

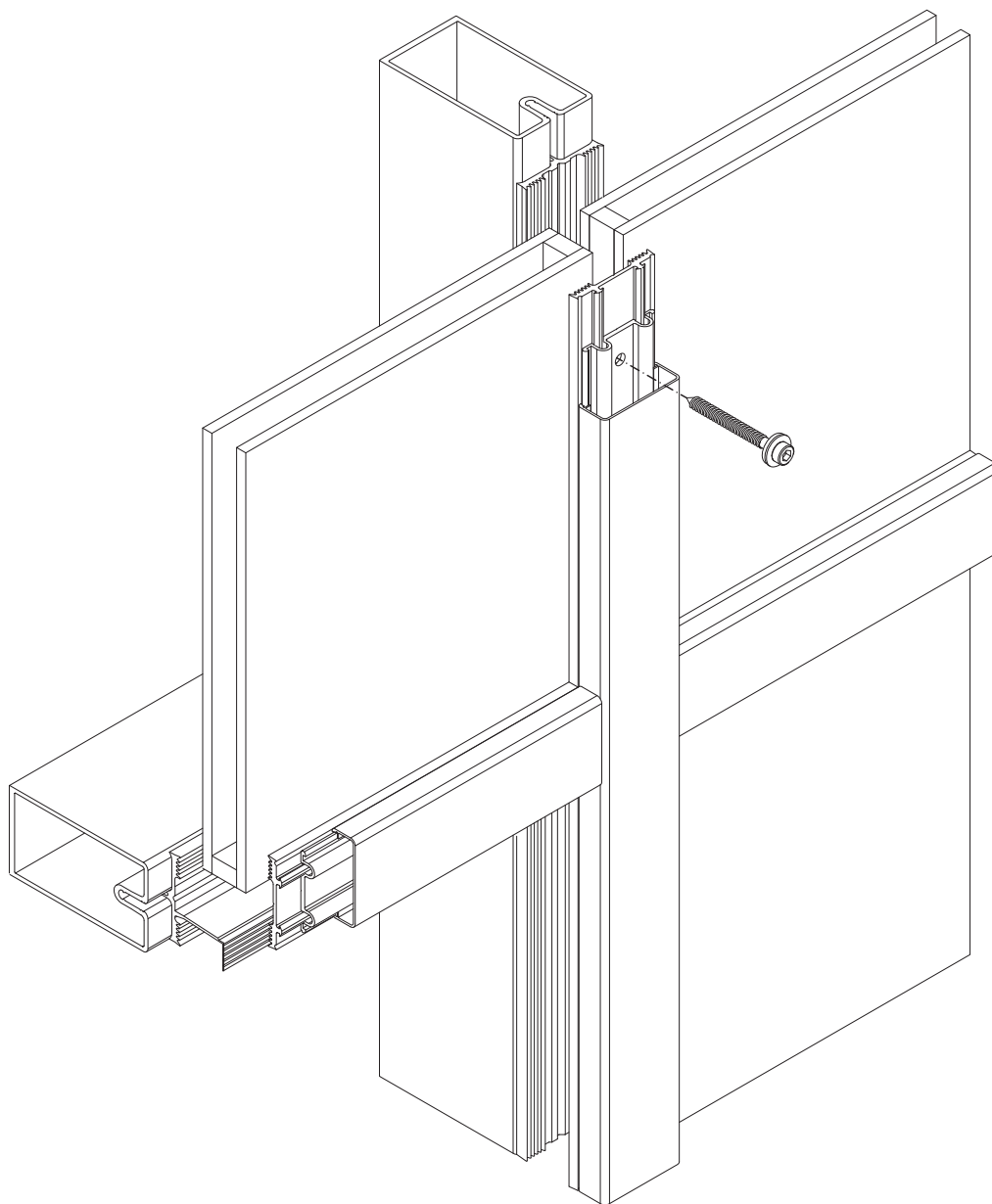
Stabalux AL

1.1	System	3
1.1.1	System properties	3
1.1.2	System components	7
1.1.3	System cross sections and inner seals - facade	8
1.1.4	System cross sections and inner seals - facade	9
1.1.5	System cross sections and inner seals - roof	10
1.1.6	System cross sections and inner seals - roof	11
1.1.7	Cover strips and outer seals	12
1.2	Processing notes	15
1.2.1	Material information	15
1.2.2	Mullion-transom joint	17
1.2.3	Tips for laying seals	22
1.2.4	Seals - Facade	23
1.2.5	Seals - roof	30
1.2.6	Glass inset and glass support	36
1.2.7	Screw fittings	41
1.2.8	Flat cover strip DL 5073	45
1.2.9	Slab insulation	46
1.3	Design	49
1.3.1	Pane support variants	49
1.3.2	System cross sections	52
1.3.3	System details	53
1.3.4	Structural attachments	59
1.3.5	Installing windows and doors	70

System properties

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1

Aluminium facade system with direct screw fittings



System properties

1.1
1

Stabalux AL system description

- The Stabalux System AL provides a complete range of products in 50 mm width to produce vertical and inclined glazing on a supporting steel substructure.
- Stabalux AL is characterised by direct screw fittings and the screw channel in the system profiles.
- The inner seal is pressed directly into the screw channel on the transom and guarantees precise guidance of the sealing section.
- The outer seal and clamping strip are screwed directly on to the steel substructure.
- The homogeneous glazing system for glass facades and glass roofs satisfies all technical and aesthetic standards.
- The integrated screw channel technology significantly reduces the planning, production and assembly costs. No additional work on the profile is needed to attach the glass.

Specifications

		facade 5 mm sealing height	Facades with inclina- tions up to 20°; overlap- ping inner sealing	Roof up to 2° inclina- tion
System width		50 mm	50 mm	50 mm
Air permeability		AE	AE	AE
EN 12152				
Watertightness EN 12154/ENV 13050	Static dynamic	RE 1650 Pa 250 Pa/750 Pa	RE 1650 Pa 250 Pa/750 Pa	RE 1350 Pa*
Resistance to wind load	permitted load increased load	2,0 kN/m ² 3,0 kN/m ²	2,0 kN/m ² 3,0 kN/m ²	2,0 kN/m ² 3,0 kN/m ²
Impact resistance EN 14019		I5/E5	I5/E5	Increased requirements in accordance with Cahier 3228 du CSTB Méthode d'essai de choc sur verrière Weight 50 kg Head 2.4 m
Clamp connection		abZ Z-14.4-444	abZ Z-14.4-444	abZ Z-14.4-444
Mullion-transom T-joint		abZ Z-14.4-831	abZ Z-14.4-831	abZ Z-14.4-831
Design-dependent				
Glass weights		≤ 590 kg	≤ 590 kg	≤ 590 kg
Burglar resistance DIN EN 1627		RC2	RC2	
Heat transition coefficient		$U_f \leq 0,57 \text{ W}/(\text{m}^2\text{K})$	$U_f \leq 0,57 \text{ W}/(\text{m}^2\text{K})$	$U_f \leq 0,57 \text{ W}/(\text{m}^2\text{K})$

*the test was carried out using a water volume of 3,4 ℓ / (m² min) - above the amount required by the standard

System properties

1.1
1

Certifications, authorisations, CE mark

(Section 9)

The tests we have conducted provide the processor and planner with the certainty and the ability to use the test findings and the products fits, for instance to award the CE mark.

Permeability/Safety

- The Stabalux sealing geometry prevents moisture ingress.
- Condensation is guided away in a controlled manner.
- Stabalux offers slotted and overlapping sealing systems for vertical glazing. Overlapping systems have been tested for inclined facades up to 20°.
- Seal flaps increase the safety and impermeability of the installation on vertical glazing.
- A special Stabalux sealing system with offset sealing sections is used for roof glazing. This keeps the supporting structure level during planning and production processes.
- Sealing the transom rebate allows flat roofs to be created with an incline of up to 2°.
- Creation of the required drainage takes place directly at the construction site by pushing together the seals in the facade or slotting together the offset sealing sections in the roof.

Insulation/Thermal Separation (Section 9)

The Stabalux System AL has excellent thermal properties. It allows a heat transfer coefficient of U_f for frames of up to $0.617 \text{ W}/(\text{m}^2\text{K})$.

Burglar resistance (Section 9)

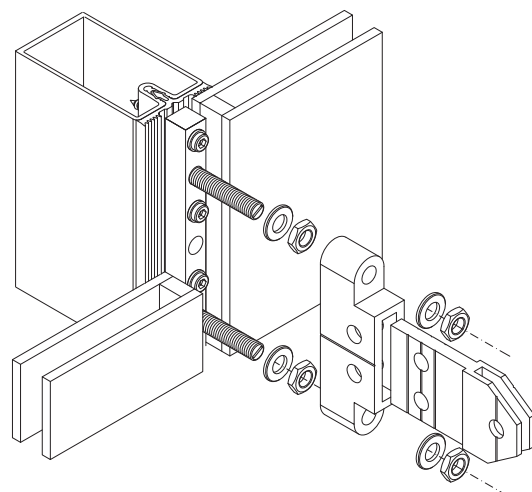
The Stabalux System AL has burglar resistant properties. The test was performed according to DIN EN 1627. Facades in resistance class RC2 can be mounted on the system widths 50 mm. Class RC2 is classified as a moderate risk. It is recommended for use in residential, commercial and public buildings.

Very few constructive measures are needed to achieve the burglary-resistant properties; tested panels must also be installed.

The appearance of burglar-resistant facades using Stabalux System AL is the same as the normal construction. All benefits of using threaded tubes are preserved.

Stabalux SOL sun protection (Section 4)

We offer our proprietary system with exterior lamellae, in addition to the familiar measures for protection against glare and excessive sunlight. Particular attention has been paid here to ensure attachment and assembly can be completed easily with Stabalux systems whilst meeting architectural and climatic requirements. Glass panes and clamping strips are not subject to any load from application of the sun protection. Assembly and sealing are simple and efficient.

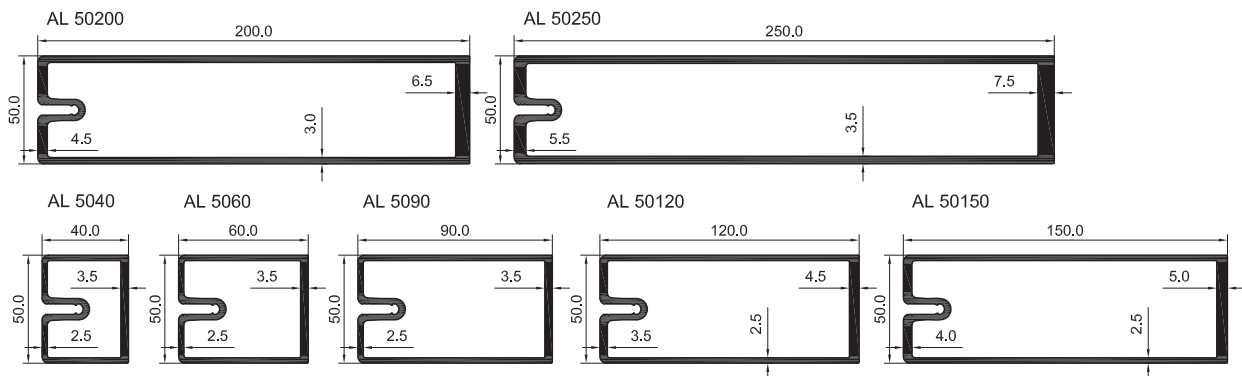


System components

1.1
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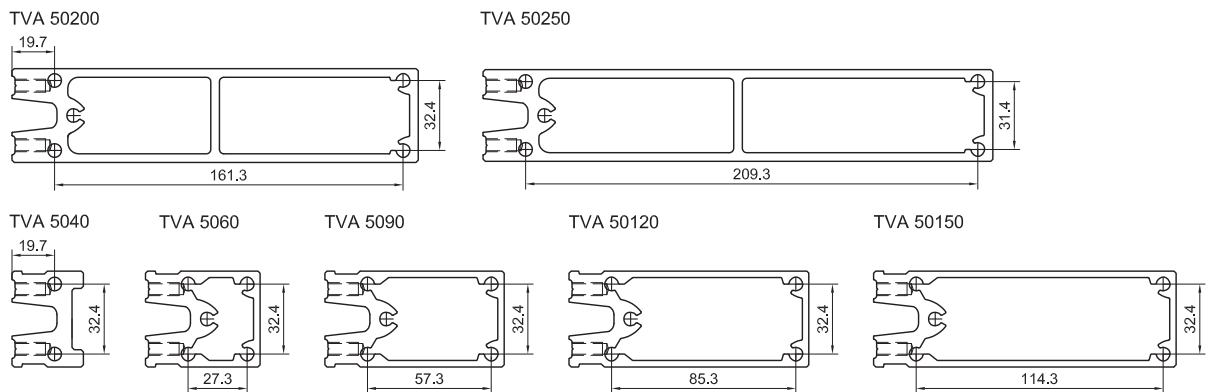
Mullion and transom profiles

Systemprofile Pfosten und Riegel



Transom retainers

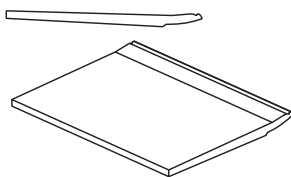
T-Verbinder



Glass support

Glasaufleger Typ1

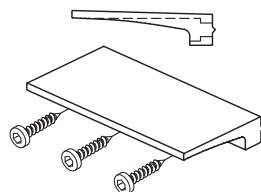
GH 5101 = 100 mm
GH 5102 = 200 mm



Inserted glass supports

Glasaufleger Typ2

GH 5201 = 100 mm
GH 5202 = 200 mm



Glass support for screwing

Fastenings

Z 0118 6,3x40 mm



Fastenings
GH 5201/GH 5202
On transom

Z 0118 6,3x40 mm



Fastenings
TVA on mullion

Z 0128 18 mm



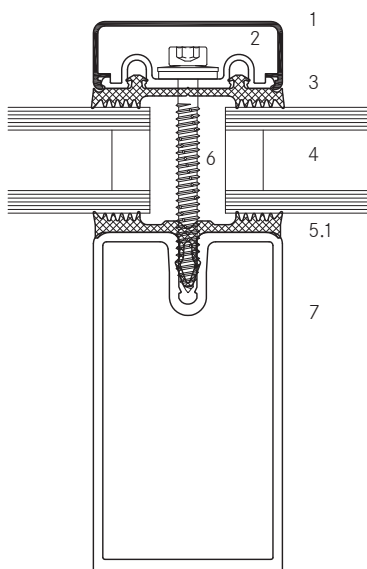
Fastenings
TVA on transom

System cross sections and inner seals - facade

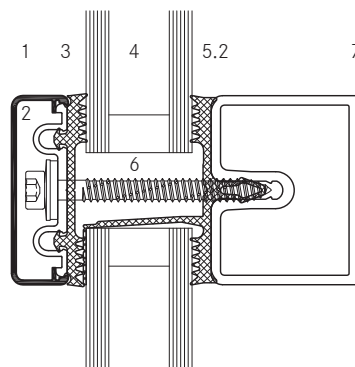
1.1
3

Inner seal 5 mm high / 1 drainage level

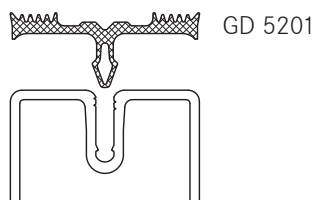
Vertical glazing mullion



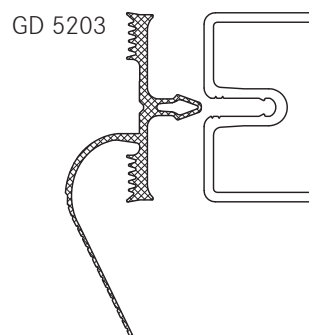
Vertical glazing transom



Inner seal mullion



Inner seal transom



- 1 Upper strip
- 2 Lower strip
- 3 Outer seal
- 4 Glass / panel

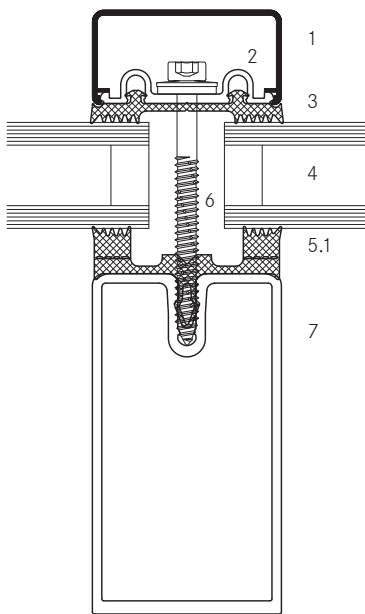
- 5.1 Inner seal mullion
- 5.2 Inner seal transom
- 6 System screw fittings
- 7 aluminium profile

System cross sections and inner seals - facade

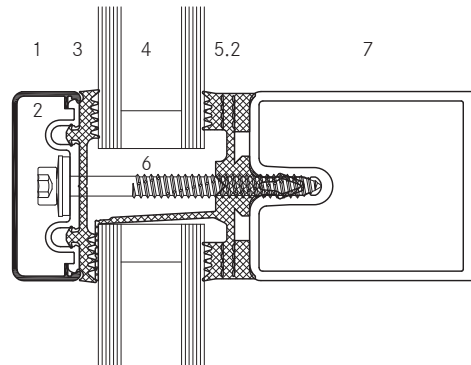
1.1
3

Inner seal 12 mm tall / 3 overlapping drainage levels

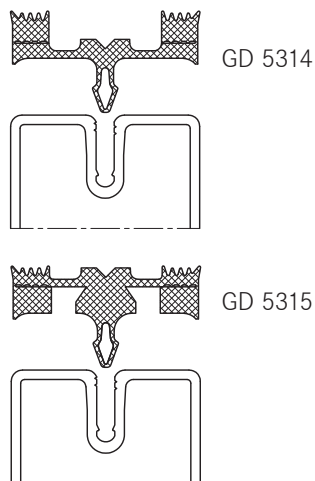
Vertical glazing main mullion - 3rd level



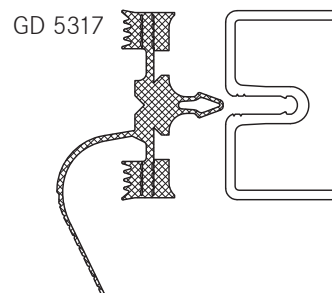
Vertical glazing transom - 2nd level



Inner seal mullion and secondary mullion



Inner seal transom



- 1 Upper strip
- 2 Lower strip
- 3 Outer seal
- 4 Glass / panel

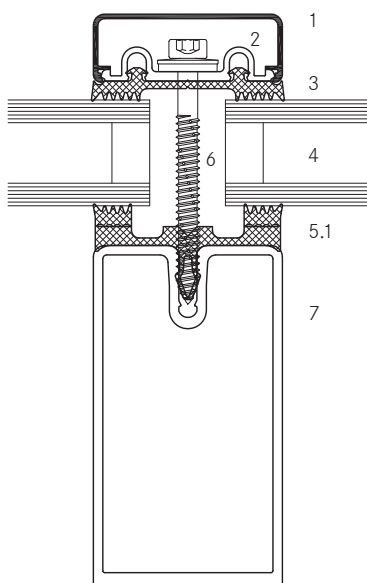
- 5.1 Inner seal mullion
- 5.2 Inner seal transom
- 5.3 inner seal secondary mullion
- 6 System screw fittings
- 7 aluminium profile

System cross sections and inner seals - roof

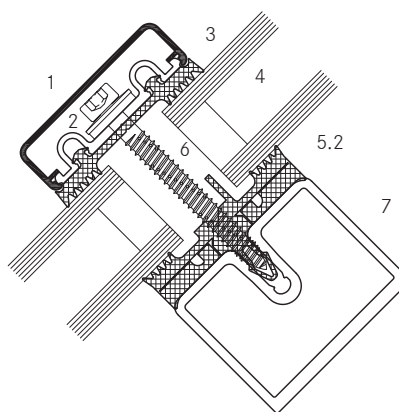
1.1
4

Inner seal 10 mm tall / 2 overlapping drainage levels

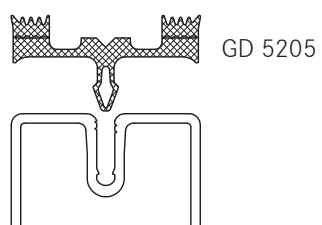
Inclined glazing mullion



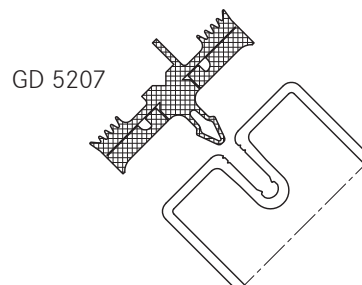
Angled glazing transom



Inner seal inclined glazing rafter



Inner seal Angled glazing transom



- 1 Upper strip
- 2 Lower strip
- 3 Outer seal
- 4 Glass / panel

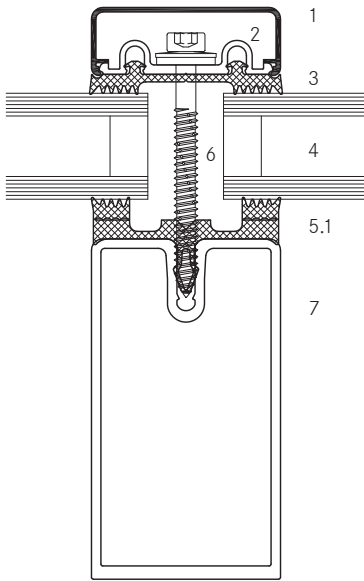
- 5.1 Inner seal rafter
- 5.2 Inner seal transom
- 6 System screw fittings
- 7 aluminium profile

System cross sections and inner seals - roof

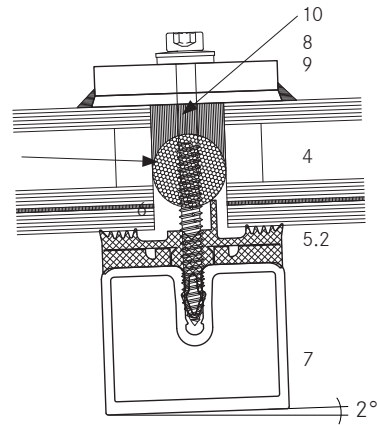
1.1
4

Inner seal 10 mm tall / 2 overlapping drainage levels

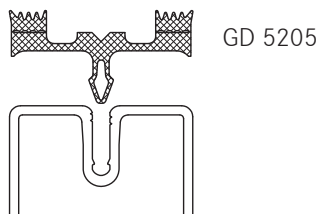
Inclined glazing mullion



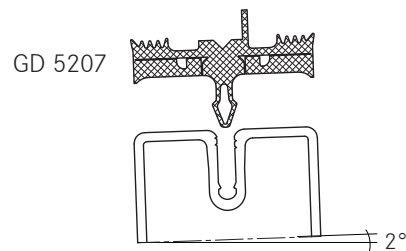
Angled glazing transom up to 2° inclination



Inner seal inclined glazing rafter



Inner seal Angled glazing transom



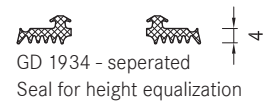
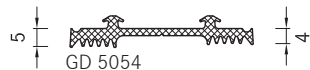
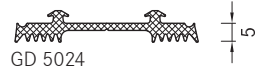
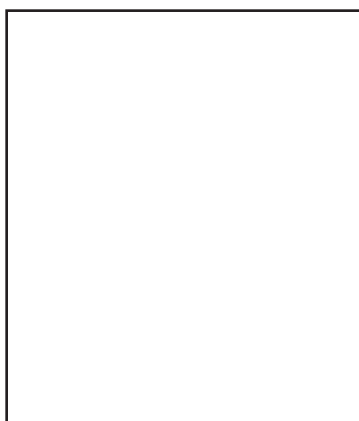
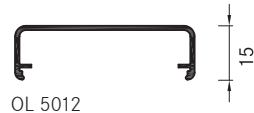
- 1 Upper strip
- 2 Lower strip
- 3 Outer seal
- 4 Glass / panel
- 5.1 Inner seal rafter
- 5.2 Inner seal transom

- 6 System screw fittings
- 7 aluminium profile
- 8 Hold-down clamp
- 9 Washer
- 10 All weather silicone seal
- 11 rope seal

Cover strips and outer seals

1.1
5

Aluminium - concealed screw fittings



- 1) Use screws without sealing washer
OL 5022, possibly with PA washer Z 0033
 - 2) Use of the flat cover strip only in vertical facades
- Other bars available on request

Cover strips and outer seals

1.1
5

Aluminium - visible screw fittings



DL 5061



DL 5059



DL 5071

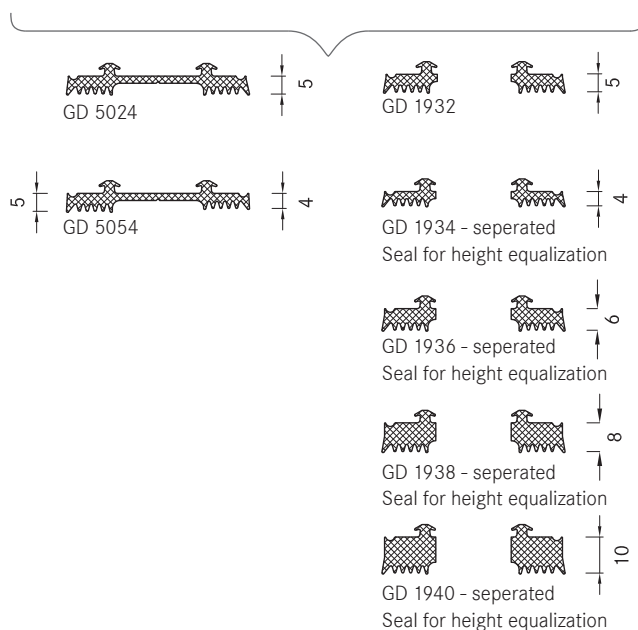


DL 5067

Flat cover strip DL 5073



DL 5073 ²⁾



GD 6174



GD 6175

Stabalux AL

Processing notes

Material information

1.2
1

Aluminiums profiles

The aluminium profiles we supply are generally made from EN AW 6060 according to DIN EN 573-3, T66 according to DIN EN 755-2.

Coating the aluminium

Alongside anodic oxidation, with the corresponding pre-treatment, conventional coating methods such as air-drying multi-layer coating systems (wet coating) or thermosetting coatings (stove enamelling / powder-coating) can be used. By using different mass distribution, longitudinal shadow formation is possible with cover strips DL 5073 and DL 6073. Resulting actions are to be taken with the agreement of the coater.

Longitudinal expansions in aluminium profiles exposed to temperature stress

When cutting the lower, upper and cover strips from aluminium, allowance should be made for temperature-induced longitudinal expansion. The theoretical rod lengths ℓ should be shortened by: $\Delta\ell = \alpha T \cdot \Delta T \cdot \ell$.

Example:

$$\Delta\ell = 24 \cdot 10^{-6} \cdot 40 \cdot 1000 = 0,96 \approx 1,0 \text{ mm}$$

$\alpha^T \approx 24 \cdot 10^{-6}$ 1/K	Coefficient of thermal expansion for aluminium
$\Delta T = 40 \text{ K}$	Assumed temperature difference of aluminium dependent on the colour and amount of solar radiation
$\ell = 1000 \text{ mm}$	Rod length
$\Delta\ell \approx 1 \text{ mm}$	Longitudinal expansion

further examples:

$$\Delta\ell = 24 \cdot 10^{-6} \cdot 60 \cdot 1000 = 1,44 \approx 1,5 \text{ mm}$$

$$\Delta\ell = 24 \cdot 10^{-6} \cdot 100 \cdot 1000 = 2,40 \approx 2,5 \text{ mm}$$

A rod with a system length of $\ell = 1000 \text{ mm}$ should be shortened by 1 mm for a temperature difference of $\Delta T = 40 \text{ }^\circ\text{C}$. A rod of length $\ell = 3000 \text{ mm}$ should be shortened by 3 mm.

For $\Delta T = 100 \text{ }^\circ\text{C}$ (often occurs in roof areas and

south-facing facades), a rod of length $\ell = 1000$ should be shortened by 2.5 mm.

