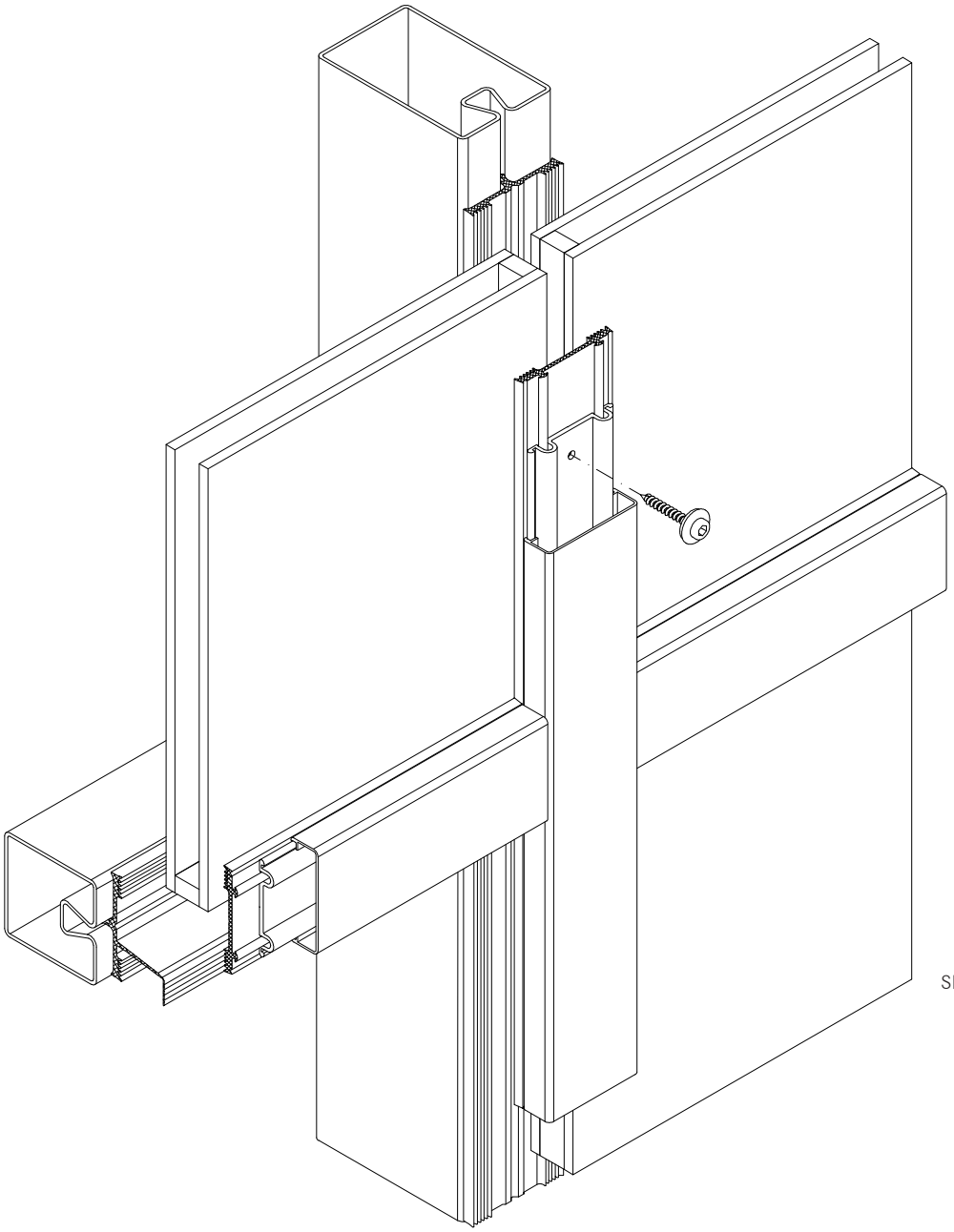
Stabalux SR

System properties

1.1
1

Steel facade system with direct screw fittings



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System properties

1.1
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Stabalux SR system description

- The Stabalux System SR provides a complete range of products in 50 and 60 mm widths to produce vertical and inclined glazing on a supporting steel substructure.
- Stabalux SR 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

		F30 / facade 5 mm sealing height	**Facades with inclinations up to 20°; overlapping inner sealing**	**Roof up to 2° inclination**
System widths		**50, 60 mm**	**50, 60 mm**	**50, 60 mm**
Air permeability EN 12152		AE	AE	AE
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/m² 3.0 kN/m²	2.0 kN/m² 3.0 kN/m²	2.0 kN/m² 3.0 kN/m²
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		from Z-14.4-444	from Z-14.4-444	from Z-14.4-444
Mullion-transom T-joint		from Z -14.4-498 from Z -14.4-742	from Z -14.4-498 from Z -14.4-742	from Z -14.4-498 from Z -14.4-742
Design-dependent Glass weights		≤ 2654 kg	≤ 2654 kg	≤ 2654 kg
Fire protection approval	F30 facade G30 roof	from Z Z-19.14-1451 from Z Z-19.14-1235		
Burglar resistance DIN EN 1627		RC2, RC3	RC2, RC3	
Bullet resistance DIN EN 1522/1523		up to FB6 NS		
Airborne sound insulation		up to R_w ($C;C_{tr}$) = 48 (-1;-4)dB		
Heat transition coefficient		U_f ≤ 0,61 W/(m²K)	U_f ≤ 0,61 W/(m²K)	U_f ≤ 0,61 W/(m²K)

*the test was carried out using a water volume of 3.4 ℓ/(m² min) - above the amount required by the standard

System properties

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 SR has excellent thermal properties. It allows a heat transfer coefficient of U_f for frames of up to 0.617 W/(m²K).

Noise insulation of the glass facade (Section 9)

The noise insulating properties of a facade depend on a variety of factors, each of which affects the properties in a different way. The task of the planner is to expertly select the optimum design on a case-by-case basis. Different combinations of frame profiles, glazing systems and noise reducing glass have vastly different effects on noise insulation. Investigations and measurements performed by us are just examples of a huge range of possibilities and serve only as a guideline.

Fire protection (Section 9)

Outstanding fire protection properties are achieved by small additions to the system and the use of fire-resistant glass. The Stabalux H system have general approvals by the building authorities in Germany in classes G 30 and F 30 in accordance with DIN 4102 Part 13.

The following applies to fire-resistant glass following authorisation:

- Mandatory use of Stabalux stainless steel bottom strips or Stabalux stainless steel cover strips with visible screw fittings.
- Identical sealing geometries; individual seal types (different materials) must be selected according to the authorisation.
- All requirements defined in the authorisation must be adhered to.

Burglar resistance (Section 9)

The Stabalux System SR 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 and 60 mm. System SR 60 in a system width 60 mm satisfies the requirements for resistance class RC3.
Both classes are applied to an average 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 SR is the same as the normal construction. All benefits of using threaded tubes are preserved.

System properties

Bullet resistance (Section 9)

The tests were conducted in the government proof house in Ulm. The assignment to resistance classes took place according to DIN EN 1522. The Stabalux SR system is assigned to the following resistance classes:

- FB3 S / FB3 NS
  Use of a stainless steel bottom strip for the clamp connection and the installation of tested glazing with a glass inset of 18 mm are sufficient to satisfy classes FB3 S/NS.

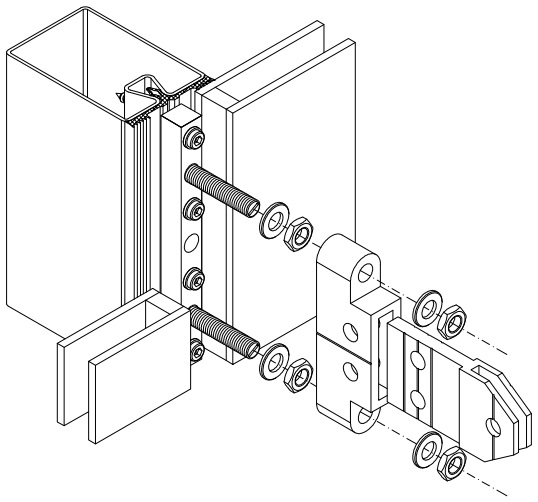
- FB4 S / FB4 NS
  Additional protection in the area adjacent to the lateral joints of the clamping connection satisfies the classes FB4 S/NS.

- FB6 S / FB6 NS
  Only class FB6 S/NS requires strengthening of the rebate to reinforce the storeys. For this purpose, a continuous sheet of aluminium is installed in the rebate.

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

Stabalux SOL sun protection (Section 6)

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.



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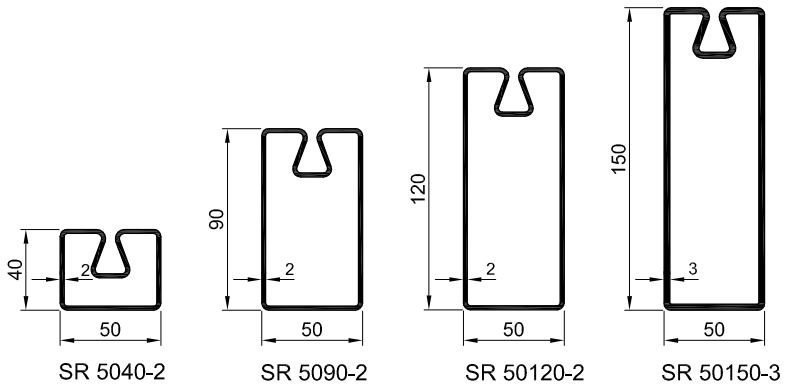
System profiles

Threaded tubes

- The threaded tubes are roll formed using sendzimir-galvanized band steel.
- The tubes can be delivered plain or in stainless steel on request.
- This method is characterised by corrosion protection, dimensional accuracy, small radii and highly effective static cross-sections.
- The galvanized profiles in the hollow cavity can also be processed using standard coating methods, even without laborious grinding work.

Profile overview threaded tubes

SR 50



SR 5040-2 SR 5090-2 SR 50120-2 SR 50150-3

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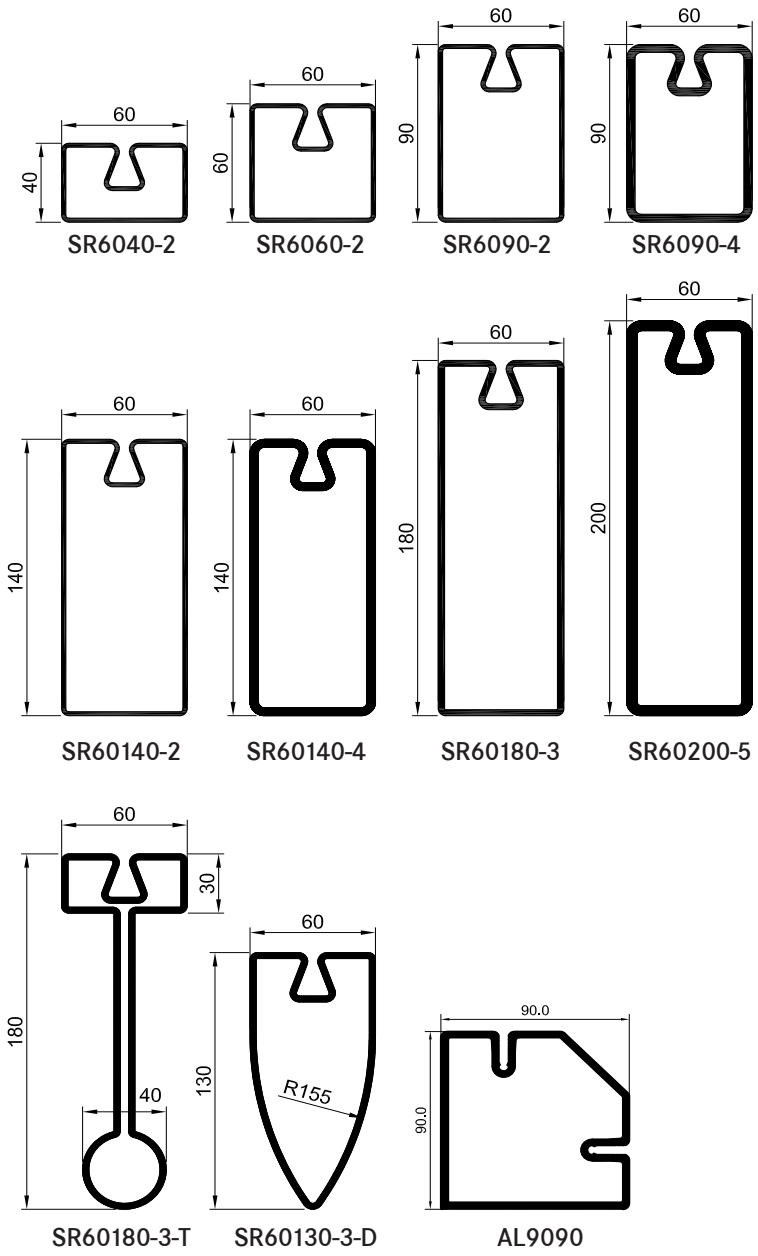
System profiles

1.1
2

SR 60



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System cross sections and inner seals - facade

1.1
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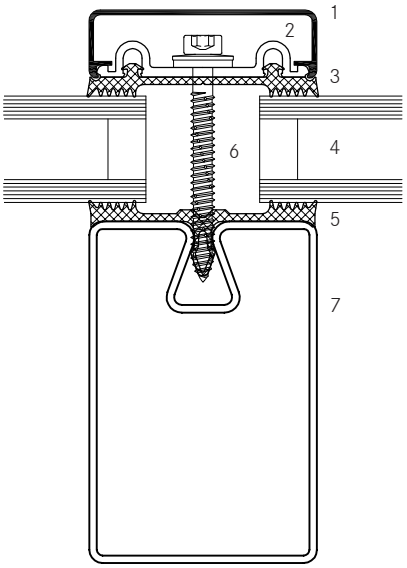
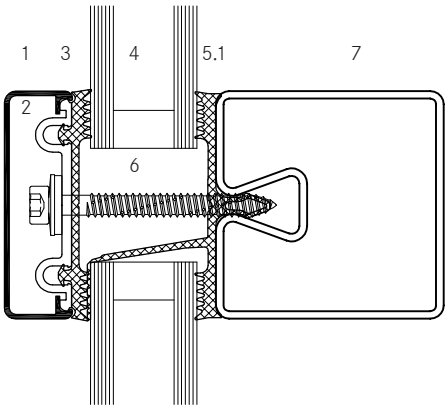
Inner seal 5 mm high / 1 drainage level

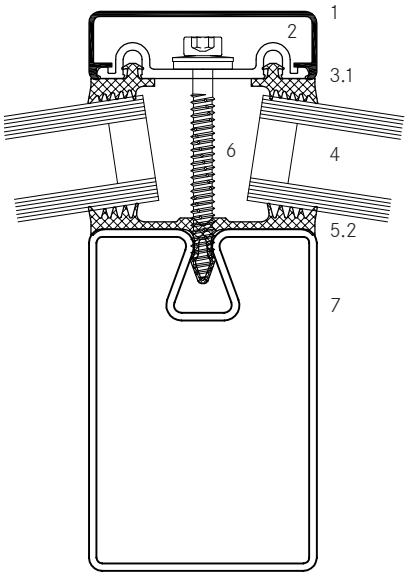
Vertical glazing mullion



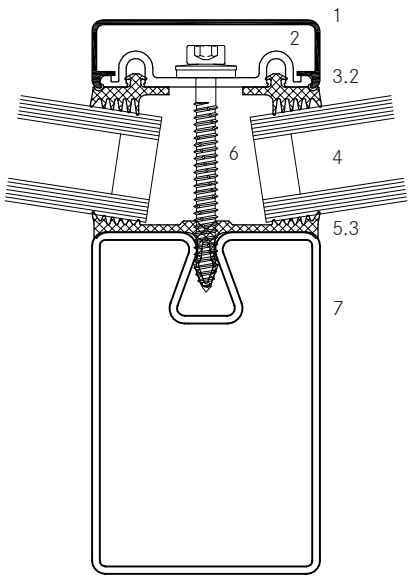
Vertical glazing transom



Polygonal glazing mullions - convex 3° - 15°



Polygonal glazing mullions - concave 3° - 10°



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1 Upper strip
2 Lower strip
3 Outer seal
3.1 Outer seal convex polygonal glazing
3.2 Outer seal concave polygonal glazing
4 Glass / panel
5 Inner seal
5.1 Inner sealing using a seal flap
5.2 Inner seal convex polygonal glazing
5.3 Inner seal concave polygonal glazing
6 System screw fittings
7 Steel profile

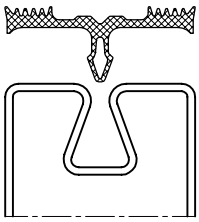
System cross sections and inner seals - facade

1.1
3

Inner seal 5 mm high / 1 drainage level

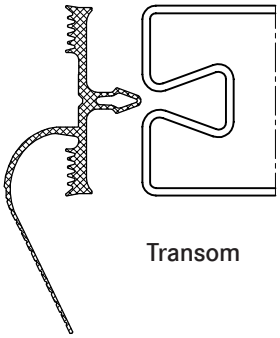
- The seal geometry depends on the wall thickness of the various threaded tubes.

System 50 mm



Mullion

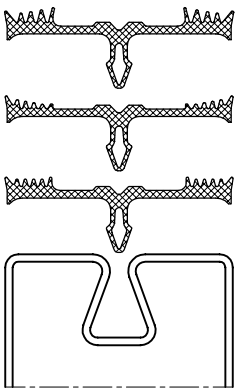
e.g. GD 5201*



Transom

e.g. GD 5203*

System 60 mm

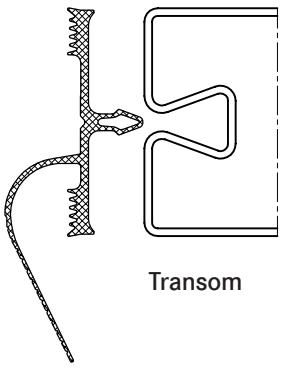


Mullion

e.g. GD 6210*
Polygonal/convex

e.g. GD 6211*
Polygonal/concave

e.g. GD 6202*



Transom

e.g. GD 6204*

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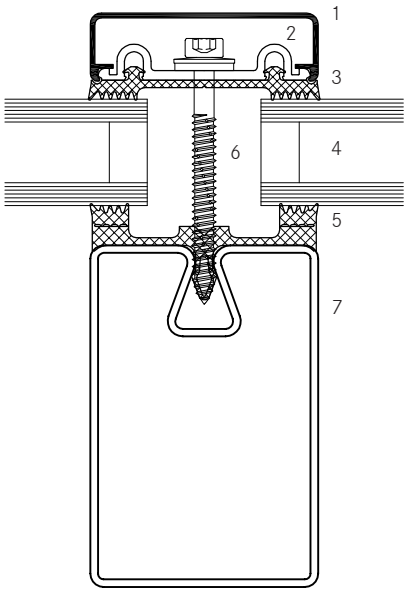
*seals for different requirements have the same geometries. They are distinguished by their different designations, e.g. G30 or F30 to match the corresponding classifications and fire-resistant glass.

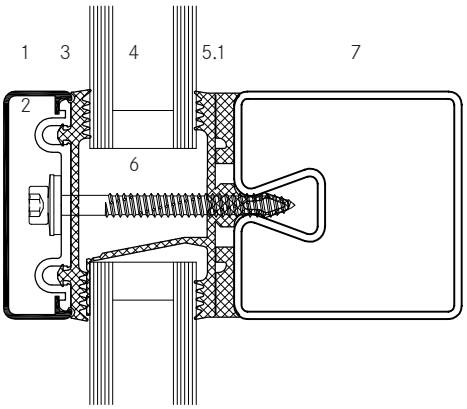
System cross sections and inner seals - facade

Inner seal 10 mm high / 2 overlapping drainage levels

Vertical glazing mullion - 2nd level*



Vertical glazing transom -1st level*



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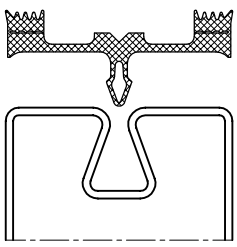
1 Upper strip
2 Lower strip
3 Outer seal
4 Glass / panel
5 Inner seal 10 mm
5.1 Inner sealing using a seal flap 10 mm
6 System screw fittings
7 Steel profile

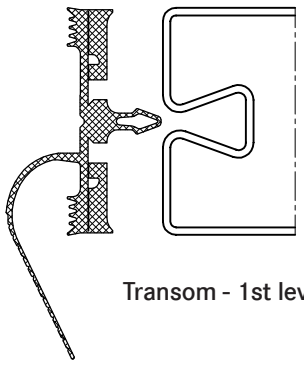
System 60 mm

- The seal geometry depends on the wall thickness of the various threaded tubes.



e.g. GD 6206

Mullions - 2nd level



e.g. GD 6303

Transom - 1st level

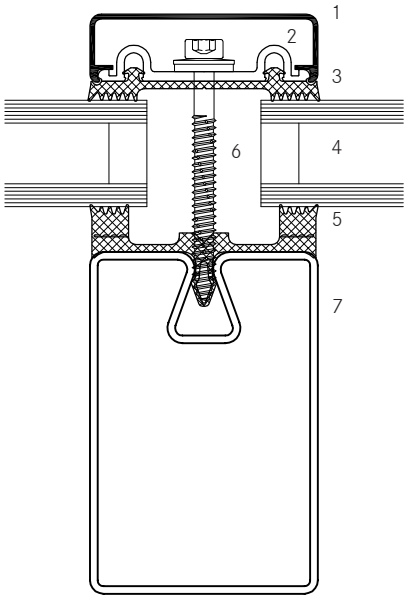
SR_1.1_005.dwg

* tested system for vertical facades and facades with an incline up to 20°

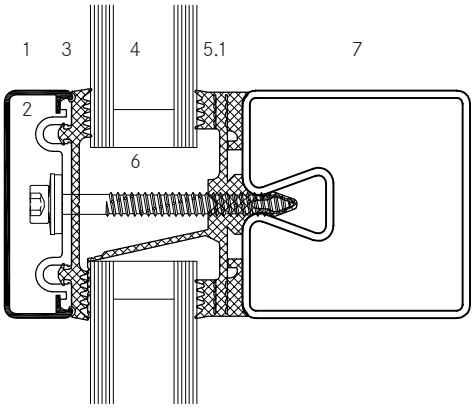
System cross sections and inner seals - facade

Inner seal 12 mm tall / 3 overlapping drainage levels

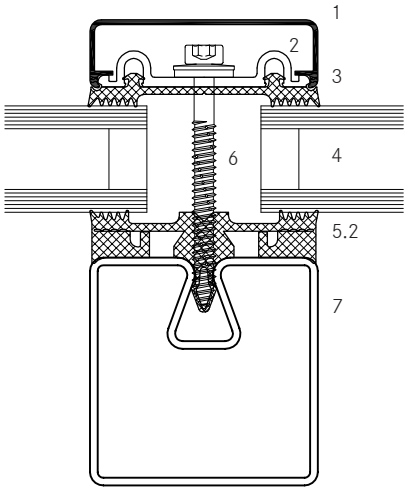
Vertical glazing main mullion - 3rd level*



Vertical glazing transom - 2nd level*



Vertical glazing secondary mullion - 1st level*



SR_1.1_004.dwg

1 Upper strip
2 Lower strip
3 Outer seal
4 Glass / panel
5 Inner seal 12 mm main mullion
5.1 Inner seal using a seal flap
5.2 Inner seal 12 mm secondary mullion
6 System screw fittings
7 Steel profile

*tested system for vertical facades and facades with an inward incline up to 20°

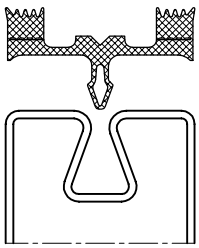
System cross sections and inner seals - facade

1.1
3

Inner seal 12 mm tall / 3 overlapping drainage levels

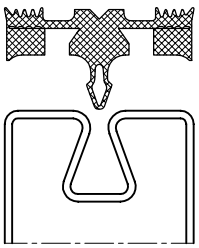
- The seal geometry depends on the wall thickness of the various threaded tubes.

System 50 mm



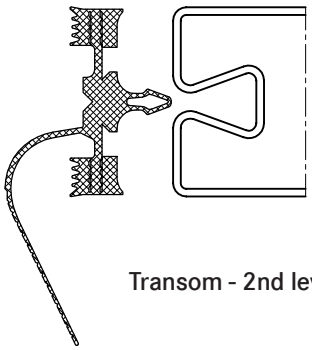
GD 5314

Main mullion - 3rd level



GD 5315

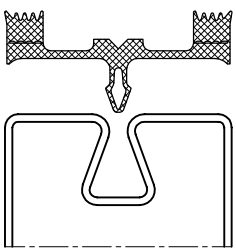
Secondary mullion - 1st level



GD 5317

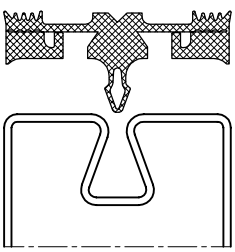
Transom - 2nd level

System 60 mm



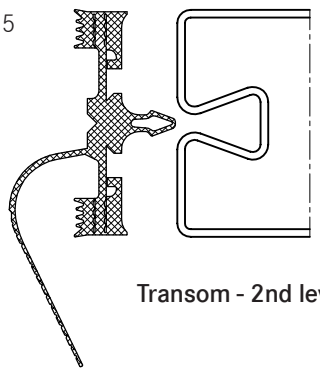
e.g. GD 6314

Main mullion - 3rd level



e.g. GD 6315

Secondary mullion - 1st level



e.g. GD 6318

Transom - 2nd level

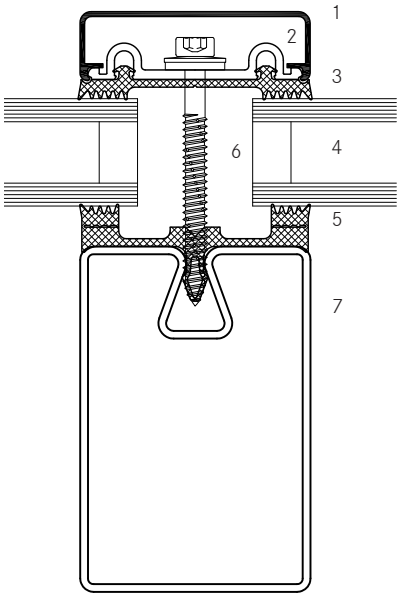
SR_1.1_005.dwg

System cross sections and inner seals - roof

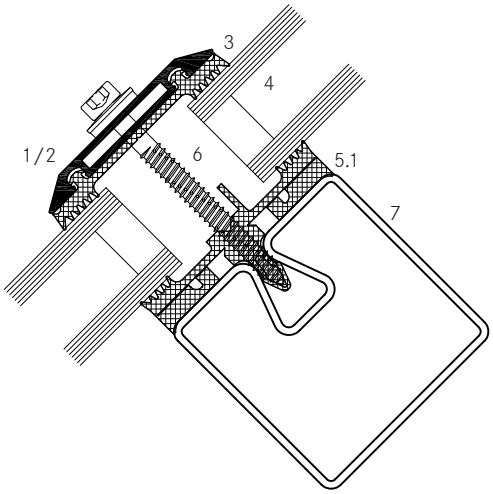
1.1
4

Inner seal 10 mm tall / 2 overlapping levels

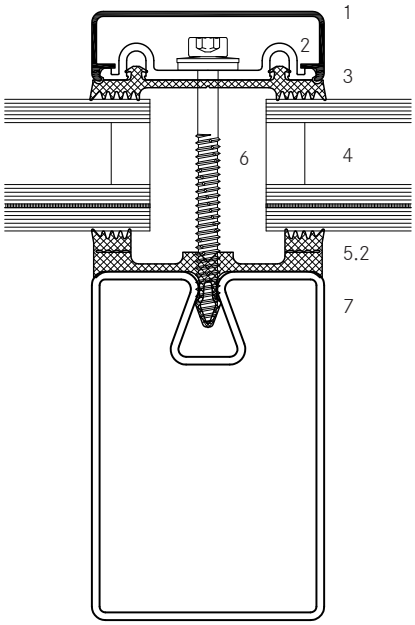
Inclined glazing rafter



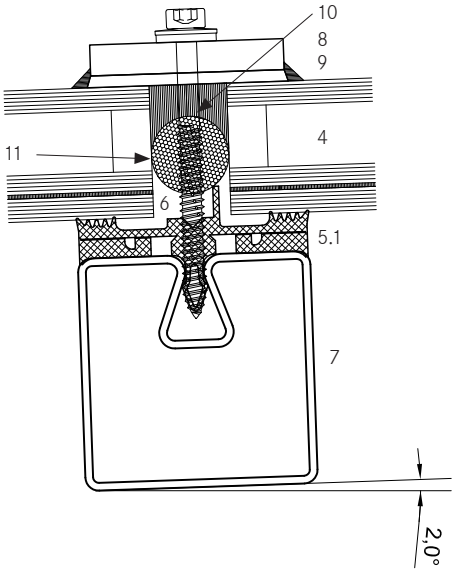
Angled glazing transom



Angled glazing rafter up to 2° inclination



Angled glazing transom up to 2° inclination



SR_1.1_004.dwg

1 Upper strip
2 Lower strip
3 Outer seal
4 Glass / panel
5 Inner seal 10 mm rafter
5.1 Inner seal 10 mm transom
6 System screw fittings
7 Steel profile
8 Hold-down clamp
9 Washer
10 All weather silicone seal
11 rope seal

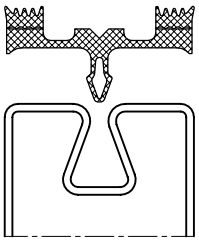
System cross sections and inner seals - roof

1.1
4

Inner seal 10 mm tall / 2 overlapping levels

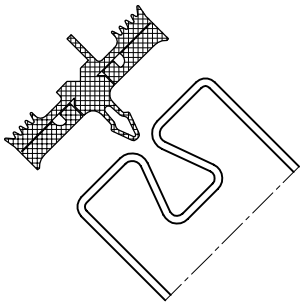
- The seal geometry depends on the wall thickness of the various threaded tubes.

System 50 mm



e.g. GD 5205

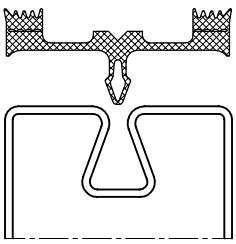
Rafter - 2nd level



e.g. GD 5207

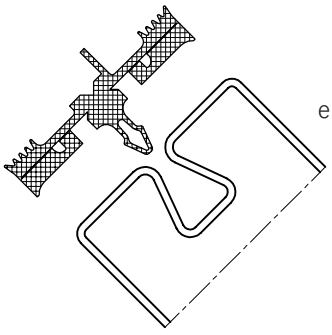
Transom - 1st level

System 60 mm



e.g. GD 6206*

Rafter - 2nd level



e.g. GD 6208*

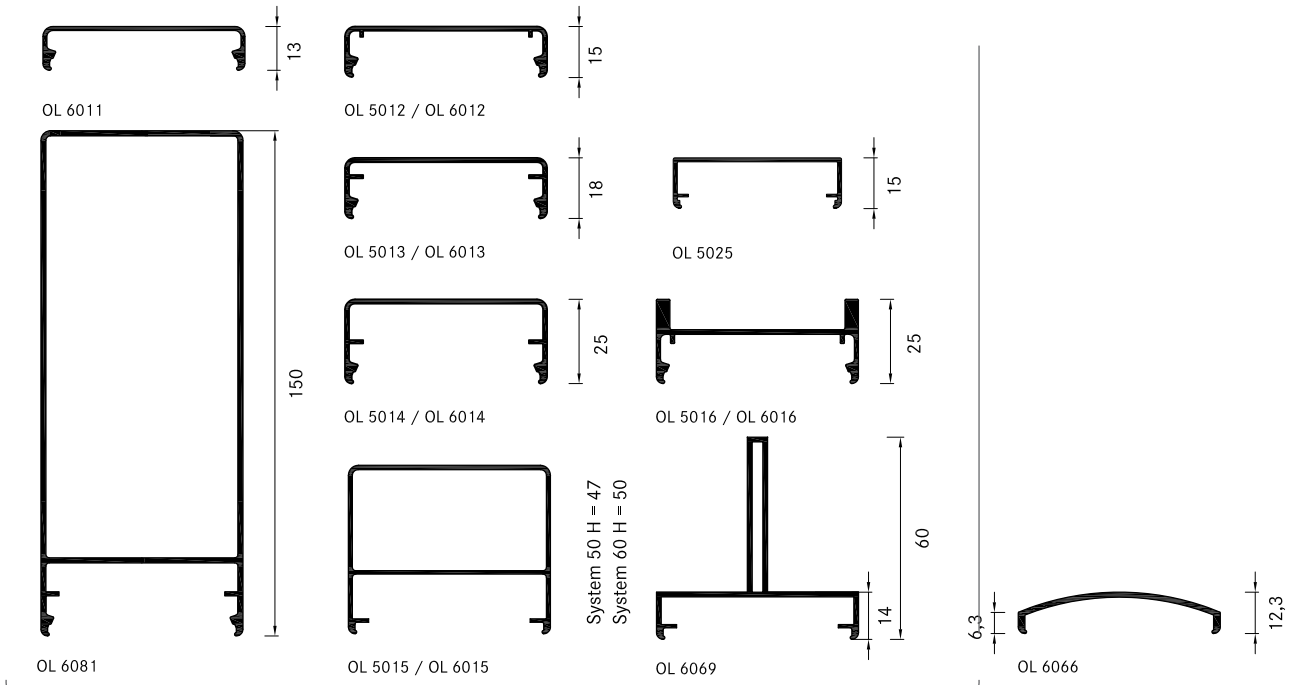
Transom - 1st level

SR_1.1_005.dwg

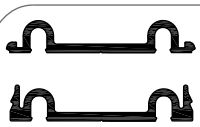
*seals for different requirements have the same geometries. They are distinguished by their different designations, e.g. G30 according to the matching classification and the fire protection glazing.

Cover strips and outer seals

Aluminium - concealed screw fittings



UL 5110 / UL 6110 / UL 8110 [4]
stainless steel / galvanized steel
fire resistance / burglary protection
glazing



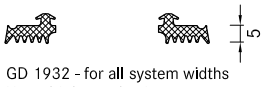
UL 5009 / UL 5009 L [4]
UL 6009 / UL 6009 L [4]

UL 6005 [3]

GD 5122 G30 / GD 5122 WK - to UL 5110 [1)+2)]
GD 6022 G30 / F30 - to UL 6110 [1)+2)]
GD 6122 WK - to UL 6110 [1)+2)]

GD 5024 / GD 6024

GD 5054 / GD 6054
Outer transom seal



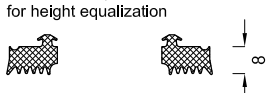
GD 1932 - for all system widths
Use with insulation block

GD 1925 - for all system widths
Polygonal glazing convex

GD 1928 - for all system widths
Polygonal glazing concave

GD 1934 - seperated seal
for height equalization

GD 1936 - seperated seal
for height equalization



GD 1938 -seperated seal
for height equalization

GD 1940 - seperated seal
for height equalization

1) Seals for stainless steel bottom or cover strips satisfy different requirements with the same geometry. Refer to the designation: e.g. G30/F30 - Fire protection, WK - Burglar resistance.

2) The corresponding sections, i.e. the general building approval, must be adhered to if specific requirements are placed in the facade in regard to fire protection / burglar resistance.

3) Use screws without sealing washer
OL 5022, possibly with PA washer Z 0033

4) The geometry of the clipping process is different for the 50 and 60 mm system widths

SR_1.1_006.dwg

Cover strips and outer seals

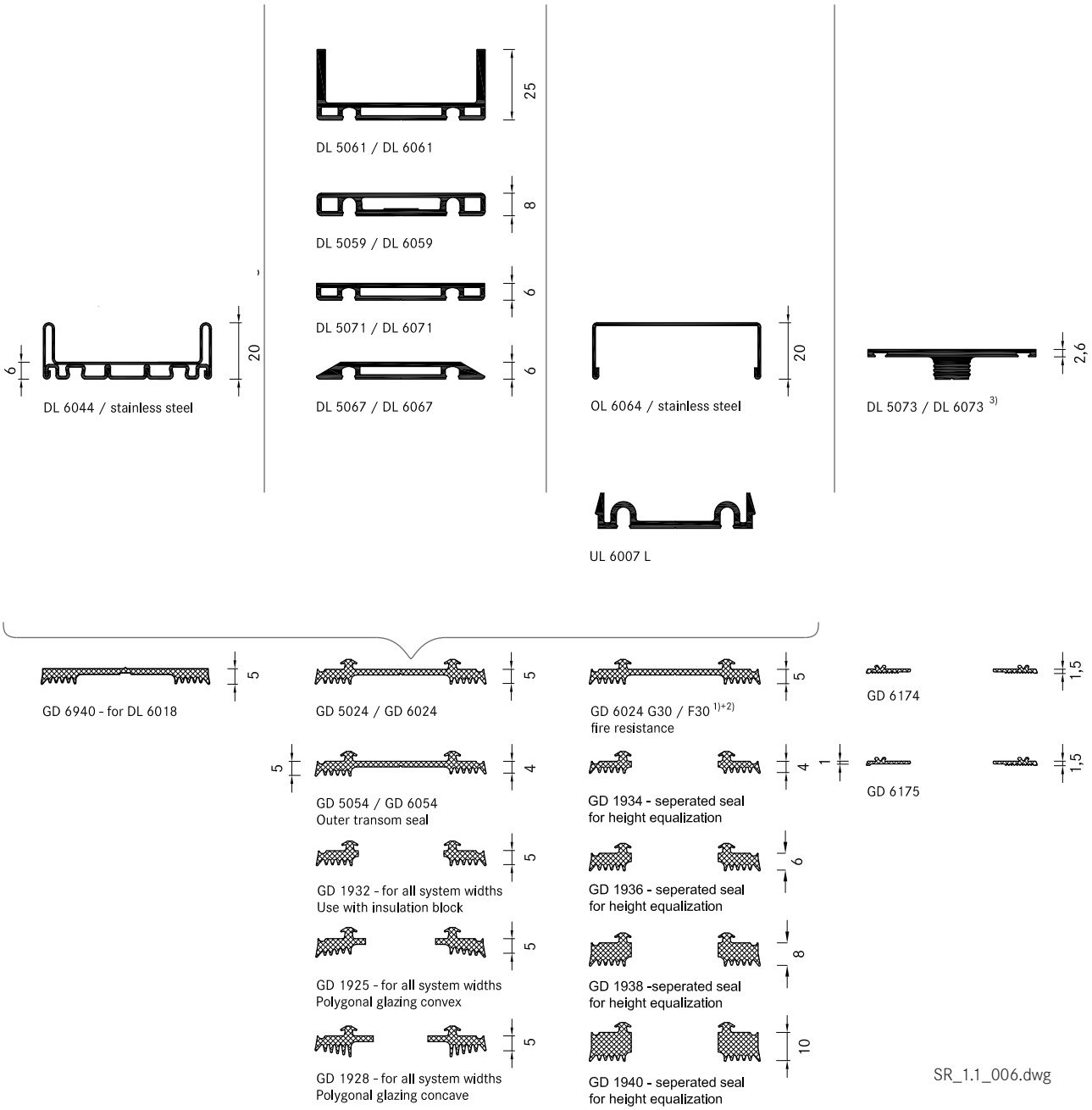
1.1
5

Stainless steel - visible screw fittings

Aluminium - visible screw fittings

Stainless steel - concealed screw fittings

Flat cover strip DL 5073 / DL 6073



Material information

1.2
1

Threaded tube quality

We deliver the tubes according to DIN EN 10021, and they are generally made of sendzimir-galvanized hot or cold-rolled strip in grade S 280.
The tubes are manufactured within the tolerances defined in DIN ISO 2768.

The zinc coating is approx. 275 g/m² in accordance with DIN EN 10162. The insides of the tubes are also galvanized. The thickness of the zinc coating is therefore approx. 20 µm.

Welding seams from production are automatically re-galvanized during manufacture. The threaded tube SR 60200-5 is laser-welded for manufacturing reasons. This welding seam is not usually re-galvanized.
When storing the tubes, it is important to ensure sufficient ventilation. Due to the danger of white rust developing, galvanised materials should never be covered with tarpaulins or other types of covers. Any packaging used for transporting the galvanised tubes must be immediately removed upon arrival. Please be aware that the appearance of any white rust does not constitute grounds for a complaint.

Threaded tube coating

Conventional coating methods such as air-drying multi-layer coating systems (wet coating) or thermosetting coatings (stove enamelling / powder-coating) can be used, provided suitable pre-treatment is applied.

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 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.

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.

Aluminium 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.

Material information

1.2
1

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 mm**

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

further examples:

$\Delta\ell = 24 \cdot 10^{-6} \cdot 60 \cdot 1000 = 1.44 \approx$ **1.5 mm**
$\Delta\ell = 24 \cdot 10^{-6} \cdot 100 \cdot 1000 = 2.4 \approx$ **2.5 mm**

A rod with a system length of ℓ = 1000 mm should be shortened by 1 mm for a temperature difference of ΔT = 40 °C. A rod of length ℓ = 3000 mm should be shortened by 3 mm.
For ΔT = 100 °C (often occurs in roof areas and south-facing facades), a rod of length ℓ = 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 ≈ 2.5 mm per ℓ = 1000 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 mm.

Stainless steel profile

The stainless steel used in the threaded tubes matches material number 1.4301. They are delivered with surface 2B according to DIN EN 10088-2
Lower strips and bottom sections of cover strips are made from 1.4301 stainless steel for visible screw fittings. The surface is equivalent to classification 2B according to DIN 10088-2.
Upper strips using 1.4401 stainless steel. The surface has a ground finish (grain 220, DIN EN 10088-2). The upper parts of the cover strip are made from 1.4571 stainless steel with ground finish (grain 240, DIN EN 10088-2). A film is attached on one side to protect the surface; its knife edge remains visible on one narrow side.

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.

Mullion-transom joint

The mullion-transom joint can be created using screws or welds. Transom retainers made of aluminium and steel are possible for the screwed joints.
Steel transom retainers are mandatory for fire-resistant glazing. Two variants of aluminium transom retainers are offered.

