





From their Swiss HQ in Heerbrugg, the SFS Group operates internationally within four divisions: SFS intec, SFS unimarket, SFS locher and SFS services.

SFS intec serves the global engineering sub-contract and construction markets with high precision components. The division develops, manufactures and markets from four focused operating units:

**AutomotiveProducts:**

Offering precision custom components to the automotive industry and its supply base: including cold formed parts, deep drawn components and demanding plastic injection mouldings, as well as metal-to-plastic composites.

**IndustrialProducts:**

Serving the electrical and electronics industries, the aircraft sector and the architectural hardware and machine tool businesses with ready-to-fit special screws and components.

**FasteningSystems:**

Furnishing the building trades and their supply base with systems for mechanical fixing. FasteningSystems also supplies producers of doors and windows with mechanical fixing systems and hinges and the transport sector with made-to-measure installation solutions.

Whether as a component supplier or service provider, SFS intec constantly strives to forge value-added chains with suppliers and customers alike. The ability to develop and continuously improve products and processes to the mutual benefit of our business partners and ourselves is a core factor in maintaining our competitive edge and therefore the success of SFS intec and our partners.



## **Façade Systems:**

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# 1 Facade Systems ALW

ALW-Light

ALW-Flat

ALW-S1

ALW-S2

ALW-D

ALW Project References



## Add a touch of class to your glass: explore exciting new avenues with the unique SFS intec glass fixings programme



### **Glass creates light. Light creates life.**

Glass is "in". Glass façades stand the test of time, because no other building material has proved as resilient against the weather as glass. But glass does more than create a façade; rather, its use defines the atmosphere inside. Modern architecture places heavy demands on the safety, longevity and protective function of the façade. The SFS intec ALW system rises to the challenge.

### **Secure investments.**

Long-term functionality is a prerequisite. A whole spectrum of functions and features are integral to a façade, partition or window unit; whether it's a building restoration or new-build. Ingenious, functional fastening systems are one of the key issues when it comes to achieving aesthetically pleasing designs – economically. The high-quality, corrosion-proof materials used in the ALW system make for longlasting, secure installations.

### **Fast, efficient installation.**

This system represents the latest development in the tried and trusted SFS intec ALW range. Despite the extended glass thickness range [8 to 18 mm], the same simple assembly has been retained. What's more, both single-pane and laminated safety glass can be used. Once installed, all three systems blend almost invisibly into the background; creating the optical illusion of a seamless glass wall.



### ALW-Light



ALW-Light is ideal for installing light-weight glass panels onto aluminium sub-frames. It is characterised by ease-of-use and easy adaptation to any pane size. Fixing to the sub-frame is achieved with corrosion-proof power tool fasteners. Each glass panel is held in place by the positioning of the neighbouring pane, secured by shims. The glass is secured in place without drilling. Clamps are available in anodised aluminium EV1 or any RAL colour.

**ALW-Light has a full static type approval to DIN 18516.**  
**There is no need for individual building regulations approval.**

<b>SFS code:</b>	ALW-L	
<b>Description:</b>	Single clamp for fixing two or four glass panes; with EPDM inserts	
<b>Glass thickness:</b>	ESG-H6, ESG6, ESG6 enamelled ESG-H8, ESG8, ESG8 enamelled, VSG (ESG2x4)	
<b>Wind strength:</b>	to 2,9 kN/m <sup>2</sup> *	
<b>Dimensions max.:</b>	1200 x 1000 mm 2400 x 750 mm	
<b>Colour:</b>	RAL - 9006 **	Aluminium anodised EV1**

### ALW-Light offers so many applications

- commercial and industrial buildings
- domestic buildings
- facing for timber façades
- balconies and staircases
- rain screens
- privacy screens
- improvements and restorations
- photovoltaic façades

### The advantages of ALW-Light

- simple elegance with numerous design possibilities
- economical, tried and tested system
- uncomplicated support structure for super-efficient installation
- a unique system that makes total economic sense

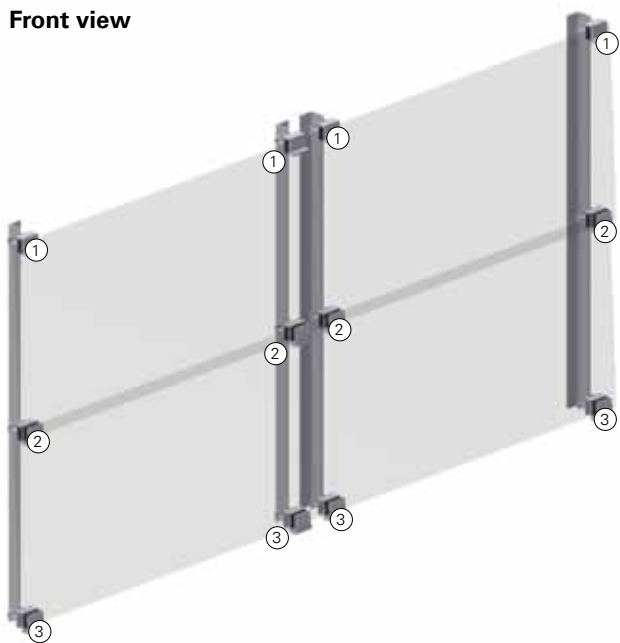


\* The maximum sizes of glass are according to the standard static calculation from 2011. A static calculation must be undertaken for every application.



\*\* The clamping system is available in RAL colours or anodised. This choice makes a project-co-ordinated colour match possible.

### Front view



① ALW-L-O  
Upper single clamp



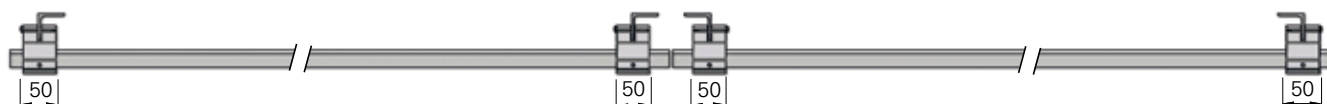
② ALW-L-M  
Central single clamp



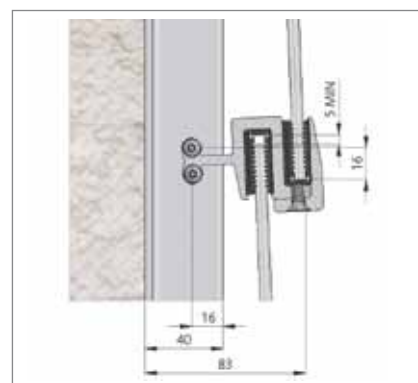
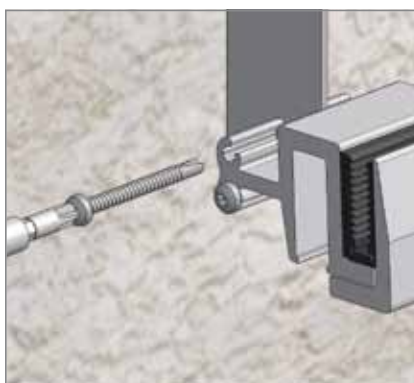
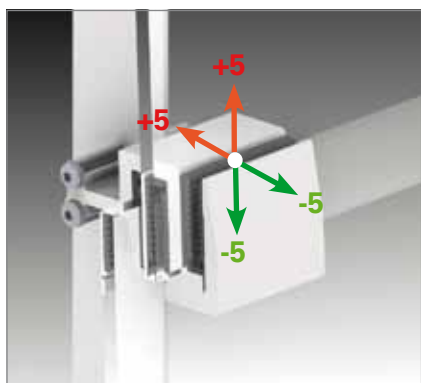
③ ALW-L-U  
Lower single clamp



### Plan view

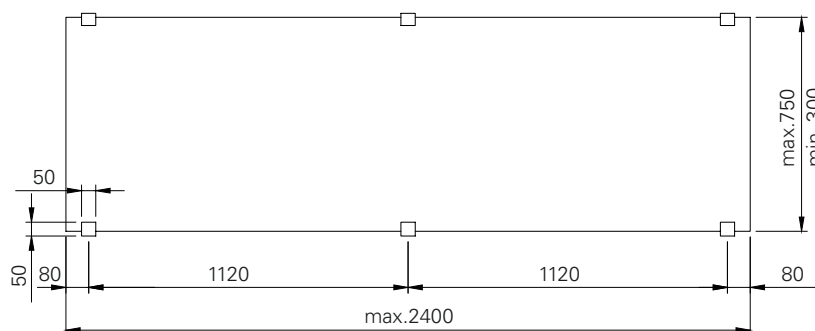
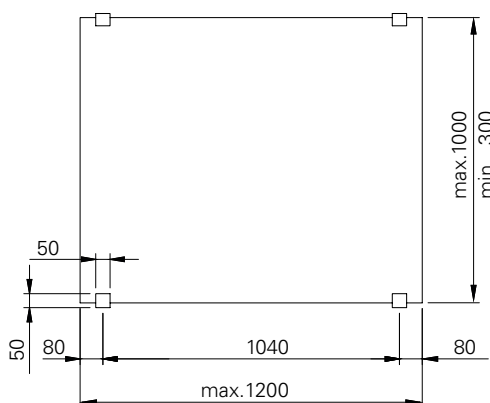


### Adjustments



### Glass formats

Maximum glass dimensions as shown in the sketch.  
Glass sizes can be reduced as required.



### ALW-Flat



ALW-Flat has been specially developed for facades with minimum pane joint width. Glass thicknesses are available from 8 mm toughened up to 10 mm laminated safety glass. ALW-Flat is suitable for a wide range of building applications. Simple adjustment, a patented quick installation system and maximum stability are the key benefits of this quality product.