Rod length ℓ (mm)	Temperature difference ΔT	Longitudinal expansion $\Delta\ell$ (mm)
1000	40°C	1
3000	40°C	3
1000	60°C	1.5
3000	60°C	4.5
1000	100°C	2.5
3000	100°C	7.5

Note:

We recommend shortening the lower strip by $\approx 2.5 \text{ mm}$ per $\ell = 1000 \text{ mm}$ of length. When doing so, ensure to use the correct length of the outer seal.

When using cover strips in roof area, it is recommended that holes for screwing on the cover strip are created with a diameter of $d = 9 \text{ mm}$.

Seal profiles

Stabalux seals are organic natural rubber materials based on EPDM and conform to the DIN 7863 standard, 'non-cellular elastomer sealing profiles for window and facade construction. Compatibility with contact media should be tested by the processor, particularly when using plastic glazing and making structural joints with non-Stabalux products.

Fire seals are special products; their specific data are filed with DIBt (German Centre of Competence for Construction).

Sealing the rebate with all weather silicone seal is possible.

Material information

1.2
1

All weather silicone seal

Only certified materials may be used for sealing the rebate with all-weather silicone. Pay attention to all information provided by the manufacturer and the sealing work must be carried out by trained persons. It is recommended that a licensed and certified specialist contractor is hired for this purpose. We further refer you to the DIN 52460 standard and IVD data sheets (Trade Association for Sealants). The compatibility of the materials is particularly important when using all-weather silicone. In this case, the compatibility of the sealant with the edge bonding of the glass and the backfill of the joints. If self-cleaning glass is used, the compatibility must be established in advance. Glass sealants and edge bonding must be UV-resistant. The incline of roofs should also be taken into account. Information about UV-resistance can be requested from the manufacturer. Silicone edge bonding generally provides better UV-resistance than polysulfide-based materials. The advantage of silicone lies in its high vapour sealing properties which is particularly useful when using more volatile argon fillings. Highly elastic, weatherproof and UV-resistant seals meet the widest range of demands for reliable joints.

Other items

All system items are produced according to applicable standards.

Maintenance and care

The information sheets WP.01 – WP.05 from the Association of Window and Facade Producers (VFF) must be observed. The address can be found in the address section. Further information can be found in section 9.0 – Cleaning/ Maintenance.

Stabalux AL

Processing notes

Mullion-transom joint

$$\frac{1.2}{2}$$

The mullion-transom connection (T-connection) is usually performed as a bolted connection. The requirements for the load-bearing capacity of the construction must be adhered to urgently.

The program initially includes 5 types.

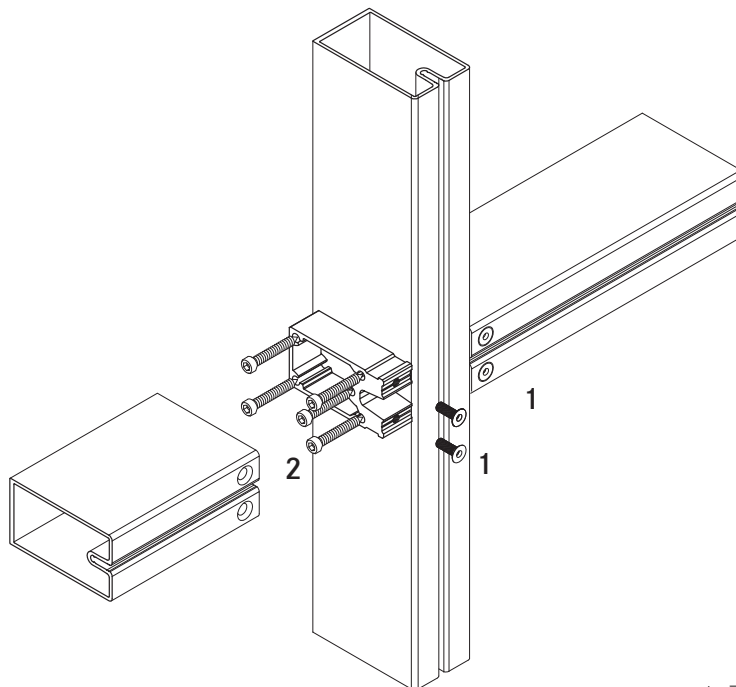
- The retainers (TVA) for attaching the bolts to the mullion are made of aluminum.
- There is a corresponding retainer for each bolt depth.
- The retainers offer high stability through perfect form and force connection.
- The connection is tested and has the general construction supervisory approval: Z-14.4-831

Permissible combinations for steel transom retainers / transom profiles as stated in authorisation abZ: Z-14.4-831

System 50

Transom retainers	Transom profile
TVA 5040	AL 5040
TVA 5060	AL 5060
TVA 5090	AL 5060
TVA 50120	AL 50120
TVA 50150	AL 50150

Other tread depths are possible on request.



1 Z 0122
Countersunk screw
(Head diameter 12.0 mm)

2 Z 0118
Screw for TVA attachment

Stabalux AL Processing notes

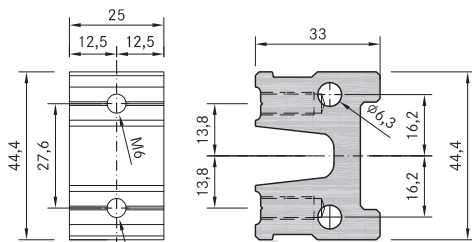
Mullion-transom joint

1.2
2

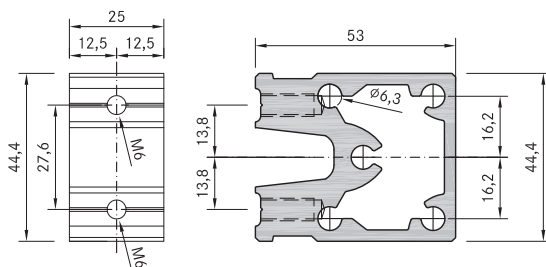
Overview of transom retainer System 50

Transom retainer fastener

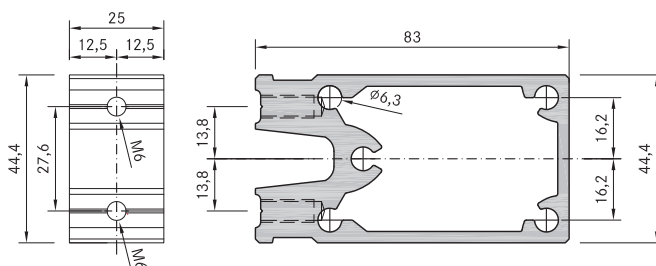
TVA 5040



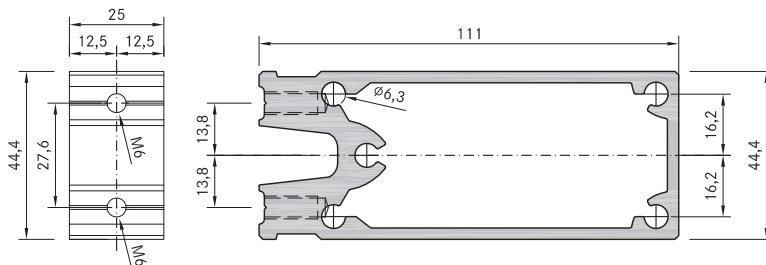
TVA 5060



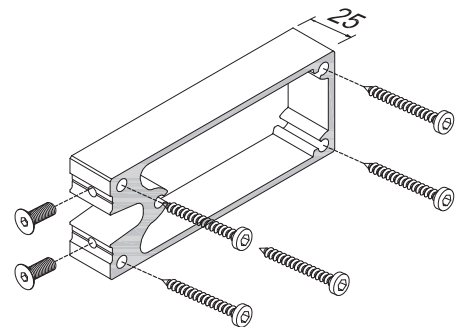
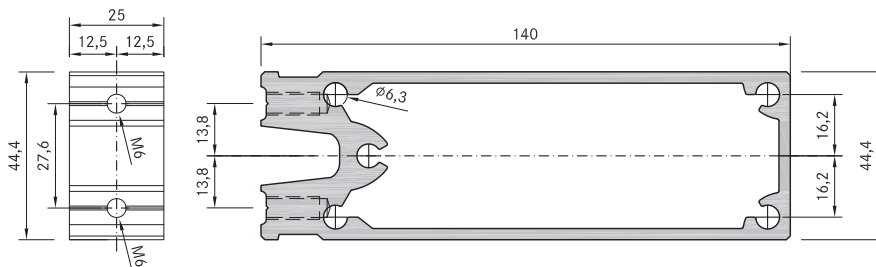
TVA 5090



TVA 50120



TVA 50150



Z 0118
6,3x40mm
Attachment TVA on mullion



Z 0128
M6 18mm
Attachment TVA on transom

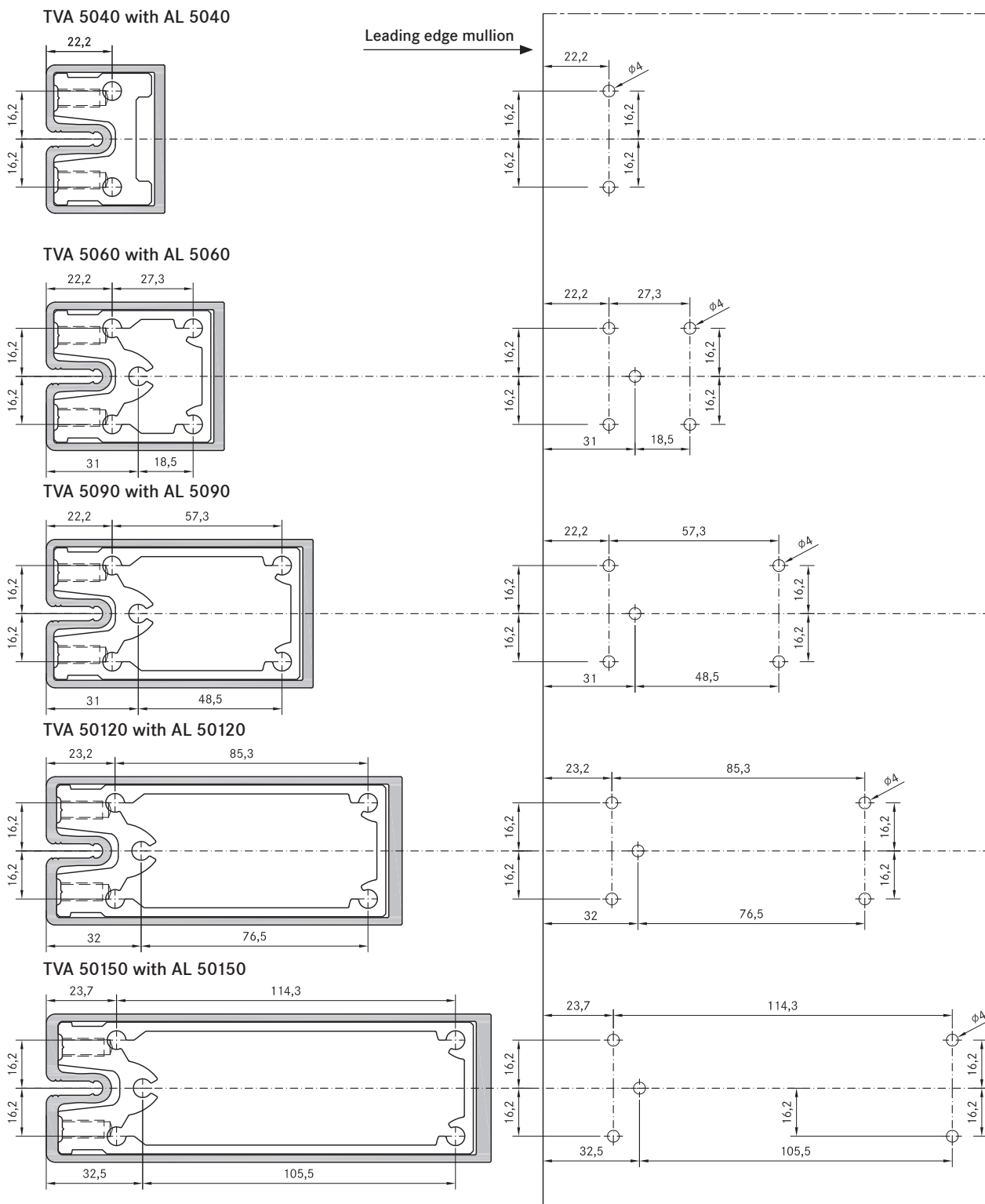
Stabalux AL Processing notes

Mullion-transom joint

1.2
2

drilling template mullion, System 50

Drill holes in the mullion $\varnothing 4,0$ mm

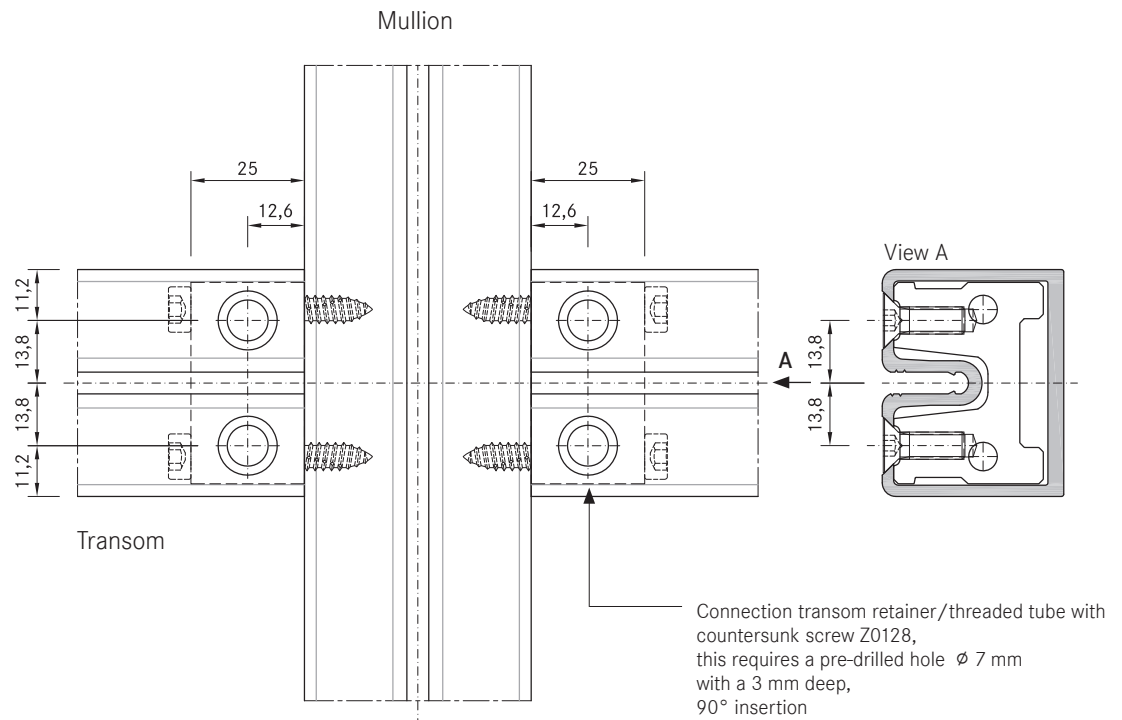


Stabalux AL Processing notes

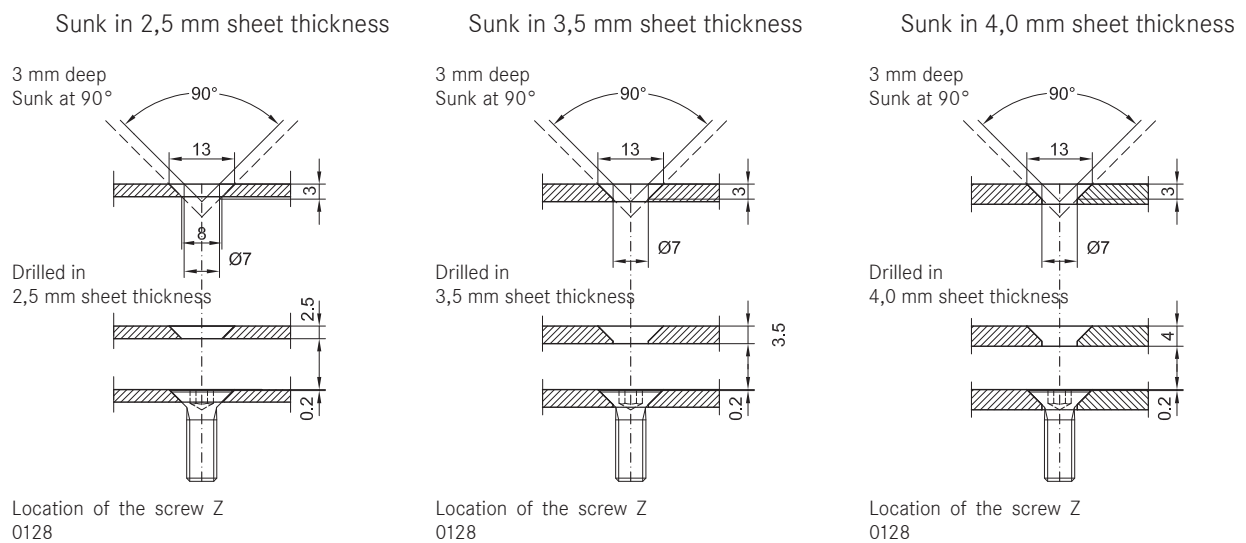
Mullion-transom joint

1.2
2

Drilling pattern, System 50



Countersink in the front wall of the transom



Stabalux AL

Processing notes

Tips for laying seals

1.2
3

Sealing system principle, general information about glazing seals

The Stabalux sealing system consists of the outer and inner sealing sections.

- The outer sealing section has the primary function of preventing the ingress of moisture. At the same time, the sealing section provides a flexible support for the glass panes.
- The inner sealing section acts to protect the inner space, water guiding section and elastic glass supports from moisture and vapour.

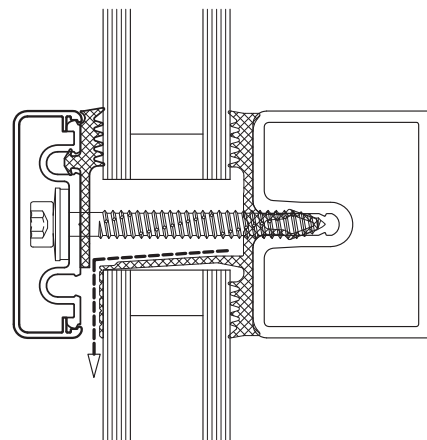
Both sealing sections must perform this function over a long period of time.

Seals should be adapted at the building site, but can be pre-cut to length in the factory and inserted into the support profiles with proper consideration of the assembly instructions for the seals, i.e. clamping strips. Always ensure that seals are not bearing any loads once installed and are firmly pressed onto joints. All joints should be sealed as per the following descriptions.

Pressure equalisation and controlled drainage

The pressure equalisation openings also serve to drain away moisture. The inner sealing section is formed in such a way that when the joints are properly sealed, any moisture that occurs and does not dissipate via the re-bate ventilation will drain away downwards. In facades, water is guided via the seal flap into the mullions. There is a choice between using tested sealing systems with between 1 and 3 levels. With inclined glazing with 2 drainage levels, the higher sealing section of the transom overlaps the lower transom seal. These principles must be consistently implemented down to the lowest point of the glazing so that the water-guiding level of the structure carries moisture to the outside. Film is placed beneath the seals accordingly. It must be ensured that the film will last for a long time.

Pressure equalisation is generally achieved via openings at the base, head and ridge points. Should additional ventilation be required in the area of the transom (e.g. Where panes are only supported on 2 sides or where transom length is $l \geq 2,00$ m), then this ventilation should be created by placing holes into the cover strip and/or using notches on the lower sealing lips of the outer seal.



Stabalux AL

Processing notes

Tips for laying seals

1.2
3

Inner sealing section

The structure of the inner sealing section is different for vertical facades and facades with an inward incline up to 20° as well as roof glazing.

Inner sealing for vertical glazing and glazing with an inward incline up to 20°:

- 5 mm butt jointed seals with a drainage section for vertical facades ($\alpha=0^\circ$)
- 12 mm high seals with two drainage sections to safely guide away any moisture or condensation to the outside. These seals are created by overlapping the seal joints in which the higher sealing section of the transom goes underneath the lower level of the mullion. In addition, a third drainage section for an intermediate mullion can be executed. These seals can be used for vertical facades and facades with an incline up to 20°.
- The shaped seal flap protects the vulnerable area of the rebate and ensures that moisture is drained away via the vertical or up to 20° inwards inclined mullions.

Inner seals for glazed roofs:

- A special seal geometry for glazed roofs also allows for two-level stepped drainage. The 10 mm high seals are laid with overlapping joints.

Some basic information for sealing and sticking down Stabalux seals

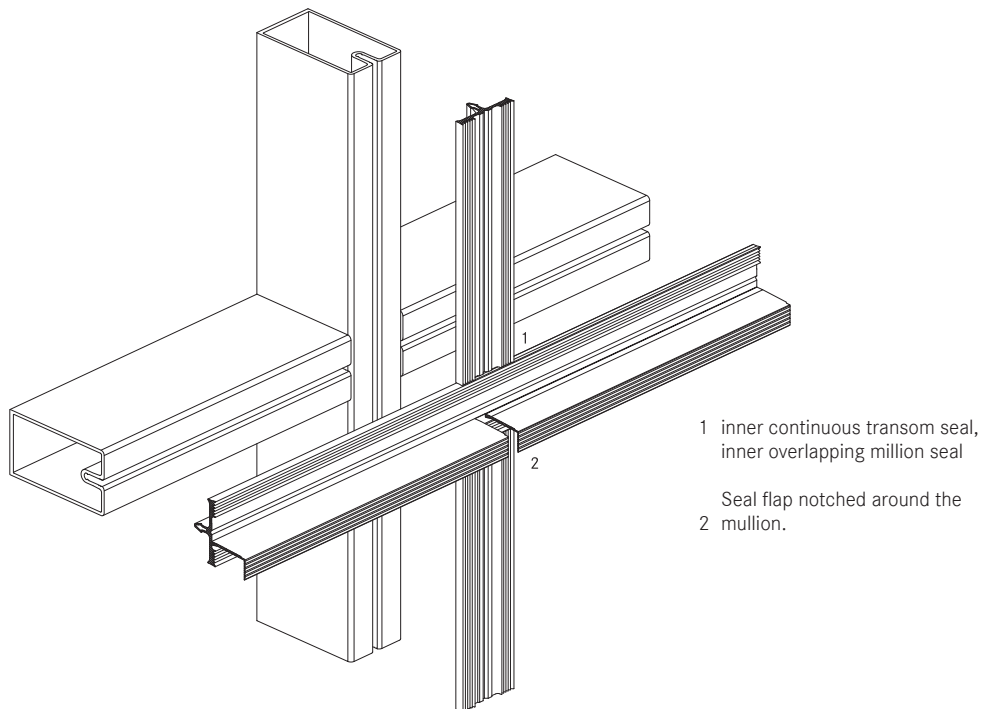
- All joints and seal penetrations must be waterproofed with the exception of the Stabalux screw fittings.
- Gasket joints are should always be sealed using Stabalux sealant, regardless of whether they are butt joints or overlapping. (We recommend Stabalux connecting paste Z 0094. Please adhere to the manufacturer's instructions.)
- For difficult to seal places we recommend first using a fixing adhesive such as the Stabalux quick fixing glue Z 0055.
- Before gluing, ensure all surfaces are free from moisture, dirt and grease.
- Weather conditions such as snow and rain prevent an effective seal.
- Temperatures below +5 °C are not suitable for fixing seals.
- The hardened connecting paste should not prevent level support of glass.

Seals - Facade

1.2
4

Assembly of the inner seal on vertical facade glazing - 1 level join

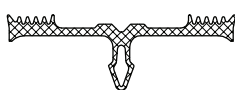
- The horizontal transom seals are laid continuously across the mullion-transom joints. Ensure here that the clamping feet of the horizontal seal are released around the mullion.
- Mullion seals are butt jointed to the transom seals.
- The seal flaps should be released to a width of 10-15 mm at the mullion joint.
- The protruding length of the seal flap should be removed at the perforation once glazing is completed.
- In order to safely drain away moisture from transoms even at the edges of the facade, the inner transom seals must be laid into the released mullion seals. To release and remove the clamping feet we recommend using our release pliers Z 0077 for System 50.
- Ensure all joints are cleanly and solidly sealed. Excess sealant should be removed.



1 inner continuous transom seal, inner overlapping mullion seal

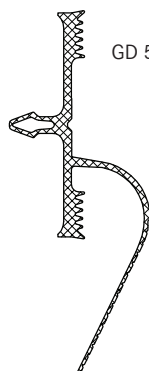
Seal flap notched around the 2 mullion.

Inner seal mullions



GD 5201

Inner seal transoms



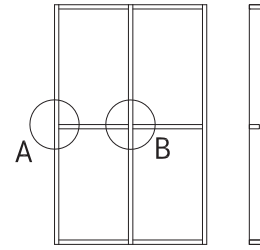
GD 5203

Stabalux AL Processing notes

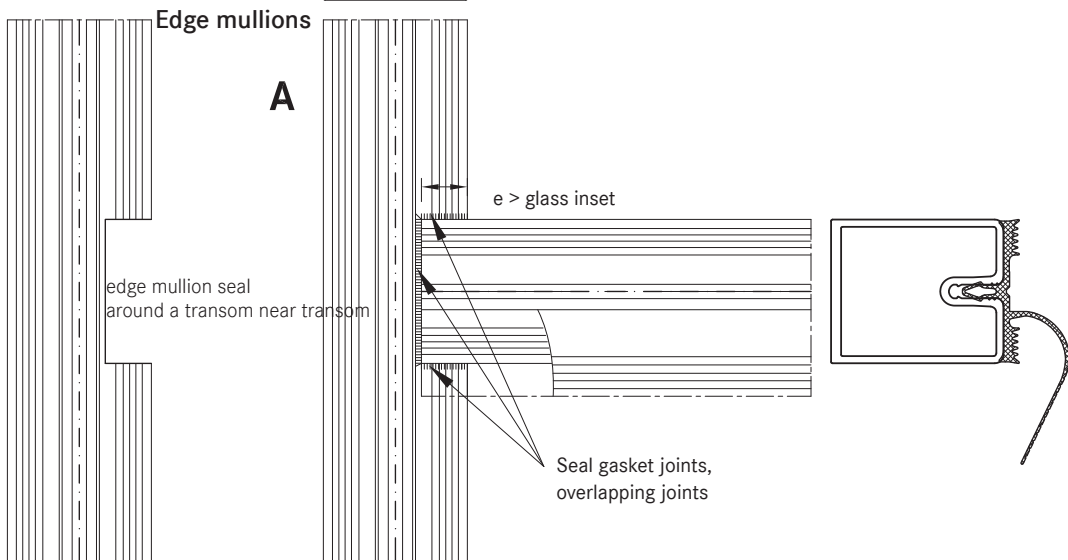
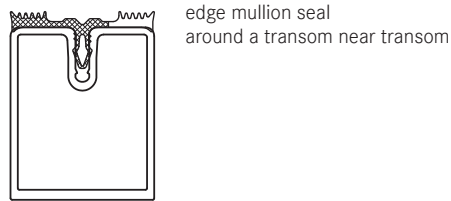
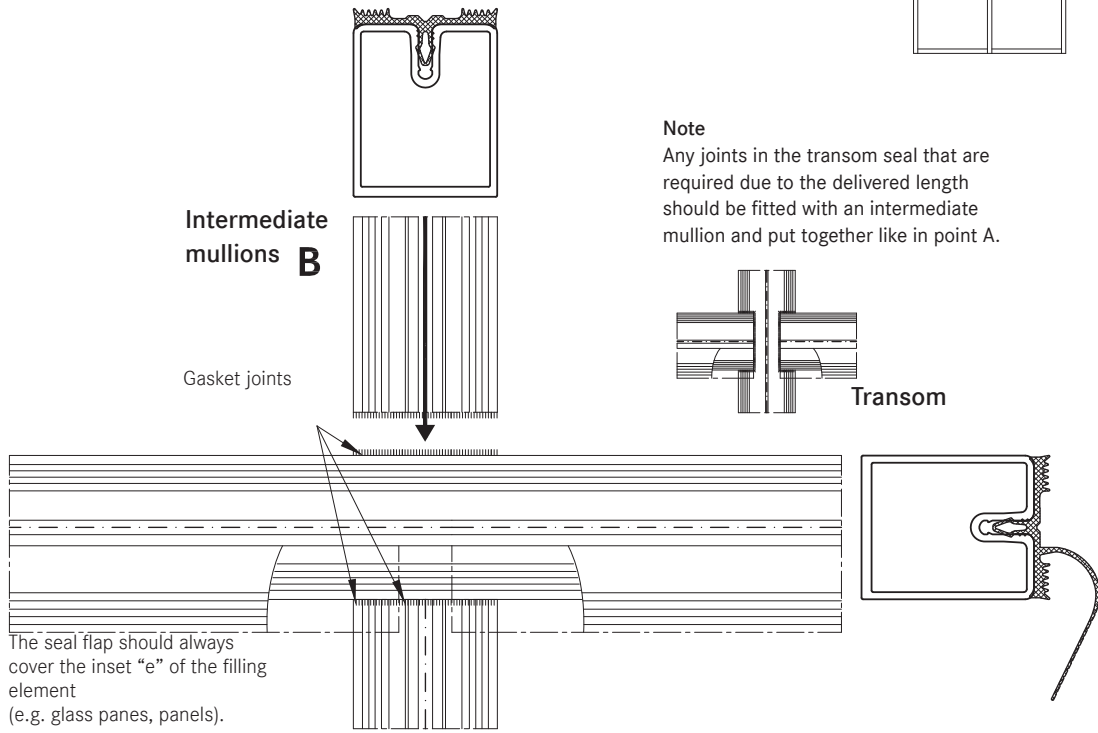
Seals - Facade

1.2
4

Assemble the inner seal on vertical facade
glazing - 1 level join



Note
Any joints in the transom seal that are required due to the delivered length should be fitted with an intermediate mullion and put together like in point A.



