

the max.

/TI12

Outside Wall Claddings

Fasteners and fixing details



Visible mechanical Fastenings Rivets or Screws

Fixed and sliding points have to be formed (Fig. 15.)

Sliding point

The diameter of the drill hole in MAX EXTERIOR must be drilled larger than the diameter of the fastening, depending on the required expansion clearance. This is the shaft diameter of the fastening plus 2 mm for every meter of cladding material starting from the fixed point. The head of the fastening must be big enough so that the drill hole in MAX EXTERIOR is always covered. The fastening is placed in such a way that the panel can move. Rivets are put in place with flexible mouth-pieces. The defined clearance of the rivet head to the surface of the panel (0.3 mm) allows movement of the element in the drill hole. (Fig. 21).

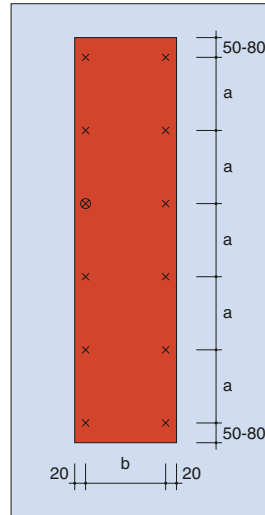
Screws must not be over-tightened. Do not use any countersunk screws - use washers if necessary. The centre point of the drill hole in the subconstruction must coincide with the centre point of the drill hole in the MAX EXTERIOR panels. Drill with a centring piece. The fastenings should be put in place starting from the middle of panel outwards.

Fixed point

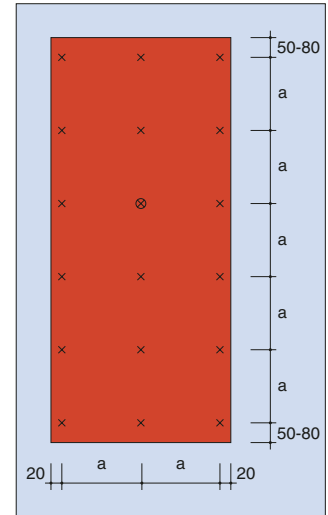
Fixed points are used for uniform distribution (halving) of the expansion and shrinkage movements. The diameter of the drill hole in MAX EXTERIOR is the same size as the diameter of the fastening.

Edge spacings

For reasons of stability and flatness, the edge spacings must be kept to without fail. The joints must be made at least 8 mm wide so that changes in size can take place without hindrance.

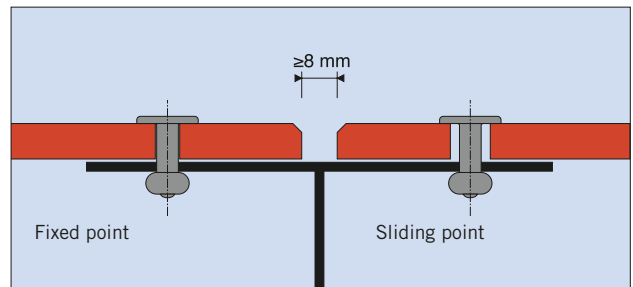


Single span panel Fig. 14



Double span panel Fig. 15

⊗ Fixed point × Sliding point Space from edge



Example of vertical joint

Fig. 16

Fastening Spacings

These are to be chosen in accordance with the structural engineering requirements (calculations) or, if this is not necessary due to the local regulations, according to the following table. In the edge region of the construction, the spacings of the fastenings are to be chosen smaller than in the central region (pressure, suction).

For installation with mechanical fastenings

Panel thickness	Maximum fastening spacing „b“. Single span panel	Maximum fastening spacing „a“. Double span panel
6 mm	470 mm	600 mm
8 mm	620 mm	770 mm
10 mm	770 mm	920 mm

Table 1

Visible fastenings

Fastenings made of non-corroding materials must always be used.

Suppliers of Fastenings:

MAX EXTERIOR installation screws, MAX EXTERIOR balcony screws, aluminium blind rivets and flexible mouthpieces are sold:
in Germany by:
MBE GmbH, D-58706 Menden, Tel. +49(0)2373 4304
in Austria by:
UNI Bausysteme GmbH, Gewerbepark 1
A-4052 Ansfelden, Tel. +49(0)72 29-78 990-0,
Fax. +49(0)72 29-78 995
E-mail: verkauf@unibaustysteme.at

MAX EXTERIOR Installation screw

and washer made of stainless steel CrNiMo 17122
Material no. 1.4401
Plastic covering cap
Permitted by IfBT, Berlin under Permit Number Z-33.2-16 for MAX EXTERIOR exterior wall claddings Diameter of drill hole in MAX EXTERIOR:
Sliding points: 8 mm or as required
Fixed points: 6.0 mm

MAX EXTERIOR Installation Screw

with Torx 20 made of stainless steel X5Cr Ni Mo 17122
Material no. 1.4401 V4A
Lacquered head on request.
Diameter of drill hole in MAX EXTERIOR
Sliding points: 8 mm or as required
Fixed points: 6.0 mm

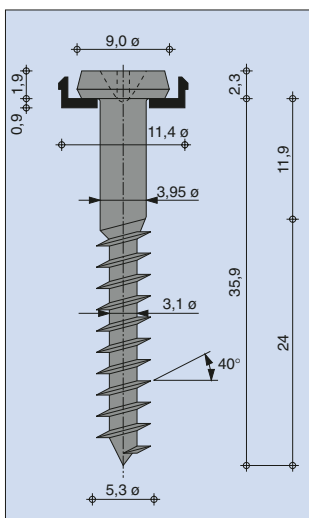


Fig. 17

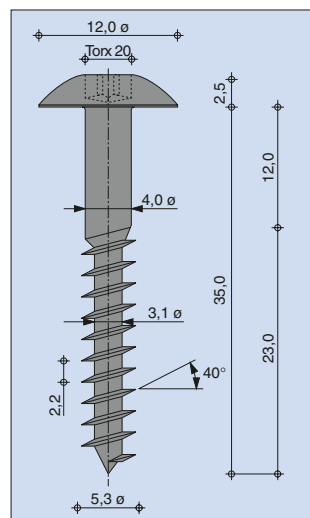


Fig. 18

Aluminium blind rivet

with big head colour lacquered or with covering cap. Used for MAX EXTERIOR exterior wall claddings on aluminium subconstructions.

Rivet sleeve: Al Mg 3 Material no. 3.3535

Rivet pin: Steel Material no. 1.4541

Snapping force of rivet pin: ≤ 5.6 KN

Lacquered head on request.

Permitted by IfBT, Berlin under Permit Number Z-33.2-16 for MAX EXTERIOR exterior wall claddings Diameter of drill hole in MAX EXTERIOR:

Sliding points: 8.5 mm or as required

Fixed points: 5.1 mm

Diameter of drill hole in the aluminium subconstruction: 5.1 mm

The rivets must be put in place with a flexible mouthpiece, clearance 0.3 mm.

The rivet, flexible mouthpiece and riveting tool must be suited to each other.

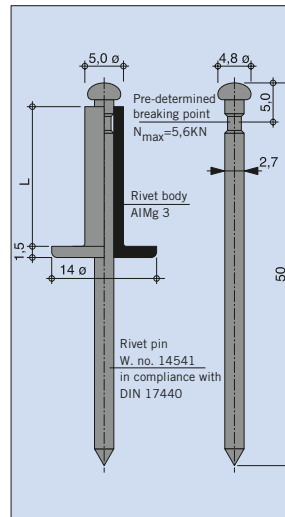


Fig. 19

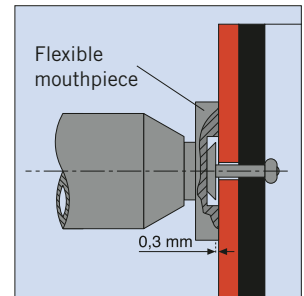


Fig. 20

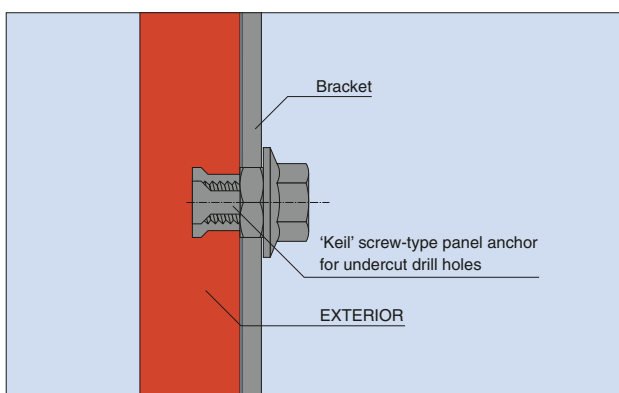
Secret mechanical fastenings with undercut panel anchors

Secret fastenings

For architectural reasons, secret fastening of MAX EXTERIOR may be called for. MAX EXTERIOR is also very suitable for this type of fastening.

