



**CROSS** — **FIX**

# CROSSFIX<sup>®</sup>

The substructure system for  
rainscreen facades (RVF)



## The rainscreen facade

Manifold, energy efficient and durable

The rainscreen facade (RVF) is undisputedly the most diverse of the facades. It scores with its long-lasting service, offers great design freedom and is extremely popular with architects.

Contrary to other facade types no requirements are placed on the RVF regarding the building statics, because it is only hung in front of the actual load-bearing wall. And exactly this decoupling of statics, thermal and weather protection is what enables architects and builders to have a very high design freedom and versatility.

### Manifold construction possibilities

The construction possibilities for exterior wall cladding are almost limitless. In addition to a wide range of possible raw materials for wall cladding, it is the colours in particular that give the building its character and individuality, visible from afar.

The rainscreen facade is equally suitable for new builds and restorations, in both public and private construction.



Of lasting value

In addition to the design freedom, the RVF also scores in the areas of sustainability and economic efficiency. Because to plan and build a building is one thing. The other thing is the preservation of an intact function throughout the lifecycle and the proper handling of the used-up resources at the end of life. The individual components of the facade have a very long-lasting service and can be dismantled and returned to the material cycle at the end of their useful life. The use of nearly any insulation thickness and modern substructures enables U-values for the highest energy requirements.

Special fastening technology

Every facade must be securely fastened to the loadbearing outer wall. In this case the substructure is the static link. The different fastening elements at this point are literally playing a key role, even though they seem to be insignificant. Because they ensure that all system components, such as insulation, substructure and facade cladding, are joined in a lasting and secure way.





# Convincing all along the line

## CROSSFIX® – the variable substructure system

CROSSFIX® is the first stainless steel substructure system that can be used for horizontal and vertical support profiles. CROSSFIX® increases flexibility, facilitates assembly, saves precious time and reduces your storage costs.

The CROSSFIX® console is made of stainless steel and thus significantly reduces the thermal bridge surcharge in the system. With the CROSSFIX® modular system, EJOT delivers everything from a single supplier. In proven quality.



Fastening system for facade cladding



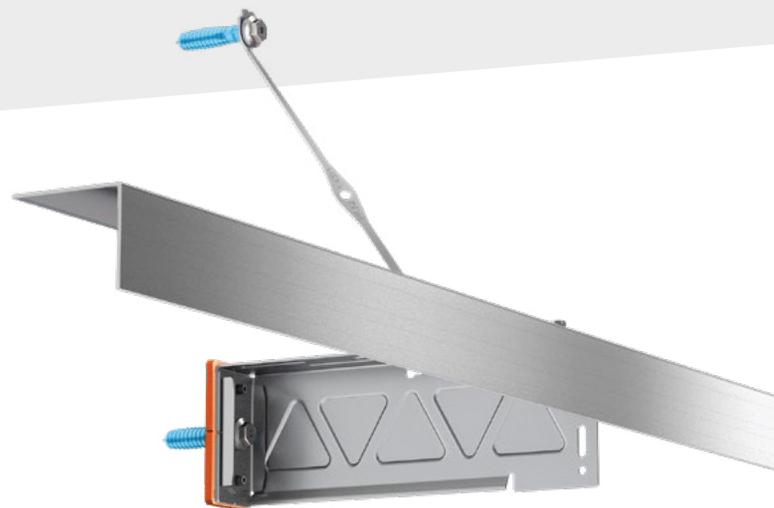
Fastening screw for wall bracket, metal parts and sheet metal (with intermediate layers)



