	HD	W	d	L	Application
A	SX	3/	15/	L12	S16	5.5x	32	VD max. steel: 3.0 mm 1 max. steel: 2.5 mm
B	SX	3/	15/	D12		5.5x	30	VD max. steel: 3.0mm 1 max. steel: 2.5 mm
C	SX	3/	15/	D10		5.5x	25	VD max steel: 3.0mm 1 max steel: 2.5mm t min steel: 2.0 mm t min, aluminium: 2.0 mm

Tab. *Symbols and parameters of connectors (SFS). All dimensions in mm.*

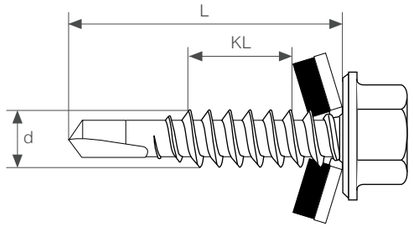


Fig. *Self-drilling connector-construction*

KL thickness of joined elements
d thread diameter
L total length
VD maximum drilling capability
HD type of head/ seat
W material and diameter of washer
t thickness of substrate

Visible fixing on metal substructure

horizontal cross-section

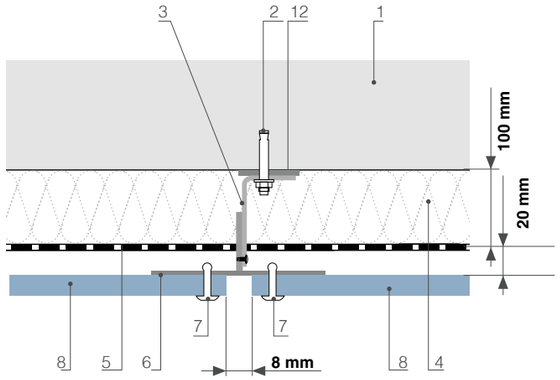


Fig. Draft A-A
I-Beam connector

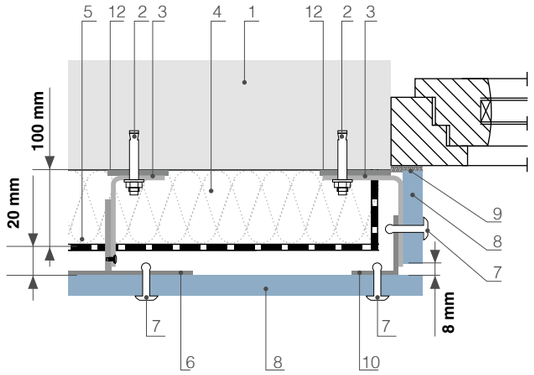


Fig. Draft C-C
Connector with window elements (internal)

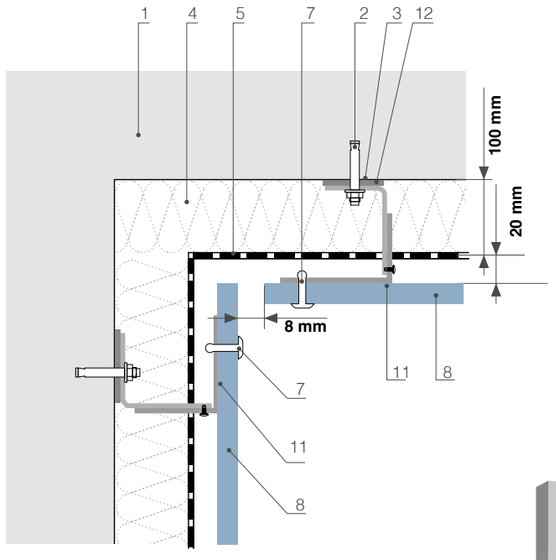


Fig. Draft H-H
Connector at the inner corner

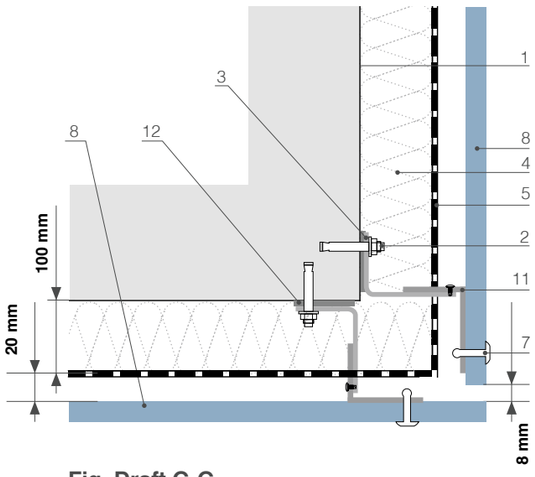
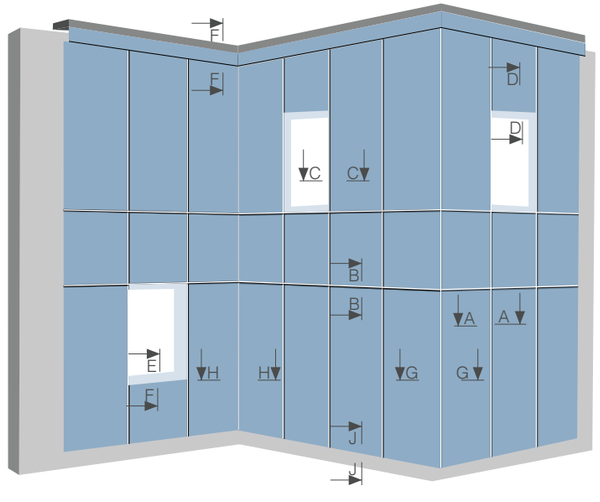


Fig. Draft G-G
Connector at the outer corner



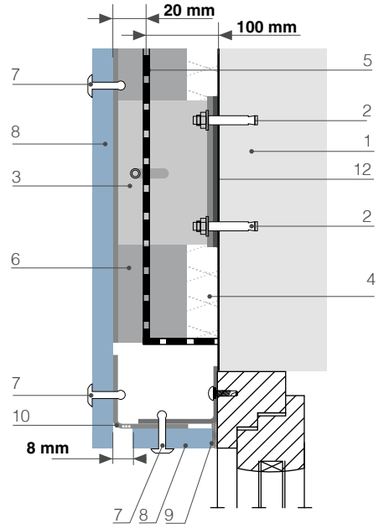


Fig. Draft D-D
Connector with window element (external)

vertical cross-section

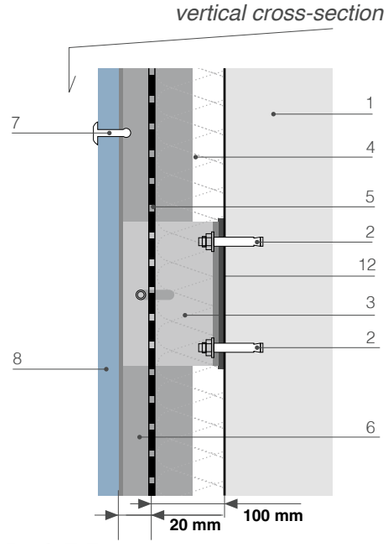


Fig. Draft F-F
Upper part of the wall with closing frame

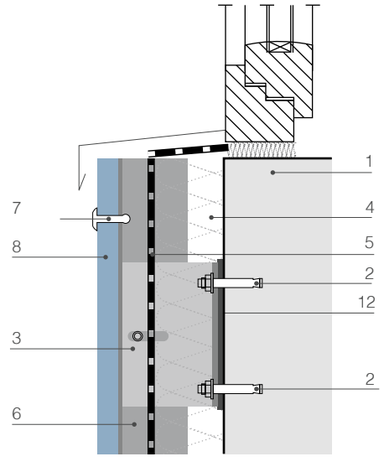


Fig. Draft E-E
External window sill

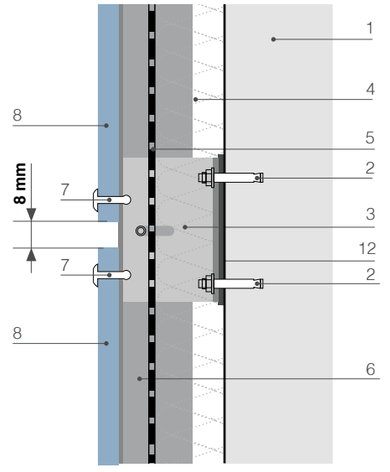


Fig. Draft B-B
Beam connector

1. Supporting wall
2. Fixing anchor
3. Fixing angle L120 x 60 x 3, length 60 mm
4. 100 mm mineral wool
5. Windproofing
6. T90 x 70 x 4 fixing tees
7. Rivet fastening in the color of the Panel
8. Samrat Hpl panel
9. Weather silicone
10. Perforated angle
11. 40 x 40 angle
12. Insulation washer 80/50

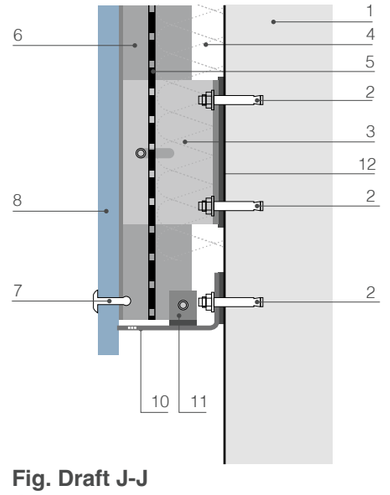


Fig. Draft J-J
Bottom part of the wall

Visible fixing on wooden substructure

horizontal cross-section

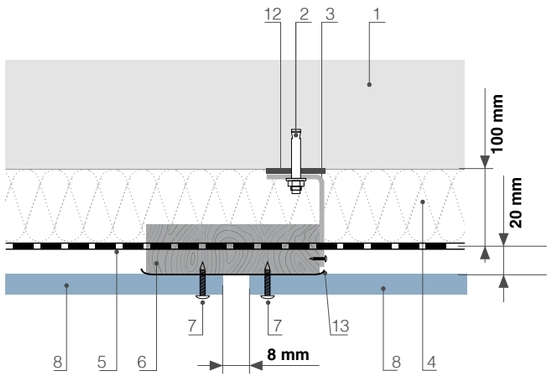


Fig. Draft A-A
I-Beam connector

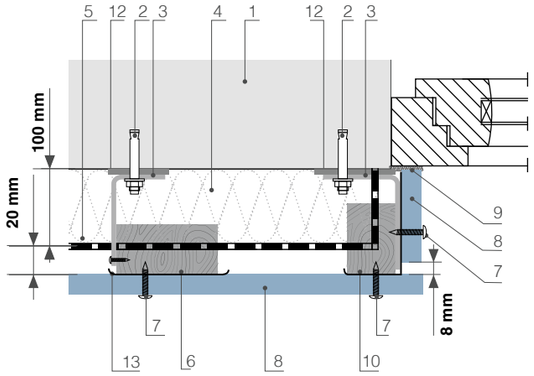


Fig. Draft C-C
Connector with window elements (internal)

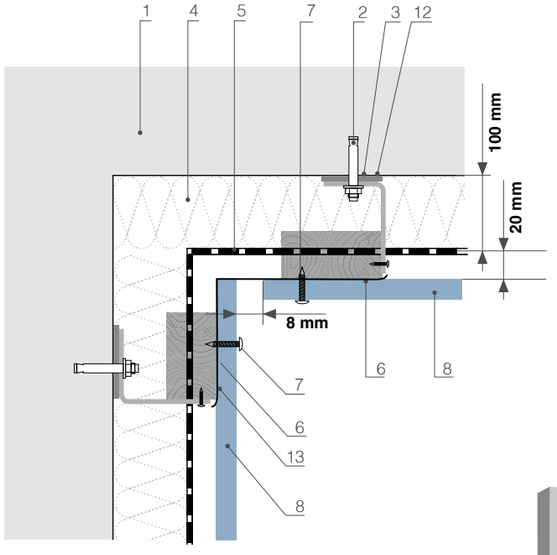


Fig. Draft H-H
Connector at the inner corner

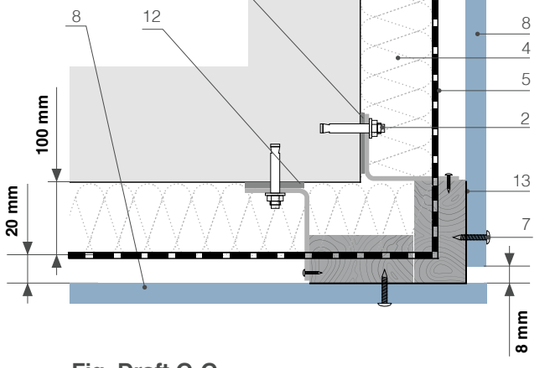
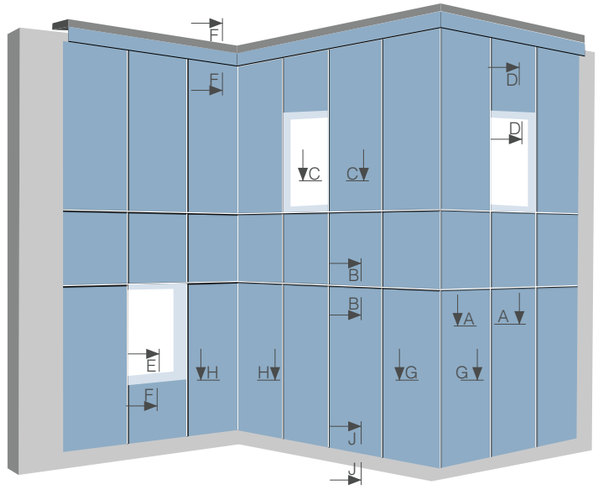