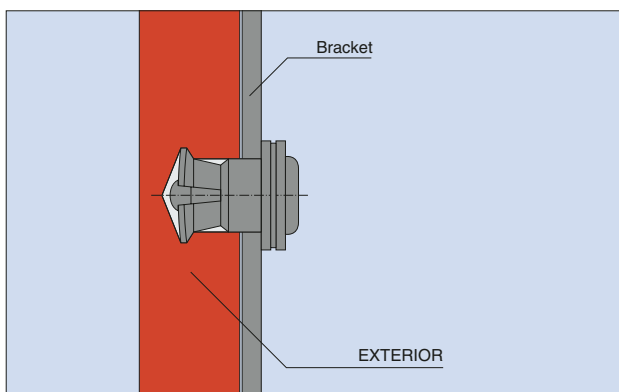
Advantages of the undercut panel anchor:

- Excellent appearance - no fastening elements can be seen from the front. (Fixed invisibly mechanically)
- High, uniform holding force
- Optimum long-term performance
- Spreading-pressure-free anchoring



„Keil“ screw-type panel anchor for undercut drill holes

Fig. 21



„Fischer“ undercut rivet anchor

Fig. 22

MAX EXTERIOR is permitted by the building authorities for this fastening method with the „Fischer“ undercut anchor.
Permit number: Z-21.9 - 1543
We will be glad to send you a copy of the permit if you require one.

Basics:

The panel anchor consists of a double-slotted conical plug sleeve with an integrated blind rivet.

The plug is placed into the undercut drill hole of the facade panel so that it has a positive fit and then carefully anchored.

MAX EXTERIOR panel thickness:
8-10 mm

Maximum dimensions of the MAX EXTERIOR panels: 1000 mm x 1900 mm with at least four and at most six individual brackets.

The substructure is to be formed in such a way that unstressed fastening of the MAX EXTERIOR panels is guaranteed.

When the fastenings are made (drill hole, plug installation) a responsible, qualified employee of the manufacturer must be present in the factory or, at the construction site, the employer, a construction manager appointed by him or a proficient representative of the construction manager must be present. This person must ensure that the work is carried out properly.

Facades of this type must only be installed by trained specialist employees. Supporting profile joints in the subconstruction must not be covered by the panels

The undercut drill holes are to be made in the factory or under workshop conditions with a special drilling tool. Individual drill holes can also be made with portable drilling tools on the construction site under workshop conditions.

The drilling dust must be removed from the drill hole.

The nominal drill hole diameter must correspond to the values in the permit.

In the event of a mis-drilling, a new drill hole has to be positioned away from the mis-drilled one at a distance of at least twice the depth.

Anchoring depths:
8 mm thick panels 4 mm
10 mm thick panels 6 mm

The plug is installed with a plug positioning device which is suitable for the system.

Checking of the execution:

The drill holes and the installed plugs are to undergo the following checks.

At 1% of all drill holes, the geometry of the drill holes is to be checked.

The following measurements are to be checked and documented in accordance with the instructions of the plug manufacturers.

- Diameter of the cylindrical drill hole
- Diameter of the undercut
- Drill hole overcovering and drill hole depth.

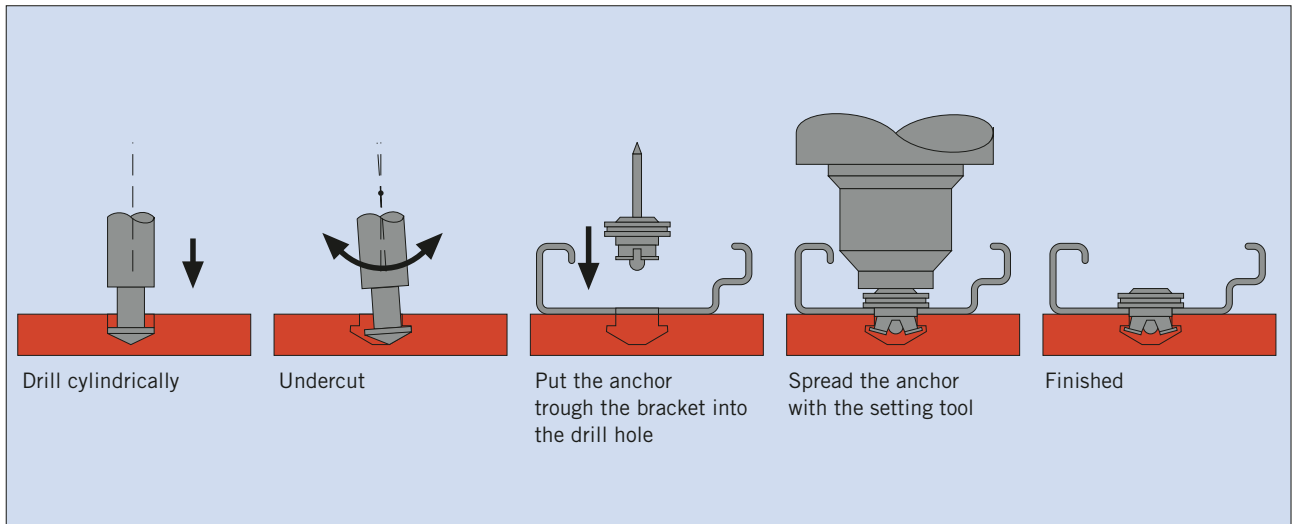
The positive fit of the plug in the drill hole is to be tested by a visual check. The edge of the sleeve must finally support itself evenly on the bracket.

Concerning the making of the fastenings, records of the proof of proper installation are to be kept by the construction manager or his representative. These records have to be saved for 5 years by the employer.

Permit Z - 21.9 - 1543 should be given appropriate attention before starting the planning.

Information must be obtained without fail from:
Fischerwerke [Fischer Works]
Artur Fischer GmbH & Co. KG
Weinhalde 14 - 18, D-72178 Waldachtal
Tel.: (+49) 7443/124553, Fax.: (+49) 7443/124568

The local building regulations must be obeyed.



Work sequence

Fig. 23

Part	Name	Material
1	Anchor sleeve	Stainless steel, 1.4571 or 1.4401
2	Sleeve	Stainless steel, 1.4567 or 1.4303
3	Rivet pin	Stainless steel, 1.4571