**ALW-Light has a full static type approval to DIN 18516.**  
**There is no need for individual building regulations approval.**

<b>SFS code:</b>	ALW-F	
<b>Description:</b>	Single clamp for fixing two or four glass panes; with EPDM inserts	
<b>Glass thickness:</b>	ESG-H8, ESG8, ESG8 enamelled, VSG (ESG2x4) ESG-H10, ESG10, ESG10 enamelled, VSG (ESG2x5)	
<b>Wind strength:</b>	to 2,9 kN/m <sup>2</sup> *	
<b>Dimensions max.:</b>	1200 x 1000 mm 2400 x 750 mm	
<b>Colour:</b>	RAL - 9006 **	Aluminium anodised EV1 **

### The new "click" system - multifunctional use and building types:

- commercial and industrial buildings
- domestic buildings
- facing for timber façades
- balconies and staircases
- rain screens
- privacy screens
- improvements and restorations
- photovoltaic façades

### The advantages of ALW Flat

- ease of handling
- safe installation of glass without tools
- stylish rounded design
- fabulously fast
- third party tested and approved
- minimum pane joint width 8 mm
- EPDM suits all glass thicknesses



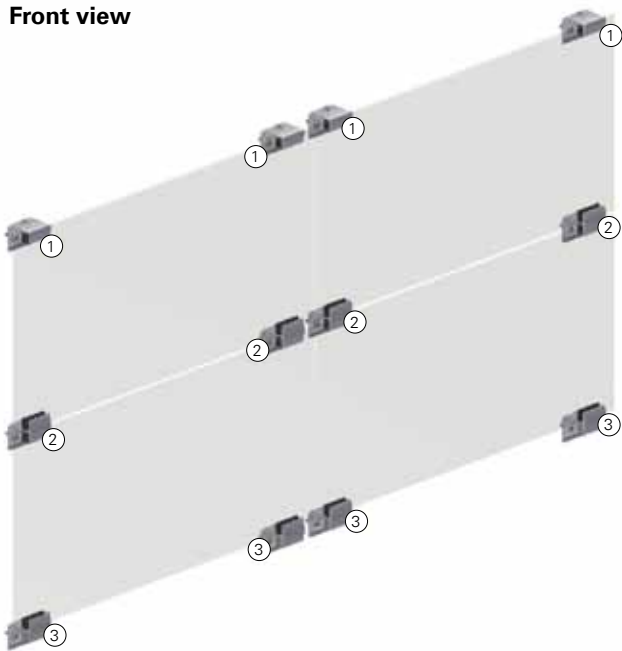
\* The maximum sizes of glass are according to the standard static calculation from 2012. A static calculation must be undertaken for every application.



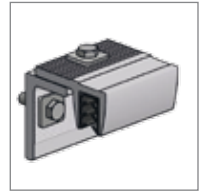
\*\* The clamping system is available in RAL colours or anodised. This choice makes a project-co-ordinated colour match possible.



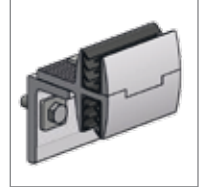
### Front view



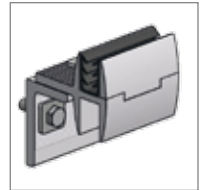
① ALW-F-O  
Upper single clamp



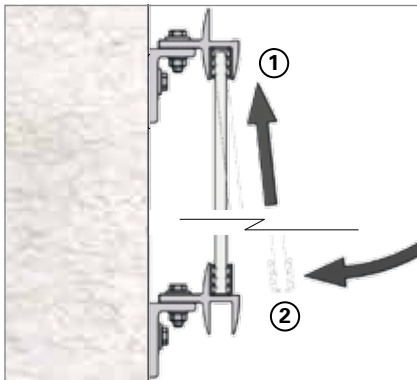
② ALW-F-M  
Central single clamp



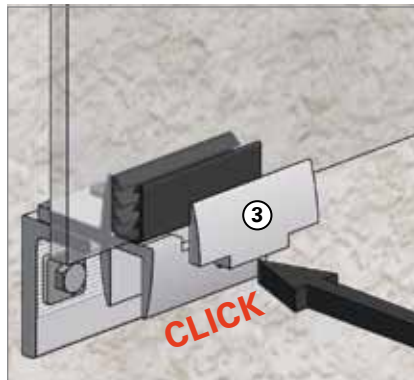
③ ALW-F-U  
Lower single clamp



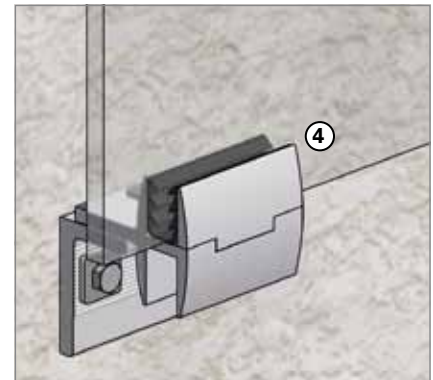
### Simple installation by "click":



Fasten support bracket to the substructure. Position glass pane. Insert the pane into the upper retainer ①, swivel the pane with the lower EPDM onto the lower retainer ②.



Insert the clamping part from the front into the lower retainer and "click" it into fix the glass pane ③.



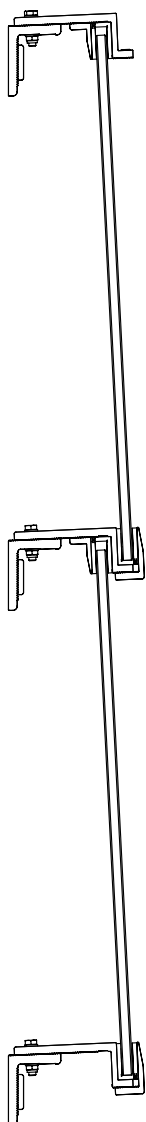
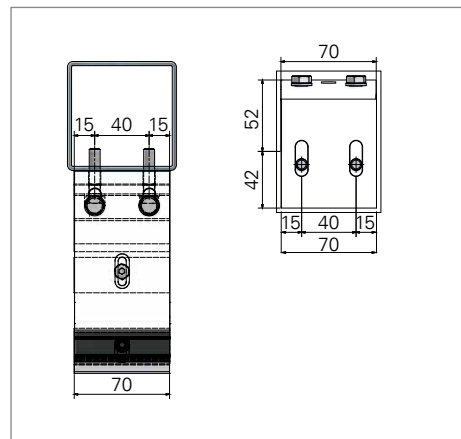
A self-locking mechanism guarantees a durable fixing of the glass panes ④.

### ALW-S1



#### Simple, tried and trusted and timesaving.

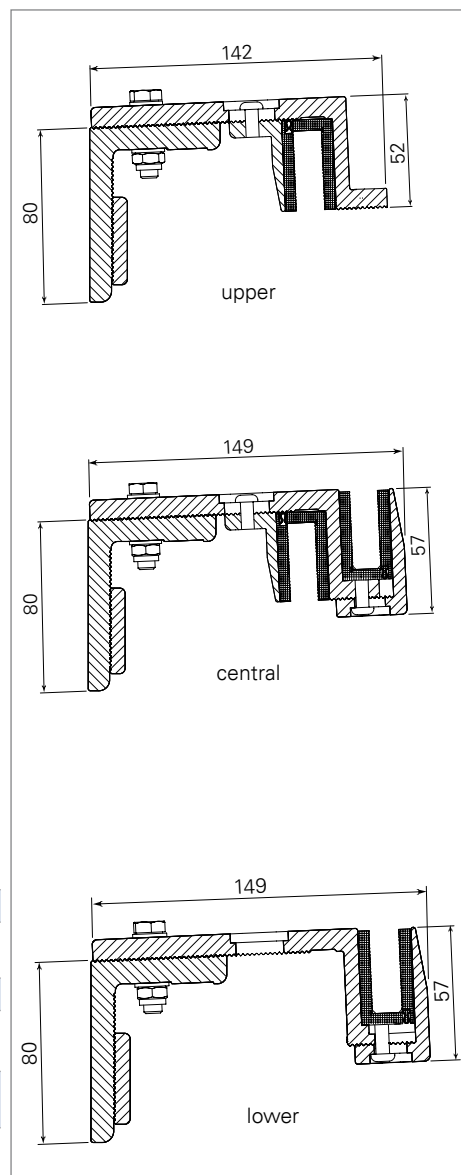
The ALW-S clamping system has already been used in a myriad of projects, both at home and abroad. The glass used can be anything from 8 to 18 mm thick, depending on the application. No glass drilling is required for completely secure installation. We can even provide complete static calculations based on standard BS EN 1991-1-1:2002, BS EN 1991-1-7:2006. All components also conform to building regulations through adherence to BS EN 1999-1-1:2007 + A1:2009. Installing the clamps and fitting glass panels on site is made much easier by the fact that tolerances in the support structure can be taken up by adjustments in every direction: simple and time-saving.



