

Invisible (hidden) fixing of GRC concrete slabs with Wido-Grip aluminium substructure



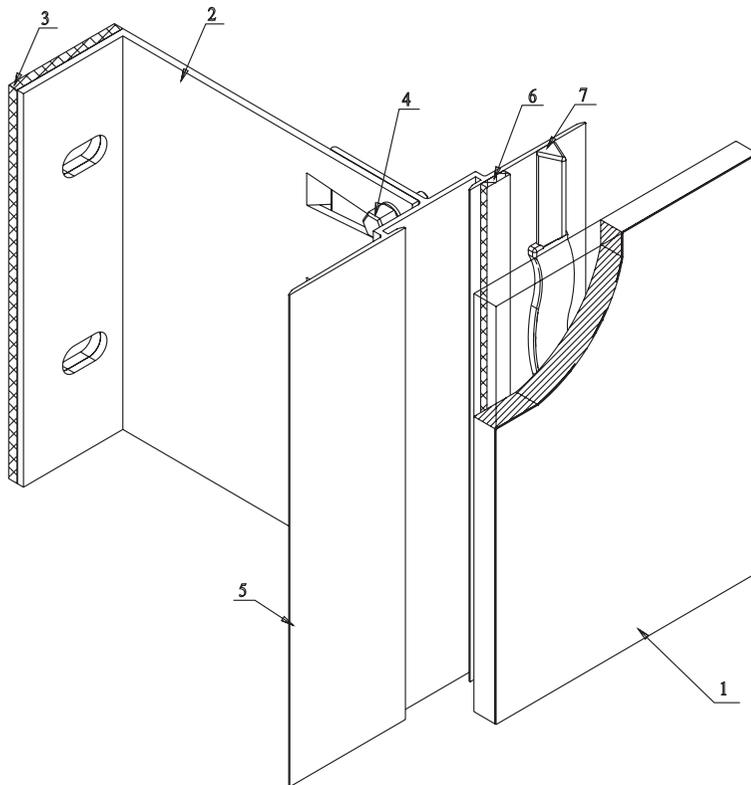
ITB technical approval
AT-15-9301/2014
FOR WIDO-PROFIL SYSTEMS

Invisible (hidden) fixing of GRC concrete slabs with Wido-Grip aluminium substructure

Notice: technical parameters for panels should be verified according to the panel and complementary element producers' guidelines.

GRC concrete slabs can be fixed to Wido-Grip aluminium structure by means of certified adhesives. The adhesion must use permanently flexible adhesives, which enable the slabs' dimensions to adapt to the substructure. All the installation and assemblage works should be carried out by qualified staff and should follow the recommendations and instructions of an experienced adhesive supplier, in accordance with a professional design and current regulations.

Wido-Profil is not responsible for the choice and usage of an assembly adhesive.



It is recommended that buyers, investors and architects follow independent professionals' advice regarding the accordance of assemblage systems with state and regional building regulations. The following information does not consider all the certification requirements and should be completed and updated at the stages of design and installation.

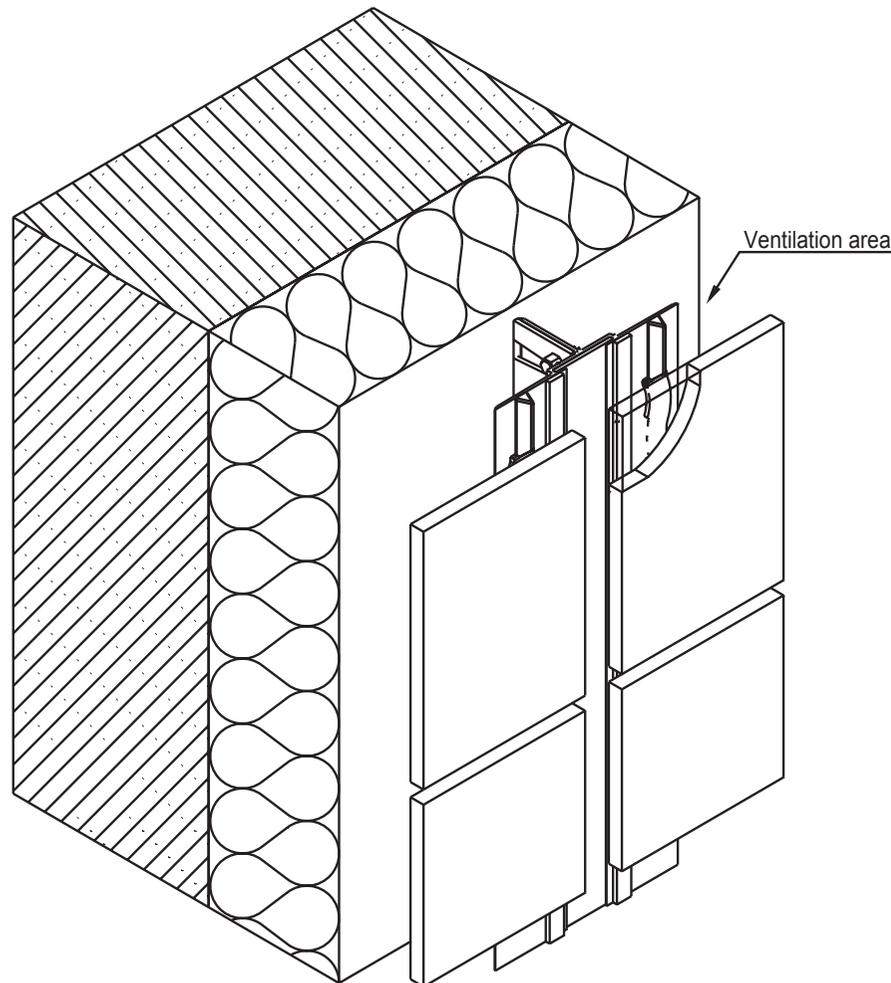
The accordance with adhesive system certifications should be checked.

An individual executive design of the ventilated façade is recommended.

Legend

1. GRC façade slab
2. Wido-Grip aluminium double bracket.
3. Wido-Grip insulation washer
4. Screw or rivet
5. Wido-Grip aluminium supporting T-profile
6. Assembly tape
7. Assembly adhesive

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General recommendations concerning the assemblage of façade slabs:

1. Ventilation and ventilation area

In order to ensure constant ventilation behind the slabs, it is recommended to leave a 20-to-50 mm-wide clearance between the facing and the thermal insulation layer or construction wall, which will allow airflow between ventilation inlets and outlets. The area of ventilation inlets and outlets must amount to at least 50 cm² per every linear metre of the elevation. The ventilation clearance as well as inlets and outlets should be in accordance with relevant building regulations.

2. The supporting substructure

Façade slabs should be installed on a substructure of sufficient strength and constant durability. The quality and conservation of the structure should obey relevant norms and building regulations.

3. Assembly elements

The success of slab installation with adhesive depends mostly on weather conditions during the assemblage. Humidity, low temperatures or pollution might have a negative influence on the setting of the adhesive. Hence, we cannot take any responsibility for the durability of the constructions with adhesive.

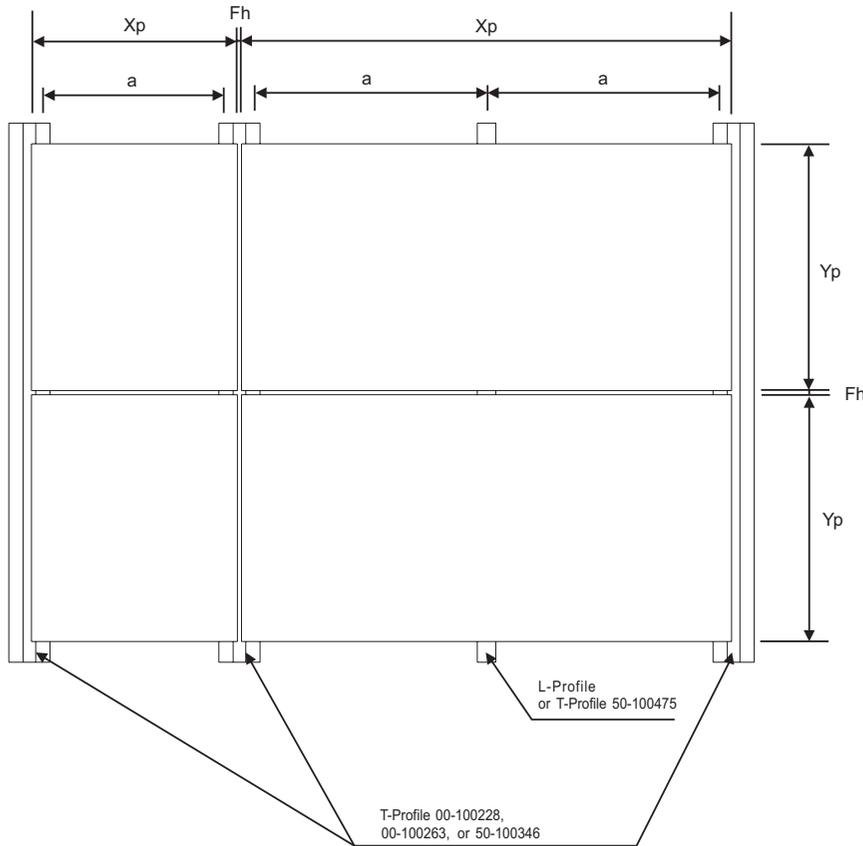
It is recommended that the adhesive producer's guidelines be always obeyed.

Invisible (hidden) fixing of GRC concrete slabs with Wido-Grip aluminium substructure Maximum slab formats for adhesion



Features:

1. It is possible to use thinner slabs than in case of mechanical invisible fixing (Wido-INV).
2. A flexible join with the substructure.
3. Financially attractive for small formats.
4. Check Wido-Frame System

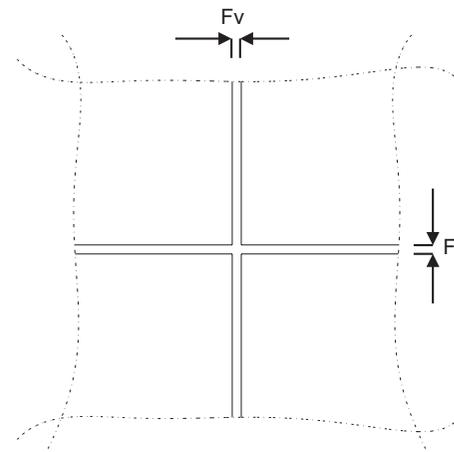


Minimum size of Wido-Grip aluminium supporting substructure:

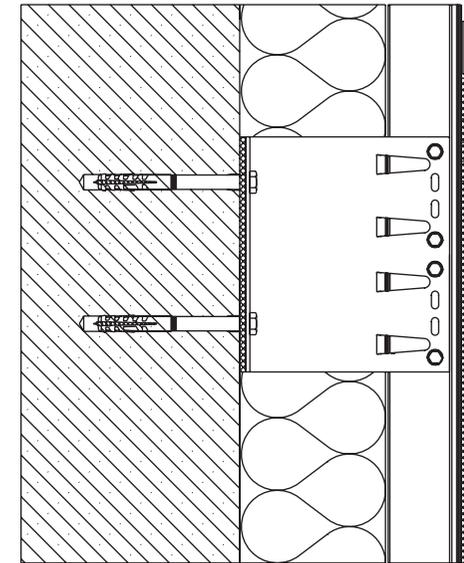
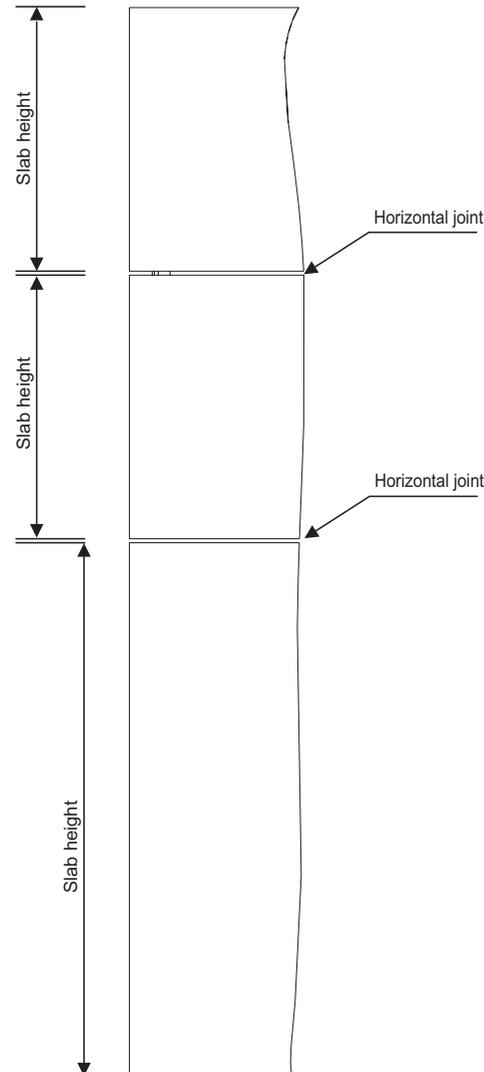
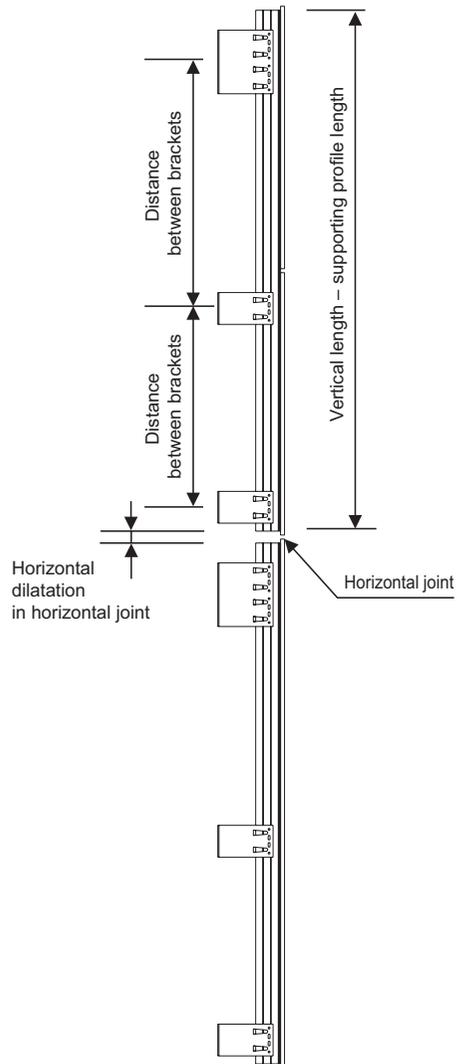
1. External and corner profiles - width: 40 mm
2. Slab joining profiles - width: 140 mm