Fig. Draft G-G
Connector at the outer corner



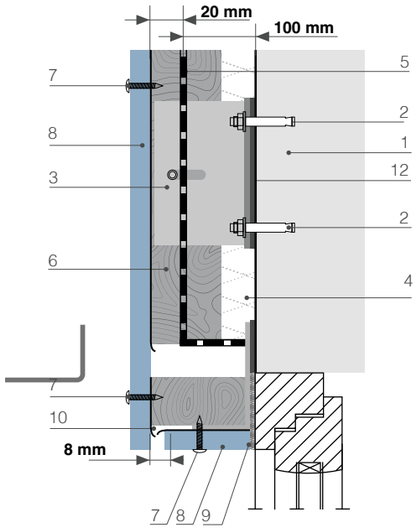


Fig. Draft D-D
Connector with window element (external)

vertical cross-section

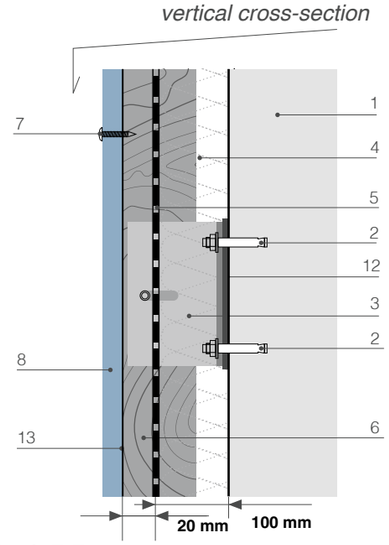


Fig. Draft F-F
Upper part of the wall with closing frame

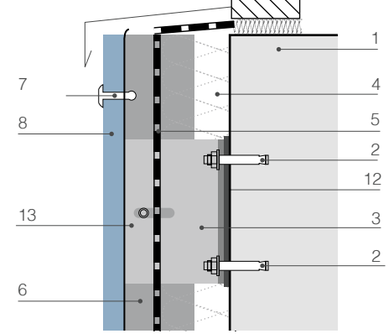


Fig. Draft E-E
External window sill

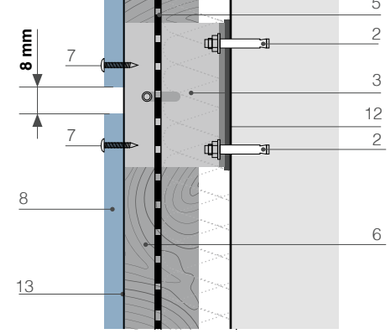


Fig. Draft B-B
Beam connector

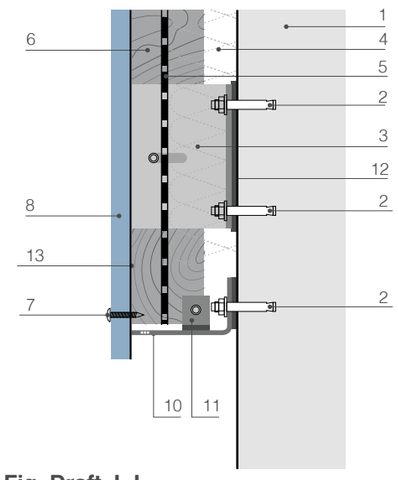


Fig. Draft J-J
Bottom part of the wall

1. Supporting wall
2. Fixing anchor
3. Fixing angle L120 x 60 x 3, length 60 mm
4. 100 mm mineral wool
5. Windproofing
6. Vertical timber batten
7. Rivet fastening in the color of the panel
8. Samrat Hpl Panel
9. Weather silicone
10. Perforated angle
11. 40 x 40 angle
12. Insulation washer 80/50
13. EPDM tape

SAMRAT HPL
— Inspired by Nature —

Visible fixing on timber frame buildings

horizontal cross-section

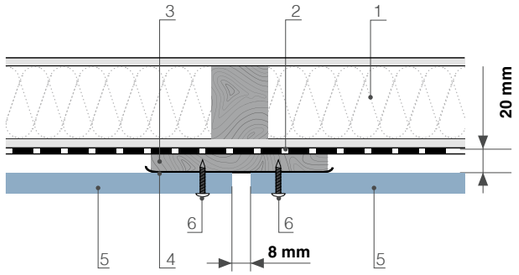


Fig. Draft A-A
I-Beam connector

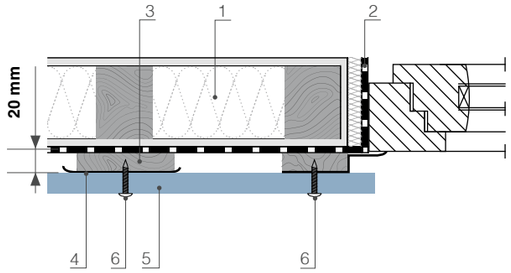


Fig. Draft C-C
Connector with window elements (internal)

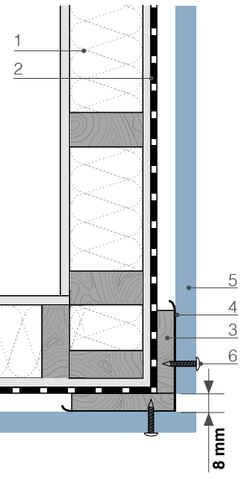


Fig. Draft G-G
Connector at the outer corner

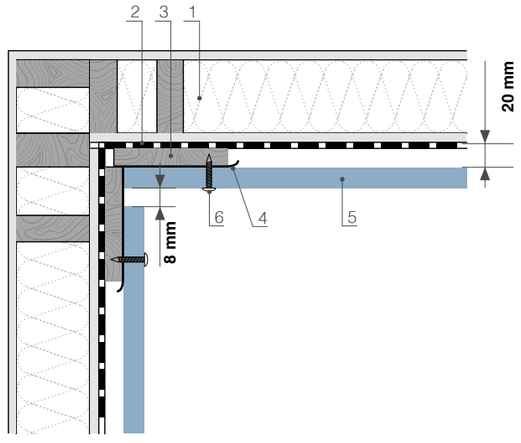
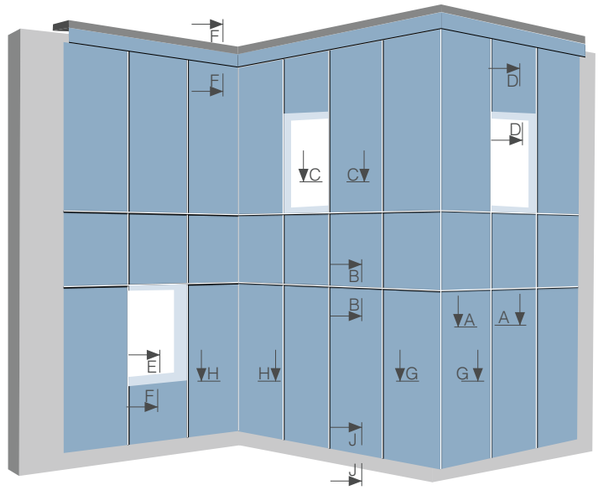


Fig. Draft H-H
Connector at the inner corner



SAMRAT HPL
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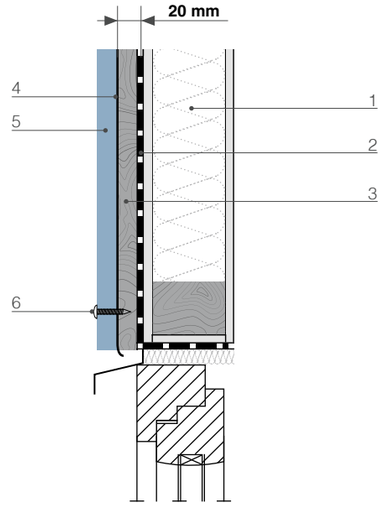


Fig. Draft D-D
Connector with window element (external)

Vertical cross-section

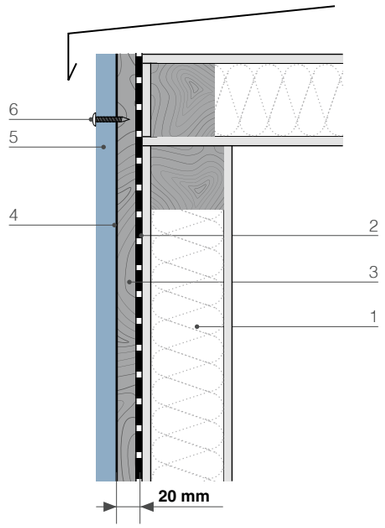


Fig. Draft F-F
Upper part of the wall with closing frame

Fig. Draft E-E
External window sill

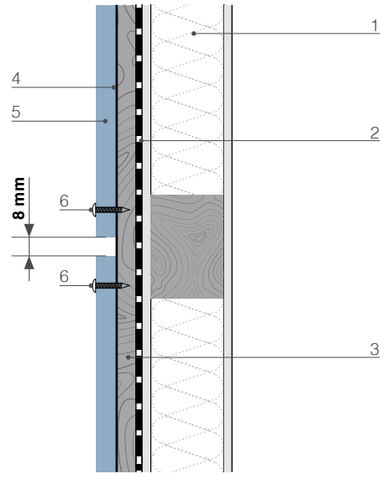


Fig. Draft B-B
Beam connector

1. Load bearing wall
2. Windproofing
3. Vertical timber batten
4. EPDM tape
5. Samrat Hpl Panel
6. Rivet fastening in the color of the panel

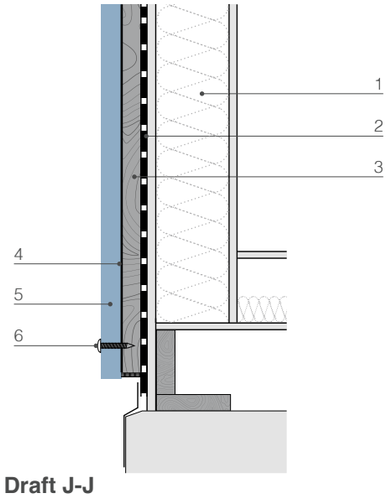


Fig. Draft J-J
Bottom part of the wall

Installation via concealed fittings

General Information

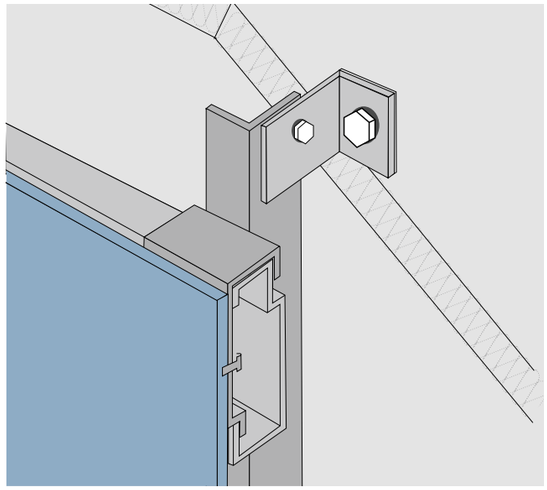
Hidden mechanical fixing offers the advantage of delivering stronger, more uniformly distributed fixing forces. They achieve durable mounting, and optimize bonding with the substrate without expansion stresses.

Thickness of panels

The ideal thickness is 10 mm, although as a minimum, 8 mm panels may be used. This is due to the perforation and method of fixing.

Recommendations for installation

The length of lateral edge for every format should not exceed 3050 mm.



Spacing of fixing holes

Follow the guidelines below to select the correct spacing for fixing holes. The centers recommended relate to one-span installation of panels.

	Thickness [mm]	max.B,D [mm]	max. d [mm]	max. b [mm]
One-span fixing				
	10	740	125	150

Tab. *Distribution of holes-one-span installation*

In the case of multi-span fixing of panel, it is recommended to distribute the installation holes as given in the table below.

	Thickness [mm]	max.B,D [mm]	max. d [mm]	max. b [mm]
Multi-span fixing				
	8	740	20-80	20-60
	10	800	20-100	20-80

Tab. *Distribution of holes-multi-Span installation*

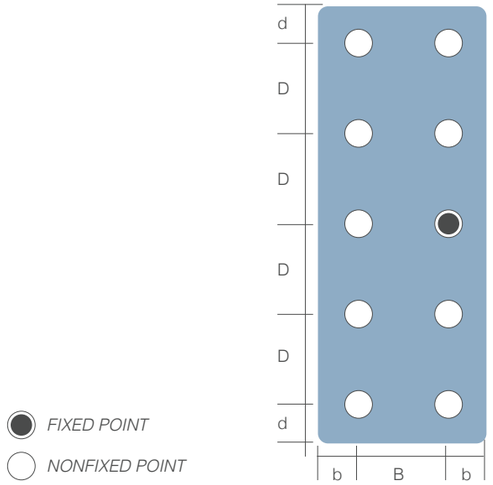


Fig. *One-span fixing*

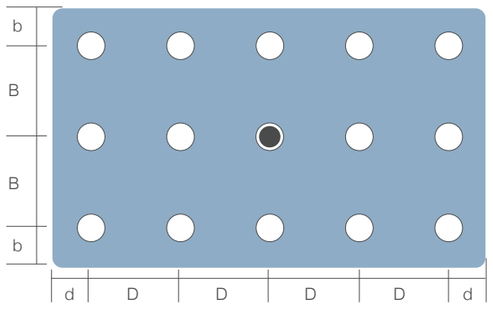


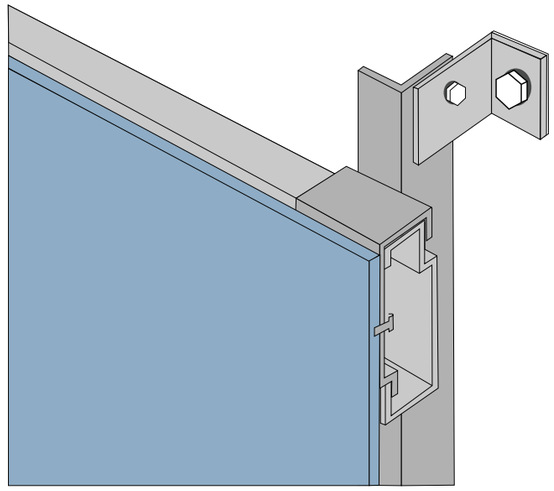
Fig. *Multi-span fixing*

Concealed fittings techniques

There are two options available:

- Vertical bearing elements fitted to the substrate which give a flat uniform installation surface.
- Horizontal elements fixed to the load bearing verticals. Special hanging connectors (hangers, safety pins and clips) are utilized.