<b>SFS code:</b>	ALW-S1-O	
<b>Description:</b>	Single upper clamp for fixing one pane, aluminium and EPDM inserts	
<b>Glass thickness:</b>	8 - 18 mm	
<b>Dimensions max.:</b>	2500 x 1200 mm*	
<b>Colour:</b>	RAL - 9006 **	Anodised EV1** aluminium

<b>SFS code:</b>	ALW-S1-M	
<b>Description:</b>	Single central clamp for fixing two panes, aluminium and EPDM inserts	
<b>Glass thickness:</b>	8 - 18 mm	
<b>Dimensions max.:</b>	2500 x 1200 mm*	
<b>Colour:</b>	RAL - 9006 **	Anodised EV1** aluminium

<b>SFS code:</b>	ALW-S1-U	
<b>Description:</b>	Single lower clamp for fixing one pane, aluminium and EPDM inserts	
<b>Glass thickness:</b>	8 - 18 mm	
<b>Dimensions max.:</b>	2500 x 1200 mm*	
<b>Colour:</b>	RAL - 9006 **	Anodised EV1** aluminium



\* The maximum sizes of glass are according to the standard static calculation from 2010. A static calculation must be undertaken for every application.

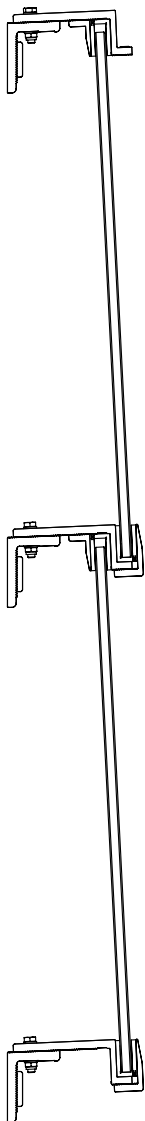
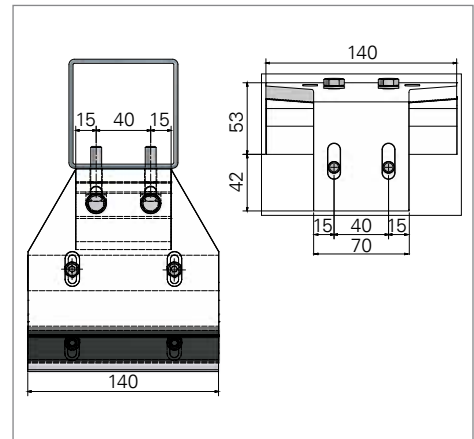
\*\* The clamping system is available in RAL colours or anodised. This choice makes a project-co-ordinated colour match possible.

ALW-S2



The advantages of the ALW-S1 and ALW-S2 systems

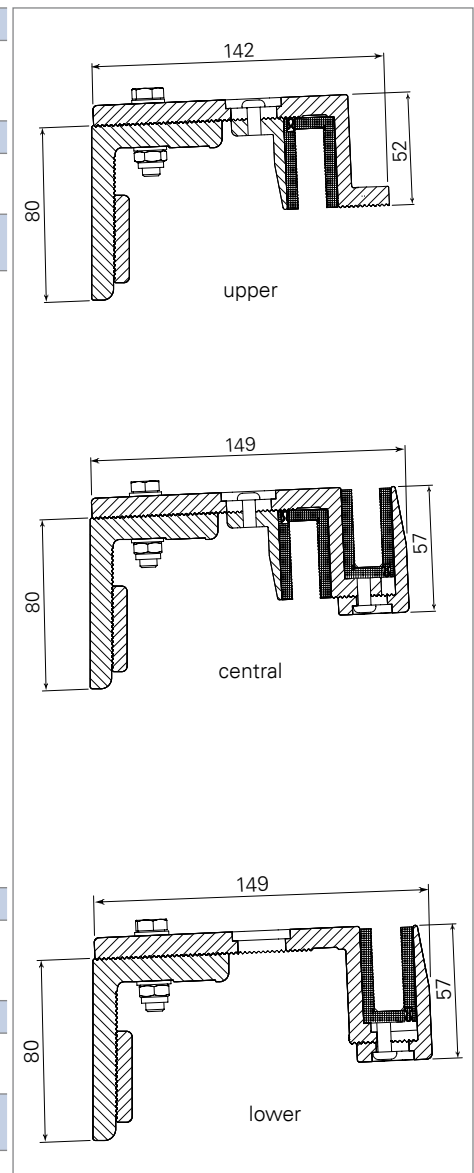
- tried and trusted simplicity
- time saving
- rear ventilated
- secure against driving rain
- overlapping panes (horizontal overlap)
- amazingly variable



<b>SFS code:</b>	ALW-S2-O	
<b>Description:</b>	Twin upper clamp for fixing two adjacent panes, aluminium and EPDM inserts	
<b>Glass thickness:</b>	8 - 18 mm	
<b>Dimensions max.:</b>	2500 x 1200 mm*	
<b>Colour:</b>	RAL - 9006 **	Anodised EV1** aluminium

<b>SFS code:</b>	ALW-S2-M	
<b>Description:</b>	Twin central clamp for fixing four adjacent panes, aluminium and EPDM inserts	
<b>Glass thickness:</b>	8 - 18 mm	
<b>Dimensions max.:</b>	2500 x 1200 mm*	
<b>Colour:</b>	RAL - 9006 **	Anodised EV1** aluminium

<b>SFS code:</b>	ALW-S2-U	
<b>Description:</b>	Twin lower clamp for fixing two adjacent panes, aluminium and EPDM inserts	
<b>Glass thickness:</b>	8 - 18 mm	
<b>Dimensions max.:</b>	2500 x 1200 mm*	
<b>Colour:</b>	RAL - 9006 **	Anodised EV1** aluminium



\* The maximum sizes of glass are according to the standard static calculation from 2010. A static calculation must be undertaken for every application.

\*\* The clamping system is available in RAL colours or anodised. This choice makes a project-co-ordinated colour match possible.



### ALW-D



#### Unique worldwide façade designs

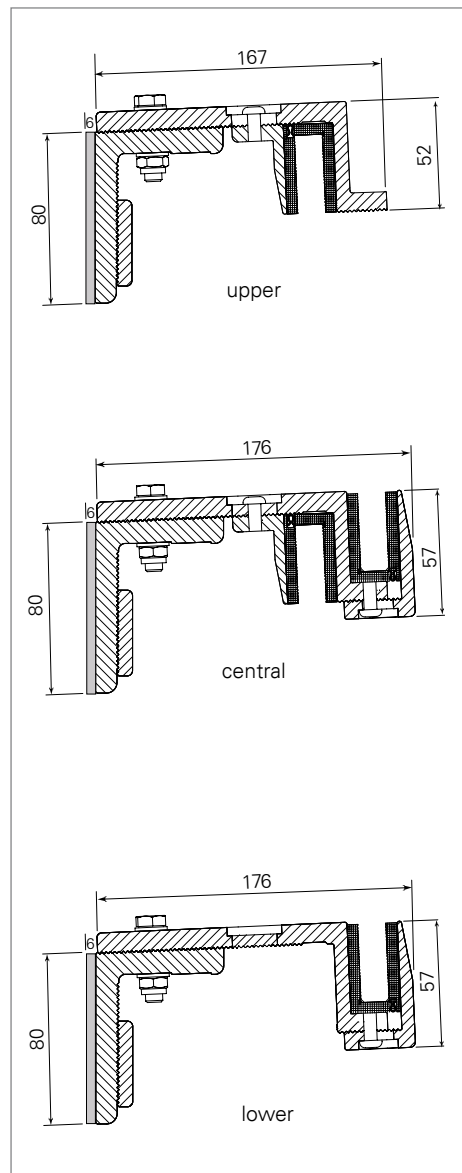
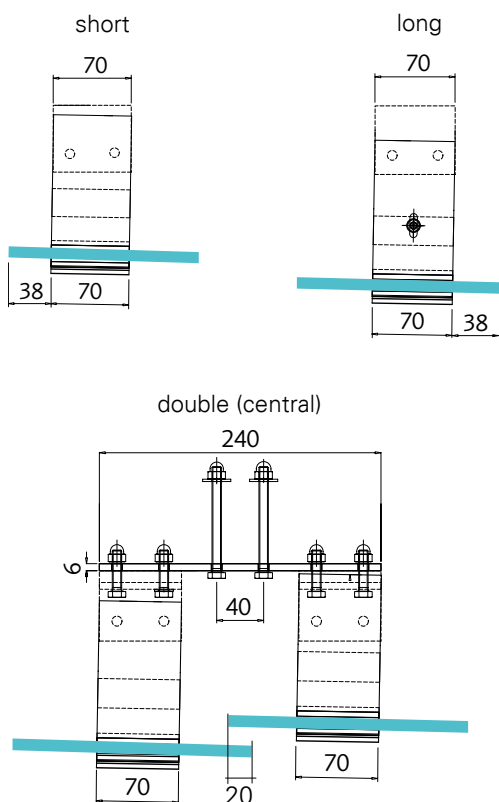
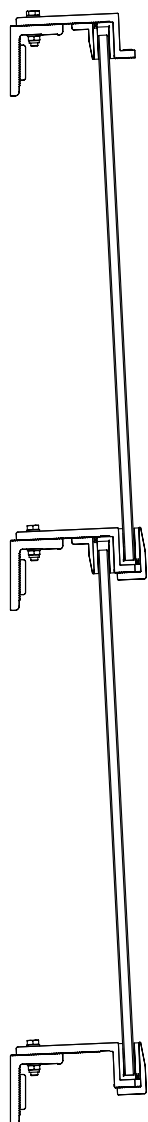
The further advanced ALW-D system offers application potential for double-clamped installations. All the existing features and benefits of the tried and trusted ALW-S clamping system are enhanced by this additional advantage. The panes are not just horizontally but also vertically overlapped. The absence of vertical joints creates a very attractive façade finish. Overlapping of the panes can be either parallel or with a lateral displacement.