## All advantages at a glance

- > **Everything from one source** We supplies a complete substructure system for all applications and all necessary information for installation.
  - > **All-purpose** CROSSFIX® is the support for vertical and horizontal installation and offers maximum flexibility for all applications, no matter if fixed-point or sliding-point installation.
  - > **Economical** CROSSFIX®, thanks to its high flexibility, enables quick and easy processing and, at the same time, standard-compliant fastening options on all common surfaces (e.g. concrete, solid and perforated brick, timber and steel substructures).
  - > **Environment-friendly** CROSSFIX® has a low carbon footprint. When manufacturing stainless steel, there is a more moderate amount of energy required and considerably lower environmental pollution than when producing aluminium. > **Energy-efficient** CROSSFIX® is made of A2/A4\* stainless steel and thus enables a significant reduction of the thermal bridge surcharge compared to aluminium.
- Vertical assembly
- > **Cost-efficient** CROSSFIX® enables considerable savings in material costs and storage costs.
  - > **High static carrying capacity** Stainless steel is many times more stable than aluminium, which means CROSSFIX® enables higher static load capacities. In addition, a finite element analysis guarantees an optimised load distribution.
  - > **Dynamic load capacity** Seismic tests confirm the dynamic load capacity of the CROSSFIX® console.
  - > **Fire protection** The CROSSFIX® console is classified as non-flammable. The melting temperature of stainless steel is 1450 °C vs. 660 °C for aluminium.
  - > **Certified** CROSSFIX® is ETA certified. This reduces the plan-ning effort, creates cost security through clearly regulated calculation specifications and ensures more safety in the case of complaints or accidents. The CROSSFIX® console was also certified by the Passive House Institute.

\* In Germany, only A4 stainless steel may be used.



Horizontal assembly

# CROSSFIX® can be used universally

One console for different assembly purposes

With the CROSSFIX® console, EJOT provides a flexible solution that can accommodate both vertical and horizontal support profiles.

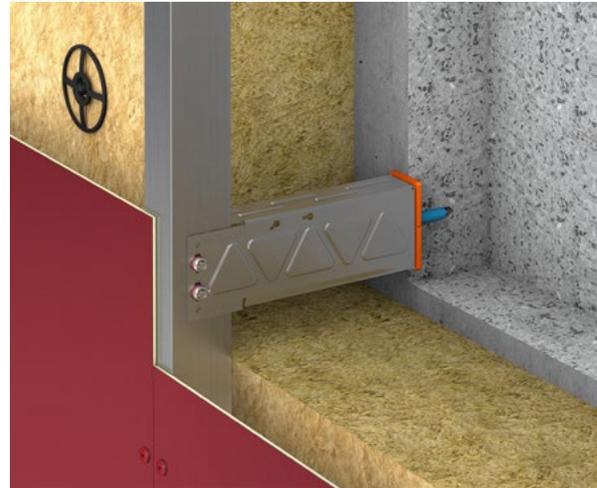
Regardless of whether it is a fixed point or sliding point installation. This eliminates the previous need to install different consoles.

## Vertical assembly

Fixed and sliding point design for vertically running support profiles



Vertical fixed point  
Fixing through clearance hole, optionally with power key for better load transmission



Vertical sliding point Fastening through slotted hole

## Horizontal assembly (two-layer application)

Fixed and sliding point design for horizontally running support profiles



Horizontal fixed point  
Fixing through clearance hole, optionally with power key for better load transmission



Horizontal sliding point Fastening through slotted hole

# CROSSFIX® increases energy efficiency

Improved U-values thanks to 100% stainless steel

In order to reduce thermal bridges in the rain-screen facade and thus to achieve higher energy efficiency, materials with the lowest possible thermal conductivity are recommended for facade substructures. While this is only approx. 17 W/(m K) for stainless steel, it is approx. 160 W/(m K) for aluminium.

Therefore, the use of stainless steel significantly reduces the transmission of thermal bridges in the CROSSFIX® substructure system compared to systems made of solid aluminium. This means that significantly improved U-values can be achieved with the same insulation thickness.

## Aluminum and stainless steel in comparison

The isothermal images below illustrate temperature curves within the external wall when using aluminium consoles and the CROSSFIX® consoles made of stainless steel.

This means that the wall inside can cool down considerably. The temperature difference between the indoor and outdoor area is therefore relatively small.

Lines of the same temperature are called isotherms. If these run almost parallel, there is only a slight disturbance compared to the one-dimensional heat flow (U-value, coefficient of heat transmission). The large thermal bridge, as can be seen in image 1, results in a large heat loss.

With the CROSSFIX® substructure system, compared to aluminium consoles, only a minimal thermal bridge forms (image 2) and the wall in the interior cools significantly less. This example clearly shows how the use of a stainless steel substructure significantly increases energy efficiency.