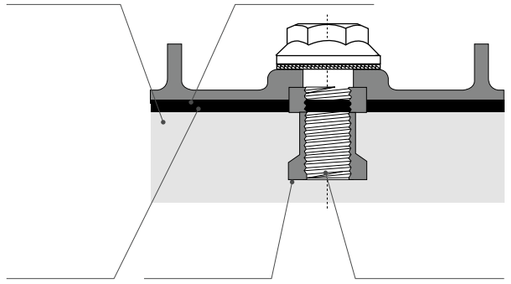
Fasteners such as screws, studs and clinch bolts are selected depending on the type and thickness of the panels, and the expected environmental conditions of the location.
Correctly installed according to guidelines, the construction should guarantee stress-free installation and weather resistance.



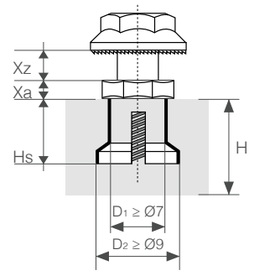
Fitting connectors

Connector KEIL

Basic connector consists of a sleeve and a locking screw



D_1 Hole diameter (≥ 7 mm)
D_2 Undercut diameter (≥ 9 mm)
H Panel thickness (≥ 8 mm)
H_S Anchorage depth
X_A Bolt height (3 mm)
X_Z Aluminium profile thickness in the structure



Connector SFS

The sleeve is made from austenitic stainless steel (AISI 316, grade 1.4401 acc. to PN-EN), whereas the stem is from carbon steel (stem is completely removed during setting).

Type	Material S-steel	Ø	L	Panel thickness	Thickness of joined elements
TUF-	S-	6.0x	9	8	2.5-3.5
				10 - 12	0.5-3.5
				8	4.5-5.5
TUF-	S-	6.0x	11	10	2.5-5.5
				13	0.5-5.5
TUF-	S-	6.0x	13	10	4.5-7.5
				13	2.5-7.5

Fig. *Dimensions and designations of connectors (all dimensions in mm)*

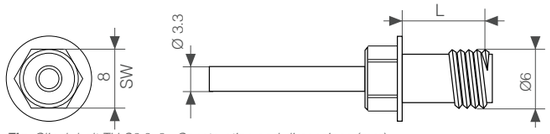


Fig. *Clinch bolt TU-S6.0x8 - Construction and dimensions (mm).*

Invisible fixing on metal substructure

horizontal cross-section

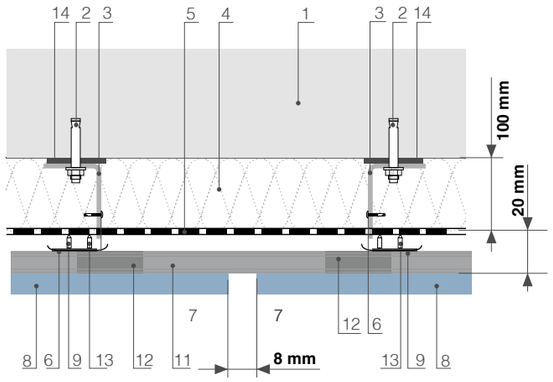


Fig. Draft A-A
I-Beam connector

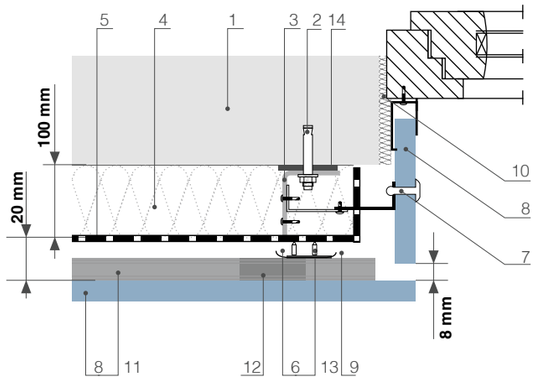


Fig. Draft C-C
Connector with window elements (internal)

Fig. Draft H-H
Connector at the inner corner

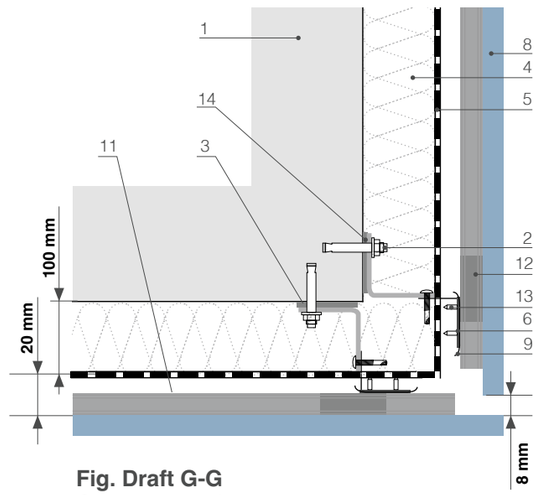
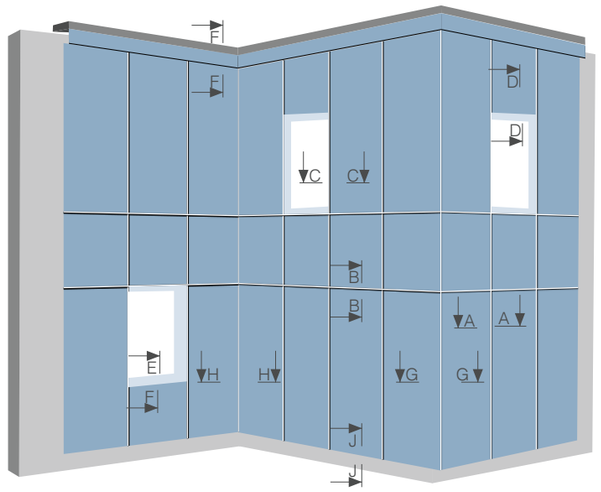


Fig. Draft G-G
Connector at the outer corner



1. Supporting wall
2. Fixing anchor
3. Double aluminium console
4. 100 mm mineral wool
5. Windproofing
6. Facade profile L-60x45
7. Rivet fastening in the color of the panel
8. Samrat Hpl Panel
9. EPDM tape
10. Weather silicone
11. Facade profile of the invisible assembly system
12. Regulation clip for invisible INV-system round hole assembly
13. Screws 4.8 x 19 A2
14. Insulation washer 80/50
15. Rubber for INV-system profile

Vertical cross-section

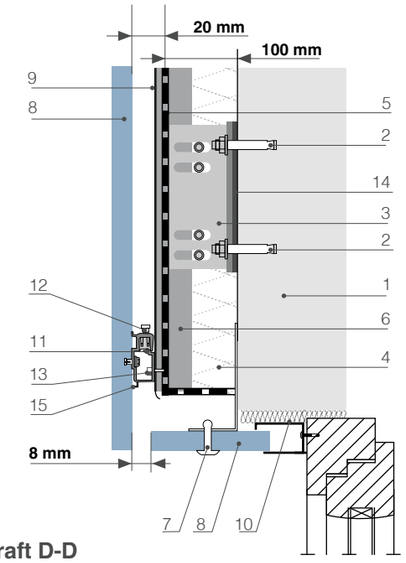


Fig. Draft D-D
Connector with window element (external)

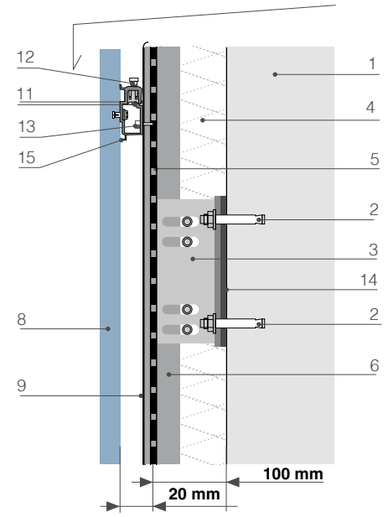


Fig. Draft F-F
Upper part of the wall with closing frame

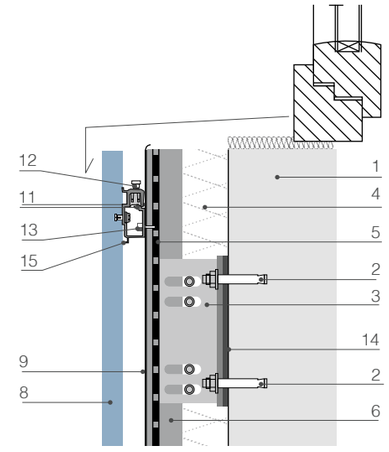


Fig. Draft E-E
External window sill

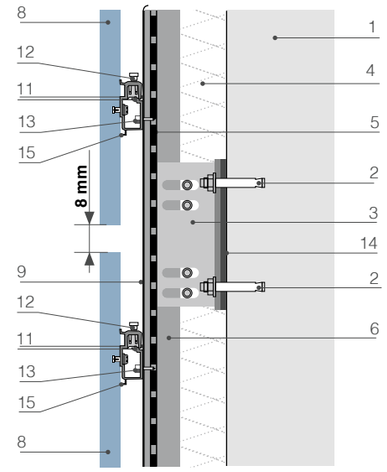


Fig. Draft B-B
Beam connector

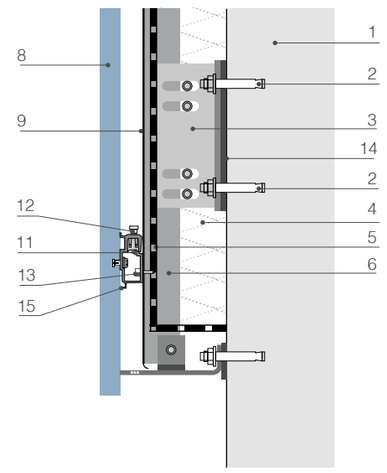


Fig. Draft J-J
Bottom part of the wall

Installation through adhesive

General Information

PanelTack is a moisture curing, highly elastic adhesive based on SMP (Silyl Modified Polymer). PanelTack is solvent- and isocyanate free.

Product advantages

- Reliable blind fixing method
- Simple and fast installation
- Optimal tension distribution

Application

Bonding of panels for:

- Facade cladding.
- Fascias and soffits.
- Ceilings, canopies, awnings.
- Wall covering panels in a.o. porches.

Features PanelTack bonding system

- Durable and highly elastic with an optimal tension distribution.
- Suitable for the bonding of larger panels up to panels.
- Excellent mechanical strength.
- Good moisture- and weather resistance.
- Quick and easy mounting.

Bostik bonding system consists of:

PanelTack	highly elastic adhesive
Primer Paneltack	for pre-treatment of the bonding side of the cladding panel.
Primer Paneltack	primer for metal support construction
Foam tape 12x3mm	for the initial bonding of the panels and a spacer to obtain a sufficient thick adhesive layer.

Reaction to fire

Within Europe wall cladding constructions should comply to class D according to EN 13501-1.
As demands and requirements in other countries may differ we advise to consult local authoritative test institutes for detailed information.