#### The advantages of the ALW-D system

- unique façade design concept
- secure against driving rain
- rear ventilated
- double-overlapping panes (horizontally and vertically overlapping)

<b>Description:</b>	ALW - double, aluminium and EPDM inserts	
<b>Glass thickness:</b>	8 - 18 mm	
<b>Dimensions max.:</b>	max. 2500 x 1200 mm*	
<b>Colour:</b>	RAL - 9006 **	Anodised EV1** aluminium

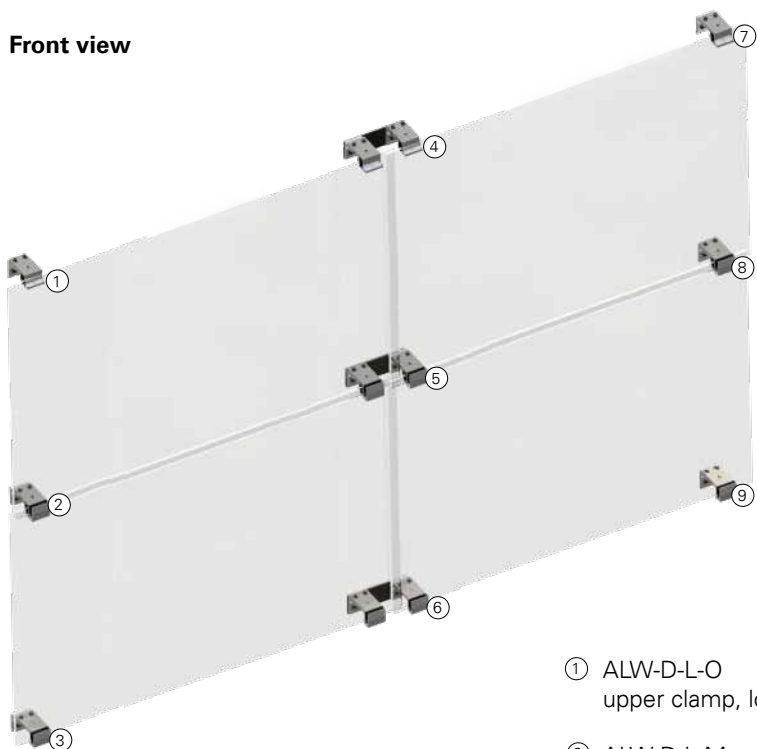
SFS code:	Description
ALW-D-L-O	ALW - double-left upper
ALW-D-L-M	ALW - double-left central
ALW-D-L-U	ALW - double-left lower
ALW-D-M-O	ALW - double upper
ALW-D-M-M	ALW - double central
ALW-D-M-U	ALW - double lower
ALW-D-R-O	ALW - double-right upper
ALW-D-R-M	ALW - double-right central
ALW-D-R-U	ALW - double-right lower



\* The maximum sizes of glass are according to the standard static calculation from 2010. A static calculation must be undertaken for every application.

\*\* The clamping system is available in RAL colours or anodised. This choice makes a project-co-ordinated colour match possible.

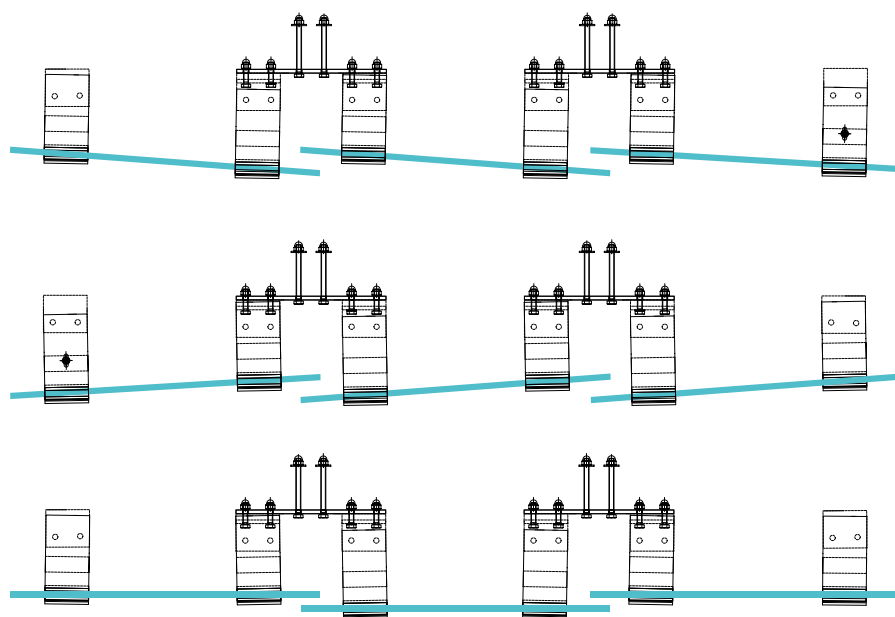
## Front view



- ① ALW-D-L-O  
upper clamp, long
- ② ALW-D-L-M  
central clamp, long
- ③ ALW-D-L-U  
lower clamp, long

- ④ ALW-D-M-O  
Upper double retainer  
consisting of one long-reach  
and one short-reach upper retainer  
connected via a 6mm plate
- ⑤ ALW-D-M-M  
Middle double retainer  
consisting of one long-reach  
and one short-reach middle retainer  
connected via a 6mm plate
- ⑥ ALW-D-M-U  
Lower double retainer  
consisting of one long-reach  
and one short-reach lower retainer  
connected via a 6mm plate
- ⑦ ALW-D-R-O  
upper clamp, short
- ⑧ ALW-D-R-M  
central clamp, short
- ⑨ ALW-D-R-U  
lower clamp, short

## View from top



left sloping

right sloping

parallel



St. Boniface's School, Frankfurt/Main, Germany



Dental Hospital, Bergen, Norway



"Bau" construction show, Munich, Germany





Alfred Wegener Institute, Bremerhaven, Germany



Sparkasse Bank, Karlsruhe, Germany



1



Danube Centre, Vienna, Austria



ETECH, Linz, Austria



Footbridge, Wieselburg, Austria





Logistics Centre, Dresden, Germany



Schneeberg rack railway, Puchberg, Austria



Solar energy tower, Leonding, Austria





The "solar sails", Karlsruhe, Germany



Swimming pool roof, Teheran, Iran



Station, Orléans, France



Zentgrafen Primary School, Frankfurt/Main, Germany



# 2 Canopy Systems VDS

VDS-Easy

VDS-Light

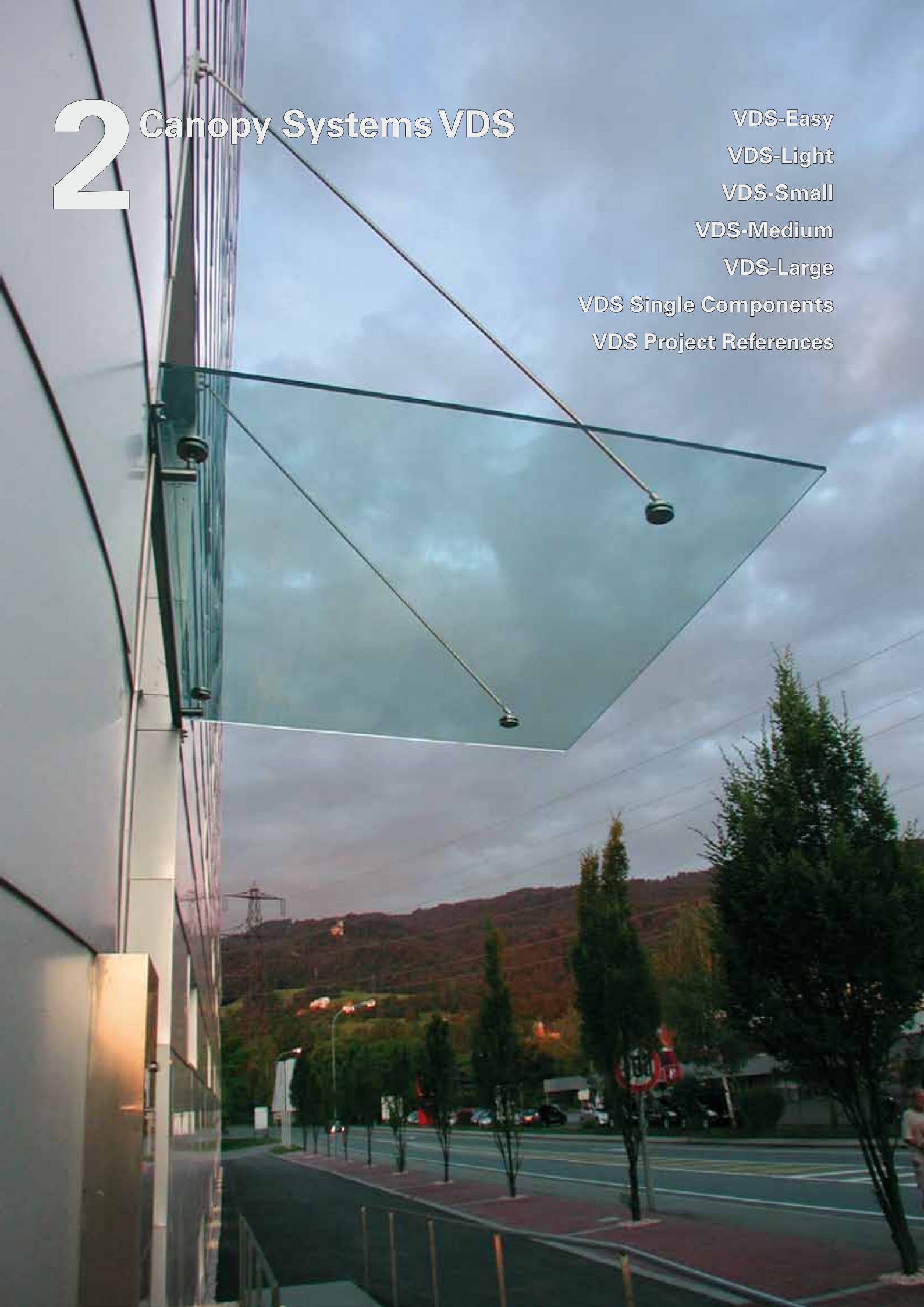
VDS-Small

VDS-Medium

VDS-Large

VDS Single Components

VDS Project References







2

## The modern way to fit glass canopies

These days, glass canopies address numerous architectural demands. Alongside the core function of weather protection, they form a key element in facade design, their transparency and light touch presenting an attractive contrast. They offer the perfect combination of function and design.