Legend:

- X_p – slab width
- Y_p – slab height
- a – central horizontal position of the slab assemblage line
- Fv – vertical joint (minimum 10 mm)
- Fh – horizontal joint (minimum 10 mm)



Determining vertical lengths of Wido-Grip substructure

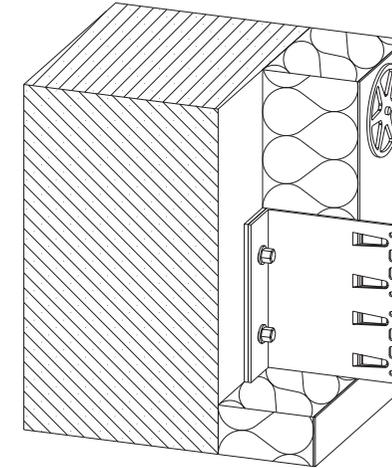
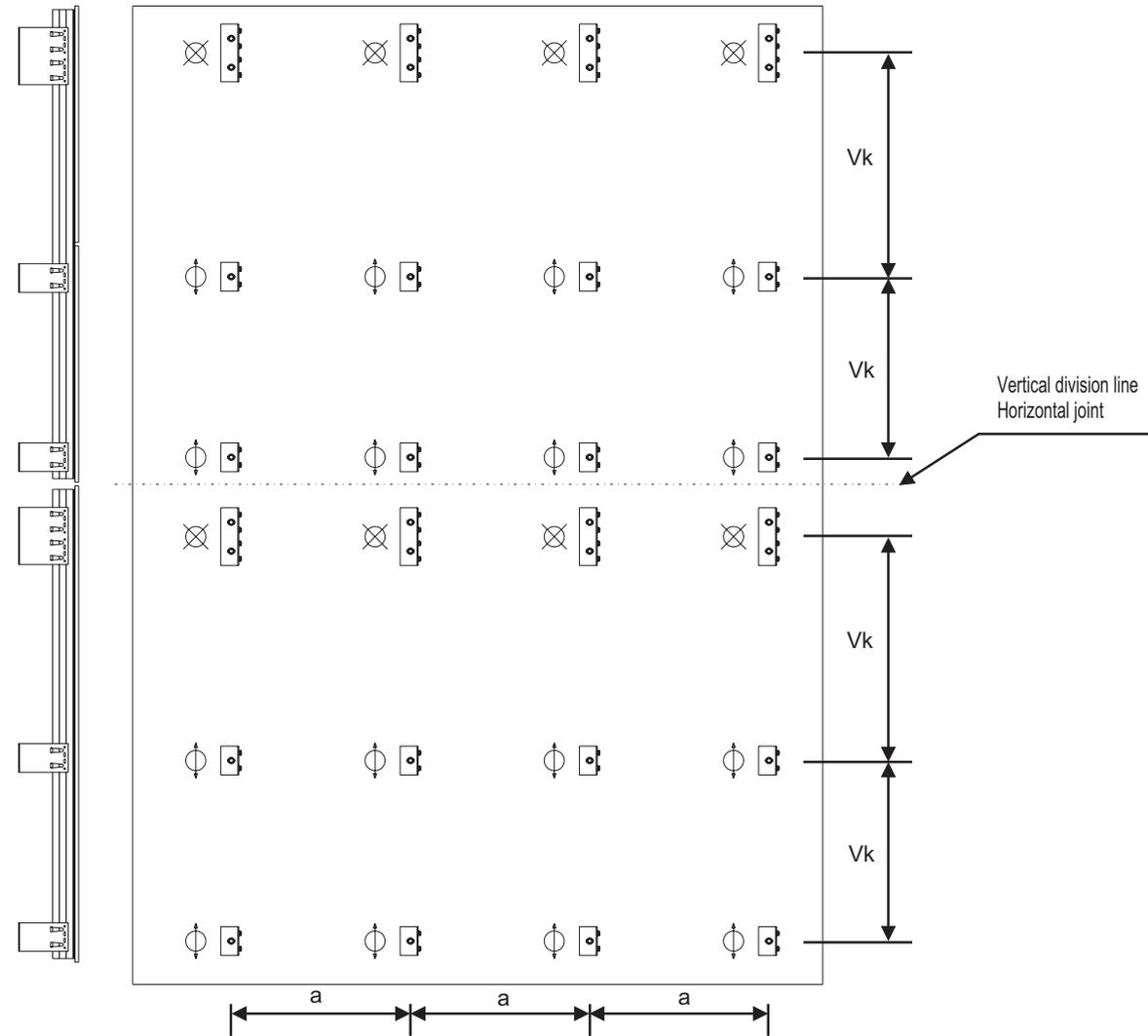


Having determined the slab size, you may proceed with defining the vertical lengths.

Depending on thermal expansion, the profile length may be equal or slightly smaller than the length of one or several slabs. Therefore, proper calculations should be made.

Notice: regarding adhesive assemblage, the dilatation of vertical Wido-Grip profile should be made not in the slab height (behind the slab) but between slabs in the horizontal joint.

Exemplary bracket arrangement



Legend:

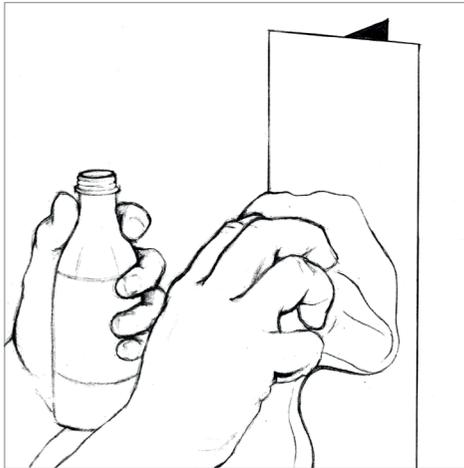
a - distance between vertical profiles

V_k - vertical distances between bracket axles

⊗ Supporting brackets – fixed points of vertical Wido-Grip profiles

⊕ Retaining brackets – moving points of vertical Wido-Grip profiles

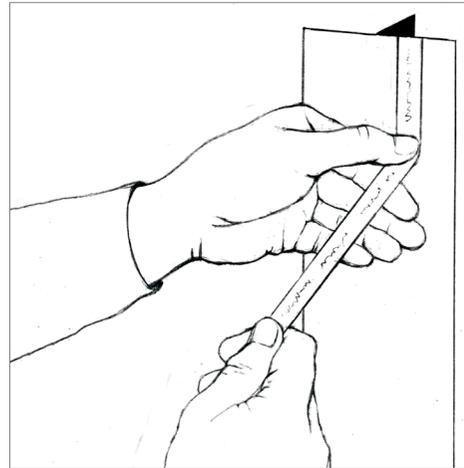
Usually, the supporting bracket is a double bracket.



Preparing an aluminium profile

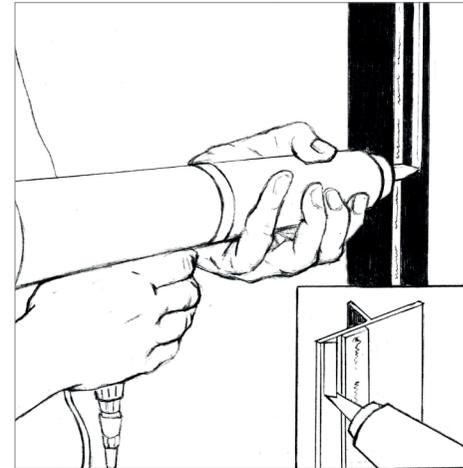
Clean the surface first with a fine abrasive and then with a non-fraying cellulose cloth, moistened by an appropriate cleaning substance. Rub the surface in one direction. Exchange the cloth when dirty.

Wait until the surface dries; then spread one thin layer of a prime coat evenly on the whole surface with a brush or a cloth. Wait until it dries.



Application of assemblage tape

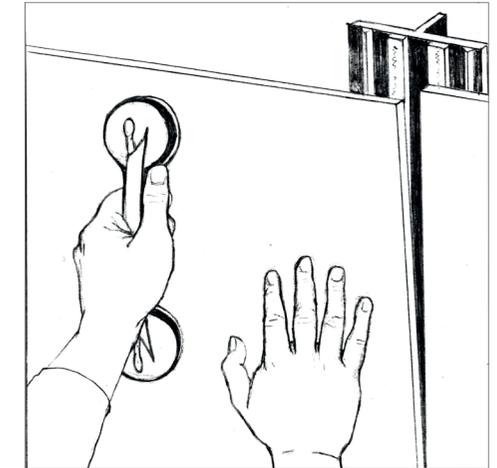
Stick the assemblage tape vertically, parallelly to the whole length of the edge. Do not remove the upper foil of the tape.



Adhesive application

Spread the adhesive with the use of a triangular-section tip, with at least 5mm-wide space from the applied tape at the side of the glued element.

Flexible adhesives should be applied with a manual or automatic gun.



Slab arrangement

Remove the upper foil of the assemblage tape. Put the slab in a desired position without touching the tape. Check the slab position and gently press the slab until it rests on the tape.

Notice: The slab assemblage must be completed in 10 minutes' time starting from adhesive application.