Maximum panel size

PanelTack is highly elastic, therefore possible deformations of the Samrat panels can be absorbed in the adhesive layer. When mounting Samrat panels a maximal occurring displacement of 2.5 mm/m' has to be taken into account. The maximal elastic deformation which the PanelTack system practically still can absorb, may not exceed 4.3 mm. This means that the maximal diagonal length of the panels may not exceed 3440 mm. Panels must be evenly flat prior to bonding. In this aspect large panels are more critical than small panels, therefore extra care regarding correct handling and storage is inevitable

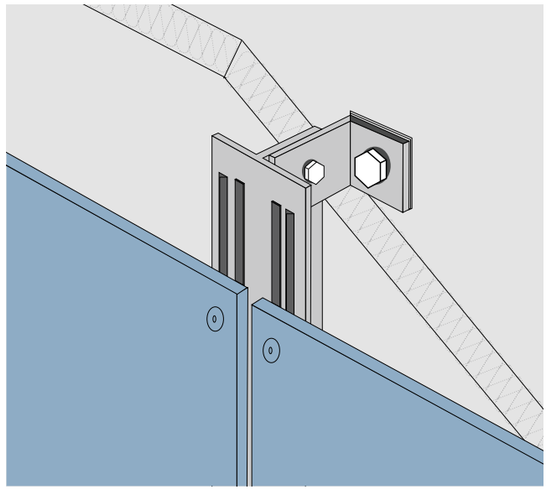


Fig. *Invisible fixing on metal substructure*

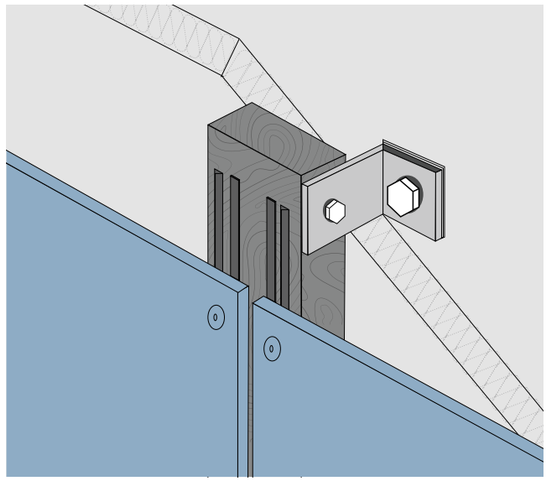


Fig. *Invisible fixing on wooden substructure*

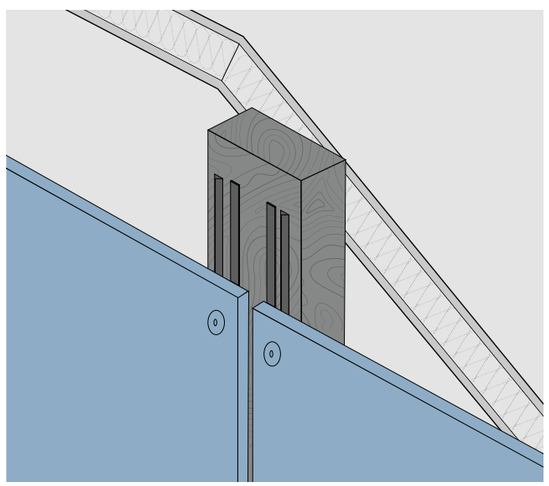


Fig. *Invisible fixing on timber frame buildings*

SAMRAT HPL — Inspired by Nature —

Support construction

Choice of material

Dry and smooth (galvanized) steel or (anodized) aluminium. These metals must be rustproof and after fixing they must conform to relevant standards. Enamelled metals are suitable as well, however different instructions for use may apply.

Ventilation

The support battens or profiles must only be mounted vertically. Behind the panels there has to be an open ventilated cavity of minimal 20 mm. Furthermore ventilation openings/slots of art least 50 cm³/m' at both the top and the bottom of the bonded panels. For horizontal applications preferably apply the battens perpendicular to the facade in order to ventilate over the short end.

Minimal joint width

A joint between the panels with a width of min. 8 mm is recommended.

Dimensions and distances

The minimal widths of supports in the support construction depend on the function of the supports:

- support for joints-aluminium - 100 mm
- end-and intermediate support-aluminium-40mm

The distances between the support battens or profiles as indicated by the panel manufacturer.

Panel thickness [mm]	**6**	**8**	**10**
2 fixings in one direction	440	590	640
3 or more in one direction	540	640	640

For horizontal applications (ceilings) these distances must be multiplied with 3/4.

Consumption per 100 m² surface panel

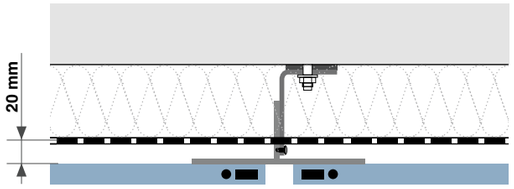
Foam tape 12 25 metre role
Paneltack 50 290 ml cartridge
Primer Paneltack (panel) 3 500 ml tin
Primer Paneltack (metal) 3 500 ml tin

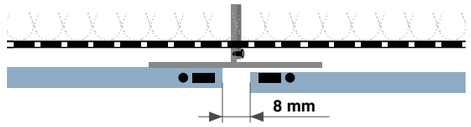
Application conditions

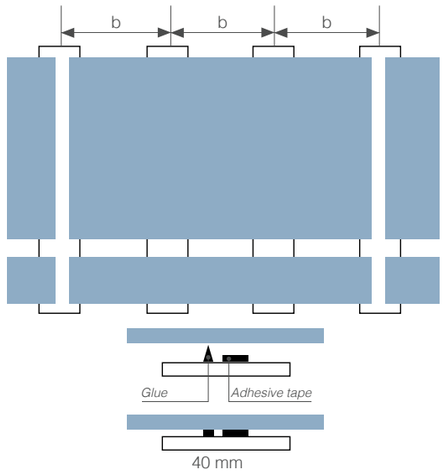
The cladding panels can be bonded indoors (in a factory) or on the building site.
The following conditions apply:

- Do not pre-treat or bond in case of rain.
- Do not pre-treat or bond in case of very high air humidity for instance during dense fog.
- Avoid condensation on both the panels and support construction: the dew point must be 3 °C above substrate temperature.
- Apply between +5 °C and +30 °C.

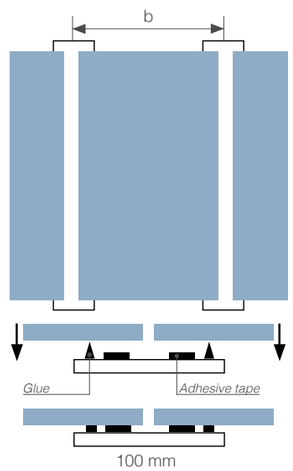
Prevent warping of the panels due to the influence of moisture.







Multispan example

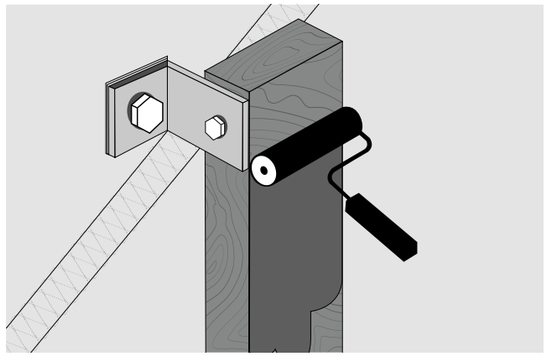


Single span example

Installation Instructions

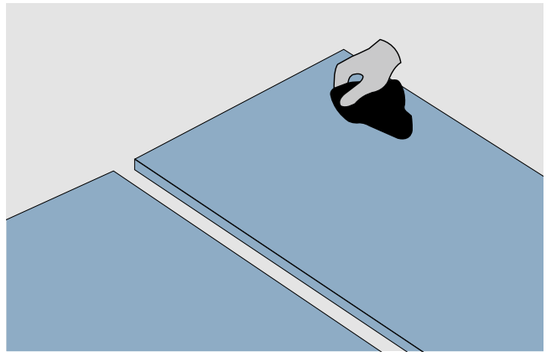
Pre-treatment support construction

The support construction must be primed before or after mounting. The primer can be applied both in and outdoors. Use Primer SX Black for wood and Primer Paneltack for metal. One (continuous and closed) coat of primer is sufficient. Residues of primer should not be used. Avoid contamination of the support construction with dust and grease after application of primers. Metal support construction: Apply Primer PanelTack straight from the tin on a clean, lint free and pigment free cloth or tissue paper. Firmly rub the supports with the primer-soaked cloth. Minimal drying time after application 10 minutes. Replace cloths regularly by new ones. Do not treat more surface than can be bonded within 6 hours.



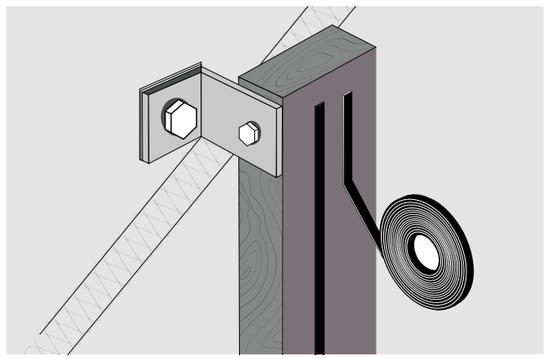
Pre-treatment cladding panel

Apply Primer PanelTack straight from the tin on a clean, lint free and pigment free cloth or tissue paper. Firmly rub the supports with the primer-soaked cloth. Minimal drying time after application 10 minutes. Replace cloths regularly by new ones. Do not treat more surface than can be bonded within 6 hours.



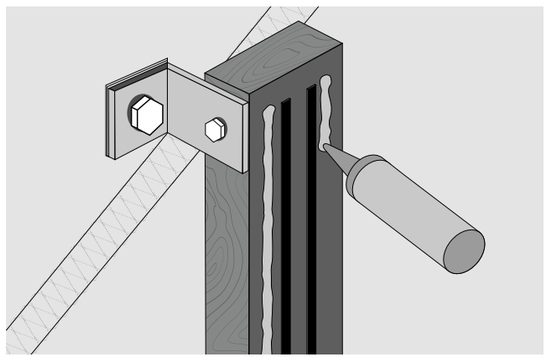
Application of foam tape

Once the primers have dried, foam tape is applied only vertically to the support construction without any interruption. Press foam tape firmly onto the support construction and cut it with a sharp knife. When deciding on the correct position and length of the tape also bear in mind the dimensions of the supports, the dimensions of the panels and the necessary space for the adhesive. Do not immediately remove the protective layer after application of the foam tape.



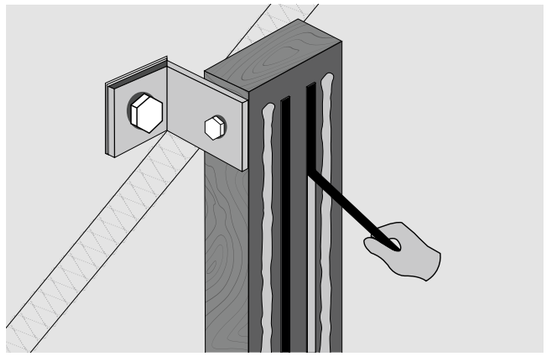
Application of adhesive with special nozzle

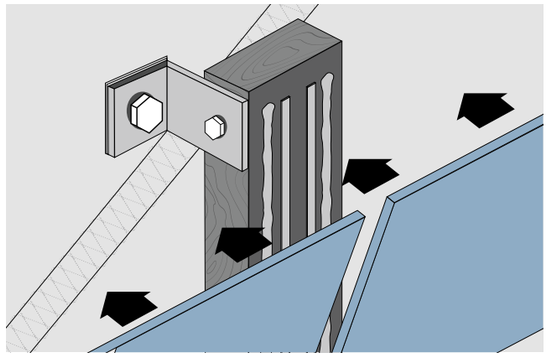
Apply PanelTack only vertically and without interruption after the application of the foam tape. Use a hand-or an air pressure caulking gun. A special V-shaped nozzle has been packed with every cartridge PanelTack. This enables to apply a triangular adhesive bead with a width and height of 9 mm. Using this special nozzle prevents the enclosure of air bubbles and unnecessary loss of adhesive. Opposite the V-cut one can cut the nozzle obliquely.



Placing the panel

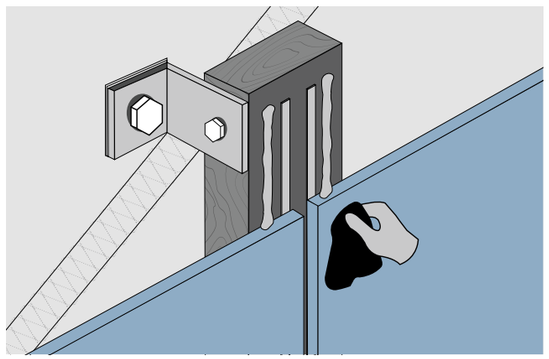
Now remove the protective layer from the foam tape. Apply the cladding panel within 10 minutes of adhesive application. Fix the panel by gently pressing it onto the adhesive beads and, if necessary, correct its position. Correction is still possible until the panel touches the foam tape. For accurate, easier positioning of the panel use a joint spacer, supporting blocks or horizontal supporting rails. For easier handling a glass suction clamp can be useful. Once the panel is positioned correctly, the panel must be pressed down by gently rubbing over the entire length of the foam tape. Avoid pressing the foam tape together. At this stage it's no longer possible to correct the panel position. See the detail drawings.





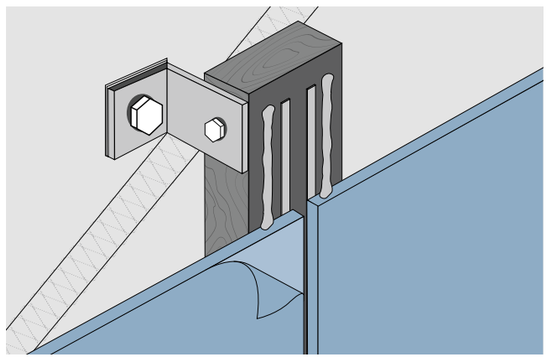
Cleaning

Avoid contamination of the front side of the panels with primer or adhesive. Uncured primer or uncured adhesive residues can be removed with a suitable cleaner such as Liquid 1. Use a clean, lint free and pigment free cloth or tissue paper. Test first on a small unobtrusive area to check that the cleaner does not attack or contaminate the panel.



Removing the protective foil from the front face

Immediately after bonding, if the protective foil is still present, it should be removed from the front face of the panel.