Permissible combinations for steel transom retainers / transom profiles as stated in authorisation Z-14.4-498

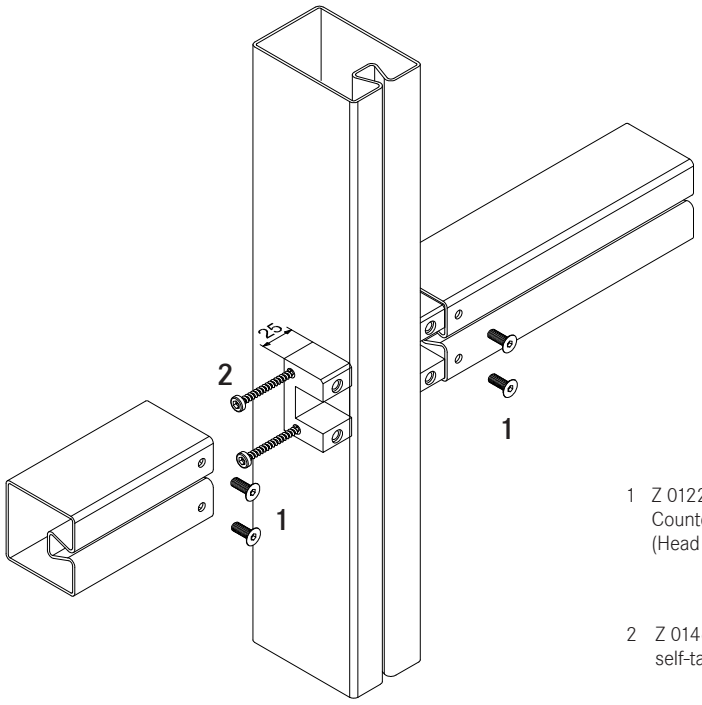
System 50	
T-connector	Transom profile
RHT 9007	SR 5040 – 2
RHT 9027	SR 5090 – 2 SR 50120 – 2
RHT 9015	SR 50150 – 3

System 60	
T-connector	Transom profile
RHT 9008	SR 6040 – 2 SR 6060 – 2
RHT 9026	SR 60130 – D
RHT 9023	SR 6090 – 2
RHT 9011	SR 6090 – 4
RHT 9014	SR 60140 – 2
RHT 9012	SR 60140 – 4
RHT 9025	SR 60180 – 3
RHT 9013	SR 60180 – 5 SR 60200 – 5

Screwed connection with steel transom retainer

- The transom retainers shown below are made of galvanized steel.
- They are only intended for connection of the transoms at right angles.
- Any protrusion of the inner weld seam in the area of the transom retainer must be ground down.
- This connection is also permitted for fire-resistant glazing. All requirements defined in the respective authorisation must be adhered to.
- The screws Z 0201 (without sealing washers) must be used to attach the transom retainers if stainless steel threaded tubes are installed.
- The system connection is tested and was awarded the general building authorisation Z-14.4-498.

The smallest transom retainers are shown in the diagrams. Larger transom retainers are attached according to the same principle.



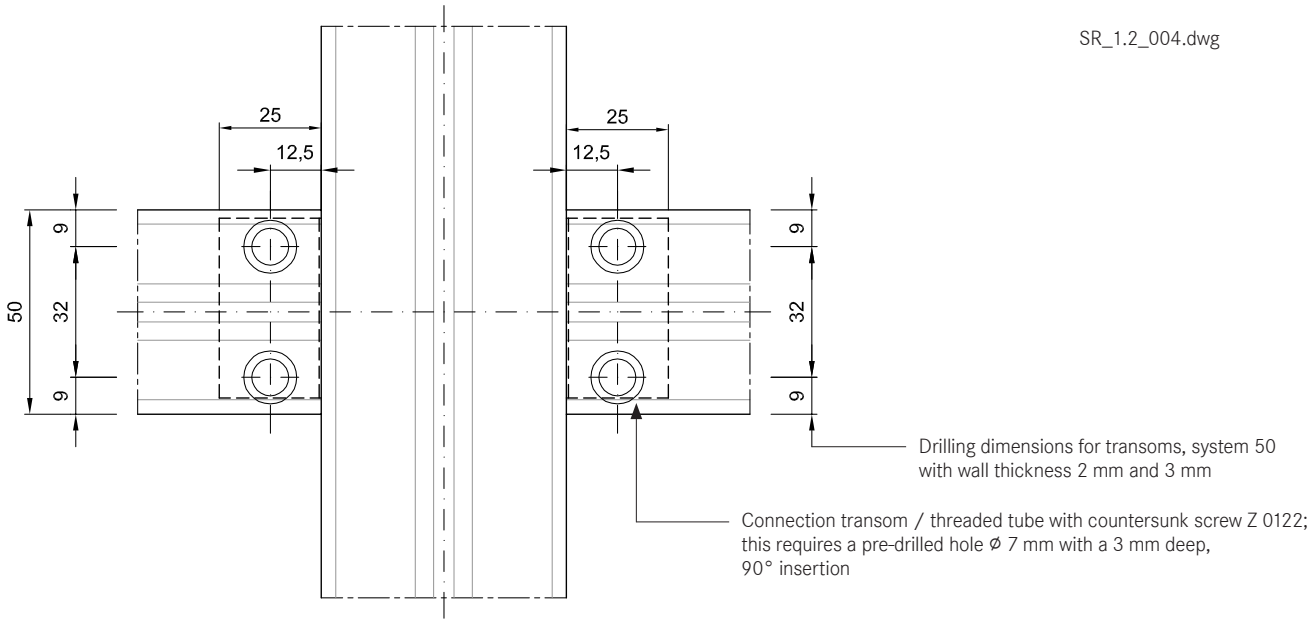
1 Z 0122
Countersunk screw
(Head diameter 12.0 mm)

2 Z 0146
self-tapping screw

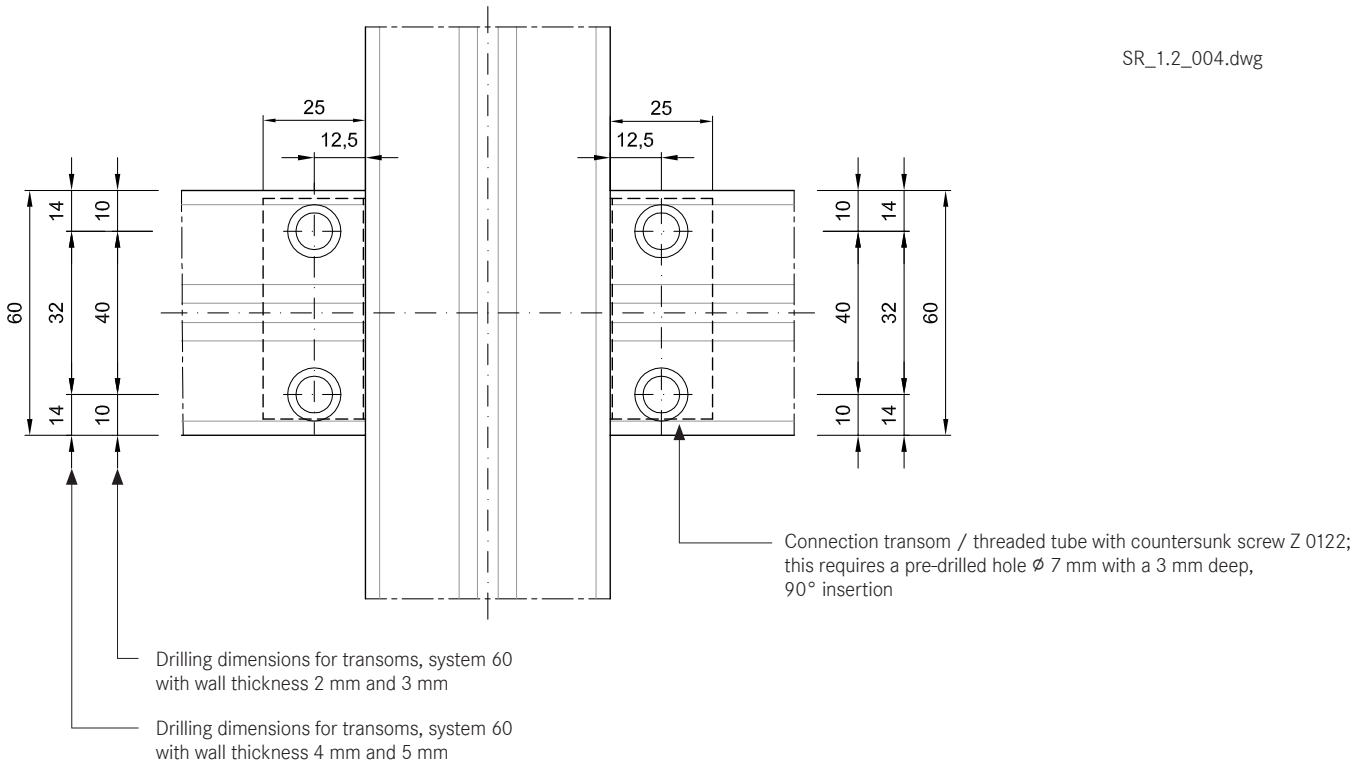
SR_1.2_003.dwg

Mullion-transom joint

Drilling template for transoms, system 50

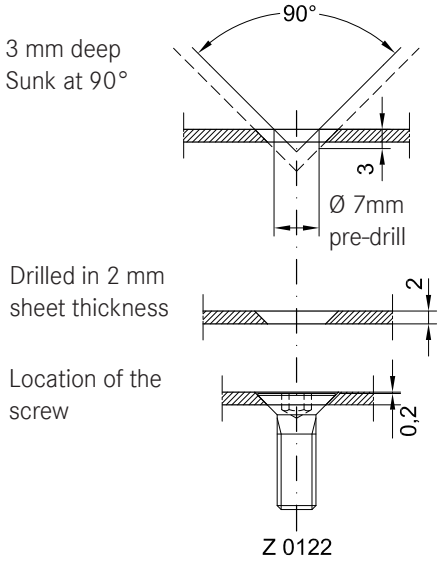


Drilling template for transoms, system 60

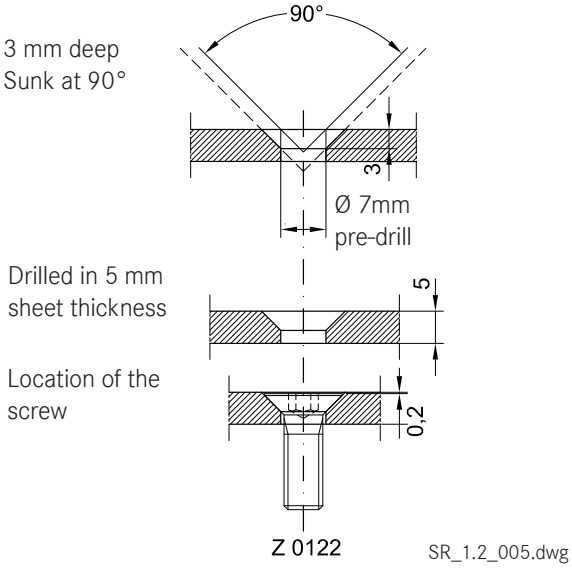


Mullion-transom joint

Example: Sunk in 2 mm sheet thickness

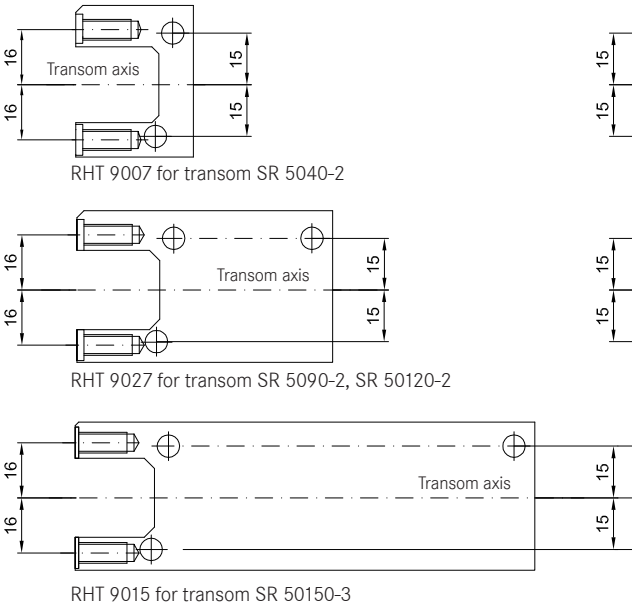


Example: Sunk in 5 mm sheet thickness

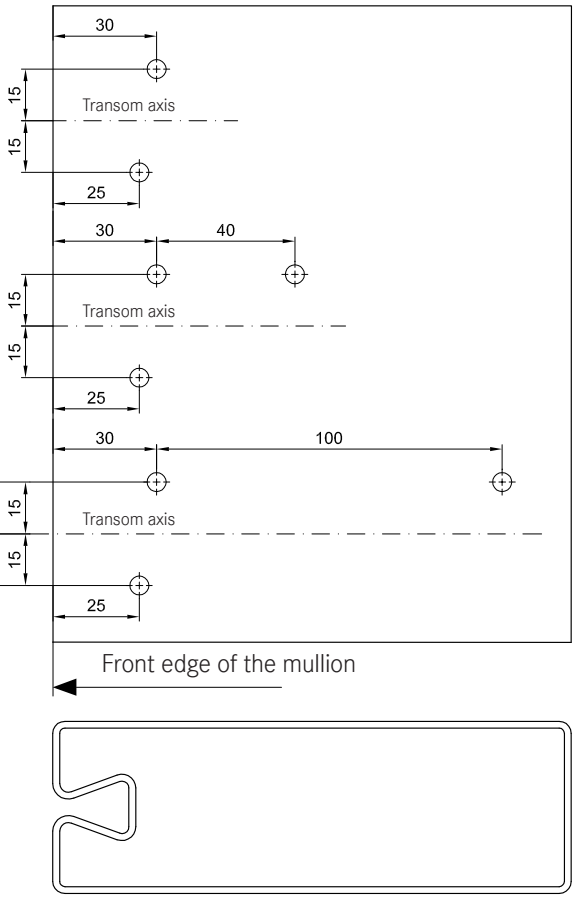


SR_1.2_005.dwg

Drilling template for mullions, system 50



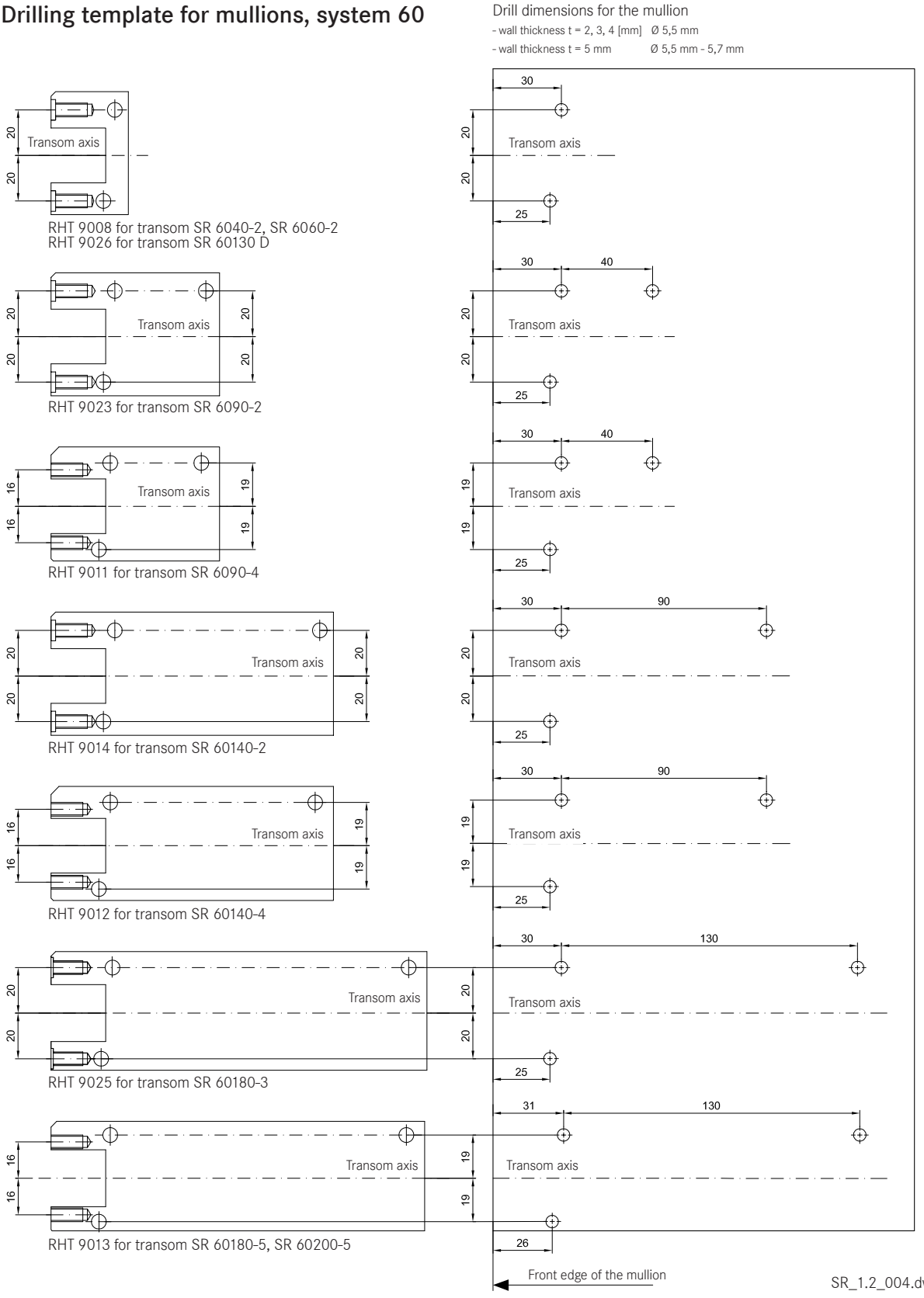
Drill holes in the mullion ø 5.5 mm



SR_1.2_004.dwg

Mullion-transom joint

Drilling template for mullions, system 60

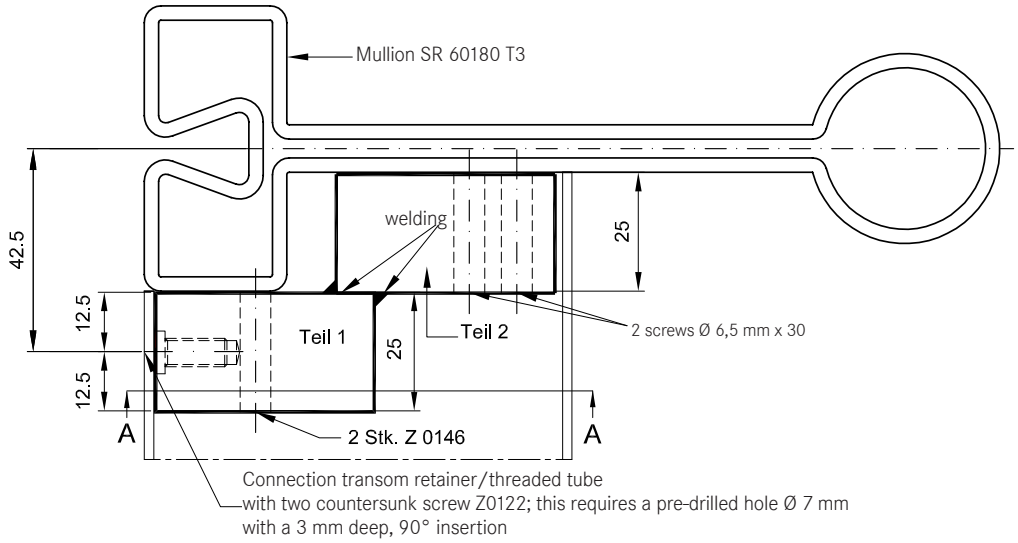


Mullion-transom joint

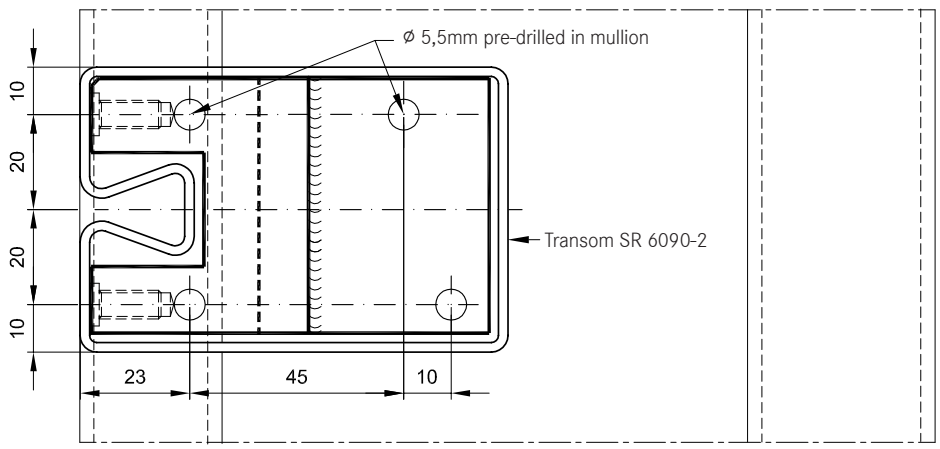
Screwed connection with steel transom retainer for mullions SR 60180 T3 and transoms SR 6090-2

Drilling template for RHT 9031, right-side retainer as viewed from the front of the facade, i.e. the groove side, for mullions and transoms

Drill dimensions for the transom, system width 50 mm with 2 mm and 3 mm wall thickness



Section A-A

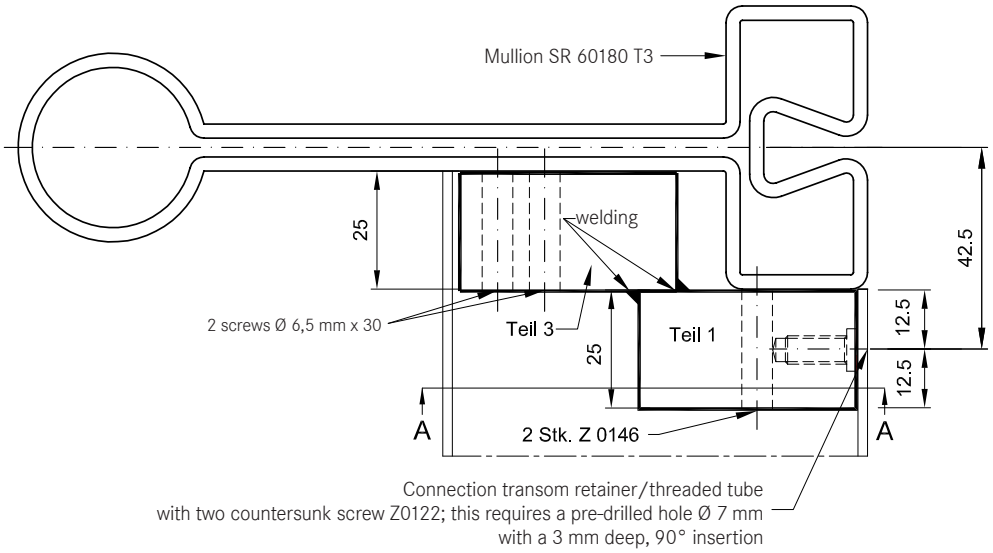


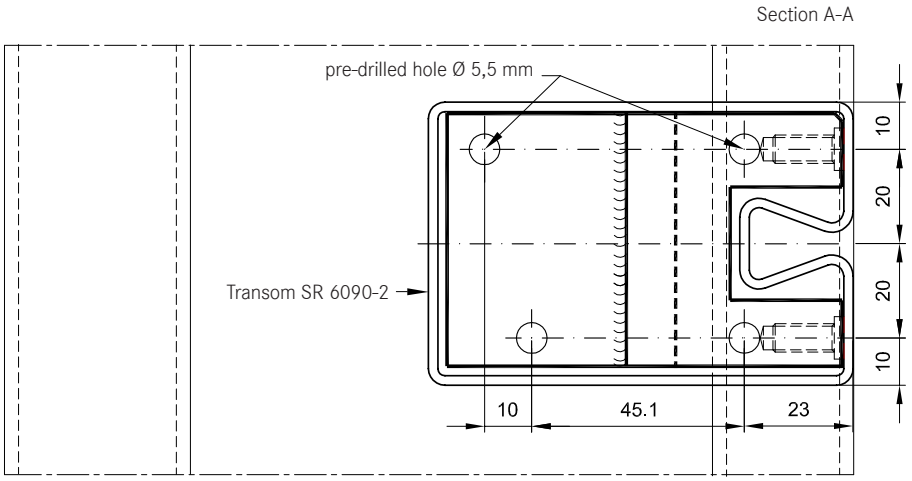
SR_1.2_006.dwg

Mullion-transom joint

Screwed connection with steel transom retainer for mullions SR 60180 T3 and transoms SR 6090-2

Drilling template for RHT 9032, left-side retainer as viewed from the front of the facade, i.e. the groove side, for mullions and transoms





SR_1.2_006.dwg

Mullion-transom joint

Screwed connection with aluminium transom retainer - type 1

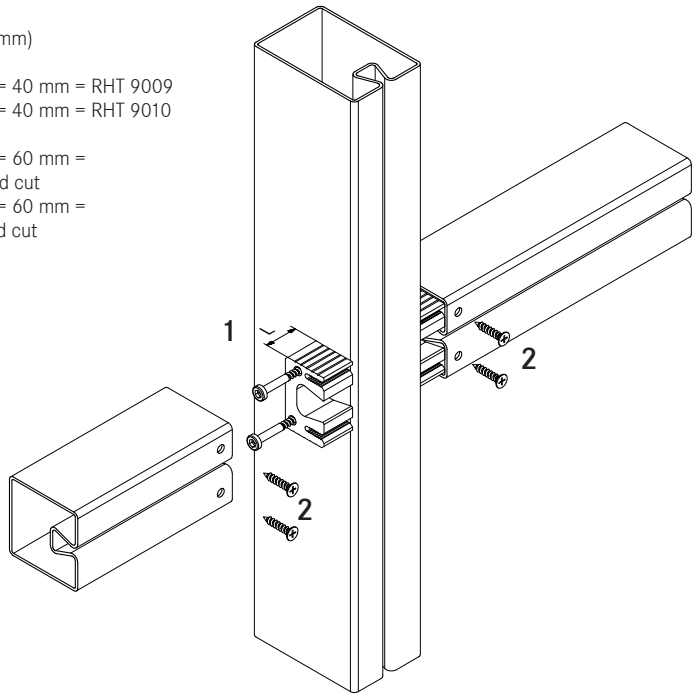
- The transom retainers shown below are made of aluminium.
- The transom retainers are also suitable for transoms installed at an incline (polygon glazing).
- Any protrusion of the inner weld seam in the area of the transom retainer must be ground down.
- Not approved for fire-resistance glazing.
- The screws Z 0204, L=55 mm (without sealing washers) must be used to attach the transom retainers if stainless steel threaded tubes are installed.
- The system connection is tested and was awarded the general building authorisation Z-14.4-498.
- The screw length must be determined for transom retainers cut at an incline.

1 Z 0147
Self-tapping screw,

2 Z 0120
Countersunk screw
(Head diameter 9.5 mm)

3 System 50 length L = 40 mm = RHT 9009
System 60 length L = 40 mm = RHT 9010

System 50 length L = 60 mm =
RHT 9109 for inclined cut
System 60 length L = 60 mm =
RHT 9110 for inclined cut



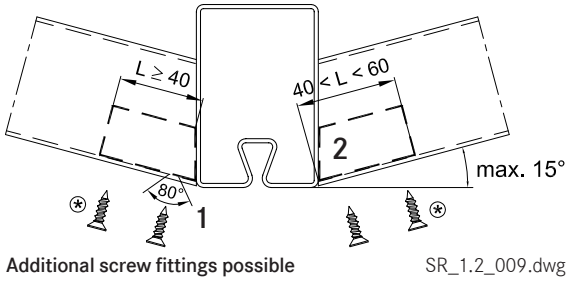
SR_1.2_007.dwg

1 The 60 mm transom retainers must be processed suitably for polygonal glazing, i.e. transoms installed at an incline (min. L of short side = 40 mm)

2 Recess for the screw Z 0120

Permissible combinations for aluminium transom retainers / transom profiles as stated in authorisation Z-14.4-498

System 50		System 60	
T-connector	**Transom profile**	**T-connector**	**Transom profile**
RHT 9009 Right-angled connection of the transom	SR 5040 – 2 SR 5090 – 2 SR 50120 – 2	RHT 9010 Right-angled connection of the transom	SR 6040 – 2 SR 6060 – 2 SR 6090 – 2 SR 60140 – 2
RHT 9109 Mullion installed at an incline (polygonal glazing)	SR 5040 – 2 SR 5090 – 2 SR 50120 – 2	RHT 9110 Mullion installed at an incline (polygonal glazing)	SR 6040 – 2 SR 6060 – 2 SR 6090 – 2 SR 60140 – 2

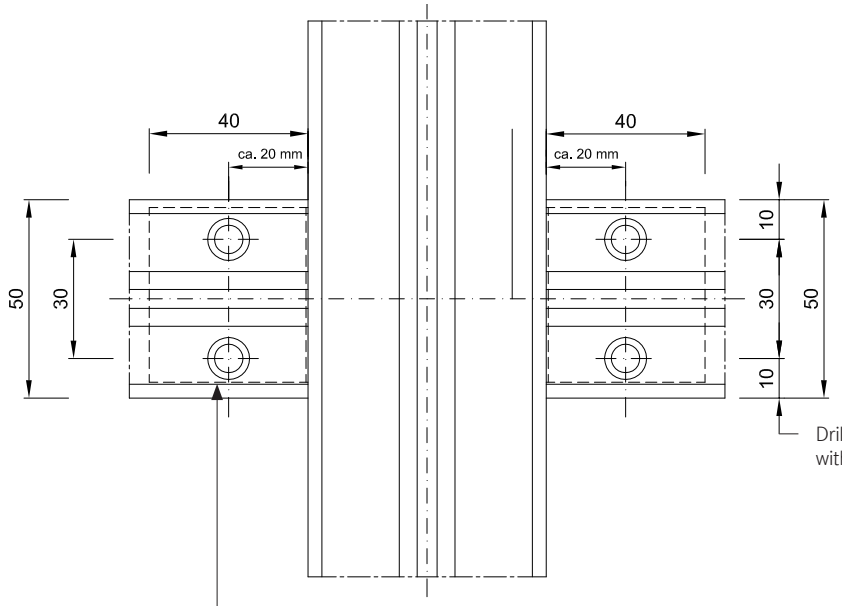


* Additional screw fittings possible

SR_1.2_009.dwg

Mullion-transom joint

Drilling template for transoms, system 50

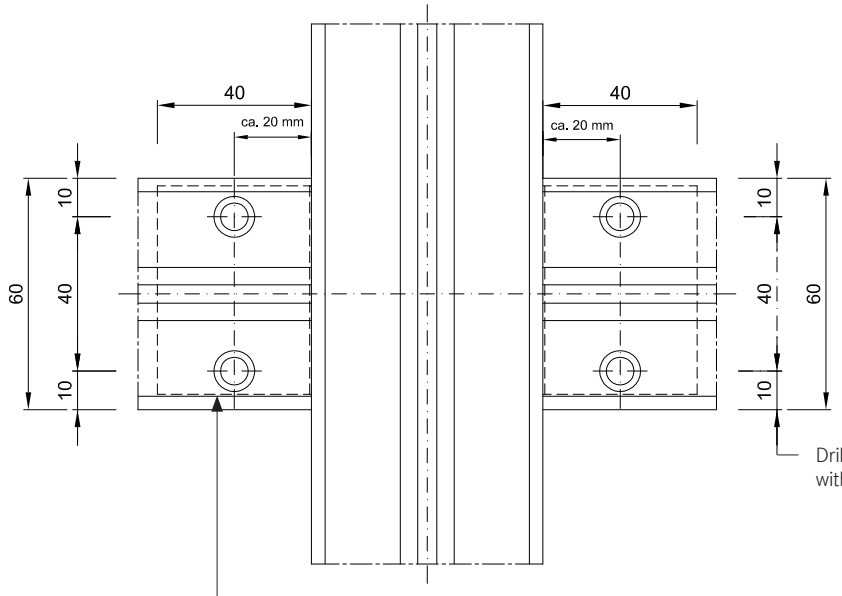


Drilling dimensions for transoms, system 50
with wall thickness 2 mm

Connection transom / threaded tube countersunk screw Z 0120;
this requires a pre-drilled hole ⌀ 5.5 mm with a 3 mm deep,
80° insertion

SR_1.2_008.dwg

Drilling template for transoms, system 60



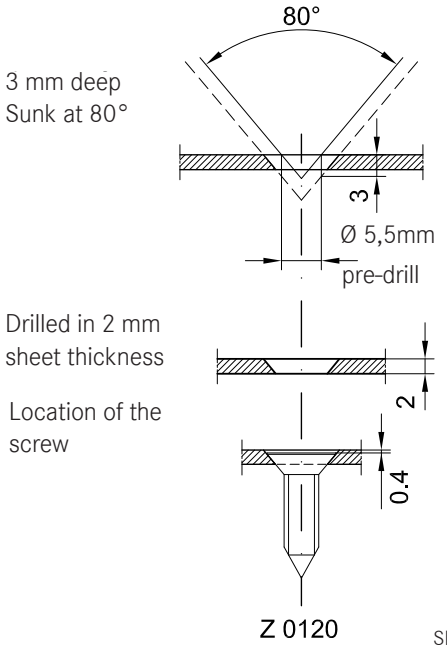
Drilling dimensions for transoms, system 60
with wall thickness 2 mm

Connection transom / threaded tube countersunk screw Z 0120;
this requires a pre-drilled hole ⌀ 5.5 mm with a 3 mm deep,
80° insertion

SR_1.2_008.dwg

Mullion-transom joint

Sunk in 2 mm sheet thickness



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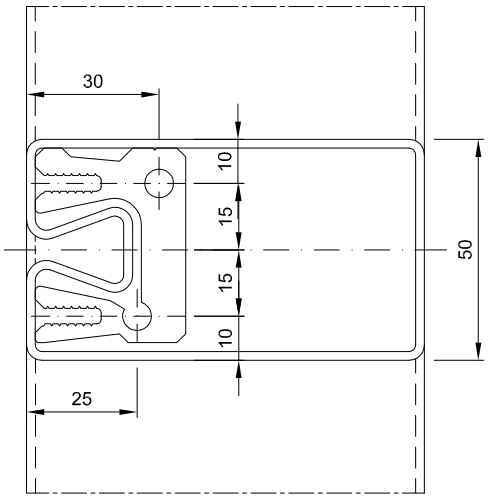
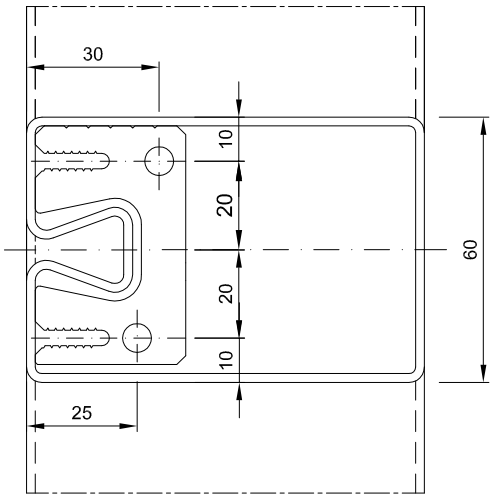
Drilling template for mullions, system 50

Drill holes in the mullion ø 5.5 mm



Drilling template for mullions, system 60

Drill holes in the mullion ø 5.5 mm

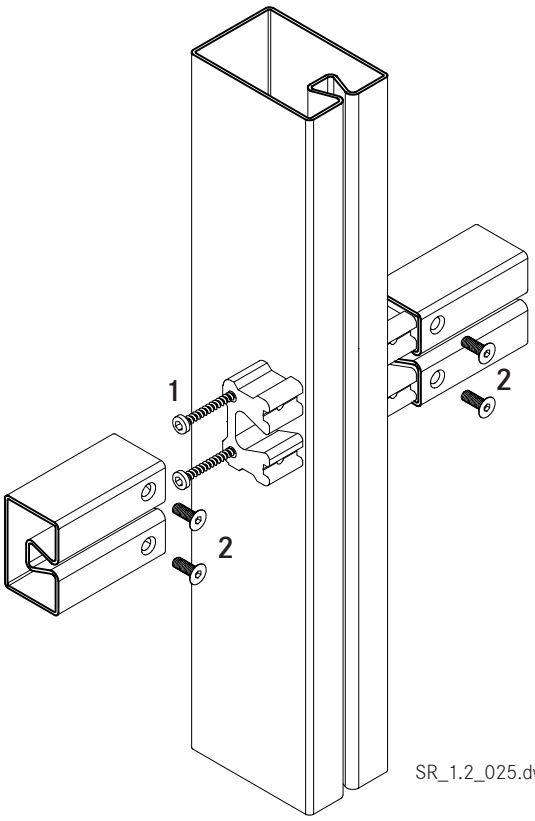


SR_1.2_008.dwg

Mullion-transom joint

Screwed connection with aluminium transom retainer - type 2

- The transom retainers shown below are made of aluminium.
- Intended for connection of the transoms at right angles.
- The transom retainers are grooved in the area of any possible protrusion of the inner weld seam around the transom retainer. This ensures a precise installation position.
- The screws Z 0201, L=40mm (without sealing washers) must be used to attach the transom retainers if stainless steel threaded tubes are installed.
- It is also possible to fit the screws to the bridges of the transom profiles to ensure greater transfer of tensile forces in the transom. Visible countersunk screws are fitted. The screws are colour-coded to ensure a uniform appearance.
- Not approved for fire-resistance glazing.
- The system connection is tested and was awarded the general building authorisation Z-14.4-742.



Permissible combinations for aluminium transom retainers / transom profiles as stated in authorisation Z-14.4-742

System 50

T-connector	Transom profile
RHT 5040 - 2	SR 5040 – 2
RHT 5090 - 2	SR 5090 – 2
RHT 50120 - 2	SR 50120 – 2
RHT 50150 - 3	SR 50150 - 3

System 60

T-connector	Transom profile
RHT 6040 - 2	SR 6040 – 2
RHT 6040 – 2	SR 6080 – 2 – K
RHT 6060 – 2	SR 6060 – 2
RHT 6090 – 2	SR 6090 – 2
RHT 6090 – 4	SR 6090 – 4
RHT 60140 – 2	SR 60140 – 2
RHT 60140 – 4	SR 60140 – 4
RHT 60180 – 3	SR 60180 – 3
RHT 60180 – 5	SR 60180 – 5
RHT 60200 – 5	SR 60200 – 5

Example:
Transom holder RHT 6040 – 2 with
transom profile SR 6040 – 2 and
mullion profile SR 6090 – 2

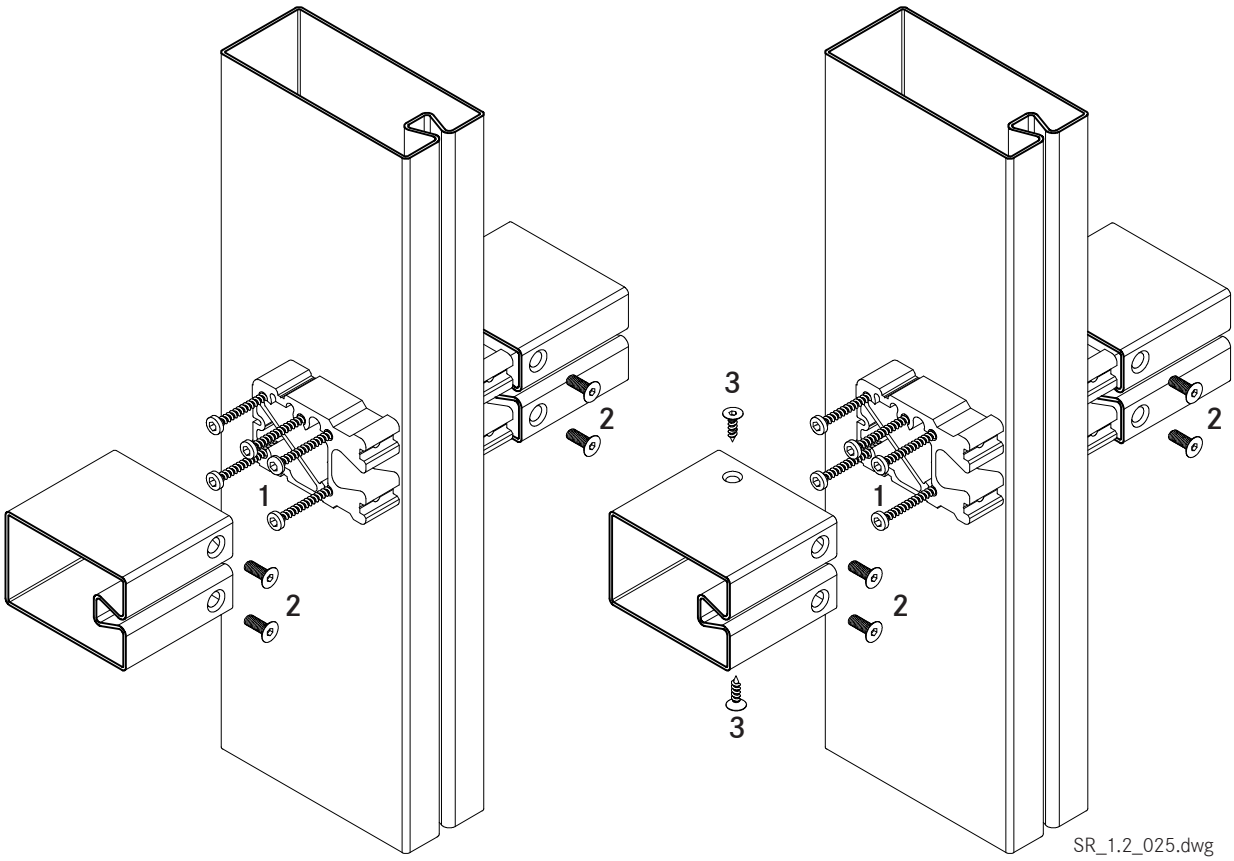
Standard screw fittings not visible

1 Z 0118
self-tapping screw

2 Z 0128
fixing screw for transom

Mullion-transom joint

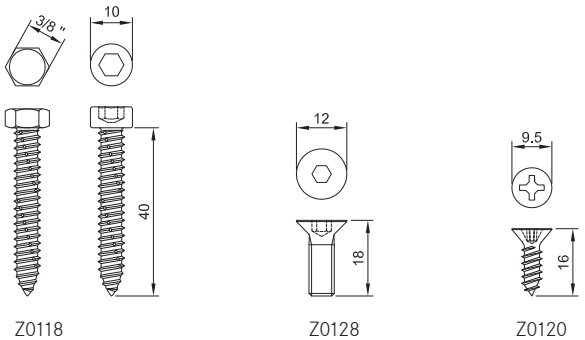
Example:
Transom holder RHT 6090 – 2 with
transom profile SR 6090 – 2 and
mullion profile SR 60140 – 2



Standard screw fittings not visible

Standard screw fittings and additional screw fittings web of the transom profile

System screws



1 Z 0118
Attachment of transom retainer to the mullion, self-tapping screw ⌀ 6.3 mm.

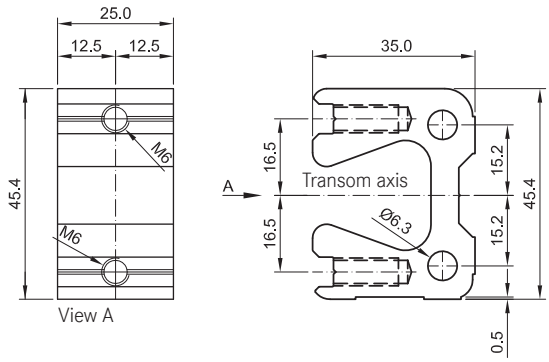
2 Z 0128
Fixing screw M6 for transoms, concealed screw fitting for groove-side transom, (screw countersunk at 90°, 3 mm deep, pre-drilled ⌀ 7.0 mm)

3 Z 0120
Fixing screw M6 for transoms, optionally visible screw fitting for transom profile bridges, self-tapping screw ⌀ 4.8 mm (screw countersunk at 80°, 3 mm deep, pre-drilled ⌀ 5.5 mm)

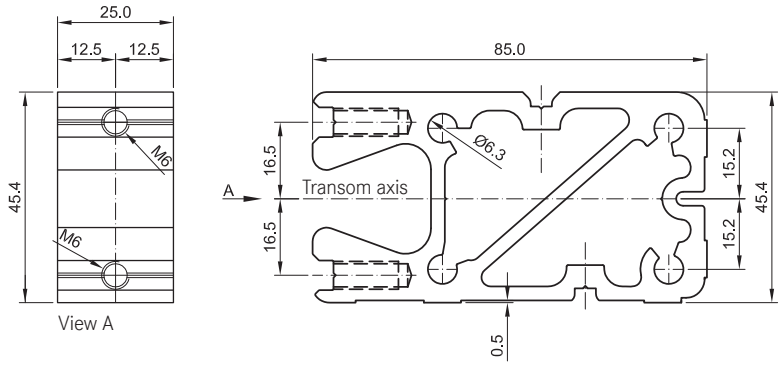
Mullion-transom joint

System 50
Overview of transom retainer

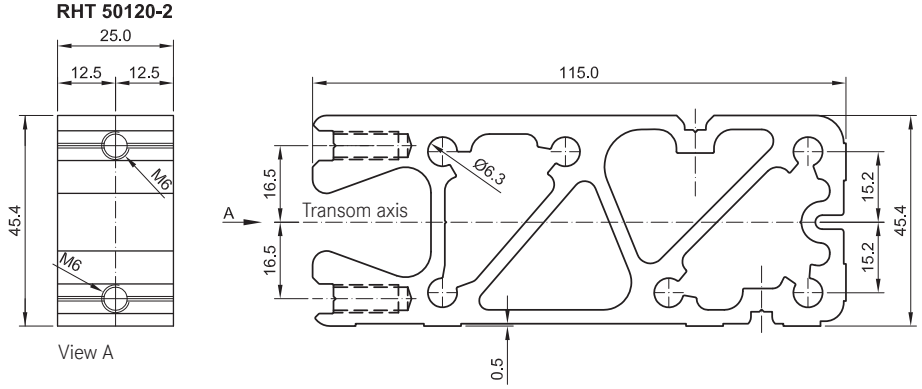
RHT 5040-2



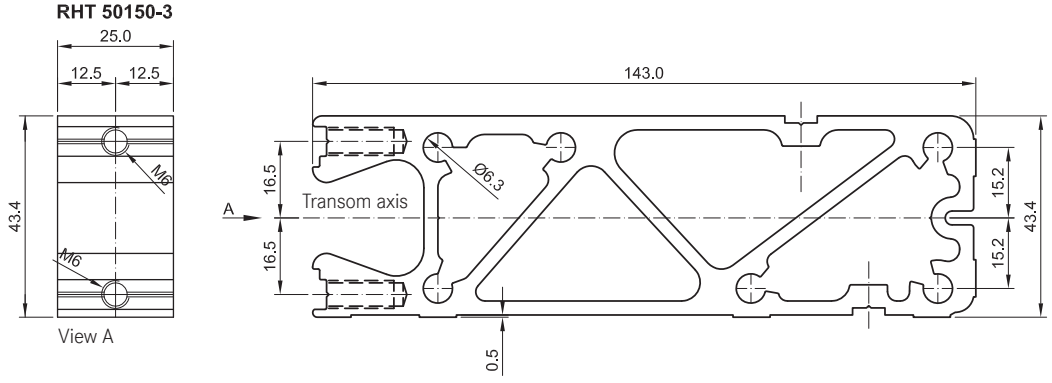
RHT 5090-2



RHT 50120-2



RHT 50150-3



Aluminium transom retainer – type 2
System width 50 mm

Designation	Article no.	Length in mm
Transom retainer	RHT 5040-2	25
Transom retainer	RHT 5090-2	25
Transom retainer	RHT 50120-2	25
Transom retainer	RHT 50150-3	25

Note:
An additional screw fitting in the transom profiles is not possible for RHT 5040-2.