**Adhesive assemblage
should follow the adhesive
producer's recommendations.**

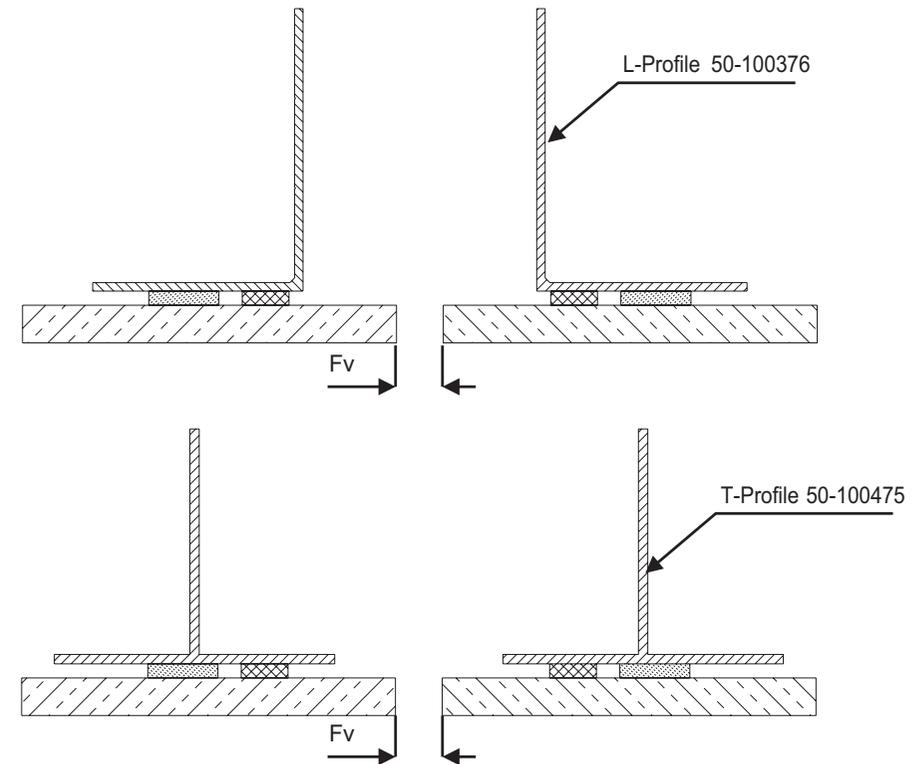
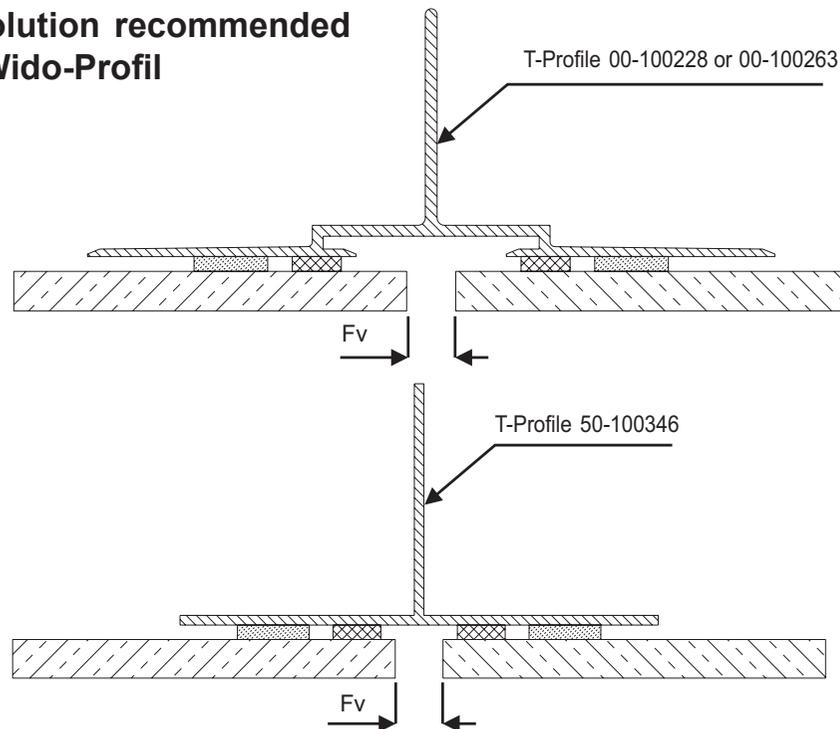
The choice of supporting Wido-Grip profiles at vertical joints

At vertical slab joints you can use:

1. A common aluminium Wido-Grip T-type profile e.g. T-Profile 00-100228, 00-100263, 50-100346.
2. Two separate aluminium Wido-Grip L-type or T-type profiles e.g. L-Profile 50-100376, T-Profile 50-100475

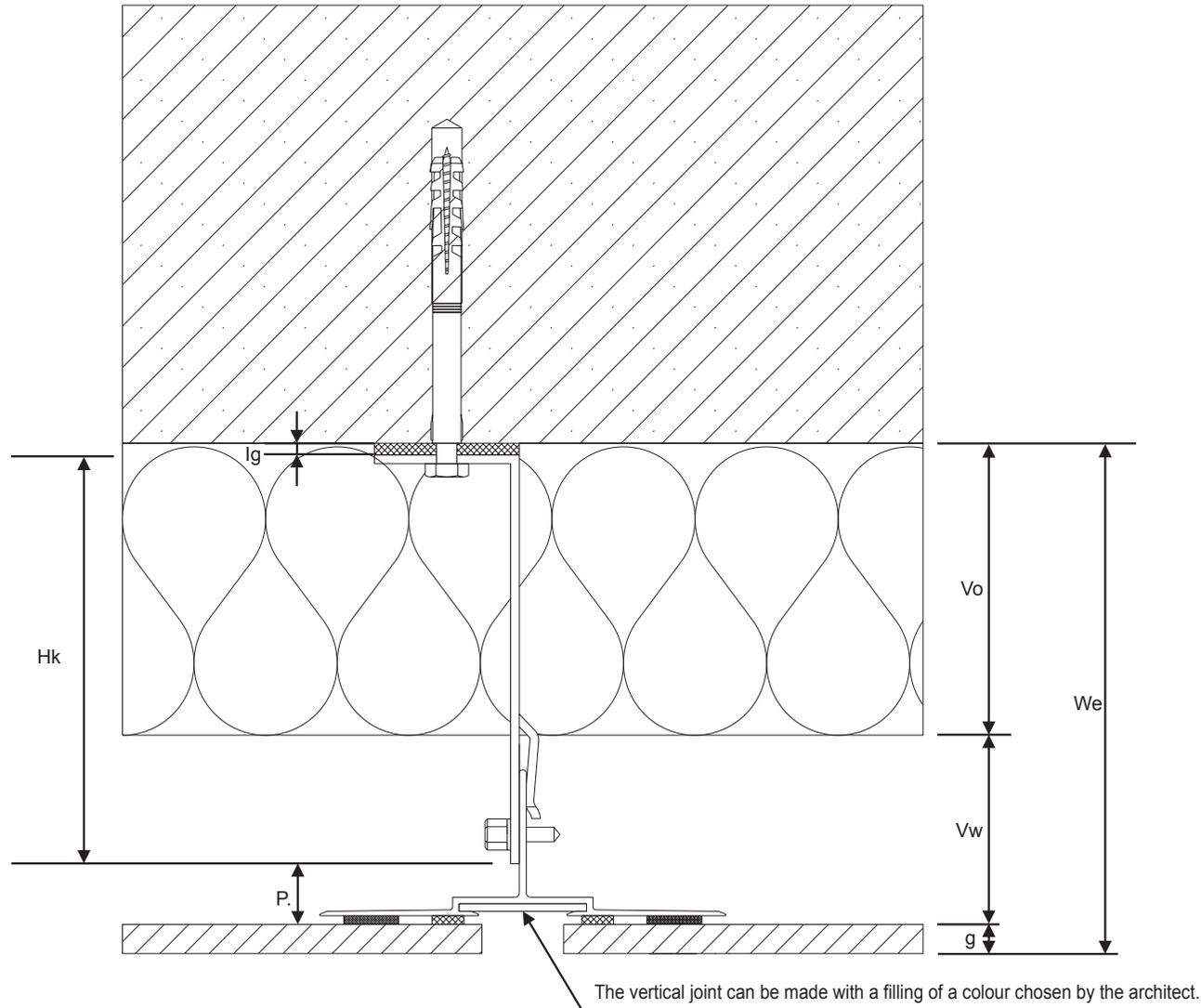
Fv – vertical joint (minimum 2 mm)

A solution recommended by Wido-Profil



Solutions recommended in case of building dilatations or height differences between neighbouring slabs

Calculating bracket height on the basis of elevation outreach

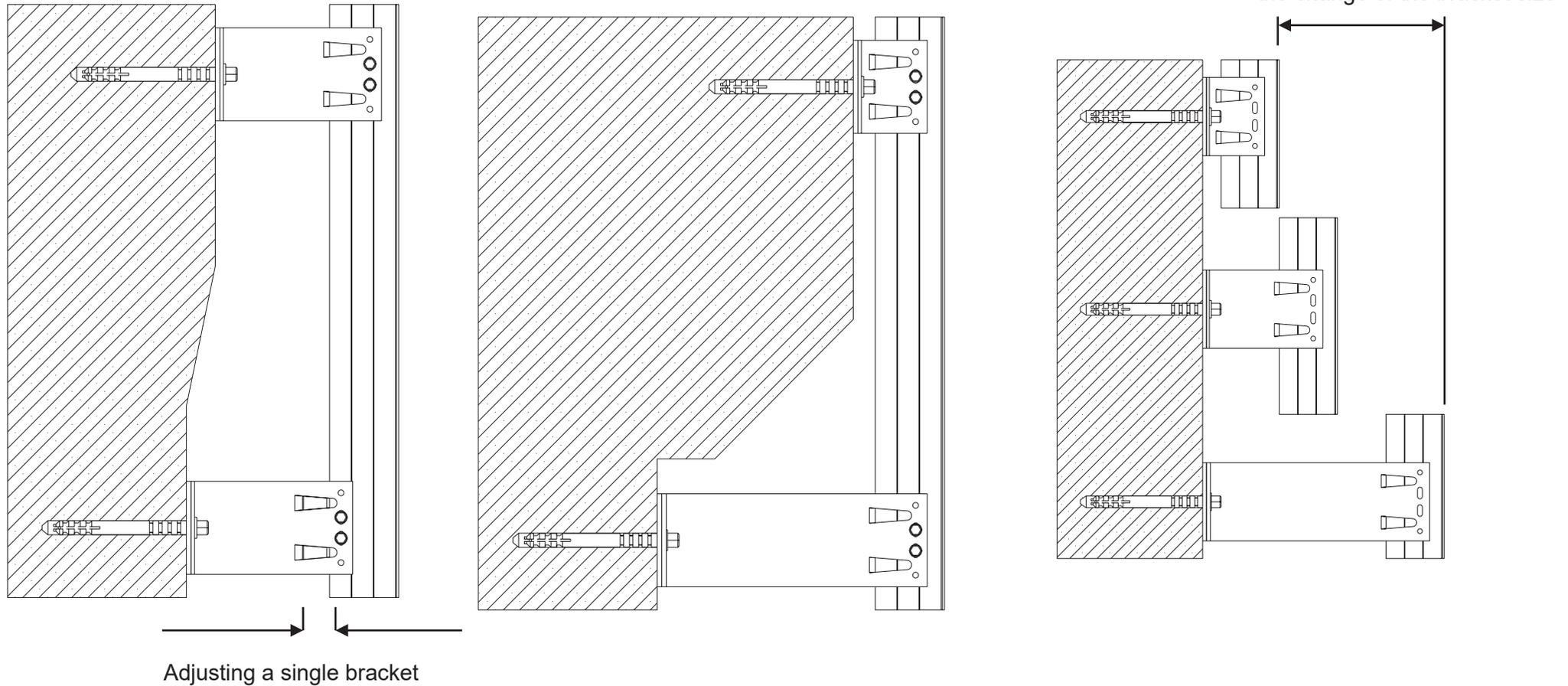


Elevation outreach is the basic factor determining the height of the bracket. While choosing the bracket, you should consider the unevenness of the surface.

$$Hk = We - (g+P+lg)$$

Legend:

- We** – elevation outreach
- Vo** – thermal insulation thickness
- Vw** – ventilation clearance (minimum 20 mm)
- g** – Concrete slab thickness
- P** – the height of the substructure between the bracket and the slab (including adhesive thickness and vertical adjustment)
- lg** – the thickness of Wido-Grip insulation washer
- Hk** – the height of Wido-Grip bracket



When the adjustment of a single bracket is insufficient, you can exchange the bracket for a smaller or bigger one. Wido-Grip aluminium brackets are produced in the following sizes: 60, 80, 100, 120, 140, 160, 180, 200 and 230 mm.

For greater outreach, stainless steel brackets or bracket lengthening devices should be used.

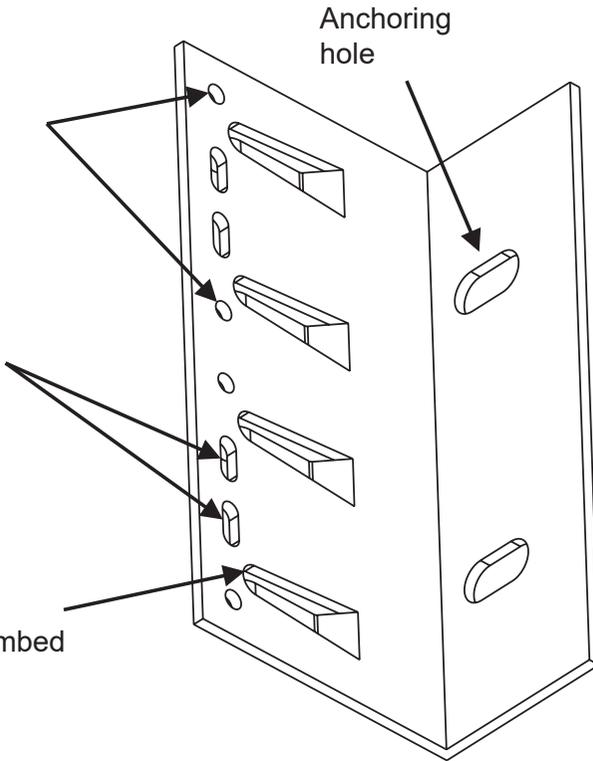
The functions of Wido-Grip brackets



Fixed points of the bracket – round holes

Sliding points of the bracket – oblong holes

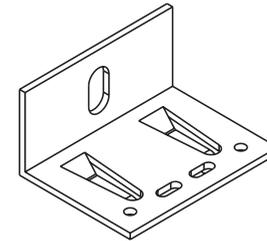
Pressed elements holding up the profile when the supporting profiles are being plumbed



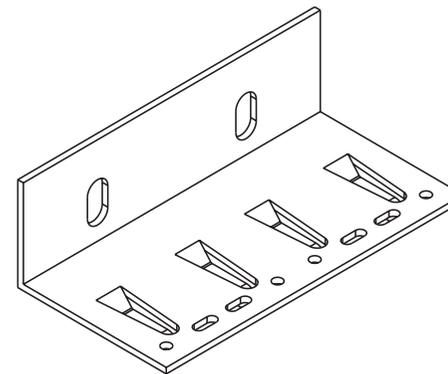
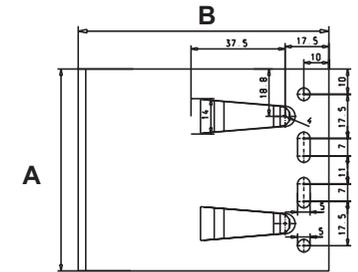
The supporting bracket is responsible for carrying the whole structure together with the load caused by wind at the place of its assemblage.