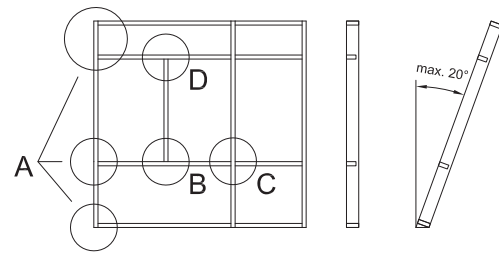
Stabalux AL Processing notes

Seals - Facade

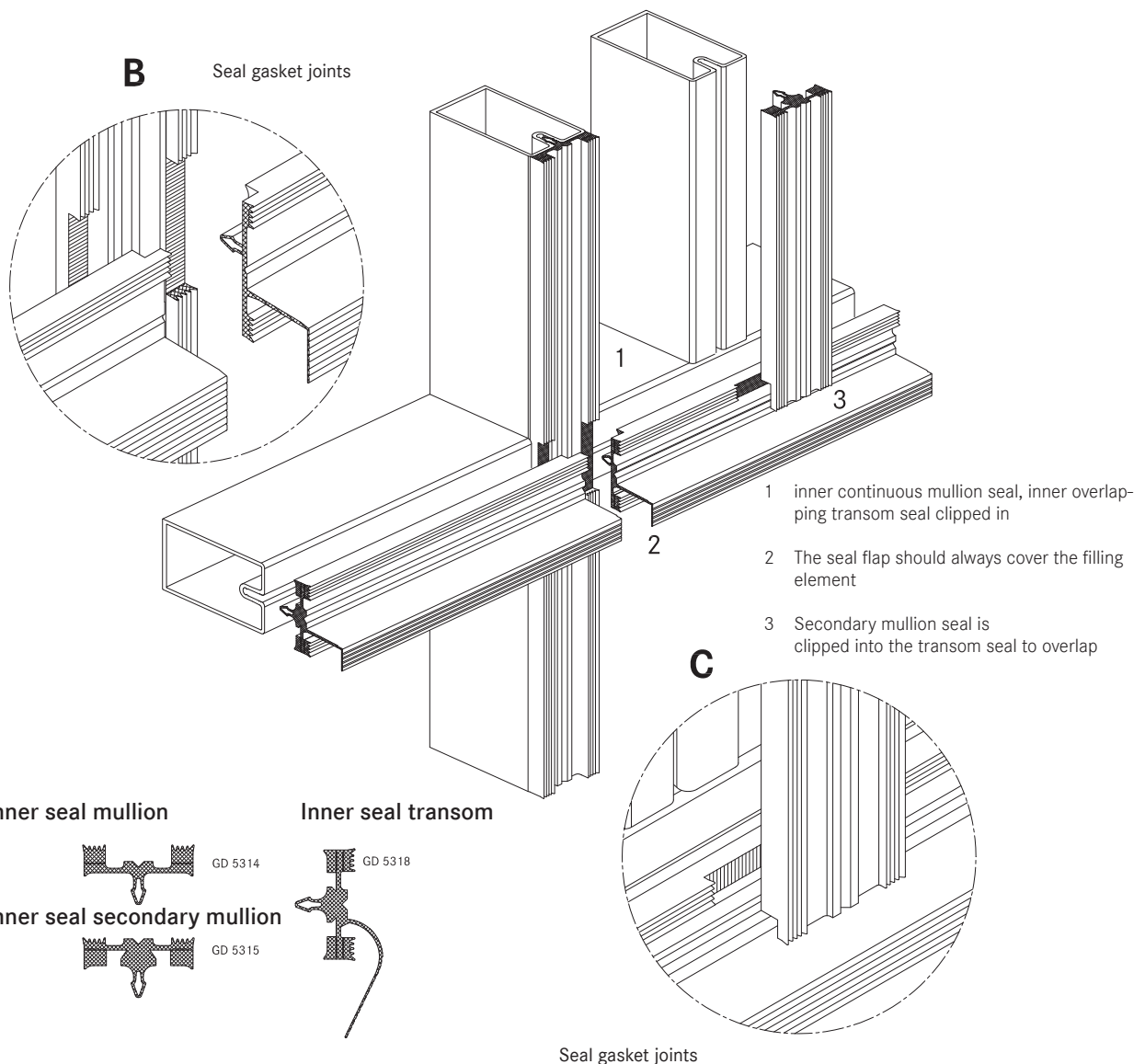
1.2
4

Assembly of the inner seal for vertical facade glazing and facade glazing with an incline of up to 20° - 3 overlapping sections

- Optionally, Stabalux seals with three offset water channels can be used in the facade area which safely drain any moisture or condensation to the outside.
- The 12 mm high seals can be divided across their height to allow a simple overlap at critical secondary mullion/transom joints, i.e. transom/primary mullion joints.
- Moisture and condensation is guided away via the seal flap of the transom seal (2nd drainage section) to the main mullion.



- The vertical seals for main mullions (3rd drainage section) are laid continuously.
- The transom seals overlap the main mullion seals.
- Along a transom, seals must be laid continuously.



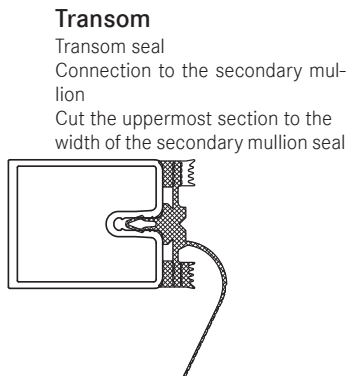
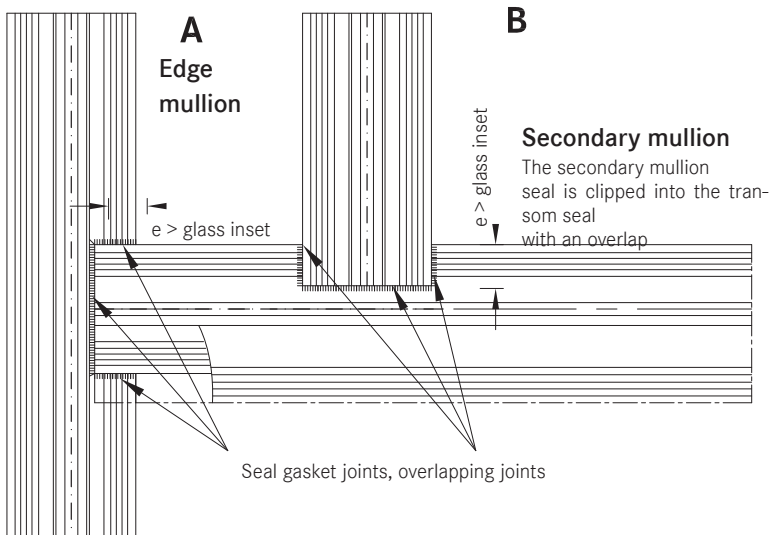
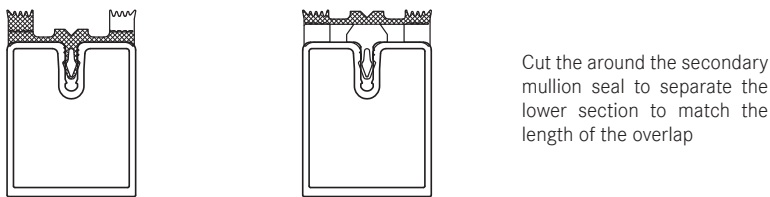
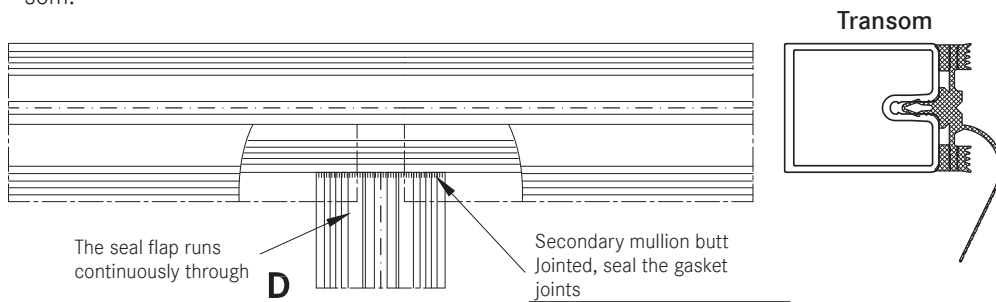
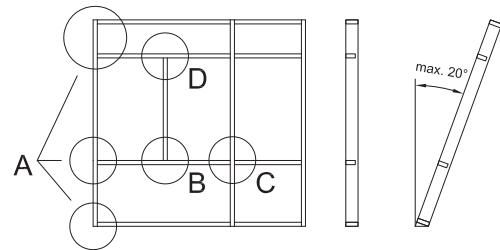
Stabalux AL Processing notes

Seals - Facade

1.2
4

Assembly of the inner seal for vertical facade glazing and facade glazing with an incline of up to 20° - 3 overlapping sections

- The seal flap must always cover the inset depth of the glass panes and filling element.
- The protruding length of the seal flap should be removed at the perforation once glazing is completed.
- Vertical seals on the secondary mullion are butt jointed beneath the upper transom. The seal flap of the upper transom runs continuously in the upper part of the joint.
- Drainage of the secondary mullion (1st drainage section) is achieved by overlapping the seals of the secondary mullion with the seal of the upper transom.



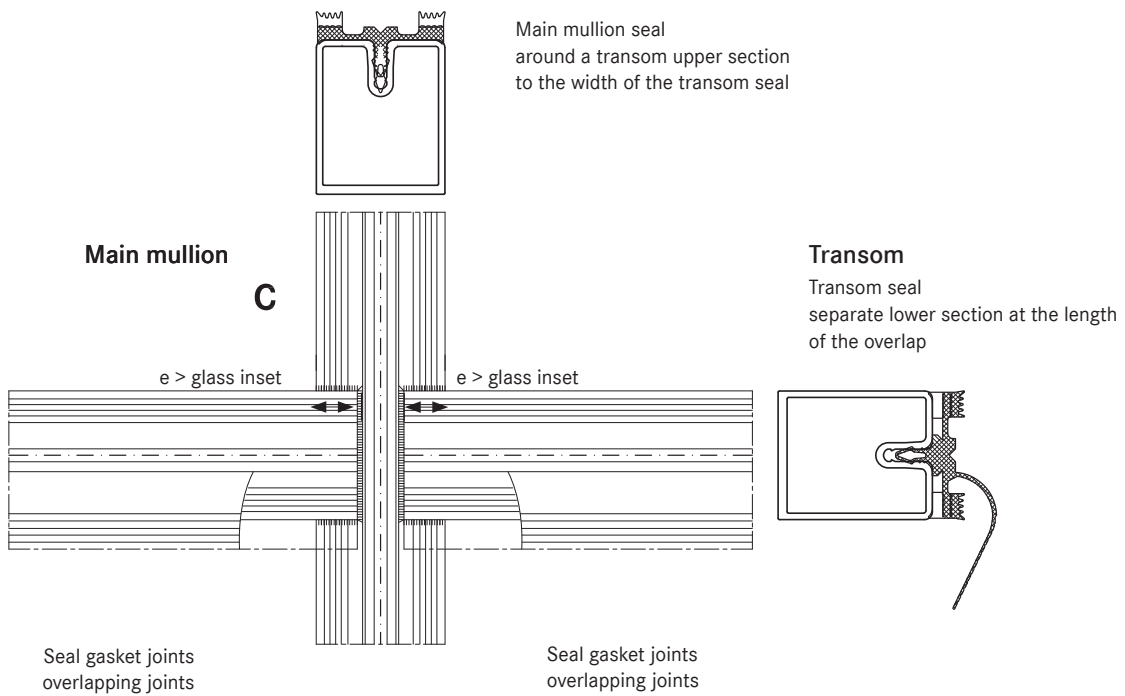
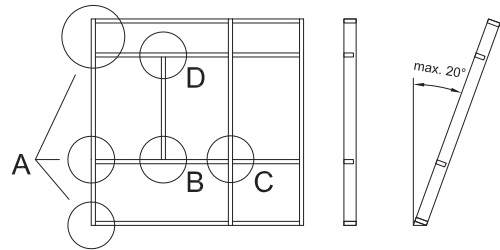
Stabalux AL Processing notes

Seals - Facade

1.2
4

Assembly of the inner seal for vertical facade glazing and facade glazing with an incline of up to 20° - 3 overlapping sections

- All joints must be sealed. Before laying seals, we recommend completely coating the support surfaces and edges with Stabalux connection paste.
- Ensure all joints are cleanly and solidly sealed. Excess sealant must be removed. Absolutely no unevenness in the glass support surface must occur from applying sealant too thickly.



The seal flap should always cover the inset "e" of the filling element (e.g. glass panes, panels)

Stabalux AL

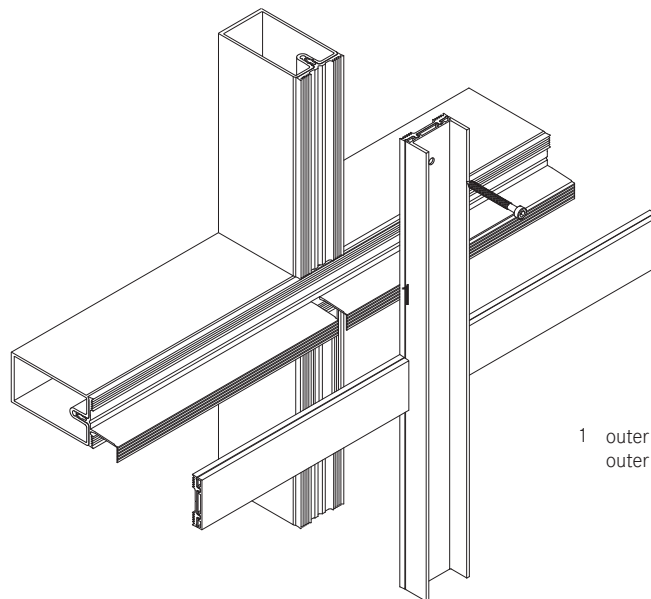
Processing notes

Seals - Facade

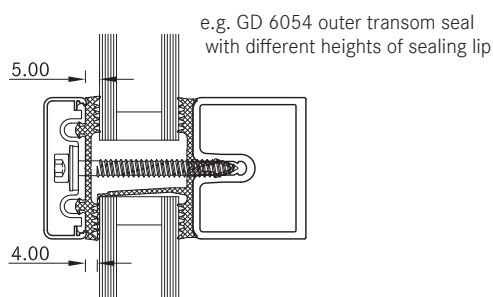
1.2
4

Assembly of the outer seal for vertical facade glazing

- As well as gently clamping the glass in place, the outer sealing system has the primary task of protecting the rebate against moisture ingress.
- The outer sealing sections must be completely sealed except for the necessary openings for pressure equalisation and condensation dissipation.
- The outer mullion seals are laid continuously and the transom seals are joined.
- Sealant joints are to be laid flat with a slight excess in dimensions. It is important to consider the respective system situation in this context.
- The seal flap for the inner transom joint in combination with the outer seal creates additional safety.
- The seal flap should be separate at its perforations to match the thickness of the glass in order that this is clamped down and concealed under the outer seal.
- Different heights of sealing lips on the outer seal bridge the height difference created by the seal flap in the outer sealing section.
- Differently high, split seals allow a balance between filling elements of different total thickness of up to 6 mm.
- When mounting the clamping strip, be aware of aluminium profile expansion (see section - Material information)



1 outer continuous mullion seal,
outer jointed transom seal



Expansion of aluminium profiles

Rod length l (mm)	Temperature difference ΔT	Longitudinal expansion Δl (mm)
1000	40°C	1.0
3000	40°C	3.0
1000	60°C	1.5
3000	60°C	4.5
1000	100°C	2.5
3000	100°C	7.5

Stabalux AL

Processing notes

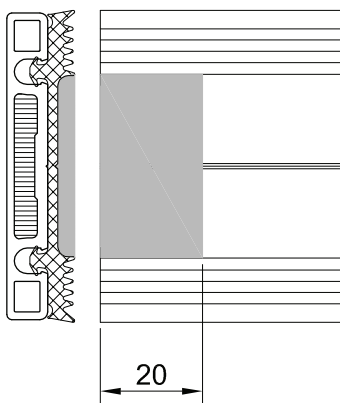
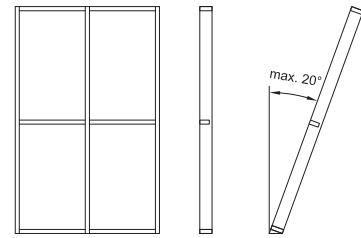
Seals - Facade

1.2
4

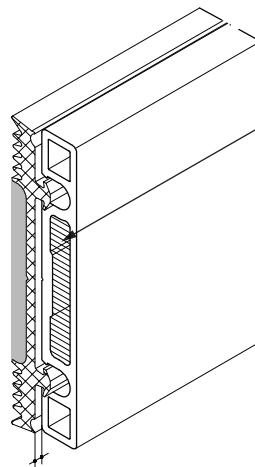
Assembly of the outer seal for facade glazing

with an inwards incline of 20°

- If the facade is inclined inwards from the vertical (max. permitted incline 20°), the open ends of the outer transom seals must be closed up using butyl.
- When constructing inwardly inclined facades (up to max. 20°), if flat cover strips are used in the transoms (e.g. DL 5059, DL 5061, DL 5067, DL 5071) and flat strips, then the central hollows at each end must be sealed with silicone.



The open end of the transom seal in inwardly inclined facades (up to max. 20°) must be sealed using butyl.



When using flat cover strips on inwardly inclined facades (up to max. 20°), the central hollow at each end should be sealed with silicone.

Trim the seals to be slightly larger than re-

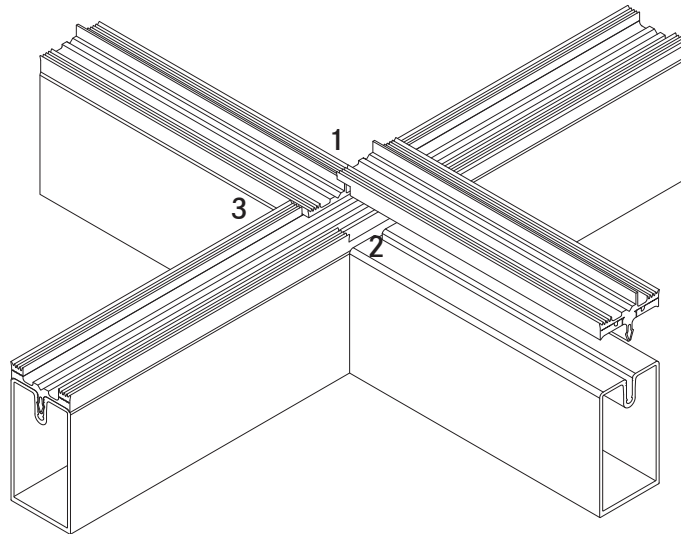
Seals - roof

1.2
5

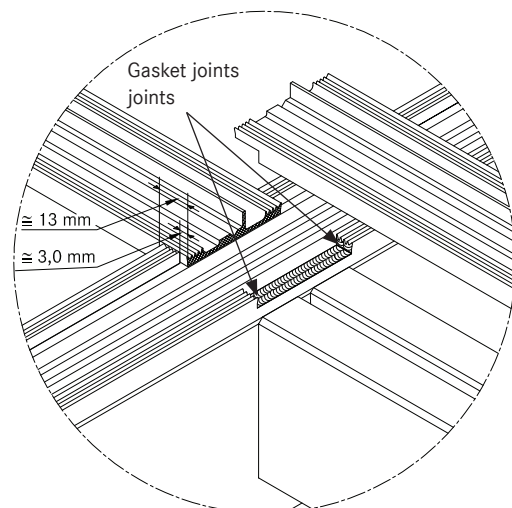
Assembly of the inner seal

for roof glazing - 2 overlapping sections

- Optionally, Stabalux seals with offset water channels can be used in the facade area which safely drain any moisture or condensation to the outside.
- The 10 mm high seals can be divided across their height to allow a simple overlap at critical transom joints.
- The transom seals are geometrically shaped so as to create a condensation channel. This channel drains from the overlapping transom joint into the mullion.
- Along a transom, seals must be laid continuously.
- All joints must be sealed. Before laying transom seals, we recommend completely coating the support surfaces and edges with connection paste. On no accounts may the application of a thick sealant coat cause unevenness in the glass support surface.



- 1 remove the lower perforated part and the clamping foot on the transom seal at around 15 mm
- 2 remove the upper perforated part on the rafter seal
- 3 Length of transom seal = transom length + ~ 13 mm per side



Stabalux AL

Processing notes

Seals - roof

1.2
5

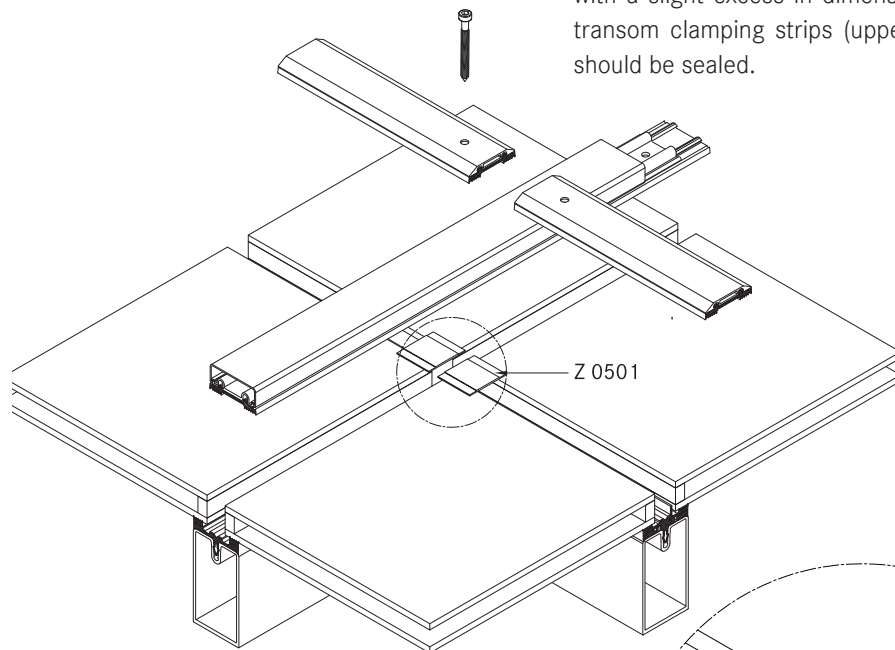
Assembly of the outer seal for

for roof glazing

- These are laid in fundamentally the same way as for vertical glazing. Split seals such as GD 1932 are not suitable for transom seals in roofs. Split seals can only be installed in mullions in combination with slab insulation. Pay attention to the specific installation situation and always check how well sealed it is.
- For cross joints we recommend using our self-adhesive stainless steel sealing plates with butyl coating Z 0501 for System 50. The stainless steel sealing plates are 35 mm wide and are attached to the edge of the glass panes parallel to the mullion axis.
- Butyl tape is not suitable as a sealing tape between the glass and the outer seal.
- The outer mullion seals are laid continuously and the transom seals are joined.
- Sealant joints are to be laid flat with a slight excess in dimensions. It is important to consider the respective system situation in this context.

Note:

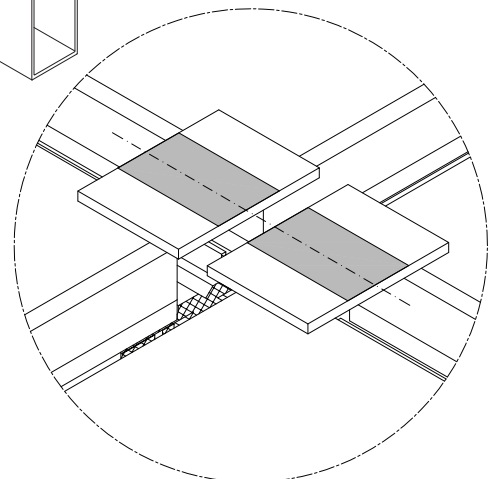
- Horizontal clamping strips prevent the free run off of rain water and dirt.
- Cover strips and upper strips with angled edges reduce the build up of water in front of the clamping strip.
- To improve water drainage, clamping strips in the joint area of transoms should be shortened by 5 mm. Gasket joints, however, are to be laid flat with a slight excess in dimensions. Open ends of transom clamping strips (upper and cover strips) should be sealed.



Detail view, sealing plate: Z 0501 = 35 x 40 mm

Attention: The sealing plates must be glued central to the transom axis!

For glass insets of 15 mm, the first screw fittings for the transom cover strip begin 30 mm from the end of the cover strip.



Stabalux AL

Processing notes

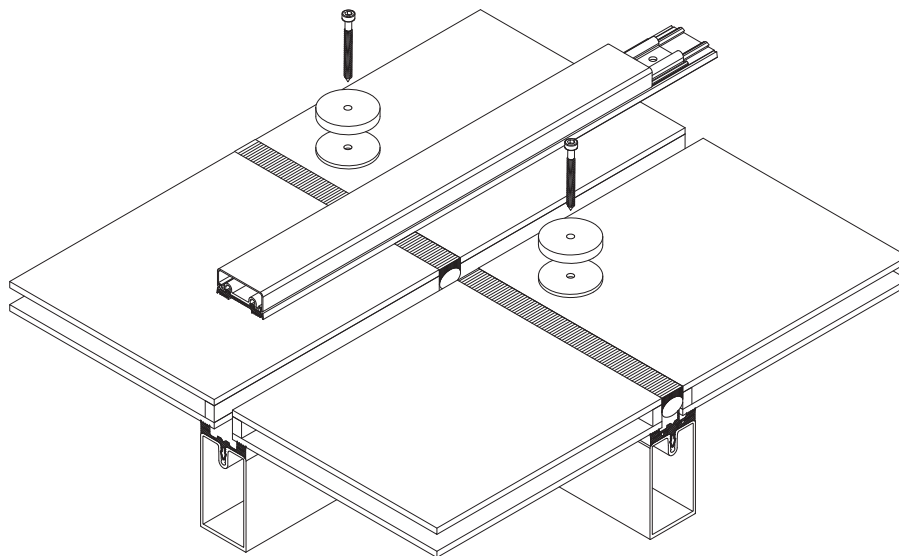
Seals - roof

1.2
5

Assembly of the outer seal for glazed

roofing up to 2° incline

- These are laid in fundamentally the same way as for vertical glazing. Split seals around the mullions in roofs such as GD 1932 are only suitable when using in combination with slab insulation. Each installation situation will differ to some degree and always check how well sealed it is.
- To ensure free run-off of rain water and dirt on roofs inclined up to 2°, we recommend not using clamping strips in the transoms.
- Instead, the rebate spaces should be sealed with all-weather silicone.
- Implementation of the outer sealing section around mullions is done in the same way as conventional roofs with an inclination up to 15°.
- At the high point or ridge area of the inclined glazing, it is recommended to also install an outer sealing section in the transoms with clamping strips.
- Only certified sealing materials may be used for sealing the transom rebate space.
- Pay attention to all information provided by the manufacturer and the sealing work must be carried out by trained persons. It is recommended that a licensed and certified specialist contractor is hired for this purpose. We further refer you to the DIN 52460 standard and IVD data sheets (Trade Association for Sealants).