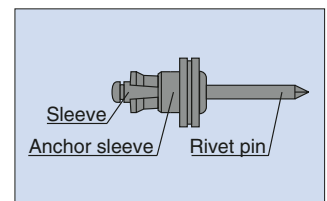
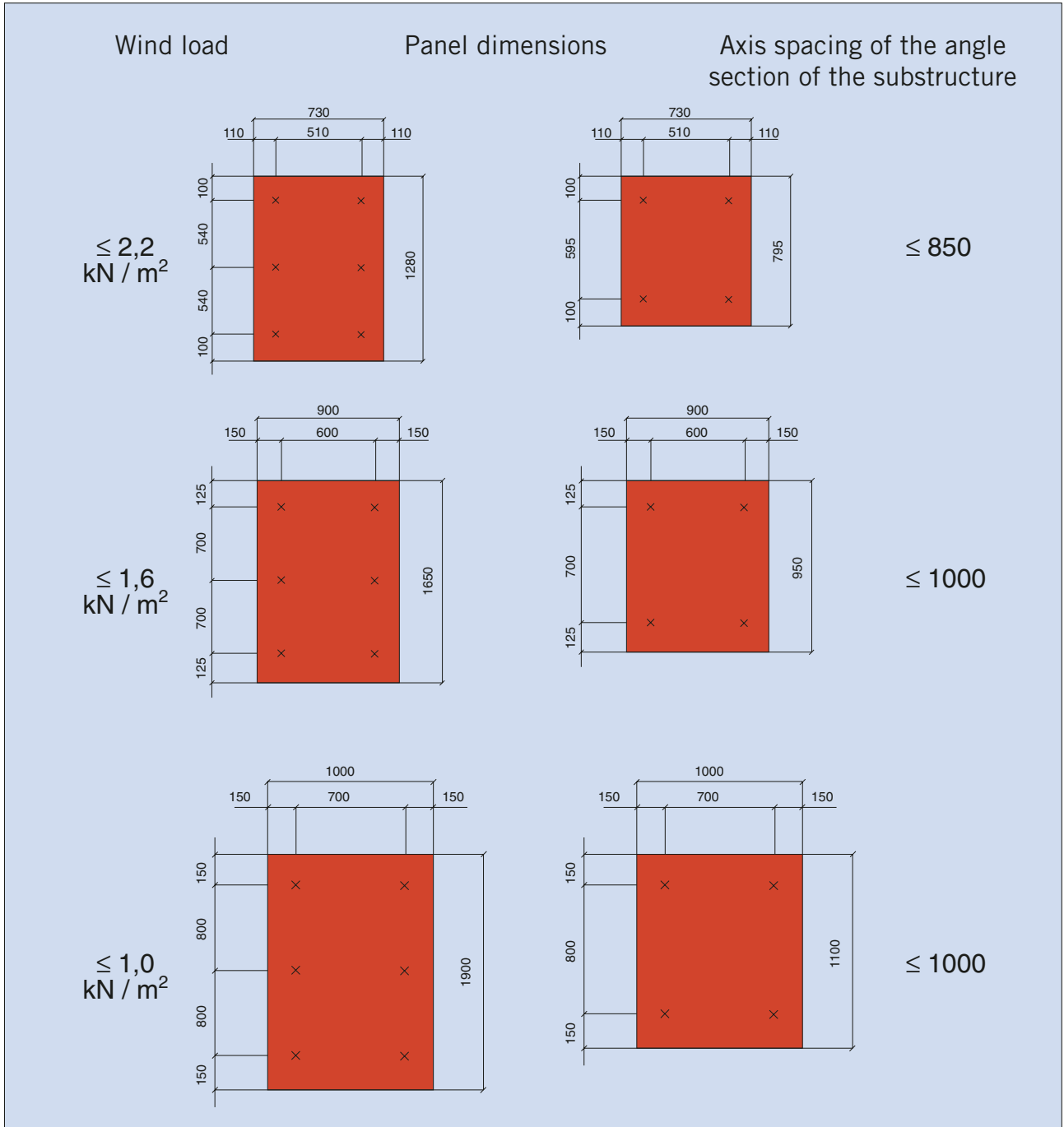


Fig. 24



Fastening spacings in accordance with the construction authority permit

Fig. 25

Secret glued fastening with the Sika Tack Panel gluing system

Gluing

An alternative to secret fixing with plugs is gluing the MAX EXTERIOR facade panels with the Sika Tack Panel gluing system which was specially developed for this by Sika Plastiment. It works on normal planed wood or aluminium subconstructions. Gluing is a clean and simple solution for rear-ventilated facades, attics, visible roof underfaces, reveals and much more. It is important that the responsible building officials of the region or the country give permission.

The Sika Tack Panel gluing system in connection with MAX EXTERIOR panels is permitted generally by building authorities in Germany.

Permit number: Z-36.4-18

(exclusively for aluminium subconstructions).

We will be glad to send you a copy of the permit on request.

Advantages of the Sika Tack Panel gluing system:

- Excellent appearance - no fastening elements can be seen from the front
- Simple, economical and fast installation
- Tough, movement-absorbing fastening

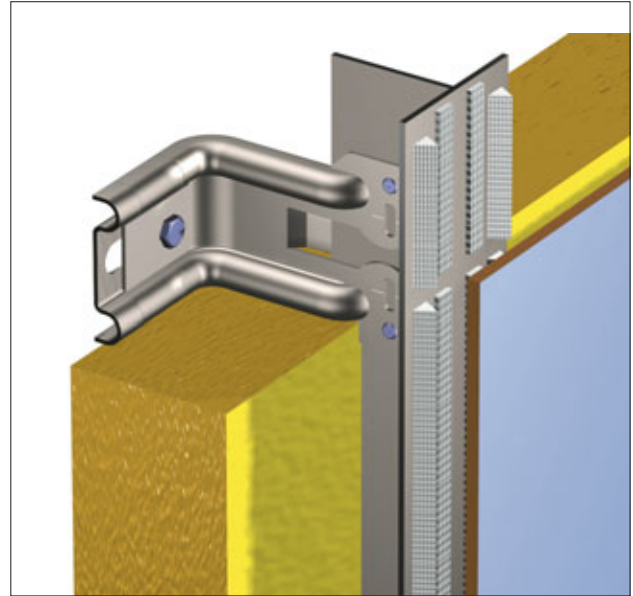


Fig. 27

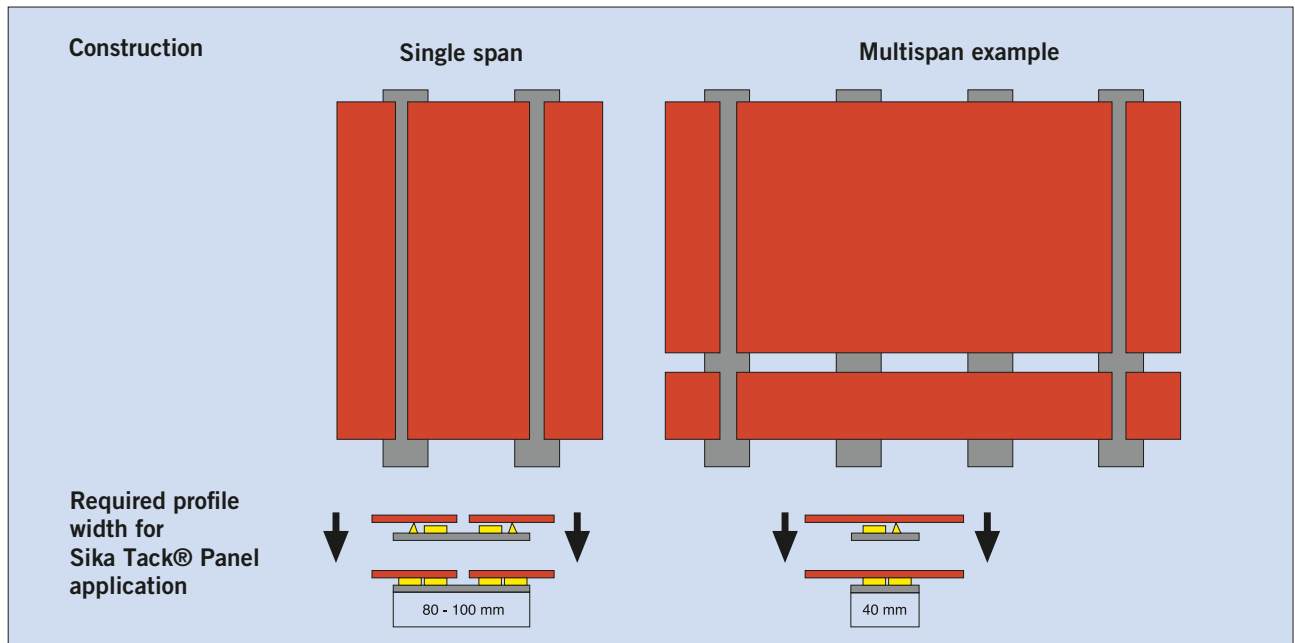


Fig. 26

For glued installation with Sika Tack Panel (spacing of the vertical support construction)

Panel thickness	Maximum fastening spacing	Maximum fastening spacing
	Single span panel	Double span panel
6 mm	400 mm	500 mm
8 - 10 mm	500 mm	500 mm

Table 2

Working sequence:**Pretreatment of aluminium subconstructions**

- Rub down with an abrasive fleece
- Clean with Sika Cleaner 205 (cellulose cloth)
- Ventilation time - 10 minutes
- Apply Sika Tack Primer thinly with a brush
- Ventilation time - at least 30 minutes, maximum 8 hours

Pretreatment of wooden subconstructions:

(Wooden subconstructions are not permitted in Germany)

- Planed wood with untreated surfaces without wood preservative
- Apply Sika Tack Primer thinly with a brush
- Ventilation time - at least 30 minutes, maximum 8 hours

Pretreatment - MAX EXTERIOR:

- Rub down with an abrasive fleece
- Clean with Sika Cleaner 205 (cellulose cloth)
- Ventilation time - 10 minutes
- Apply Sika Tack Primer thinly with a brush
- Ventilation time - at least 30 minutes, maximum 8 hours

All surfaces to be glued must be kept clean, dry and grease-free.