The function of the supporting bracket is usually performed by a double bracket. The profile is attached to the fixed points of the bracket.

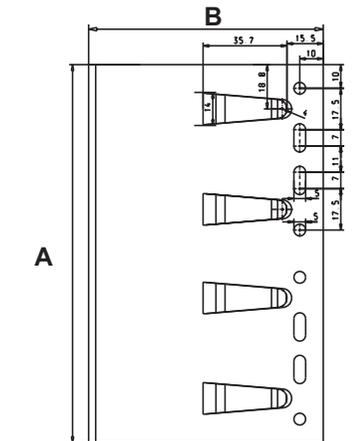
Wido-Grip aluminium brackets – dimensions



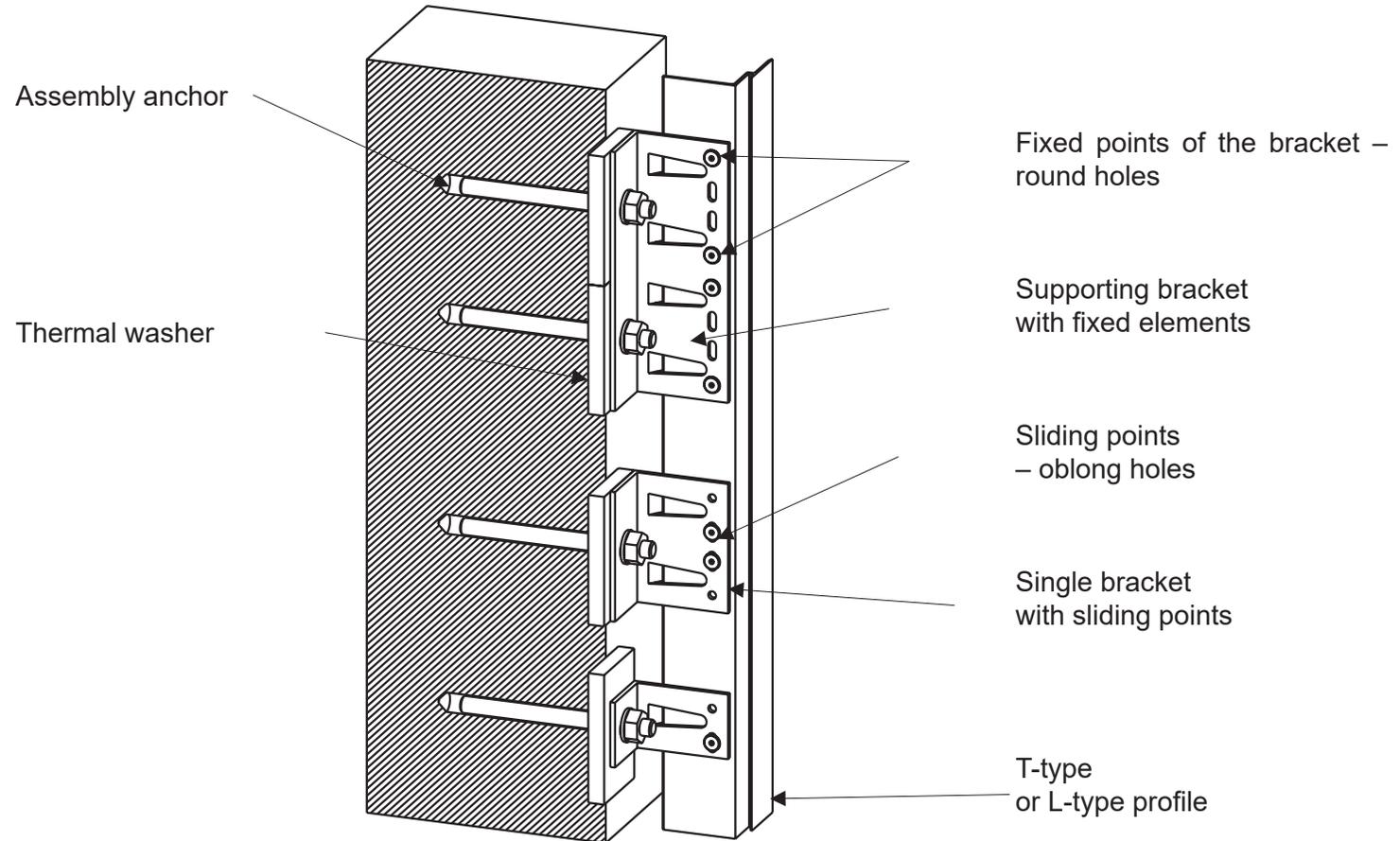
Single aluminium bracket



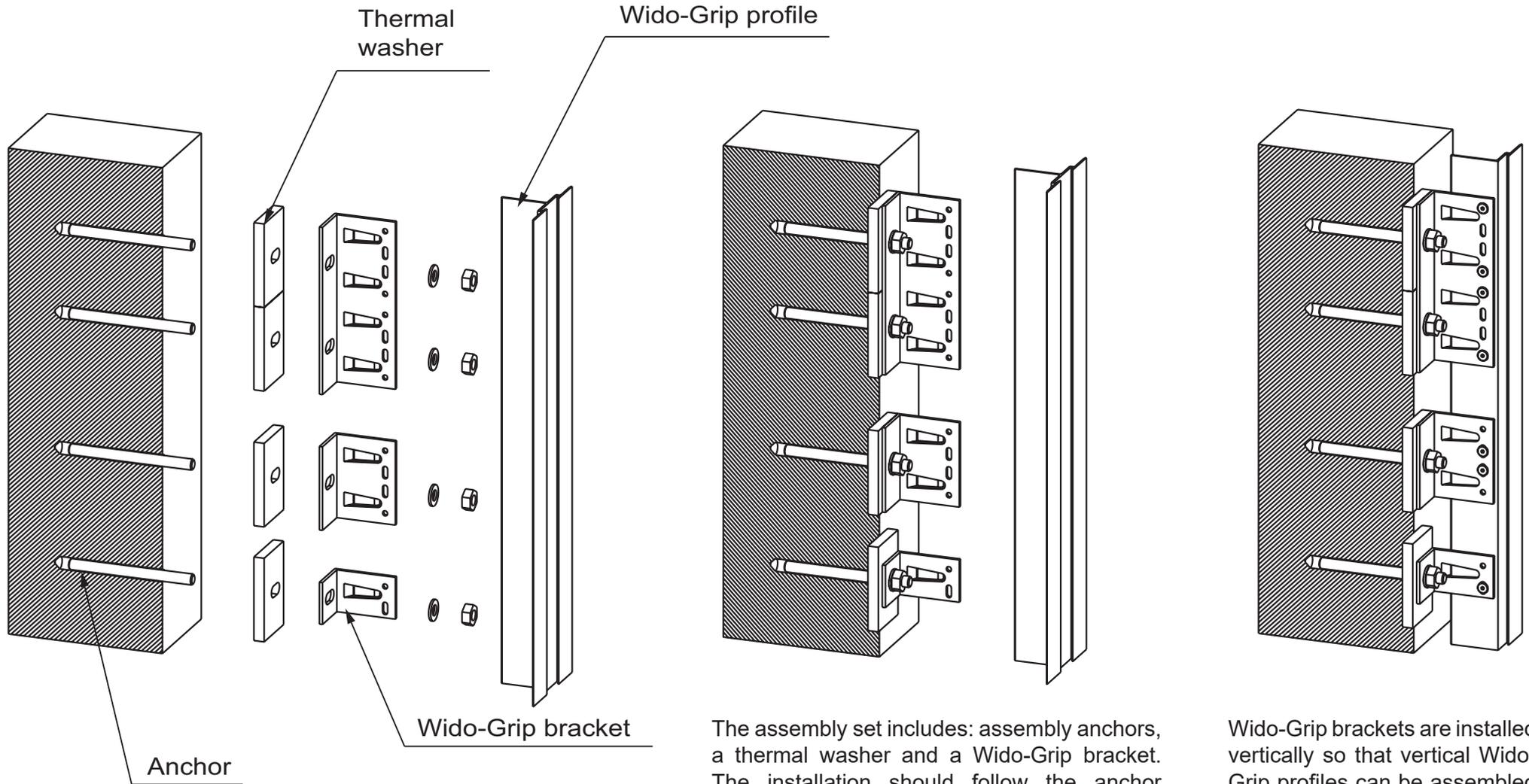
Double aluminium bracket



Wido-Grip system – exemplary arrangement of fixed and moving points of brackets



Assembling Wido-Grip system

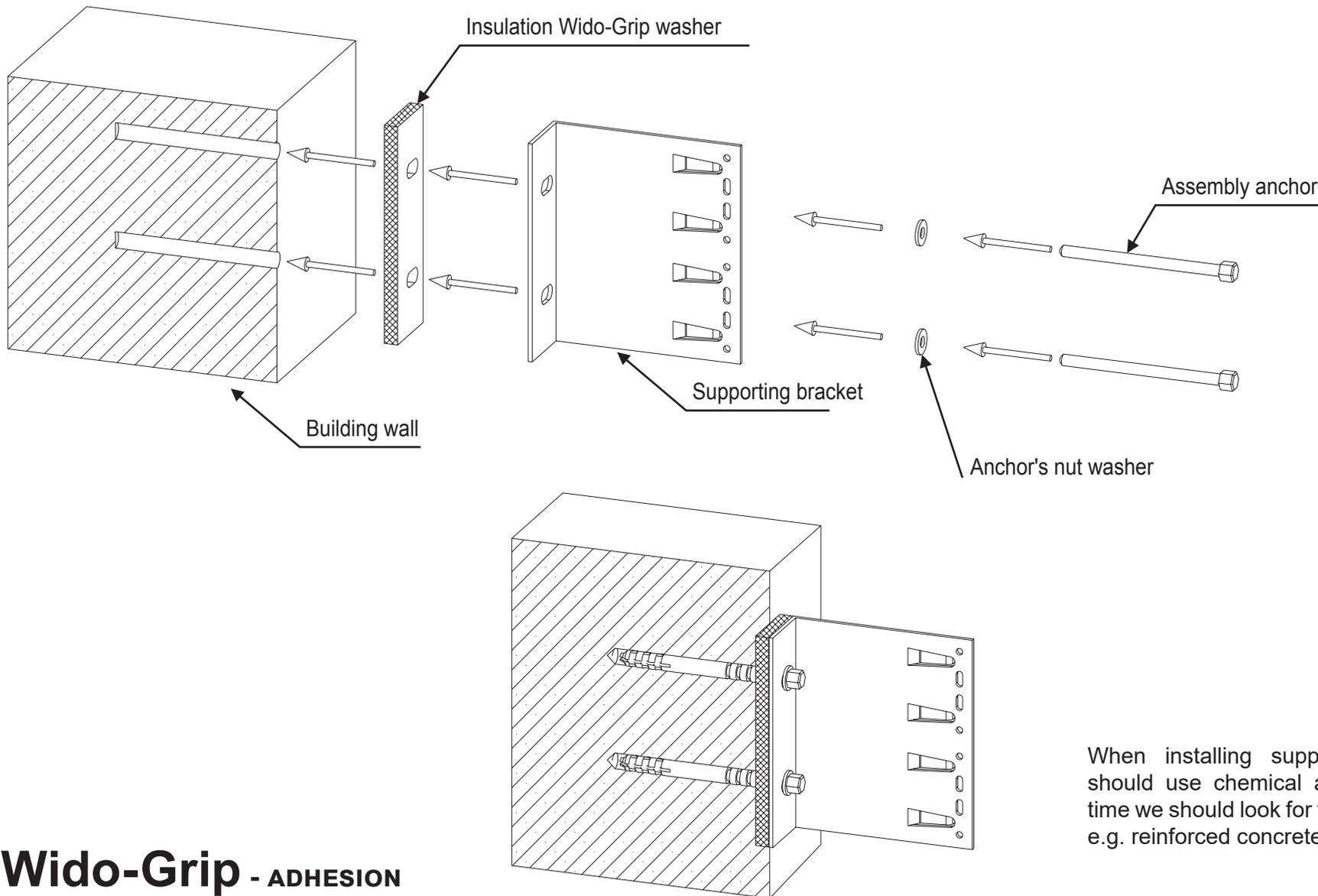


The assembly set includes: assembly anchors, a thermal washer and a Wido-Grip bracket. The installation should follow the anchor producer's instructions. Supporting Wido-Profil brackets need chemical anchors.