Tips for all roof designs:

When using aluminium cover strips on roofs, take account of the expansion factor as a result of the high degree of heat absorption when selecting the length to use. Equally, the use of single-piece cover strips should be carefully considered. In this case it is recommended that holes for screwing on the cover strip are created with a diameter of $d = 9$ mm.

For wide spans we recommend using concealed screw fittings when selecting the clamping strips (lower + up-

per Processing notes strip). This is the preferred option for mullions. Unused holes in the lower strip must be sealed.

Several different materials (glass, silicone, aluminium sheets, ...) are used in some roof areas, such as the eaves, each with different expansion coefficients. To avoid the formation of cracks, aluminium sheets should be installed with expansion joints.

Stabalux AL

Processing notes

Seals - roof

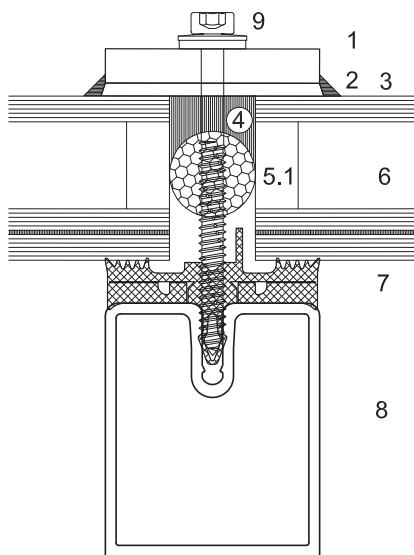
1.2
5

Assembly of the outer seal for glazed

roofing up to 2° incline

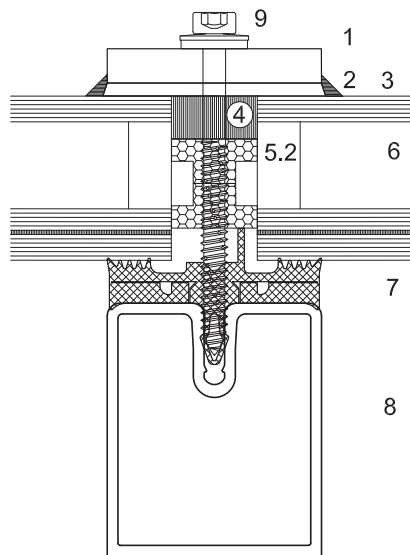
- The compatibility of the materials is particularly important when using all-weather silicone. In this case, the compatibility of the sealant with the edge bonding of the glass and the backfill of the joints. If self-cleaning glass is used, the compatibility must be established in advance.
- Glass sealants and edge bonding must be UV-resistant. The incline of roofs should also be taken into account. Information about UV-resistance can be requested from the manufacturer. Silicone edge bonding generally provides better UV-resistance than polysulfide-based materials. The advantage of silicone lies in its high vapour sealing properties which is particularly useful when using more volatile argon fillings.
- Highly elastic, weatherproof and UV-resistant seals meet the widest range of demands for reliable joints.
- If the silicone joint is created without additional mechanical safety devices, ensure that the glass is supported from two sides only. Selective installation of holding clamps can be used to provide support for all glass edges.
- The hold-down clamps are made from stainless steel with silicone washers and are screwed in the same as pressure strips. The hold-down clamp should be additionally sealed around the perimeter with silicone sealant. The design is based upon the dimensions of the glass as documented in the glass static analysis.

Angled glazing transom up to 2° inclination with all-weather silicone and round rope seal.



- 1 Hold-down clamp
- 2 Silicone washer
- 3 Silicone sealant / seal around the clamp

Angled glazing transom up to 2° inclination with all-weather silicone and insulation block.



- 4 All weather silicone seal
- 5.1 Rope seal
- 5.2 Slab insulation
- 6 Glass / filling element
- 7 Inner seal 10 mm transom
- 8 Aluminium profile
- 9 System screw fittings

Stabalux AL Processing notes

Seals - roof

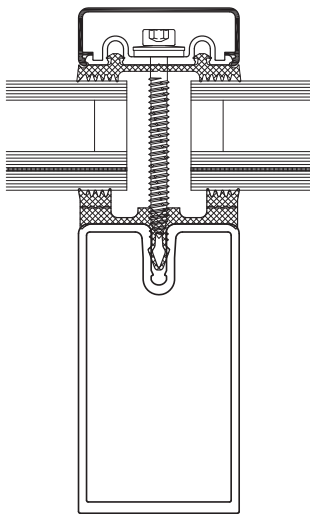
1.2
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Assembly of the outer seal for glazed

roofing up to 2° incline

- The joint width and the joint height for Stabalux AL are defined as $w \times h = 20 \text{ mm} \times 10 \text{ mm}$. These measurements should always be checked when selecting the sealing material and adapted if necessary. Generally: $w : h = 2 : 1$ to $3.5 : 1$.
- PE round section seals or Stabalux slab insulation is suitable as a back fill material.
- Silicone sealant should be applied before laying the mullion seals and cover strips.
- After the specified setting time, the seals and screw fittings can be installed in the areas around mullions.
- The mullion-transom joints around the clamps are then sealed.
- Before applying this second layer, the joints around transoms must have completely set.

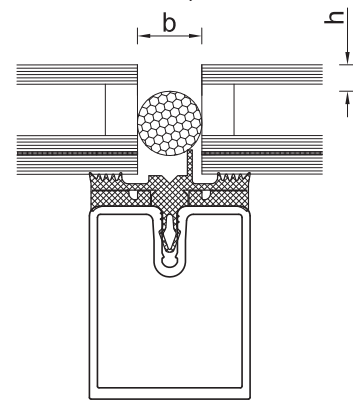
Rafter with clamping strips



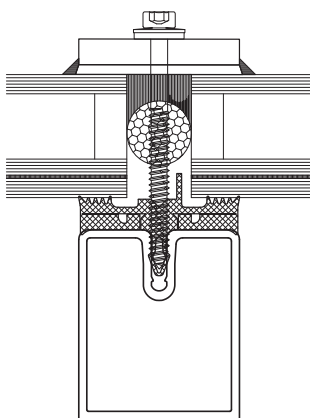
Joint design according to manufacturer's instructions!

Generally:

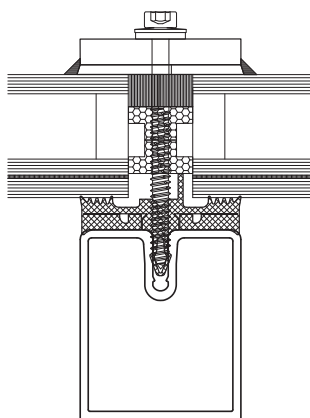
$$w : h = 2 : 1 - 3,5 : 1$$



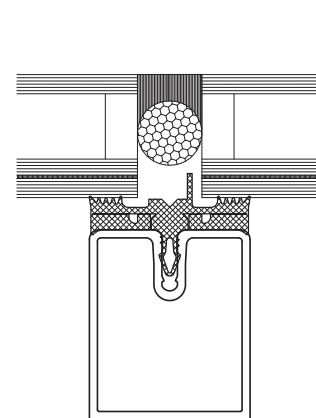
Transom with clamp,
All weather silicone seal
and round section rope seal



Transom with clamp,
All weather silicone seal
and slab insulation



Transom with all-weather silicone
and round section rope seal

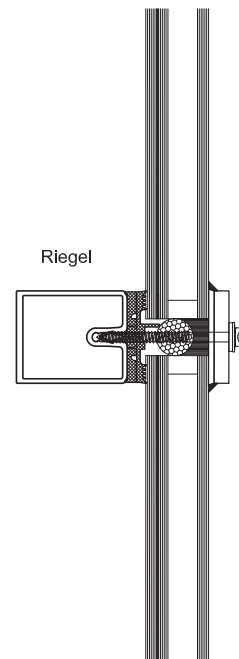
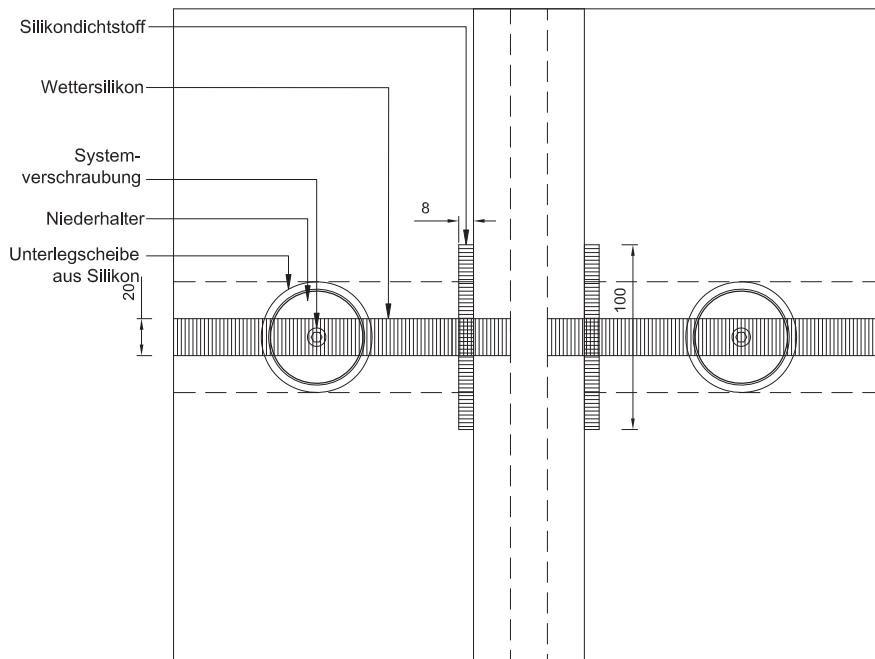
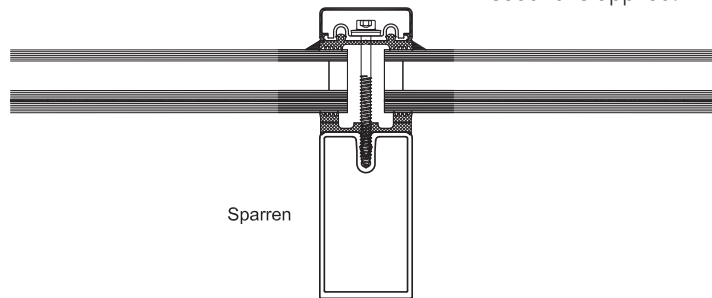


Seals - roof

1.2
5

Steps for creating the seal with all-weather silicone

- Test the silicone sealant and glass edge bondings and other contact surfaces (e.g. panels) for suitability.
- Clean edge bonding adhesive impurities from the surfaces to which sealant will be applied following manufacturer's directions.
- Fill the joints as per the joint dimensions using only non-water absorbent closed-cell PE profiles (no damage to the edge bonding).
- The remaining space in the glass rebate must be large enough that the pressure is able to equalise and a drainage level is available.
- Clean any impurities from the surfaces to which the sealing material is to be applied and any adjacent surfaces according to manufacturer's directions.
- Be particularly aware of any adjacent metal components. Prime according to manufacturer's directions.
- Seal joints without leaving any cavities or bubbles. Mask any adjacent components in advance where necessary.
- Smooth out the filled joints using the manufacturer's smoothing agents and conventional tools with as little water as possible. Remove the adhesive tape when liquid.
- If two or more reactive sealants are used in combination, the first must completely set before the second is applied.

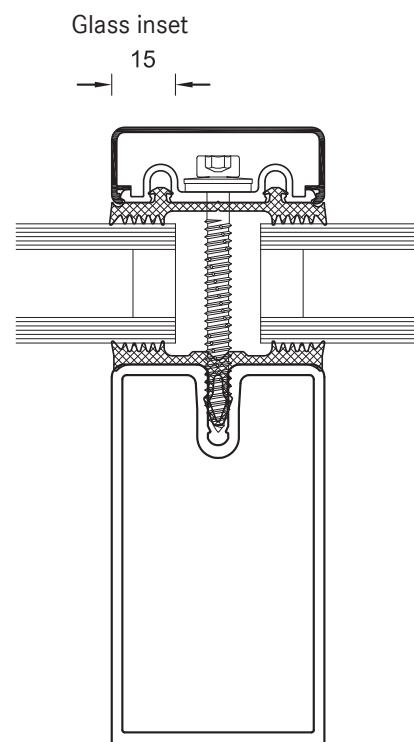
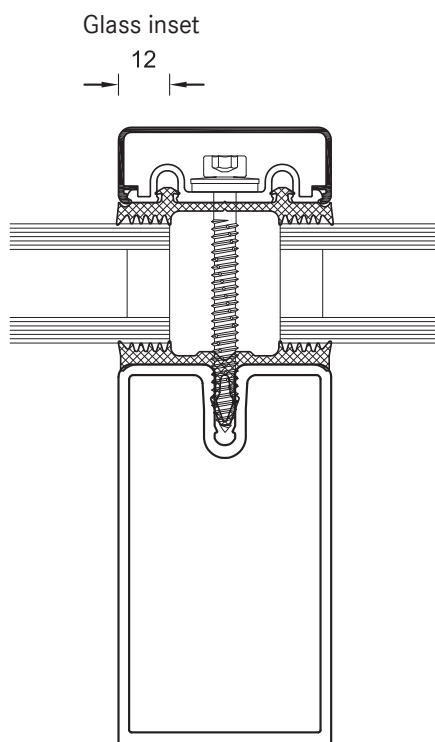


Glass inset and glass support

1.2
6

Glass inset

- Glass industry guidelines must be observed.
- The glass inset is generally 15 mm.
- An increase to 20 mm has a beneficial effect on the heat transfer coefficient U_f of the frame structure.



Stabalux AL

Processing notes

Glass inset and glass support

1.2
6

Glass support types and selection of glass support

Glass supports carry the load of the glass panes through to the structure. The permissible glass weights also depend on the structure of the glass and the selected mullion- transom connection. The depth of the glass supports is determined by the glass structure. Section 9 contains more information in this respect.

The Stabalux AL system uses three different types and techniques for attaching glass supports:

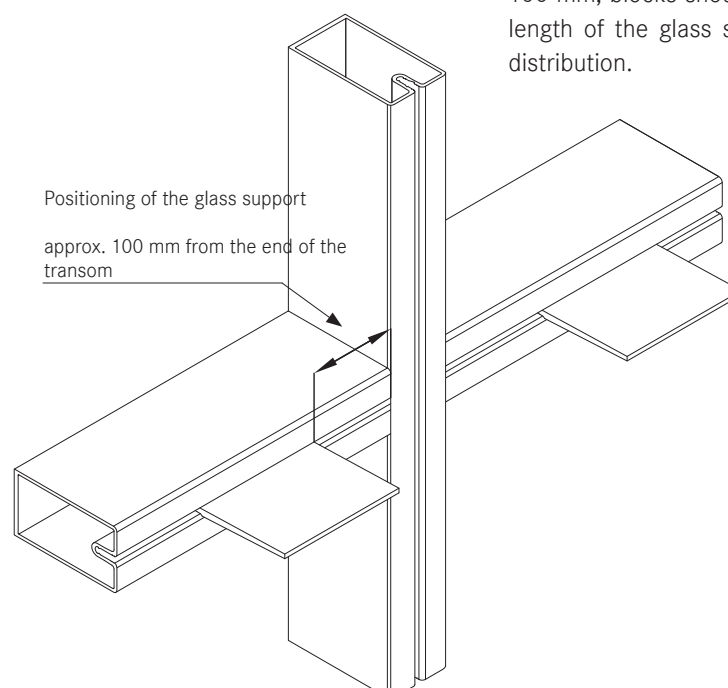
- Insert glass supports GH 5101 and GH 5102 are inserted directly into the screw channel of the threaded tubes and do not require any further fastening.
- The glass supports GH 5201 and GH 5202, consisting of a top and bottom part, are screwed directly on to the transoms and are extremely easy to assemble. Heavy glass loads require welded glass supports. For this purpose, flat sheets with a thickness of $t = 5 \text{ mm}$
- are hammered into the screw channel and welded.

Mounting the glass supports

- Positioning the glass supports and glazing according to glass industry guidelines and guidelines of the Institute for Window Technology.
- The weight of the glass panes is distributed via the glass supports attached to the transoms.
- Glass supports should be attached at an interval of 100 mm from the end of the transom. When doing so, it is important to sure there is no collision with the cover strip screw fittings at the end of the transom.

Glazing blocks

- Glazing blocks must be compatible with the edge bonding of the insulated glass panes.
- They should be stable under constant pressure and be able to withstand loads, aging and temperature changes.
- It is important that the blocks ensure circumferential pressure equalisation and that drainage of condensation is not obstructed as well as allowing the glass edges to be offset and small design tolerances to be accommodated.
- If the length of the glass support is more than 100 mm, blocks should be placed along the entire length of the glass support to ensure equal load distribution.

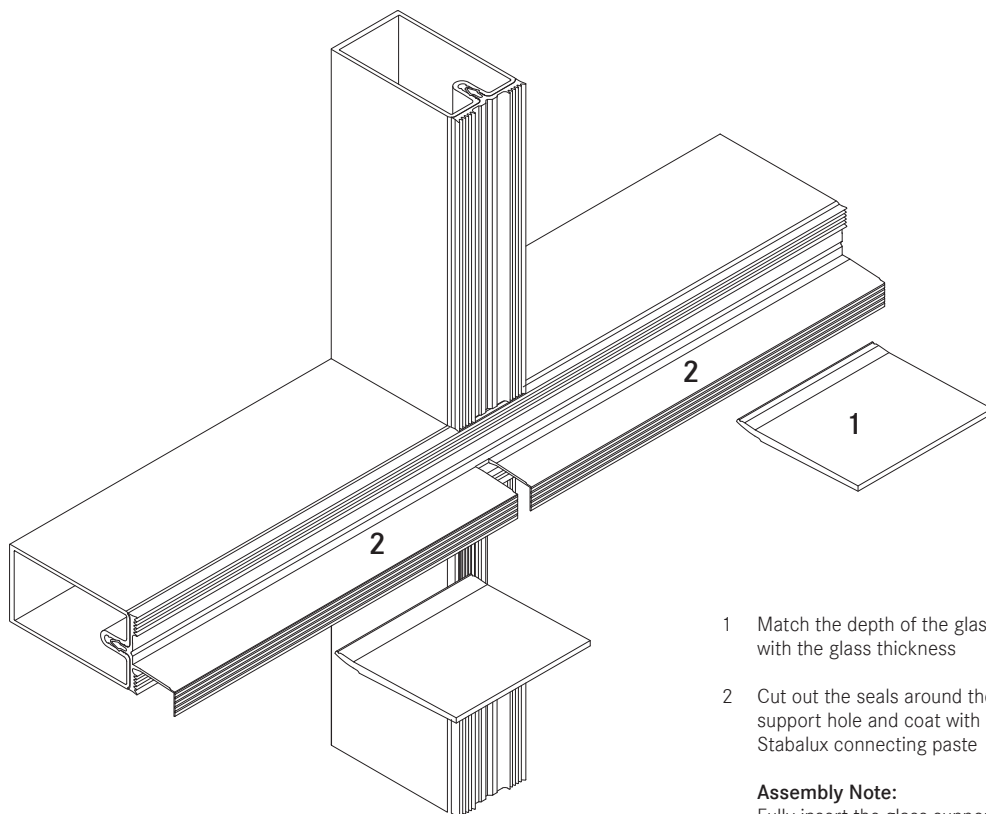


Stabalux AL Processing notes

Glass inset and glass support

1.2
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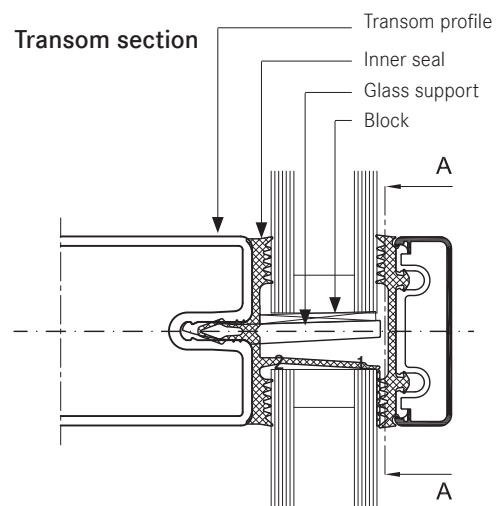
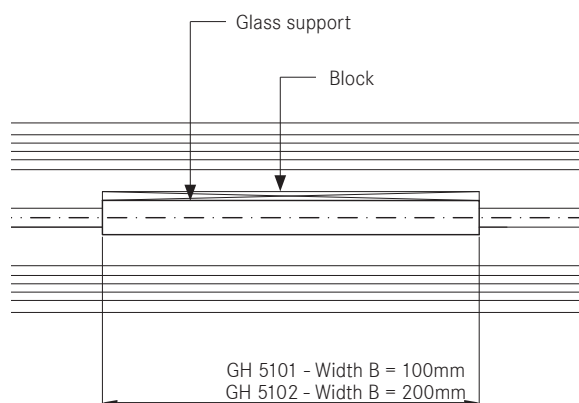
Glass support GH 5051 and GH 5102 -
Inserted glass supports



- 1 Match the depth of the glass support with the glass thickness
- 2 Cut out the seals around the glass support hole and coat with Stabalux connecting paste

Assembly Note:
Fully insert the glass support - you hear a "click" sound

Section A-A

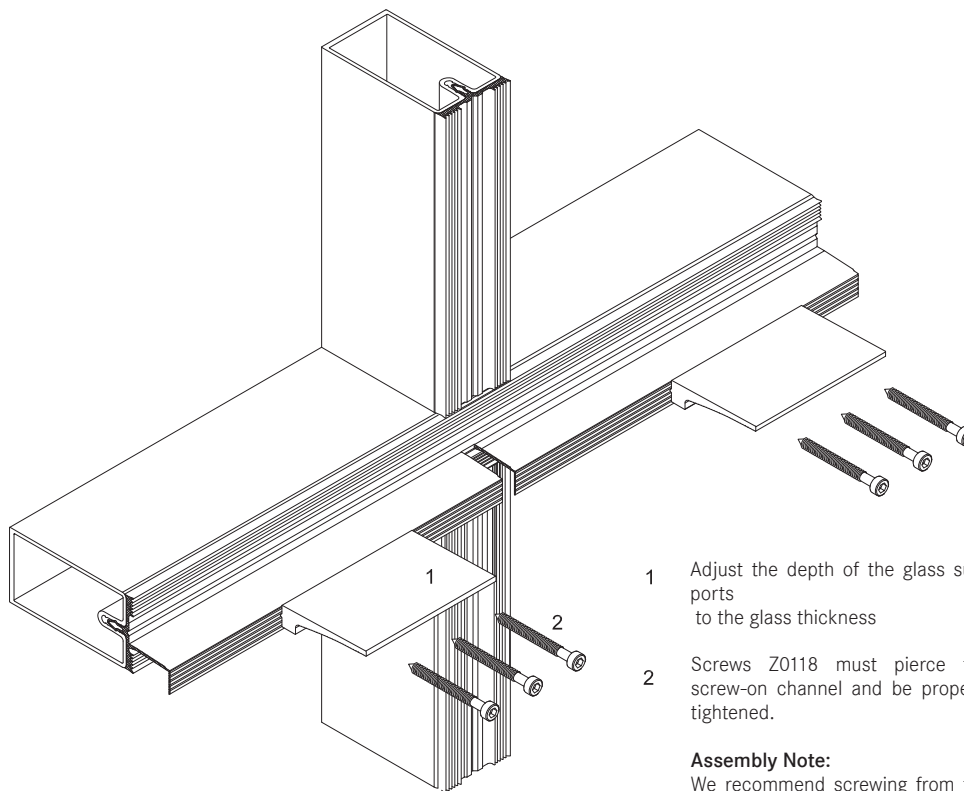


Stabalux AL Processing notes

Glass inset and glass support

1.2
6

Glass support GH 5201 and GH 5202 -
bolted glass support

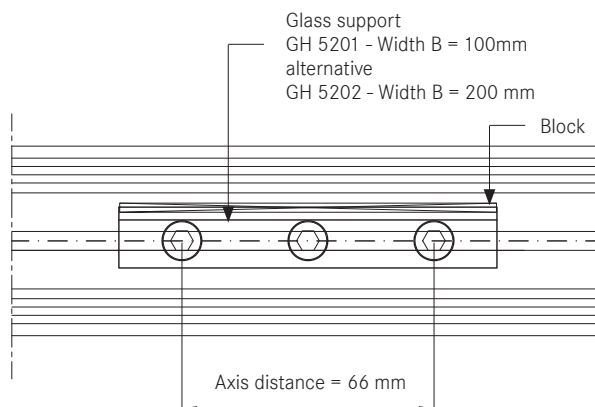


- 1 Adjust the depth of the glass supports to the glass thickness
- 2 Screws Z0118 must pierce the screw-on channel and be properly tightened.

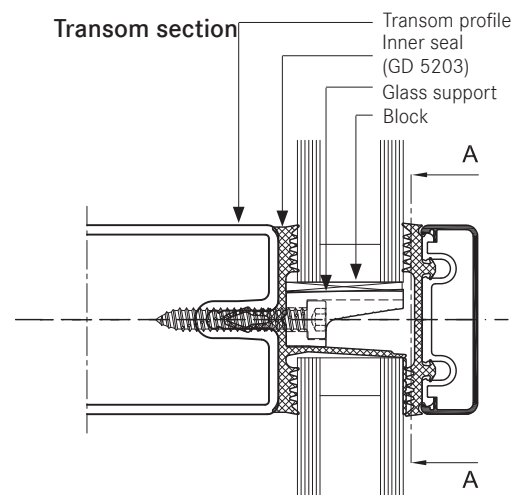
Assembly Note:

We recommend screwing from the center to the outside.

View A-A



Transom section



Stabalux AL Processing notes

Glass inset and glass support

1.2
6

Section of the glass support

Permissible glass loads are stated in Section 9. Depending on the thickness of the glass, the depth of the glass support must be shortened by X.

T = depth of the glass support 72 mm
 D = Inner seal height
 (e.g. 5 mm or 12 mm)
 B = thickness of glass pane

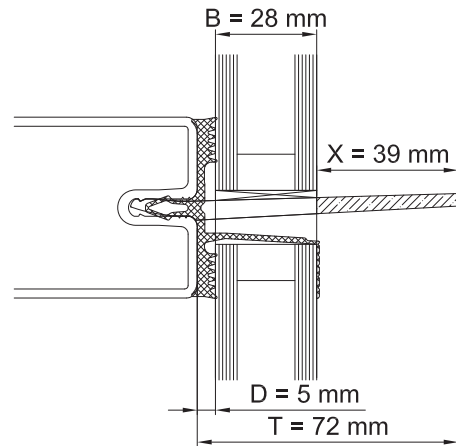
$X = T - D - B$

Example:

Depth of glass support T = 72 mm
 Inner seal GD 5203 D = 5 mm
 Glass pane 6 / 16 / 6 B = 28 mm

$X = 72 - 5 - 28$
X = 39 mm

GH 5101 - Width B = 100mm
 GH 5102 - Width B = 200 mm



T = depth of the glass support 62 mm
 B = thickness of glass pane

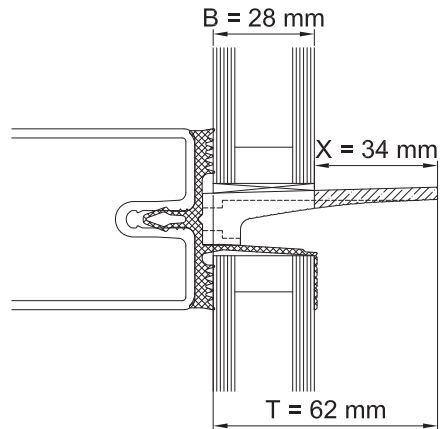
$X = T - B$

Example:

Depth of glass support T = 62 mm
 Glass pane 6 / 16 / 6 B = 28 mm

$X = 62 - 28$
X = 34 mm

GH 5201 - Width B = 100 mm
 GH 5202 - Width B = 200 mm



Stabalux AL

Processing notes

Screw fittings

$$\frac{1.2}{7}$$

Fastenings

- The fastenings for the Stabalux AL system allow filling elements to be easily secured.
- The clamping strips are connected to the threaded tube using Stabalux system screws. Stainless steel 1.4301 DIN EN 10088 is the material used to produce screws for the Stabalux system. To make screws easier to install, they are coated with a lubricating zinc layer.
- Depending on the type of screw fittings selected, Stabalux system screws with special stainless steel, 4 mm vulcanised EPDM washers are available.
- Screw lengths are available for all common glass thicknesses. The screw length is determined using a table.
- The minimum distance is 15 mm.
- The distance for screw fittings is variable. The maximum distance is $a = 250$ mm.
- The distance from the edge for the first screw fitting should generally be $30 \text{ mm} \leq a \leq 80 \text{ mm}$. The placement of the glass supports should also be taken into account.
- The clamp connection is exclusively exposed to tensile forces. The maximum tensile force (limit tension) for the tested system is regulated in general building approval Z-14.4-444. The indication of the characteristic load allows proof of fall protection Glazings according to DIN 18008.
- Screw fittings are applied using a conventional electric screwdriver with depth stop. This guarantees uniform application of pressure. The depth setting should be chosen so that a gasket compression of 1.5 - 1.8 mm is achieved.
- An electric screwdriver with adjustable torque can be used as an alternative. The required torque is influenced by the variable influence of friction, material strength and material thickness. It is therefore advisable to determine the setting on a test piece and to check compression of the sealing washer.