Invisible fixing on metal substructure

horizontal cross-section

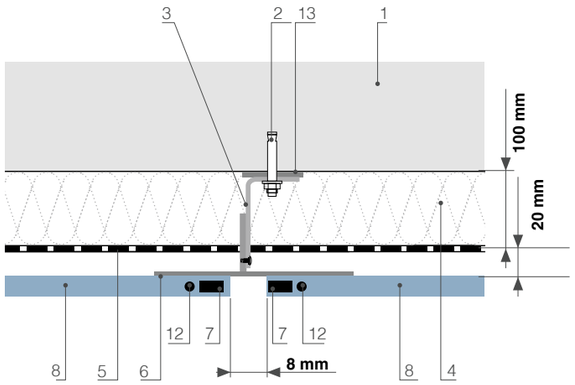


Fig. Draft A-A
I-Beam connector

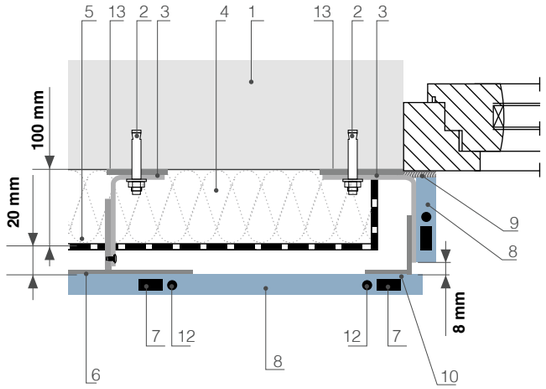


Fig. Draft C-C
Connector with window elements (internal)

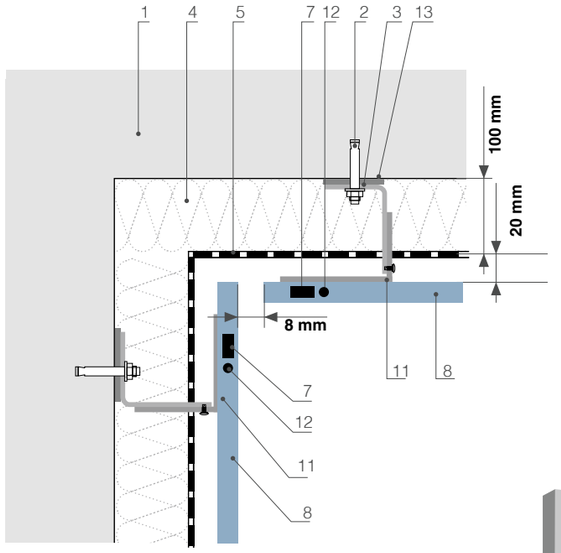


Fig. Draft H-H
Connector at the inner corner

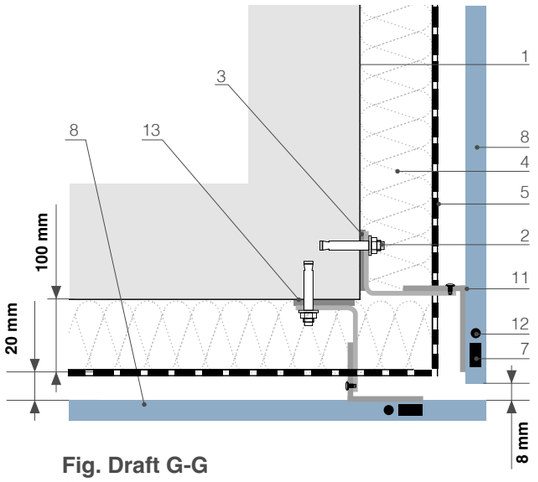
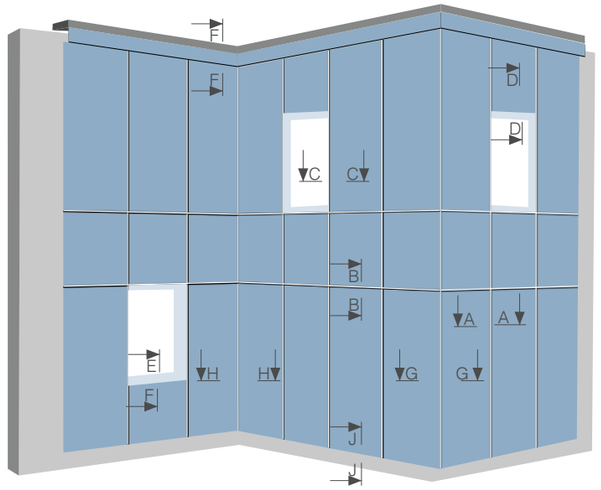


Fig. Draft G-G
Connector at the outer corner



1. Supporting wall
2. Fixing anchor
3. Fixing angle L120 x 60 x 3, length 60 mm
4. 100 mm mineral wool
5. Windproofing
6. T90 x 70 x 4 fixing tees
7. Foam tape
8. Samrat Hpl Panels
9. Weather silicone
10. Perforated angle
11. 40 x 40 x 3 angle
12. Adhesive
13. Insulation washer 80/50

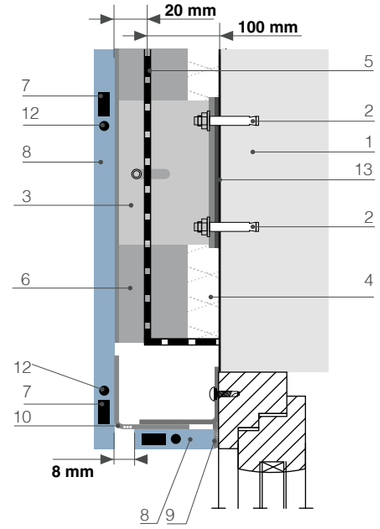


Fig. Draft D-D
Connector with window element (external)

Vertical cross-section

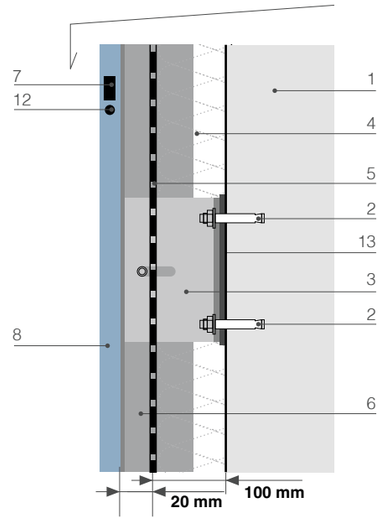


Fig. Draft F-F
Upper part of the wall with closing frame

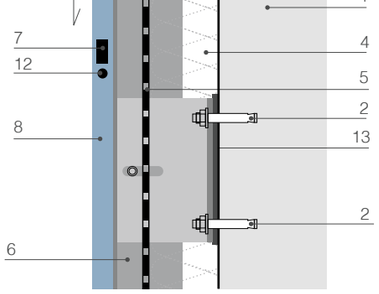


Fig. Draft E-E
External window sill

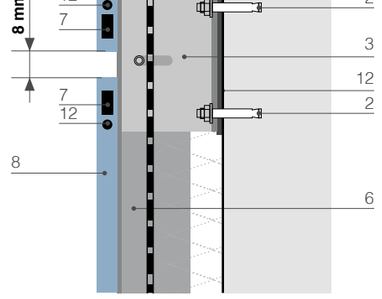


Fig. Draft B-B
Beam connector

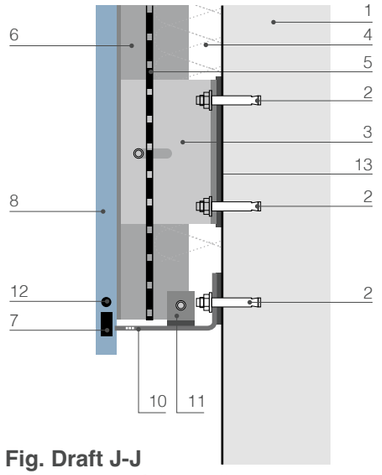


Fig. Draft J-J
Bottom part of the wall

Invisible fixing on wooden substructure

horizontal cross-section

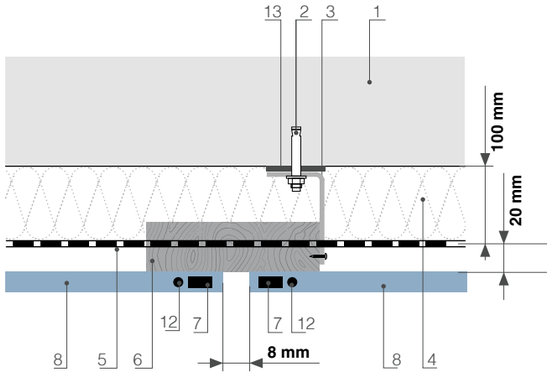


Fig. Draft A-A
I-Beam connector

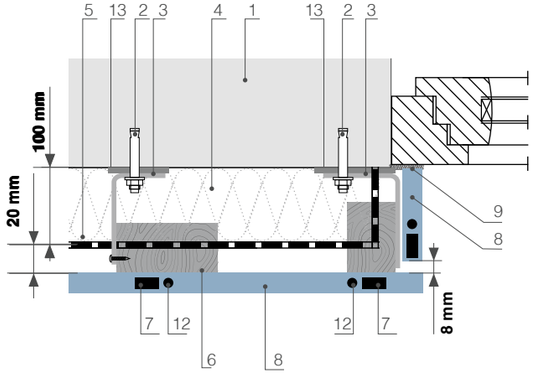


Fig. Draft C-C
Connector with window elements (internal)

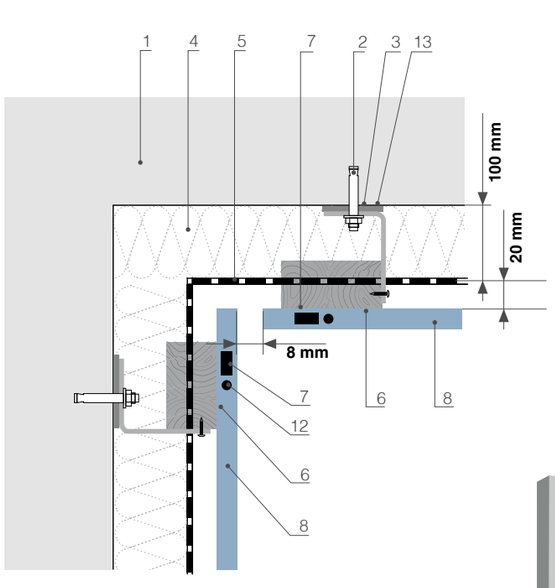


Fig. Draft H-H
Connector at the inner corner

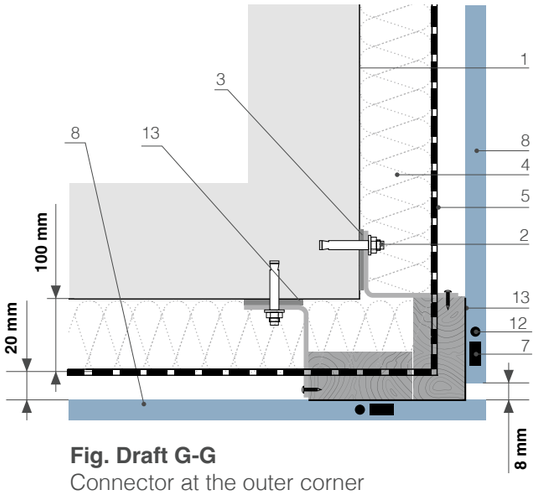
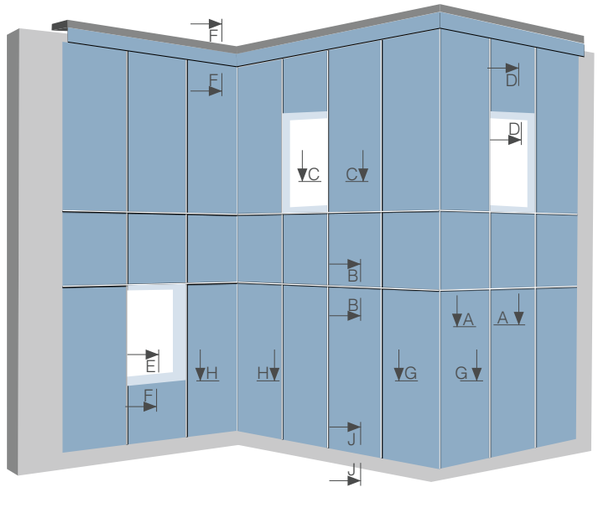


Fig. Draft G-G
Connector at the outer corner



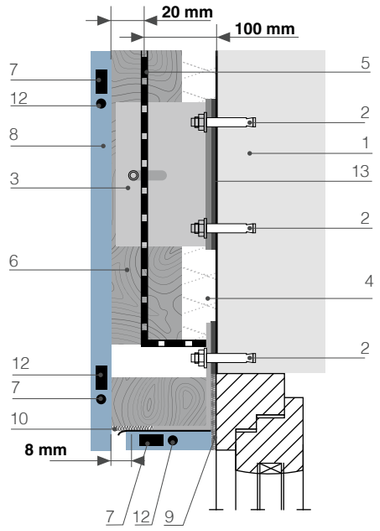


Fig. Draft D-D
Connector with window element (external)