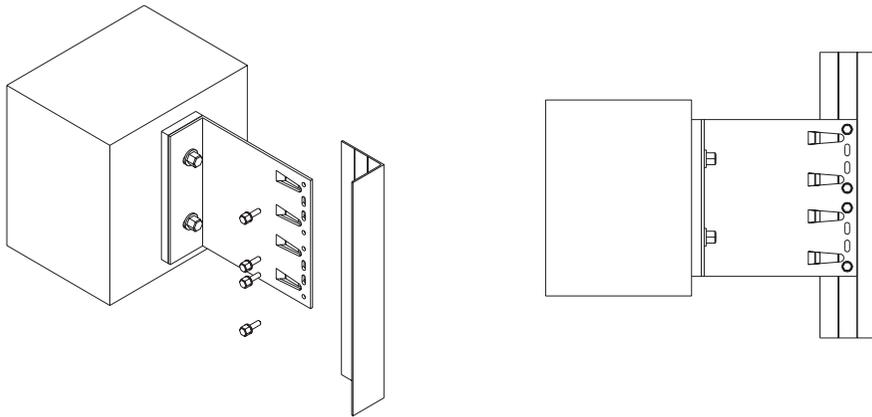
Wido-Grip brackets are installed vertically so that vertical Wido-Grip profiles can be assembled on them, between the bracket surface and the sustaining pressed elements.

Wido-Grip - ADHESION

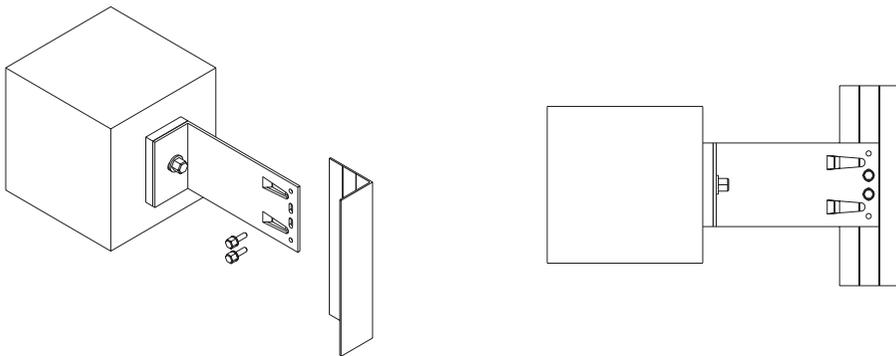
Assembling Wido-Grip system – the bracket



When installing supporting brackets, you should use chemical anchors; at the same time we should look for the best place for them e.g. reinforced concrete rim.



Supporting double bracket with fixed points – assembling rivets in round holes



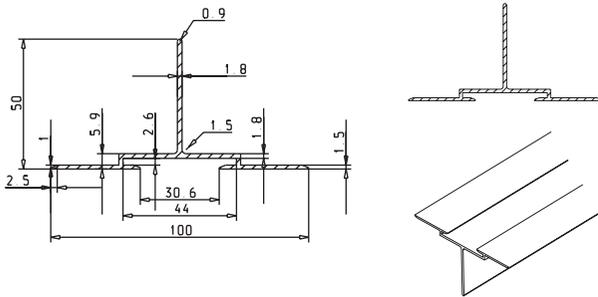
Single bracket with sliding points – assembling rivets in oblong holes



Wido-Grip elements Aluminium profiles

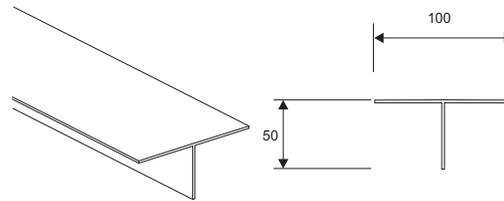
00-100228

T-profil fasadowy 100x50- aluminium
T-profile 100x50 mm - aluminium
T-Profilstück für Fassaden 100x50 - aluminium



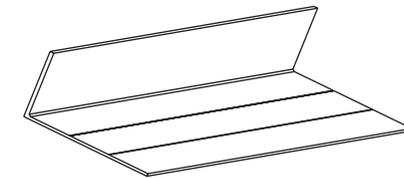
50-100346

T-profil 100x50x2- aluminium
T-profile 100x50x2 mm - aluminium
T-Profilstück 100x50x2 – aluminium



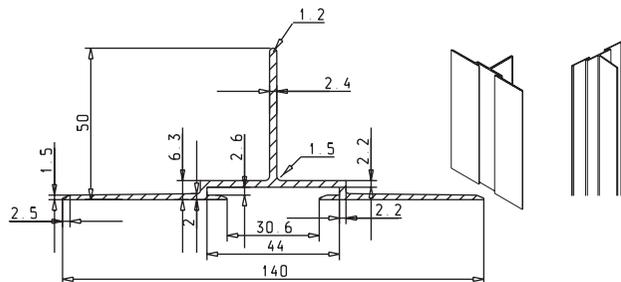
50-100376

L-profil 60*45 mm - aluminium
L-profile 60*45 mm – aluminium
L-Profilstück 60*45 mm – aluminium



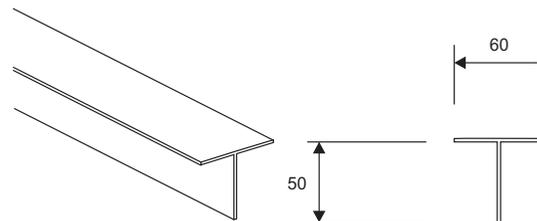
00-100263

T-profil fasadowy 140x50- aluminium
T-profile 140x50 mm - aluminium
T-Profilstück für Fassaden 140x50 – aluminium



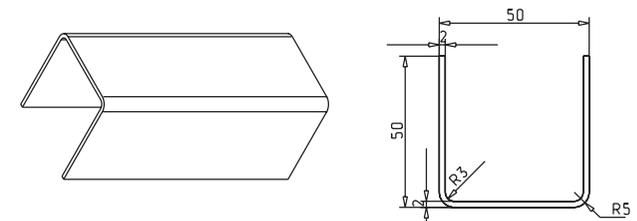
50-100475

T-profil 60x50x2 – aluminium
T-profile 60x50x2 – aluminium
T-Profilstück 60x50x2 – aluminium



01-100504

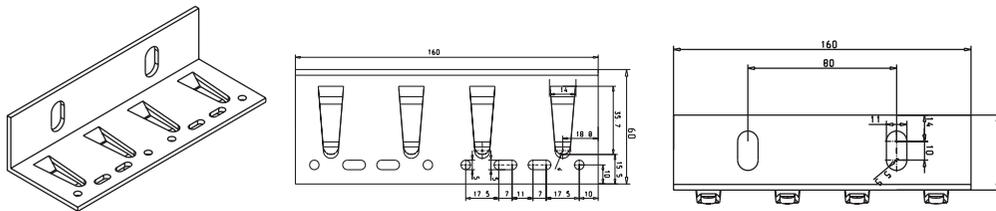
C-profil 50x50x2 – aluminium
C-profile 50x50x2 – aluminium
C-Profilstück 50x50x2 – aluminium



Wido-Grip elements Aluminium brackets 60

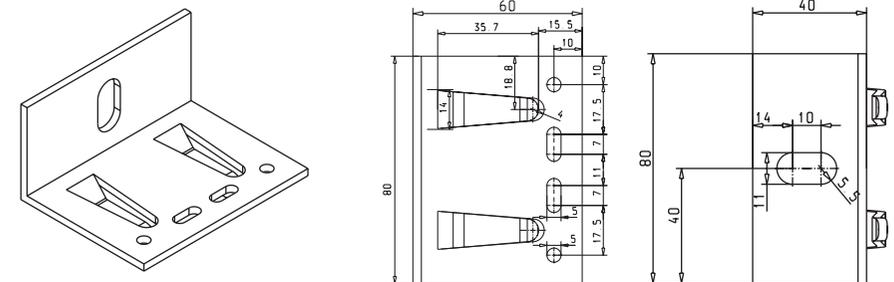
52-100351

Podwójna konsola 160-60x40x3 Ø 11 - aluminium
Aluminium double bracket 160-60x40x3 Ø 11
Tragkonstruktion doppelt 160-60x40x3 Ø 11 – aluminium



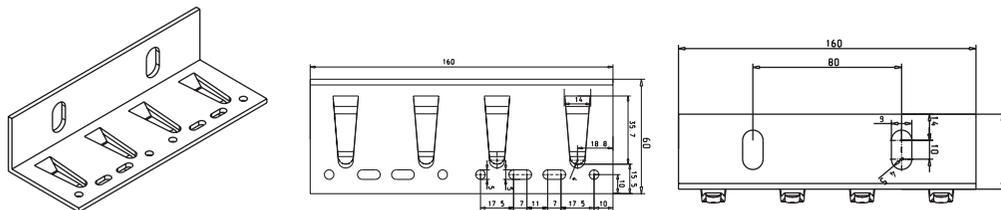
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Aluminium bracket 80-60x40x3 Ø 11
Tragkonstruktion 80-60x40x3 Ø 11 – aluminium



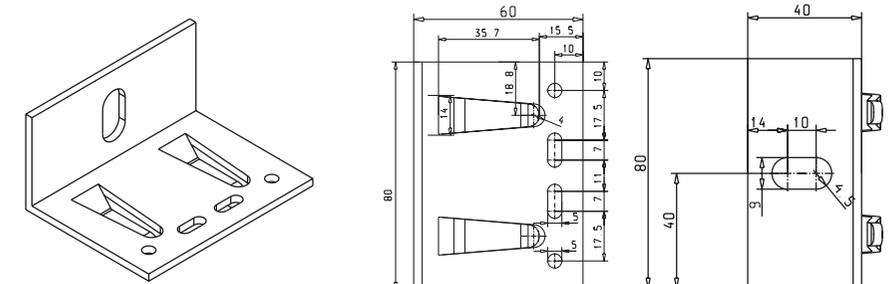
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Aluminium double bracket 160-60x40x3 Ø 9
Tragkonstruktion doppelt 160-60x40x3 Ø 9 – aluminium



51-100348

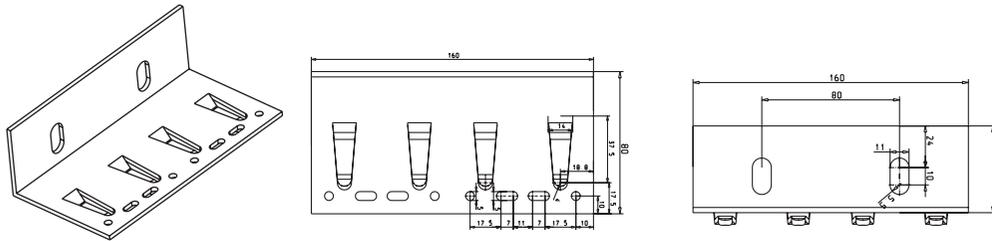
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Aluminium bracket 80-60x40x3 Ø 9
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Wido-Grip elements Aluminium brackets 80

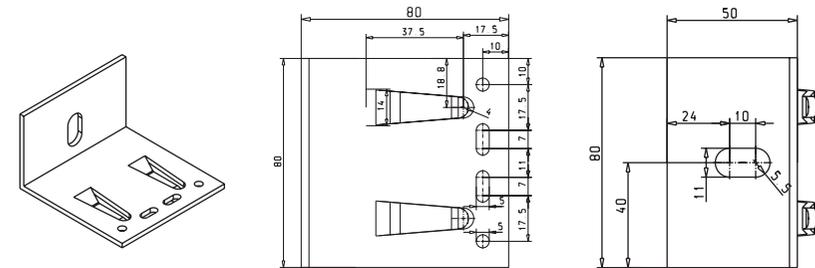
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Podwójna konsola 160-80x50x3 Ø 11 - aluminium
Aluminium double bracket 160-80x50x3 Ø 11
Tragkonstruktion doppelt 160-80x50x3 Ø 11 – aluminium