Concealed screw fittings

- Assembly is facilitated by the selection of pre-drilled clamping strips (e.g. UL 5009 L, slot 7 x 10 mm, $a = 125$ mm) with clippable upper strips. A round hole of $d = 8$ mm should be made in the remaining clamping strips. The functionality of the clip procedure can be checked after the first upper strip has been pushed against the lower strip.

Note:

When using aluminium cover strips on roofs, take account of the expansion factor as a result of the high degree of heat absorption and its impact on the selected length. Equally, the use of single-piece cover strips should be carefully considered. In this case it is recommended that holes for screwing on the clamping strip are created with a diameter of $d = 9$ mm.

Visible screw fittings

- Cover strips should be drilled with a round hole of $d = 8$ mm.

Note:

(see Note on concealed screw fittings)

Visible recessed screw fittings

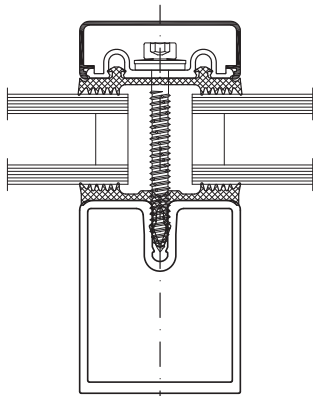
- When creating visible recessed screw fittings a stepped bore is required. The lower part of the cover strip should be drilled with a $d = 7$ mm diameter. The upper part of the cover strip needs a $d = 11$ mm diameter for the screw head. It is recommended to install a washer (PA washer, e.g. Z 0033) with all screw fittings.

Stabalux AL Processing notes

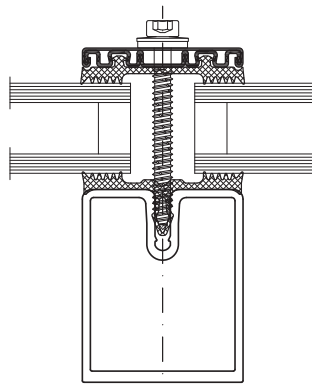
Screw fittings

1.2
7

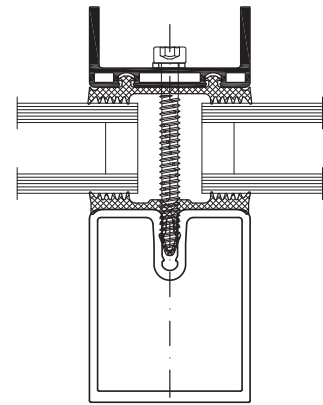
Fastenings



Concealed screw fittings
Stabalux system screws with cylinder head
d = 10 mm und 4 mm sealing gasket
e.g. Z 0155



Visible screw fittings
Stabalux system screws with cylinder head
d = 10 mm und 4 mm sealing gasket
e.g. Z 0156



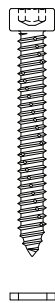
Visible recessed screw fittings
Stabalux system screws with cylinder head
d = 10 mm with additional PA washer
e.g. Z 0255 with Z 0033

Diagram of various screw types

Thread $\varnothing 6.3$ mm

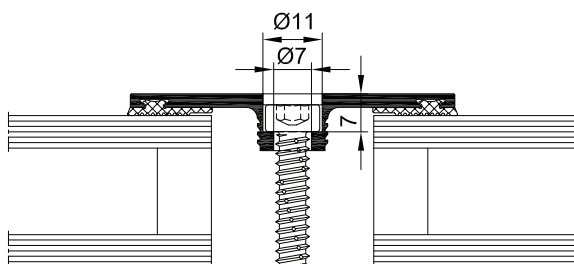


e.g. Z 0155



e.g. Z 0253
with Z 0033

Calculating the screw length for DL 5073



Attention!

The calculation to determine screw lengths for the the calculation to determine screw lengths is:

Glass thickness - 3 mm + inner seal
(5, 10 bzw. 12 mm) + 20 mm








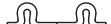










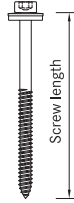





Stabalux AL Processing notes

Screw fittings

1.2
7

Calculating the screw length

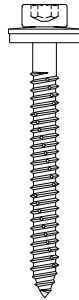
System width 50 mm

	Seal washer PA washer (*)	3,0 mm 1,5 mm	}	mm	
<hr/>					
	Z 0020	8,0 mm	}	mm	+  (*) For visible recessed screw fittings PA-washers have to be used. The values in [] must be considered for the calculation of the screw length.
	DL 5059(*)	(2,5) 8,0 mm			
	DL 5061(*)	(1,5) 6,0 mm			
	DL 5067(*)	(1,5) 6,0 mm			
	DL 5071 (*)	(1,5) 6,0 mm			
	UL 5110	3,0 mm	}	mm	+ 
	UL 5009	2,5 mm			
<hr/>					
	GD 1940	10,0 mm	}	mm	
	GD 1938	8,0 mm			
	GD 1936	6,0 mm			
	GD 1934	4,0 mm			
	GD 1932	5,0 mm			
	GD 5024	5,0 mm			
	GD 5009	3,0 mm			
<hr/>					
	Glass thickness		}	mm	+ 
<hr/>					
	GD 5201 / GD 5203	5,0 mm	}	mm	+ 
	GD 5205 / GD 5207	10,0 mm			
	GD 5314 / GD 5317	12,0 mm			
<hr/>					
	Screw depth threaded tube		}	19 mm	+ = mm = Required screw length Example: Calculated result = 74 mm Required screw length = 70 mm Calculated result = 60 mm Required screw length = 55 mm
<hr/>					

Screw fittings

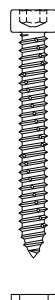
1.2
7

System screws for Stabalux AL



Cylinder head screws \varnothing 10 mm with hex socket | with sealing gasket

Z 0148	Cylinder head screw	6,3x 30 mm
Z 0149	Cylinder head screw	6,3x 35 mm
Z 0151	Cylinder head screw	6,3x 40 mm
Z 0152	Cylinder head screw	6,3x 45 mm
Z 0153	Cylinder head screw	6,3x 50 mm
Z 0154	Cylinder head screw	6,3x 55 mm
Z 0155	Cylinder head screw	6,3x 60 mm
Z 0156	Cylinder head screw	6,3x 65 mm
Z 0157	Cylinder head screw	6,3x 70 mm
Z 0158	Cylinder head screw	6,3x 75 mm
Z 0161	Cylinder head screw	6,3x 80 mm
Z 0162	Cylinder head screw	6,3x 85 mm
Z 0163	Cylinder head screw	6,3x 90 mm
Z 0164	Cylinder head screw	6,3x 95 mm
Z 0165	Cylinder head screw	6,3x100 mm
Z 0166	Cylinder head screw	6,3x120 mm



Cylinder head screws \varnothing 10 mm with hex socket | without sealing gasket

Z 0293	Cylinder head screw	6,3x 18 mm
Z 0247	Cylinder head screw	6,3x 25 mm
Z 0116	Cylinder head screw	6,3x 30 mm
Z 0249	Cylinder head screw	6,3x 35 mm
Z 0118	Cylinder head screw	6,3x 40 mm
Z 0119	Cylinder head screw	6,3x 45 mm
Z 0253	Cylinder head screw	6,3x 50 mm
Z 1114	Cylinder head screw	6,3x 55 mm
Z 0255	Cylinder head screw	6,3x 60 mm
Z 0256	Cylinder head screw	6,3x 65 mm
Z 0257	Cylinder head screw	6,3x 70 mm
Z 0258	Cylinder head screw	6,3x 75 mm
Z 0241	Cylinder head screw	6,3x 80 mm
Z 0242	Cylinder head screw	6,3x 85 mm
Z 0243	Cylinder head screw	6,3x 90 mm
Z 0033	PA washer	\varnothing 10 x 1,5 mm

Stabalux AL

Processing notes

Flat cover strip DL 5073

1.2
8

Tips for laying the cover strip DL 5073

We assume that this cover strip will be used with glass panes that are supported on two sides and the recessed screw head is concealed. In this case, a cylinder head screw with inner hex is to be used e.g. Z 0253. When covering with a 2 mm cover plug Z 89, a bore depth of 7 mm is calculated.

Depending on the precision of the bore, it should be decided on case by case basis if any slight changes to this depth are necessary. The cover plug Z 0089 does not need to be glued in place, but may be levelled using levelling compound.

Coating the cover strip

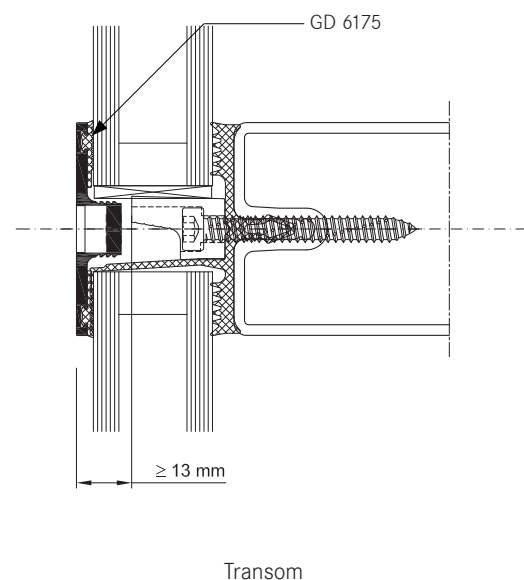
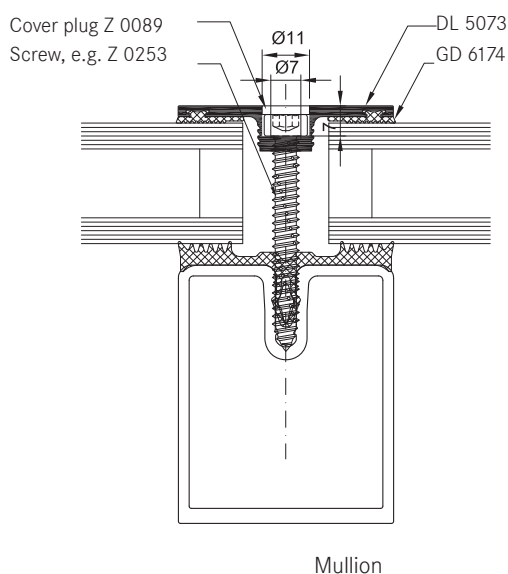
Profile production (aluminium extrusion moulding) with different mass distribution is extremely difficult. Length-wise shadow formation may result. Resulting actions are to be taken with the agreement of the coater.

Intersections

Due to the special shape of the strip (the material extends into the rebate), there is no closed sealing section available at intersections. We therefore recommend placing particular attention to ensure tightness of the joints and fill will Stabalux connecting paste Z 0094.

Glass supports/blocking

Special attention should be given to dimensional proportions. Glass supports should be designed by the processor depending on the glass thickness and weight. To support the outer pane, a sufficiently large glazing block must be installed that can carry the load to safely ensure the glass load is distributed effectively.



Stabalux AL Processing notes

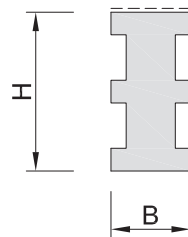
1.2
9

Slab insulation

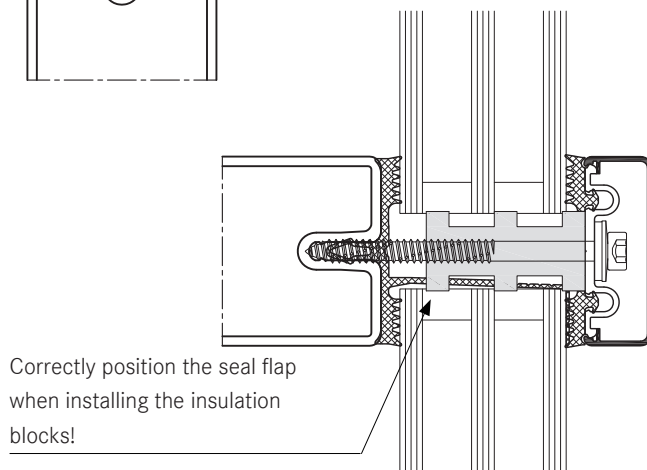
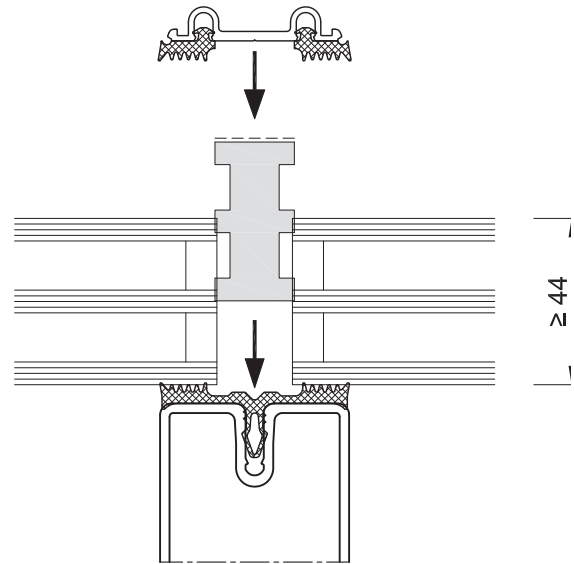
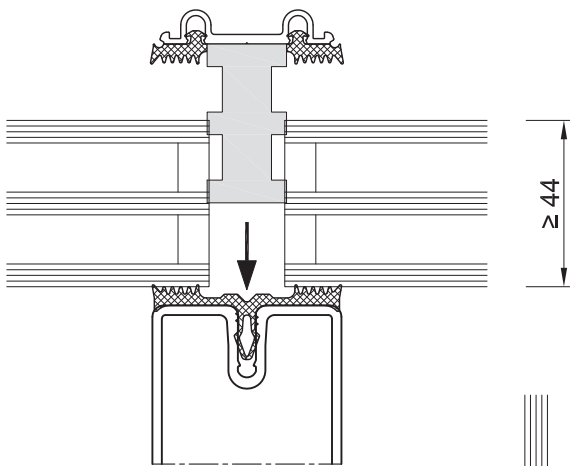
- Using insulation blocks significantly reduces heat dissipation.
- The highly effective slab insulation has a permanently adhesive HOT-MELT.
- Depending on the situation where they are used, insulation blocks can be directly applied to the cover strip/lower strip or placed into the rebate over the screw fittings and pushed into position with the cover strip/lower strip.

Note:

- The use of slab insulation with cover strips DL 5073 should be tested for each individual situation.
- 2-piece outer seals are always used with slab insulation blocks: for a glass inset of 15 mm, outer seal e.g.: GD 1932 or GD 1934 use.



Insulation block	Width (=rebate)	Height
Z 0605 insulation block 20 / 42	20 mm	42 mm, glass thickness from 44 mm
Z 0606 insulation block 20 / 26	20 mm	26 mm, glass thickness from 28 mm

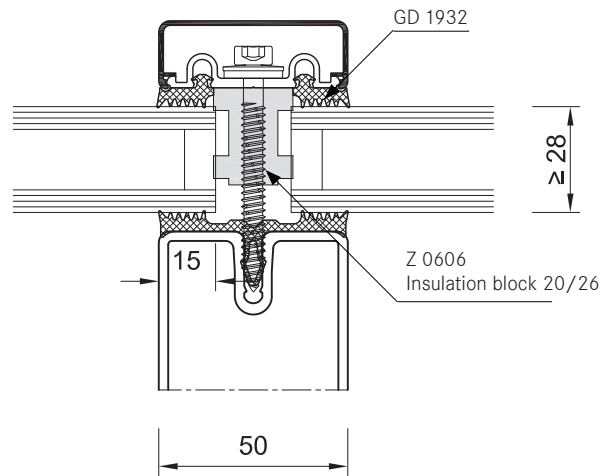
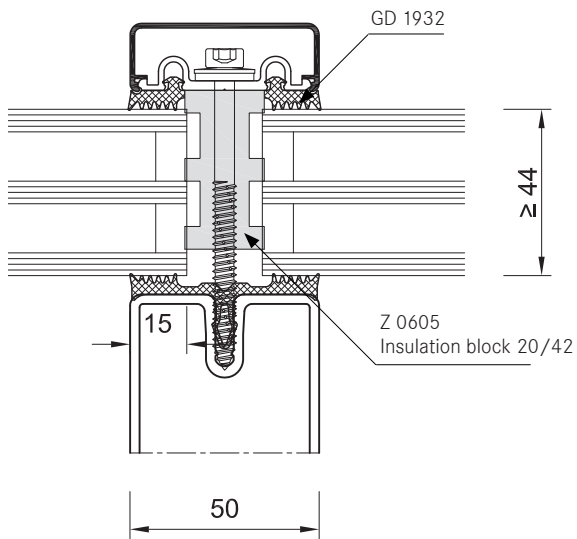


Stabalux AL Processing notes

Slab insulation

1.2
9

Examples:



Pane support variants

1.3
1

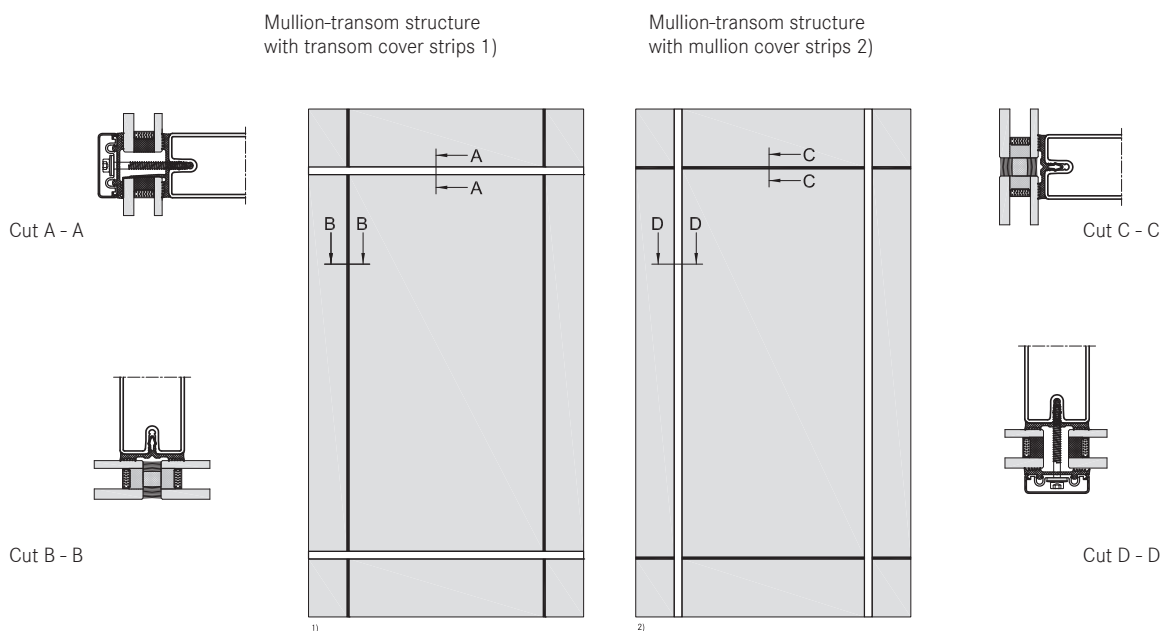
Special design

Glass structures that partially refrain from using visible cover strips are considered special designs.

These designs do not conform to the intended uses of the system. No guarantees are made for e.g. quality of seals, durability and structural stability. Responsibility here lies entirely with the company implementing the design.

Based on our experience we recommend paying close attention to the points made on the following pages during planning and implementation.

Mullion-transom structure, 2-sided cover strip



1) Seals with 1, 2 or levels are possible

2) Use of mullion seals with 1 section in mullions and transoms

Pane support variants

1.3
1

Vapour seal:

When using this type of structure, it is important to be aware that any loss of contact pressure can affect the room-side permeability. There is an increased risk of condensation build up in the rebate.

Vertical clamping strips

The glass supports should be placed to below the outer pane and sealed with it

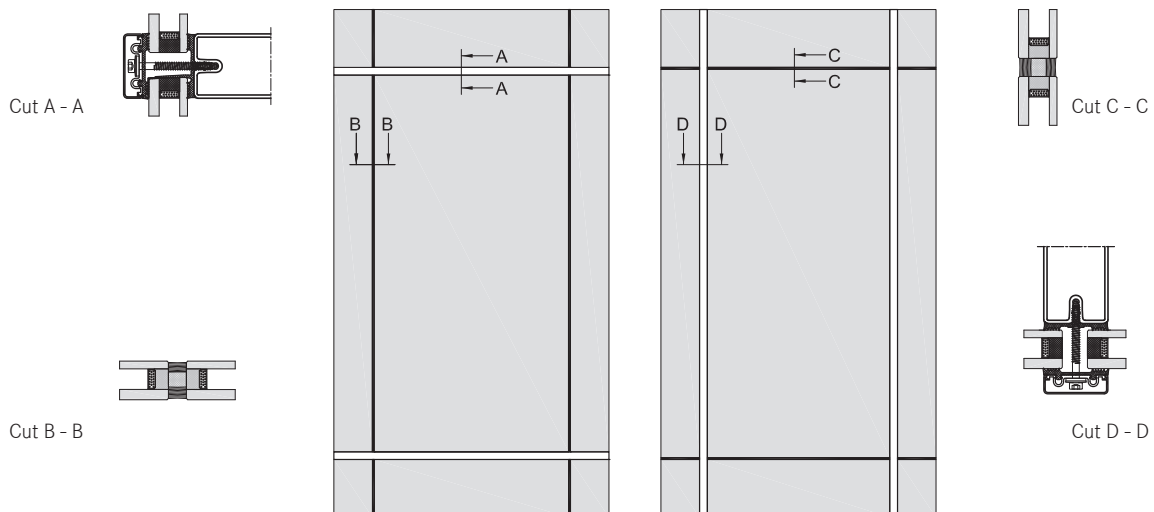
Horizontal clamping strips

Ventilation and condensation drainage is achieved via a recess in the lower sealing lip in the centre of the outer seal or at one third intervals.

Transom structure, mullion structure 2-sided cover strip

Transom - design

Mullion - design



Pane support variants

1.3
1

Design requirements

1 Vapour seal:

The room-side level of glazing must have the best possible vapour seal. In this regard, the vapour diffusion properties of the silicone sealant to be used should be tested. Ensure that there are no permeable areas around concave cross joints.

2 Rebate ventilation, pressure equalisation and condensation drainage

Systems with partially sealed rebate represent a limitation to rebate ventilation. Check on a case-by-case basis that no damage will be caused by standing condensation. It is especially critical that designs with sealed vertical joints are evaluated. To allow ventilation of the horizontal rebate we recommend installing a suitable vertical ventilation space. Alternatively, ventilation can be achieved using the outer joints.

3 Weatherproofing

The outward facing seals must be watertight. In cross joints, it is especially important to ensure a firm joint between the Stabalux profile seal and the silicone joints. We recommend sealing up to the outer edge of the glass before mounting the cover strips.

We would like emphasise once again that our profile seals will not make a permanent bond with commonly used silicone sealants. A seal can only be created at contact points through permanent application of pressure.

4 Mechanical strength of the screw fittings

Ensure screw fittings are of a sufficiently size. Special attention should be given to the effects of wind suction and the reduced support. Please refer to paragraph 3 of our authorisation Z-14.4-444 (threaded tubes) and

Z-14.4.445 (add-on channel) for information on how to select the correct size of Stabalux screw fittings.

5 Glass weight distribution

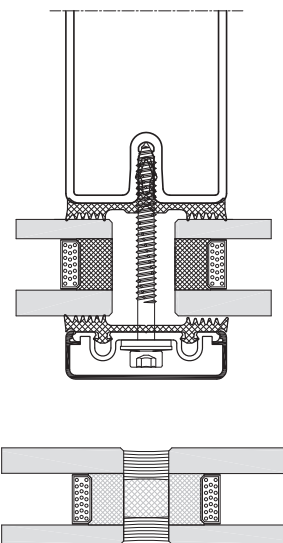
Mechanical distribution of the weight of the glass panes through the structure must be ensured. System glass supports can be used for existing horizontal transoms. Designs using “only” mullions require special glass supports which carry the weight of the glass directly into the mullions.

6 Glass sizing

Attention should be given to the reduced support of panes when dimensioning the glass. For example, only the vertical or horizontal cover strips are effective in the event of wind suction stresses or stress on the fall protection.

7 Material compatibility

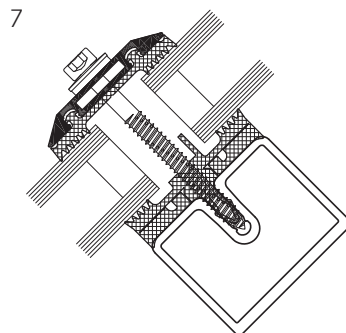
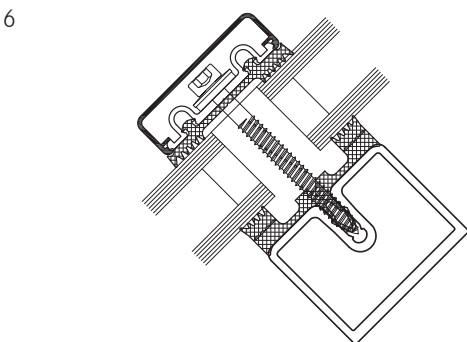
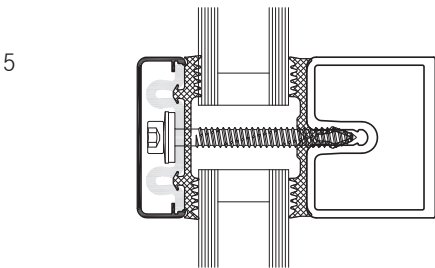
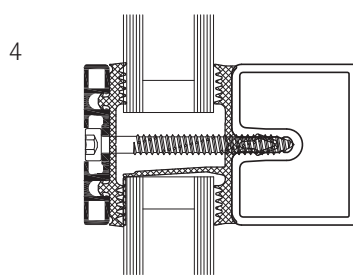
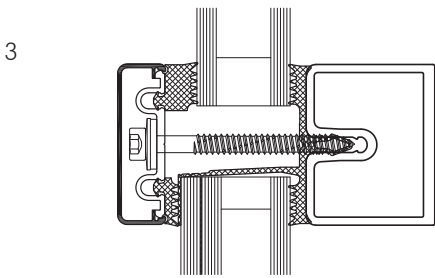
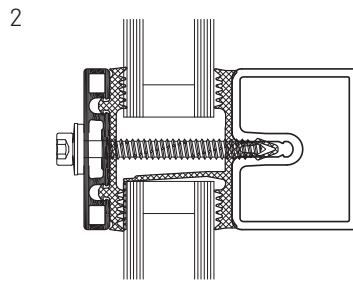
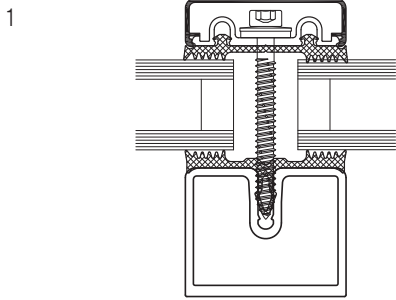
Compatibility of the silicone sealants with our profile sealants and the edge bonding of the glass must be ensured. We recommend the exclusive use of tested silicone sealants from the whole-glass facades sector. Approval is usually given by the silicone manufacturer.