Gluing:

- Apply Sika Tack Panel installation band over the entire length of the vertical profiles. (Do not remove protective film yet).
- Apply glue: Sika Tack Panel is applied as a triangular bead (width 8 mm, height 10 mm) at a distance of at least 5 mm from the edge of the profile and the installation band.
- Install panel:

Remove the protective film from the Sika Tack Panel installation band. Align the panel exactly (installation angle) until in contact with the Sika Tack installation band, then press on.

Basics:

- It is necessary to keep the work protected from the weather and dust (gluing work can be done on the construction site).
- Air temperature not below 5°C and not over 35°C
- Relative air humidity not higher than 75%
- Temperature of the construction elements which are to be glued at least 3°C higher than the dew point temperature of the air.
- Joints in the subconstruction profiles must not be glued if covered with MAX EXTERIOR panels
- The subconstruction must always be arranged vertically
- The general building authority permit, as well as the manufacturer's working instructions, must be present during the gluing work at every construction site.
- The gluing must only be done by companies with proof of training (for Germany, proof of qualification is necessary in accordance with the building authority permit).
- A construction site log is to be made.

Information must be obtained without fail from:

Austria:

Sika Chemie GmbH
1210 Vienna
Lohnergasse 3
Telephone: (+43) 1/2788611
Fax: (+43) 1/2705239

Switzerland:

Sika Chemie GmbH
CH-8048 Zürich
Tüffenwies 16-22
Telephone: (+41) 1/4 36 40 40
Internet: <http://www.sika.ch>

Germany:

Sika Chemie GmbH
Stuttgarter Str. 139
72574 Bad Urach
Telephone: (+49) 7125/940-0
Fax: (+49) 7125/940-321

Germany Agency:

Walter Hallschmid GmbH & Co KG
Ida-Schumacher-Str. 5
94424 Arnstorf
Telephone: (+49) 8723/961121
Fax: (+49) 8723/96127
Mobile: (+49) 171/777 20 47
E-mail: info@dichten-und-kleben.de

The local building regulations must be obeyed without fail.

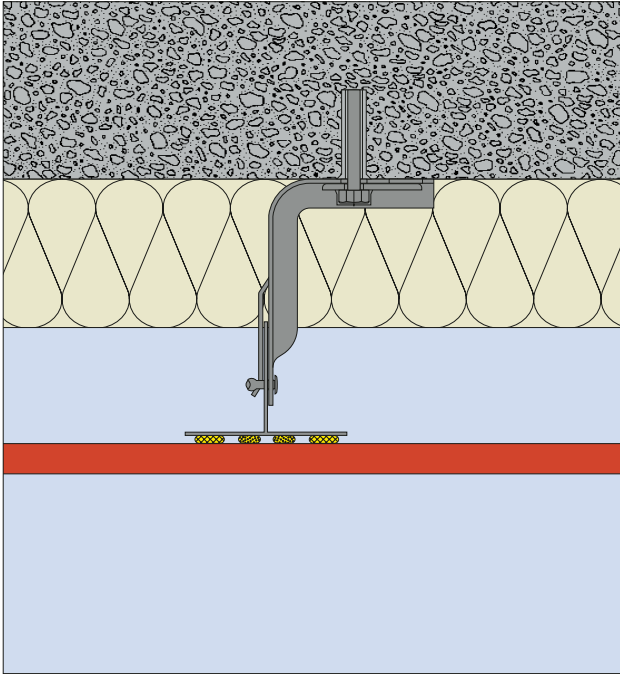
Other glue suppliers

(These glues are not permitted by the building authorities in Germany).

Gluing instructions must be requested from the respective manufacturer.

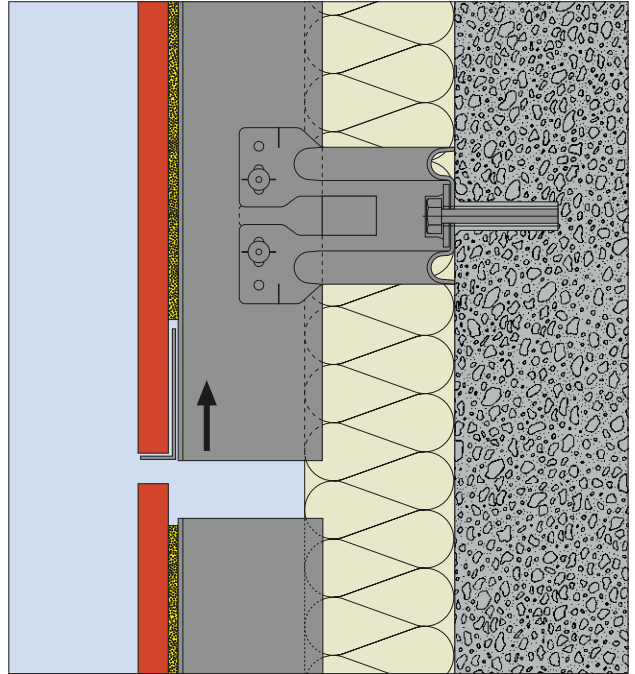
SODAL N.V.
WERK LEVERKUSEN
OLOF-PALME-STR. 13
D-51371 LEVERKUSEN
Tel.: (+49) 214/6904-0
Fax: (+49) 214/6904-23
E-mail: leverkusen@soudal.com
Internet: <http://www.soudal.com>

DKS GesmbH
Regensburgerstraße 9
A-4020 Linz
Tel.: (+43) 732/77 53 81
Fax: (+43) 732/78 46 12
E-mail: h.p.kindl@dks.at