Vertical cross-section

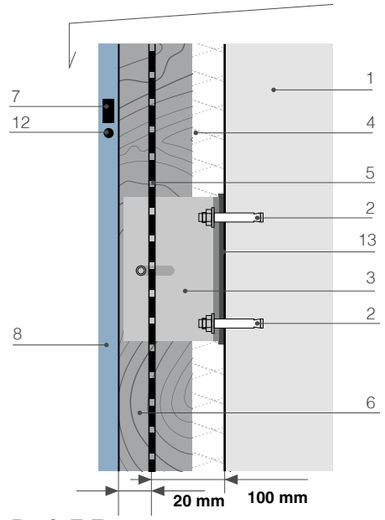


Fig. Draft F-F
Upper part of the wall with closing frame

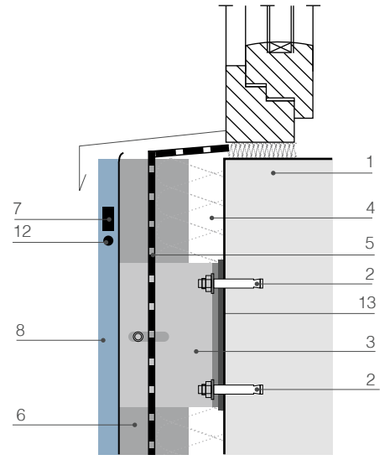


Fig. Draft E-E
External window sill

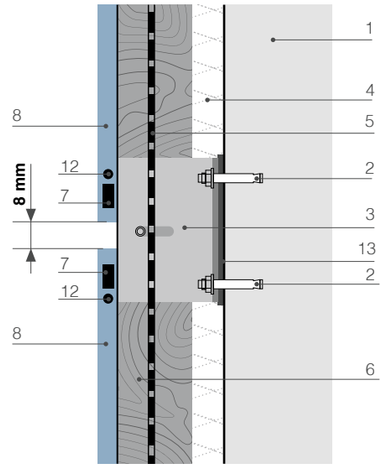


Fig. Draft B-B
Beam connector

1. Supporting wall
2. Fixing anchor
3. Fixing angle L120 x 60 x 3, length 60 mm
4. 100 mm mineral wool
5. Windproofing
6. Vertical timber batten
7. Foam tape
8. Samrat Hpl Panels
9. Weather silicone
10. Perforated angle
11. 40 x 40 x 3 angle
12. Adhesive
13. Insulation washer 80/50

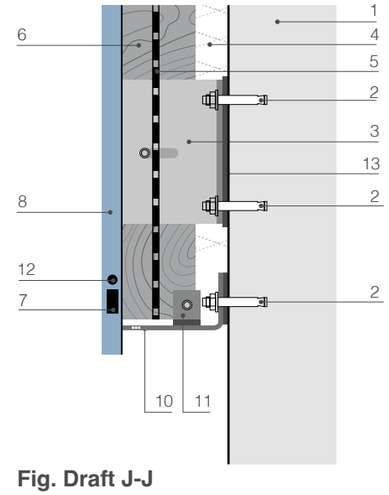


Fig. Draft J-J
Bottom part of the wall

Invisible fixing on timber frame buildings *horizontal cross-section*

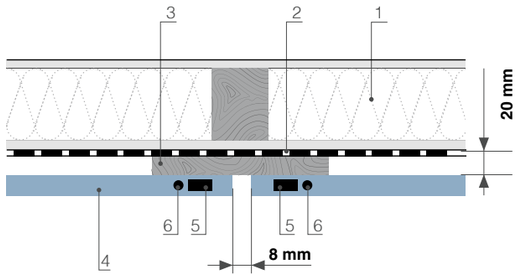


Fig. Draft A-A
I-Beam connector

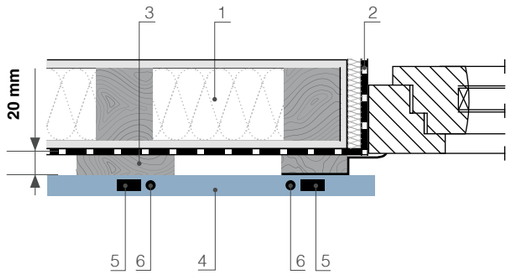


Fig. Draft C-C
Connector with window elements (internal)

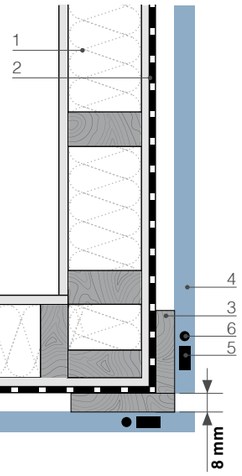
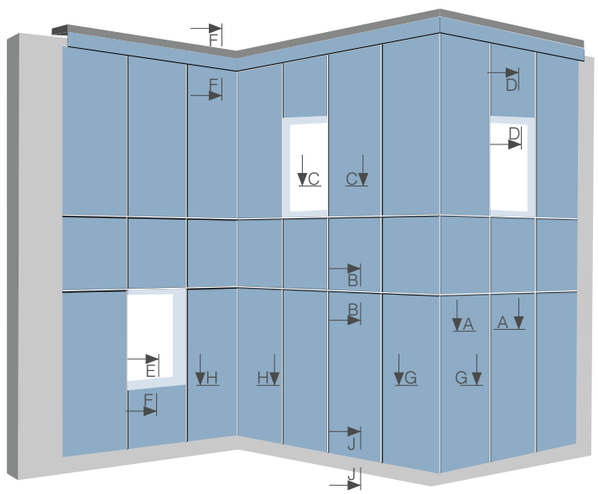


Fig. Draft G-G
Connector at the outer corner

Fig. Draft H-H
Connector at the inner corner



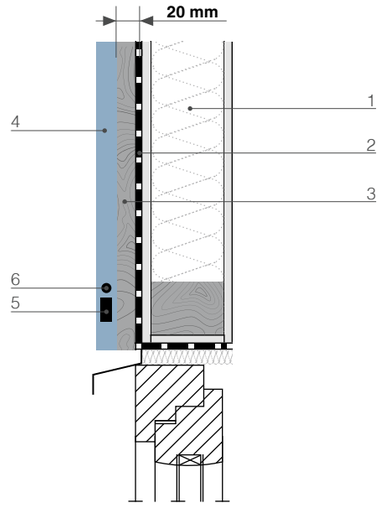


Fig. Draft D-D
Connector with window element (external)

Vertical cross-section

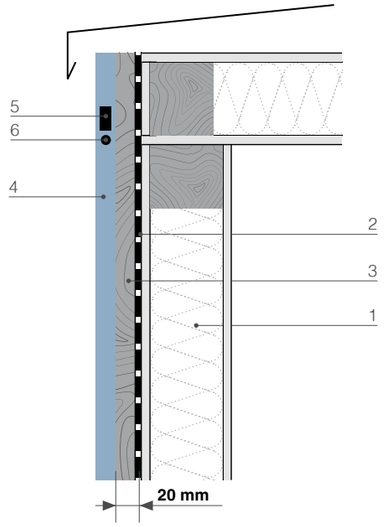


Fig. Draft F-F
Upper part of the wall with closing frame

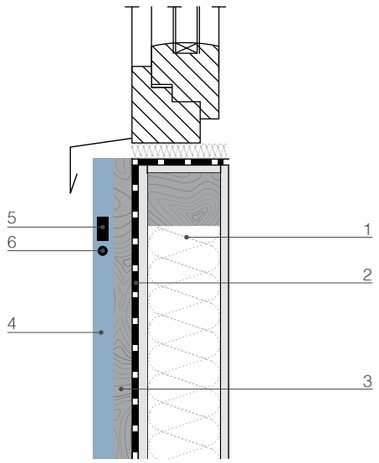


Fig. Draft E-E
External window sill

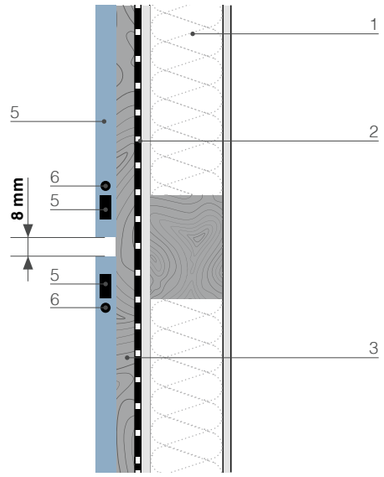


Fig. Draft B-B
Beam connector

1. Load bearing wall
2. Windproofing
3. Vertical timber batten
4. Samrat panels
5. Foam tape
6. Adhesive

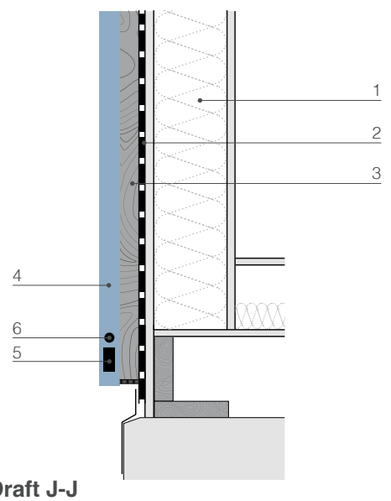


Fig. Draft J-J
Bottom part of the wall

General Information

Samrat Hpl panels exhibit characteristics similar to wood in response to changing weather conditions—they expand when absorbing moisture and contract in dry air when discharging moisture. Recognizing these properties, it is crucial to incorporate suitable compensation clearances during installation, with recommended expansion gaps between panels set at 8-10 mm. Ensuring uniform panel expansion is achievable by establishing one fixed point, while the remaining fixing points can be designated as non-fixed points.

SAMRAT®
HPL
— Inspired by Nature —

Fixed point / Non-fixed point

To ensure uniform arrangement of panels, one fixed point should be made in the center of the panel. Other attachment points should be made as non-fixed-points. This mode of installation guarantees an even panel face in both lengthwise and crosswise planes.
The diameter of the fixed-point hole should be the same as the fastener used. The diameters of holes for non-fixed points should be 1.5 times larger than the diameter of the respective fasteners.

The fixed point for one-span fixing should be in the centre of the panel edge.

	Thickness [mm]	max. D [mm]	max. B [mm]	a [mm]	b[mm]
One-span fixing					
	6	400	400	20-40	20
	8	550	500	20-40	20
	10	700	600	20-40	20

Tab. *Distribution of joints one span firing*

The fixed point for multi-span fixing should be made in the center of the panel.

	Thickness [mm]	max. D [mm]	max. B [mm]	a [mm]	b[mm]
One-span fixing					
	6	550	400	20-60	20-50
	8	700	500	20-80	20-60
	10	800	600	20-100	20-80

Tab. *Distribution of joints-Multi span fixing*

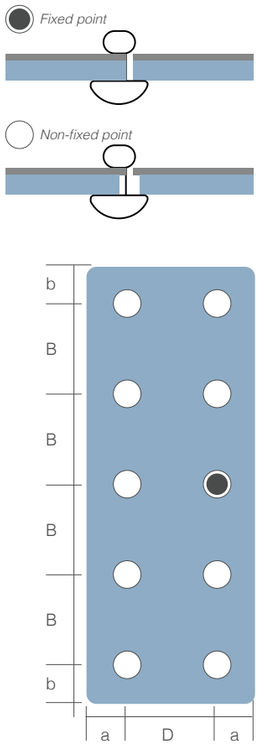


Fig. *One-span fixing*

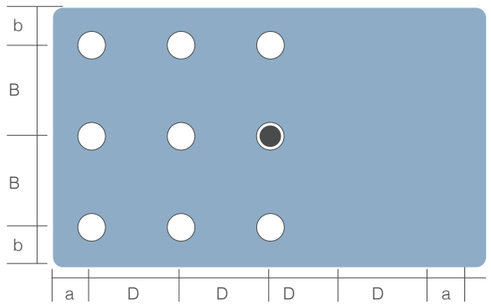


Fig. *Multi-span fixing*

Bending

Samrat panels can be formed into a curve without any special preparation - the physical and chemical properties of its laminate structure make this possible. The minimum bend radius achievable is: R-2 m.

Compensating for dimensional variance

Samrat's base material means some dimensional variance is expected according to changes in humidity and temperature it behaves in much the same way as wood. It's therefore necessary to incorporate suitable expansion gaps between panels.

- Minimum 8 mm, 2.5 mm per every meter of the panel both lengthwise and crosswise
- 5 mm around the panel for installation in profiles.

If joining profiles are used, allow for the thickness of their body.

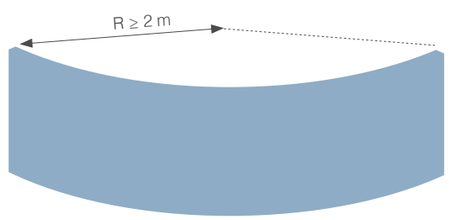


Fig. *Bending of Panels*

Balustrades

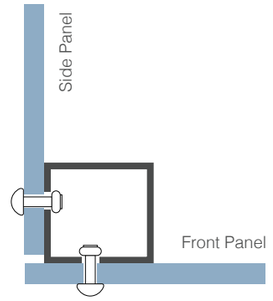
A balustrade system incorporating Samrat panels should have strength and be sufficiently durable. The height of balcony balustrades should conform to local building regulations. Its height should be not less than 100 cm, and for buildings over 12 m, it should be at least 110 cm high.

Balcony corners

With many corner form options, Samrat can fulfil different aesthetic and technical demands

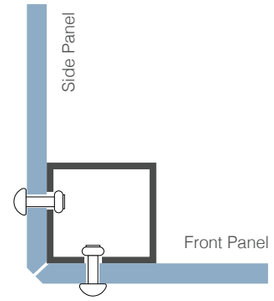
Open corners

The front panel is positioned over the side panels, revealing the natural color of the board at its vertical edges.