System cross sections

1.3
2

Examples:



- 1 Vertical glazing, mullion concealed screw fittings
- 2 Vertical glazing, mullion visible screw fittings
- 3 Vertical glazing, transom concealed screw fittings, split outer seal for height compensation
- 4 Vertical glazing, transom, Outer seal for height compensation
- 5 Vertical glazing, transom, concealed screw fittings, stainless steel bottom strip, fire protection seals
- 6 Inclined glazing, mullion, concealed screw fittings
- 7 Inclined glazing, transom visible screw fittings

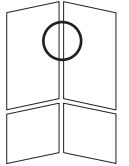
System details

$$\frac{1.3}{3}$$

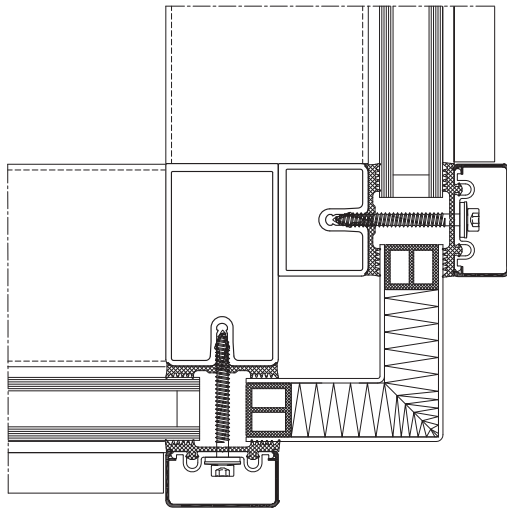
Creating facade corners

At exposed areas such as glass facade corners, it is particularly important to ensure sufficient heat insulation in order to avoid the creation of thermal bridges and prevent a build-up of condensation. Thermal current calculations provide information about the actual heat loss.

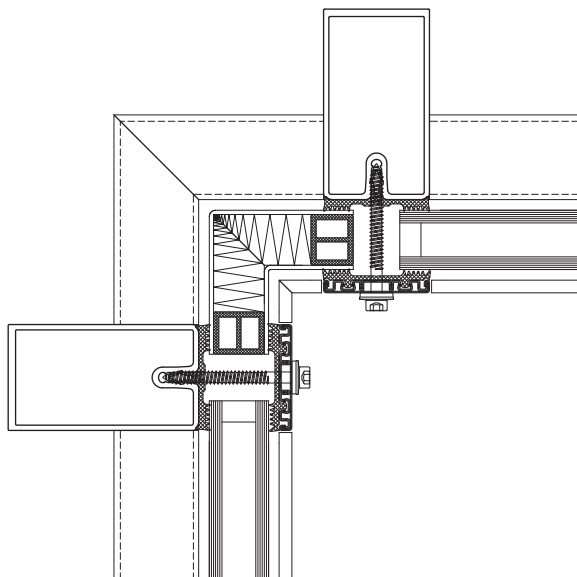
It is important to ensure a vapour-sealed design if threaded tubes are used on the corner mullions.



Outer corner



Inner corner

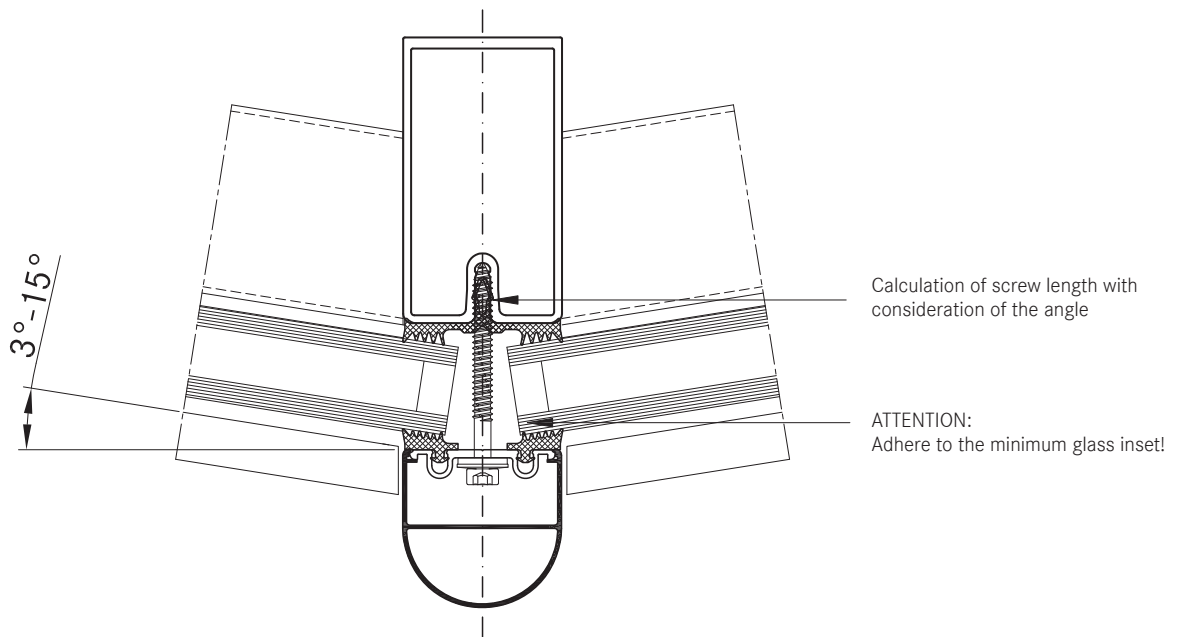


System details

1.3
3

Facade polygon

Special seals allow a polygon shaped arrangement of the facade mullions. For convex glass surfaces an angle between 3° and 15° can be freely chosen. For concave glass surfaces the angle can vary between 3° and 10° .



System details

1.3
3

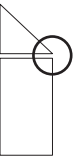
Eaves with glass roof connection

- Depending on the construction of the transoms, a design with or without rain gutters and the choice of stepped glazing or closable cover strips gives us different variants for implementation.
- All options require condensation and moisture to be drained away at the eaves.

Design with stepped glazing

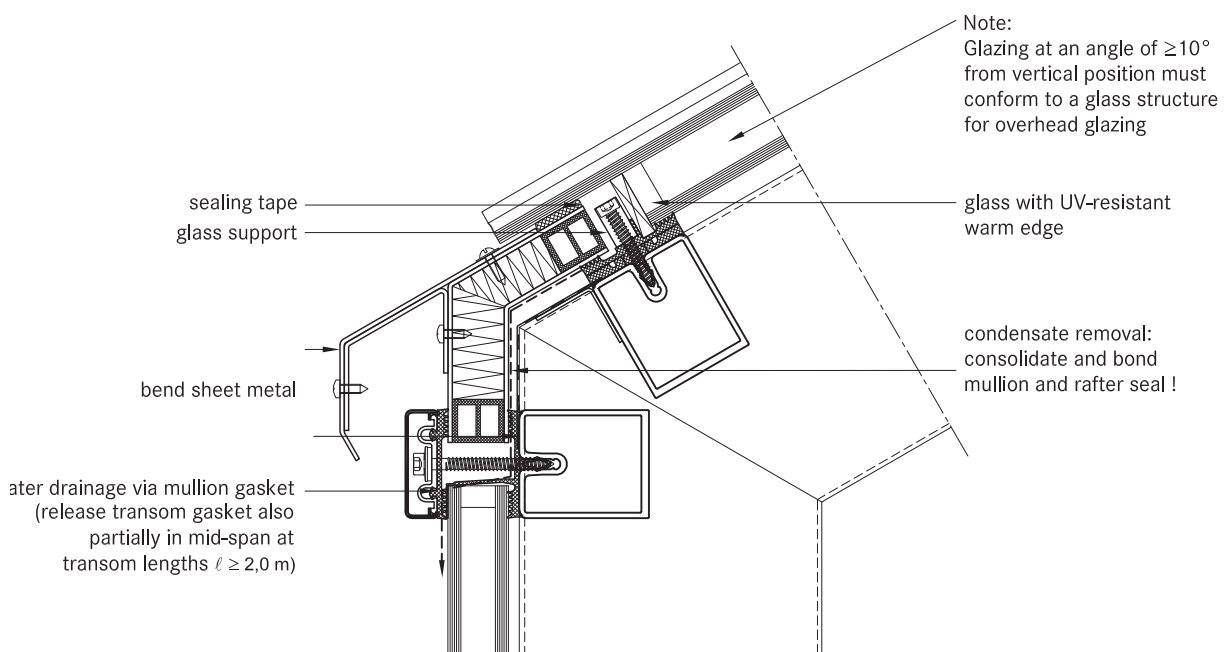
- With a stepped glazing design it is important to select a UV-resistant edge bonding for the glass. This edge bonding systems, usually silicone-based, are quite permeable to gases and are therefore unable to achieve the required high values for sound and heat insulation of conventional systems, i.e. require additional sealing around the edges.
- Our thermal calculations show that stepped glass

- panes, compared to covered glass edges, have a much less favourable isothermal movement.
- Stepped glass panes must also be statically measured according to their reduced hold against wind suction.
- The additional thermal loads that occur in stepped glass panes should be countered by the use of pre-tensioned glass (TVG, ESG) for the outer panes.
- Stepped glass panes should be preferred for flatter inclined roofs as water can drain away at the eaves unhindered.



Example 1:

Design with stepped glazing



System details

1.3
3

Eaves with glass roof connection

Design using cover strips

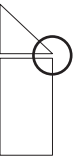
- Horizontal pressure strips prevent the free run off of rain water and dirt.
- Cover strips with angled edges reduce the build up of water in front of the cover strip.
- The outer sealing level on glass roofs must also be thoroughly sealed.
- In combination with our butyl clad stainless steel panels, glazing with pressure strips on 4 sides achieves a higher level of safety.
- Make sure that the inner sealing section provides guaranteed drainage for condensation.
- To improve drainage and heat-induced expansion,

cover strips should be shortened by 5 mm at transom

joints. Gasket joints, however, are to be laid flat with a slight excess in dimensions. Open ends of the transom cover strips must be sealed.

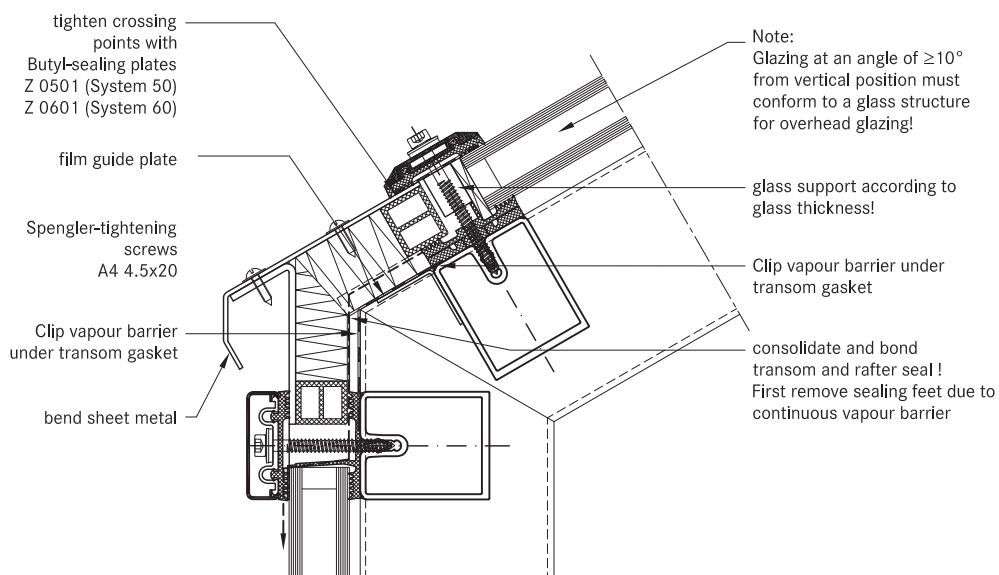
Note:

Due to the increased thermal stresses in the roof, we recommend using concealed screw fitting when choosing clamping strips for larger system lengths and in rafters. Unused holes in the lower strip must be sealed.



Example 2:

Design using cover strips



System details

1.3
3

Eaves with glass roof connection

Design with gutter

- The gutter must be able to take its own weight and mounted in such a way that stresses from its own

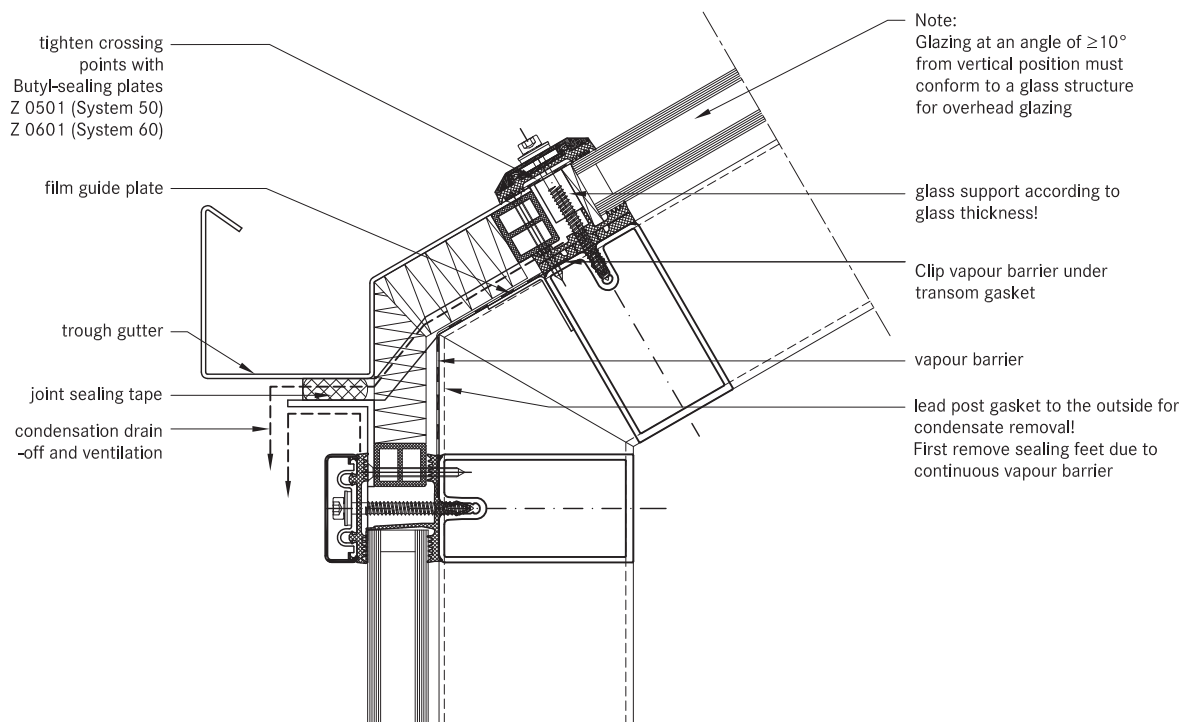
weight, water and ice will not lead to deformations and directly apply a load to the glazing.

- Overflowing water must not be able to get inside the structure. Alongside the gutter-shaped outer rafter seal, the moisture barrier installed over the guide

plate also acts to drain away condensation.

Example 3:

Design with gutter

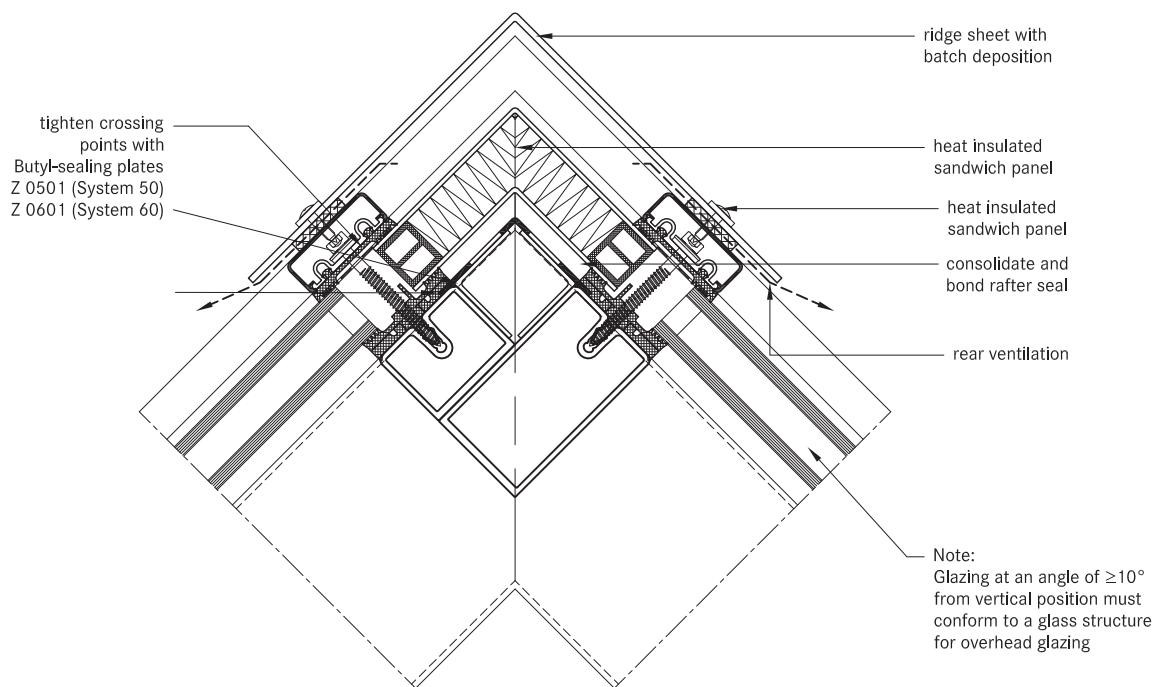
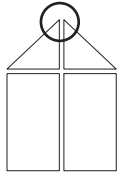


System details

1.3
3

Roof ridge design

- When designing the ridge cap, ensure that the rafter cover strips are pulled under the ridge cap.



Structural attachments

1.3
4

Structural attachment film baffles

- Attachment of glazing to the building structure requires a well thought out approach.
- Moisture damage can occur if moisture condenses at any thermal bridges.
- Thermal bridges must be avoided and warm air from the inside spaces must not penetrate too deeply into the structure.
- The required moisture barriers must be installed as deeply as possible into the inner space using impermeable structural film baffles. This prevents moisture penetration into the structure via condensation from the air inside.
- An additional foil to seal against rainwater must be permeable to moisture. Only if this foil has a water vapour diffusion resistance value μ of max. $\mu = 3000$ can a dry structure be guaranteed in the transition zones.

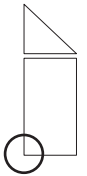
Structural attachments

1.3
4

Facade base

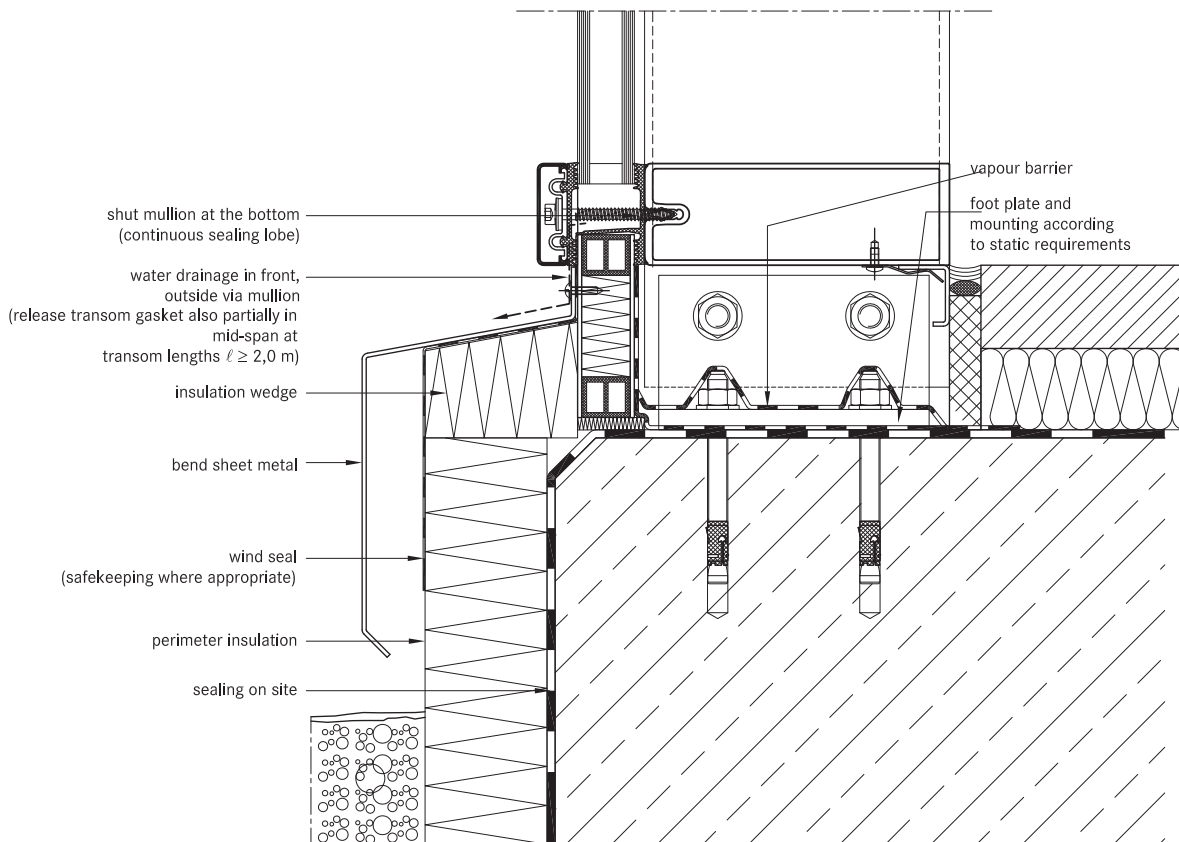
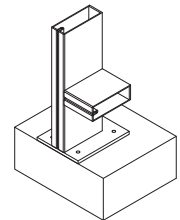
- Controlled drainage of the rebate space can only be ensured if the sealing sections overlap in such a way that no moisture can get under the seals and foils.
- Run foils under the transom seal to act as a moisture barrier and glue to the steel structure. In accordance with DIN 18195 the seal should be run at least 150 mm above the water-guiding layer.
- Attach foil with moisture barrier in accordance with

the requirements of DIN 18195.



Example 1:

Mounting intermediate mullion to base plate



Drainage of the base area is achieved via the seal flap towards the outside. In this case the seal flap around the mullion at the base should not be released. For edge mullions, ensure there is a corre-

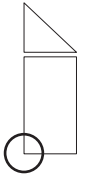
sponding seal placed (continuous transom seal up the to the end point) and a constructive design of the drainage section.

Structural attachments

1.3
4

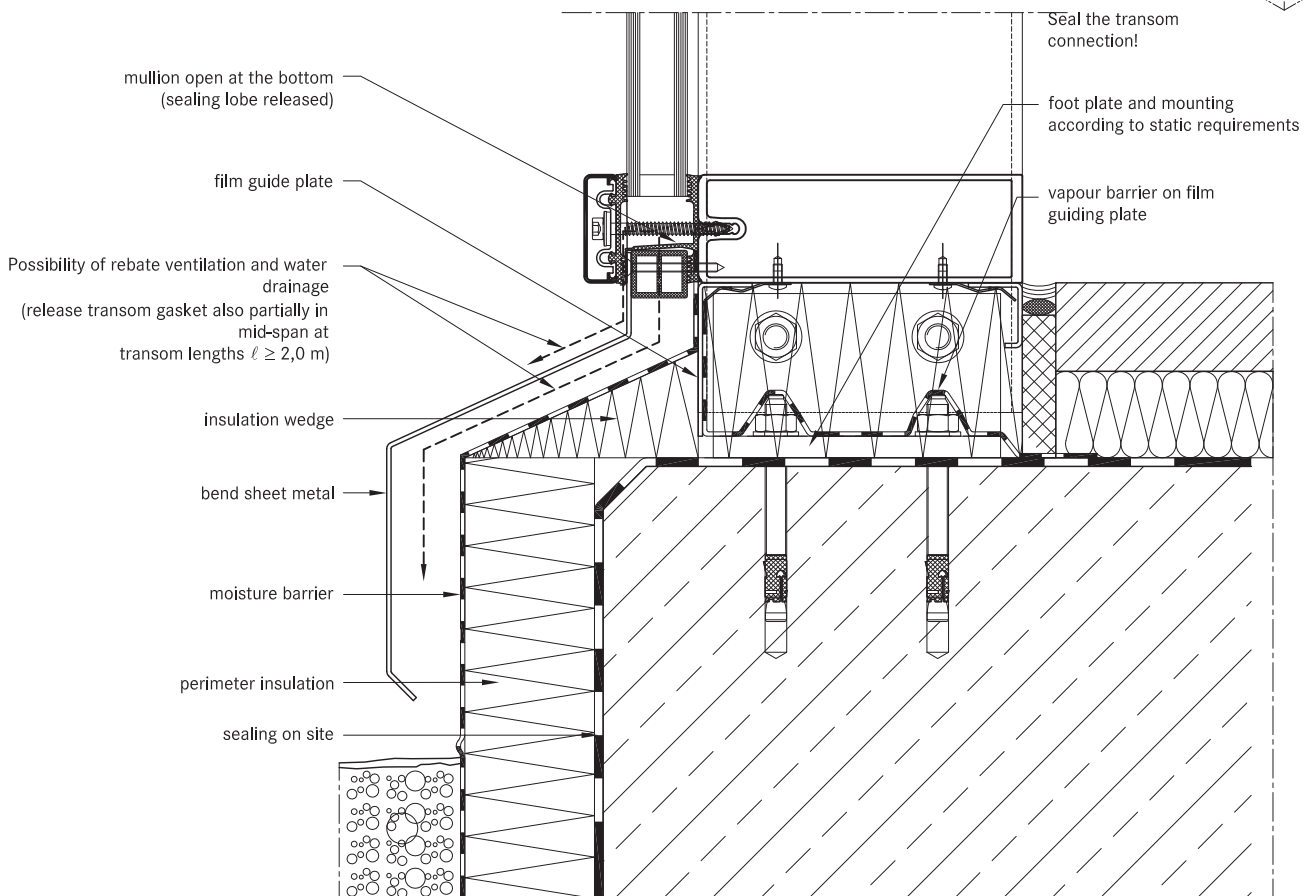
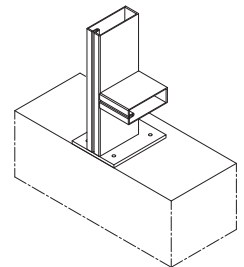
Facade base

- Rebate space ventilation is achieved via the open end of the vertical cover strips.
- Ensure the connection is impermeable to vapour.
- Mullion mountings must be sufficiently statically dimensioned. Required axis and edge distances for anchoring the base plates and in the building structure must be observed.