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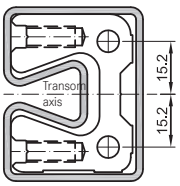
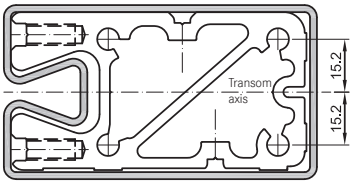
Mullion-transom joint

System 50
mounting position

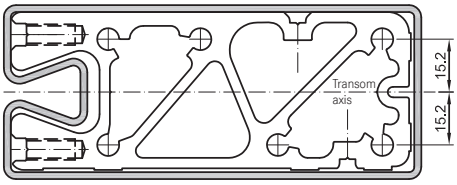
SR 5040-2 / RHT 5040-2



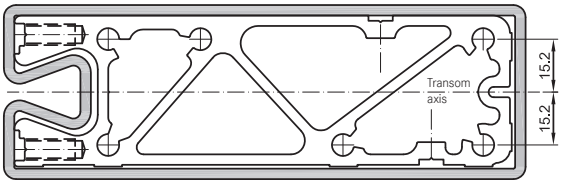
SR 5090-2 / RHT 5090-2

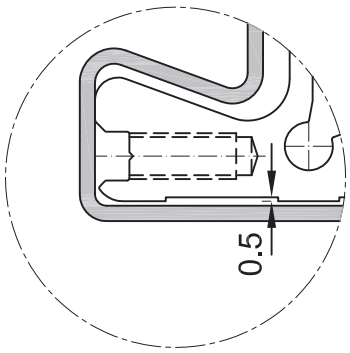


SR 50120-2 / RHT 50120-2



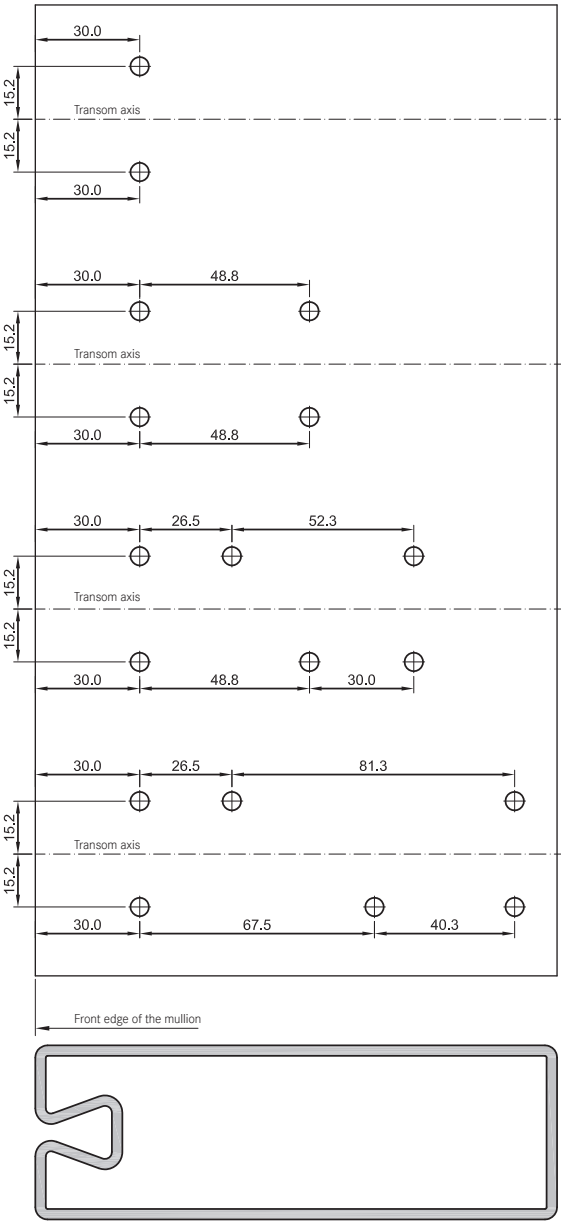
SR 50150-3 / RHT 50150-3





System 50
mullion drilling template

Drill holes in the mullion Ø 5.3 mm

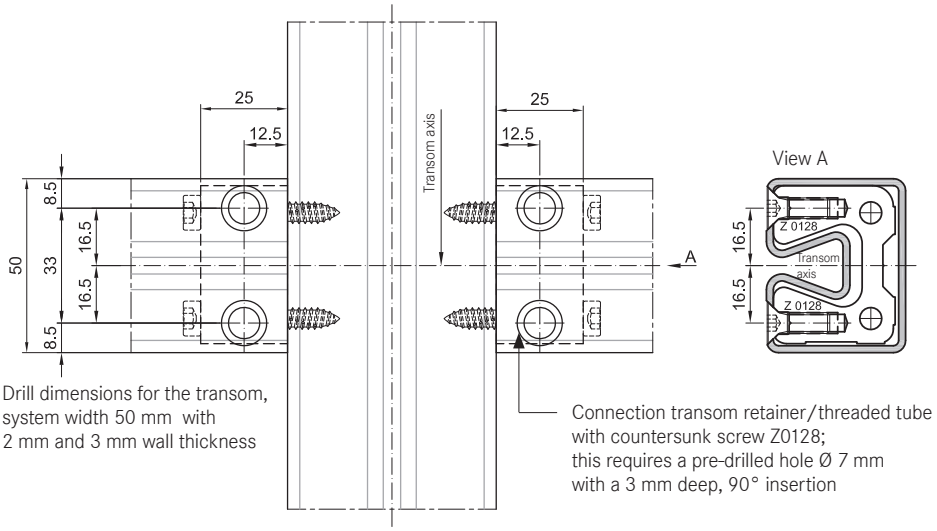


Pay attention to the RHT mounting position!
The 0.5 high beads must always be arranged on the bottom during assembly. The transoms rest on top of the RHTs. The tolerances are recorded below.

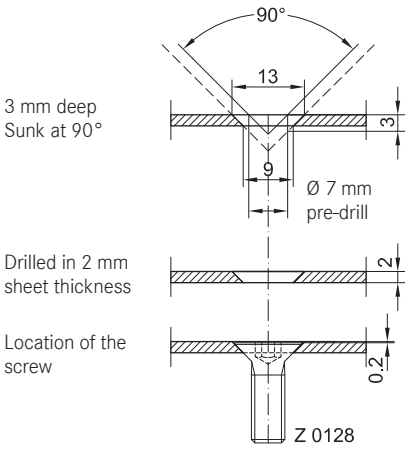
SR_1.2_026.dwg

Mullion-transom joint

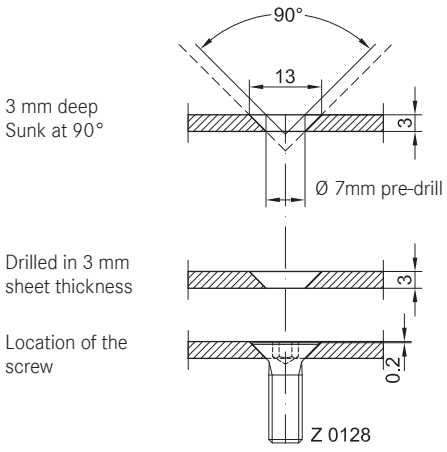
System 50
mounting position / drilling template transom – groove side



Sunk in 2 mm sheet thickness



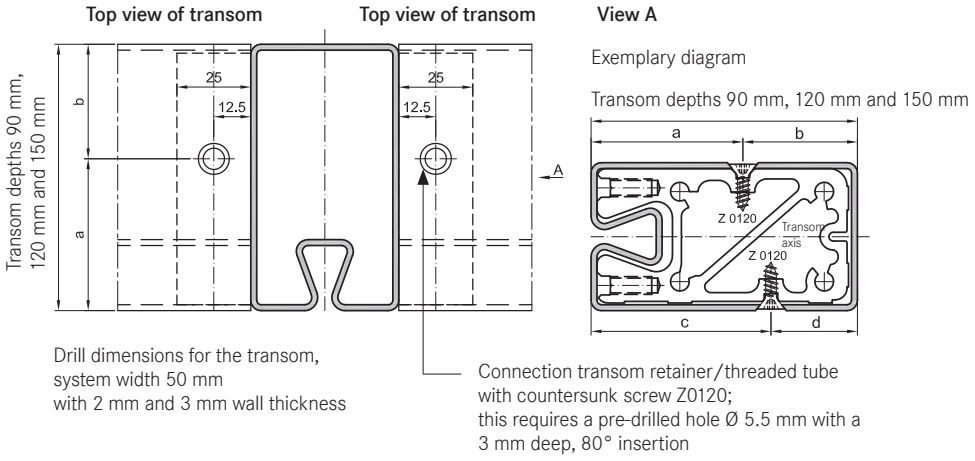
Sunk in 3 mm sheet thickness



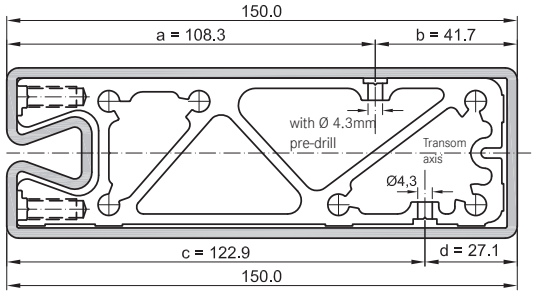
SR_1.2_026.dwg

Mullion-transom joint

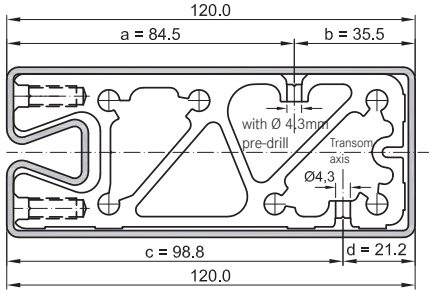
System 50
mounting position / drilling template transom – bridge sides / optional additional drill hole



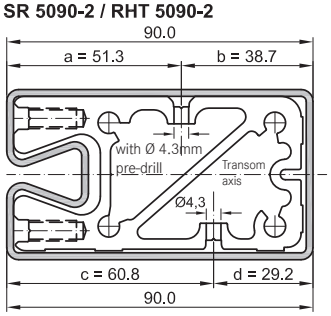
SR 50150-3 / RHT 50150-3



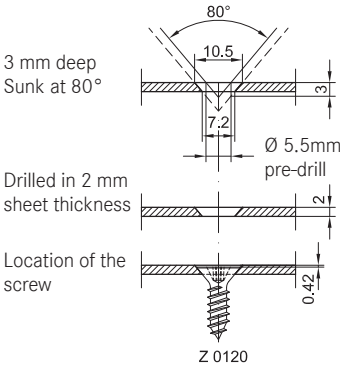
SR 50120-2 / RHT 50120-2



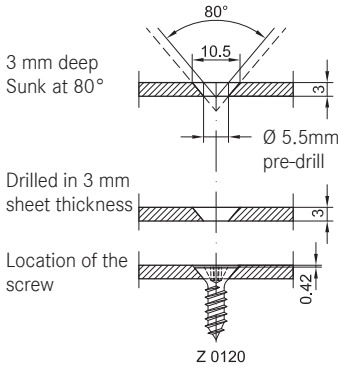
SR 5090-2 / RHT 5090-2

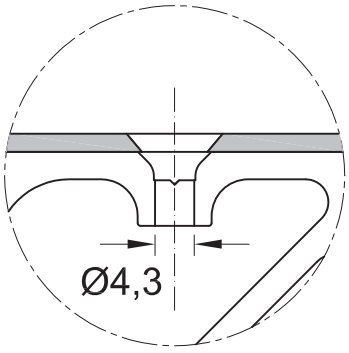


Sunk in 2 mm sheet thickness



Sunk in 3 mm sheet thickness





The transom retainers must be pre-drilled to Ø 4.3 in order to hold The self-tapping screws.

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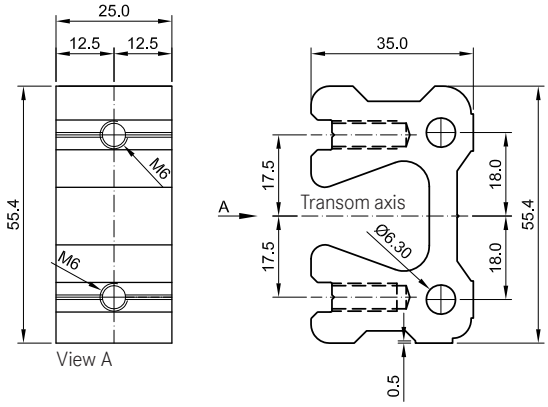
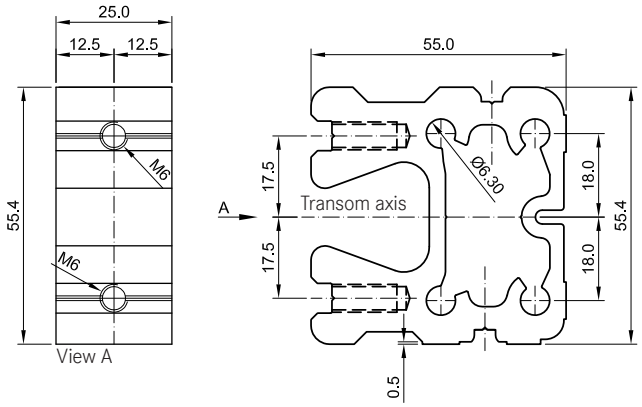
Mullion-transom joint

System 60
Overview of transom retainer

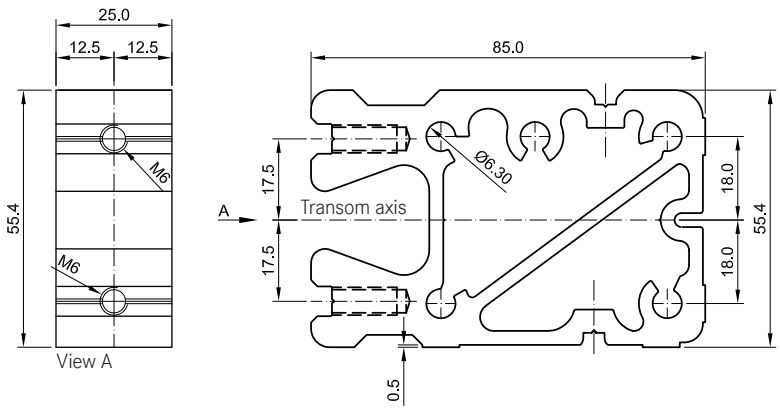
RHT 6040-2



RHT 6060-2



RHT 6090-2



Aluminium transom retainer – type 2
System width 60 mm

Designation	Article no.	Length in mm
Transom retainer	RHT 6040-2	25
Transom retainer	RHT 6060-2	25
Transom retainer	RHT 6090-2	25

Note:
An additional screw fitting in the transom profiles is not possible for RHT 6040-2.

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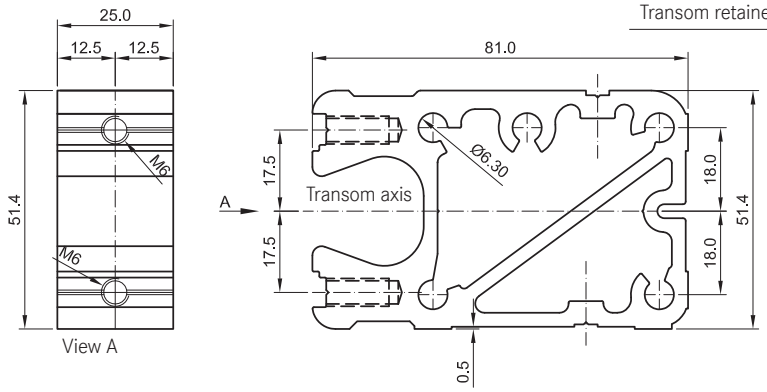
Mullion-transom joint

System 60
Overview of transom retainer

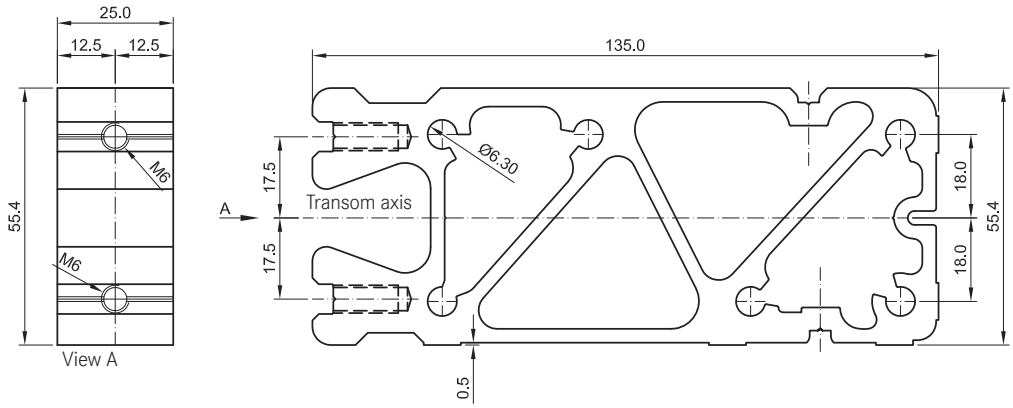
Aluminium transom retainer – type 2
System width 60 mm

Designation	Article no.	Length in mm
Transom retainer	RHT 6090-4	25
Transom retainer	RHT 60140-2	25
Transom retainer	RHT 60140-4	25

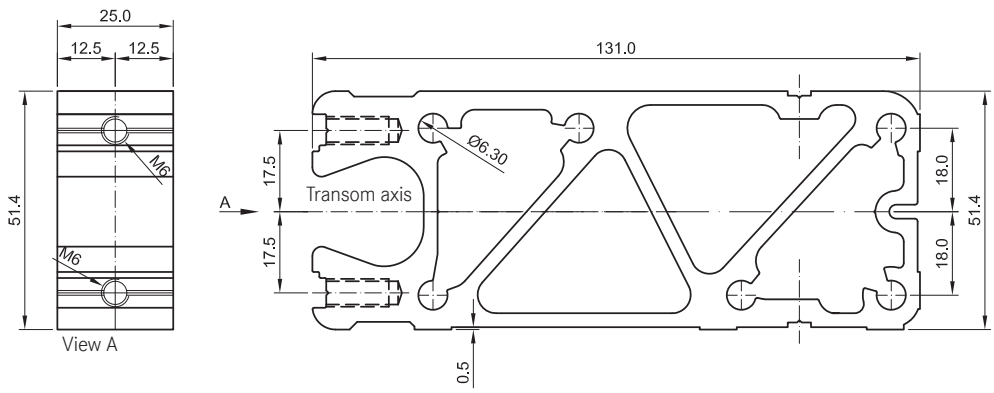
RHT 6090-4



RHT 60140-2



RHT 60140-4



SR_1.2_026.dwg

Mullion-transom joint

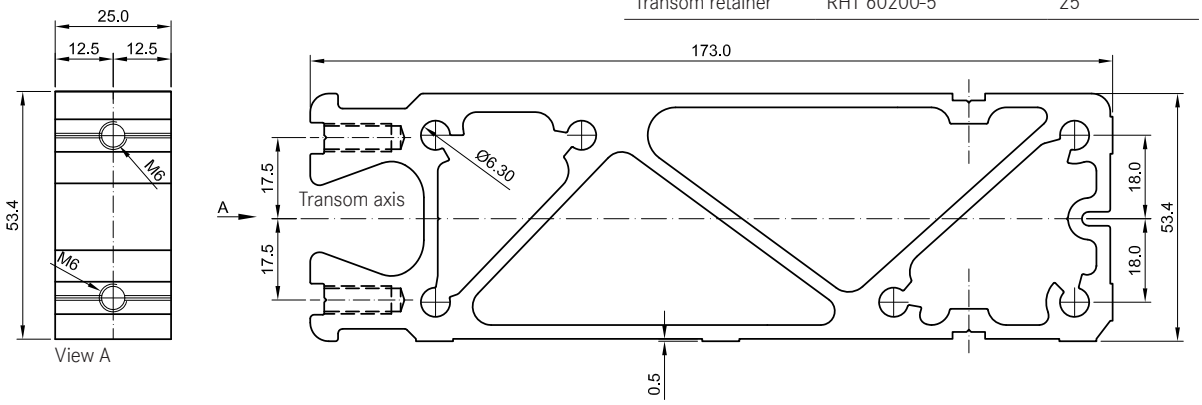
1.2
2

System 60
Overview of transom retainer

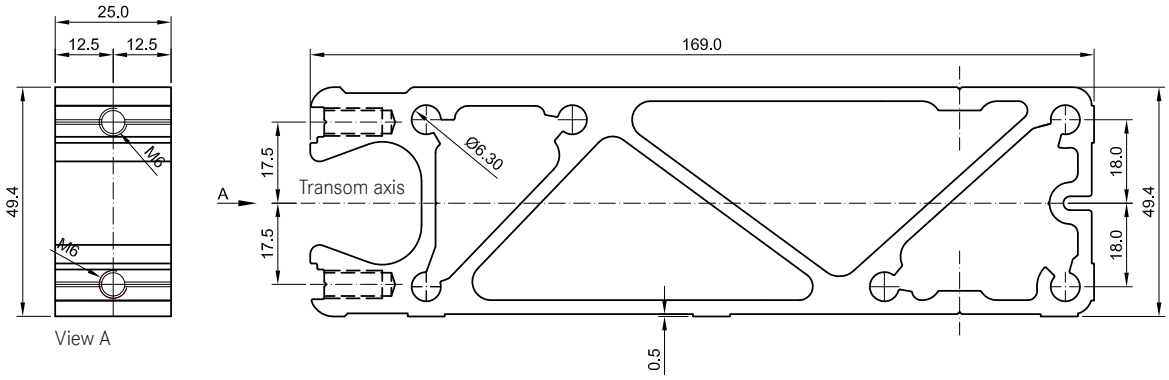
Aluminium transom retainer – type 2
System width 60 mm

Designation	Article no.	Length in mm
Transom retainer	RHT 60180-3	25
Transom retainer	RHT 60180-5	25
Transom retainer	RHT 60200-5	25

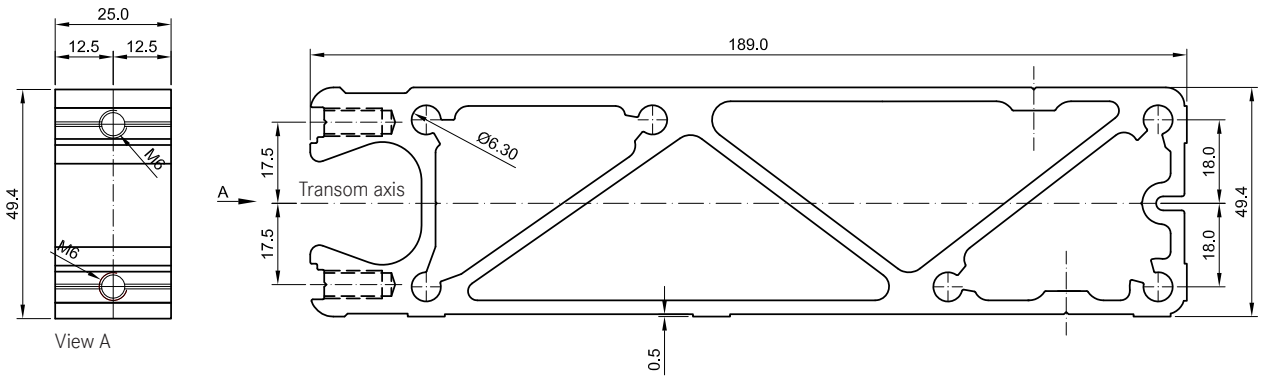
RHT 60180-3



RHT 60180-5



RHT 60200-5



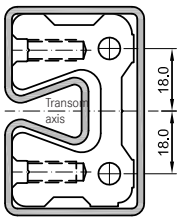
SR_1.2_026.dwg

Mullion-transom joint

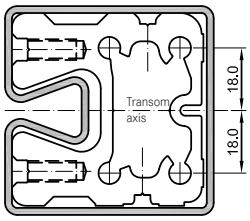
1.2
2

System 60
mounting position

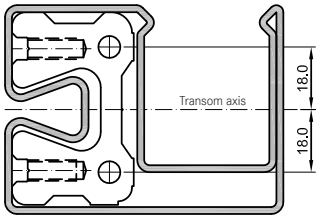
SR 6040-2 / RHT 6040-2



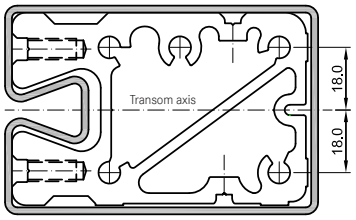
SR 6060-2 / RHT 6060-2

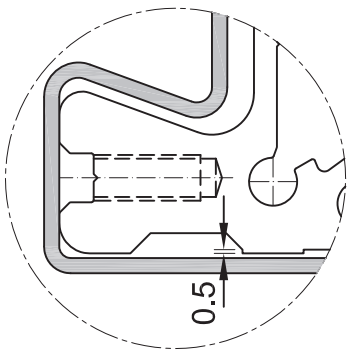


SR 6080-2-K / RHT 6040-2



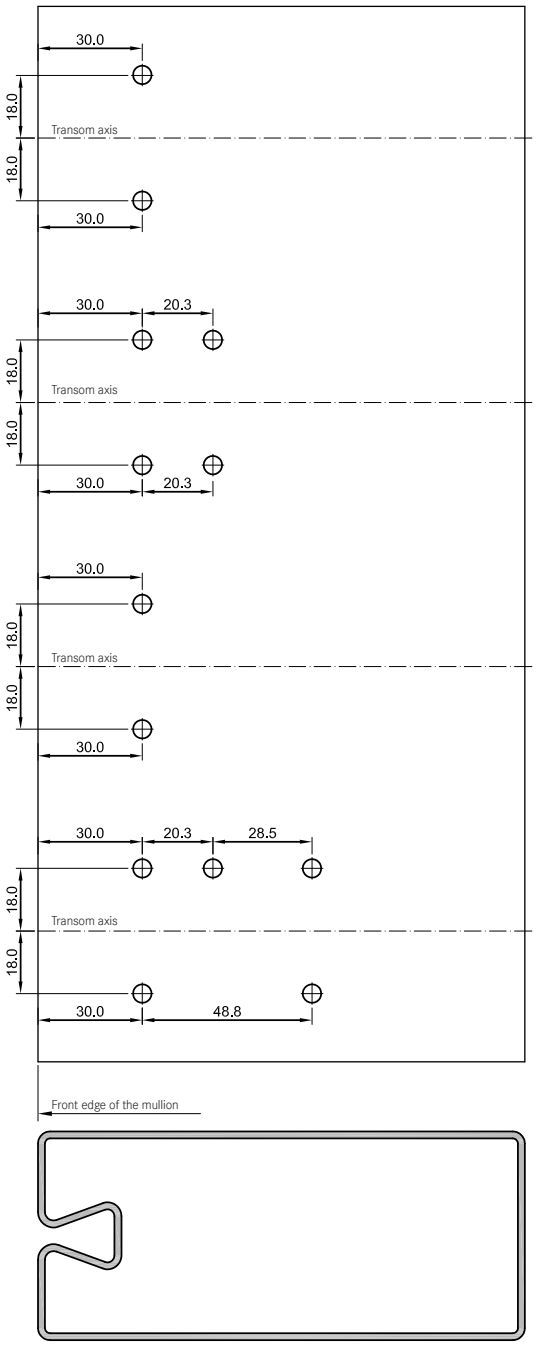
SR 6090-2 / RHT 6090-2





System 60
drilling pattern

Drill holes in the mullion Ø 5.3 mm



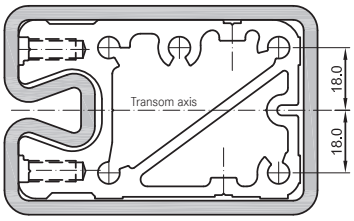
SR_1.2_026.dwg

Pay attention to the RHT mounting position!
The 0.5 high beads must always be arranged on the bottom during assembly. The transoms rest on top of the RHTs. The tolerances are recorded below.

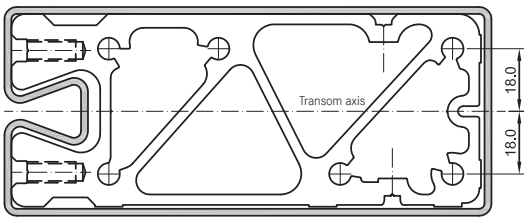
Mullion-transom joint

System 60 mounting position

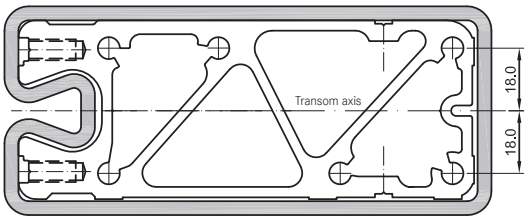
SR 6090-4 / RHT 6090-4

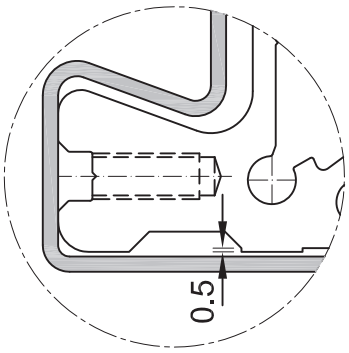


SR 60140-2 / RHT 60140-2



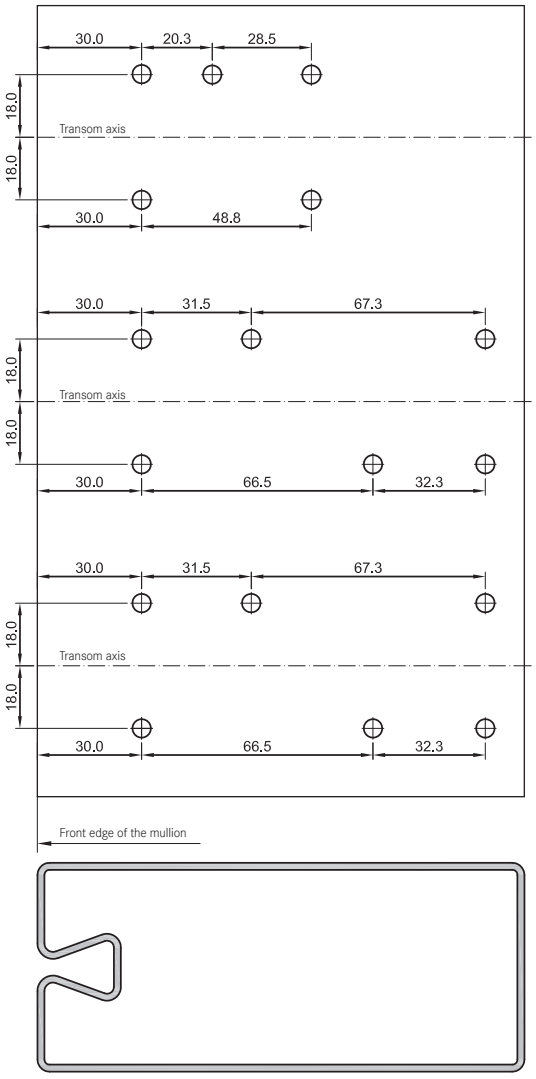
SR 60140-4 / RHT 60140-4





System 60 drilling pattern

Drill holes in the mullion Ø 5.3 mm



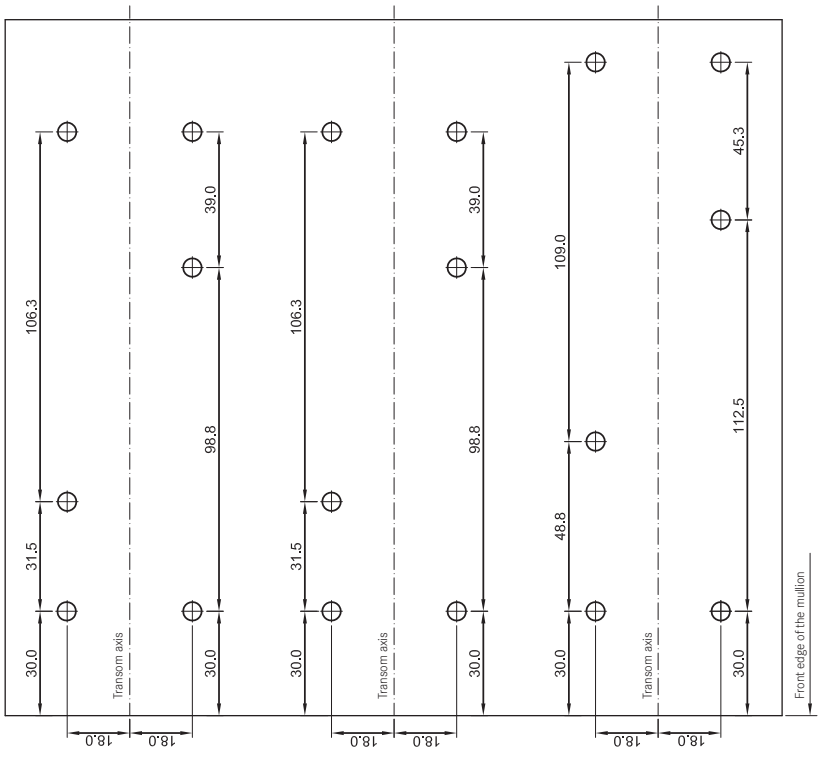
Pay attention to the RHT mounting position!
The 0.5 high beads must always be arranged on the bottom during assembly. The transoms rest on top of the RHTs. The tolerances are recorded below.

SR_1.2_026.dwg

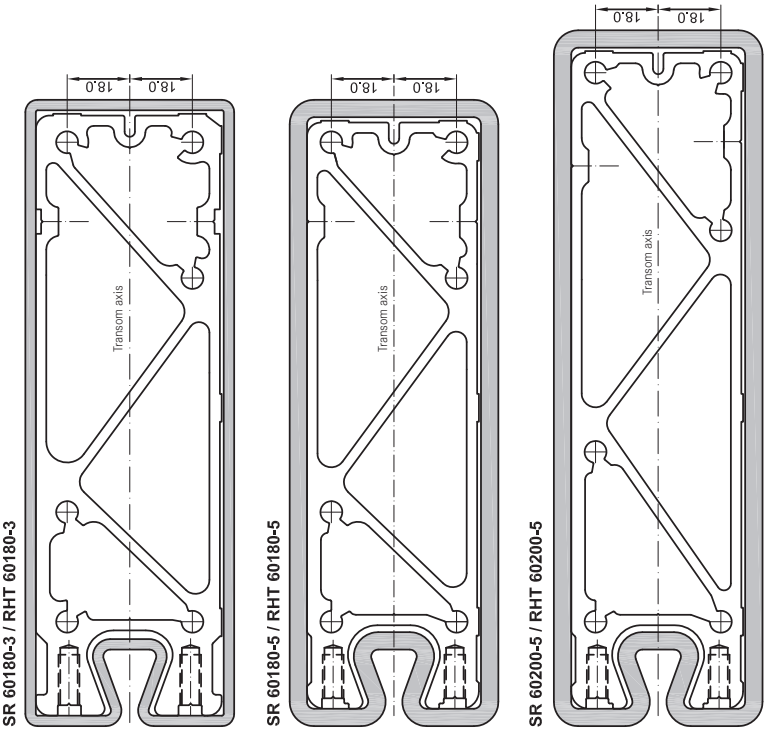
Mullion-transom joint

System 60
drilling pattern

Drill holes in the mullion Ø 5.3 mm

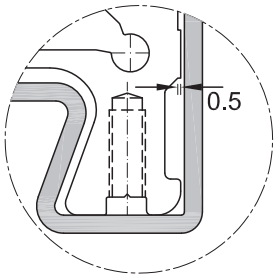


System 60
mounting position



Pay attention to the RHT mounting position!

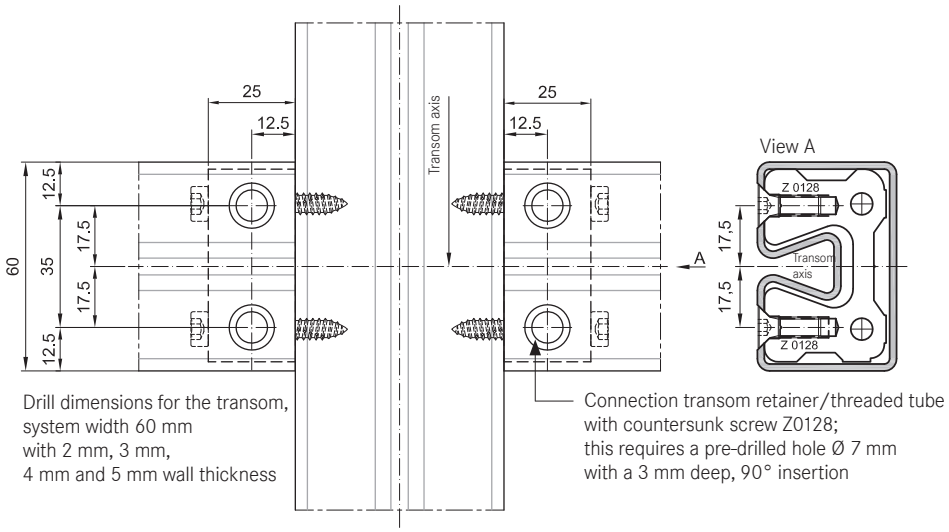
The 0.5 high beads must always be arranged on the bottom during assembly. The transoms rest on top of the RHTs. The tolerances are recorded below.