VDS canopies are supplied as complete sets, available in a wide range of design variants, sizes and projections.

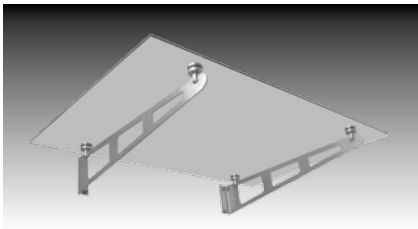
Copies of static results are available for all VDS canopy systems.

## Now available with general building regulations approval. Approval number: Z-70.3-147

The complete VDS range of canopies available in small, medium and large all carry a general building control approval certificate. No need to seek individual approvals.

The stainless, weather-proof system components are designed for rapid, efficient on-site installation, and can be combined with one another within the constraints of the general approval.

### VDS-Easy-45/60

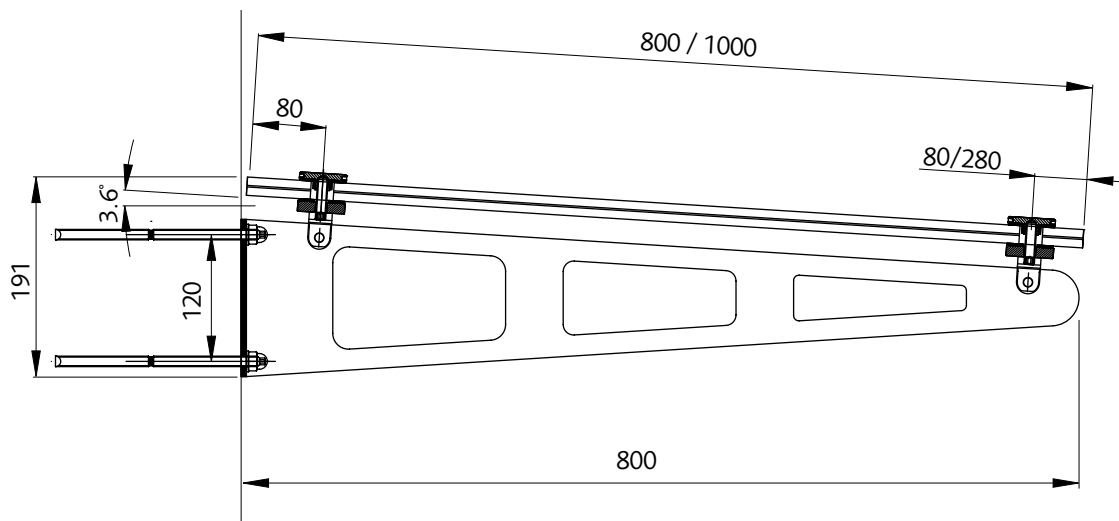
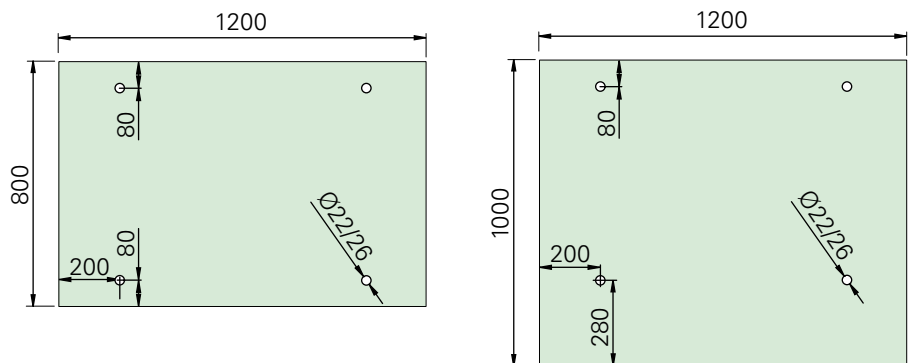


#### Function and design

Alongside the core function of protection against wind and rain, the glass canopy offers open and transparent architectural design opportunities.

#### High quality system

With point retainers integrated into the glass and special rods provided in the set, the canopy is fitted directly to the facade. All components are made from A2 stainless steel. Each individual component is tested and its stability guaranteed for permissible, defined loads.

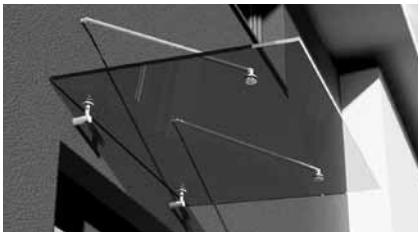


<b>SFS code:</b>	VDS-EASY45* / VDS-EASY60*
<b>Description:</b>	Canopy system Easy
<b>Containing:</b>	4x Ø 45/60 mm fixing points 2x stainless steel, cantilever support fins

SFS code:	VDS-EASY-45	VDS-EASY-60
<b>Glass thickness (ESG):</b>	2x 6 mm (Projection 800 mm) = max. strength 1,86 kN/m <sup>2</sup> 2x 6 mm (Projection 1000 mm) = max. strength 1,20 kN/m <sup>2</sup> 2x 8 mm (Projection 800 mm) = max. strength 4,14 kN/m <sup>2</sup> 2x 8 mm (Projection 1000 mm) = max. strength 2,54 kN/m <sup>2</sup>	2x 6 mm (Projection 800 mm) = max. strength 1,98 kN/m <sup>2</sup> 2x 6 mm (Projection 1000 mm) = max. strength 1,34 kN/m <sup>2</sup> 2x 8 mm (Projection 800 mm) = max. strength 4,14 kN/m <sup>2</sup> 2x 8 mm (Projection 1000 mm) = max. strength 2,70 kN/m <sup>2</sup>
<b>Angle of the glass:</b>	3,6°	3,6°
<b>Cutout:</b>	Ø 20 mm	Ø 26 mm

\* Static calculations are available.

## VDS-Light

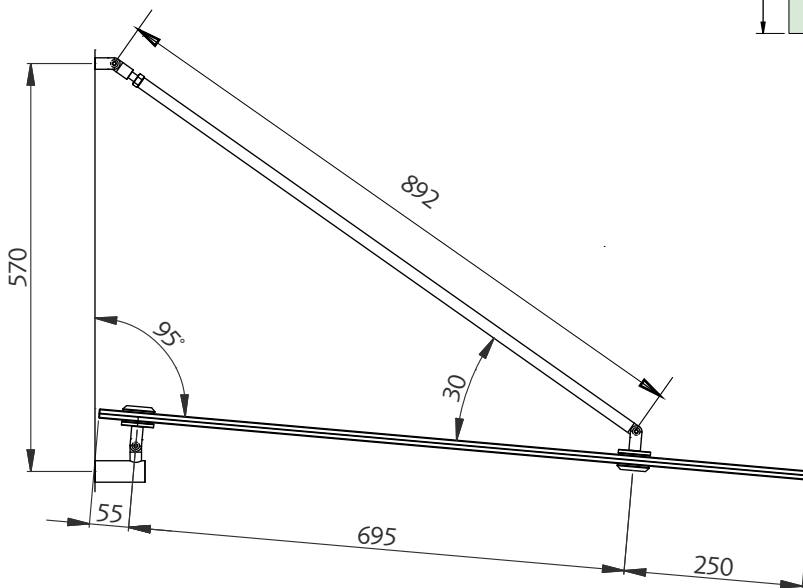
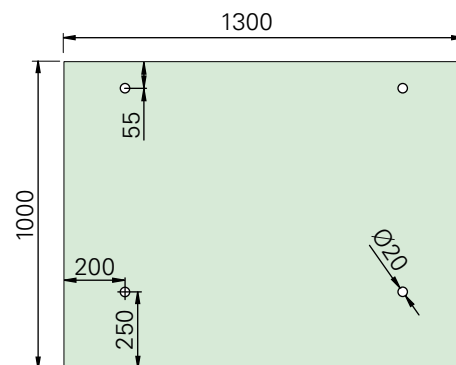


### Function and design

Alongside the core function of protection against wind and rain, the glass canopy offers open and transparent architectural design opportunities.

### High quality system

The canopy is fixed directly to the facade using the integral point retainers, stretcher rods and wall brackets provided. Every system component is adjustable. All components are made from A2 stainless steel. Each individual component is tested and its stability guaranteed for maximum permissible loads of 1.88kN/m<sup>2</sup>, with 12 gauge double ESG, VSG laminated safety glass.



<b>SFS code:</b>	VDS-Light*
<b>Containing:</b>	4x Ø 45 mm point retainer 2x upper wall bracket 2x lower wall bracket 2x rod
<b>Glass dimensions:</b>	max. 1300 mm x 1000 mm
<b>Glass thickness (ESG):</b>	2x 6 mm = max. strength 1,88 kN/m <sup>2</sup> **
<b>Cutouts:</b>	4x Ø 20 mm

\* Static calculations are available.