Example 2:

Mounting intermediate mullion to base plate



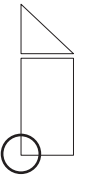
Mounting intermediate mullion to base plate

Structural attachments

1.3
4

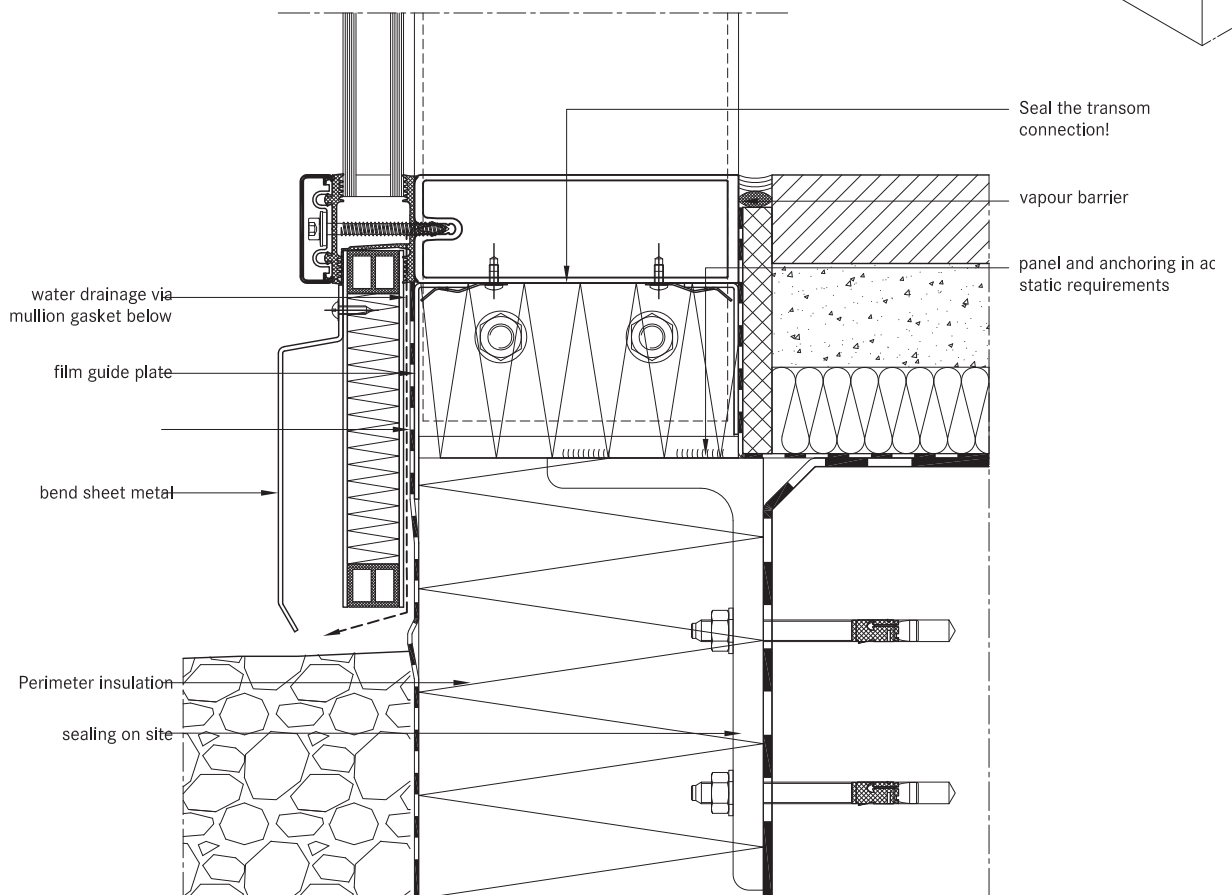
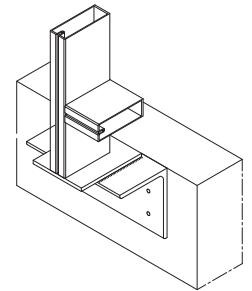
Facade base

- Heat insulation around the structural connection should be designed in such a way as to prevent cold bridges forming.
- Steel parts should also be provided with sufficient protection against corrosion even in concealed areas.
- Weather-protection sheets should be used depending on the requirements of the construction. Sufficient rear ventilation must be ensured.



Example 3:

Attaching intermediate mullions at base plates



Structural attachments

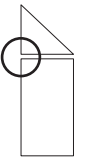
1.3
4

Connection before intermediate floors

- Depending on requirements, mullions are designed as continuous multi-span transoms or separated at each floor.
- Reasons for separating mullions can include e.g. building settlement, fire protection, sound insulation, etc.
- If the separation joint is intended to absorb expansion, then as well as the required degree of freedom for mullions the ability for movement of integrated elements must also be ensured.
- The constructive design of the mullion joint and mounting should be chosen according to the static-

ly calculated base system and determines the choice and arrangement of fixed and movable bearings, type of screw fittings, structural connection parts and attachment to the concrete floor.

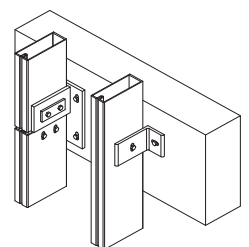
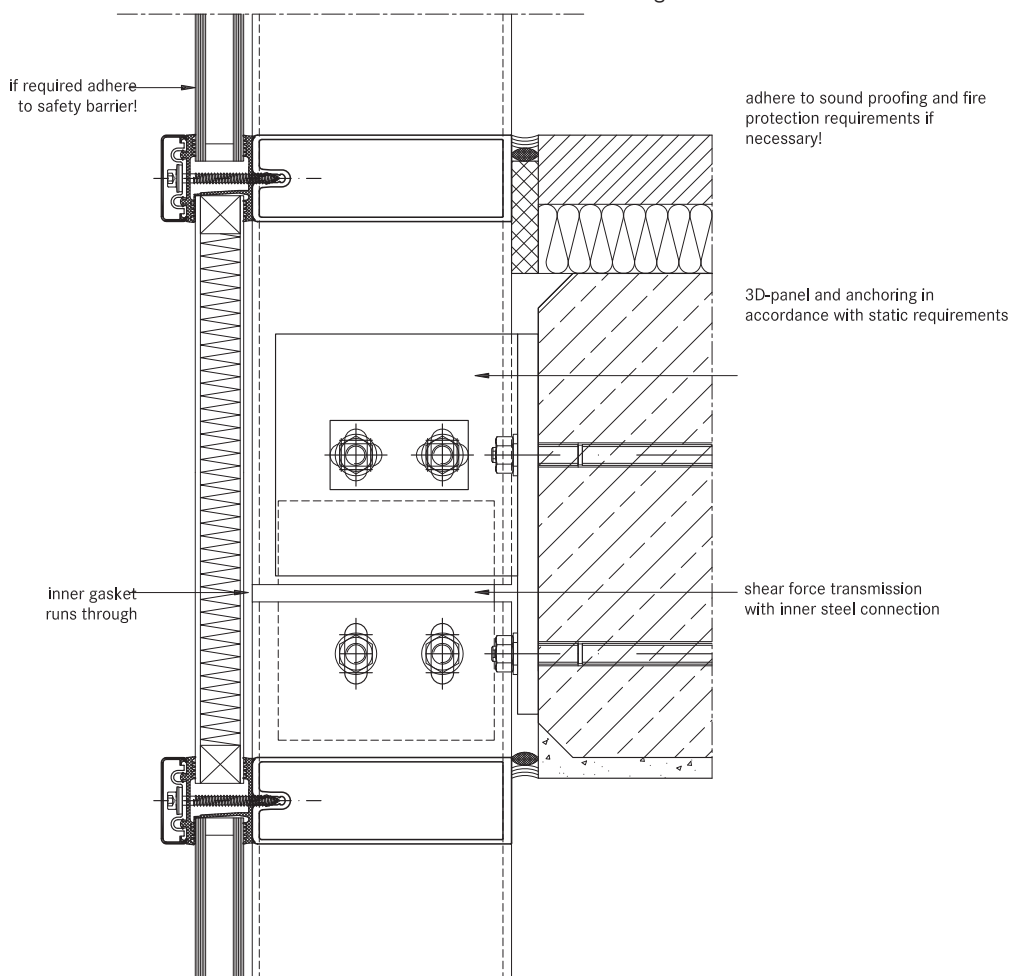
- With continuous mullions and a corresponding mount the multi-span support principle is in effect. Sagging due to horizontal effects is lower. The required moment of inertia reduces for 2-span supports with the same span length compared to the 1-span support by a factor of 0.415. However, a tension and stability analysis should be carried out.



Example:

Mullions separated at each floor

In this example, distribution of horizontal and vertical loads is achieved at each floor through the existing floor structure.

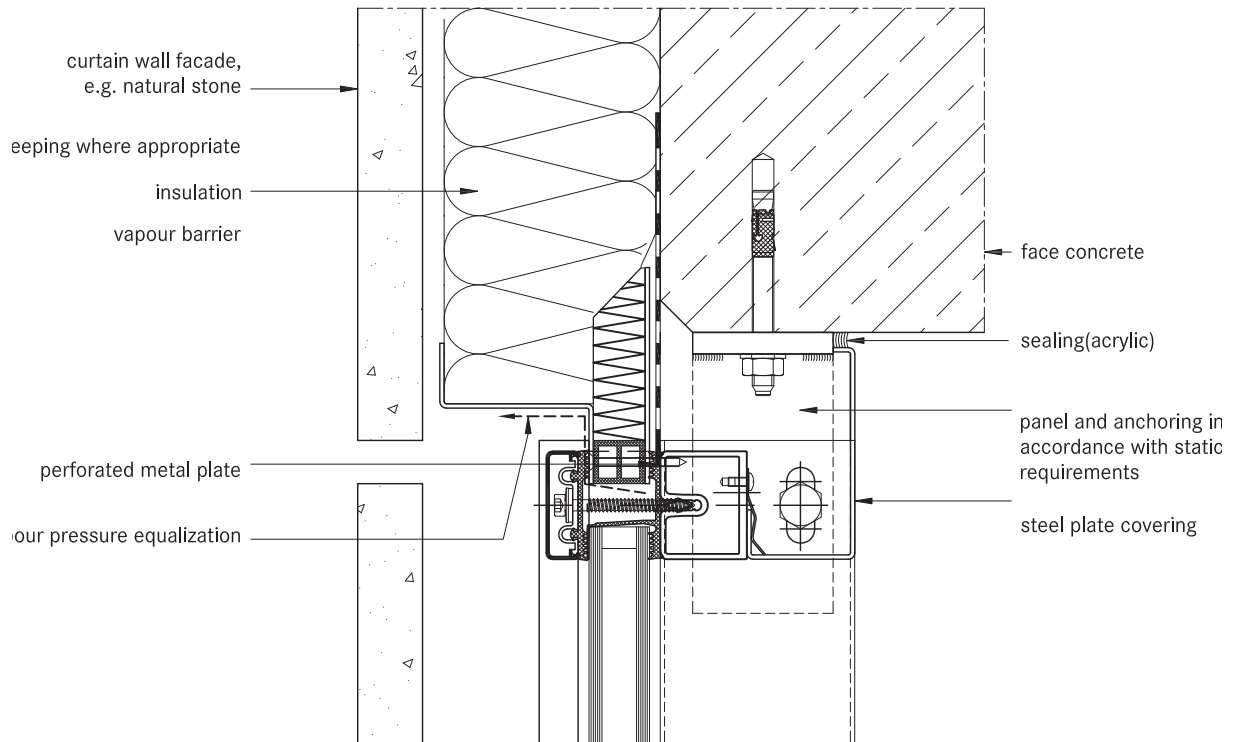
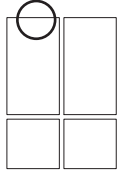


Structural attachments

1.3
4

Ceiling connection

- Structural connections should take account of any movement that may occur.
- As well as temperature induced expansion in the facade, all longitudinal expansions and movements of the affected components must be considered.
- Additional stresses from restraints must be avoided.

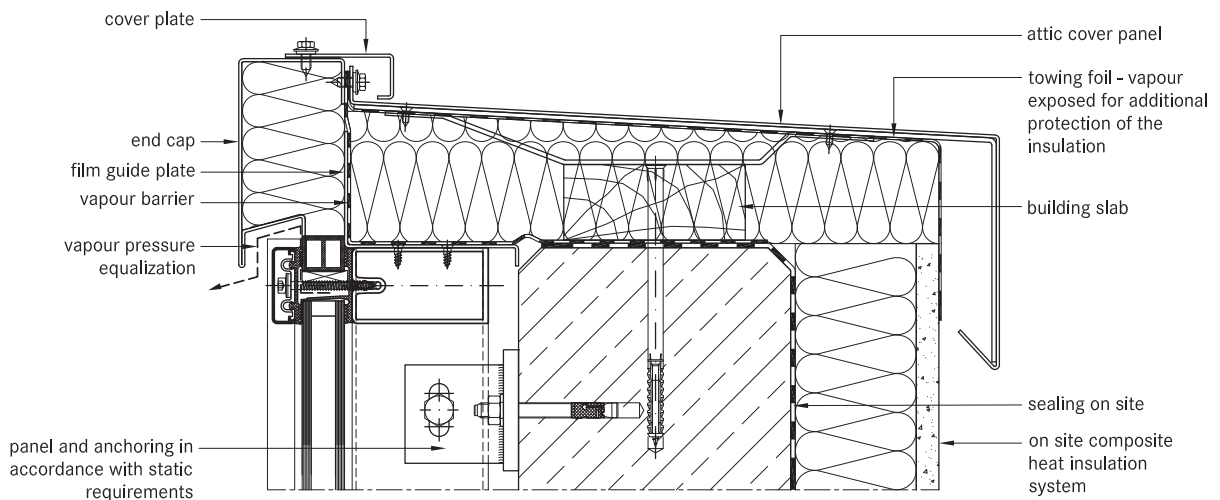
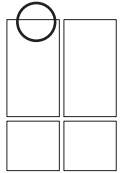


Structural attachments

1.3
4

Facade connection to parapets

- Heat insulation around the structural connection should be designed in such a way as to prevent cold bridges forming.
- Rebate space ventilation is achieved via the open end of the vertical cover strips.
- For attic connections, particular attention must be paid to steam tightness. Warm air with high humidity reaches the colder zones if the inner sealing level is leaky and can lead to moisture penetration of the adjacent construction and thus structural damage.

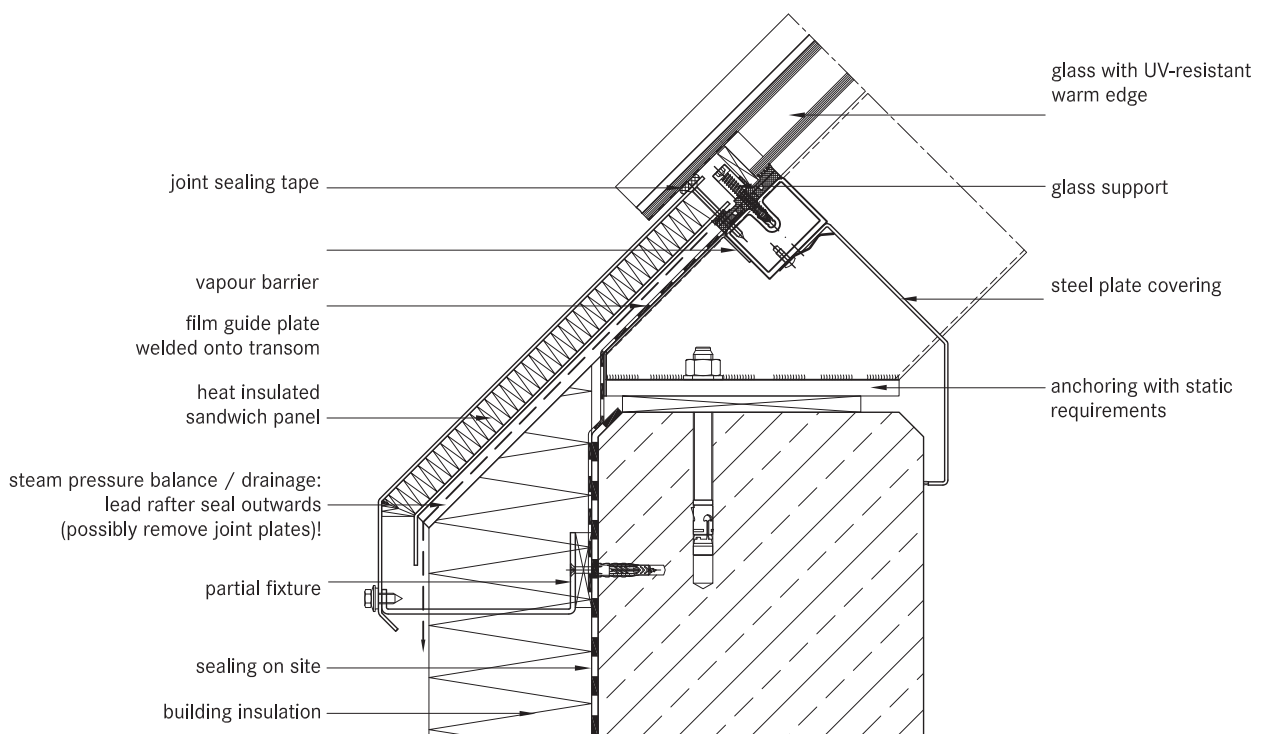
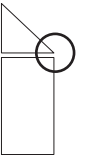


Structural attachments

1.3
4

Connection to structural eaves

- This connection is suitable for glass roofs that are being installed as skylights in the structure. These may be gabled roofs, single pitch roofs, pyramids or arched roofs.

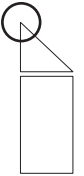
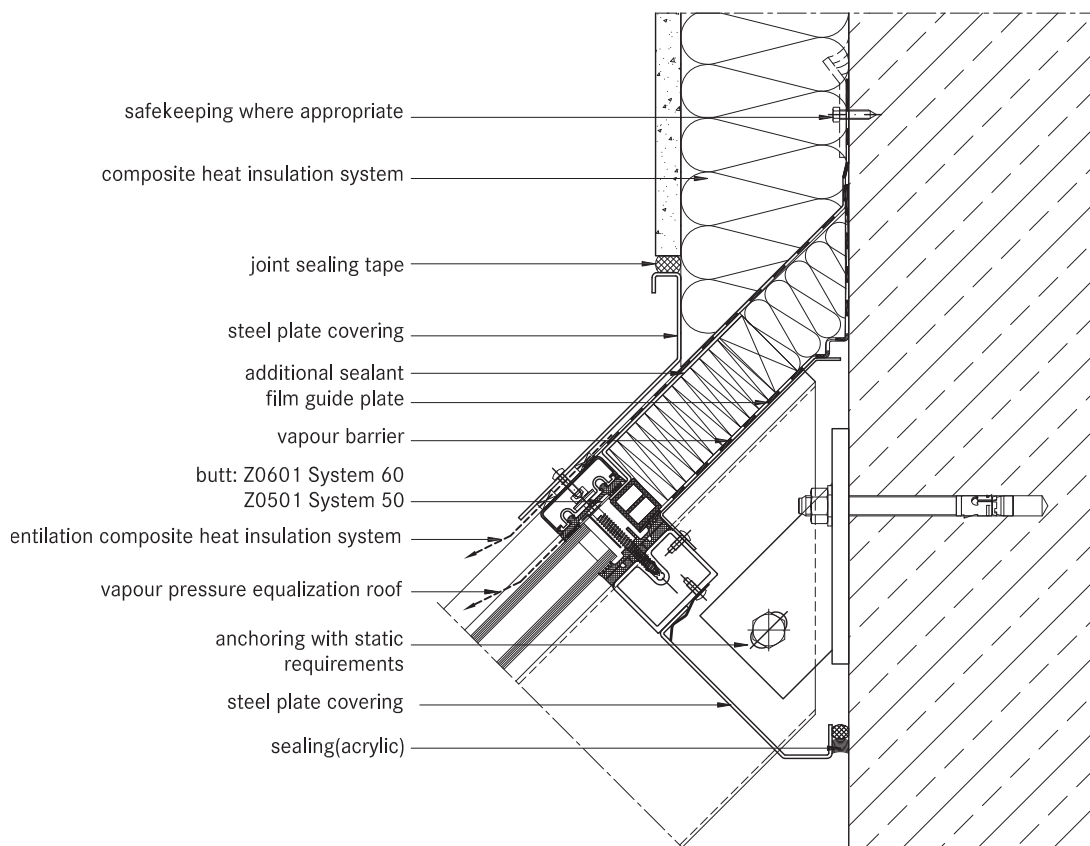


Structural attachments

1.3
4

Ridge connection to walls

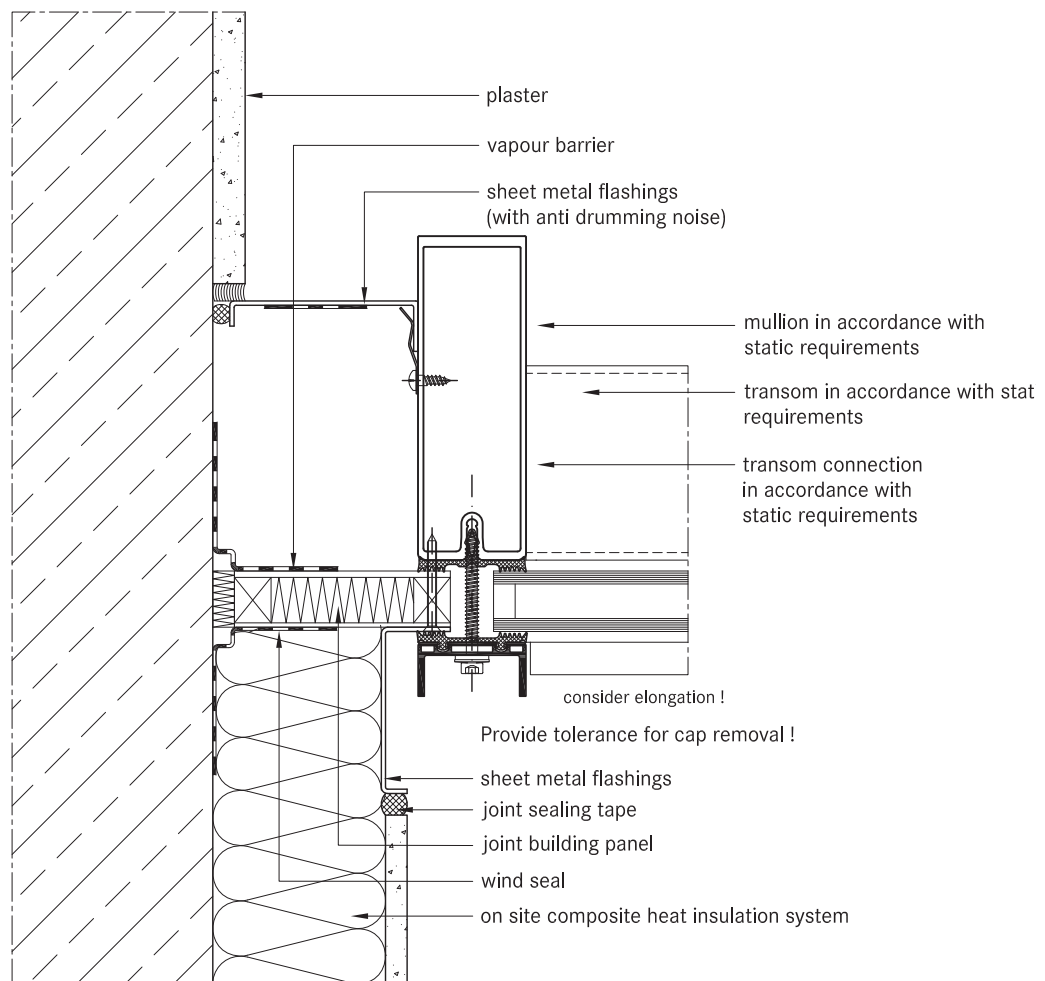
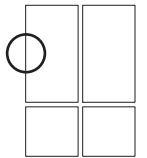
- When making ridge connections to walls, permeability to moisture is particularly important. Warm air with a high level of moisture gets into cooler zones of the inner sealing section where the design is not sufficiently sealed and can cause structural damage from penetrating into the connecting structure.
- Joint seals made from butyl-clad stainless steel plates (Z 0501) must be installed on the outside of joint areas.



Structural attachments

1.3
4

Horizontal wall connection to
heat insulation bonding system

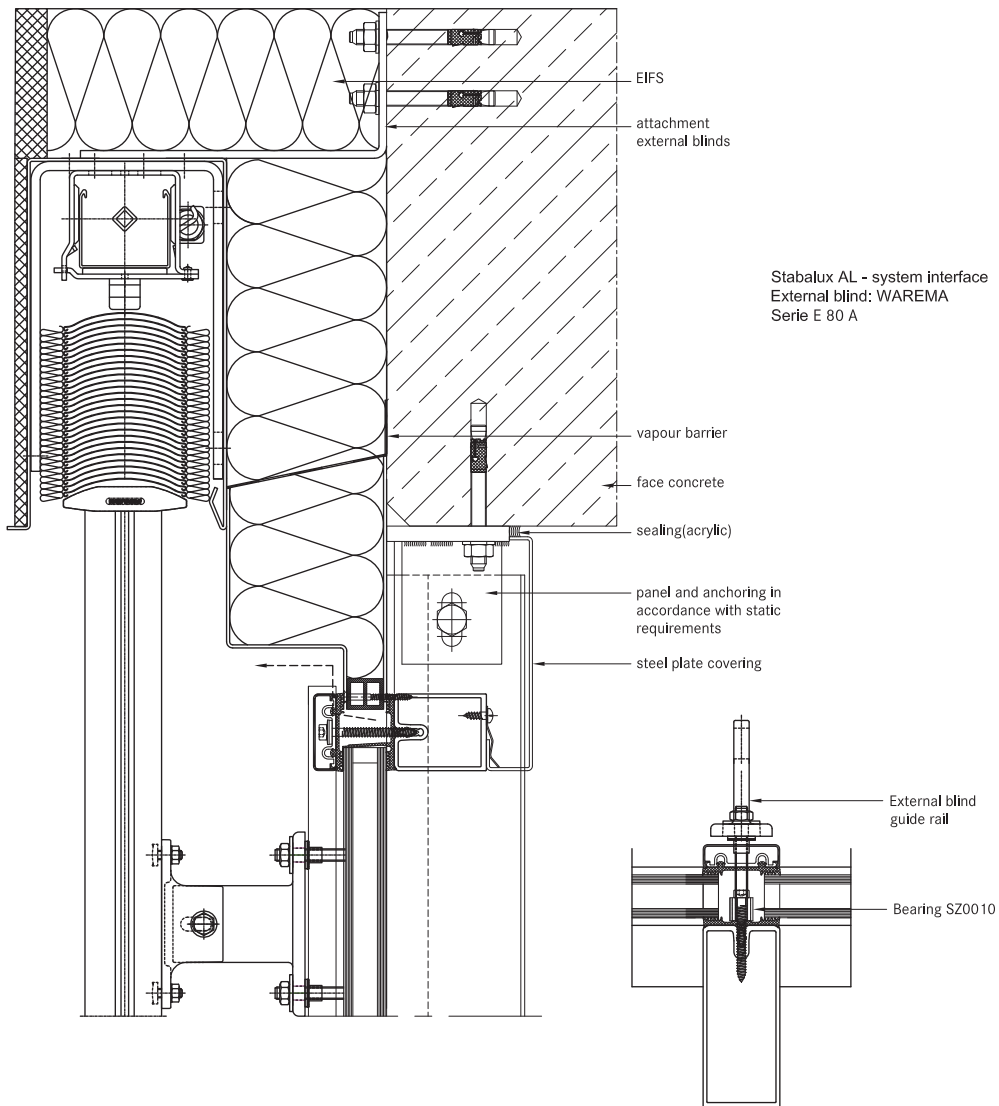
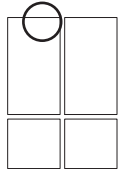


Stabalux AL Design

Structural attachments

1.3
4

Ceiling connection including WAREMA external blinds



Installing windows and doors

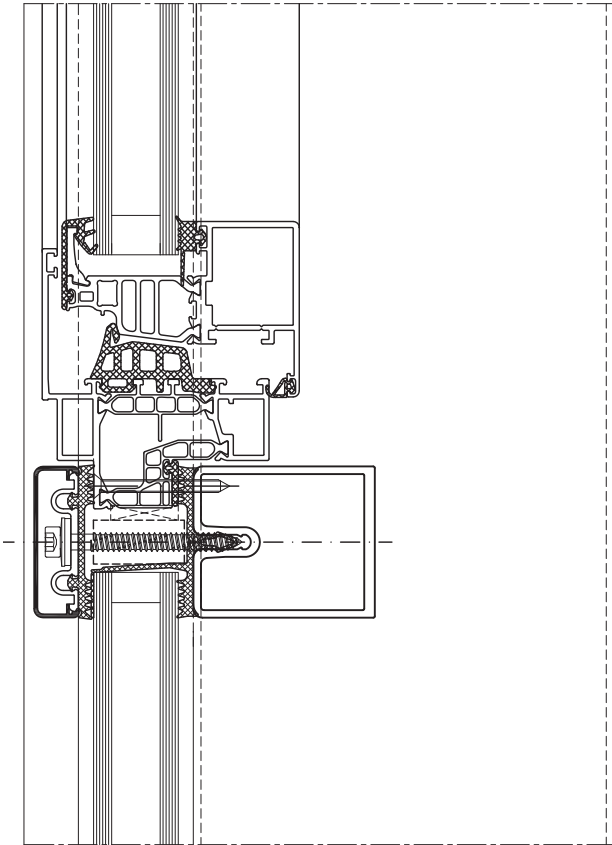
1.3
5

Installing windows and doors

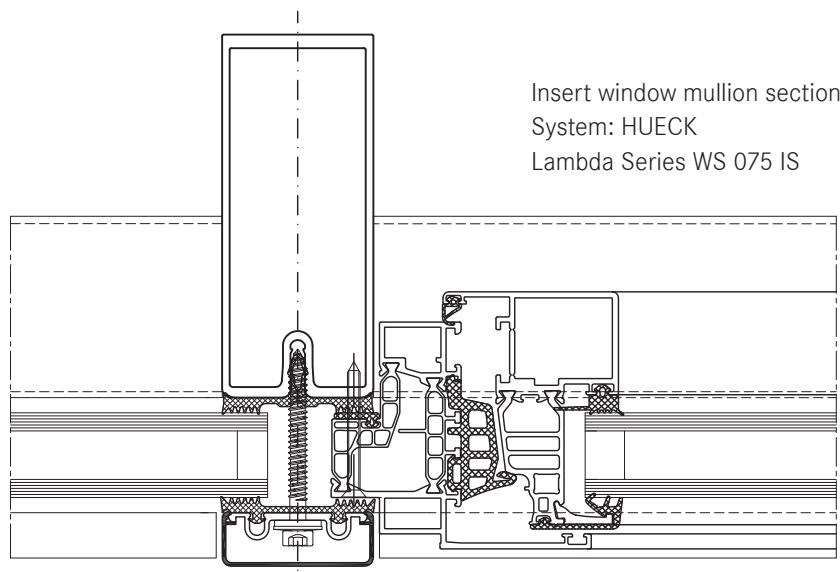
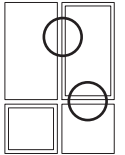
- Mullion and transom facades and glass roofs from Stabalux are neutral with regards to the selection of insert elements.
- All commonly available window and door systems made from steel, aluminium, wood or plastic can be used.
- Frame profiles from the window and door manufacturer's should be selected to match the chosen glass thickness.
- If no profiles with a suitable insert rebate are available, mountings may be used as shown in the following examples.
- Like with glass elements, windows are set into the facade on glass supports, padded and then secured against slippage.