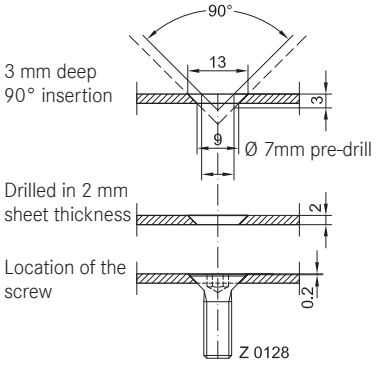
SR_1.2_026.dwg

Mullion-transom joint

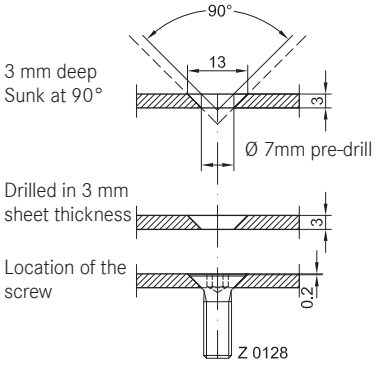
System 60
mounting position / drilling template transom – groove side



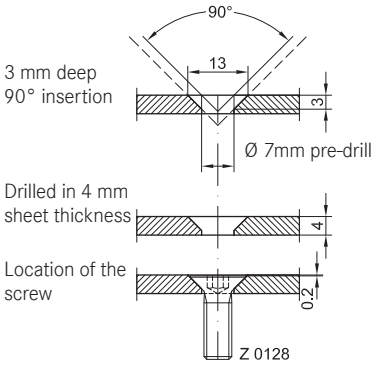
Sunk in 2 mm sheet thickness



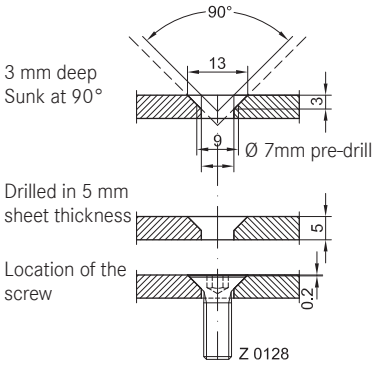
Sunk in 3 mm sheet thickness



Sunk in 4 mm sheet thickness



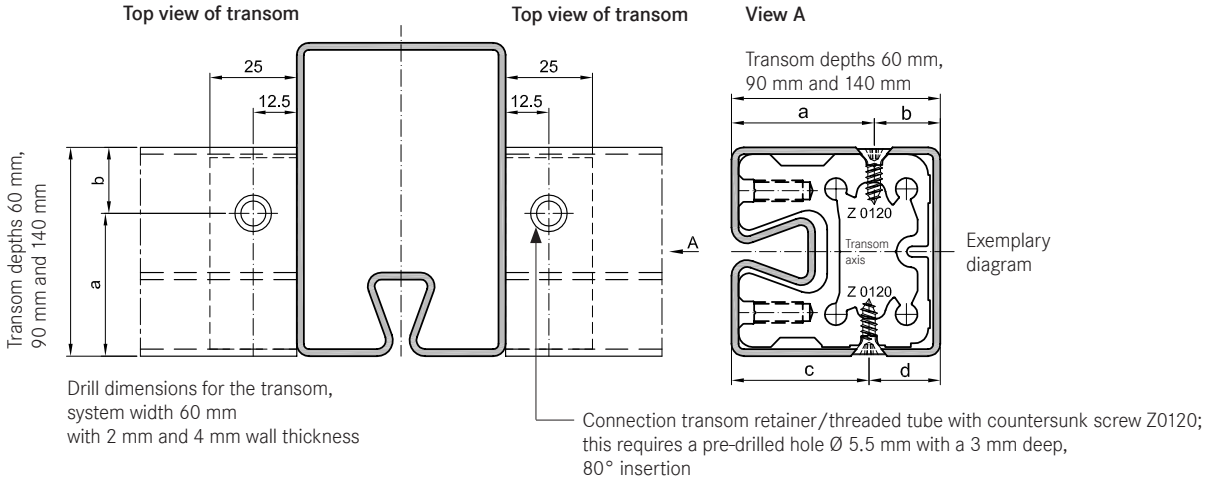
Sunk in 5 mm sheet thickness

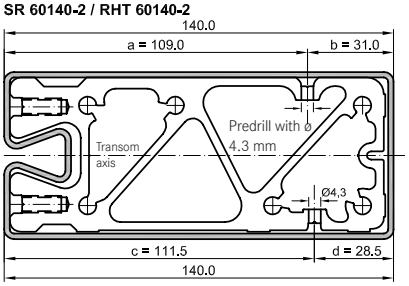


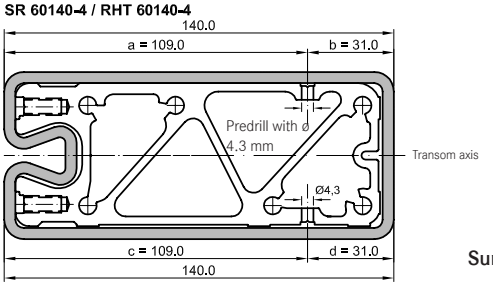
SR_1.2_026.dwg

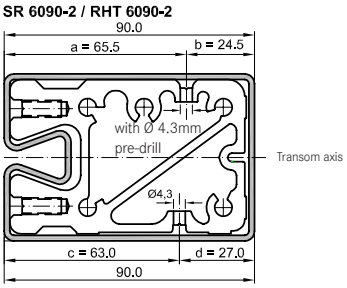
Mullion-transom joint

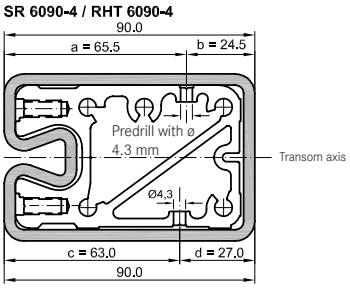
System 60
mounting position / drilling template transom – bridge sides / optional additional drill hole

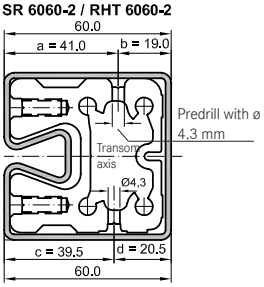


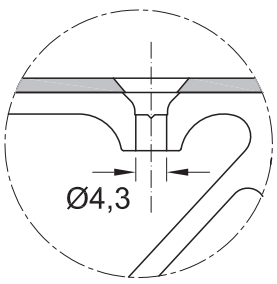




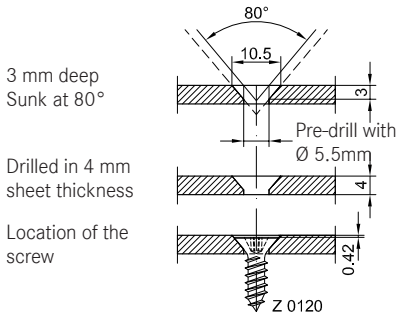








Sunk in 4 mm sheet thickness



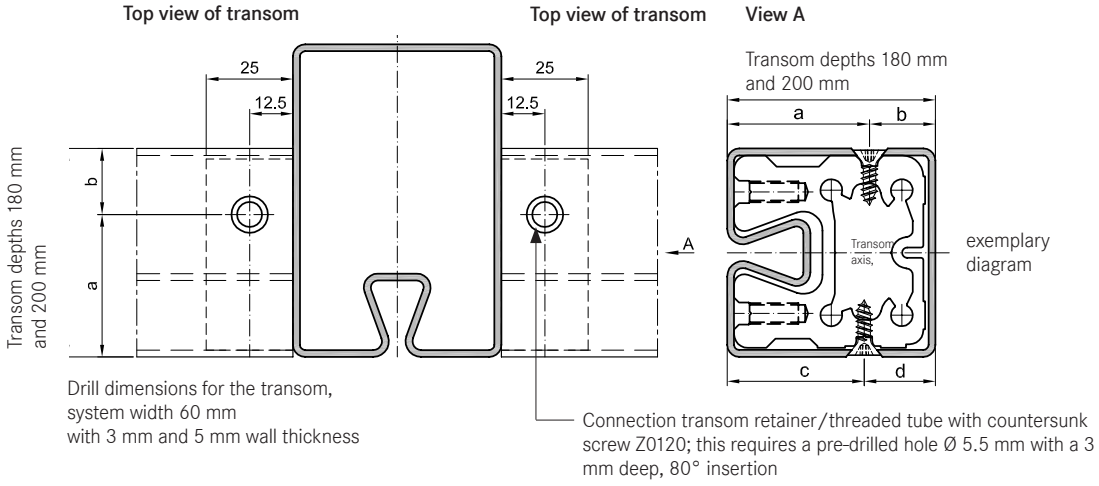
Sunk in 2 mm sheet thickness, see System 50, Page 35

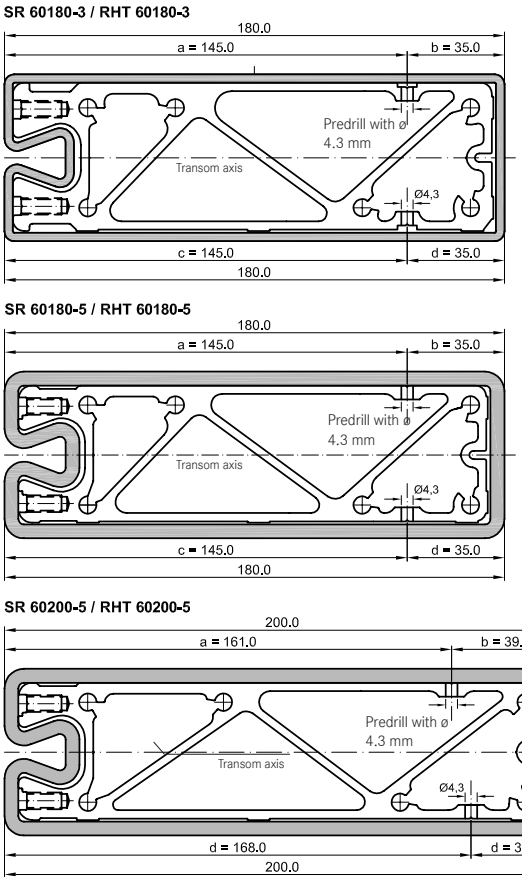
The transom retainers must be pre-drilled to Ø 4.3 in order to hold The self-tapping screws.

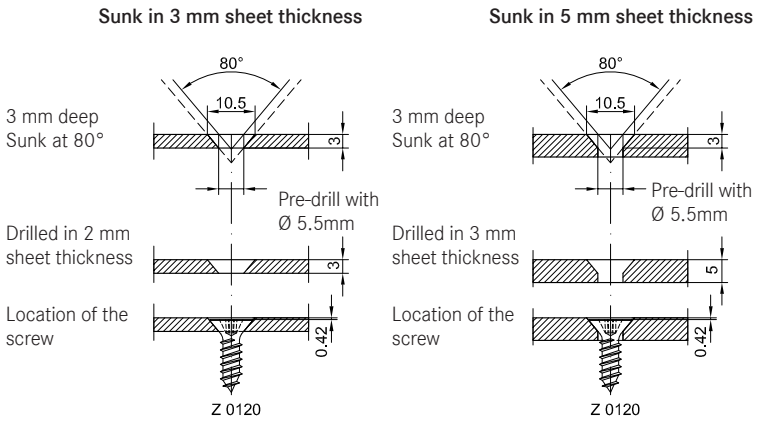
SR_1.2_026.dwg

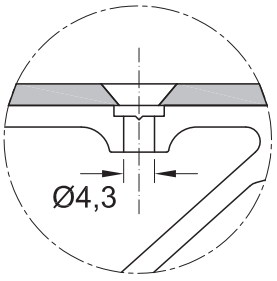
Mullion-transom joint

System 60
mounting position / drilling template transom – bridge sides / optional additional drill hole









The transom retainers must be pre-drilled to Ø 4.3 in order to hold the self-tapping screws.

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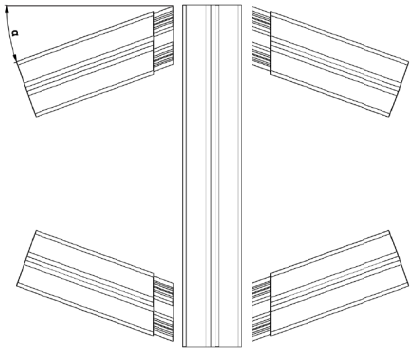
Mullion-transom joint

Inclined installation position

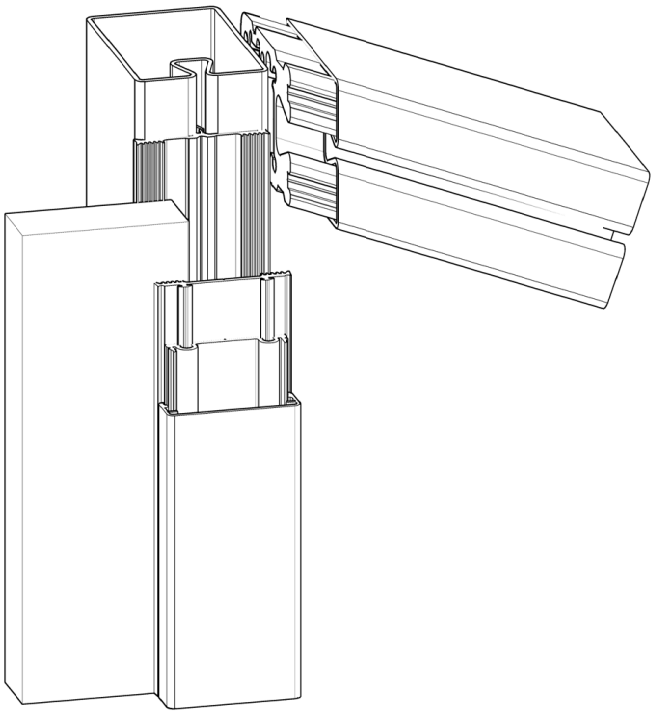
By using our T-connectors in conjunction with our gaskets, the transoms can be easily installed in an inclined position.

The length of the required T-connector depends on the angle α of the installation position.
In the following table, for example, the following lengths have been calculated for the RHT 6090-2.

Item	Required length	Angle(α)
RHT 6090-2	25 mm	0°
	40 mm	15°
	45 mm	20°
	50 mm	25°
	57 mm	30°
	64 mm	35°
	80 mm	45°



Alternatively, the length can be calculated using the formula L = 25 mm + tan (α) x 55.4 mm.



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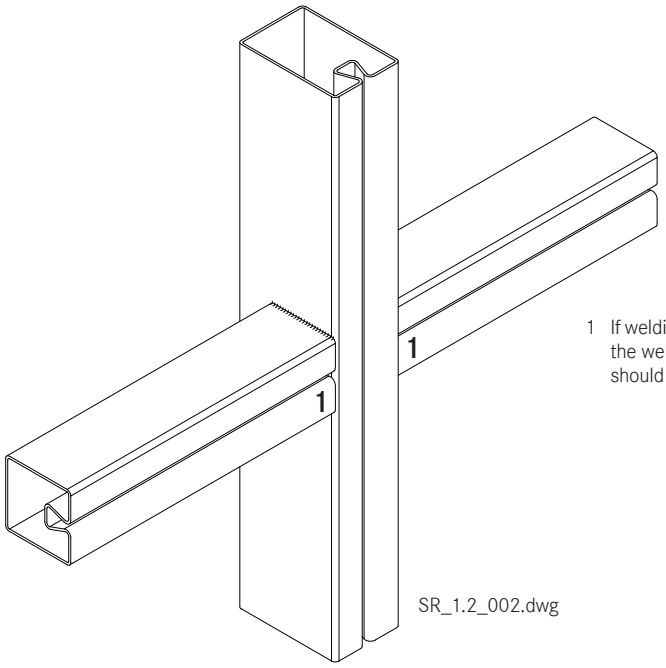
Mullion-transom joint

Welded joints

Welding and pre-treating the weld surfaces

Our sendzimir-galvanized threaded tubes are excellently suited for welded constructions. The tubes can be connected using standard arc-welding procedures such as gas-shielded or electrode welding. It is not compulsory to pre-treat the galvanized surfaces, although doing so will improve their weldability. Transom beams should be cut to length and welded, depending on how precisely the sections were cut.



1 If welding is used on the glazing side the welded seam should be sanded down.

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Ensure the evenness of the glazing surface. It is often not necessary to weld on the glazing side. If the glazing side is also welded, the welded bead should be ground flat.

In all cases be aware, however, that moisture may get into the transom through the transom joint before laying and affixing the inner seal e.g. during transport and assembly. It must be ensured that moisture ingress is prevented or that this is removed before the glazing is installed (e.g. drilling). The design of the weld joint should be chosen based upon the static system and must securely transfer loads to which it is subjected.

Post-treatment of welding points

Before applying an additional coating, we recommend cleaning any areas that have been impaired by welding and agree with the coating company on corrosion protection using cold galvanisation.

Welding of stainless steel threaded tubes

The stainless steel threaded tubes made of 1.4301 material are excellently suited to welding as well. Standard arc welding procedures such as gas-shielded or electrode welding can be applied. The recommended alloy type for the filler metal is 19 9L.

Post-treatment of welding points for stainless steel threaded tubes

Stabalux stainless steel threaded tubes are delivered with surface 2B according to DIN EN 10088-2 This surface is frequently sufficient without any further treatment. All surfaces located in the zone exposed to heat must be post-treated to prevent corrosion around the welding seams. All weld slag, splashes, tarnishing and other oxidation products must be removed. Standard methods like brushing, grinding, polishing, blasting or etching can be used as treatments. Finer surfaces will exhibit greater resistance to corrosion.

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.

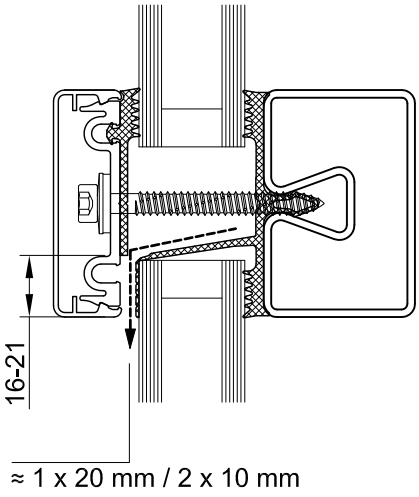
fire seals

Like all organic materials, elastomers are combustible if they are exposed to high temperatures for a sufficient period in the presence of oxygen. Inorganic substances are added to the seals in order to reduce their combustibility. The proportion of inorganic substances positively influences the flame-retardant properties, but they also make the products harder and reduce their mechanical strength. It is therefore imperative when fitting fire seals to ensure that the structure is absolutely flat and that the sealant joints connect precisely.

Depending on their geometry, it may be necessary to stretch fire seals into a mountable form, i.e. to leave them to settle into their mountable form, once they have been removed from their rolled packaging. Warm temperatures also make the seals more malleable and therefore facilitate installation.

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 rebate 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 $\ell \geq 2$ 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.



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 (α=0°)
- 10 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. These seals can be used for vertical facades and facades with an incline up to 20°.
- 12 mm high seals follow the same principle, but allow an additional third drainage section for an intermediate mullion.
- 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.

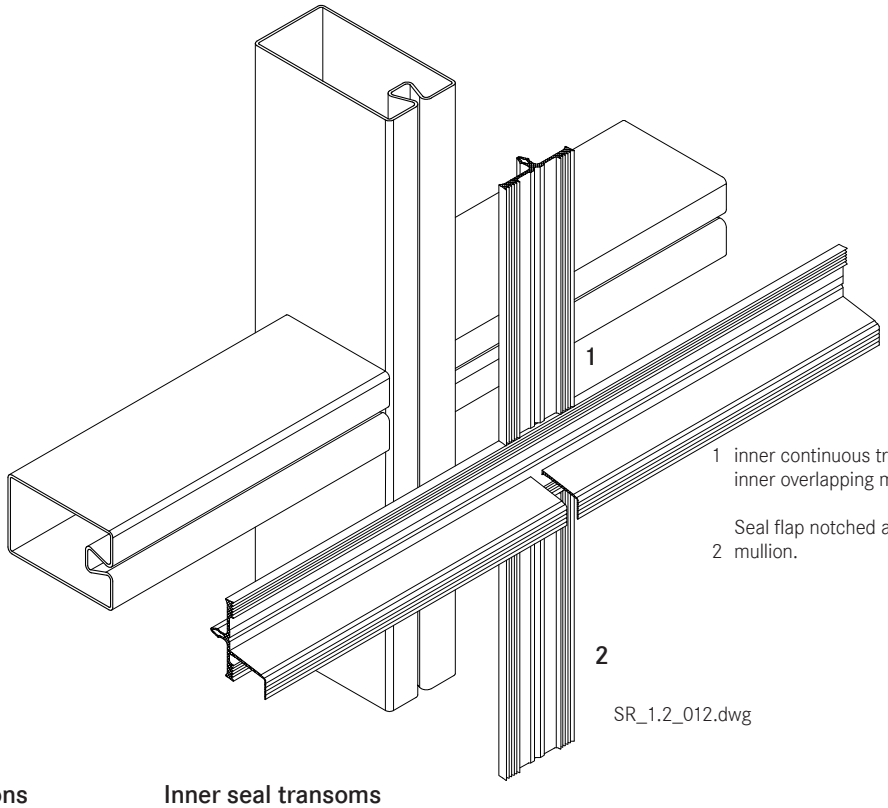
Some basic information for sealing and sticking down Stabalux seals

- 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

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

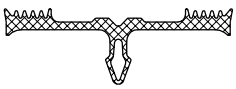
- The horizontal transom seals are laid continuously across the mullion-transom joints. Ensure here that the clamping feet of the horizontal seal are released around the mullion.
- Mullion seals are butt jointed to the transom seals.
- The seal flaps should be released to a width of 10-15 mm at the mullion 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 0078 for System 60 and 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 million seal

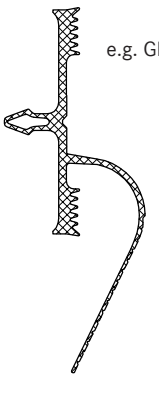
2 Seal flap notched around the mullion.

Inner seal mullions



e.g. GD 6202

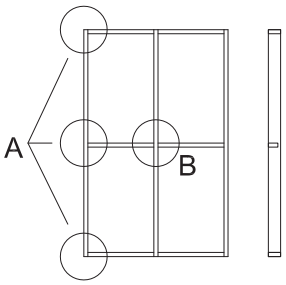
Inner seal transoms

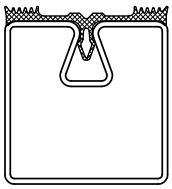


e.g. GD 6204

Seals - Facade

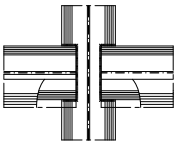
Assemble the inner seal on vertical facade glazing - 1 level join





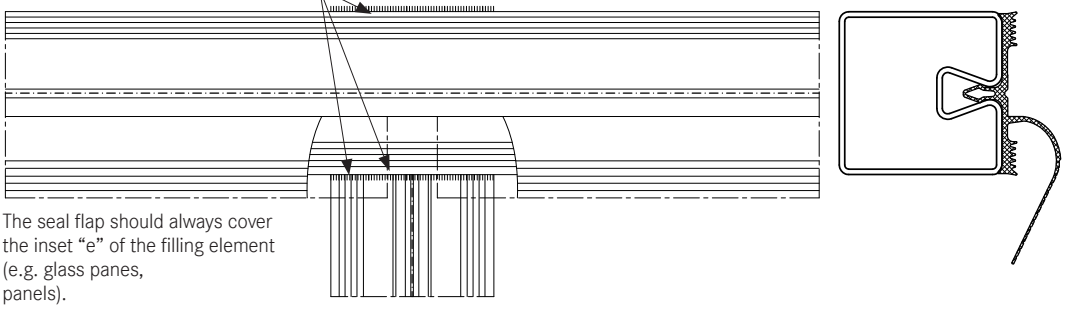
Intermediate mullions
B

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.

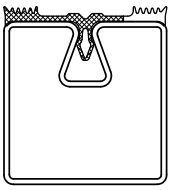


Gasket joints
joints

Transom

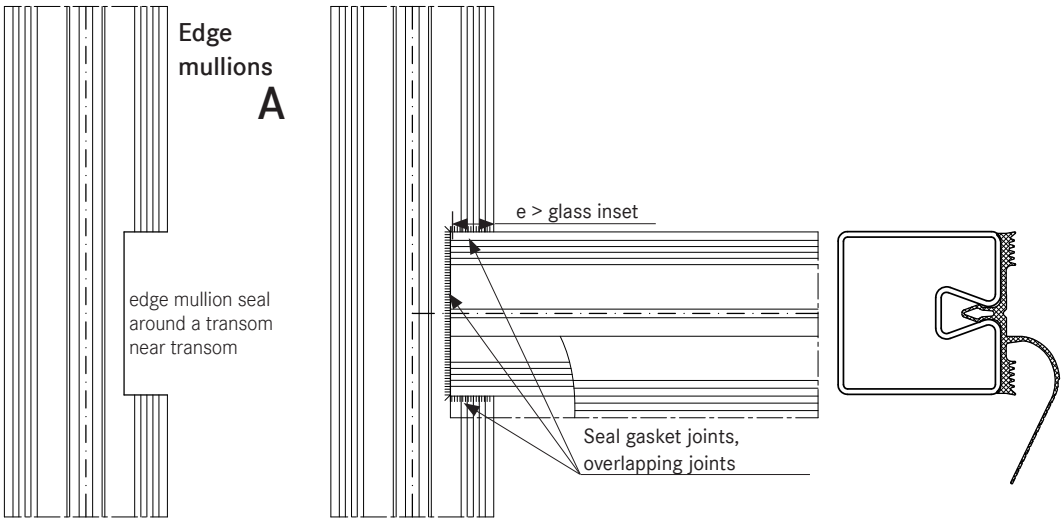


The seal flap should always cover the inset “e” of the filling element (e.g. glass panes, panels).



Notch the edge mullion seal in the area of the transom.

Edge mullions
A



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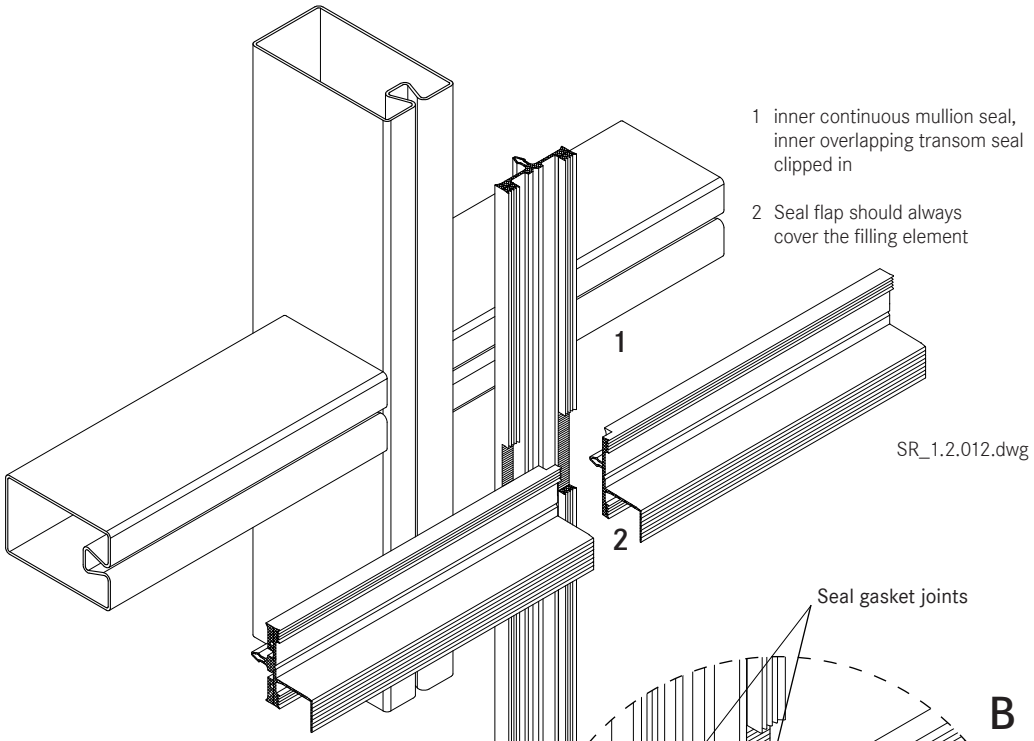
Seals - Facade

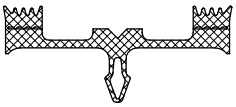
1.2
4

Assembly of the inner seal for vertical facade glazing and facade glazing with an incline of up to 20° - 2 overlapping sections

- The 10 mm high seals can be divided across their height to allow a simple overlap at critical transom joints.
- The vertical seals for the mullions (2nd drainage section) are laid continuously.
- The transom seals overlap the mullion seals.
- Moisture and condensation is guided away via the seal flap of the transom seal (1st drainage section) to the main mullion.
- 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.
- All joints must be sealed. Before laying seals, we recommend completely coating the entire support surfaces and sides 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.

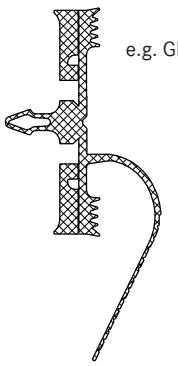


Inner seal mullions



e.g. GD 6206

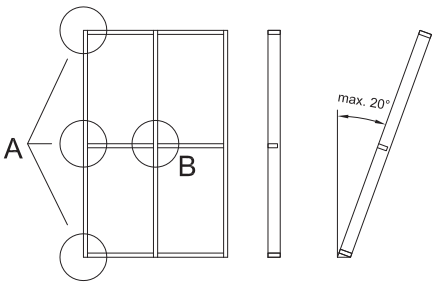
Inner seal transoms

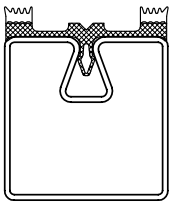


e.g. GD 6303

Seals - Facade

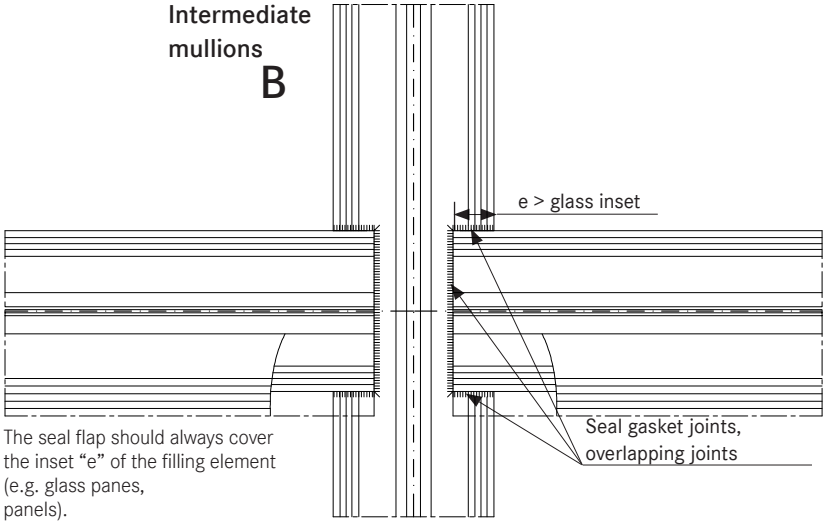
Assembly of the inner seal for vertical facade glazing and facade glazing with an incline of up to 20° - 2 overlapping sections





Mullion seals
around a transom upper section
to the width of the transom seal

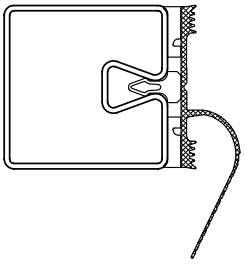
Intermediate mullions
B

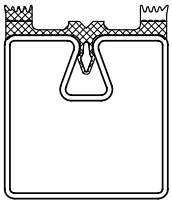


The seal flap should always cover the inset “e” of the filling element (e.g. glass panes, panels).

Transom

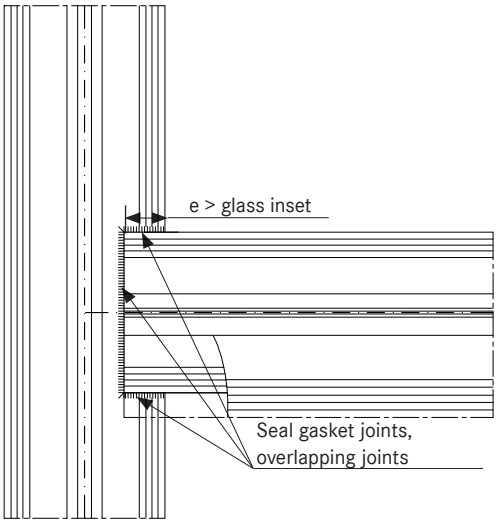
Transom seal
separate lower section at the length of the overlap “e”





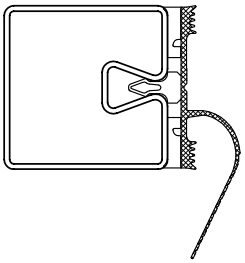
edge mullion seal
around a transom upper section
to the width of the transom seal

Edge mullions
A



Transom

Transom seal
separate lower section at the length of the overlap “e”



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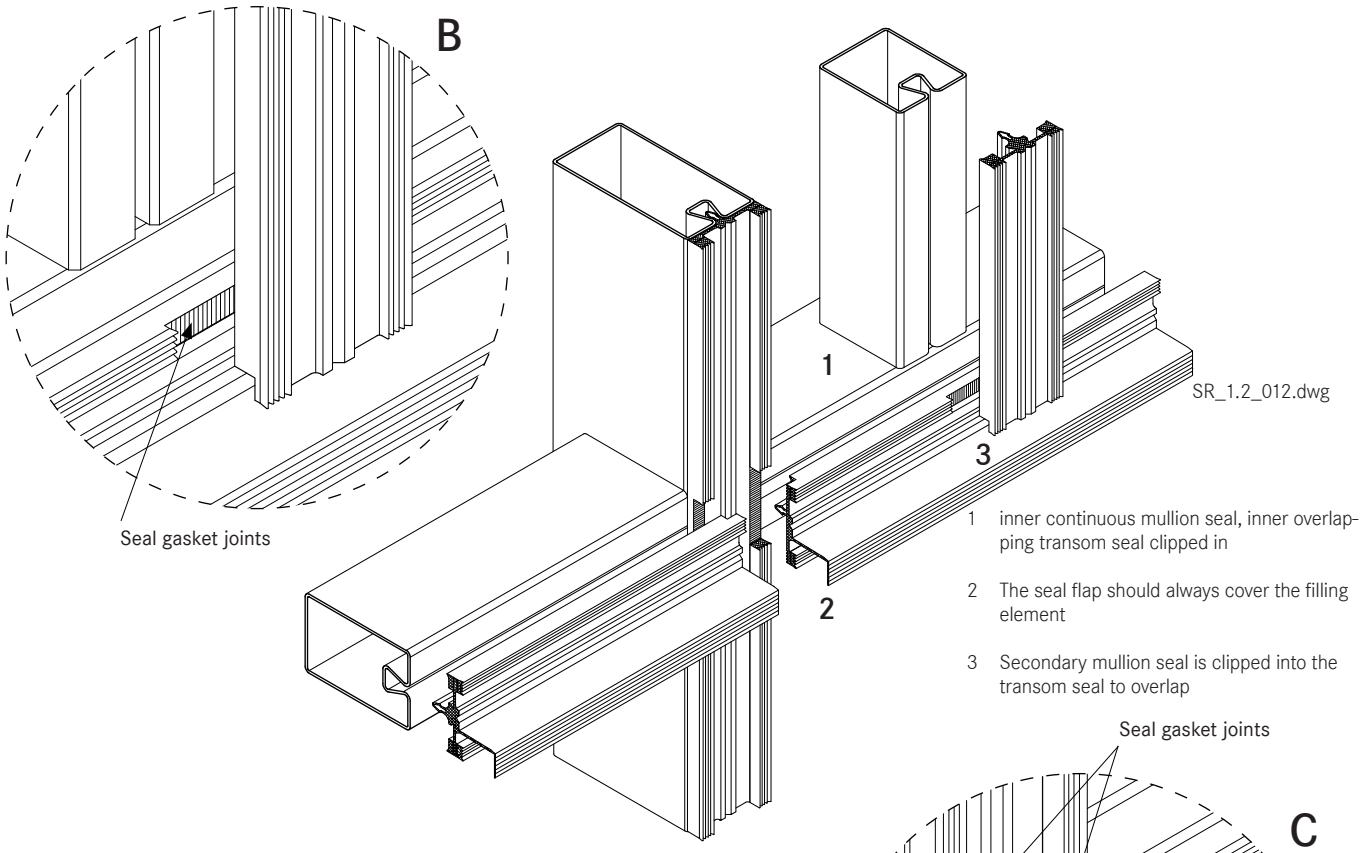
Seals - Facade

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

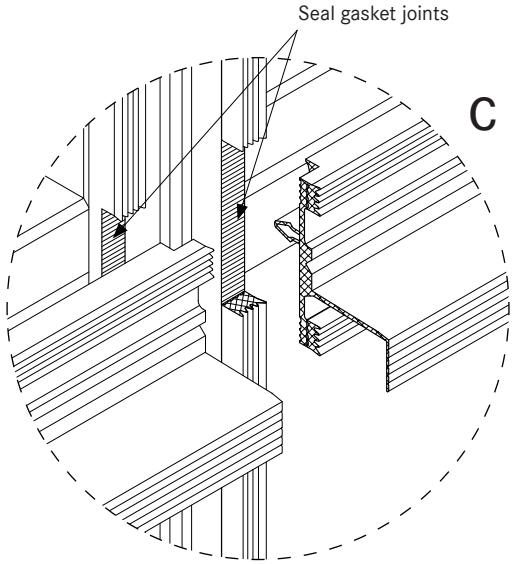
- Optionally, Stabalux seals with three offset water channels can be used in the facade area which safely drain any moisture or condensation to the outside.
- The 12 mm high seals can be divided across their height to allow a simple overlap at critical secondary mullion/transom joints, i.e. transom/primary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



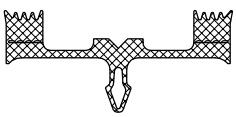
1 inner continuous mullion seal, inner overlapping transom seal clipped in

2 The seal flap should always cover the filling element

3 Secondary mullion seal is clipped into the transom seal to overlap

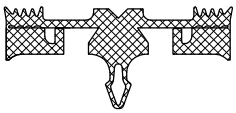


Inner seal main mullion



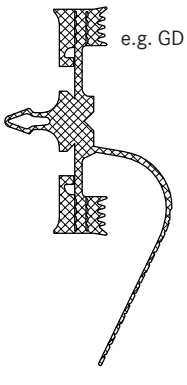
e.g. GD 6314

Inner seal secondary mullion



e.g. GD 6315

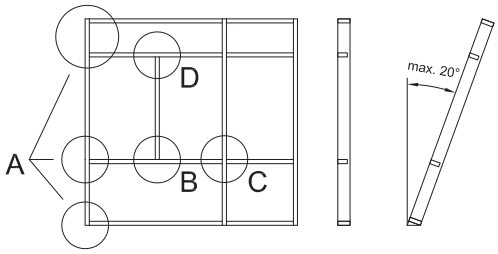
Inner seal transoms



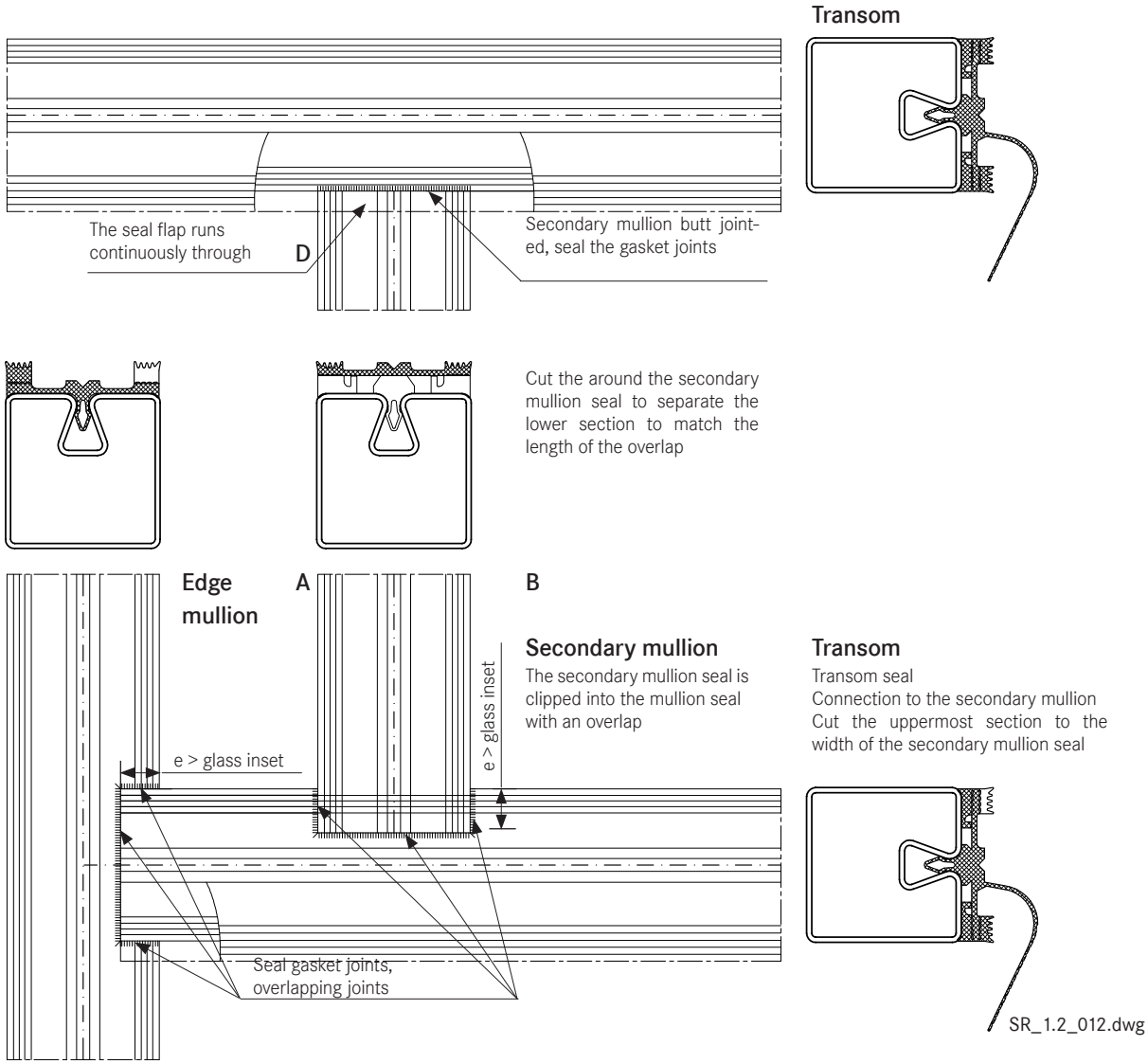
e.g. GD 6318

Seals - Facade

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

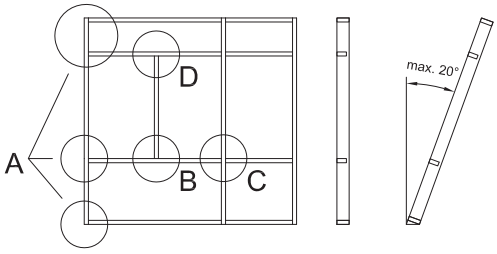


- The seal flap must always cover the inset depth of the glass panes and filling element.
- The protruding length of the seal flap should be removed at the perforation once glazing is completed.
- Vertical seals on the secondary mullion are butt jointed beneath the upper transom. The seal flap of the 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.

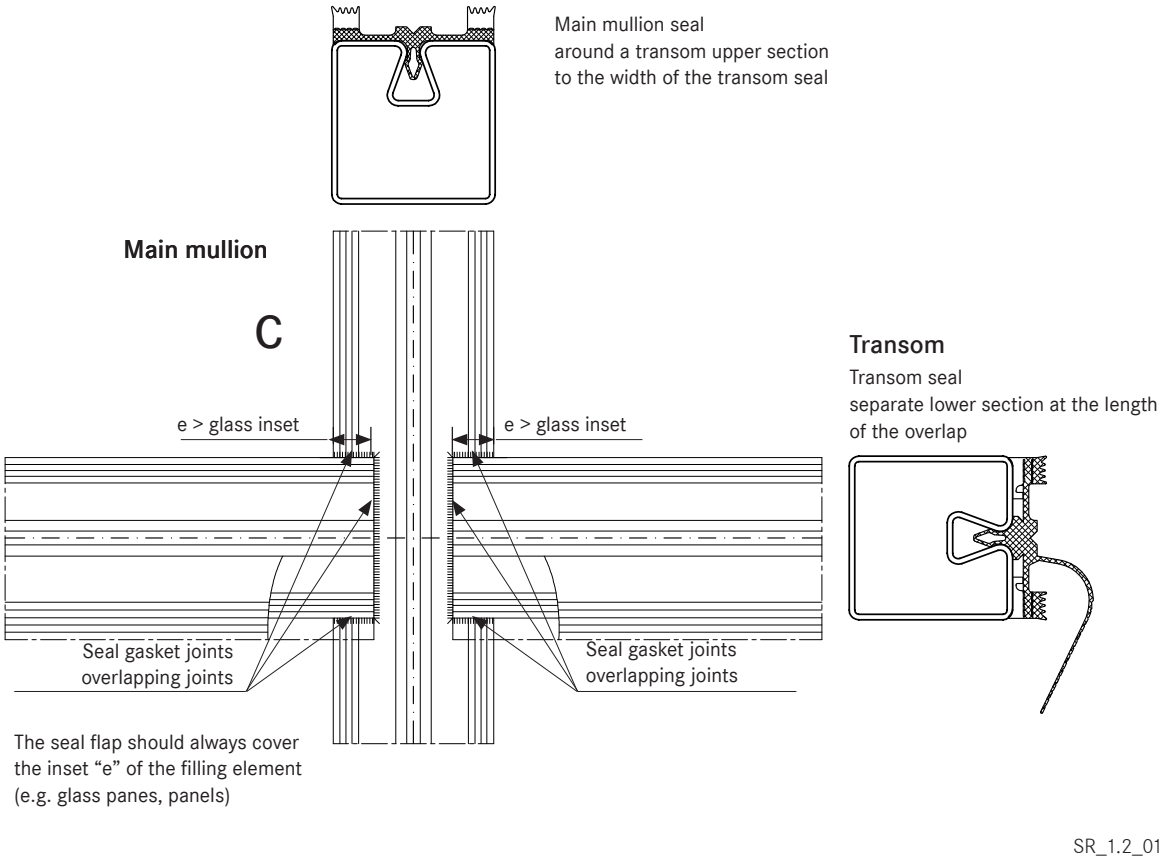


Seals - Facade

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.