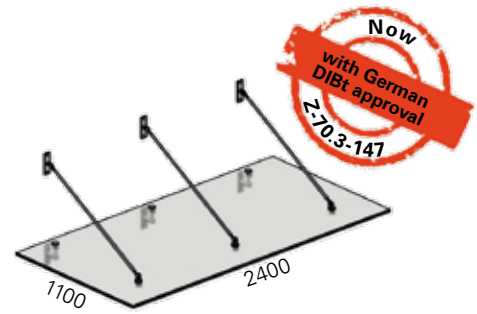
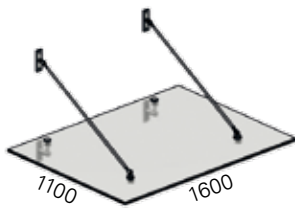
\*\* Partial safety factors.



# Canopy Systems

VDS-Small | Medium | Large

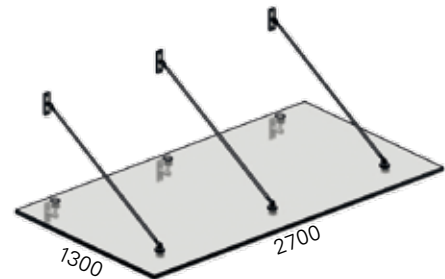
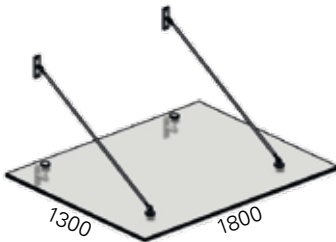
## VDS-45-Small



Glass	Glass-thickness	Bracket	Connect-ing rod	Calculated max. load
Laminated toughenedsafety glass (heat strengthened)	2 x 8 mm	4 pcs.	2 pcs.	2,16 kN/m <sup>2</sup>
	2 x 10 mm	4 pcs.	2 pcs.	3,43 kN/m <sup>2</sup>

Glass	Glass-thickness	Bracket	Connect-ing rod	Calculated max. load
Laminated toughenedsafety glass (heat strengthened)	2 x 8 mm	6 pcs.	3 pcs.	1,84 kN/m <sup>2</sup>
	2 x 10 mm	6 pcs.	3 pcs.	2,95 kN/m <sup>2</sup>

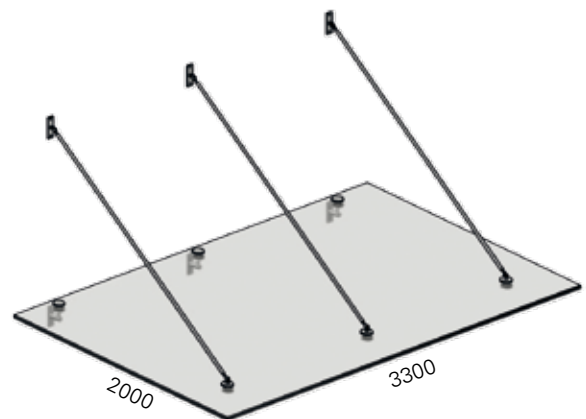
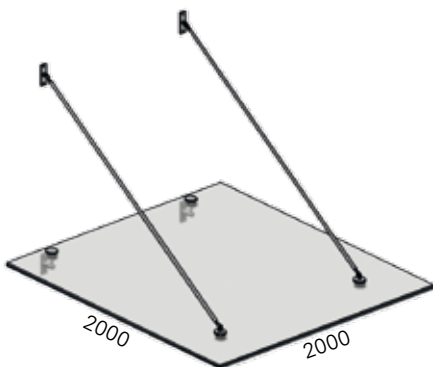
## VDS-60-Medium



Glass	Glass-thickness	Bracket	Connect-ing rod	Calculated max. load
Laminated toughenedsafety glass (heat strengthened)	2 x 10 mm	4 pcs.	2 pcs.	3,01 kN/m <sup>2</sup>
	2 x 12 mm	4 pcs.	2 pcs.	4,43 kN/m <sup>2</sup>

Glass	Glass-thickness	Bracket	Connect-ing rod	Calculated max. load
Laminated toughenedsafety glass (heat strengthened)	2 x 10 mm	6 pcs.	3 pcs.	2,55 kN/m <sup>2</sup>
	2 x 12 mm	6 pcs.	3 pcs.	3,89 kN/m <sup>2</sup>

## VDS-80-Large

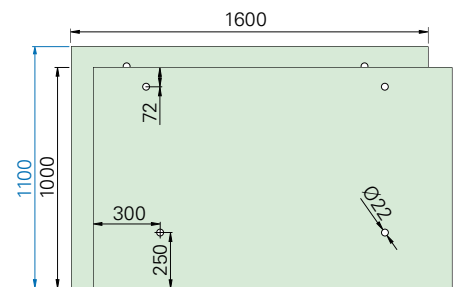
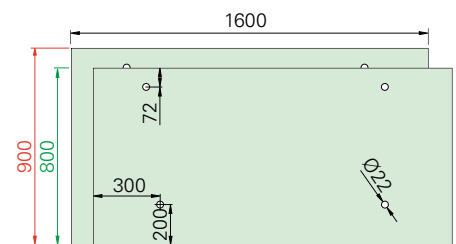
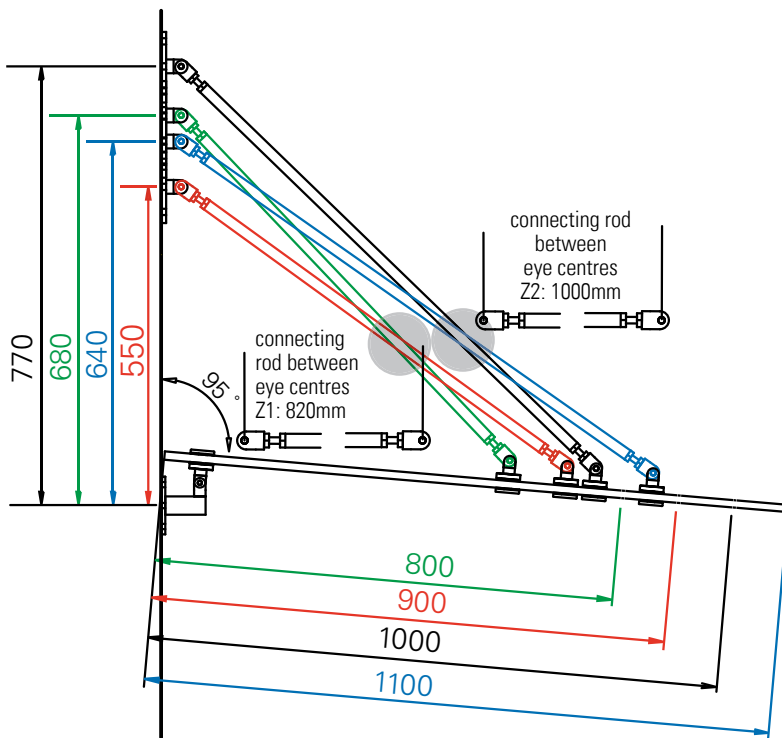
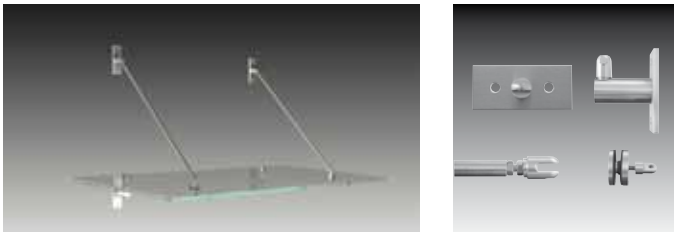


Glass	Glass-thickness	Bracket	Connect-ing rod	Calculated max. load
Laminated toughenedsafety glass (heat strengthened)	2 x 10 mm	4 pcs.	2 pcs.	2,07 kN/m <sup>2</sup>
	2 x 12 mm	4 pcs.	2 pcs.	3,09 kN/m <sup>2</sup>

Glass	Glass-thickness	Bracket	Connect-ing rod	Calculated max. load
Laminated toughenedsafety glass (heat strengthened)	2 x 10 mm	6 pcs.	3 pcs.	1,27 kN/m <sup>2</sup>
	2 x 12 mm	6 pcs.	3 pcs.	1,83 kN/m <sup>2</sup>



### VDS-45-Small



<b>SFS code:</b>	VDS-45-Small*
<b>Description:</b>	Set: canopy system Small
<b>Containing:</b>	2x upper wall bracket (VDS-WO) 2x connecting rod (Z1/Z2) 4x point retainer Ø 45 mm (VDS-45-ALP45) 2x lower wall bracket(VDS-WU)