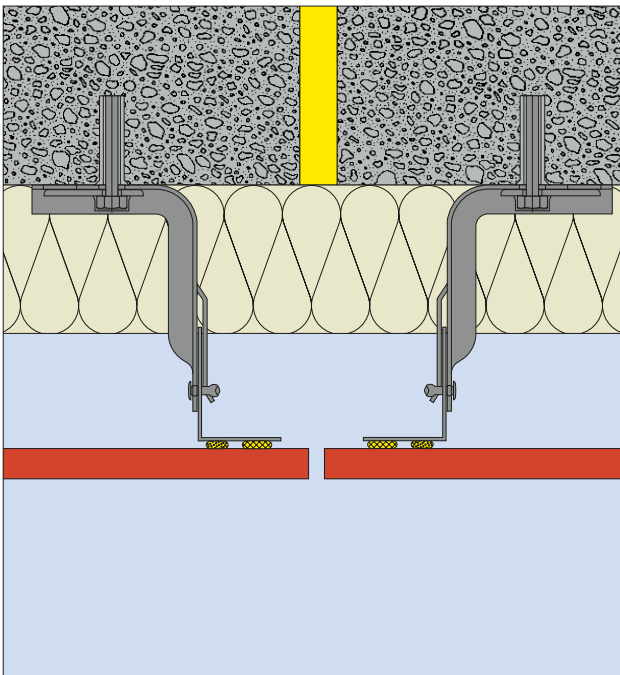
Horizontal section, vertical joint

Fig. 28



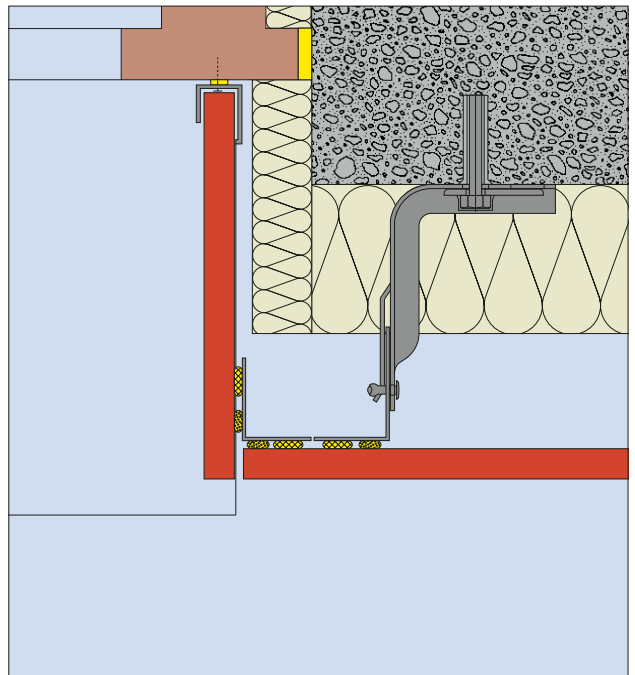
Vertical section with horizontal joint

Fig. 29



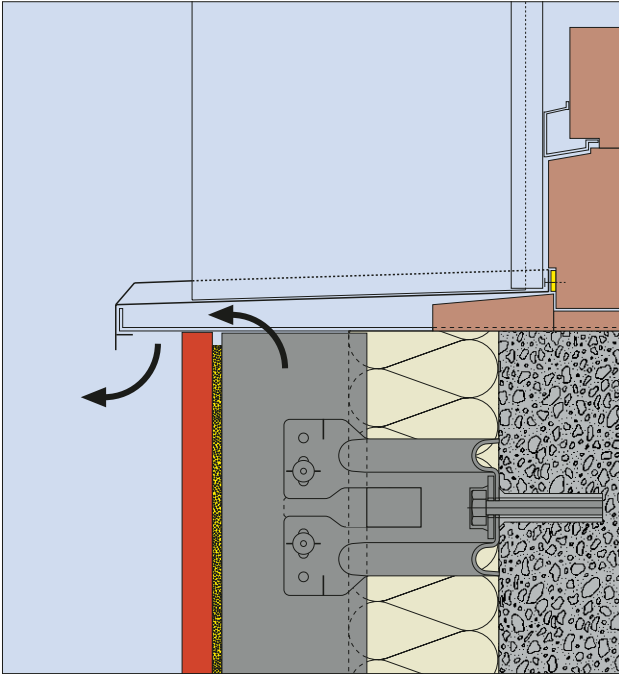
Horizontal section, expansion joint form

Fig. 30



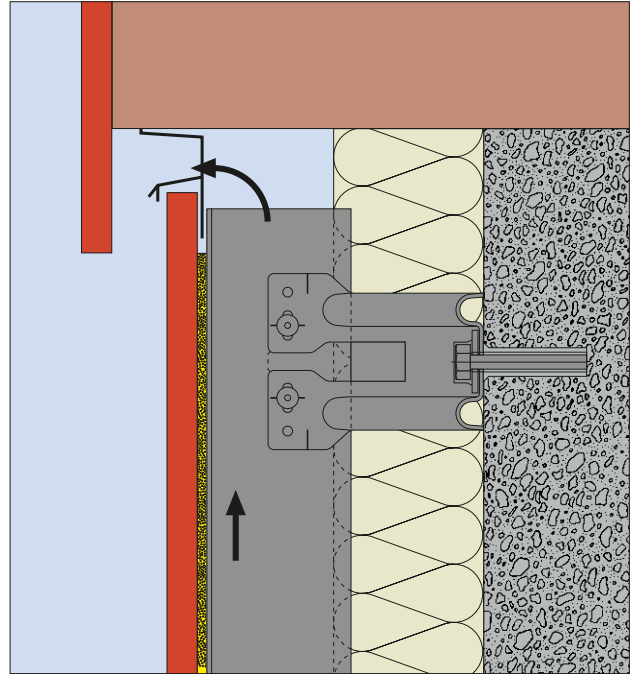
Horizontal section, window reveal

Fig. 31



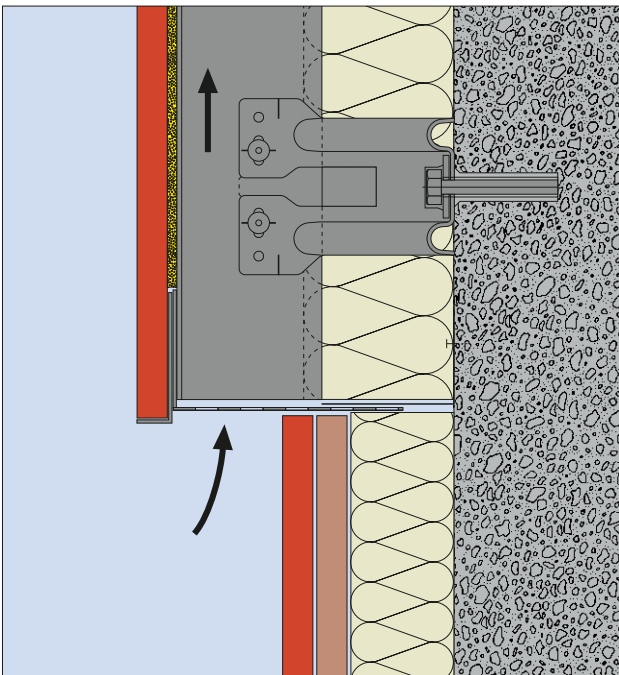
Vertical section, window parapet form

Fig. 32



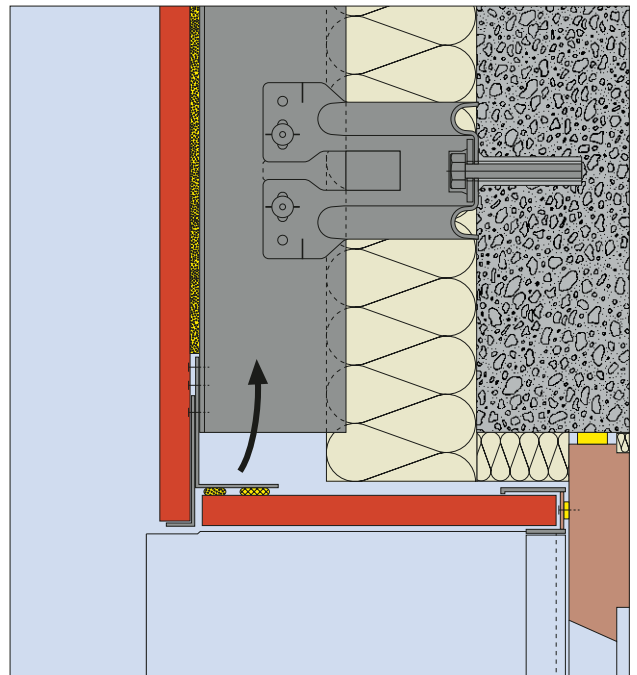
Vertical section, roof connection - attic