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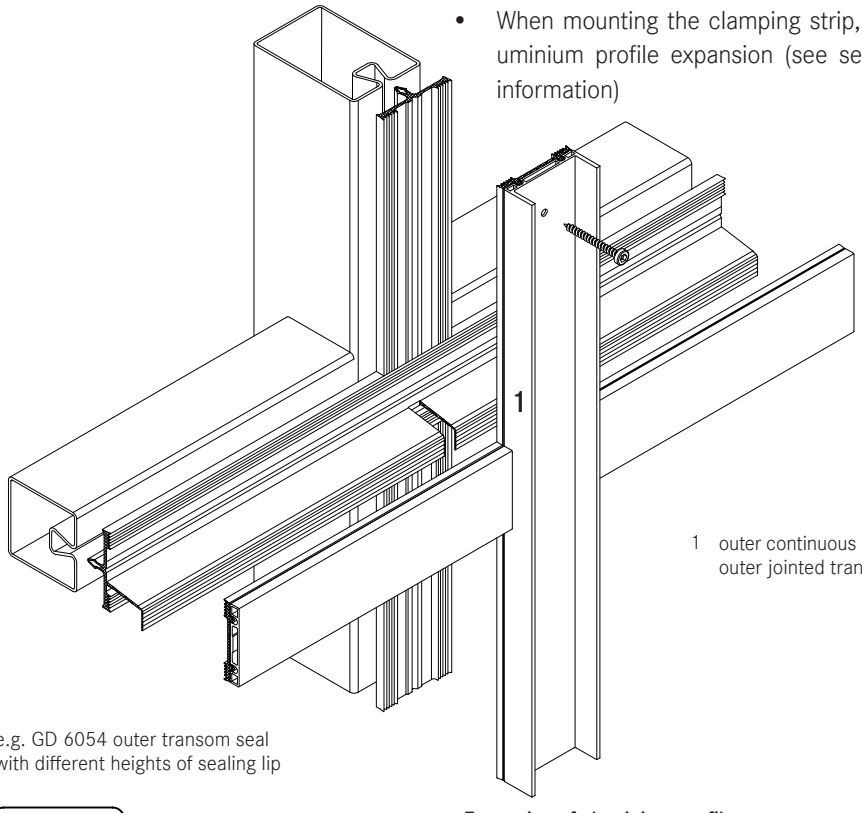
Seals - Facade

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.
- Tightly fitted sealant joints can be implemented without fixing the outer seal of the mullion-transom joint in vertical facades.
- 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 different 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)



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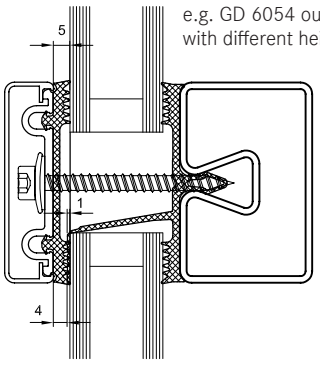
1 outer continuous mullion seal, outer jointed transom seal

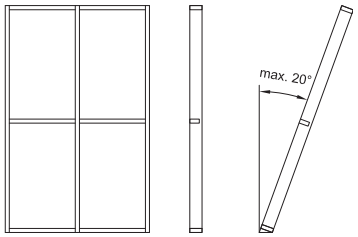


e.g. GD 6054 outer transom seal with different heights of sealing lip

Expansion of aluminium profiles

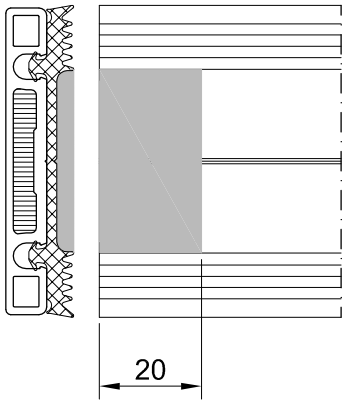
Rod length ℓ (mm)	Temperature difference ΔT	Longitudinal expansion Δ ℓ (mm)
1000	40°C	1.0
3000	40°C	3.0
1000	60°C	1.5
3000	60°C	4.5
1000	100°C	2.5
3000	100°C	7.5

Seals - Facade

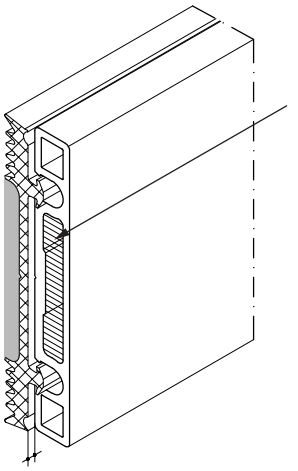


Assembly of the outer seal for facade glazing with an inwards incline of 20°

- 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 6059, DL 5061, DL 6061, DL 5067, DL 6067, DL 5071, DL 6071, DL 6043, DL 6044) and flat lower and upper strips (e.g. UL 6005 with OL 6066), 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.

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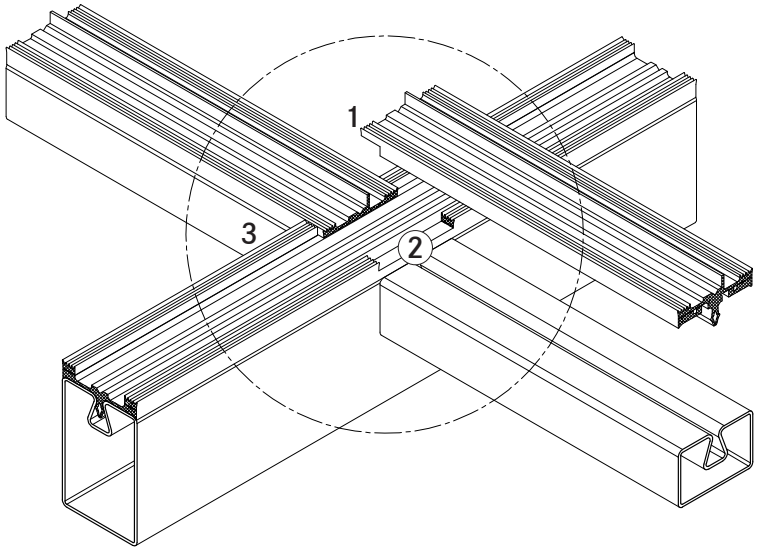
Trim the seals to be slightly larger than required.

Seals - roof

1.2
5

Assembly of the inner seal for roof glazing

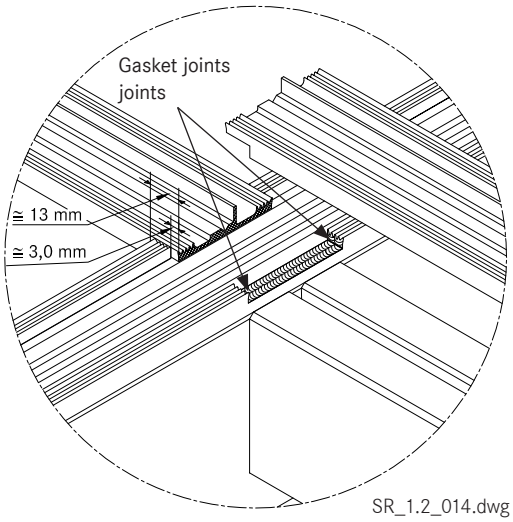
- Optionally, Stabalux seals with offset water channels can be used in the facade area which safely drain any moisture or condensation to the outside.
- The 10 mm high seals can be divided across their height to allow a simple overlap at critical transom joints.
- The transom seals are geometrically 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



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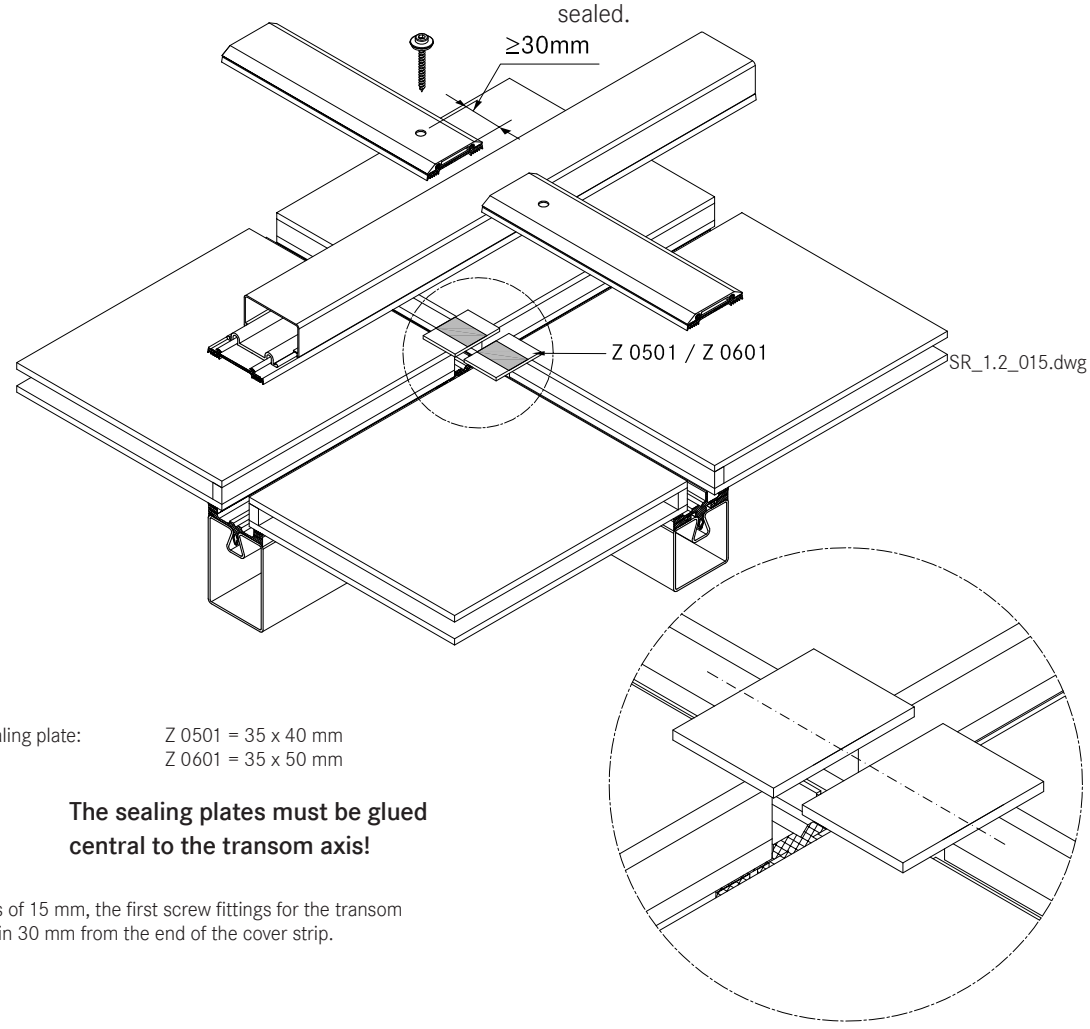
Seals - roof

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 0601 for System 60 and 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
Z 0601 = 35 x 50 mm

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

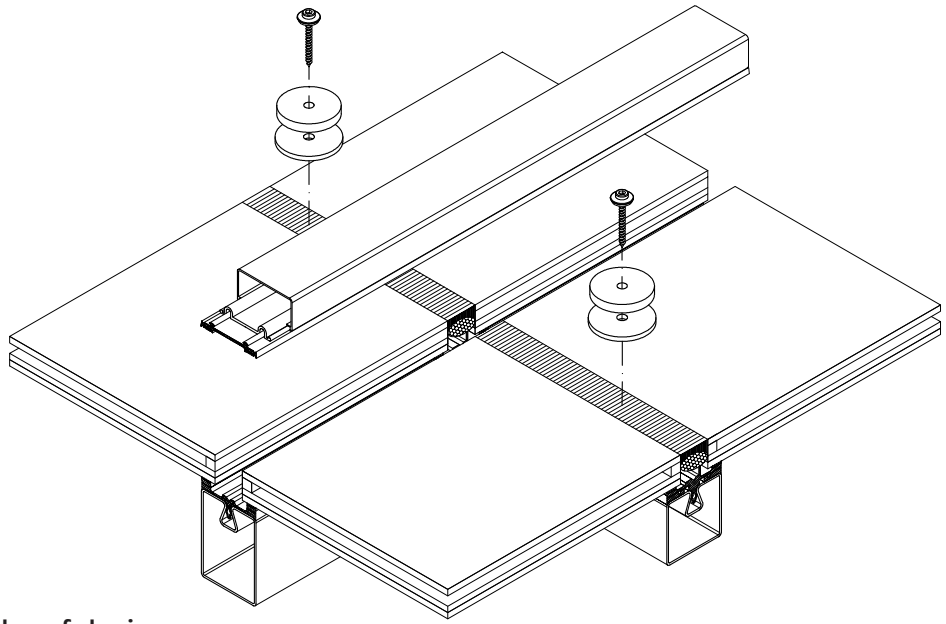
For glass insets of 15 mm, the first screw fittings for the transom cover strip begin 30 mm from the end of the cover strip.

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 and 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).



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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 + upper 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.

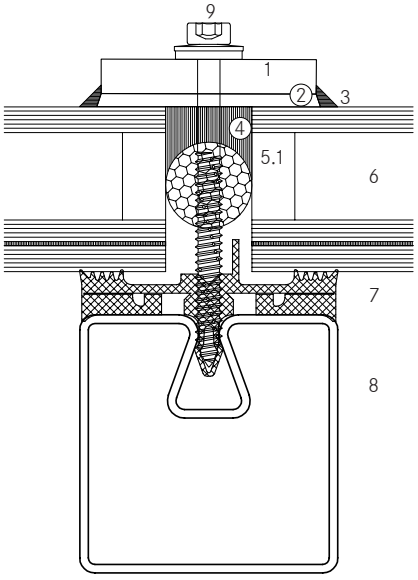
Seals - roof

1.2
5

Assembly of the outer seal for glazed roofing up to 2° incline

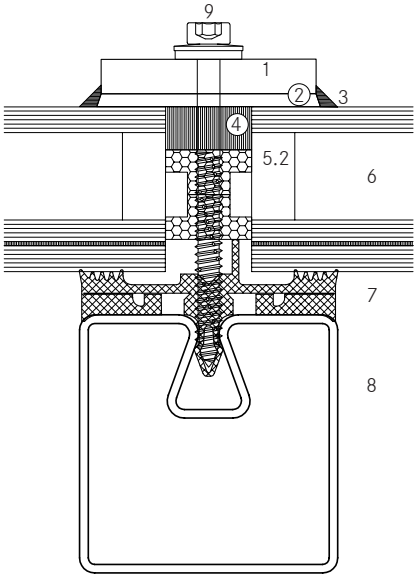
- The compatibility of the materials is particularly important when using all-weather silicone. In this case, the compatibility of the sealant with the edge bonding of the glass and the backfill of the joints. If self-cleaning glass is used, the compatibility must be established in advance.
- Glass sealants 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 bonding generally provides better UV-resistance than polysulfide-based edge bonding. 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 steal 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
4 All weather silicone seal

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



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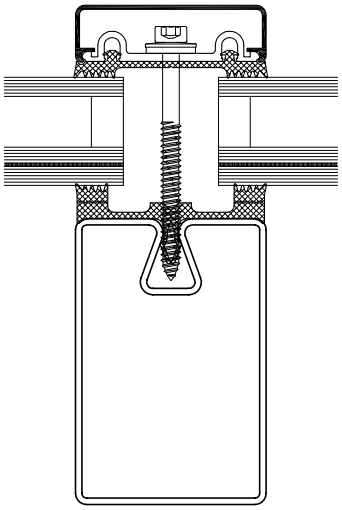
5.1 Rope seal
5.2 Slab insulation
6 Glass / filling element
7 Inner seal 10 mm transom
8 Threaded tube
9 System screw fittings

Seals - roof

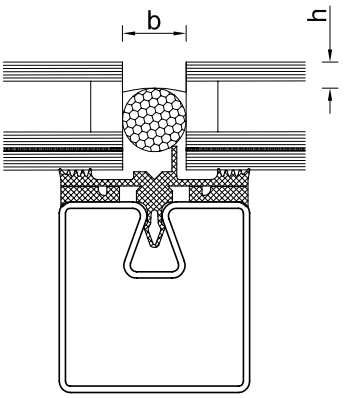
Assembly of the outer seal for glazed roofing up to 2° incline

- The joint width and the joint height for Stabalux SR are defined as w x h = 20 mm x 10 mm. These measurements should always 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.

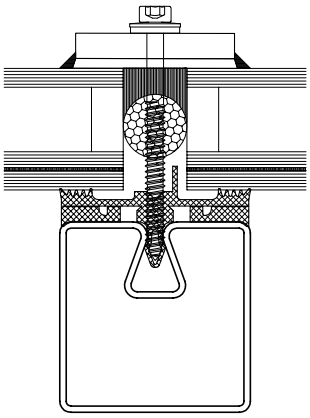
Rafter with clamping strips



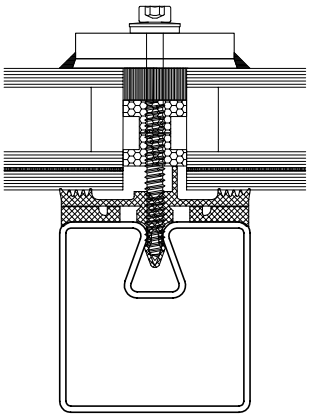
Joint design according according to manufacturer's instructions!
Generally:
w : h = 2 : 1 – 3.5 : 1



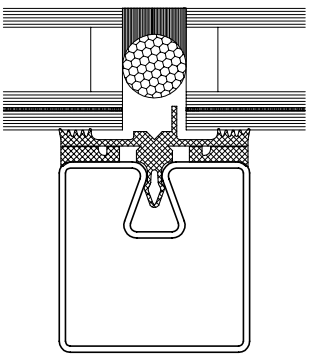
Transom with clamp, All weather silicone seal and round section rope seal



Transom with clamp, All weather silicone seal and slab insulation



Transom with all-weather silicone and round section rope seal



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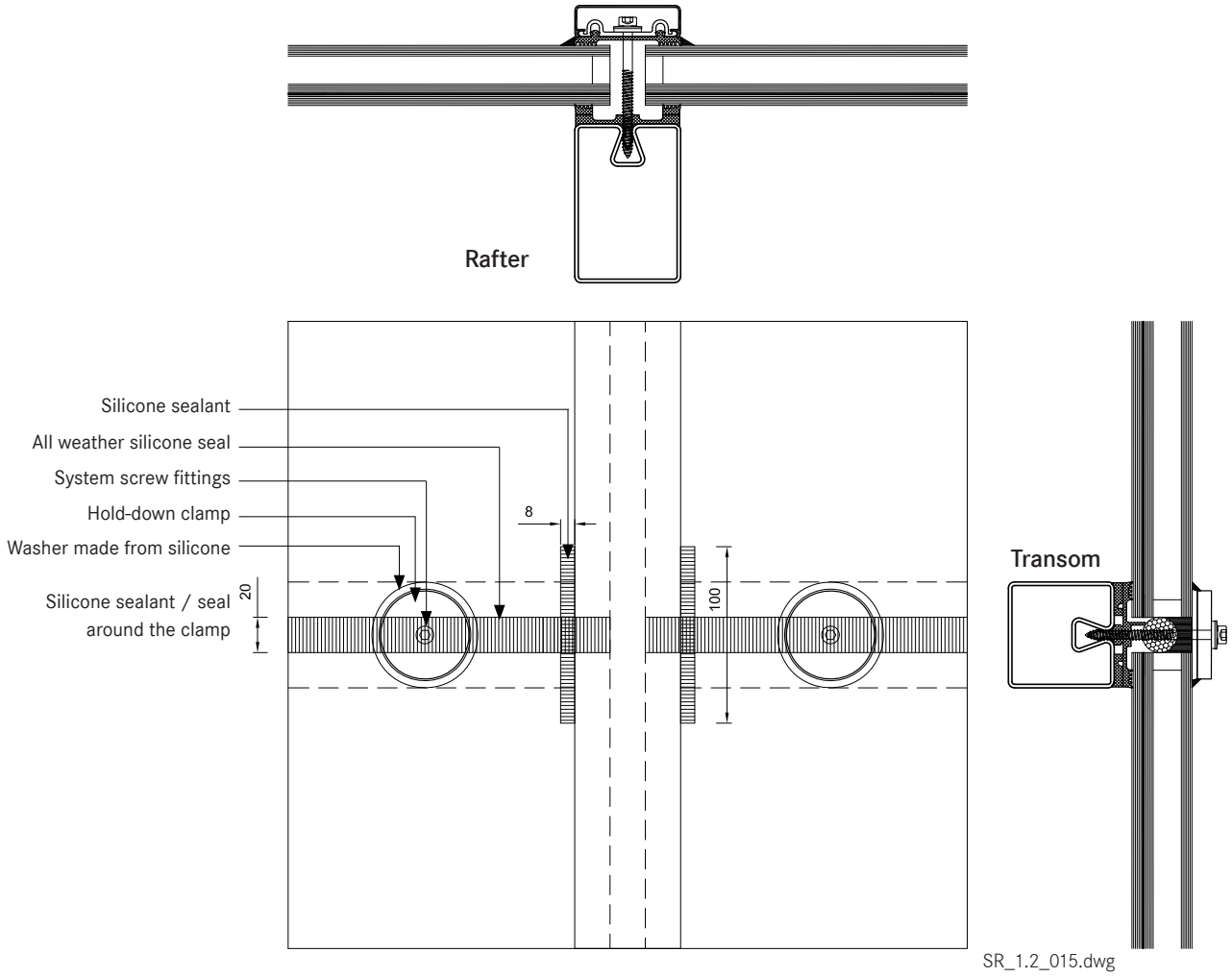
Seals - roof

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.

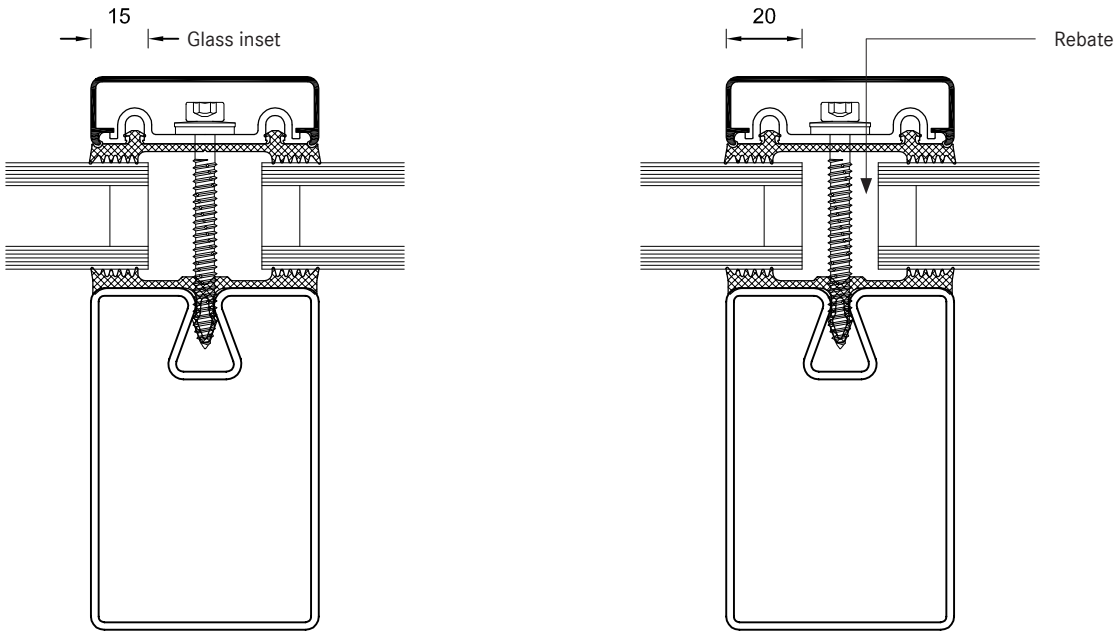


Glass inset and glass support

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.
- Special conditions such as fire protection glass must be adhered to; the terms are stated in the general building approval.



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Glass inset and glass support

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 SR system uses four different types and three techniques for attaching glass supports:

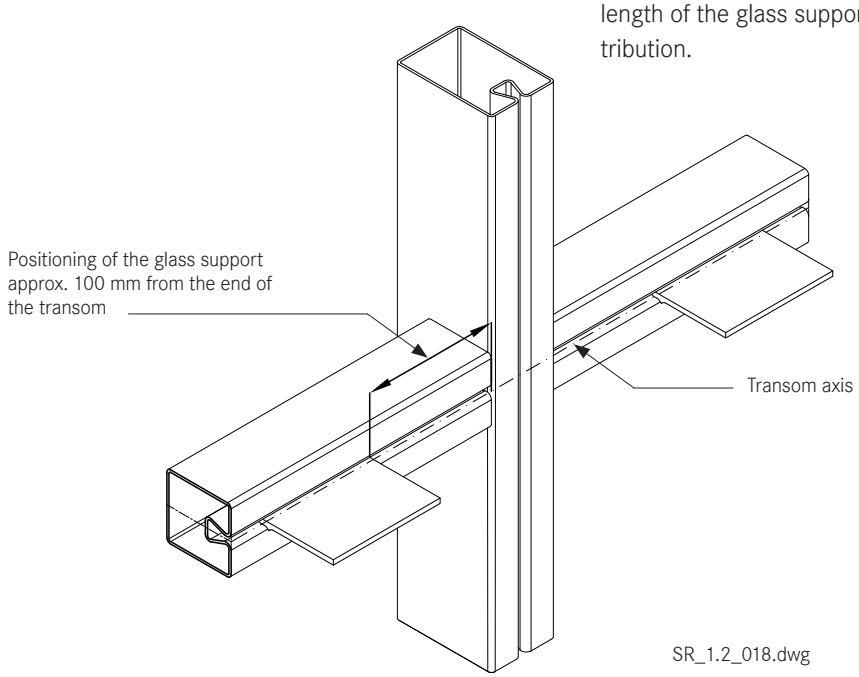
- The glass supports GH 5051, consisting of a top and bottom part, are screwed directly on to the transoms and are extremely easy to assemble. The permissible glass weights depend on the screw fittings.
- The glass supports GH 5201 and GH 5202 are screwed directly on to the transoms and are extremely easy to assemble.
- Insert glass supports GH 281 and GH 282 are inserted directly into the screw channel of the threaded tubes and do not require any further fastening. The linear alignment of the glass support enables high glass loads.
- Heavy glass loads require welded glass supports. For this purpose, flat sheets with a thickness of t = 5 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 ensure there is no collision with the cover strip screw fittings at the end of the transom.

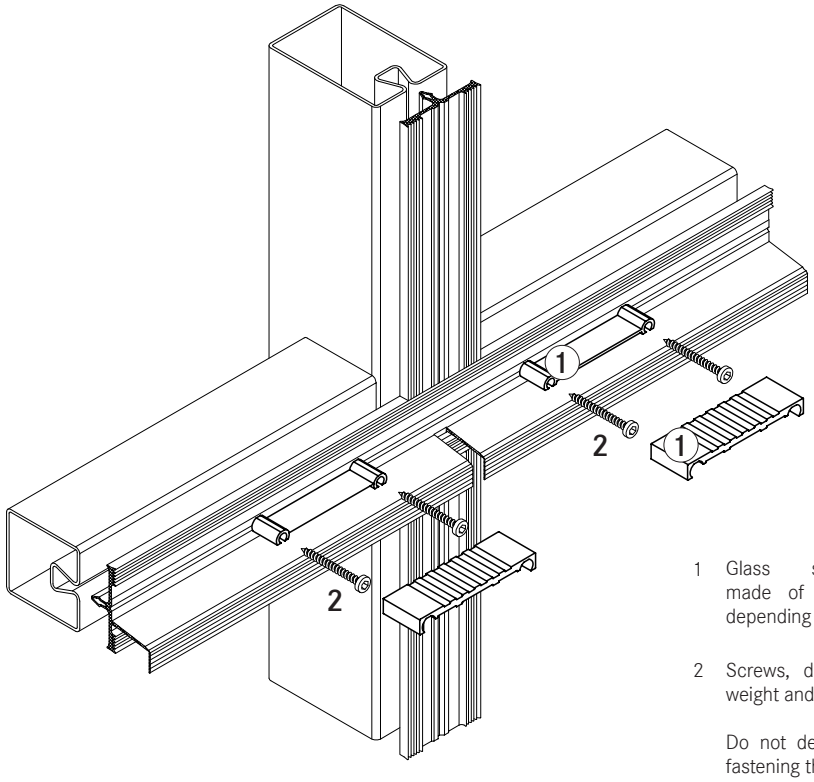
Glazing blocks

- 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.



Glass inset and glass support

Glass support GH 5051 - bolted glass support, two-part

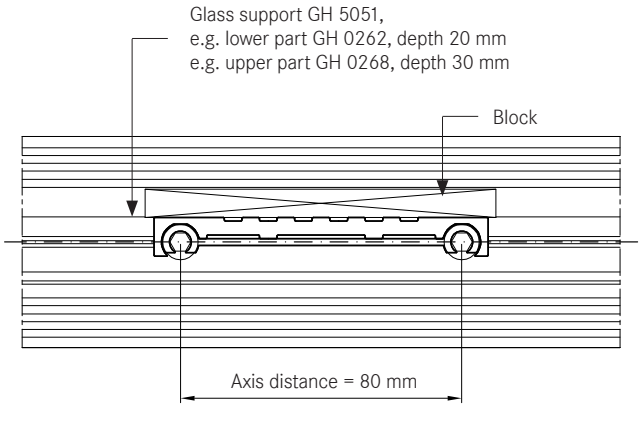


1 Glass support GH 5051 made of top and bottom part, depending on the glass thickness.

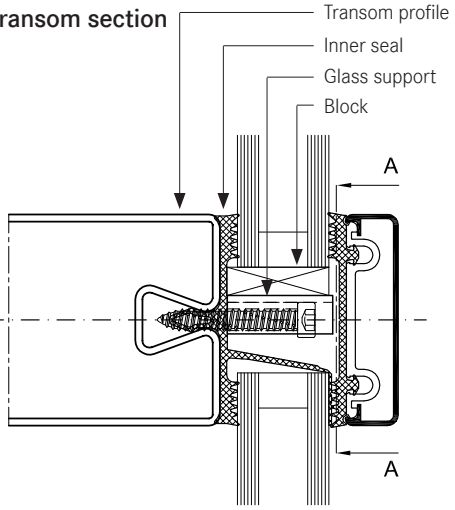
2 Screws, depending on the screw weight and glass thickness.

Do not deform the inner seals by fastening the screws too tight.

View A-A



Transom section



Glass inset and glass support

Article assignment

Glass support GH 5051 comprising the bottom parts GH 0260 to GH 0262, and the top parts GH 0263 to GH 0268.

The components of the glass support GH 5051 are arranged to suit the glass thickness; the following table lists the details for vertical facades.

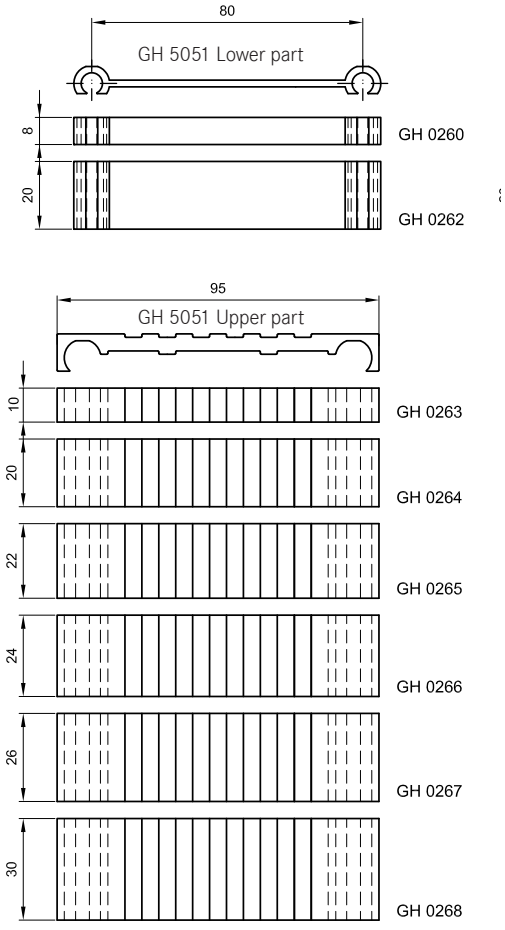
Screw fittings

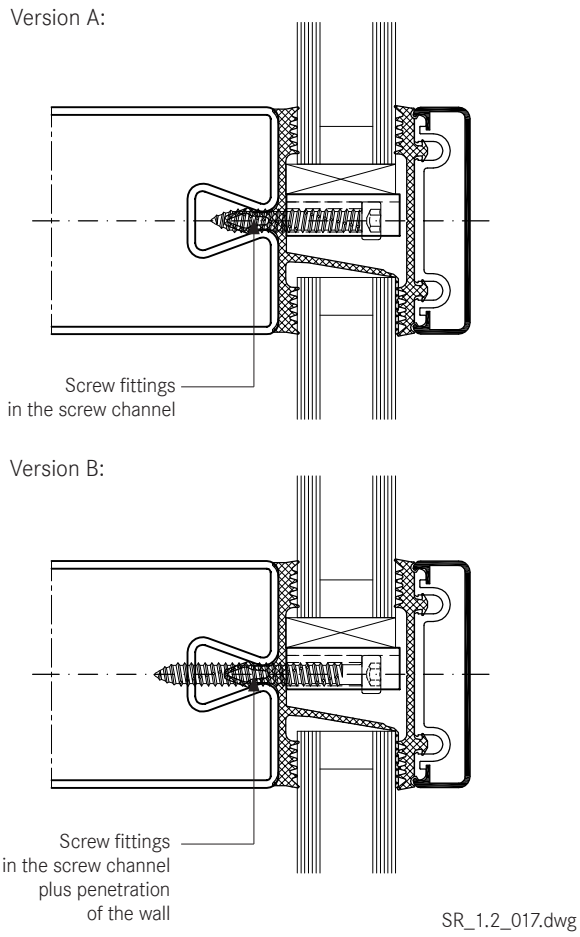
A distinction is made between two screw fitting scenarios, depending on the glass weight and thickness (see Section 9):

- **Screw fittings, lower part in the screw channel**
  - **Screw Z 0116 length 30 mm for GH 0260**
  - **Screw Z 0118 length 40 mm for GH 0262**

- **Screw fittings, lower part in the screw channel, plus aperture in the wall**
  - **Screw Z 0119 length 45 mm for GH 0260**
  - **Screw Z 0114 length 55 mm for GH 0262**

Pre-drill the threaded tubes with Ø 5.0 mm.





Glass inset and glass support

Article assignment

Table 1:

GH 5051 | Vertical glazing

	Total glass thickness t_{Glass} (mm)	Two-part glass support GH 5051		Screws					
				Inner seal height 5 mm		Inner seal height 10 mm		Inner seal height 12 mm	
		Lower part	Upper part	Screw fittings variant (A)	Screw fittings variant (B)	Screw fittings variant (A)	Screw fittings variant (B)	Screw fittings variant (A)	Screw fittings variant (B)
1	8, 9	GH 0260, depth 8 mm	GH 0263, depth 10 mm	Z 0116 L = 30 mm	Z 0119, L = 45 mm	Z 0249, L = 35 mm	Z 0253, L = 50 mm	Z 0249, L = 35 mm	Z 0253, L = 50 mm
2	10, 11	GH 0260, depth 8 mm	Cut depth 14 mm	Z 0116 L = 30 mm	Z 0119, L = 45 mm	Z 0249, L = 35 mm	Z 0253, L = 50 mm	Z 0249, L = 35 mm	Z 0253, L = 50 mm
3	12, 13	GH 0260, depth 8 mm	Cut depth 16 mm	Z 0116 L = 30 mm	Z 0119, L = 45 mm	Z 0249, L = 35 mm	Z 0253, L = 50 mm	Z 0249, L = 35 mm	Z 0253, L = 50 mm
4	14, 15	GH 0260, depth 8 mm	Cut depth 18 mm	Z 0116 L = 30 mm	Z 0119, L = 45 mm	Z 0249, L = 35 mm	Z 0253, L = 50 mm	Z 0249, L = 35 mm	Z 0253, L = 50 mm
5	16, 17, 18	GH 0260, depth 8 mm	GH 0264, depth 20 mm	Z 0116 L = 30 mm	Z 0119, L = 45 mm	Z 0249, L = 35 mm	Z 0253, L = 50 mm	Z 0249, L = 35 mm	Z 0253, L = 50 mm
6	19, 20	GH 0260, depth 8 mm	GH 0265, depth 22 mm	Z 0116 L = 30 mm	Z 0119, L = 45 mm	Z 0249, L = 35 mm	Z 0253, L = 50 mm	Z 0249, L = 35 mm	Z 0253, L = 50 mm
7	21, 22	GH 0262, depth 20 mm	GH 0266, depth 24 mm	Z 0118, L = 40 mm	Z 0114, L = 55 mm	Z 0119, L = 45 mm	Z 0255, L = 60 mm	Z 0119, L = 45 mm	Z 0256, L = 65 mm
8	23, 24, 25	GH 0262, depth 20 mm	GH 0267, depth 26 mm	Z 0118, L = 40 mm	Z 0114, L = 55 mm	Z 0119, L = 45 mm	Z 0255, L = 60 mm	Z 0119, L = 45 mm	Z 0256, L = 65 mm
9	26, 27, 28, 29, 30	GH 0262, depth 20 mm	GH 0268, depth 30 mm	Z 0118, L = 40 mm	Z 0114, L = 55 mm	Z 0119, L = 45 mm	Z 0255, L = 60 mm	Z 0119, L = 45 mm	Z 0256, L = 65 mm

Table 2:

GH 5051 | Inclined glazing

	Total glass thickness t_{Glass} (mm)	Two-part glass support GH 5051		Screws	
				Inner seal height 10 mm	
		Lower part	Upper part	Screw fittings variant (A)	Screw fittings variant (B)
1	16, 17, 18	GH 0261, depth 10 mm	GH 0263, depth 10 mm	Z 0249, L = 35 mm	Z 0114, L = 55 mm
2	19, 20	Cut, depth 14 mm	Cut, depth 12 mm	Z 0118, L = 40 mm	Z 0255, L = 60 mm
3	21, 22	Cut, depth 14 mm	Cut, depth 14 mm	Z 0118, L = 40 mm	Z 0255, L = 60 mm
4	23, 24, 25	Cut, depth 14 mm	Cut, depth 16 mm	Z 0118, L = 40 mm	Z 0255, L = 60 mm
5	26, 27, 28	GH 0262, depth 20 mm	GH 0264, depth 20 mm	Z 0119, L = 45 mm	Z 0256, L = 65 mm
6	29, 30	GH 0262, depth 20 mm	GH 0265, depth 22 mm	Z 0119, L = 45 mm	Z 0256, L = 65 mm
7	31, 32	GH 0262, depth 20 mm	GH 0266, depth 24 mm	Z 0119, L = 45 mm	Z 0256, L = 65 mm

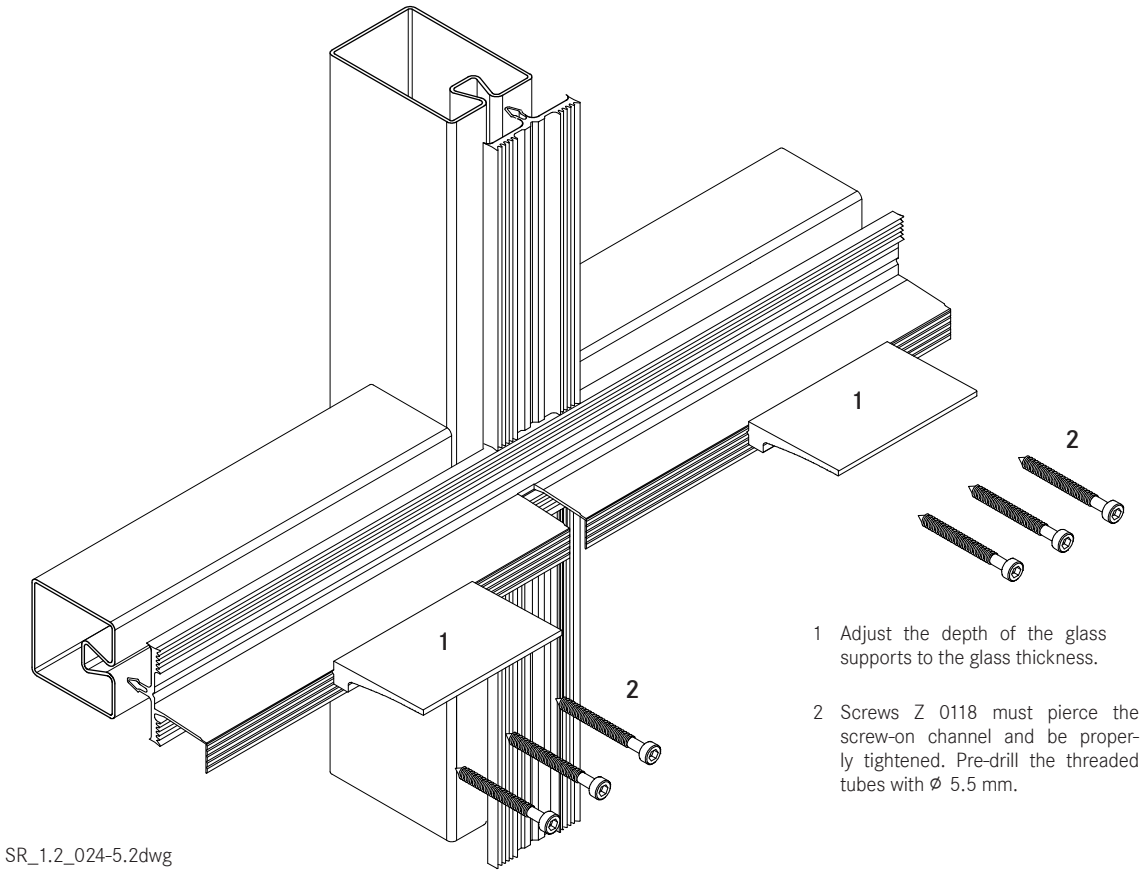
Glass panes with a symmetrical structure must be no thicker than 20 mm.

Maximum eccentricity must not exceed e = 20 mm.

Glass loads cannot be stated beyond these limits.