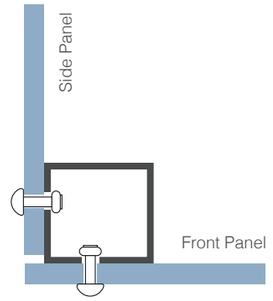
Corners joined slantwise

With precise cutting of the panels at 45°, this method delivers a neat, uniform appearance.



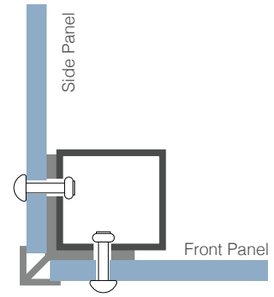
Masking uneven substructures

If supports are running out of true, by over-projecting the facing panel by around 10 mm each end it's possible to achieve a neat straight appearance.



Corners finished with profiles

The open edges of the side and front panels are concealed by a powder-coated profile, in any RAL color.



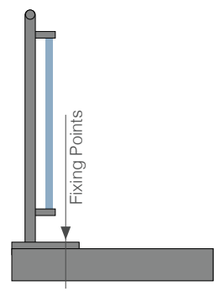
Fixing of supporting posts

Suitable balustrade supports must be firmly fixed to the floor of the balcony. These are usually tubes or profiles of a rectangular cross section. The fasteners utilized to secure the posts must ensure the safety of the construction and its stability.

Banisters can be mounted three ways

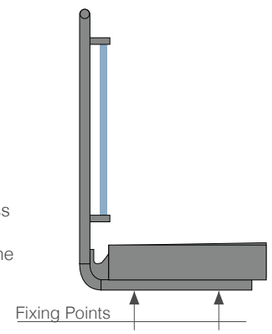
Upper mounting

Fixing the frame to the balcony floor is a common method.



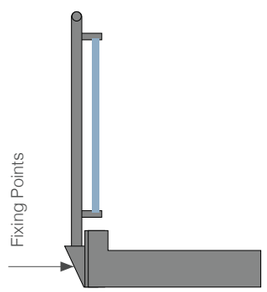
Lower mounting

As the balcony floor is untouched, there's no potential for water ingress to the structure, and optimal use is made of the floor area



Side mounting

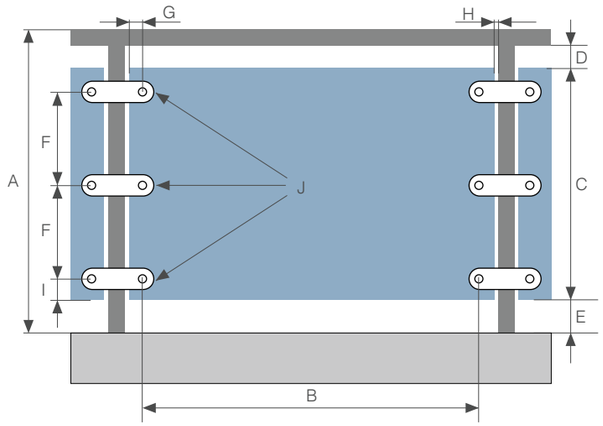
The frame can be mounted to the outer face of the balcony floor, eliminating the risk of leaks and thermal bridges.



Installation of balcony panelling

Visible fixing to posts using fasteners of clamps

A Balustrade height
B Fixing distance
C Panel height
D Upper limit distance
E Lower limit distance
F Distance between connectors
G Panel projections H Limit distance
I Free projections
J Fixing points

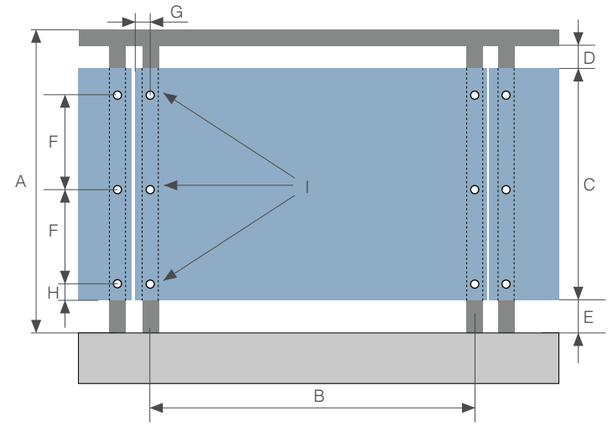


Panel thickness [mm]	A [cm]	B max. [mm]	C min. /max. [mm]	D min. /max. [mm]	E [mm]	F max. [mm]	G min. /max. [mm]	H min. /max. [mm]	I min. / max. [mm]	J
6	90	600	700-780	40-120	40	300	20-40	20-40	50-90	3
	110		900						20-150	3
	110		905-980						20-40	4
8	90	700	700-780	40-120	40	300	20-40	20-40	50-90	3
	110		900						20-150	3
	110		905-980						20-40	4
10	90	800	700-780	40-120	40	300	20-40	20-40	50-90	3
	110		900						20-150	3
	110		905-980						20-40	4

Tab. *Spacing of connectors-recommendation*

Visible fixing to posts - in modules

A Balustrade height
B Fixing distance
C Panel height
D Upper limit distance
E Lower limit distance
F Distance between connectors
G Panel projections H Limit distance
I Free projections
J Fixing points

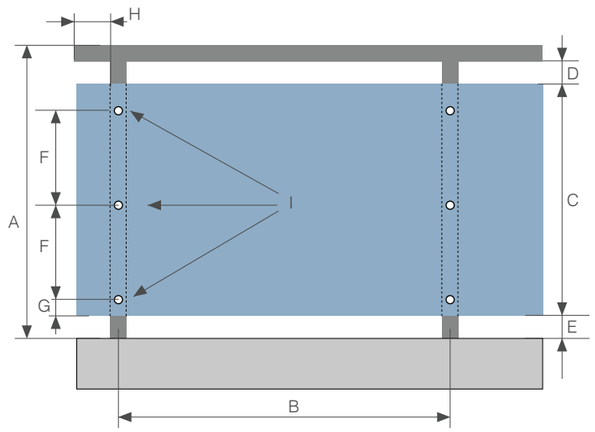


Panel thickness [mm]	A [cm]	B max. [mm]	C min. /max. [mm]	D min. /max. [mm]	E [mm]	F max. [mm]	G min. /max. [mm]	H min. / max. [mm]	J
6	90	600	700-780	40-120	40	300	20-40	50-90	3
	110		900					20-150	3
	110		905-980					20-40	4
8	90	700	700-780	40-120	40	300	20-40	50-90	3
	110		900					20-150	3
	110		905-980					20-40	4
10	90	800	700-780	40-120	40	300	20-40	50-90	3
	110		900					20-150	3
	110		905-980					20-40	4

Tab. *Spacing of connectors-recommendation*

Visible fixing to posts - continuous

- **A** Balustrade height
- **B** Distance between posts
- **C** Panel height
- **D** Upper limit distance
- **E** Lower limit distance
- **F** Distance between connectors
- **G** Panel projections
- **H** Limit distance
- **I** Fixing points

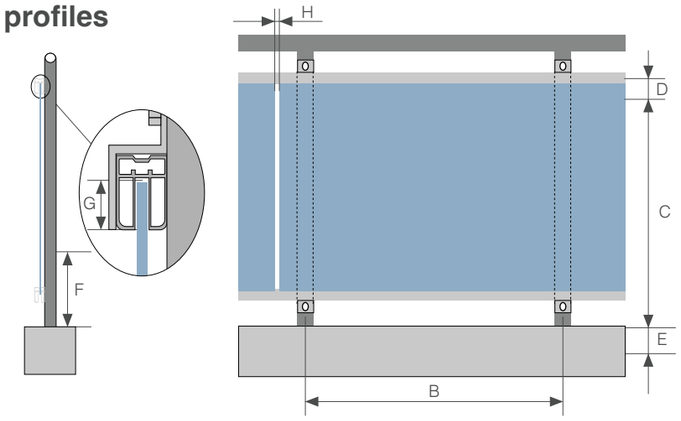


Panel thickness [mm]	A [cm]	B max. [mm]	C min. /max. [mm]	D min. /max. [mm]	E [mm]	F max. [mm]	G min. /max. [mm]	H min. /max. [mm]	I [mm]
6	90 110 110	600	700-780 900 905-980	40-120	40	300	20-40	430 470	3 3 4
8	90 110 110	700	700-780 900 905-980	40-120	40	300	20-40	430 470	3 3 4
10	90 110 110	800	700-780 900 905-980	40-120	40	300	20-40	430 470	3 3 4

Tab. *Spacing of connectors-recommendation*

Visible fixing to posts using profiles

- **B** Distance between posts
- **C** Panel height
- **D** Upper limit distance
- **E** Lower limit distance
- **F** Support of balustrade posts
- **G** Depth of insertion into profile
- **H** Distance between panels

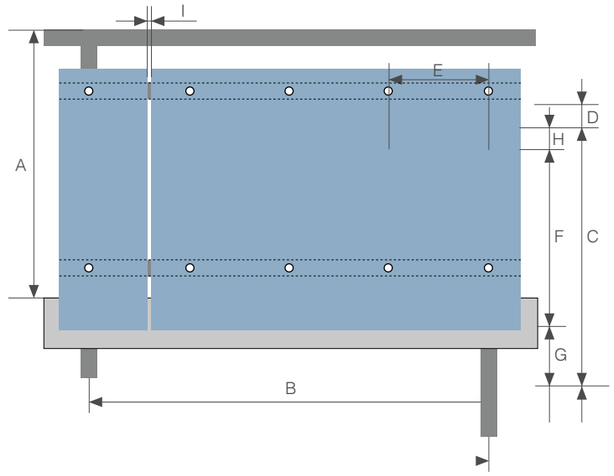


Panel thickness [mm]	Height of balustrade elements max. [cm]	B max. [mm]	C min. /max. [mm]	D min. /max. [mm]	E [mm]	F max. [mm]	G min. [mm]	H min. / max. [mm]
6	131,5	1000	1045	120	40	300	20	6
8	156,5	1200	1100	120	40	300	20	8

Tab. *Spacing of connectors-recommendation*

Visible fixing to posts - continuous

- **A** Balustrade height
- **B** Fixing distance
- **C** Panel height
- **D** Upper limit distance
- **E** Lower limit distance
- **F** Distance between connectors
- **G** Panel projections H Limit distance
- **I** Free projections
- **J** Fixing points

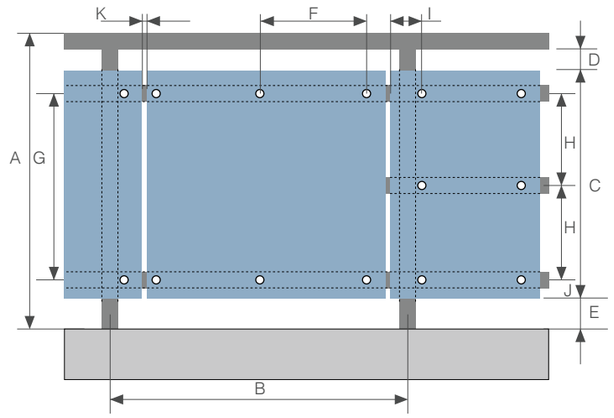


Panel thickness [mm]	A [cm]	B max. [mm]	C min. /max. [mm]	D min. /max. [mm]	E [mm]	F max. [mm]	G min. / max. [mm]	H max. [mm]	I max. [mm]
6	110	1160	1050	40-120	300	820	150	80	6
8	110	1200	1180	40-120	300	950	150	80	8
10	110	1500	1280	40-120	300	1050	150	80	8

Tab. *Spacing of connectors-recommendation*

Visible fixing to posts - in modules

- **A** Balustrade height
- **B** Fixing distance
- **C** Panel height
- **D** Upper limit distance
- **E** Lower limit distance
- **F** Distance between connectors
- **G** Panel projections H Limit distance
- **I** Free projections
- **J** Fixing points



Panel thickness [mm]	A [cm]	B max. [mm]	C min. /max. [mm]	D min. /max. [mm]	E [mm]	F max. [mm]	G max. [mm]	H max. [mm]	I [mm]	J [mm]	K [mm]
6	90 110 110	600	700-780 900 905-980	40-120	40	300		430 470	20-40	50-90 20-150 20-40	3 3 4
8	90 110 110	700	700-780 900 905-980	40-120	40	300		430 470	20-40	50-90 20-150 20-40	3 3 4
10	90 110 110	800	700-780 900 905-980	40-120	40	300		430 470	20-40	50-90 20-150 20-40	3 3 4

Tab. *Spacing of connectors-recommendation*

Balcony partitions

Integrating partitions into balcony spaces addresses various design challenges, offering solutions for privacy, weather protection, sun shading, and more. These partitions can also contribute to features such as pergolas, storage spaces, shelters, and define access routes. Samrat panels are exceptionally well-suited for partitioning roles, and the method of connecting them to the wall and balustrade depends on the panel size and intended function.