Installing windows and doors

1.3
5



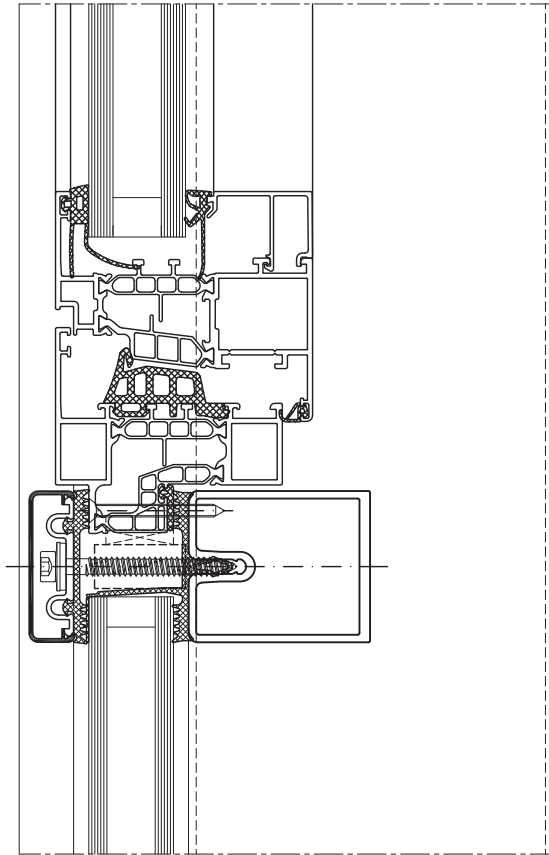
Insert window transom section
System: HUECK
Lambda Series WS 075 IS



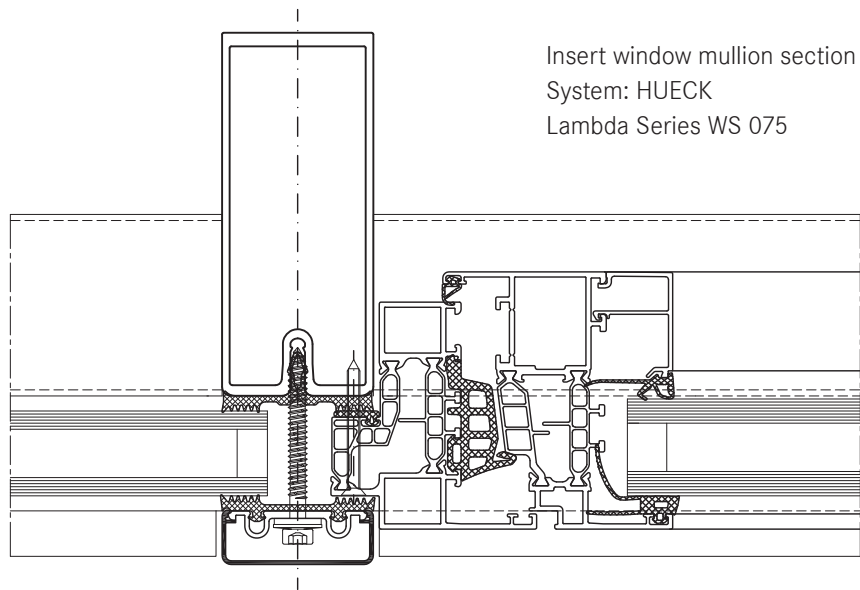
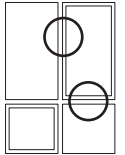
Insert window mullion section
System: HUECK
Lambda Series WS 075 IS

Installing windows and doors

1.3
5



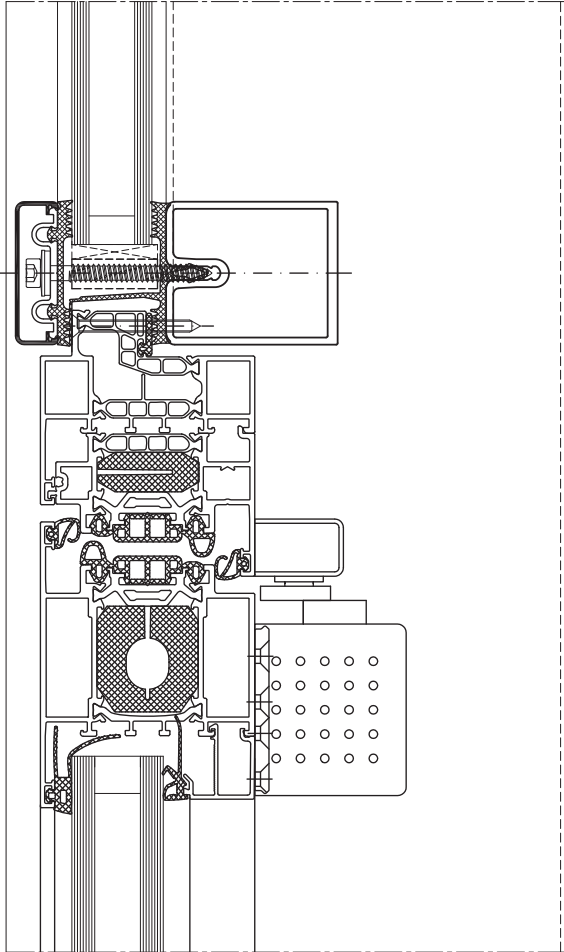
Insert window transom section
System: HUECK
Lambda Series WS 075



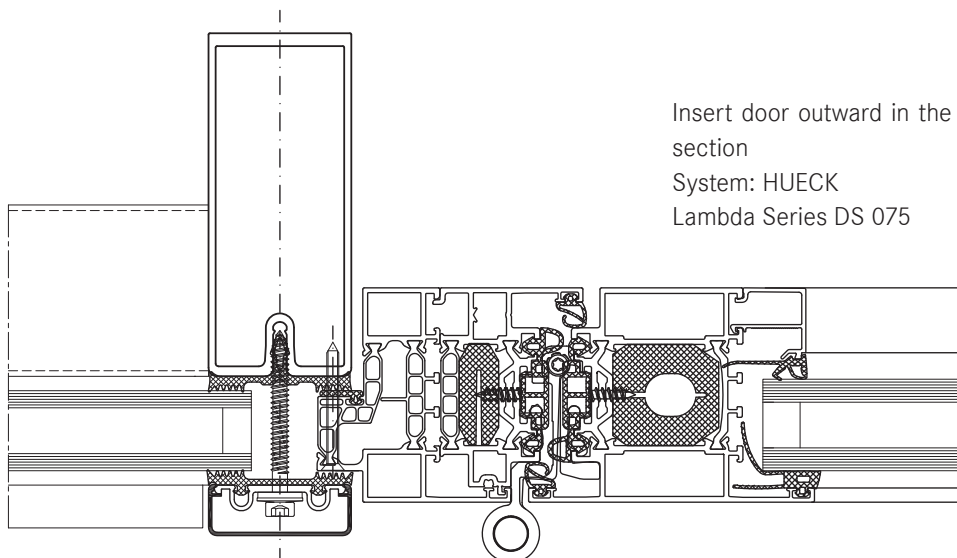
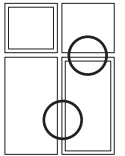
Insert window mullion section
System: HUECK
Lambda Series WS 075

Installing windows and doors

1.3
5



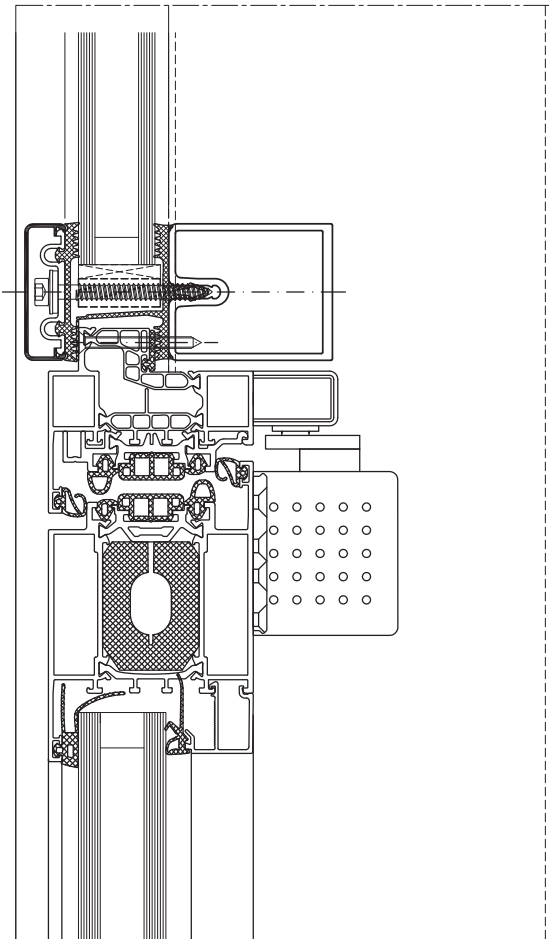
Insert door outward transom section
System: HUECK
Lambda Series DS 075



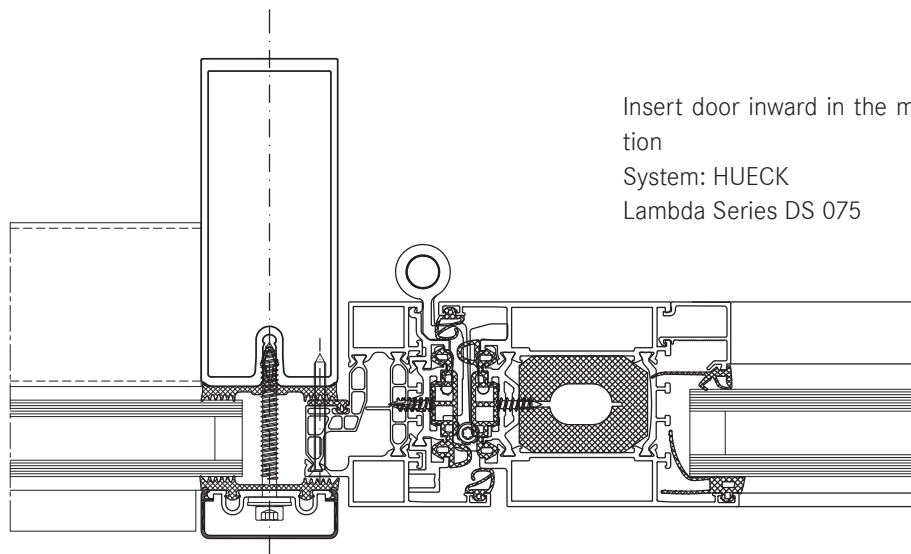
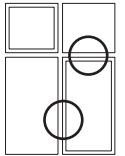
Insert door outward in the mullion
section
System: HUECK
Lambda Series DS 075

Installing windows and doors

1.3
5



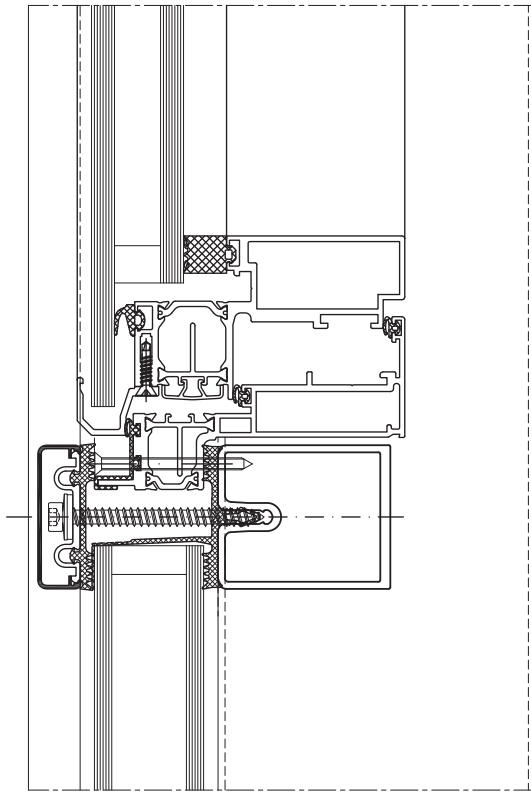
Insert door inward in the transom section
System: HUECK
Lambda Series DS 075



Insert door inward in the mullion section
System: HUECK
Lambda Series DS 075

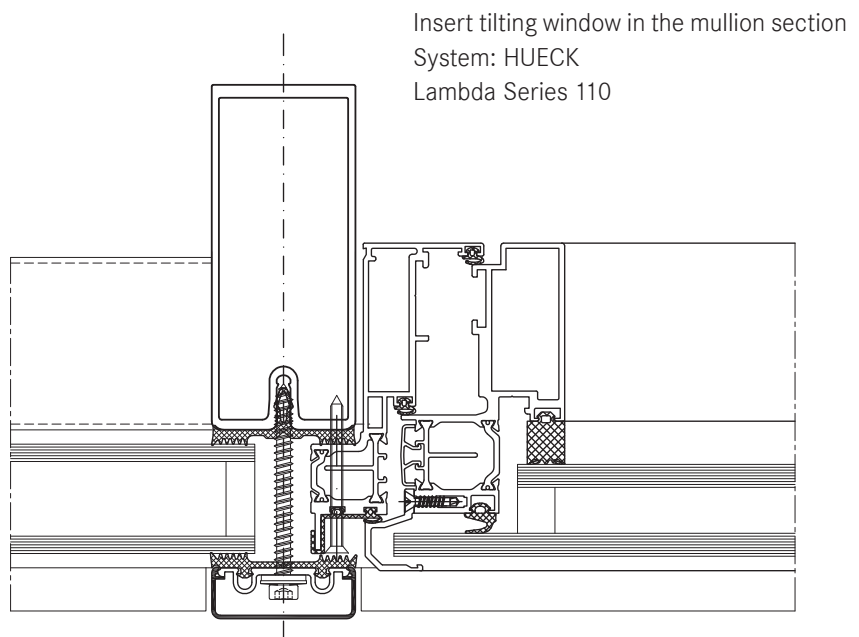
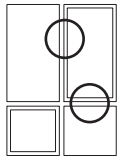
Installing windows and doors

1.3
5



Insert tilting window in the transom section

System: HUECK
Lambda Series 110

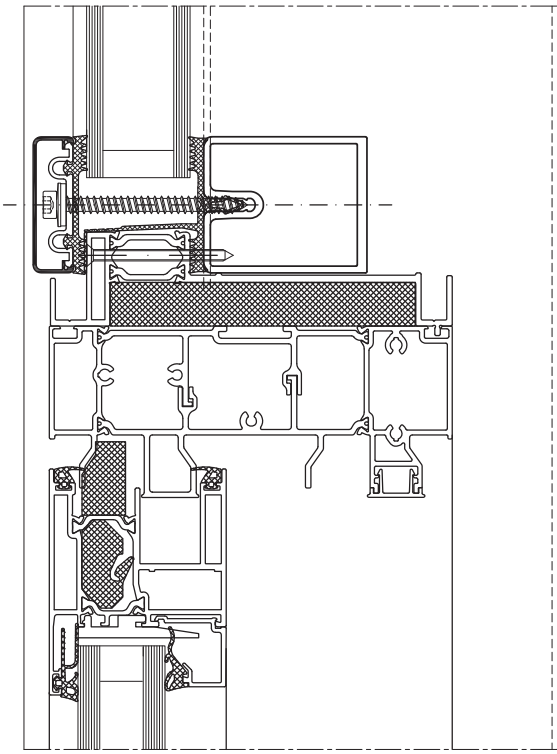


Insert tilting window in the mullion section

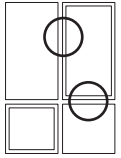
System: HUECK
Lambda Series 110

Installing windows and doors

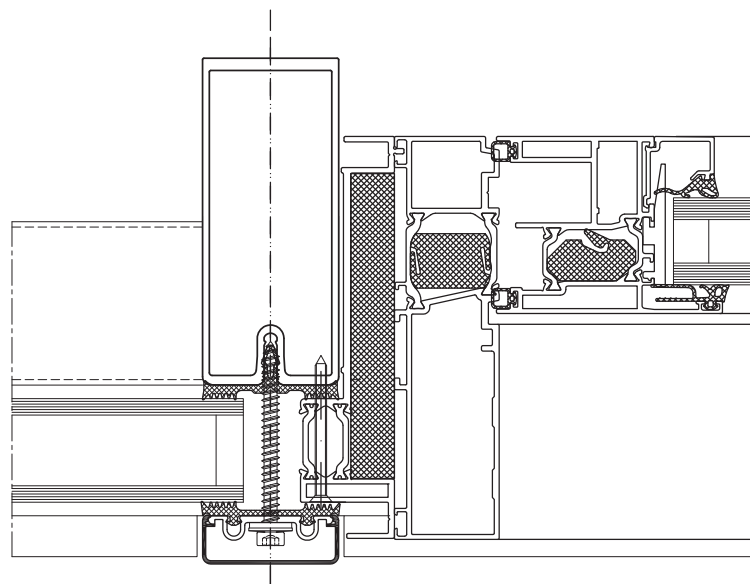
1.3
5



Sliding system transom section
System: HUECK
Volato Series M



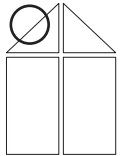
Sliding system mullion section
System: HUECK
Volato Series M



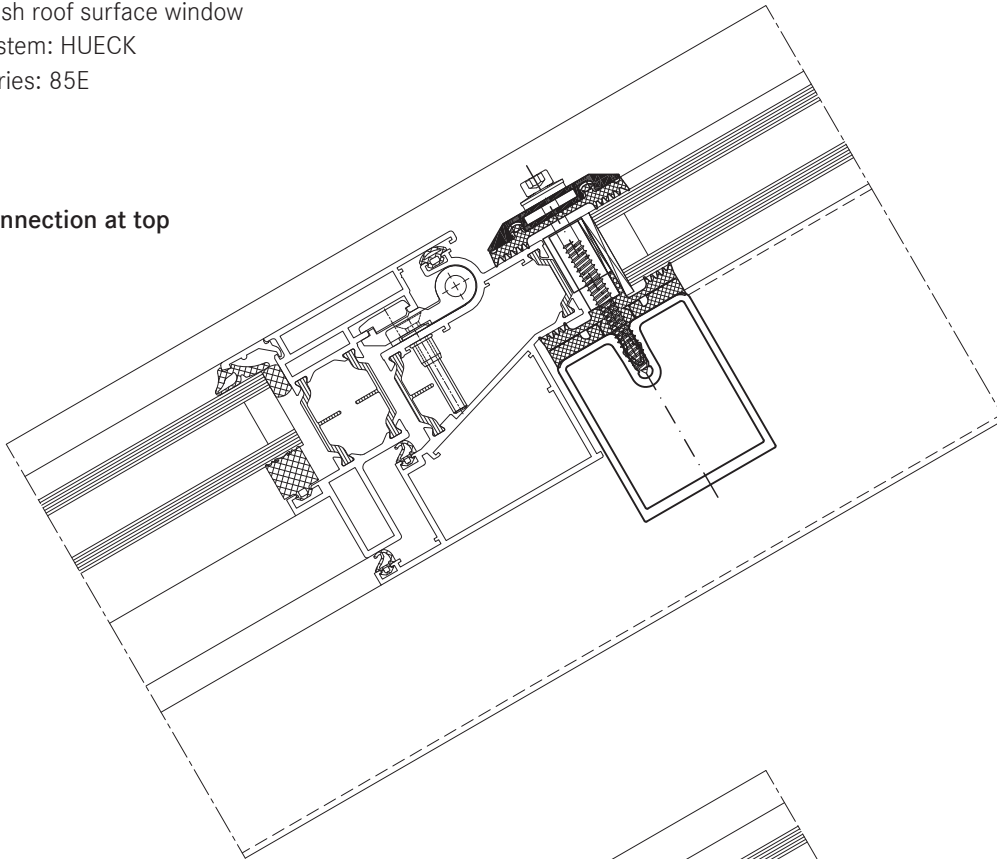
Installing windows and doors

1.3
5

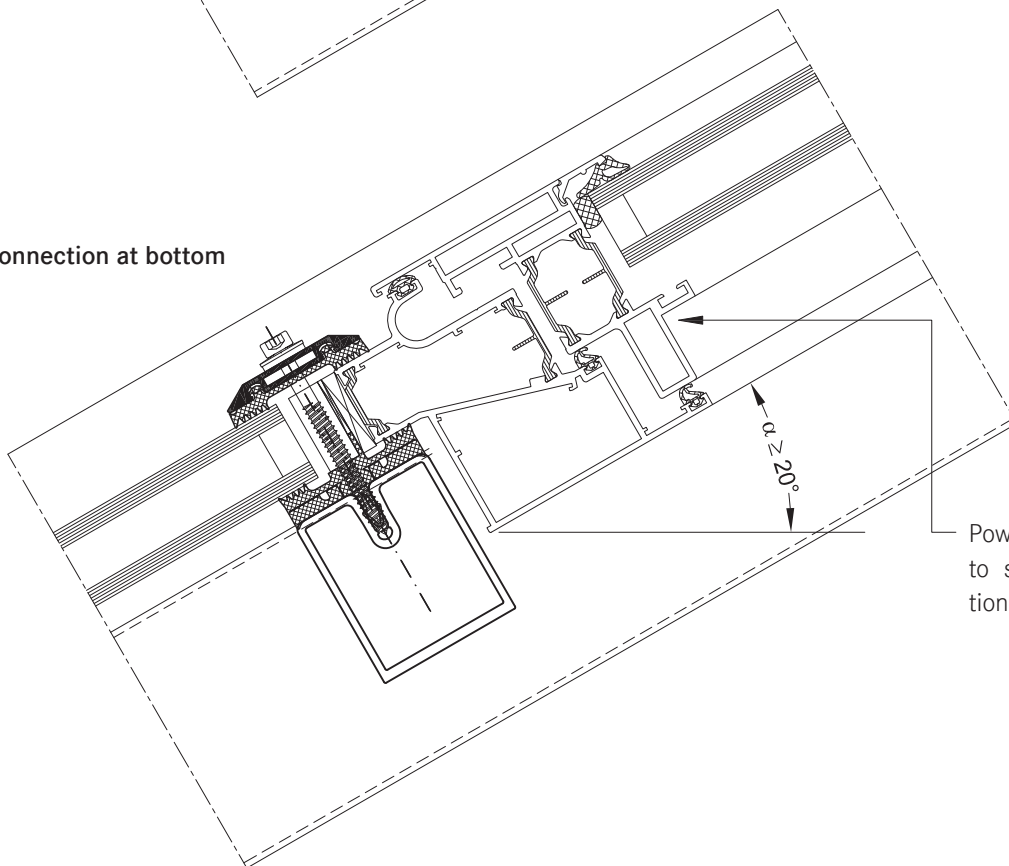
Flush roof surface window
System: HUECK
Series: 85E



Connection at top



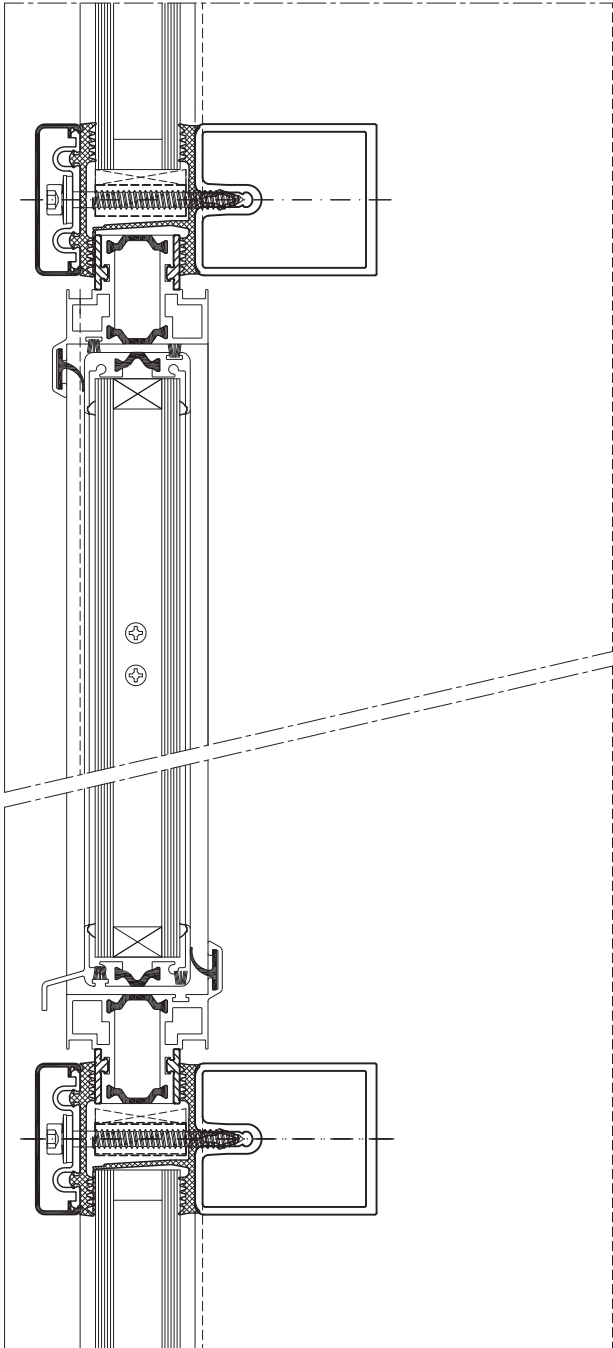
Connection at bottom



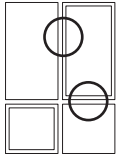
Powered according to system specifications

Installing windows and doors

1.3
5



Insert window - transom sections
System: Hahn
Series: Lamellae S9 iVt-05



Insert window - mullion section
System: Hahn
Series: Lamellae S9 iVt-05