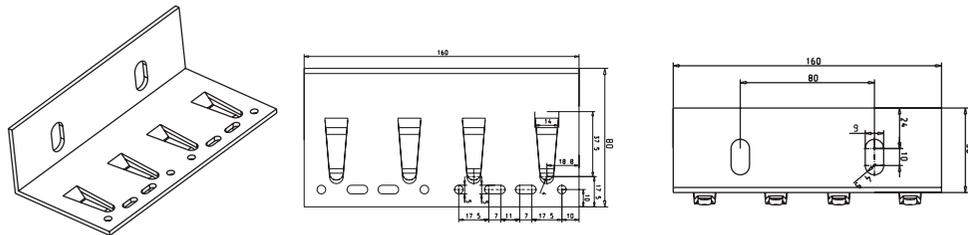
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Aluminium bracket 80-80x50x3 Ø 11
Tragkonstruktion 80-80x50x3 Ø 11 – aluminium



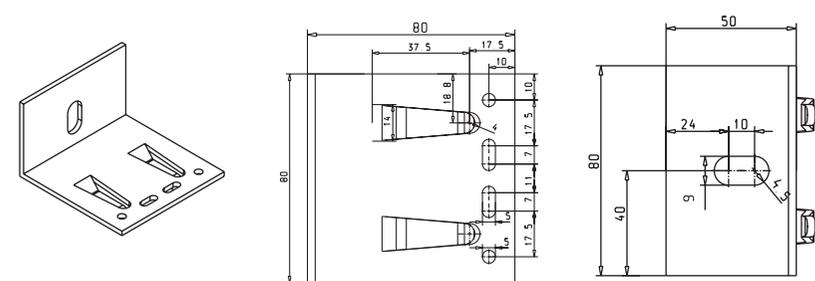
52-100357

Podwójna konsola 160-80x50x3 Ø 9 - aluminium
Aluminium double bracket 160-80x50x3 Ø 9
Tragkonstruktion doppelt 160-80x50x3 Ø 9 – aluminium



51-100354

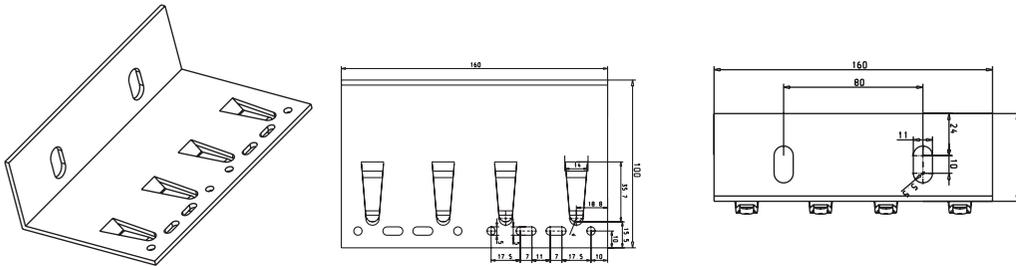
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Aluminium bracket 80-80x50x3 Ø 9
Tragkonstruktion 80-80x50x3 Ø 9 – aluminium



Wido-Grip elements Aluminium brackets 100

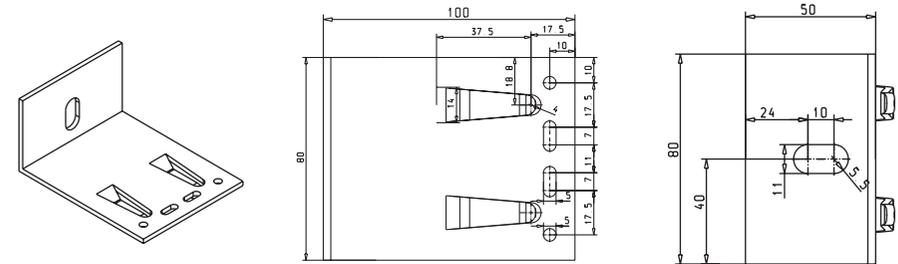
52-100360

Podwójna konsola 160-100x50x3 Ø 11 - aluminium
Aluminium double bracket 160-100x50x3 Ø 11
Tragkonstruktion doppelt 160-100x50x3 Ø 11 – aluminium



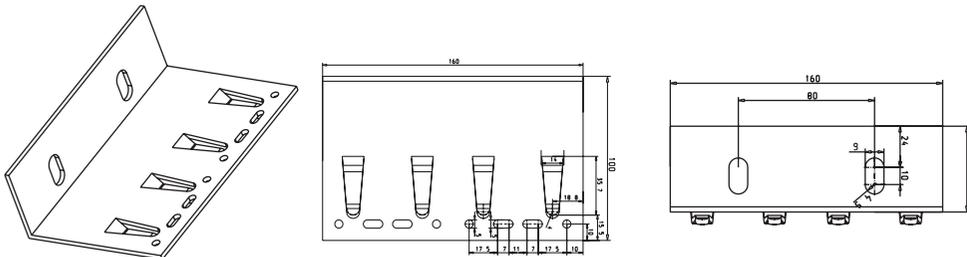
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Konsola 80-100x50x3 Ø 11 - aluminium
Aluminium bracket 80-100x50x3 Ø 11
Tragkonstruktion 80-100x50x3 Ø 11 – aluminium



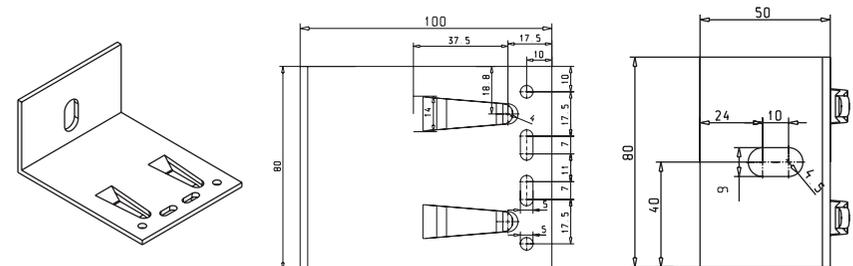
52-100361

Podwójna konsola 160-100x50x3 Ø 9 - aluminium
Aluminium double bracket 160-100x50x3 Ø 9
Tragkonstruktion doppelt 160-100x50x3 Ø 9 – aluminium



51-100359

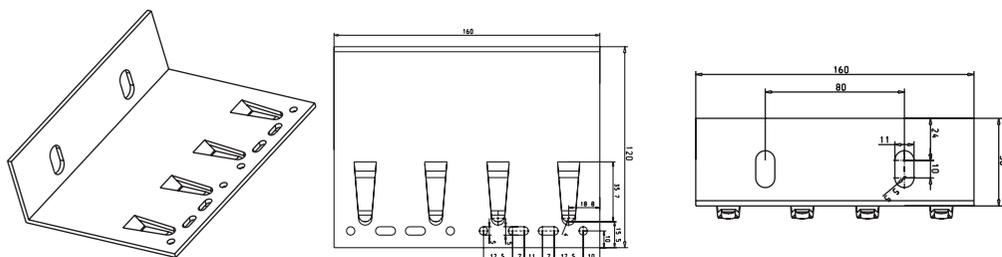
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Aluminium bracket 80-100x50x3 Ø 9
Tragkonstruktion 80-100x50x3 Ø 9 – aluminium



Wido-Grip elements Aluminium brackets 120

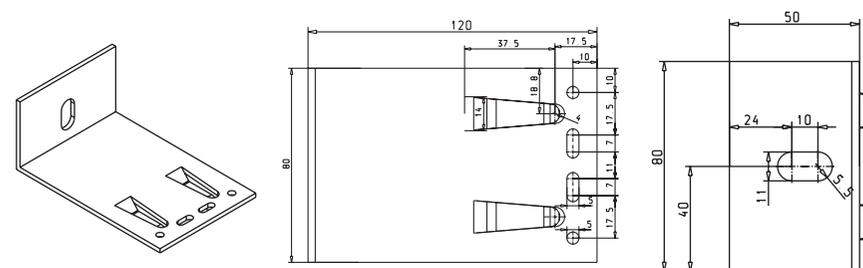
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Podwójna konsola 160-120x50x3 Ø 11 - aluminium
Aluminium double bracket 160-120x50x3 Ø 11
Tragkonstruktion doppelt 160-120x50x3 Ø 11 – aluminium



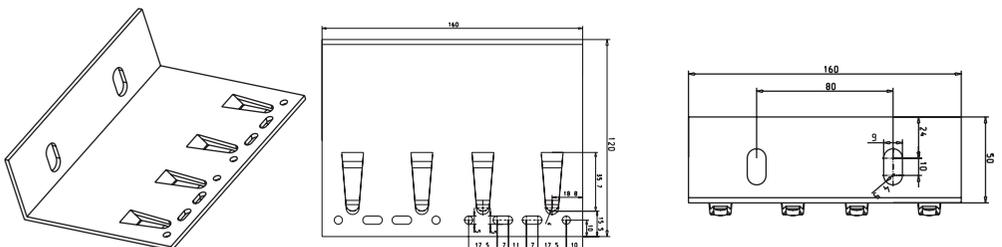
51-100362

Konsola 80-120x50x3 Ø 11- aluminium
Aluminium bracket 80-120x50x3 Ø 11
Tragkonstruktion 80-120x50x3 Ø 11 – aluminium



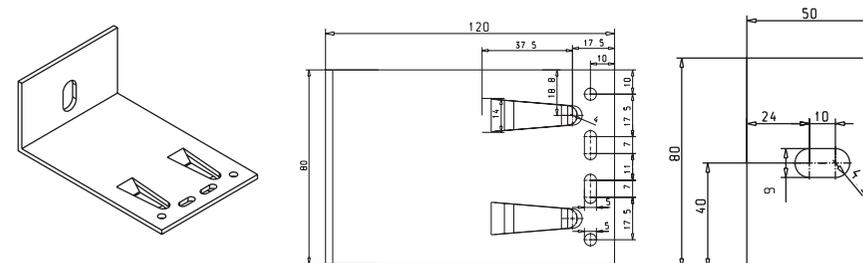
52-100365

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Tragkonstruktion doppelt 160-120x50x3 Ø 9 – aluminium



51-100363

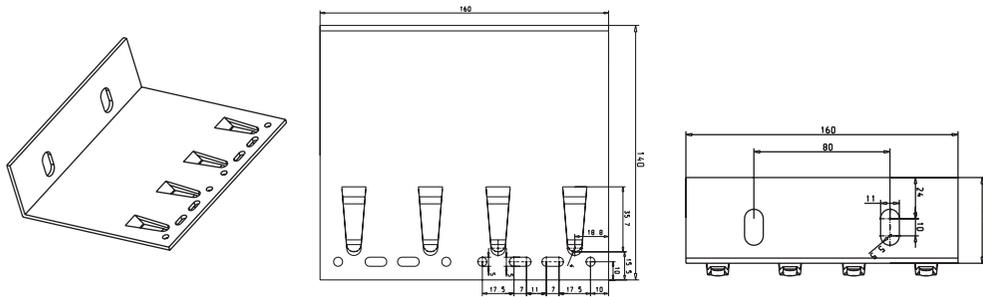
Konsola 80-120x50x3 Ø 9- aluminium
Aluminium bracket 80-120x50x3 Ø 9
Tragkonstruktion 80-120x50x3 Ø 9 – aluminium



Wido-Grip elements Aluminium brackets 140

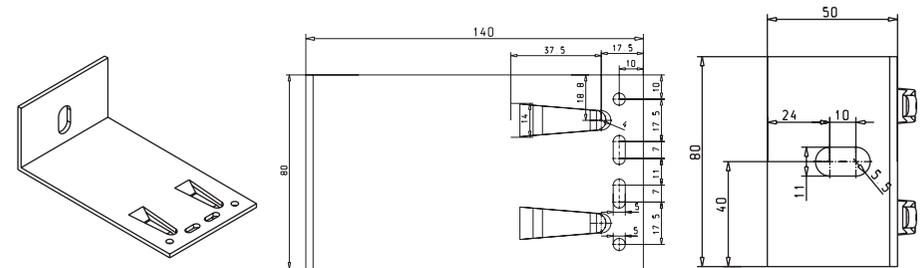
52-100368

Podwójna konsola 160-140x50x3 Ø 11 - aluminium
Aluminium double bracket 160-140x50x3 Ø 11
Tragkonstruktion doppelt 160-140x50x3 Ø 11 – aluminium