Fig. 33



Vertical section, base closure

Fig. 34

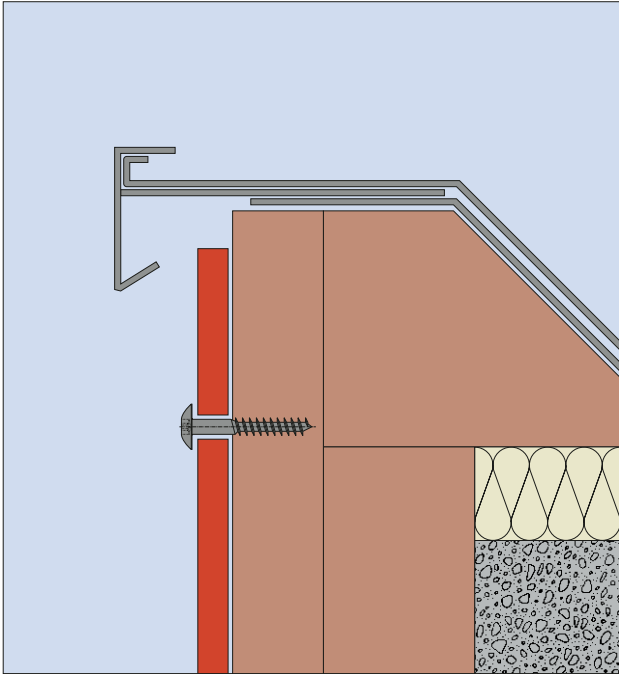


Vertical section, window lintel

Fig. 35

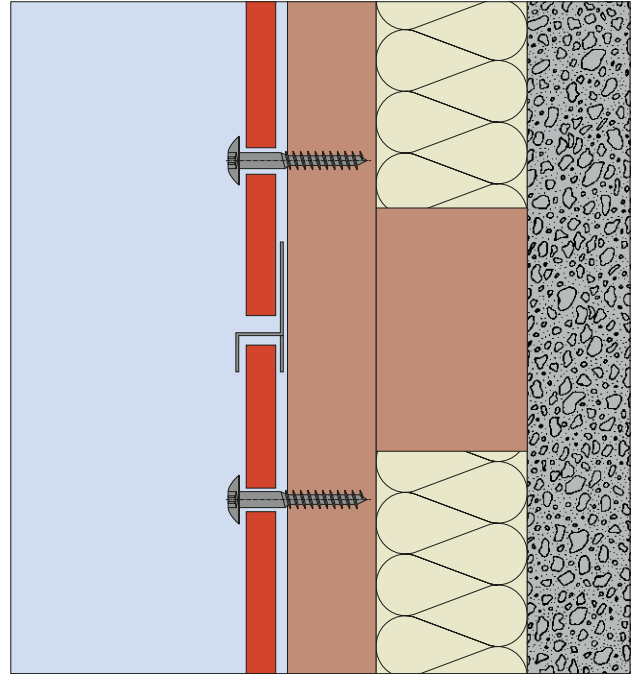


Construction details - Wooden subconstruction



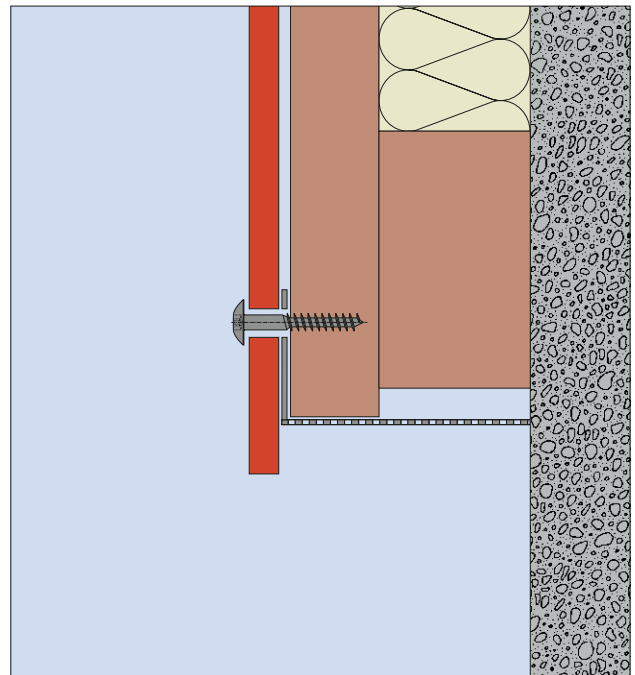
Vertical section, attic - Scale = 1:2.5

Fig. 36



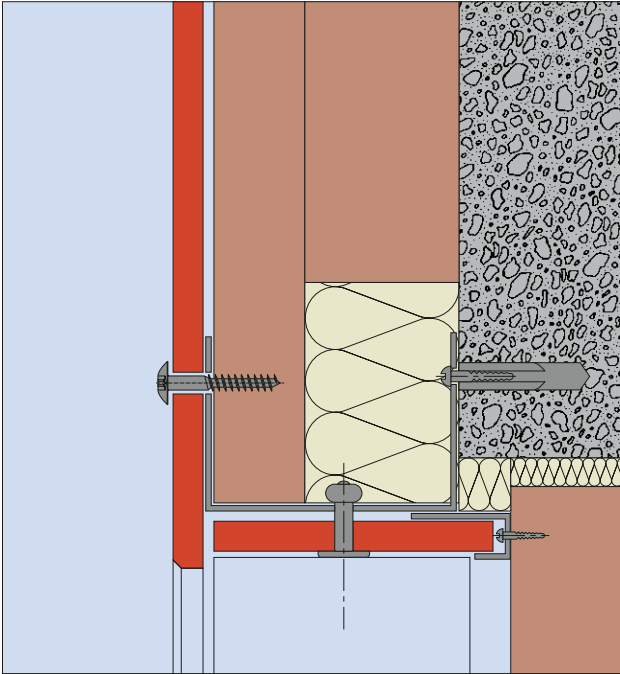
Vertical section, horizontal joint - Scale = 1:2.5

Fig. 37

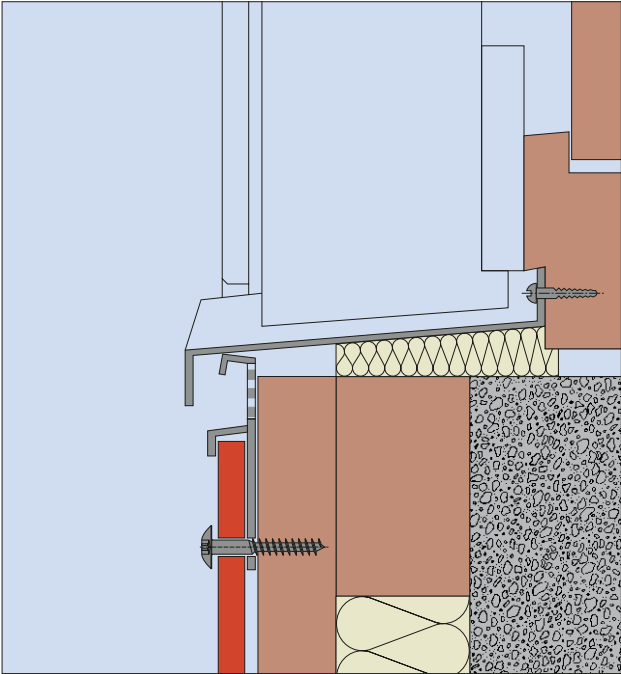


Vertical section, base connection - Scale = 1:2.5

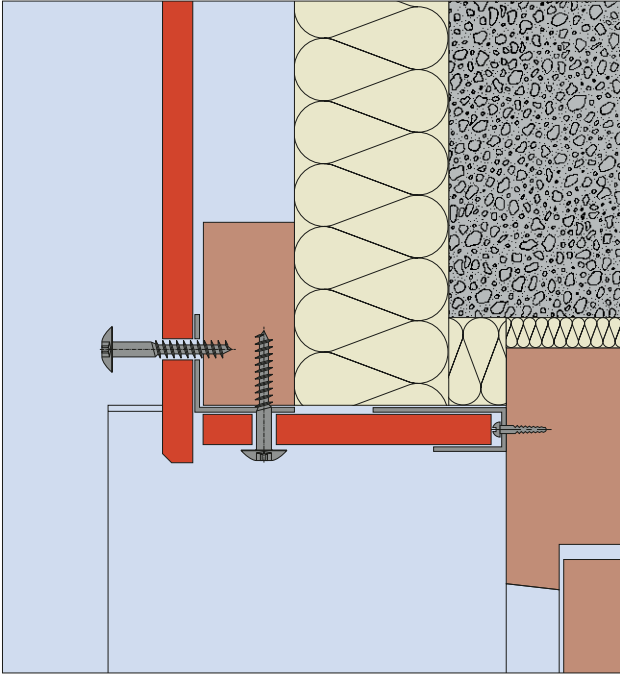
Fig. 38



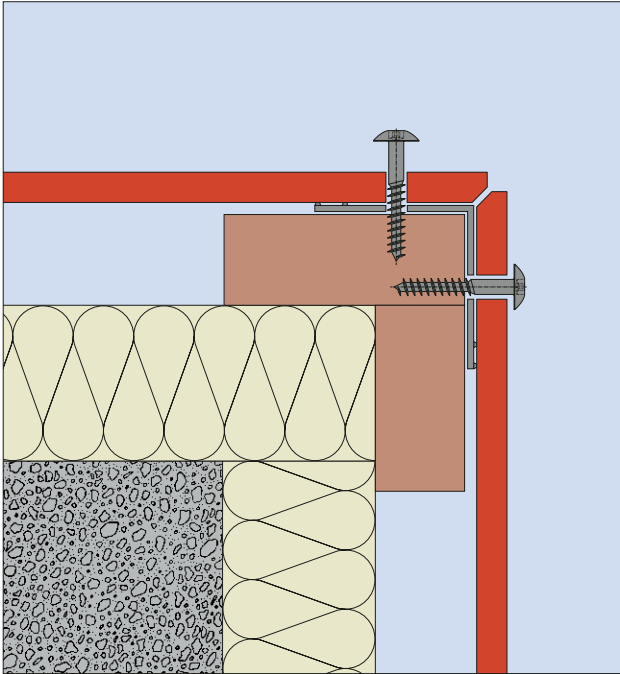
Vertical section, window lintel with steel sheet cover - Scale = 1:2.5 Fig. 39