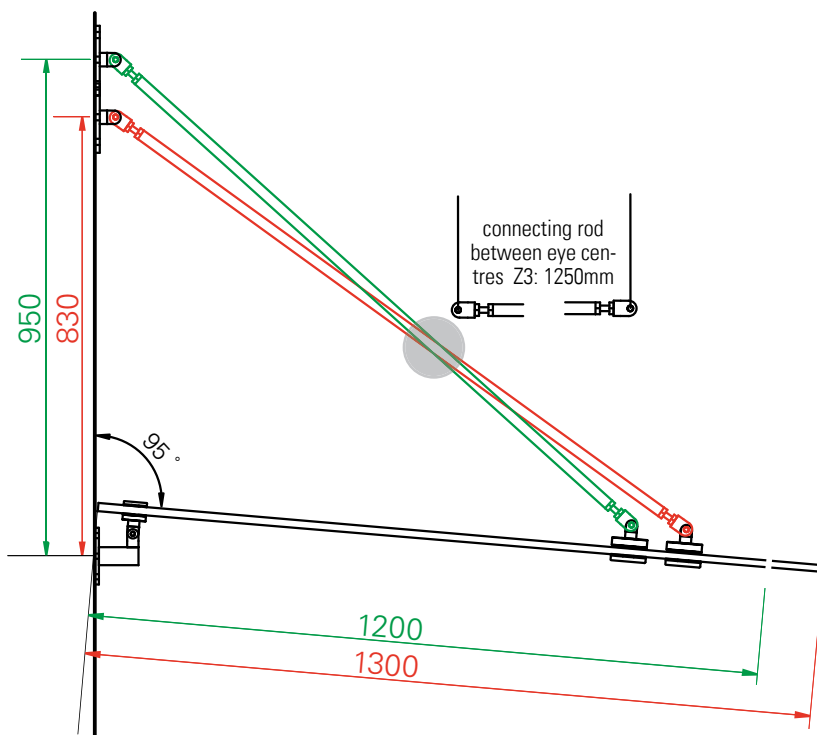
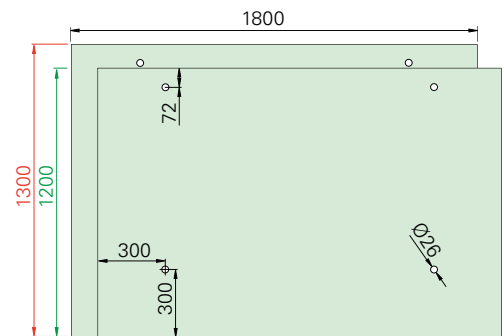
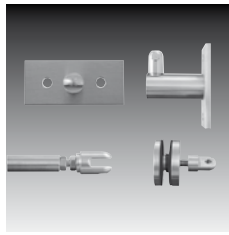
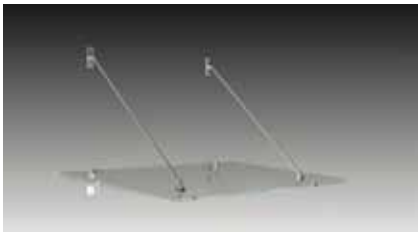
<b>Glass thickness:</b>	2 x 8 mm TVG
<b>Angle of the glass:</b>	max. 10°
<b>Angle of the rods:</b>	30° - 46°
<b>Cutouts:</b>	22 mm

\* For standard sizes, static calculations are available. German approval No. Z-70.3-147

# Canopy Systems

VDS-60-Medium

## VDS-60-Medium



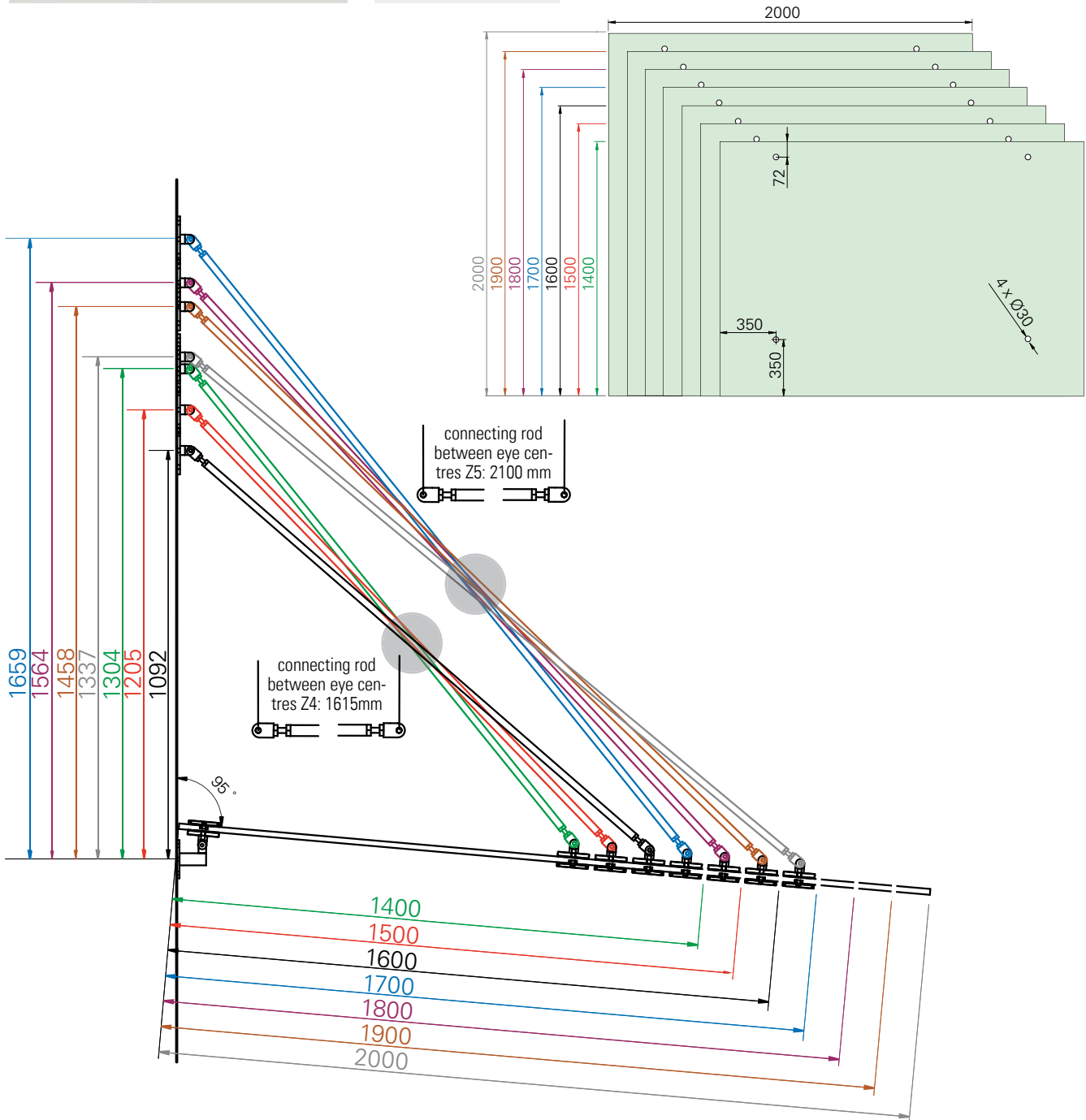
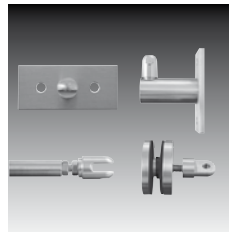
<b>SFS code:</b>	VDS-60-Medium*
<b>Description:</b>	Set: canopy system Medium
<b>Containing:</b>	2x upper wall bracket (VDS-WO) 2x connection rod (Z3) 4x point retainer Ø 60 mm (VDS-60-ALP60) 2x lower wall bracket (VDS-WU)

<b>Glass thickness:</b>	2 x 10 mm TVG
<b>Angle of the glass:</b>	max. 10°
<b>Angle of the rod:</b>	30° - 46°
<b>Cutouts:</b>	26 mm

\* For standard sizes, static calculations are available. German approval No. Z-70.3-147



## VDS-80-Large



<b>SFS code:</b>	VDS-80-Large*
<b>Description:</b>	Set: canopy system Large
<b>Containing:</b>	2x upper wall bracket (VDS-WO) 2x connection rod (Z4/Z5) 4x point retainer Ø 80 mm (VDS-80-ALP80) 2x lower wall bracket (VDS-WU)

<b>Glass thickness:</b>	VSG aus 2 x 10 mm TVG
<b>Angle of the glass:</b>	max. 10°
<b>Angle of the rod:</b>	30° - 46°
<b>Cutouts:</b>	30 mm

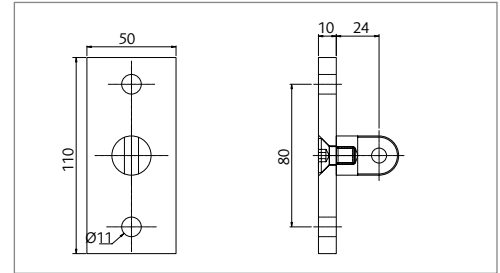
\* For standard sizes, static calculations are available. German approval No. Z-70.3-147



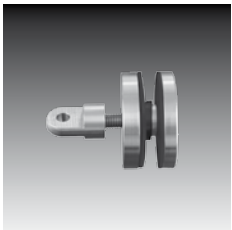
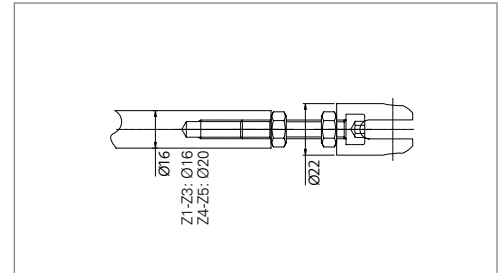
### Single components



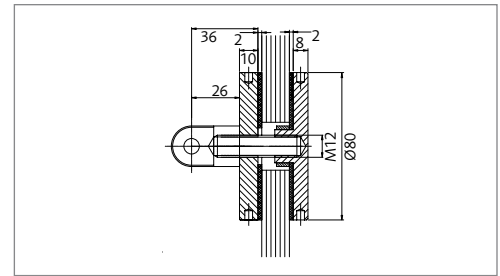
<b>SFS code:</b>	VDS-WO-S110x50-2H11
<b>Description:</b>	upper standard wall bracket suitable for all 3 canopy sets