Glass inset and glass support

Glass support GH 5201 and GH 5202 - bolted glass support



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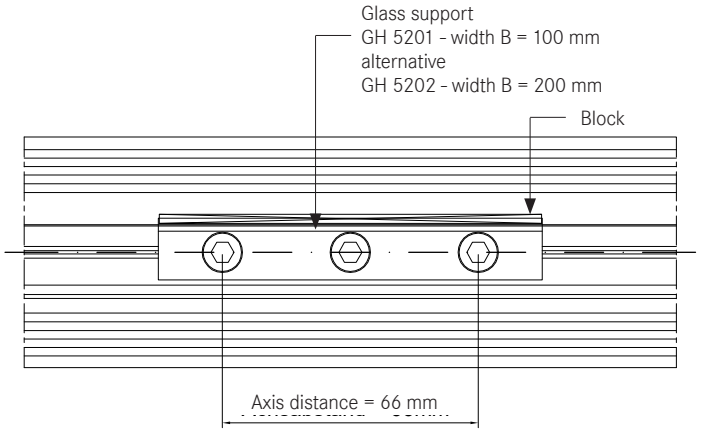
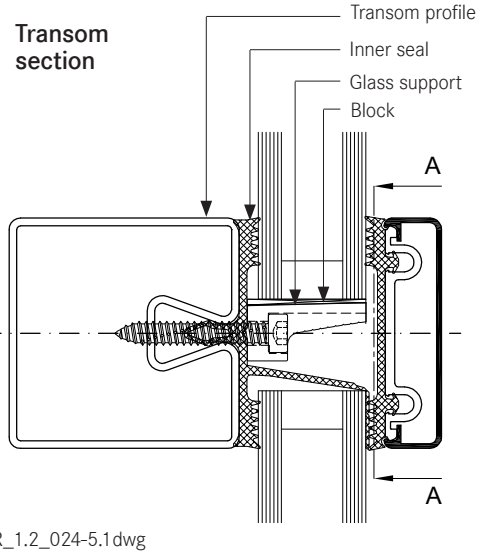
1 Adjust the depth of the glass supports to the glass thickness.

2 Screws Z 0118 must pierce the screw-on channel and be properly tightened. Pre-drill the threaded tubes with ⌀ 5.5 mm.

View A-A



Transom section



SR_1.2_024-5.1dwg

Glass inset and glass support

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 62 mm

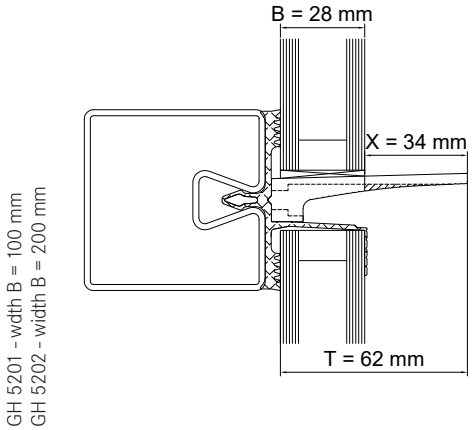
B = thickness of glass panel

X = T - B

Example:
Depth of glass support
T = 62 mm

Glass panel 6 / 16 /6
B = 28 mm

X = 62 - 28
X = 34 mm



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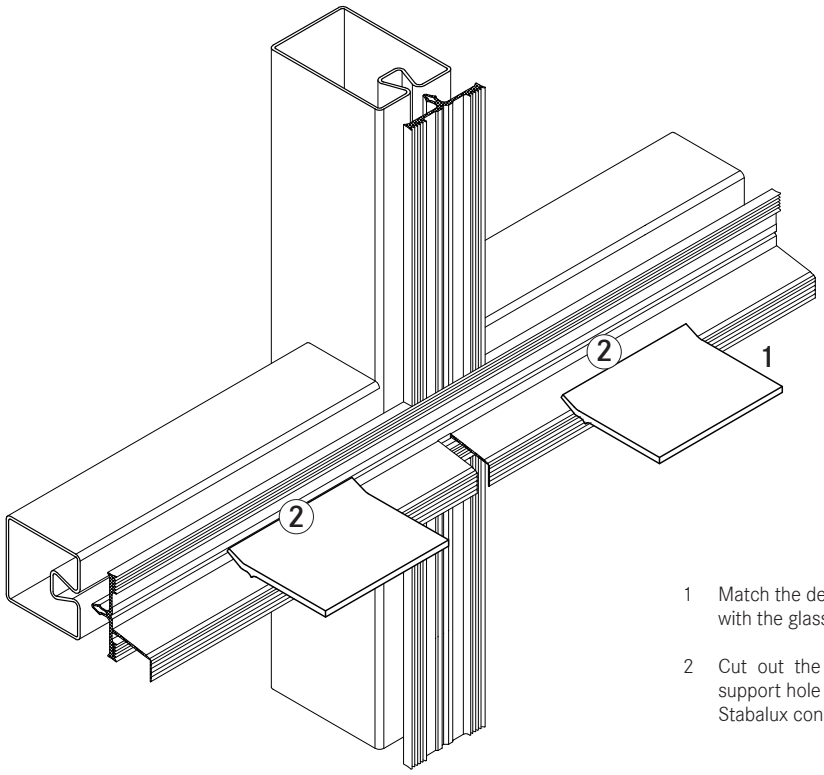
Glass inset and glass support

1.2
6

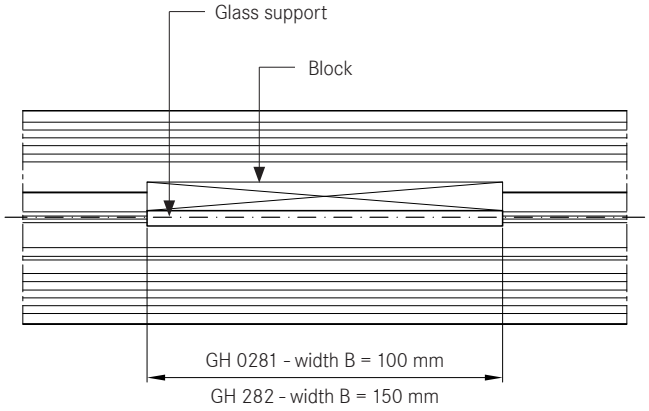
Glass supports GH 0281 and GH 0282 - inserted glass supports



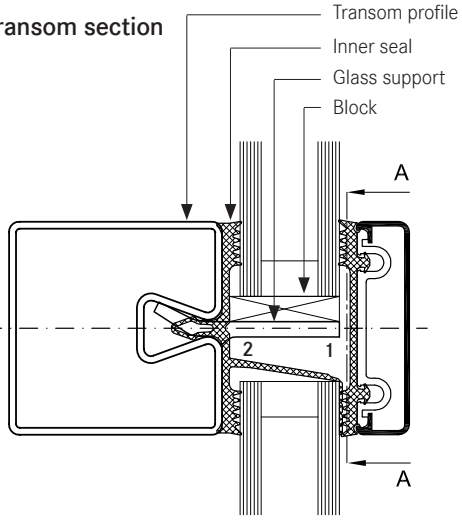
1 Match the depth of the glass support with the glass thickness.

2 Cut out the seals around the glass support hole and coat with Stabalux connecting paste.

Section A-A



Transom section



SR_1.2_018.dwg

Glass inset and glass support

Section of the glass support

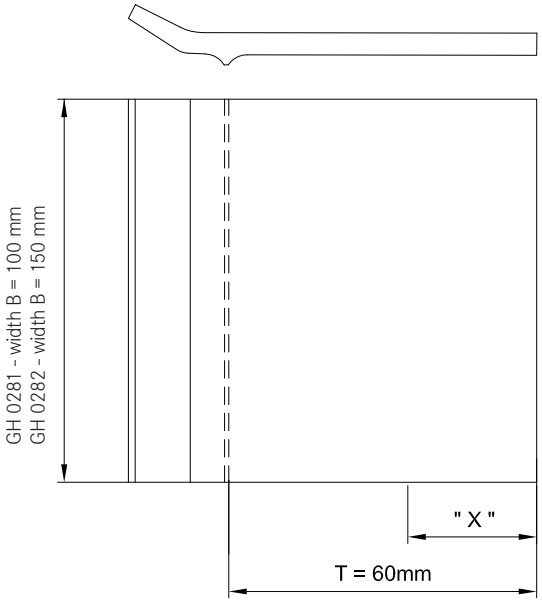
Permissible glass loads are stated in Section 9. Depending on the thickness of the glass, the depth of the glass support must be shortened by „X“.

T = depth of the glass support 60 mm
D = Inner seal height
(e.g. 5 mm, 10 mm or 12 mm)
B = thickness of glass pane

X = T - D - B

Example:
Depth of glass support
T = 60 mm
Inner seal GD 6204
D = 5 mm
Glass pane 6 / 16 /6
B = 28 mm

X = 60 - 5 - 28
X = 27 mm



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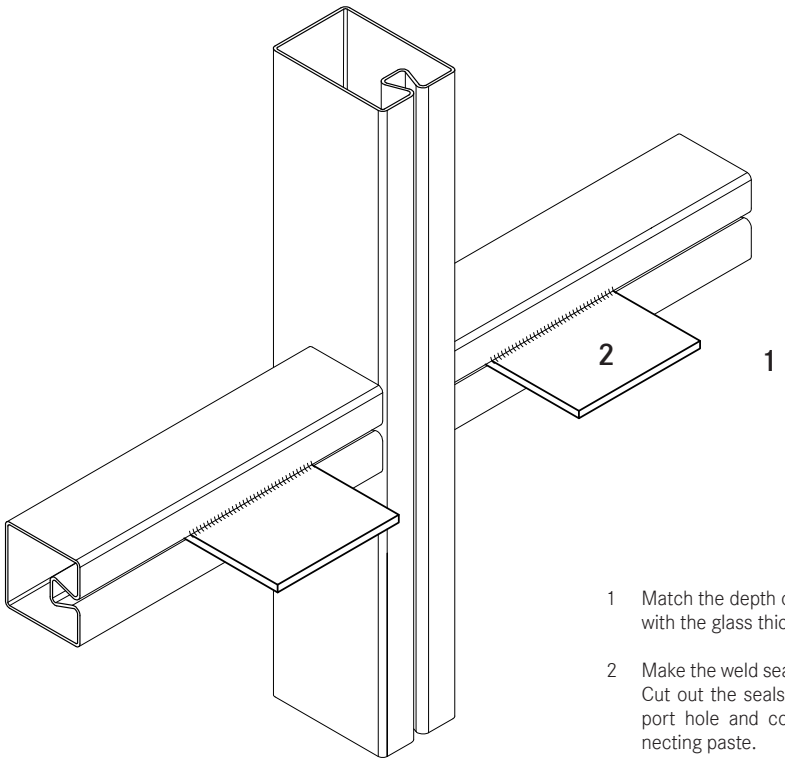
Glass inset and glass support

1.2
6

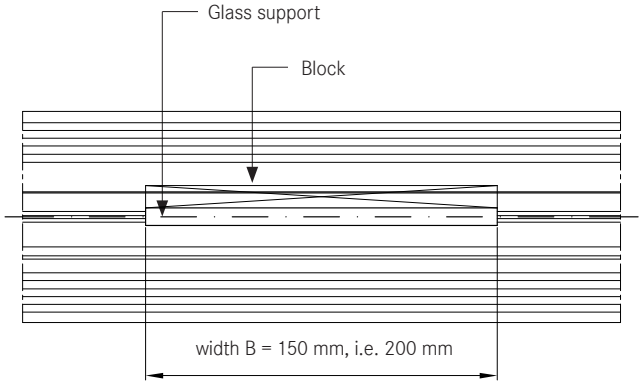
Welded glass support



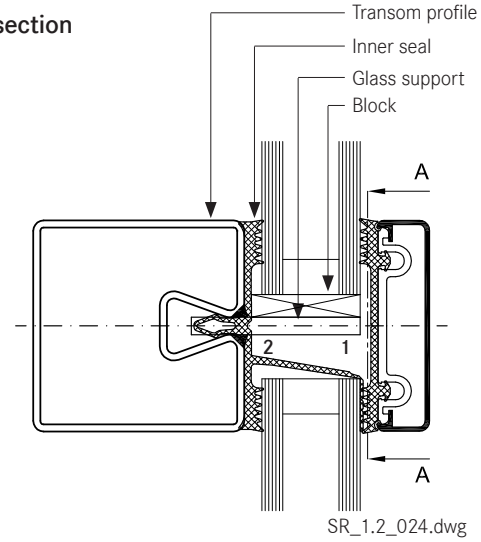
1 Match the depth of the glass support with the glass thickness.

2 Make the weld seam as even as possible: Cut out the seals around the glass support hole and coat with Stabalux connecting paste.

View A-A



Transom section



SR_1.2_024.dwg

Glass inset and glass support

Cut and positioning of the glass support

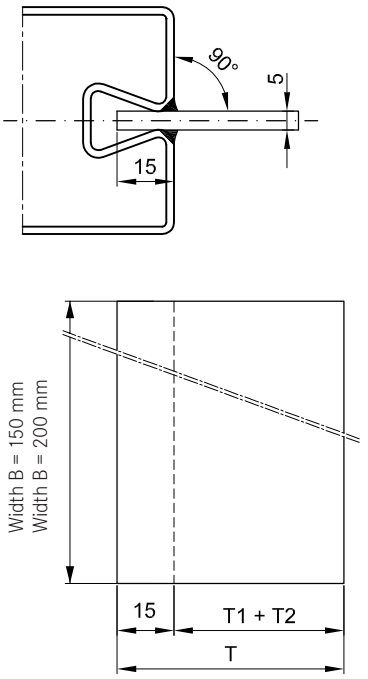
The depth of the glass support is determined based on the glass thickness.

T = depth of the glass support
T1 = height of the inner seal
(e.g. 5 mm, 10 mm or 12 mm)
B = thickness of glass panel

T= 15 + T1 + T2

Example:
Insertion depth = 15 mm
Inner seal e.g. GD 6204 T1 = 5 mm
Glass panel 6 / 16 / 6 T2 = 28 mm

T = 15 + 5 + 28
T = 48 mm



SR_1.2_024.dwg

Maximum glass thickness depending on the inner seal

If the block and the glass panel are to lie completely on the glass support, the following maximum glass thicknesses apply to the insertable glass supports GH 0281 and GH 0282:

Inner seal 5 mm / 1 drainage level
Total glass thickness t = 55 mm

Inner seal 10 mm / 2 drainage levels
Vertical- and inclined glazing
Total glass thickness t = 50 mm

Inner seal 12 mm / 3 drainage levels
Total glass thickness t = 48 mm

Larger glass thicknesses must be coordinated with the glass supplier and the system provider.

Screw fittings

Fastenings

- The fastenings for the Stabalux SR 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 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 mm ≤ a ≤ 80 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.
- 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 approx. 3 to 5 Nm. 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, UL 6009 L and UL 8009-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:

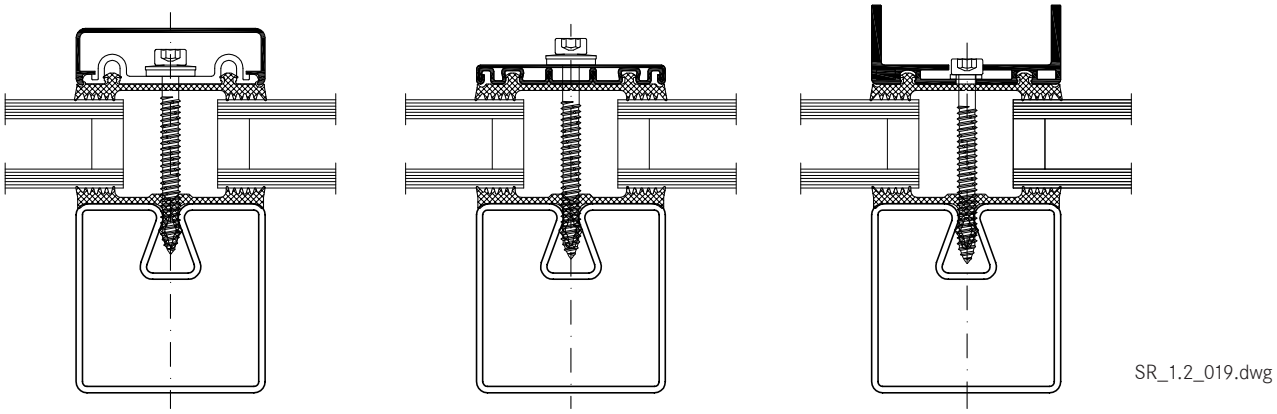
(see Note on concealed screw fittings)

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.

Screw fittings

Fastenings



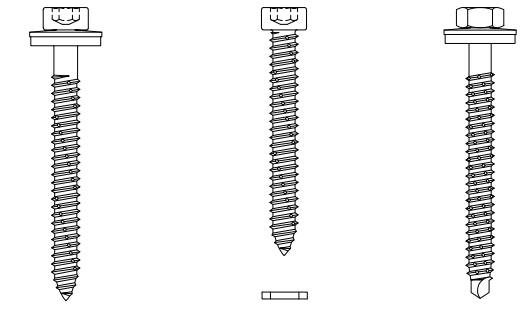
SR_1.2_019.dwg

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 ø 6.3 mm



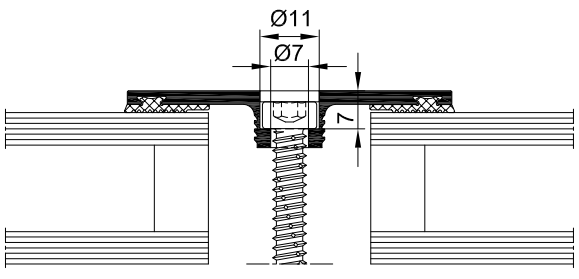
SR_1.2_019.dwg

e.g. Z 0155

e.g. Z 0253
with Z 0033

e.g. Z 0205 for
stainless steel tubes

Calculating the screw length for DL 5073 / DL 6073



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Attention!

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

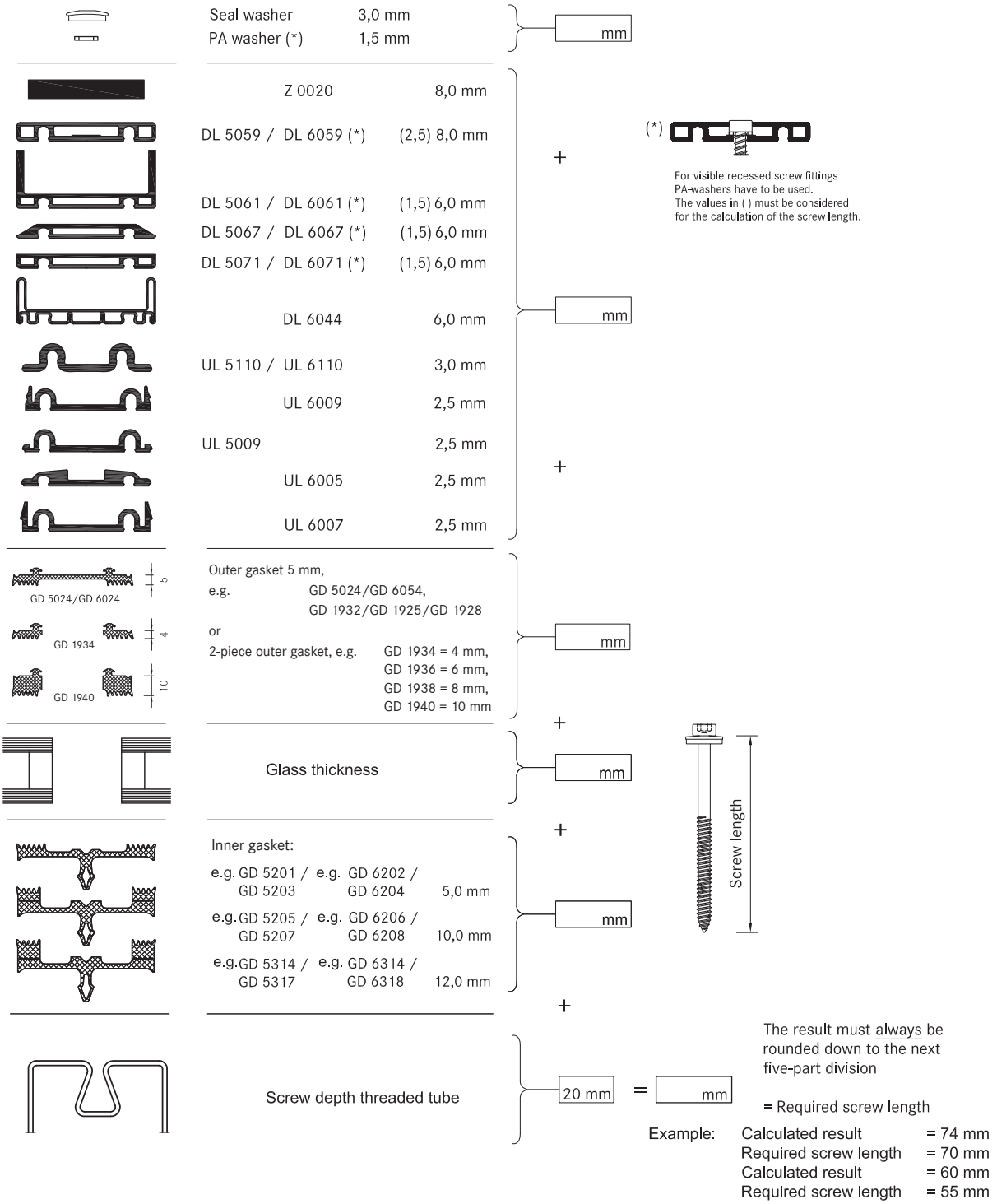
Glass thickness – 3 mm + inner seal (5, 10 or 12 mm) + 20 mm

Screw fittings

1.2
7

Calculating the screw length

System width 50 / 60 mm



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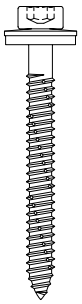
Screw fittings

System screws for Stabalux SR



Cylinder head screws ⌀ 10 mm with hex socket | with sealing gasket		
Z 0148	Cylinder head screw	6.3 x 30 mm
Z 0149	Cylinder head screw	6.3 x 35 mm
Z 0151	Cylinder head screw	6.3 x 40 mm
Z 0152	Cylinder head screw	6.3 x 45 mm
Z 0153	Cylinder head screw	6.3 x 50 mm
Z 0154	Cylinder head screw	6.3 x 55 mm
Z 0155	Cylinder head screw	6.3 x 60 mm
Z 0156	Cylinder head screw	6.3 x 65 mm
Z 0157	Cylinder head screw	6.3 x 70 mm
Z 0158	Cylinder head screw	6.3 x 75 mm
Z 0161	Cylinder head screw	6.3 x 80 mm
Z 0162	Cylinder head screw	6.3 x 85 mm
Z 0163	Cylinder head screw	6.3 x 90 mm
Z 0164	Cylinder head screw	6.3 x 95 mm
Z 0165	Cylinder head screw	6.3 x 100 mm
Z 0167	Cylinder head screw	6.3 x 110 mm
Z 0166	Cylinder head screw	6.3 x 120 mm

Cylinder head screws ⌀ 10 mm with hex socket | without sealing gasket		
Z 0293	Cylinder head screw	6.3 x 18 mm
Z 0247	Cylinder head screw	6.3 x 25 mm
Z 0116	Cylinder head screw	6.3 x 30 mm
Z 0249	Cylinder head screw	6.3 x 35 mm
Z 0118	Cylinder head screw	6.3 x 40 mm
Z 0119	Cylinder head screw	6.3 x 45 mm
Z 0253	Cylinder head screw	6.3 x 50 mm
Z 0114	Cylinder head screw	6.3 x 55 mm
Z 0255	Cylinder head screw	6.3 x 60 mm
Z 0256	Cylinder head screw	6.3 x 65 mm
Z 0257	Cylinder head screw	6.3 x 70 mm
Z 0258	Cylinder head screw	6.3 x 75 mm
Z 0241	Cylinder head screw	6.3 x 80 mm
Z 0242	Cylinder head screw	6.3 x 85 mm
Z 0243	Cylinder head screw	6.3 x 90 mm
Z 0033	**PA washer**	⌀ 10 x 1.5 mm

Flat cover strip DL 5073 / DL 6073

Tips for laying the cover strip DL 5073 / DL 6073

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

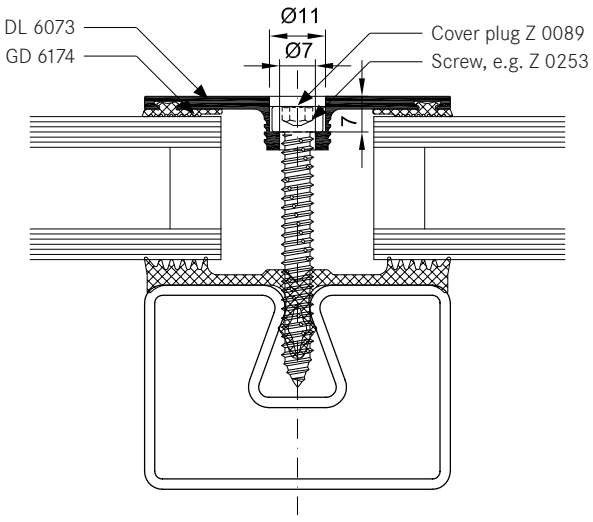
Profile production (aluminium extrusion moulding) with different mass distribution is extremely difficult. Lengthwise shadow formation may result. Resulting actions are to be taken with the agreement of the coater.

Intersections

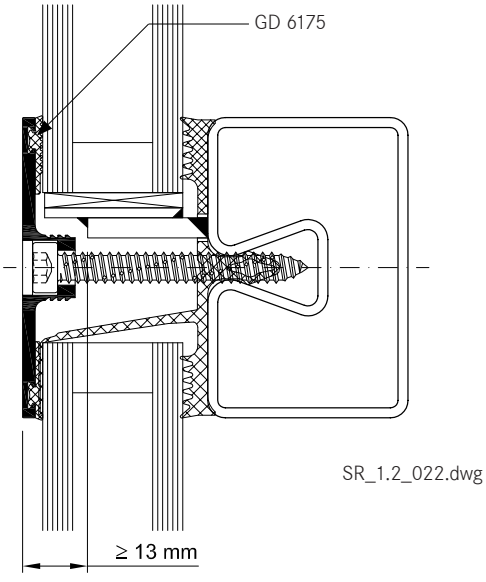
Due to the special shape of the strip (the material extends into the rebate), there is no closed sealing section available at intersections. We therefore recommend placing particular attention to ensure tightness of the joints and fill will Stabalux connecting paste Z 0094.

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.



Mullion



Transom

Slab insulation

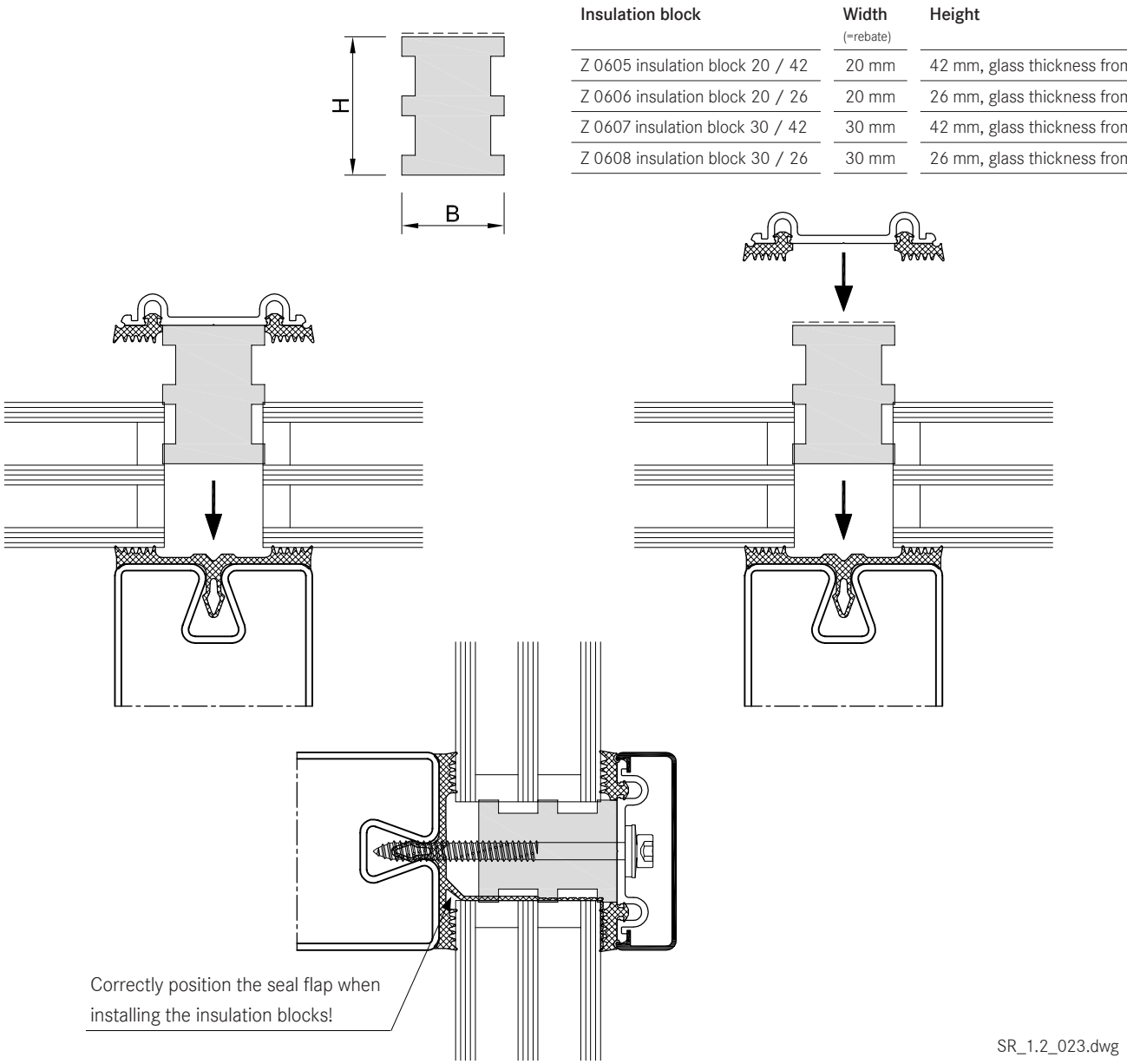
1.2
9

- Using insulation blacks 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 / DL 6073 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 **GD 1932** for a glass inset of 20 mm, outer seal **GD 1932**

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
Z 0607 insulation block 30 / 42	30 mm	42 mm, glass thickness from 44 mm
Z 0608 insulation block 30 / 26	30 mm	26 mm, glass thickness from 28 mm



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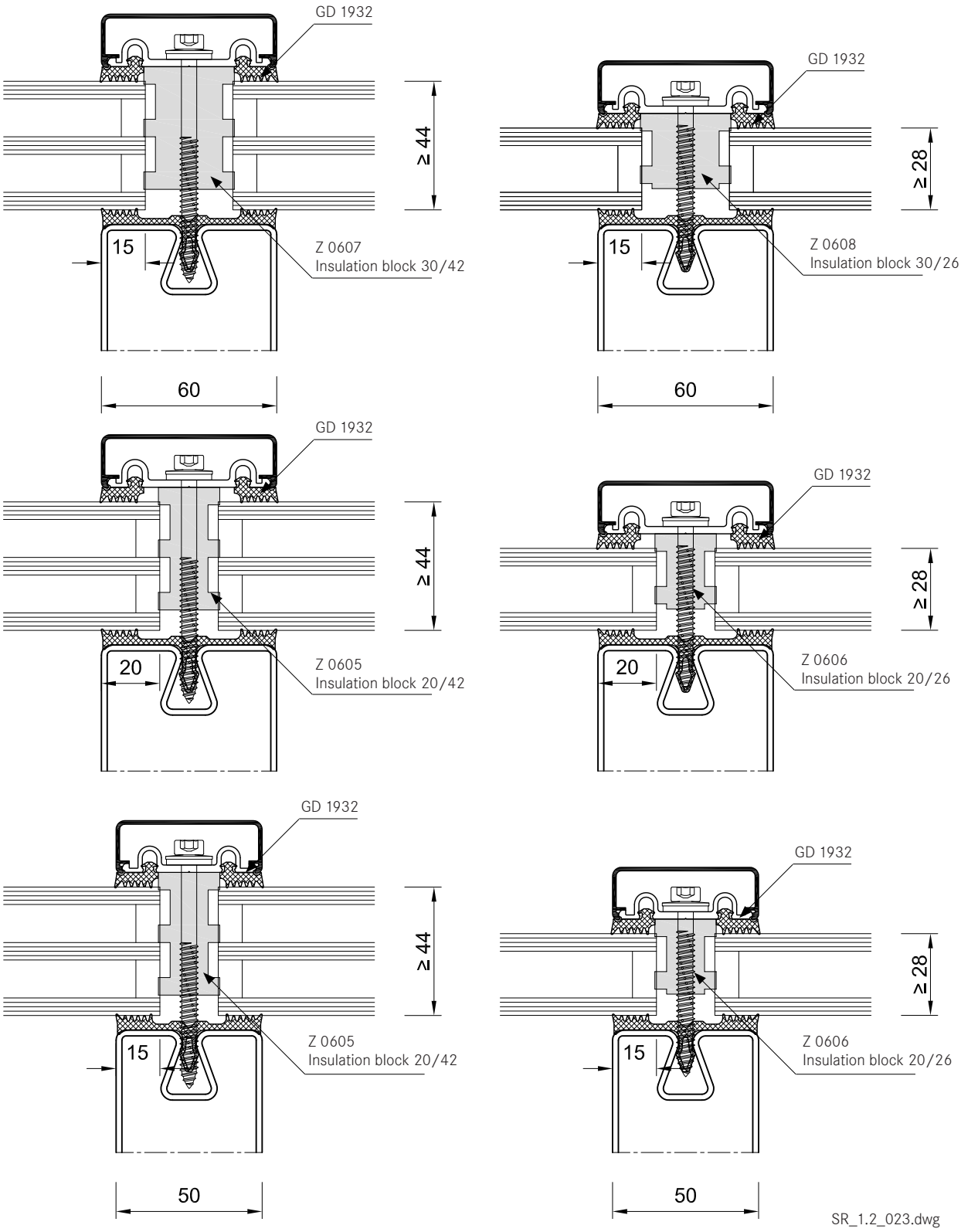
Slab insulation

1.2
9

Examples:



Pane support variants

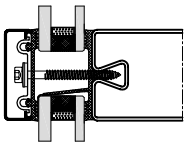
Special design

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

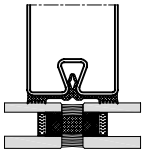
These designs do not conform to the intended uses of the system. No guarantees are made for e.g. quality of seals, durability and structural stability. Responsibility here lies entirely with the company implementing the design.

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

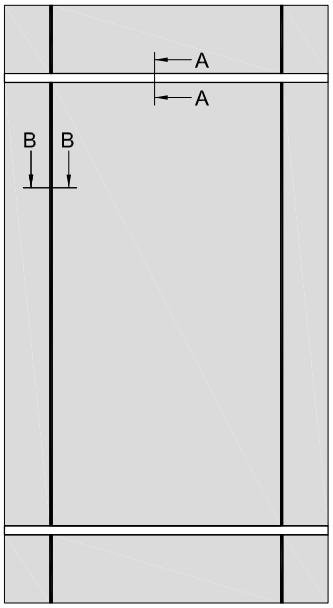


Cut A - A



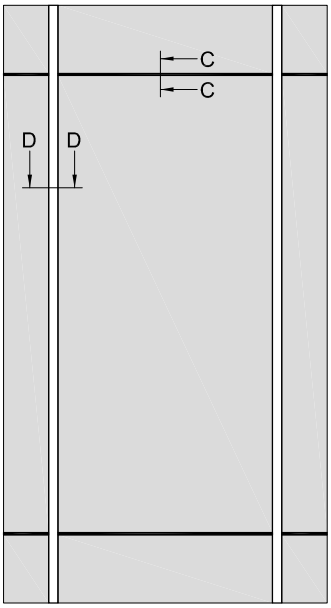
Cut B - B

Mullion-transom structure with transom cover strips [1)]

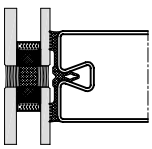


[1)] Seals with 1, 2 or levels are possible

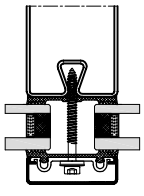
Mullion-transom structure with mullion cover strips [2)]



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



Cut C - C



Cut D - D

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Pane support variants

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.

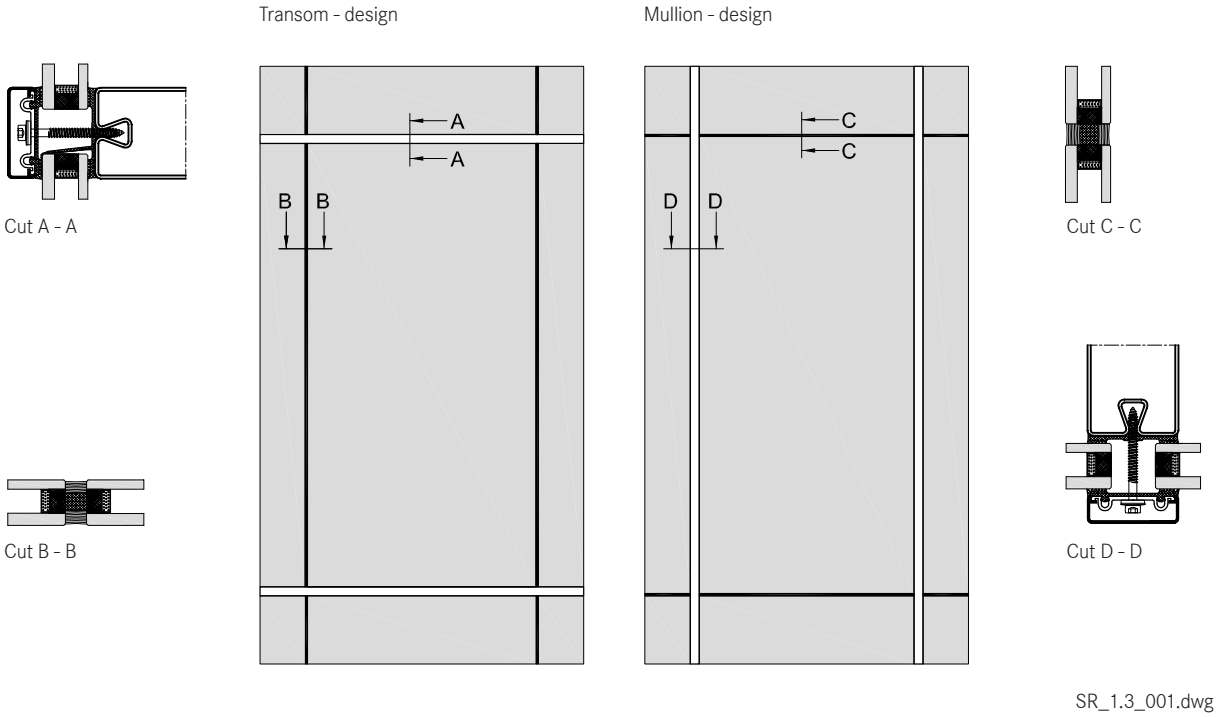
Vertical clamping strips

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



Pane support variants

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 join 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

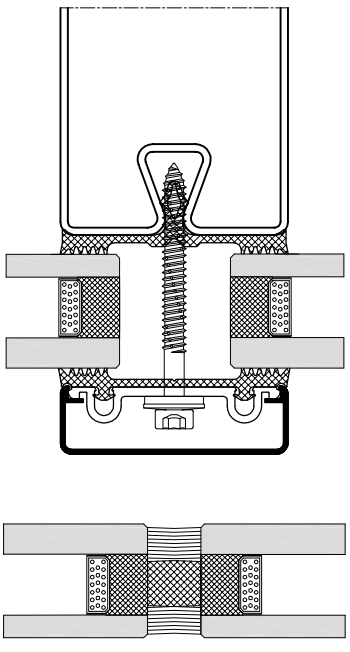
Mechanical distribution of the weight of the glass panes through the structure must be ensured. System glass supports can be used for existing horizontal transoms. Designs using “only” mullions require special glass supports which carry the weight of the glass directly into the mullions.

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.



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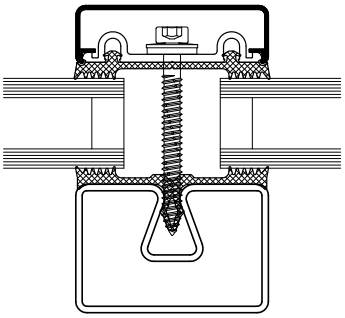
System cross sections

1.3
2

Examples:

1



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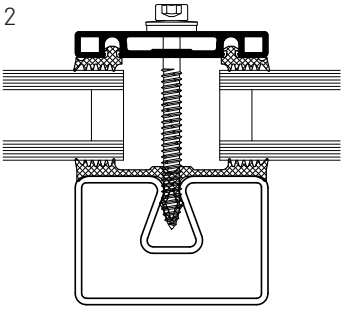

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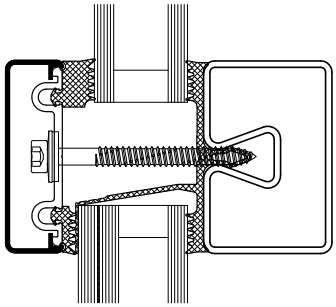

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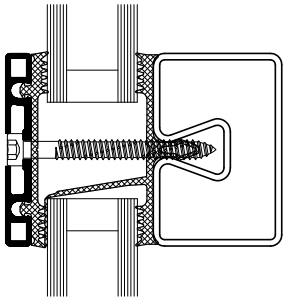

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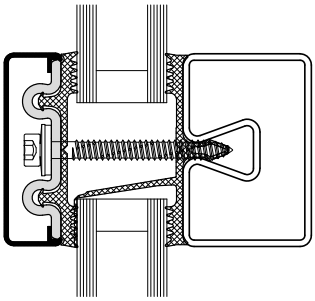

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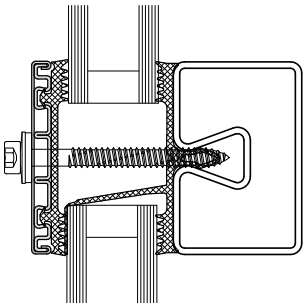

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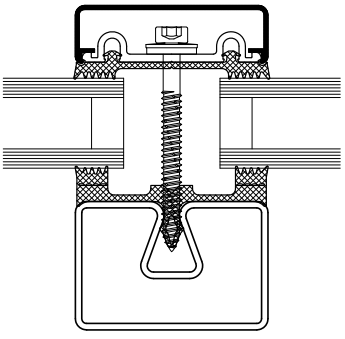

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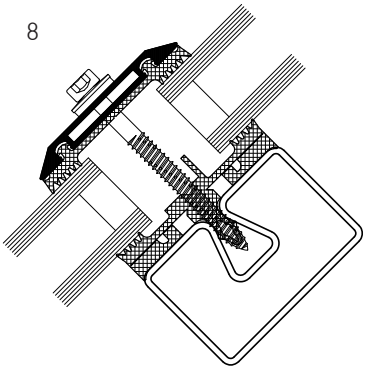


SR_1.3_002.dwg

1 Vertical glazing, mullion
concealed screw fittings

2 Vertical glazing, mullion
visible screw fittings

3 Vertical glazing, transom,
Outer seal for height compensation

4 Vertical glazing, transom,
visible recessed screw fittings

5 Vertical glazing, transom,
concealed screw fittings,
stainless steel bottom strip,
fire protection seals

6 Vertical glazing, transom
visible screw fittings,
stainless steel cover strip,
fire protection seals

7 Inclined glazing, mullion,
concealed screw fittings

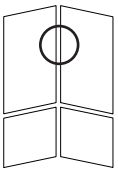
8 Inclined glazing, transom
visible screw fittings

System details

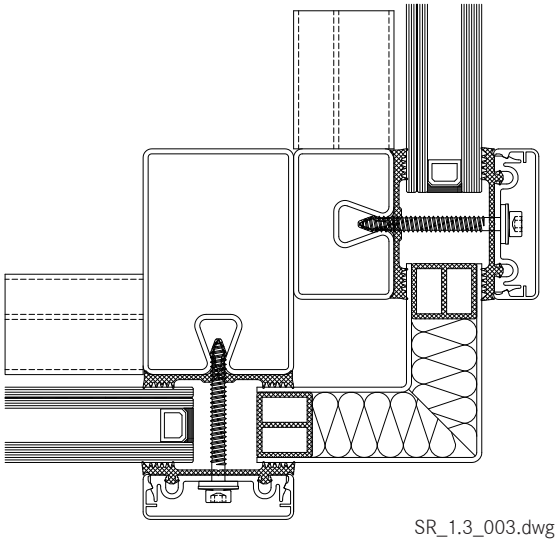
Creating facade corners

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.