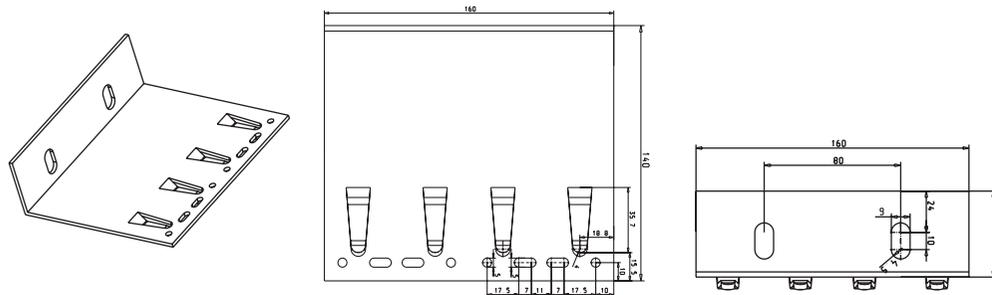
51-100366

Konsola 80-140x50x3 Ø 11 - aluminium
Aluminium bracket 80-140x50x3 Ø 11
Tragkonstruktion 80-140x50x3 Ø 11 – aluminium



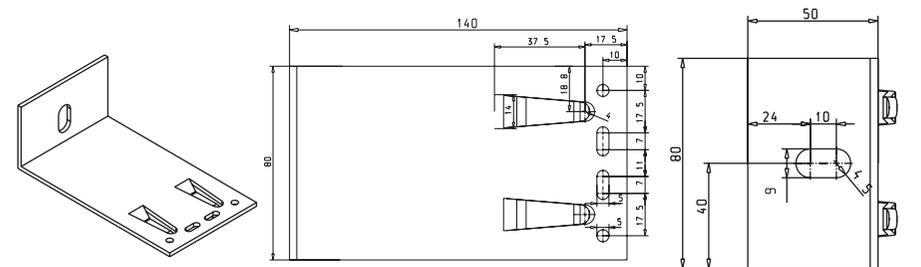
52-100369

Podwójna konsola 160-140x50x3 Ø 9 - aluminium
Aluminium double bracket 160-140x50x3 Ø 9
Tragkonstruktion doppelt 160-140x50x3 Ø 9 – aluminium



51-100367

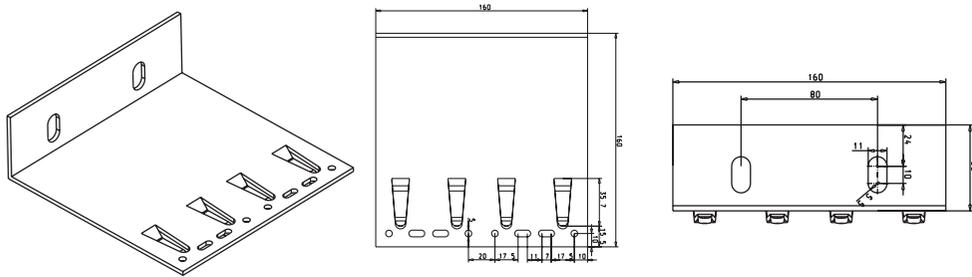
Konsola 80-140x50x3 Ø 9 - aluminium
Aluminium bracket 80-140x50x3 Ø 9
Tragkonstruktion 80-140x50x3 Ø 9 – aluminium



Wido-Grip elements Aluminium brackets 160

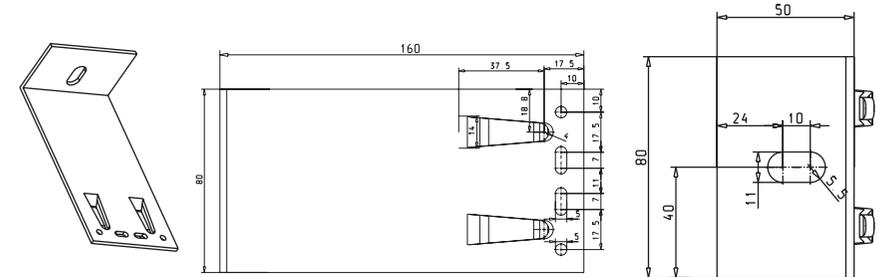
52-100372

Podwójna konsola 160-160x50x3 Ø 11 - aluminium
Aluminium double bracket 160-160x50x3 Ø 11
Tragkonstruktion doppelt 160-160x50x3 Ø 11 – aluminium



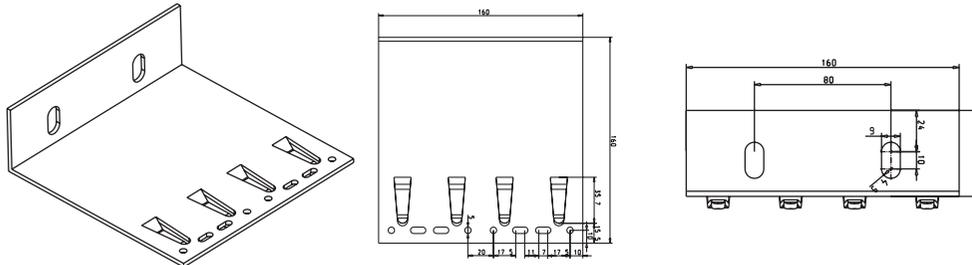
51-100370

Konsola 80-160x50x3 Ø 11- aluminium
Aluminium bracket 80-160x50x3 Ø 11
Tragkonstruktion 80-160x50x3 Ø 11 – aluminium



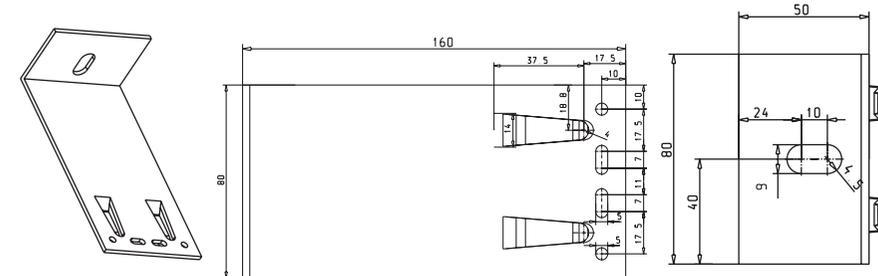
52-100373

Podwójna konsola 160-160x50x3 Ø 9 - aluminium
Aluminium double bracket 160-160x50x3 Ø 9
Tragkonstruktion 160-160x50x3 Ø 9 – aluminium



51-100371

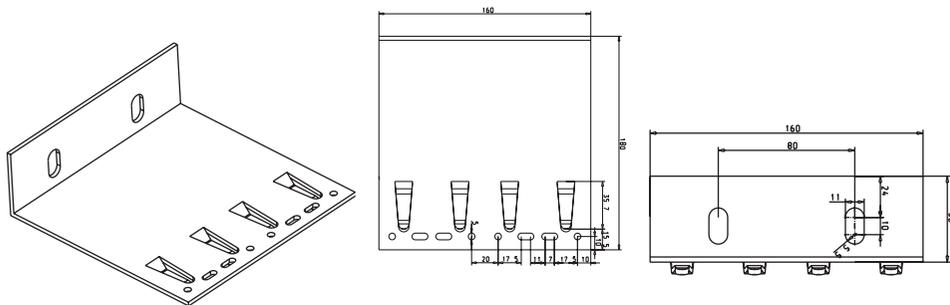
Konsola 80-160x50x3 Ø 9 - aluminium
Aluminium bracket 80-160x50x3 Ø 9
Tragkonstruktion 80-160x50x3 Ø 9 – aluminium



Wido-Grip elements Aluminium brackets 180

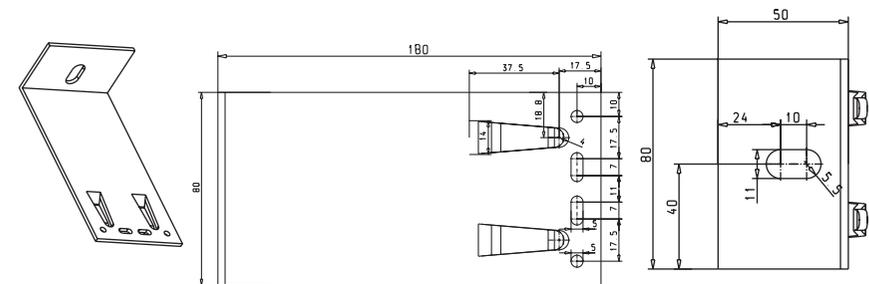
52-100433

Podwójna konsola aluminiowa 160-180x50x3 Ø 11
Aluminium double bracket 160-180x50x3 Ø 11
Tragkonstruktion doppelt 160-180x50x3 Ø 11 – aluminium



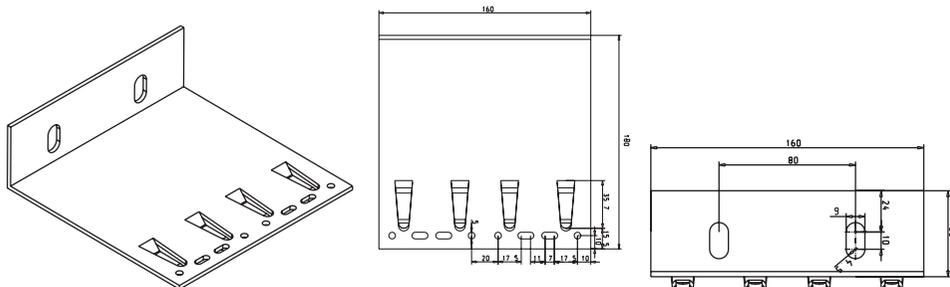
51-100431

Konsola aluminiowa 80-180x50x3 Ø 11
Aluminium bracket 80-180x50x3 Ø 11
Tragkonstruktion 80-180x50x3 Ø 11 – aluminium



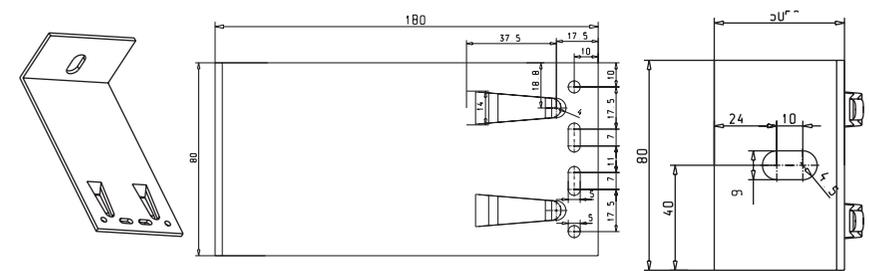
52-100434

Podwójna konsola aluminiowa 160-180x50x3 Ø 9
Aluminium double bracket 160-180x50x3 Ø 9
Tragkonstruktion doppelt 160-180x50x3 Ø 9 – aluminium



51-100432

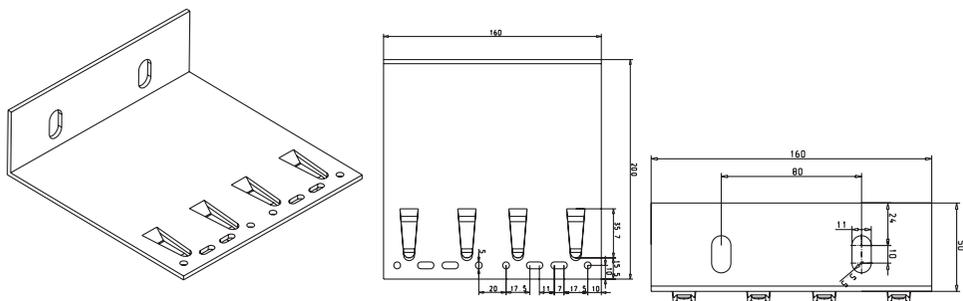
Konsola aluminiowa 80-180x50x3 Ø 9
Aluminium bracket 80-180x50x3 fi 9
Tragkonstruktion 80-180x50x3 Ø 9 – aluminium



Wido-Grip elements Aluminium brackets 200

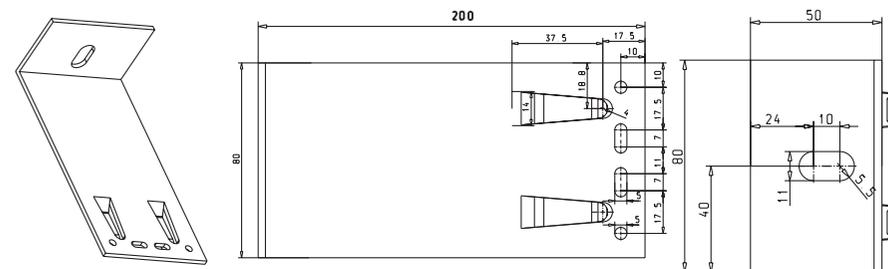
52-100384

Podwójna konsola aluminiowa 160-200x50x3 Ø 11
Aluminium double bracket 160-200x50x3 Ø 11
Tragkonstruktion doppelt 160-200x50x3 Ø 11 – aluminium