Vertical section, window sill connection - Scale = 1:2.5 Fig. 40

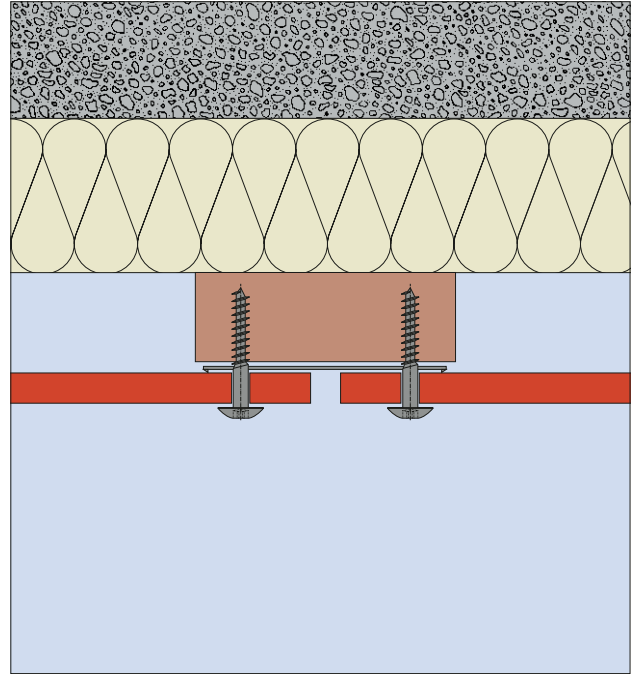


Horizontal window reveal - Scale = 1:2.5 Fig. 41



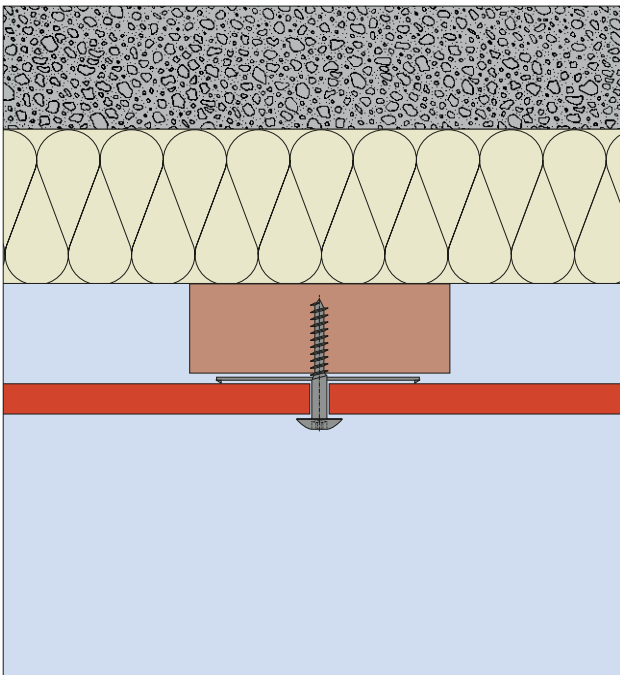
Horizontal section, external corner - Scale = 1:2.5

Fig. 42



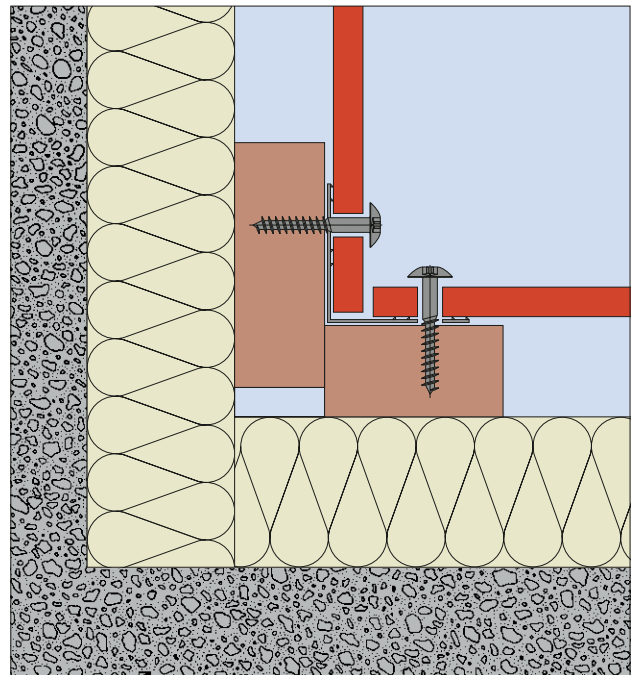
Horizontal section, vertical joint - Scale = 1:2.5

Fig. 43



Horizontal section, centre 5 supporting lath - Scale = 1:2.