If screw pipes are connected to form corner posts, make sure that the corner is steam-tight so that no condensate can get into the interior.

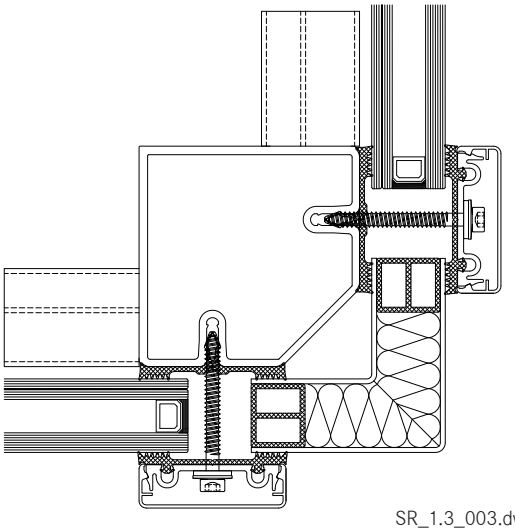


Outer corner with paneel



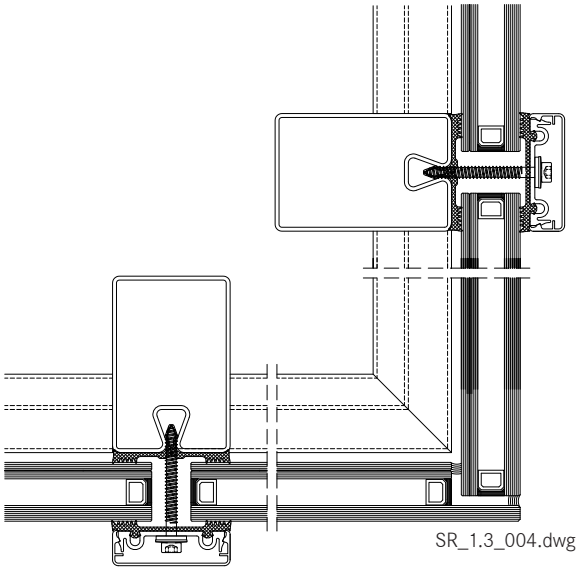
SR_1.3_003.dwg

Outer corner with AL9090



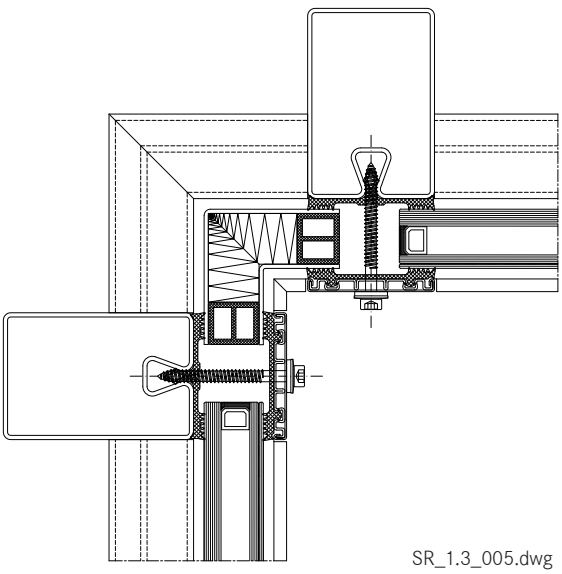
SR_1.3_003.dwg

Outer corner with glass



SR_1.3_004.dwg

Inner corner with paneel



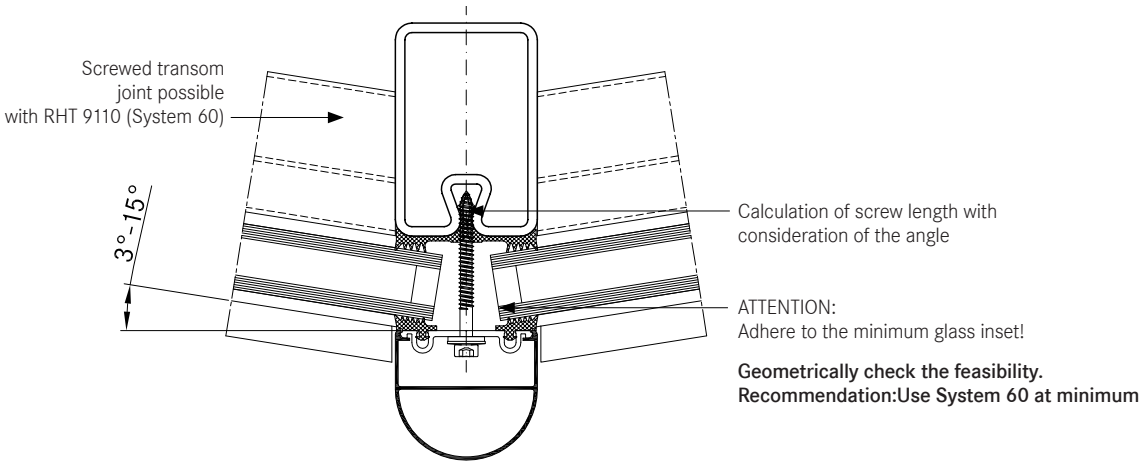
SR_1.3_005.dwg

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°.



SR_1.3_006.dwg

System details

Eaves with glass roof connection

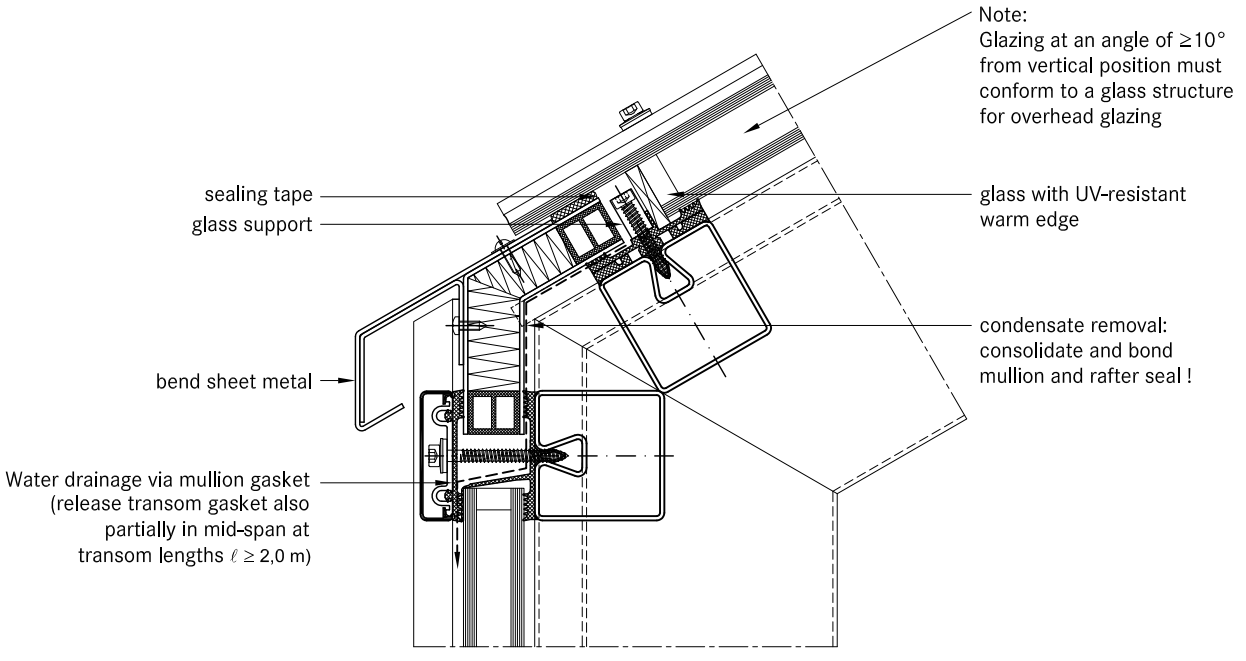
- Depending on the construction of the transoms, a design with or without rain gutters and the choice of stepped glazing or closable cover strips gives us different variants for implementation.
- All options require condensation and moisture to be drained away at the eaves.

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 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



SR_1.3_007.dwg

System details

Eaves with glass roof connection
Design using cover strips

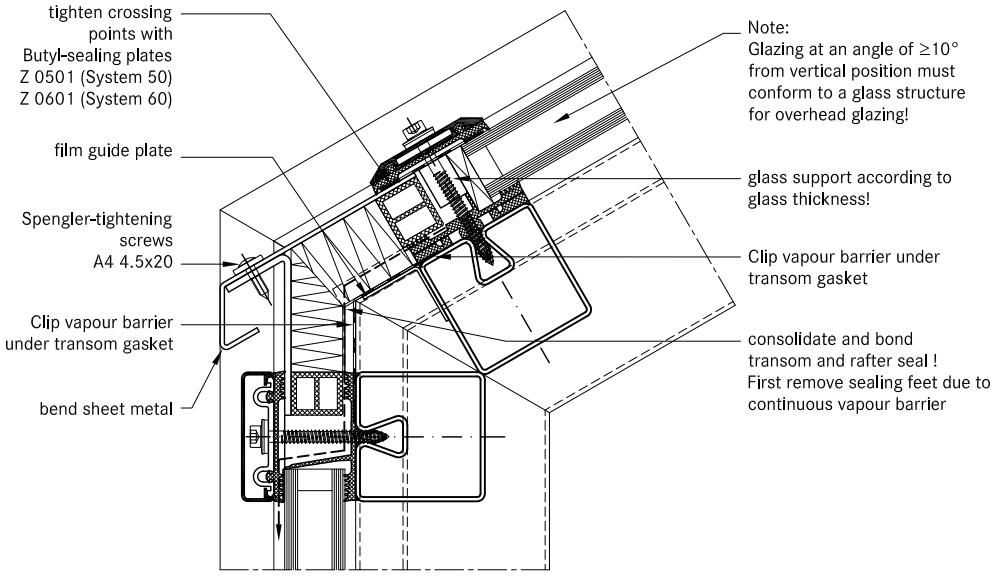
- Horizontal pressure strips prevent the free run off of rain water and dirt.
- Cover strips with angled edges reduce the build up of water in front of the cover strip.
- The outer sealing level on glass roofs must also be thoroughly sealed.
- In combination with our butyl clad stainless steel panels, 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



SR_1.3_008.dwg

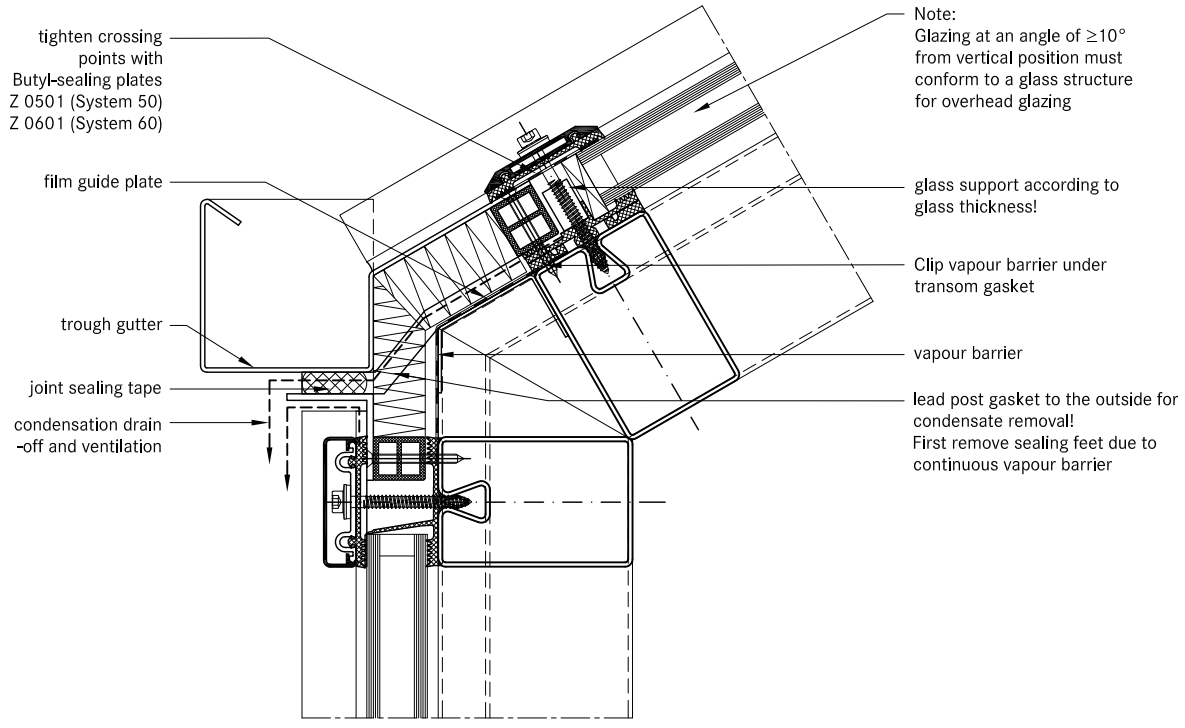
System details

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:

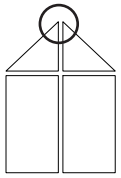
Design with gutter



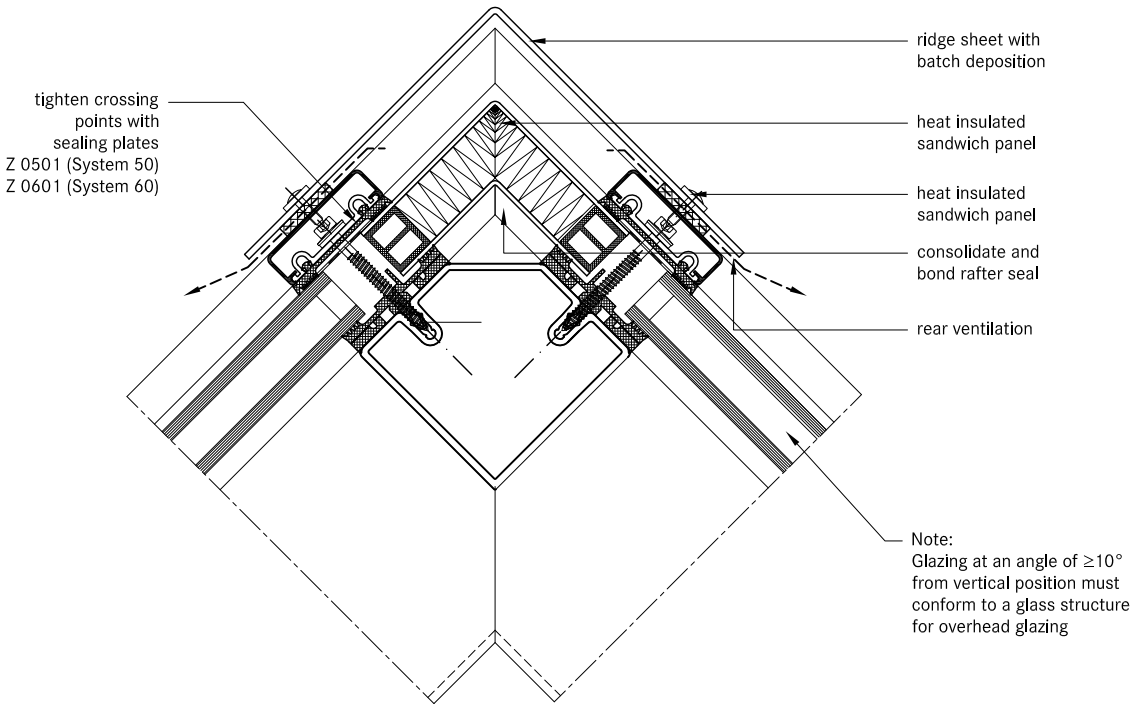
SR_1.3_009.dwg

System details

Roof ridge design



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



SR_1.3_010.dwg

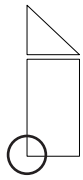
Structural attachments

Structural attachment film baffles

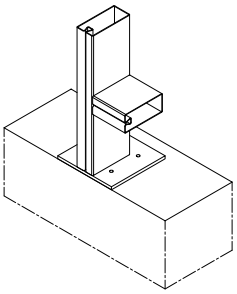
- Attachment of glazing to the building structure requires a well thought out approach.
- Moisture damage can occur if moisture condenses at any thermal bridges.
- Thermal bridges must be avoided and warm air from the inside spaces must not penetrate too deeply into the structure.
- The required moisture 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. μ = 3000 can a dry structure be guaranteed in the transition zones.

Structural attachments

Facade base

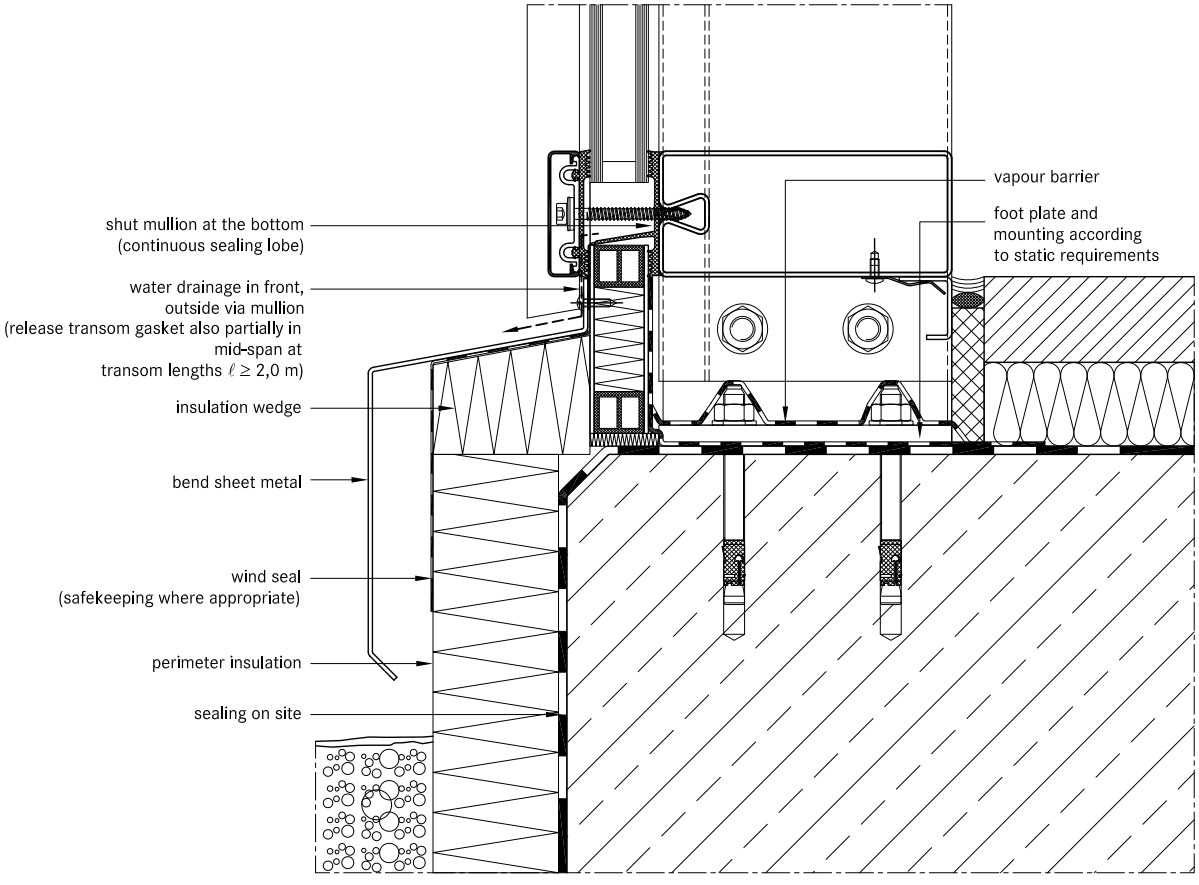


- Controlled drainage of the rebate space can only be ensured if the sealing sections overlap in such a way that no moisture can get under the seals and foils.
- Run foils under the transom seal to act as a moisture barrier and glue to the steel structure. In accordance with DIN 18195 the seal should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



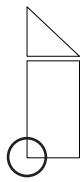
SR_1.3_011.dwg

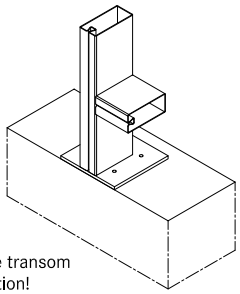
Drainage of the base area is achieved via the seal flap towards the outside. In this case the seal flap around the mullion at the base should not be released. For edge mullions, ensure there is a corresponding seal placed (continuous transom seal up the to the end point) and a constructive design of the drainage section.

Structural attachments

Facade base

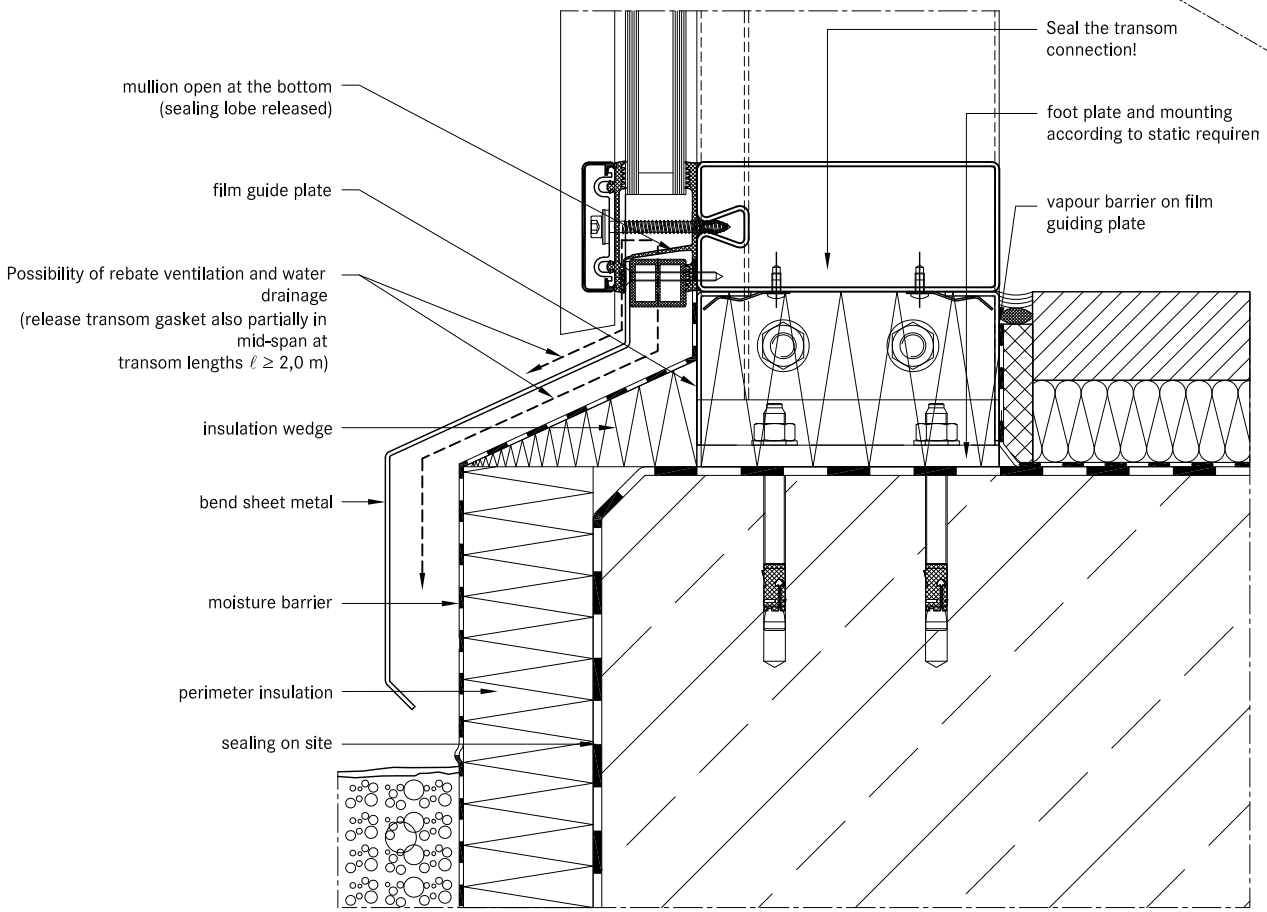
- Rebate space ventilation is achieved via the open end of the vertical cover strips.
- Ensure the connection is impermeable to vapour.
- Mullion mountings must be sufficiently statically dimensioned. Required axis and edge distances for anchoring the base plates and in the building structure must be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





Example 2:

Mounting intermediate mullion to base plate

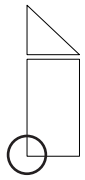


Where seal flaps are interrupted by joints, filler rods in the joint must also be cut.

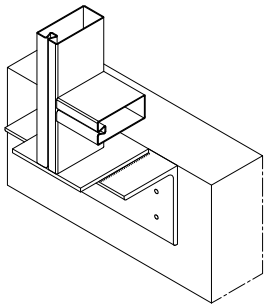
SR_1.3_012.dwg

Structural attachments

Facade base

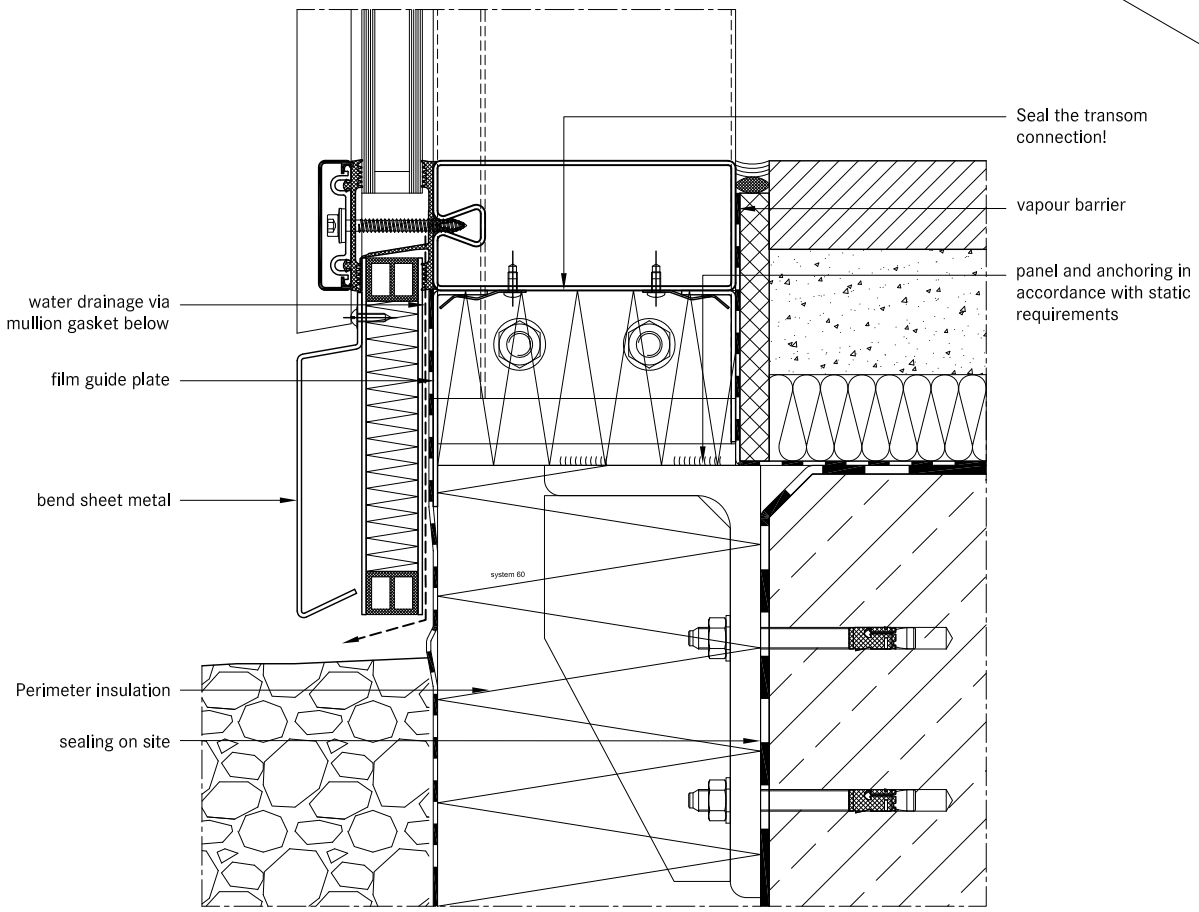


- Heat insulation around the structural connection should be designed in such as way as to prevent cold bridges forming.
- Steel parts should also be provided with sufficient protection against corrosion even in concealed areas.
- Weather-protection sheets should be used depending on the requirements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



Example 3:

Attaching intermediate mullions at base plates

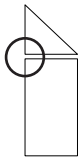


SR_1.3_013.dwg

Structural attachments

Connection before intermediate floors

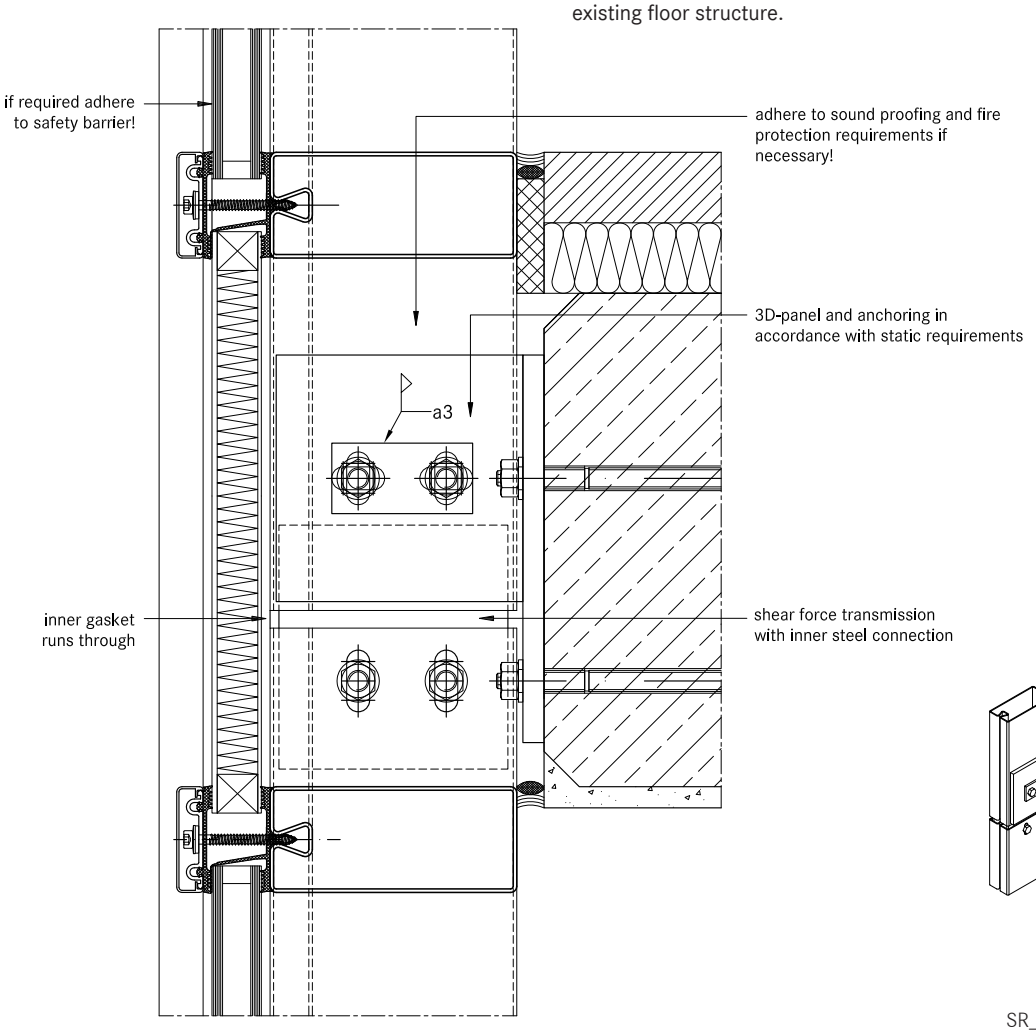
- Depending on requirements, mullions are designed as continuous multi-span transoms or separated at each floor.
- Reasons for separating mullions can include e.g. building settlement, fire protection, sound insulation, etc.
- If the separation joint is intended to absorb expansion, then as well as the 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 statically 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.

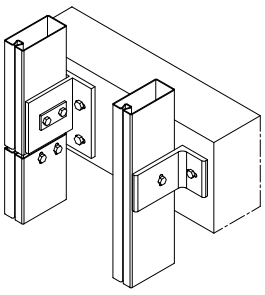


Example:

Mullions separated at each floor

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



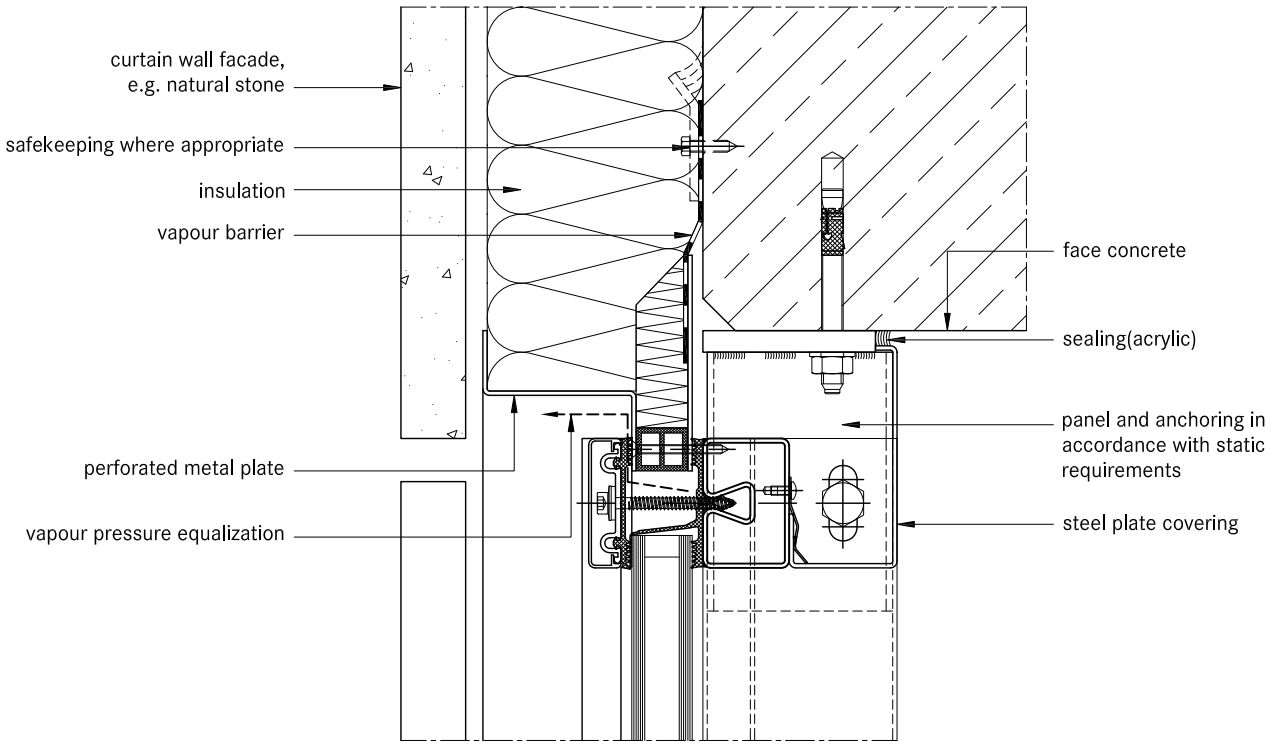


SR_1.3_014.dwg

Structural attachments

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.

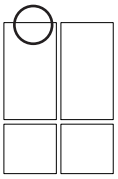


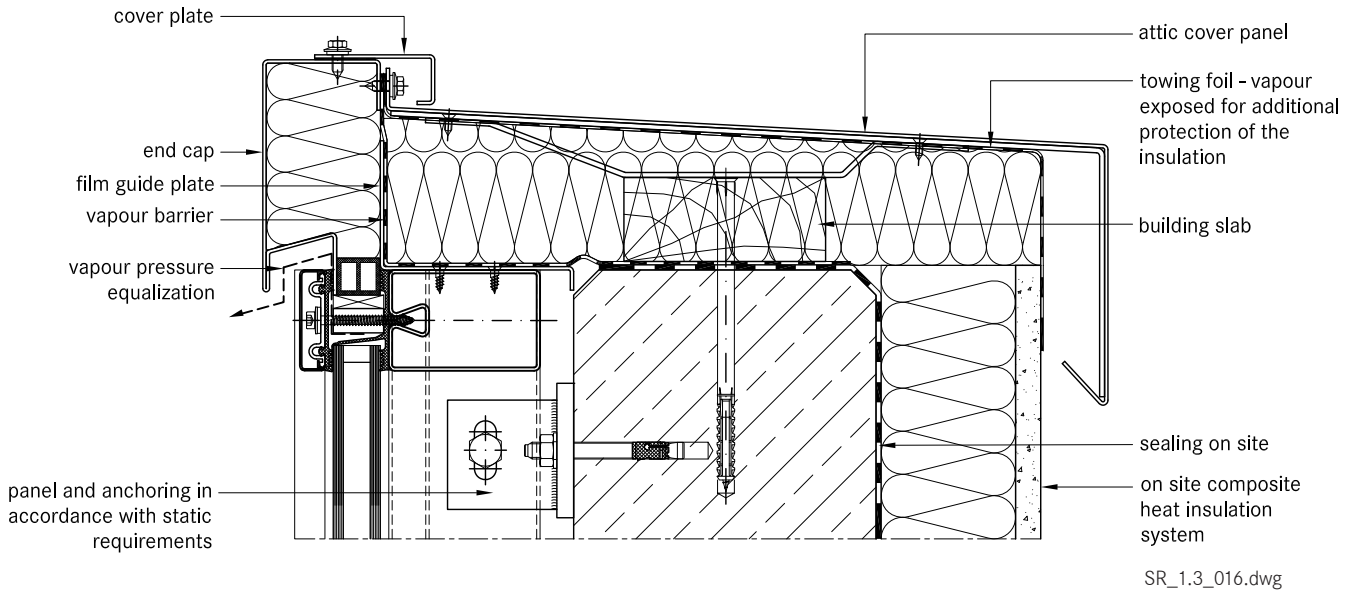
SR_1.3_015.dwg

Structural attachments

1.3
4

Facade connection to parapets

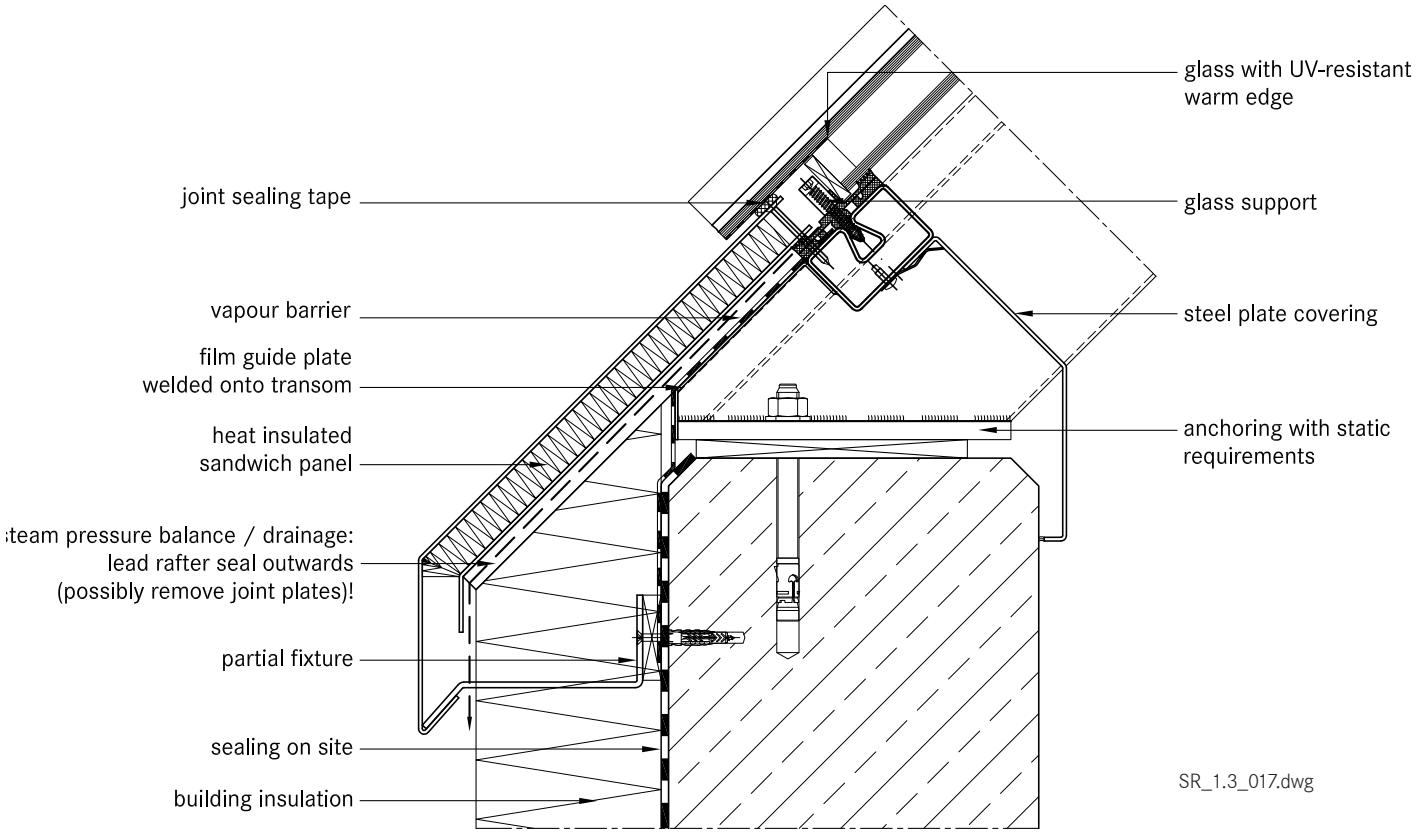




Structural attachments

Connection to structural eaves

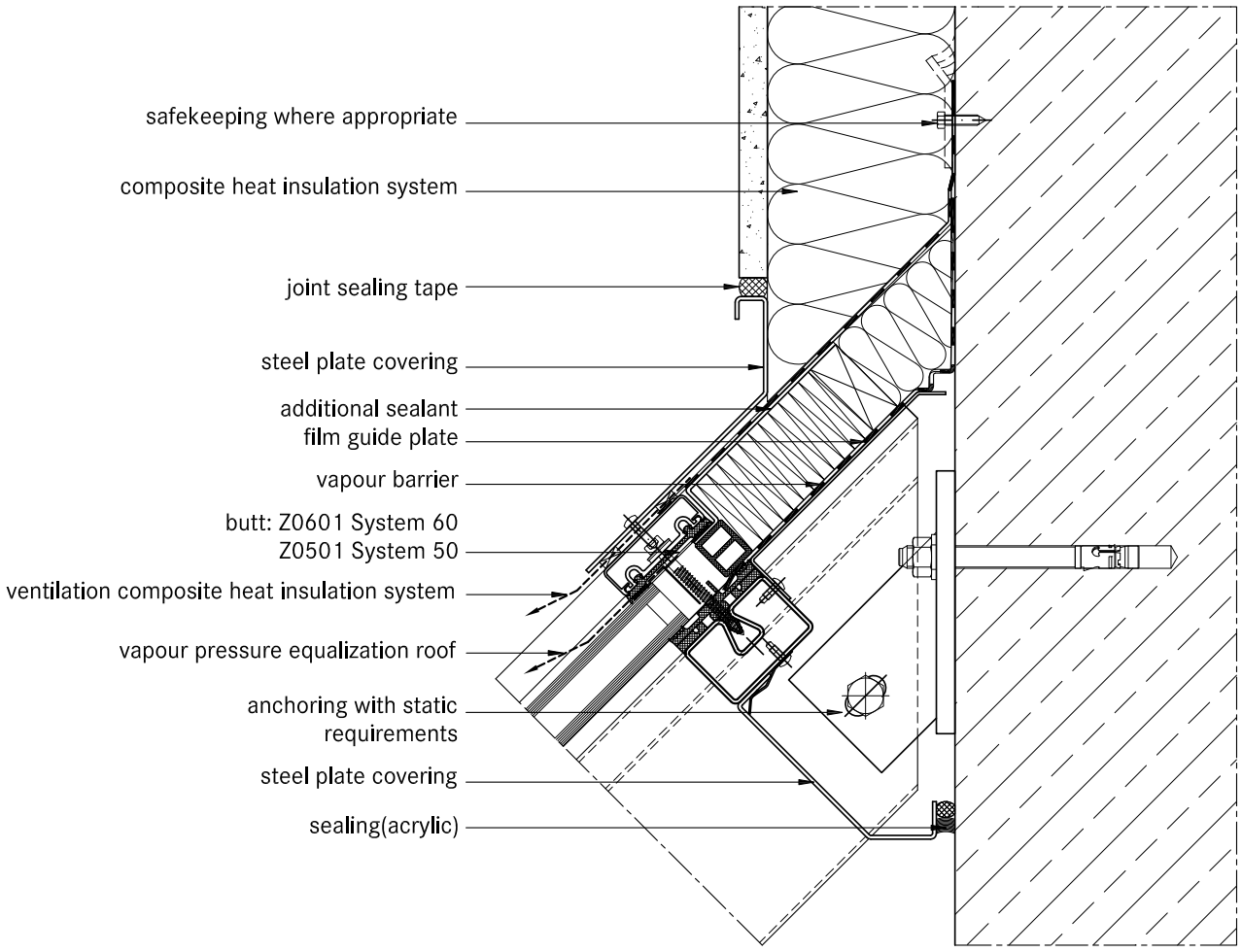
- This connection is suitable for glass roofs that are being installed as skylights in the structure. These may be gabled roofs, single pitch roofs, pyramids or arched roofs.