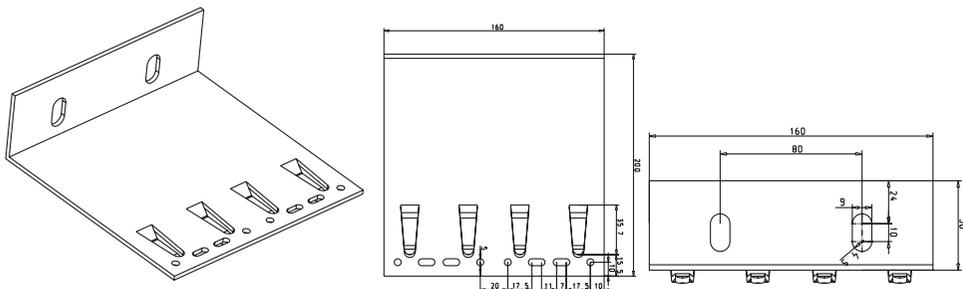
51-100382

Konsola aluminiowa 80-200x50x3 Ø 11
Aluminium bracket 80-200x50x3 Ø 11
Tragkonstruktion 80-200x50x3 Ø 11 – aluminium



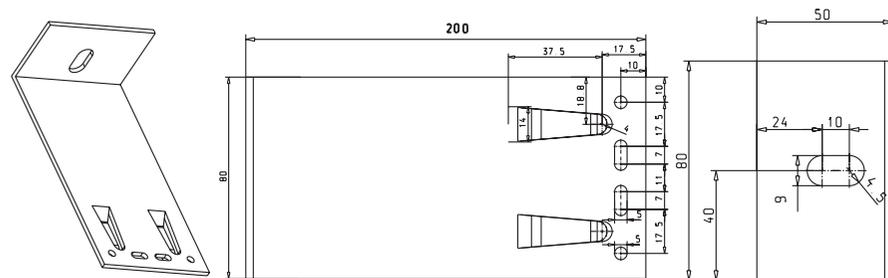
52-100385

Podwójna konsola aluminiowa 160-200x50x3 Ø 9
Aluminium double bracket 160-200x50x3 Ø 9
Tragkonstruktion doppelt 160-200x50x3 Ø 9 – aluminium



51-100383

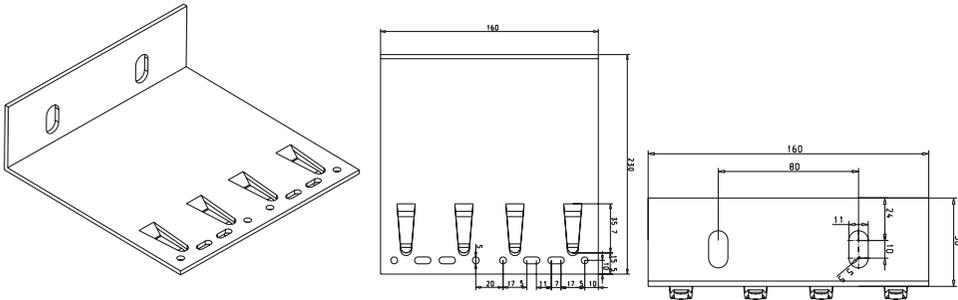
Konsola aluminiowa 80-200x50x3 Ø 9
Aluminium bracket 80-200x50x3 Ø 9
Tragkonstruktion 80-200x50x3 Ø 9 – aluminium



Wido-Grip elements Aluminium brackets 230

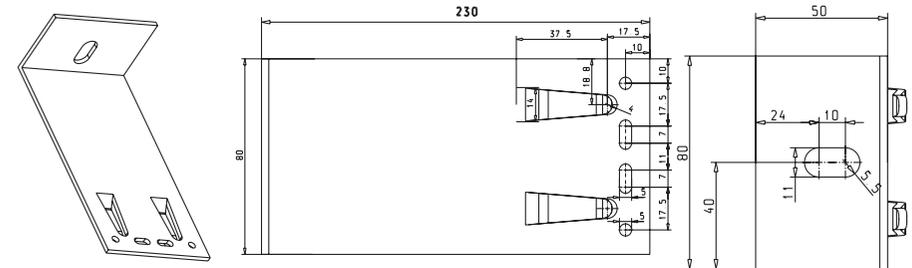
52-100443

Podwójna konsola aluminiowa 160-230x50x3 Ø 11
Aluminium double bracket 160-230x50x3 Ø 11
Tragkonstruktion doppelt 160-230x50x3 Ø 11 – aluminium



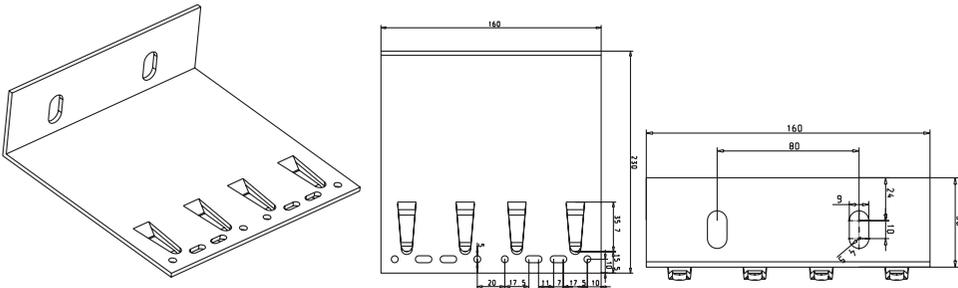
51-100441

Konsola aluminiowa 80-230x50x3 Ø 11
Aluminium bracket 80-230x50x3 Ø 11
Tragkonstruktion 80-230x50x3 Ø 11 – aluminium



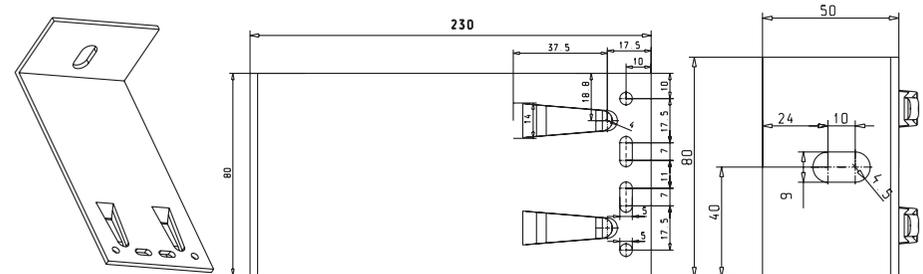
52-100444

Podwójna konsola aluminiowa 160-230x50x3 Ø 9
Aluminium double bracket 160-230x50x3 Ø 9
Tragkonstruktion doppelt 160-230x50x3 Ø 9 – aluminium



51-100442

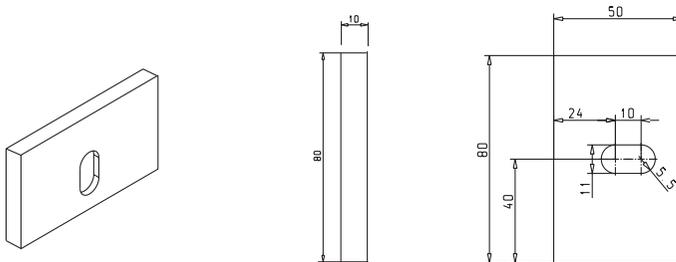
Konsola aluminiowa 80-230x50x3 Ø 9
Aluminium bracket 80-230x50x3 Ø 9
Tragkonstruktion 80-230x50x3 Ø 9 – aluminium



Wido-Grip elements Aluminium brackets

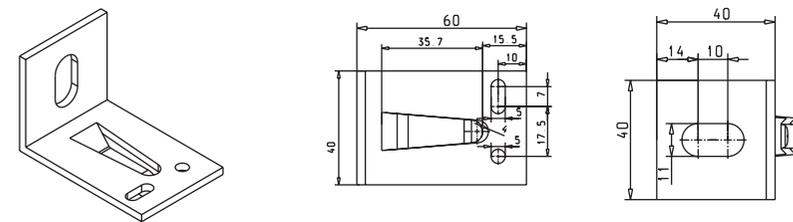
54-500355

Podkładka izolacyjna konsoli 80/50 - PCV
Insulation washer for bracket 80/50
Unterlagsplatte für Tragkonstruktion 80/50



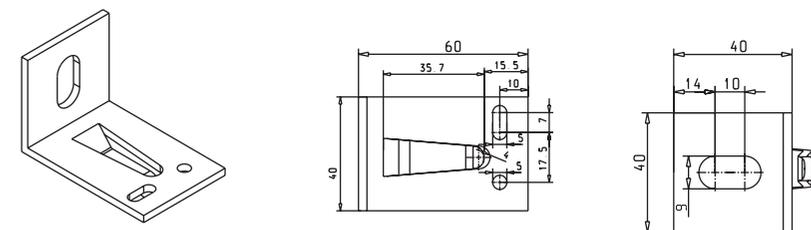
53-100349

Konsola 40-60x40x3 Ø 11- aluminium
Aluminium bracket 40-60x40x3 Ø 11
Tragkonstruktion 40-60x40x3 Ø 11- aluminium

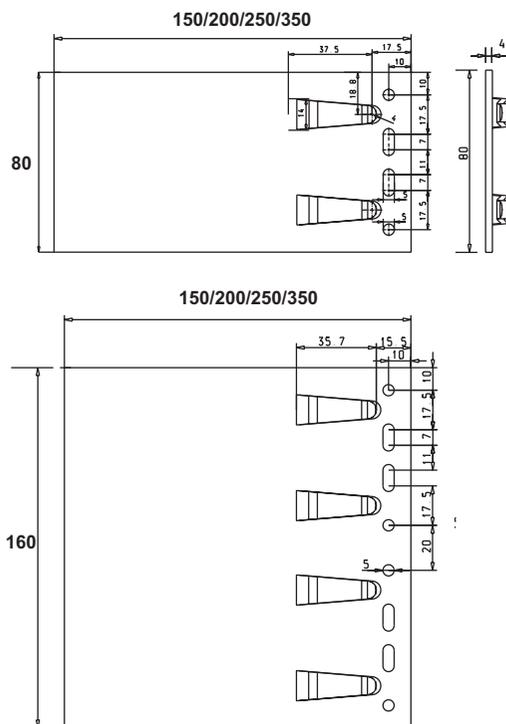
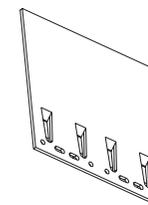


53-100350

Konsola 40-60x40x3 Ø 9 - aluminium
Aluminium bracket 40-60x40x3 Ø 9
Tragkonstruktion 40-60x40x3 Ø 9 - aluminium



Wido-Grip elements - flat brackets



56-100386

Konsola aluminiowa płaska pojedyncza 80x150 #4mm
Aluminium single flat bracket 80x150 #4mm
Tragkonstruktion flach/einfach 80x150 #4mm – aluminium

56-100388

Konsola aluminiowa płaska pojedyncza 80x200 #4mm
Aluminium single flat bracket 80x200 #4mm
Tragkonstruktion flach/einfach 80x200 #4mm – aluminium

56-100390

Konsola aluminiowa płaska pojedyncza 80x250 #4mm
Aluminium single flat bracket 80x250 #4mm
Tragkonstruktion flach/einfach 80x250 #4mm – aluminium

56-100392

Konsola aluminiowa płaska pojedyncza 80x300 #4mm
Aluminium single flat bracket 80x300 #4mm
Tragkonstruktion flach/einfach 80x300 #4mm – aluminium

56-100394

Konsola aluminiowa płaska pojedyncza 80x350 #4mm
Aluminium single flat bracket 80x350 #4mm
Tragkonstruktion flach/einfach 80x350 #4mm – aluminium

57-100387

Konsola aluminiowa płaska podwójna 160x150 #4mm
Aluminium double flat bracket 160x150 #4mm
Tragkonstruktion flach/doppelt 160x150 #4mm – aluminium

57-100389

Konsola aluminiowa płaska podwójna 160x200 #4mm
Aluminium double flat bracket 160x200 #4mm
Tragkonstruktion flach/doppelt 160x200 #4mm – aluminium

57-100391

Konsola aluminiowa płaska podwójna 160x250 #4mm
Aluminium double flat bracket 160x250 #4mm
Tragkonstruktion flach/doppelt 160x250 #4mm – aluminium

57-100393

Konsola aluminiowa płaska podwójna 160x300 #4mm
Aluminium double flat bracket 160x300 #4mm
Tragkonstruktion flach/doppelt 160x300 #4mm – aluminium

57-100395

Konsola aluminiowa płaska podwójna 160x350 #4mm
Aluminium double flat bracket 160x350 #4mm
Tragkonstruktion flach/doppelt 160x350 #4mm – aluminium