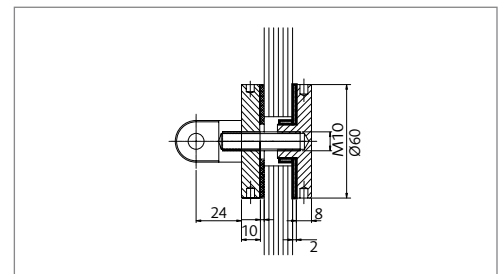
<b>SFS code:</b>	VDS-45/60/80 (Z1; Z2; Z3; Z4; Z5)
<b>Description:</b>	rod with fork and pin rod Z1/Z2/Z3: Ø 16mm rod Z4/Z5: Ø 20mm Please specify length required Z1 - Z5 or special length



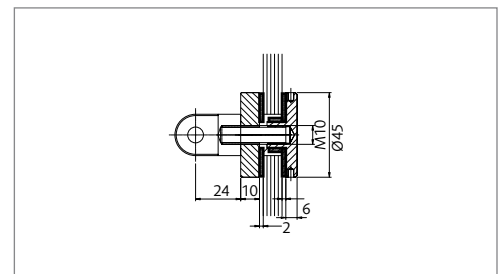
<b>SFS code:</b>	VDS-80-ALP80
<b>Description:</b>	point retainer Ø 80 mm with connector for canopy set LARGE



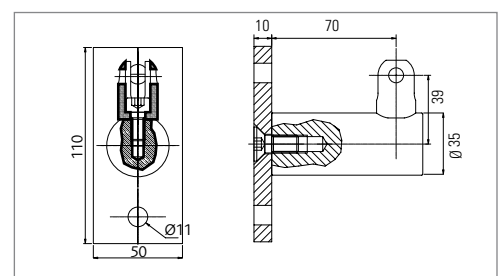
<b>SFS code:</b>	VDS-60-ALP60
<b>Description:</b>	point retainer Ø 60 mm with connector for canopy set MEDIUM



<b>SFS code:</b>	VDS-45-ALP45
<b>Description:</b>	point retainer Ø 45 mm with connector for canopy set SMALL



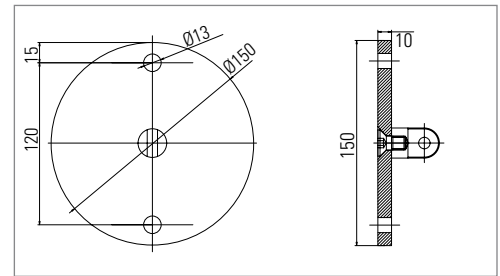
<b>SFS code:</b>	VDS-WU-S110x50-2H11
<b>Description:</b>	lower standard wall bracket suitable for all 3 canopy sets



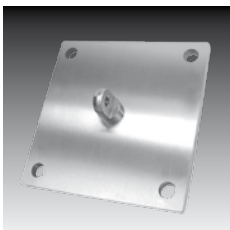
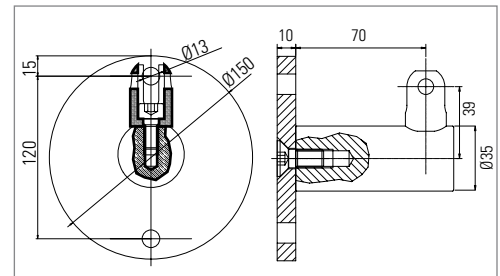
### Variants of wall brackets



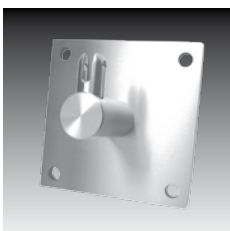
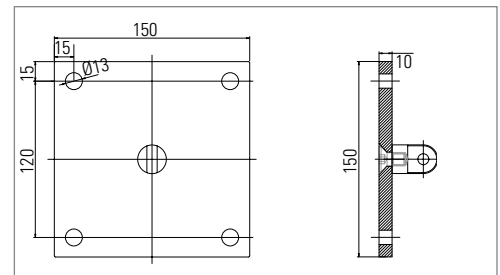
**SFS code:** VDS-WO-R150-2H13  
**Description:** upper wall bracket, round design suitable for all 3 canopy sets



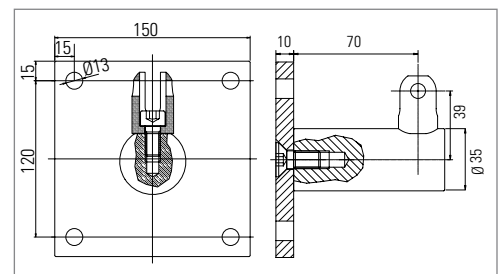
**SFS code:** VDS-WU-R150-2H13  
**Description:** lower wall bracket, round design suitable for all 3 canopy sets



**SFS code:** VDS-WO-Q150x150-4H13  
**Description:** upper wall bracket, square design suitable for all 3 canopy sets



**SFS code:** VDS-WU-Q150x150-4H13  
**Description:** lower wall bracket, square design suitable for all 3 canopy sets



**SFS code:** AW-30  
**Description:** spanner for point retainer 30 mm



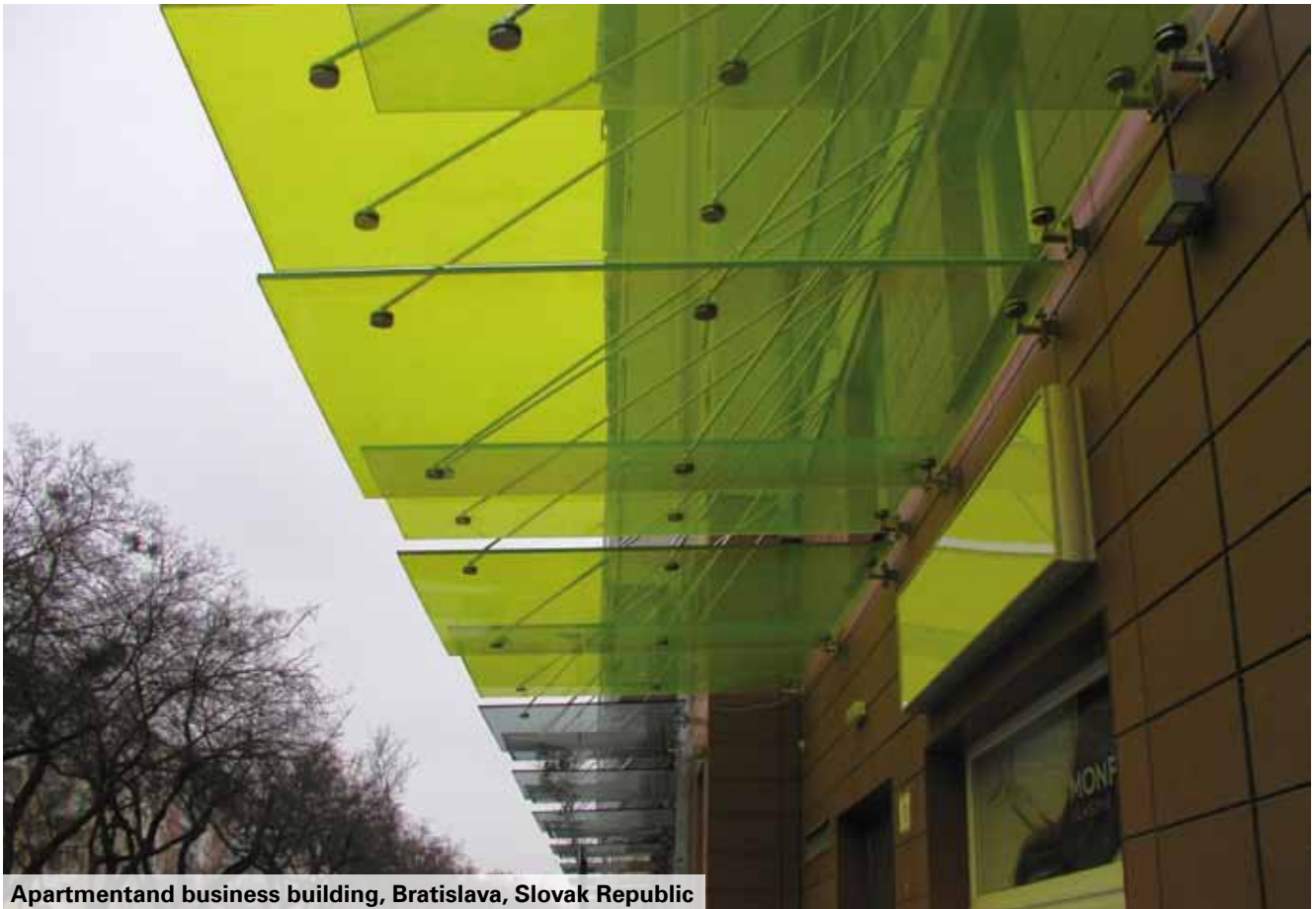
**SFS code:** AW-45/60  
**Description:** spanner for point retainer 45 - 60 mm



**SFS code:** AW-80  
**Description:** spanner for point retainer 80 mm







Apartment and business building, Bratislava, Slovak Republic



Grove Court, Nottingham, UK



TÜV Test Centre, Kassel, Germany



**Sales and customer support**

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