Structural attachments

Ridge connection to walls

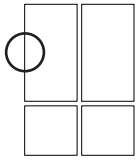
- When making ridge connections to walls, permeability to moisture is particularly important. Warm air with a high level of moisture gets into cooler zones of the inner sealing section where the design is not sufficiently sealed and can cause structural damage from penetrating into the connecting structure.
- Joint seals made from butyl-clad stainless steel plates (Z 0501, Z 0601) must be installed on the outside of joint areas.

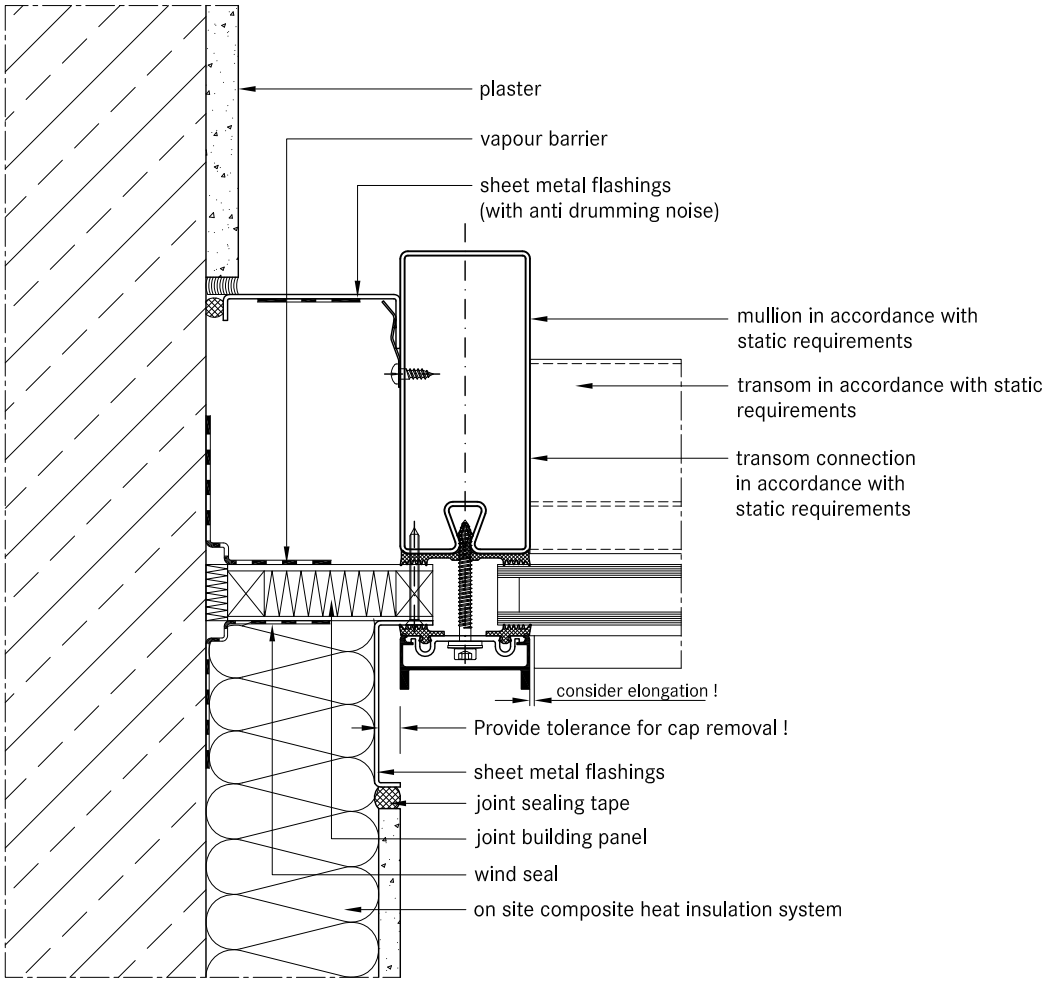


SR_1.3_018.dwg

Structural attachments

Horizontal wall connection to heat insulation bonding system



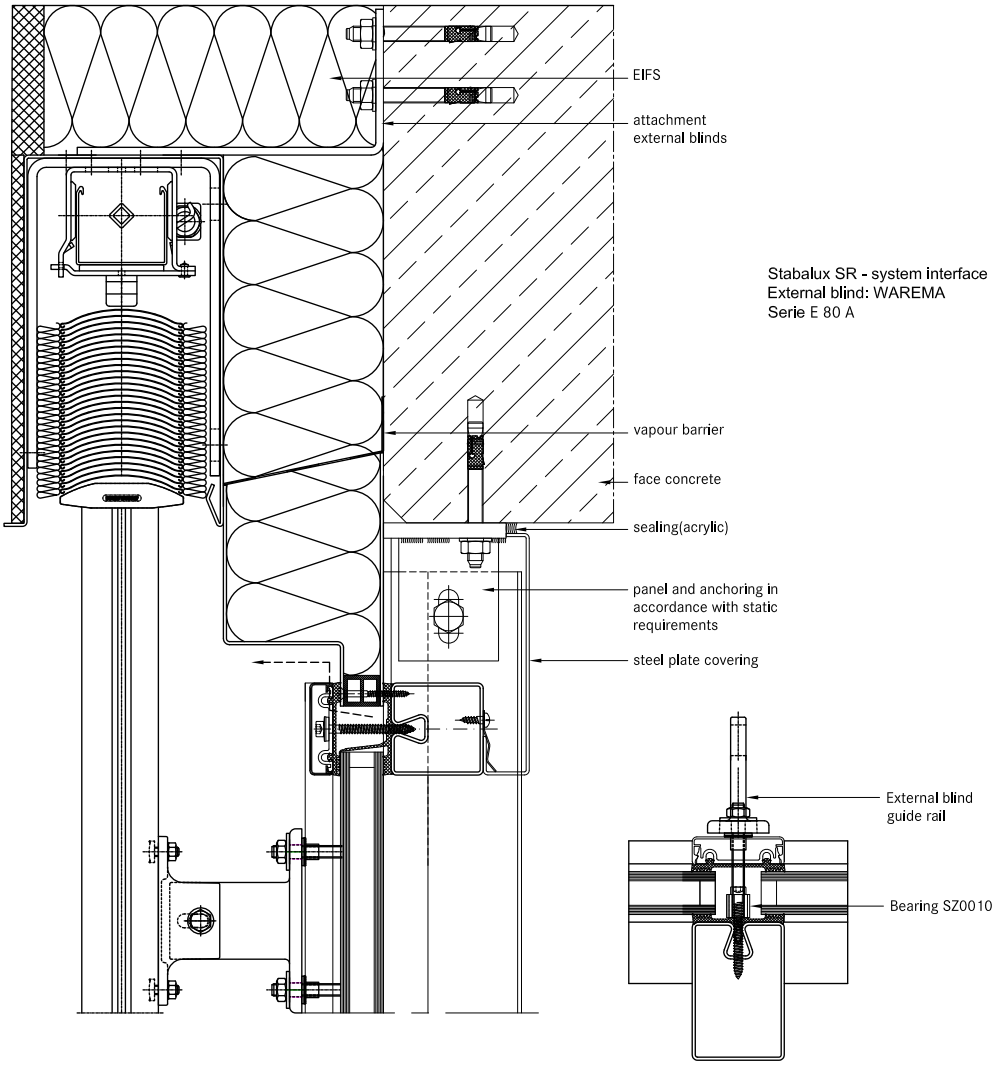


SR_1.3_019.dwg

Structural attachments

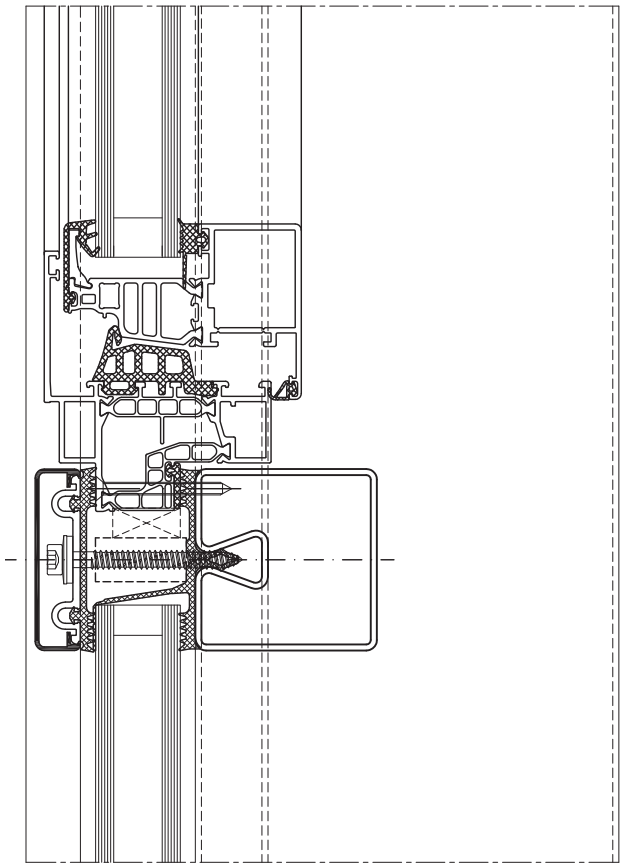
1.3
4

Ceiling connection including WAREMA external blinds

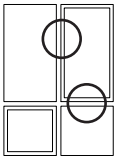


SR_1.3_028.dwg

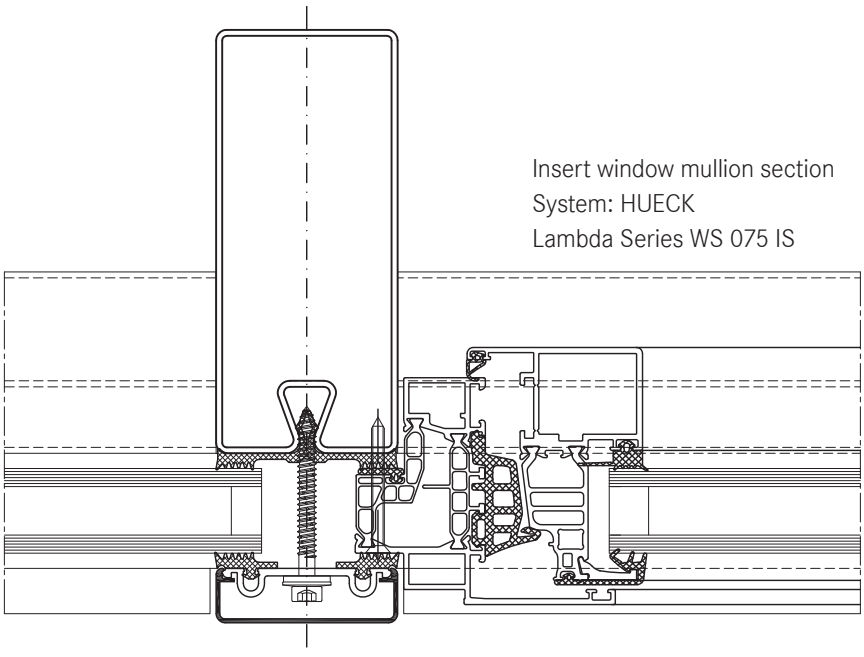
Installing windows and doors



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



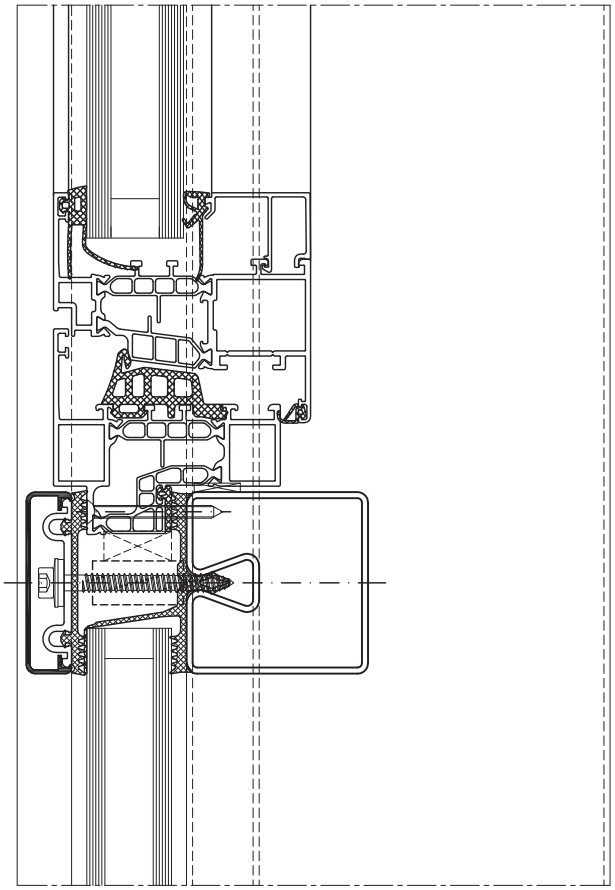
Mullion and transom facades and glass roofs from Stabalux are neutral with regards to the selection of insert elements. All commonly available window and door systems made from steel, aluminium, wood or plastic can be used. Frame profiles from the window and door manufacturer's should be selected to 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.



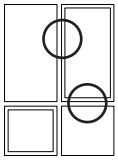
Insert window mullion section
System: HUECK
Lambda Series WS 075 IS

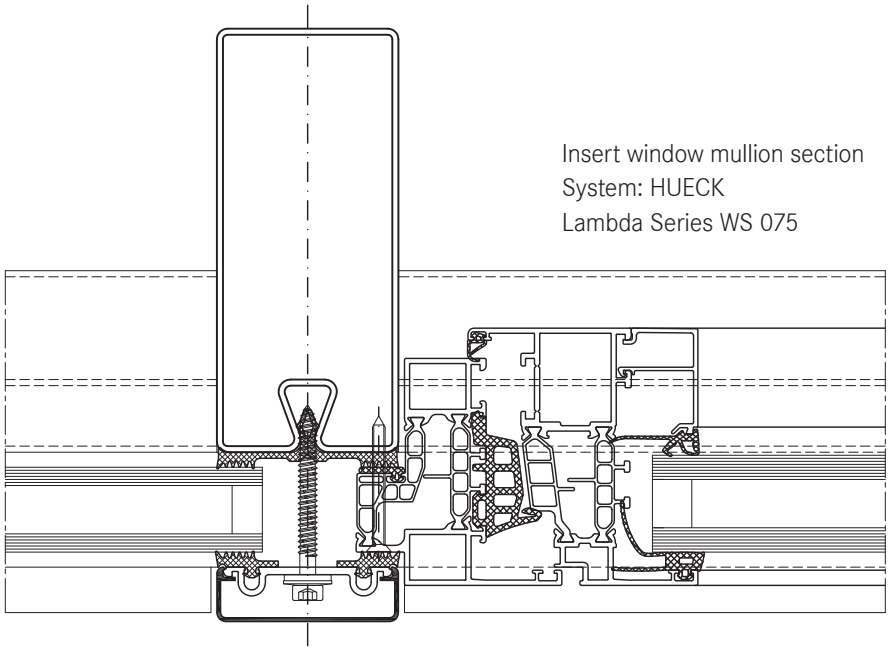
SR_1.3_020.dwg

Installing windows and doors



Insert window transom section
System: HUECK
Lambda Series WS 075

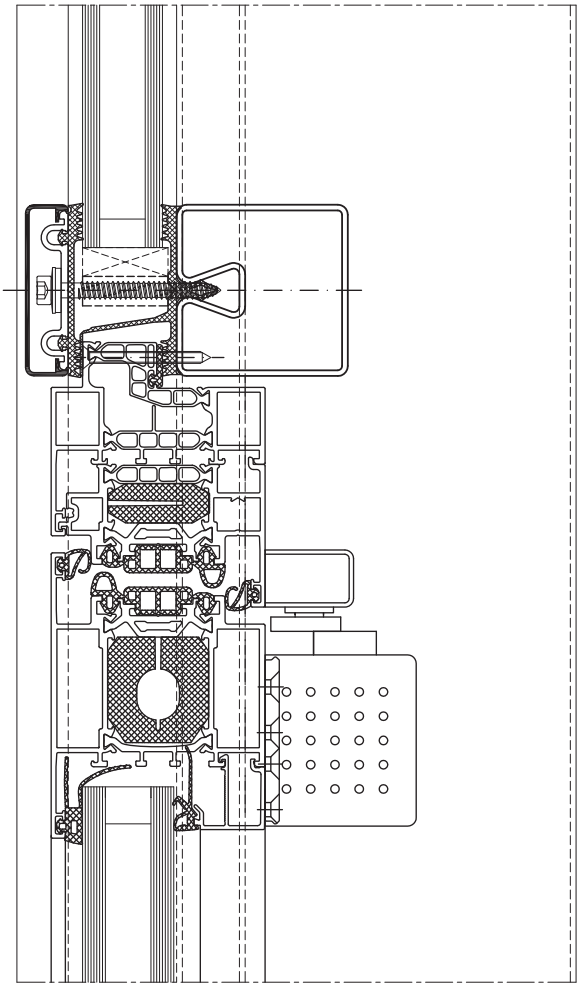




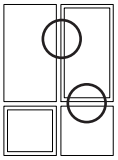
Insert window mullion section
System: HUECK
Lambda Series WS 075

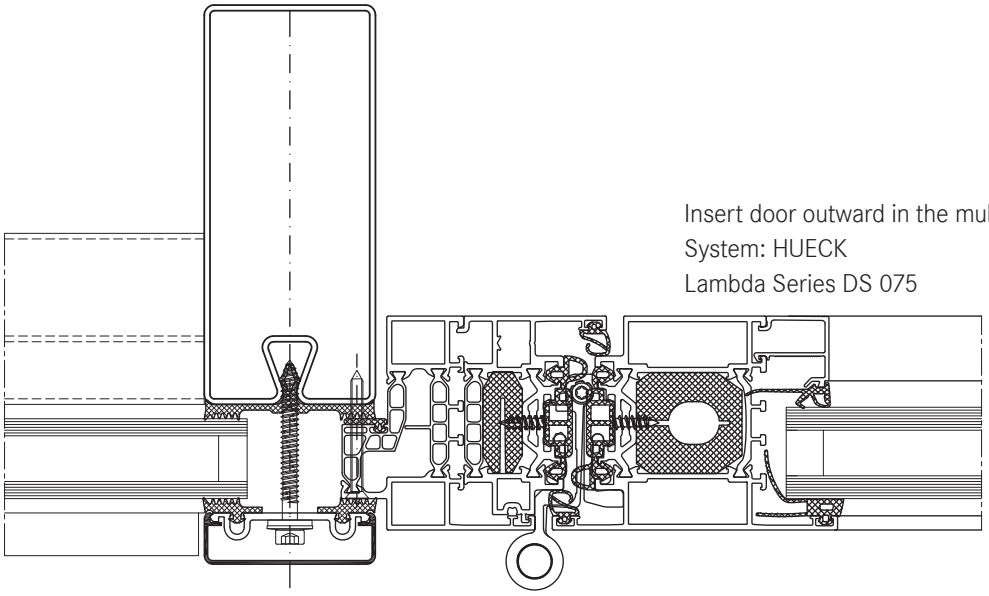
SR_1.3_021.dwg

Installing windows and doors



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

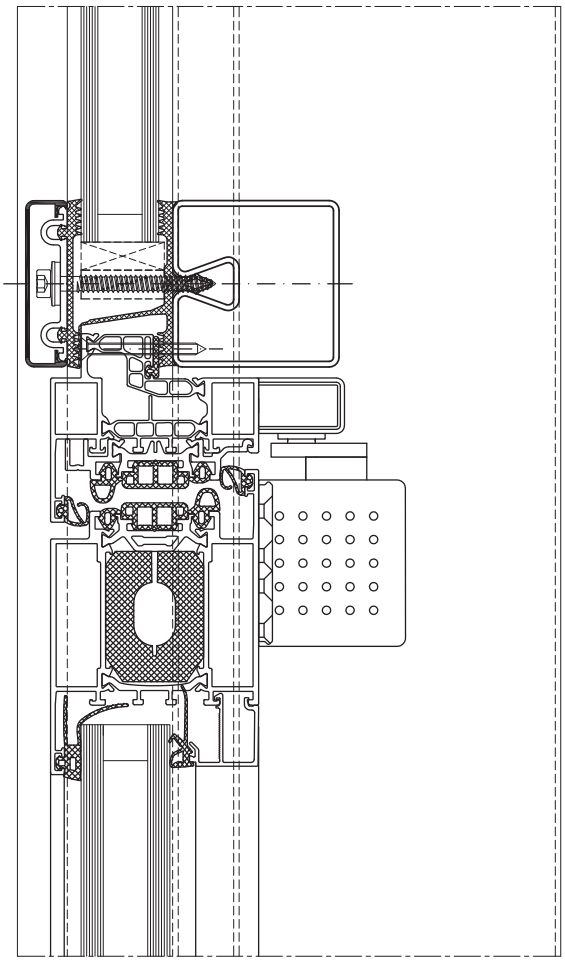




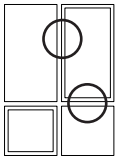
Insert door outward in the mullion section
System: HUECK
Lambda Series DS 075

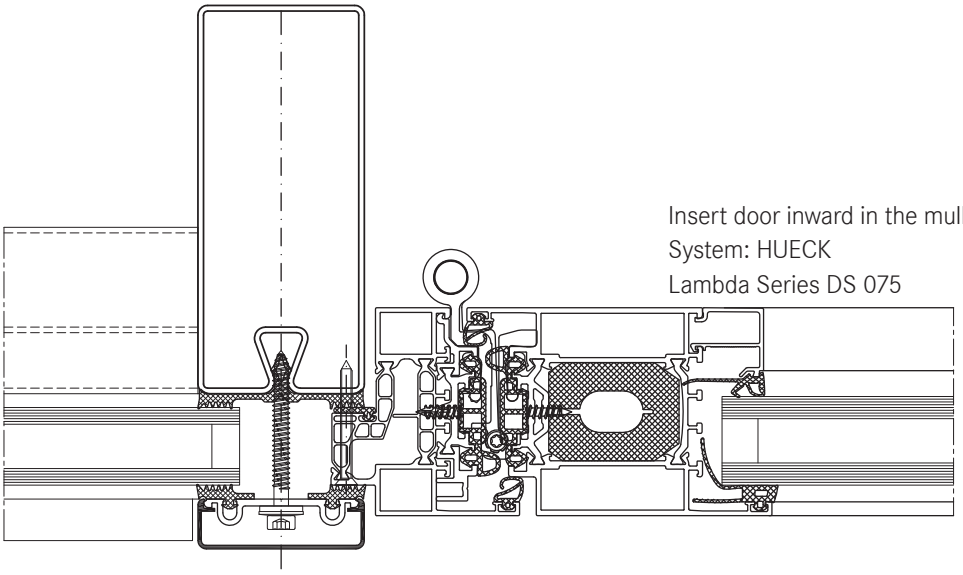
SR_1.3_022.dwg

Installing windows and doors



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

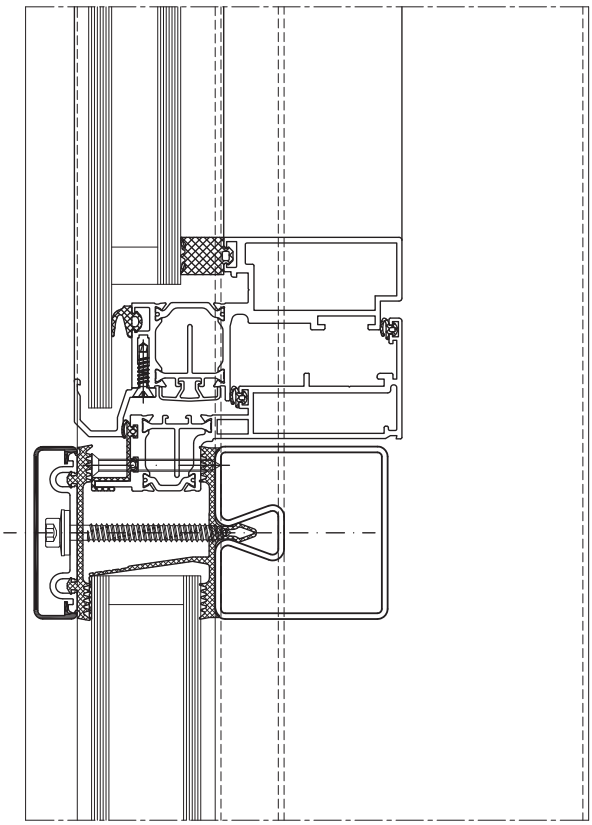




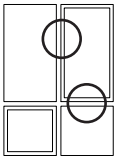
Insert door inward in the mullion section
System: HUECK
Lambda Series DS 075

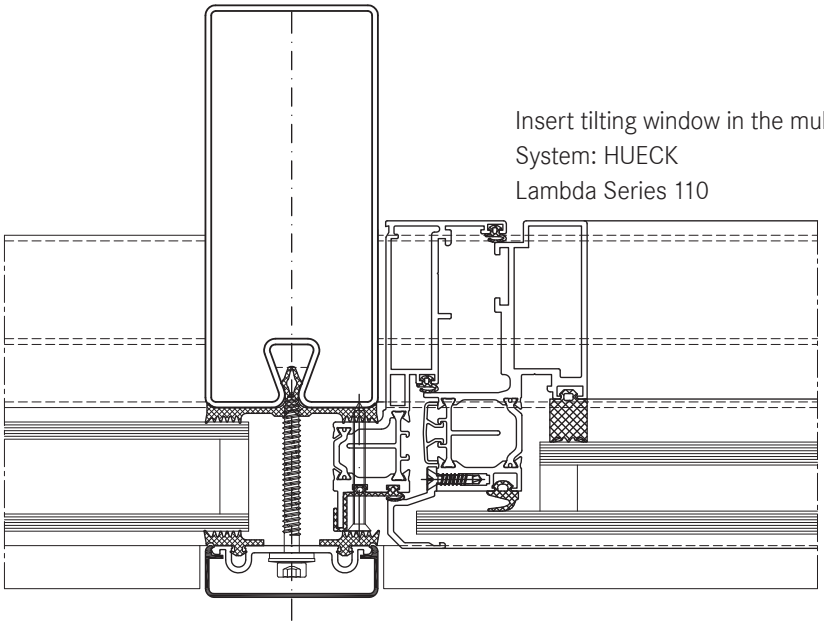
SR_1.3_023.dwg

Installing windows and doors



Insert tilting window in the transom section
System: HUECK
Lambda Series 110

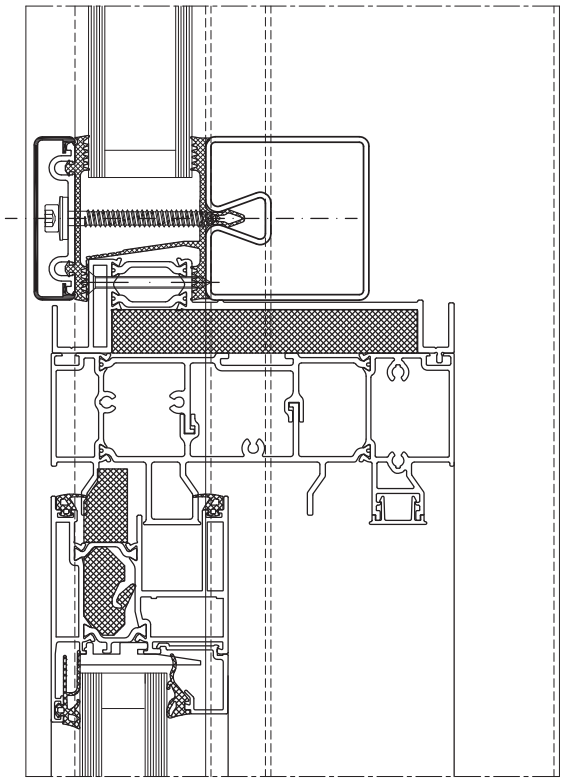




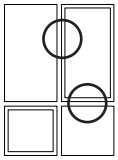
Insert tilting window in the mullion section
System: HUECK
Lambda Series 110

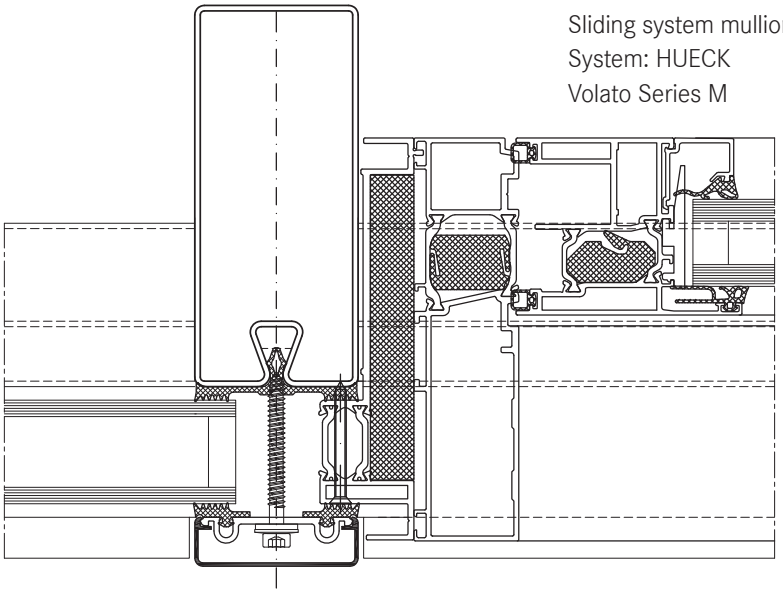
SR_1.3_024.dwg

Installing windows and doors



Sliding system transom section
System: HUECK
Volato Series M



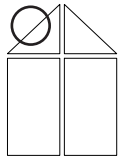


Sliding system mullion section
System: HUECK
Volato Series M

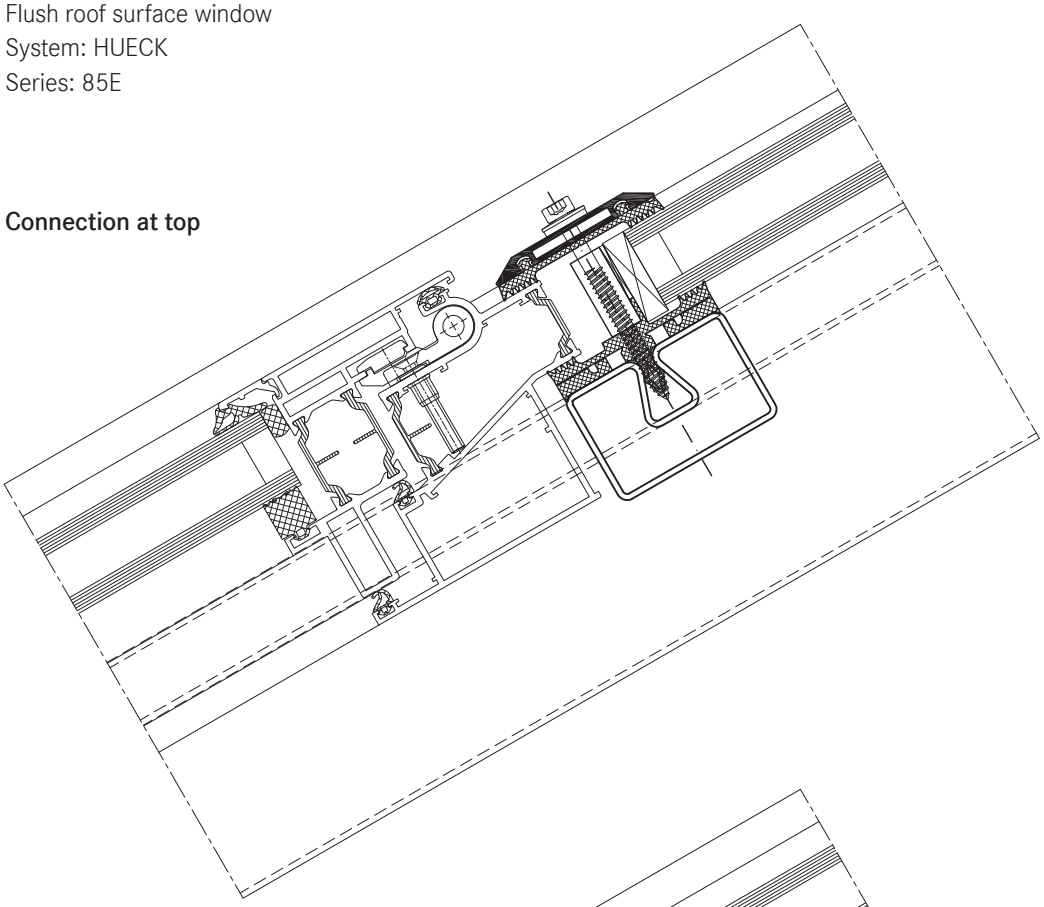
SR_1.3_025.dwg

Installing windows and doors

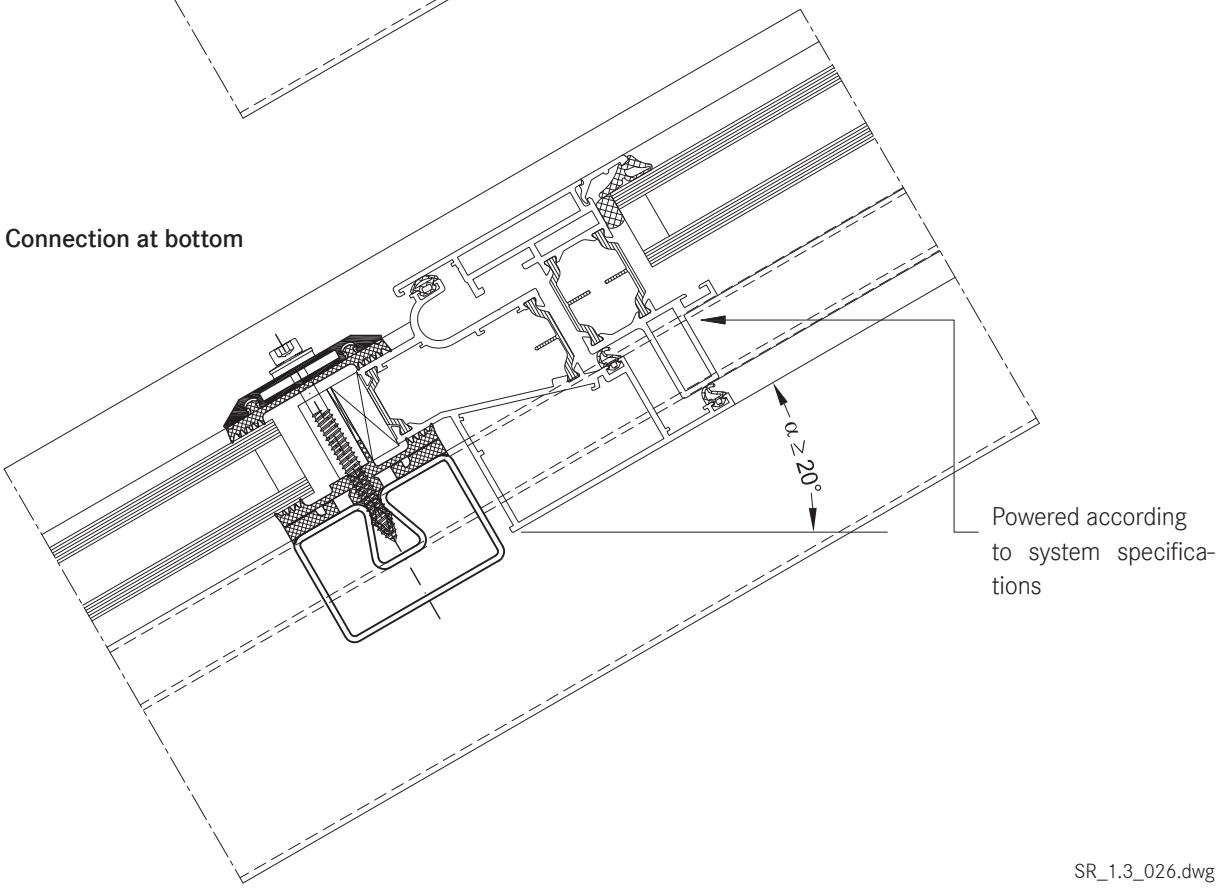
Flush roof surface window
System: HUECK
Series: 85E



Connection at top

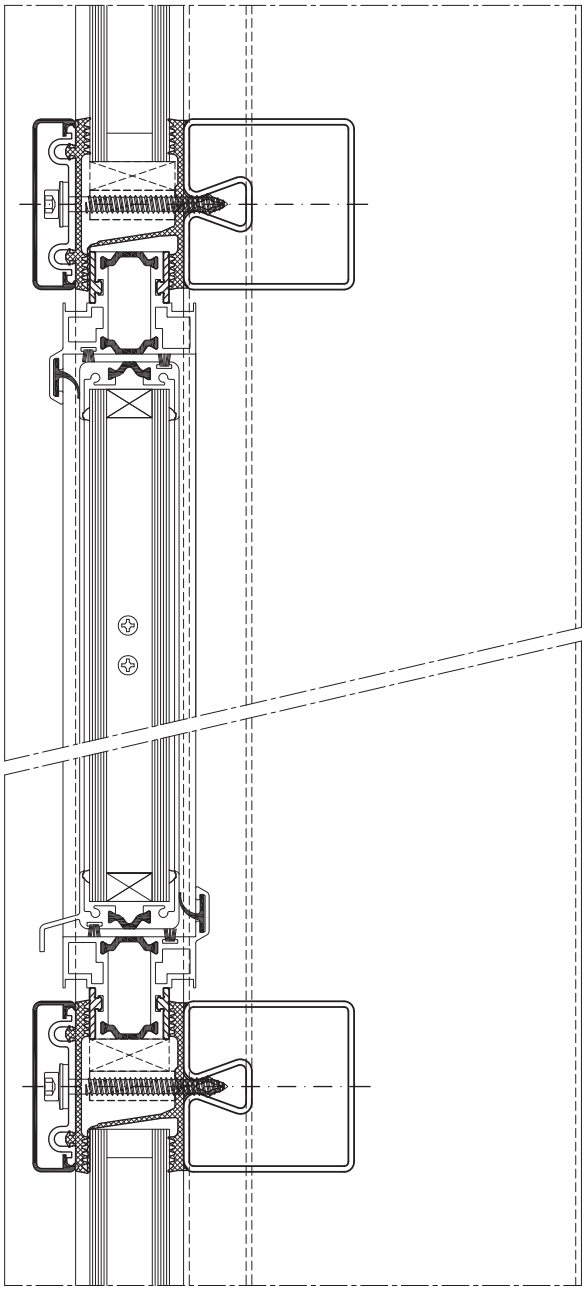


Connection at bottom

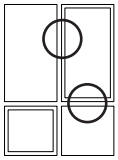


SR_1.3_026.dwg

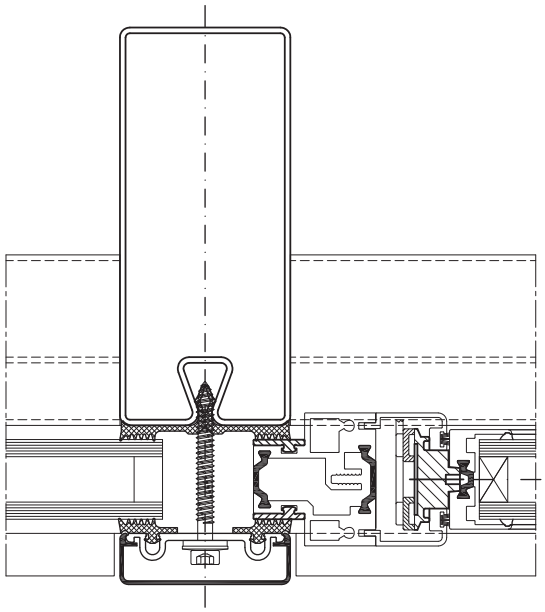
Installing windows and doors



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



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



SR_1.3_027.dwg