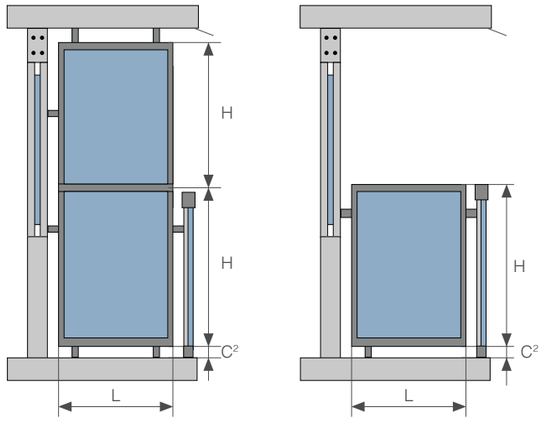
Method of partition installation

The following methods are recommended:
1. Framing with a profile from all sides.
2. Framing to lacing from galvanized steel.
3. Fitting to profiles using rivets and screws

Samrat panels can be secured to profiles using either rivets or balcony bolts, providing versatile solutions for balcony partition installations.

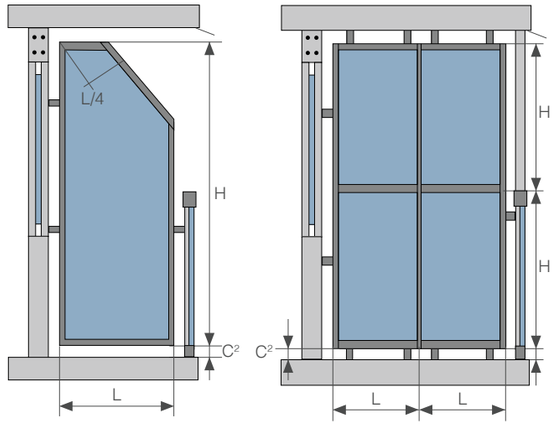
Fixed point / Non-fixed point

The dimensions of profiles should match the thickness of panels, taking into consideration the dimension tolerances and possible sealing with EPDM.
It is important to enable free panel movement by maintaining a distance from the side and upper profiles - minimum 5 mm. Suitable water drainage should be enabled, by matching the slotted holes or by drilling holes in the lower profile.
Below are recommendations for spacing of connectors where:
L_{max} the largest admissible spacing of fitting elements for given height to width ratio (H/L) of the partition under design and for the selected panel thickness.
C2 is the distance between the profile edge and the floor: it should be 20-fold of laminate thickness (maximum value).



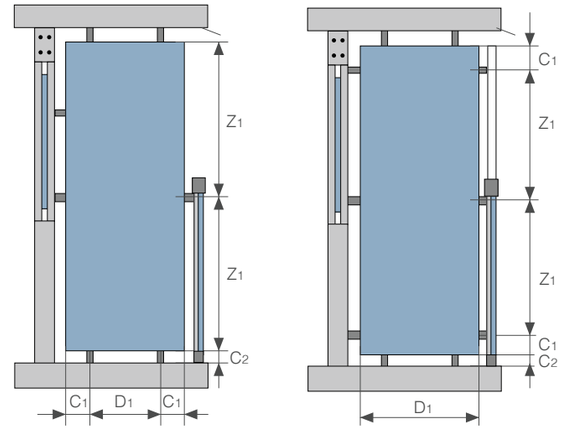
	Panel thickness [mm]				
	H/L	6	8	10	13
Framing from 4 sides	0.98	765	1029	1284	1666
	1.18	725	960	1196	1558
	1.38	686	902	1127	1470
	1.58	647	853	1068	1392
	1.78	608	813	1019	1323
	1.98	578	774	970	1264
Framing from 23 sides	>2.48	559	745	931	1206
	Max. spacing Lmax [mm]				

***Tab.** Spacing of bearing profiles, maximum distances*



Fitting to steel lacings

Below are given the recommended spacing for connectors where: D_1 is maximum distance between the fitting elements for one-span fitting, and Z_1 is the largest admissible spacing of fitting elements for multi-span fitting for the selected panel thickness:
- C_1-distance between the holder and the laminate edge, 20-150 mm,
- C_2-distance between the lower edge and the floor, min. 149 mm,
- C_3-distance between the edge of upper profile and the holder, 20-150 mm.



Panel thickness [mm]	6	8	13
D1 [mm]	588	735	931
Z1 [mm]	735	882	1176

***Tab.** Spacing of bearing profiles, maximum distances*

Fitting to profiles with rivets or balcony bolts

Below are given the recommended spacing of connectors where Lis maximum distance between the fitting elements depending on the panel thickness and number of fitting spans.
- C_1-149 mm (minimum value),
- C_2 dimension = 20-fold of laminate thickness (maximum value).

Panel thickness [mm]	6	8	10	13
L_{max} (single span) [mm]	539	539	931	1176
L_{max} (multi span) [mm]	686	882	1127	1470

***Tab.** Spacing of bearing profiles, maximum distances*

Fastenings for balconies

Coated rivets

Large head, powder coated rivets can be used as visible fixings on balconies, secured to aluminum supporting elements in line with relevant regulations.

Element	Type of material	No of material
Sleeve	Al Mg 5	3.3555.10
Stem	stainless steel	1.4541 (Alto); 1.4301 (SFS)

Suppiler: *MBE GmbH (Moderne Befestigungs-Elemente GibH)*

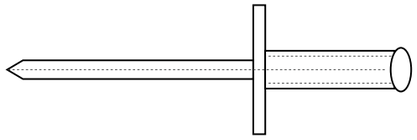


Fig. *Blind rivet, closed from one side, painted*

Diameter Ød/length L [mm]	5/18	5/21
Max. thickness of material [mm]	12	15
Diameter Ø d1 [mm]	2.7	2.7
Diameter ØD [mm]	14	14
Catalogue no. (Alfo)	12250180/14	12250210/14
Catalogue no. (SFS)	AP14-50180-S	AP14-50210-S
Quantity	500/ carton	500/ carton

Tab. *Technical data of fitting screws Torx*

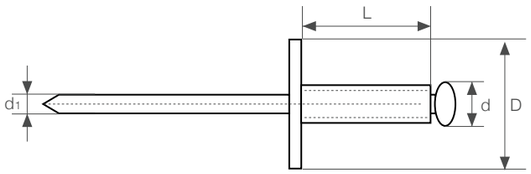


Fig. *Bind rivet – construction and dimensions*

Breaking force of the rivets is 4.4 5.2 KN.
In the majority of cases the specifications listed above can be followed for adequate fixing. Riveting tools and accessories are available, including manual and machine riveting options, distancing tips, centering tools for drilling, and a positioning tip for centering the preliminary hole.

Torx 20 screws

These are intended for use with timber supporting frames. They're made from corrosion resistant austenitic stainless steel, finished in powder coated colors. They can be used without washers, with single or double threads.

No of material	1.4301
Diameter Ø d2 [mm]	12
Diameter Ø d1 [mm]	5.2
Length L [mm]	24
Screw driver tip	TORX T20W
Pitch of the screw P [mm]	2.2

Tab. *Technical data of fitting screws Torx*

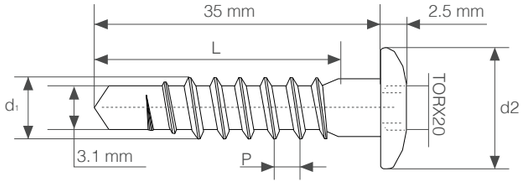
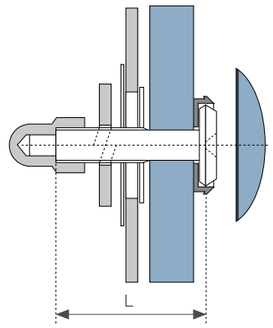


Fig. *Fixing screw Torx – construction and dimensions*

Balcony screws

Our specialized screws enable fitting of Samrat panels with complete peace of mind.
The joints are extremely secure, further enhanced by hermetic adhesive which locks the dome nuts in place.
The M5 screw has a stem of length (L) from 20 mm to 55 mm. The head with multi tooth seat is of the Phillips type, size 20, head diameter 16 mm. The screw, special nut and washer are made from stainless steel, blank A2.
They are shipped with self-adhesive polyamide pads, washer type "U", spring ring and special dome nut with a longer thread and a cap of the same color.
The fixings are packed in cartons containing 200 sets. Customized lengths are available on request.



Catalogue Nº of the screw	Stud length of the screw L [mm]
120 50 44 20	20
120 50 44 25	25
120 50 44 30	30
120 50 44 35	35
120 50 44 40	40
120 50 44 45	45
120 50 44 50	50
120 50 44 55	55

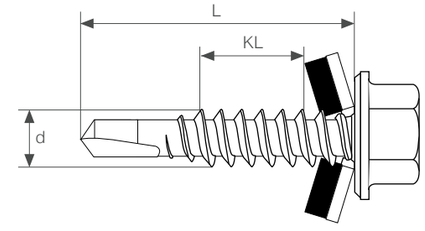
Suppiler: *MBE GmbH (Moderne Befestigungs-Elemente GibH)*

Self-drilling stainless steel fasteners

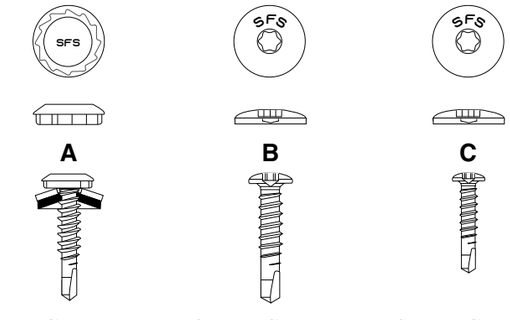
These SX-L12 (SFS) fasteners are designed to achieve a neat appearance for panels fitted to aluminum or steel bearing elements.
Special flat head L12 powder coated fasteners color match the facing and are almost invisible from a short distance away

Product	Type	VD	KL	HD	W	D	L	Application
A	SX	3/	15/	L12	S16	5.5x	32	VD max, steel: 3.0 mm t max. steel: 2.5 mm
B	SX	3/	15/	D12		5.5x	30	VD max, steel: 3.0 mm t max. steel: 2.5 mm
C	SX	3/	15/	D10/		5.5x	25	VD max steel: 3.0 mm t max steel: 2.5 mm t min. steel: 2.0 mm t min. aluminium: 2.0 mm

Tab. *Symbols and parameters of connectors (SFS). Al dimensions in mm.*



Heads of connectors, depending on version:
- L12-irius Ø 12 mm,
- D12-flat head Ø 12 mm with a seat T25,
- D10-flat head Ø 10 mm with a seat T20



irius Ø 12 mm | flat head Ø 12 mm with a seat T25 | flat head Ø 10 mm with a seat T20

KL thickness of joined elements
d thread diameter
L total length
VD maximum drilling capability
HD type of head/ seat
W material and diameter of washer
t hickness of substrate

Installation Accessories

Balconies

Profile U for framing of partition wall panels

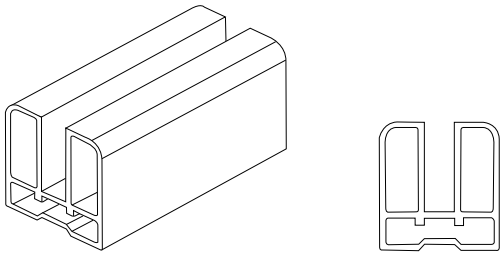


Fig. *Profile U-cross section. Designation by the manufacturer (WIDO)-00-100043*

Seals

Seal for the panels 6 mm
Profile A-00-100076
Profile U-00-100043

Seal for the panels 8 mm
Profile A-00-100076
Profile U-00-100043

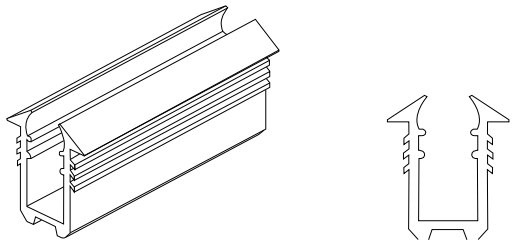


Fig. *Seal for the panels 6 mm, designation by the manufacturer (WIDO)-30-600038*

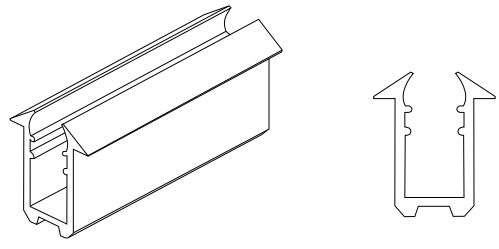


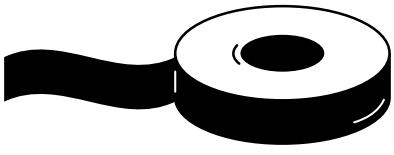
Fig. *Seal for the panels 8 mm, designation by the manufacturer (WOO)-30-600039*

Facades

EPDM

Installation tape made from elastomer on basis of the modified EPDM is used for sealing the contacting surfaces between facade elements. It is very resistant to weather conditions and highly flexible. It keeps stable shape in elevated temperatures.

It is also available as one-sided adhesive tape facilitating the installation.



Item	DIN	Property
Class of building material	4102	B2 normally flammable
Water vapour diffusion resistance factor		-40°C -+130°C
Temperature of use		+5°C-+35°C
Durability		Two years
Storage temperature		+5°C-+25°C
Color		black

Tab. *Technical details of EPDM tape*

Type	Width (mm)	Thickness (mm)	Length [m/roll]
EPDM	70	0.8/1.2	25
EPDM	110	0.8/1.2	25
EPDM-Adhesive	70	0.8/1.2	25
EPDM-Adhesive	110	0.8/1.2	25

Tab. *EPDM-examples of application*

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SCO No. 827, 1st Floor, NAC Manimajra, Chandigarh - 160101, INDIA

: admin@samratply.in : samratply.in ▪ samratcladage.com

: +91 8195960111 ▪ Follow us on