Fig. 44

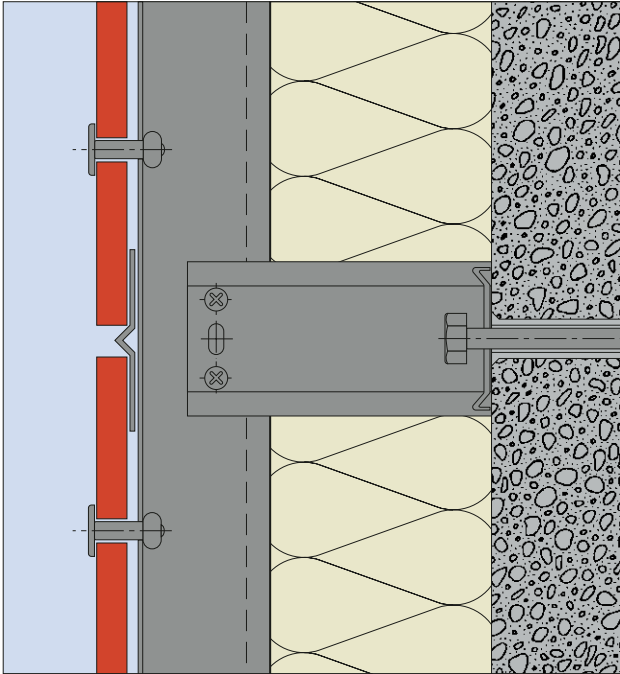


Horizontal section, internal corner - Scale = 1:2.5

Fig. 45

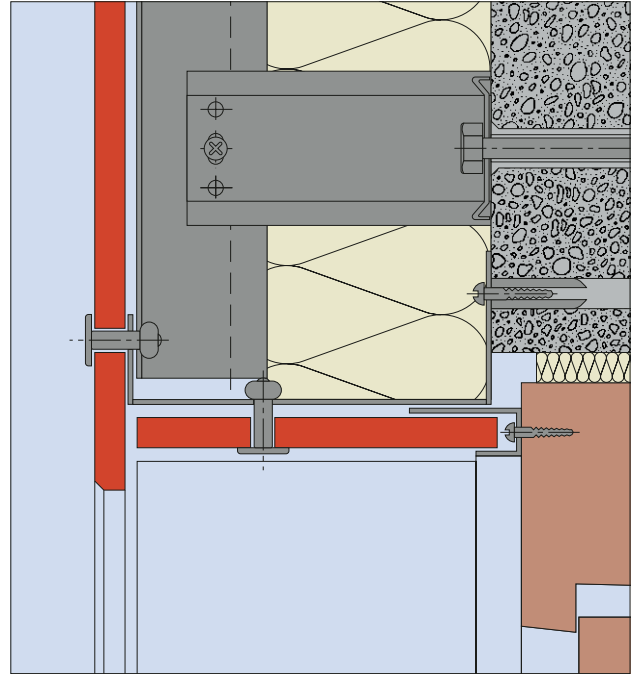


Construction details - Aluminium subconstruction



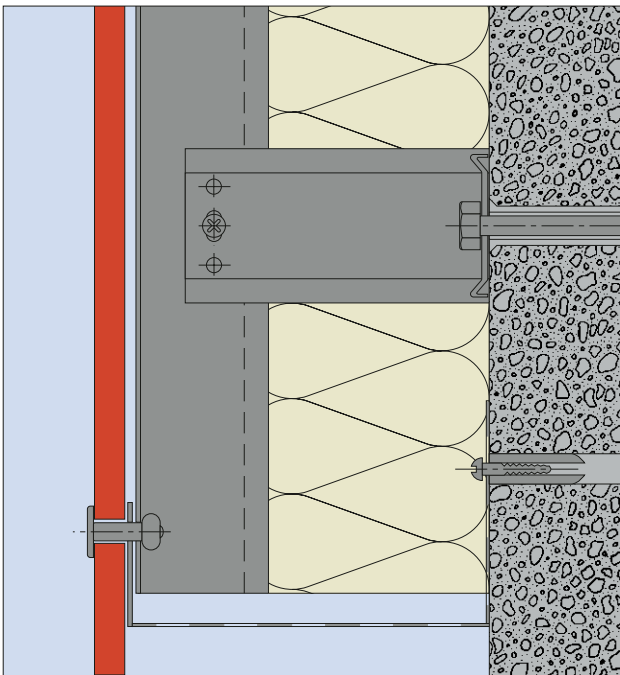
Vertical section, horizontal joint - Scale = 1:2.5

Fig. 46



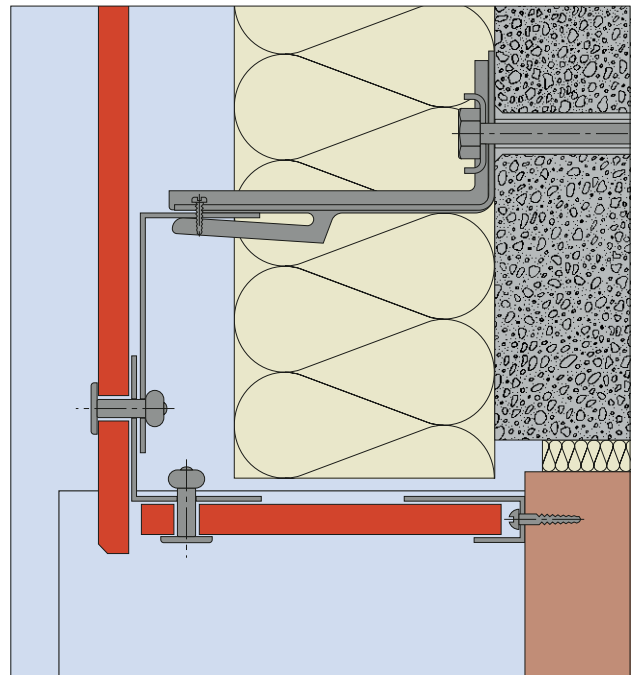
Vertical section, window lintel with steel sheet covering - Scale = 1:2.5

Fig. 47



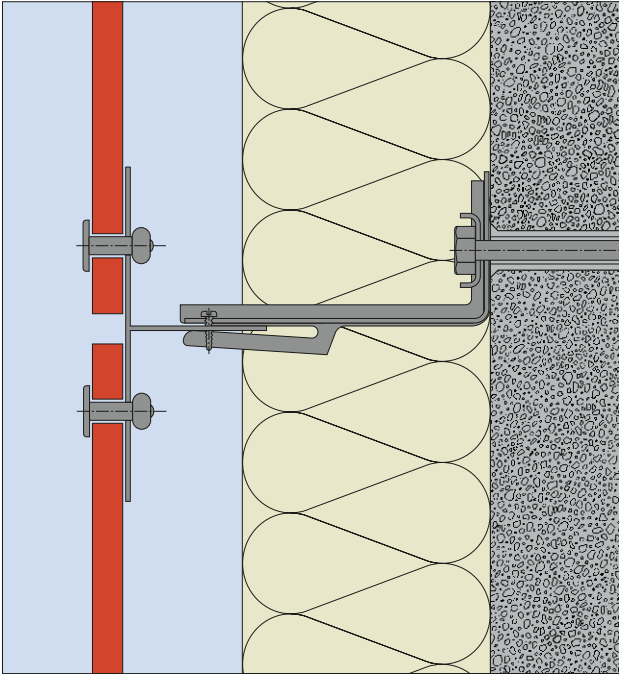
Vertical section, base connection - Scale = 1:2.5

Fig. 48



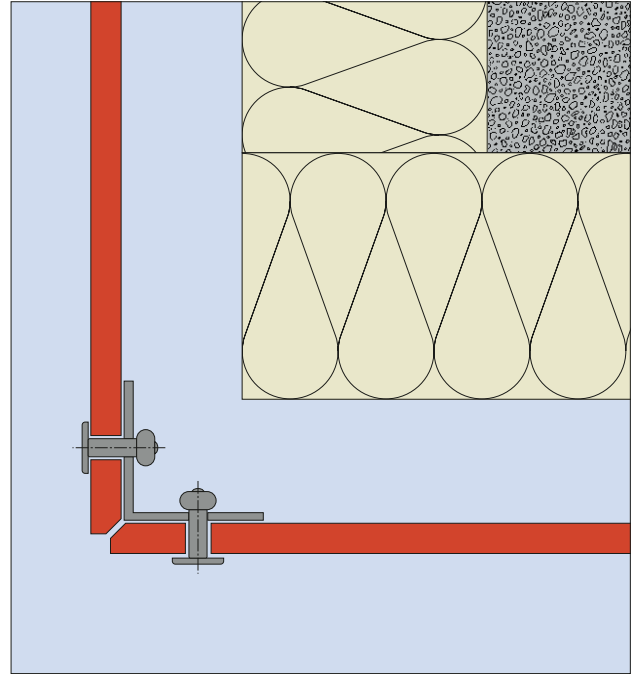
Horizontal section, window reveal - Scale = 1:2.5

Fig. 49



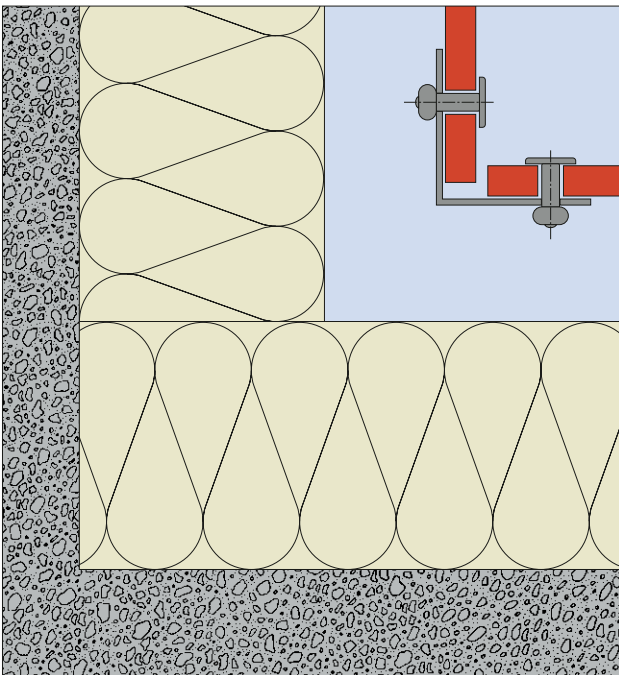
Horizontal section, panel joint - Scale = 1:2.5

Fig. 50



Horizontal section, external corner - Scale = 1:2.5

Fig. 51



Horizontal section, internal corner - Scale = 1:2.5

Fig. 52

Multiclad Facade Systems

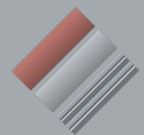
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A Company of the *Constantia*-ISO AG

Exterior

MAX

o n t o p