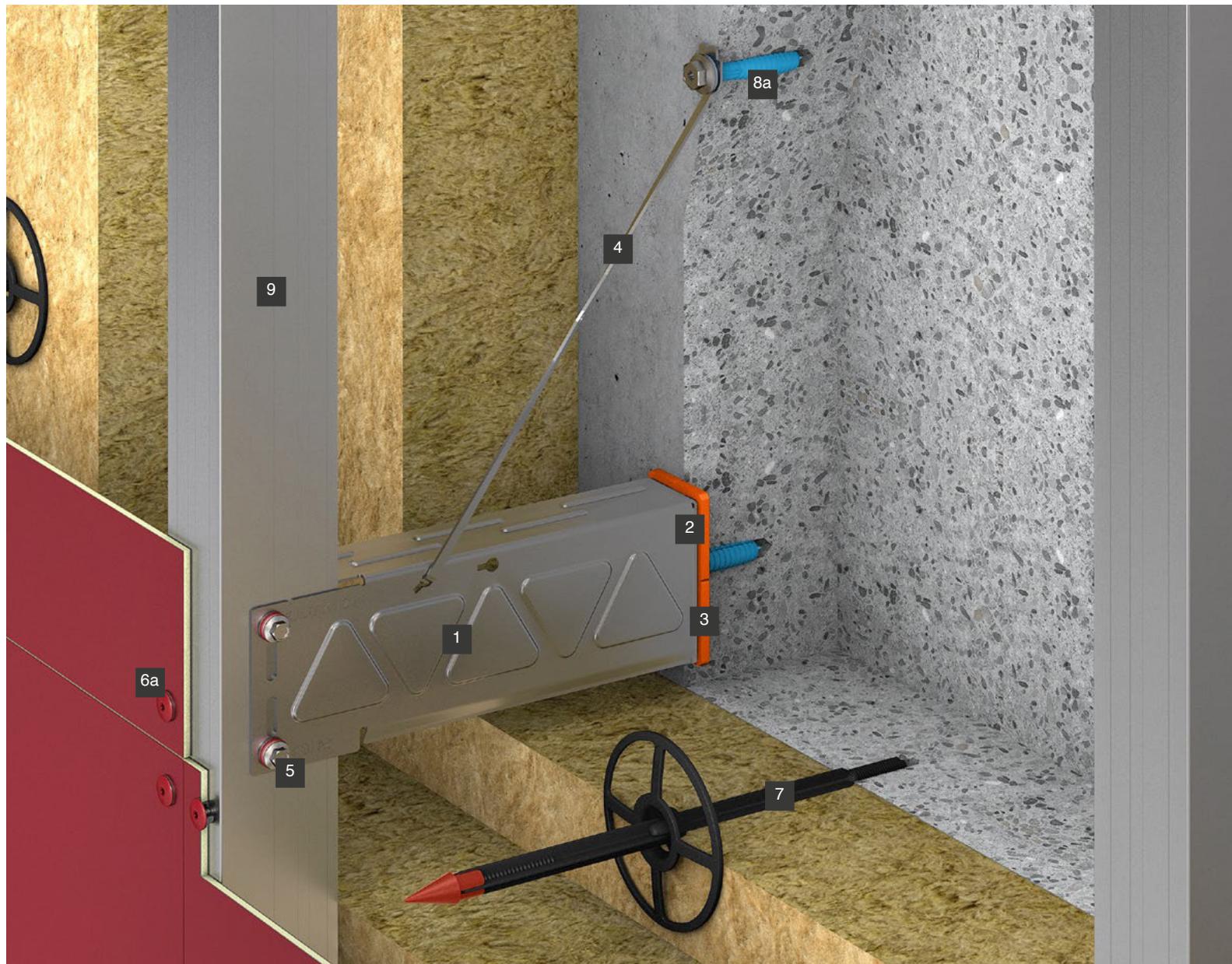
Image 1  
Pronounced thermal bridge on aluminium consoles



Image 2  
Minimal thermal bridge with CROSSFIX®

# CROSSFIX® is a complete system

The individual components and the corresponding EJOT® accessories



## 1 Console

Stainless steel A2/A4\*. Reach 40- 400 mm in 20 mm steps, larger reach possible. Pressure plate and thermal stop captive pre-assembled

- In Germany, only A4 stainless steel may be used.



## 2 Stress plate

For a higher load impact or load bearing capacity (pre-assembled)



## 3 Thermal stop

For even better U-values (pre-assembled)



**4** Power key

For better load transmission



**5** Self-drilling screw VARIO

Sliding and fixed point screw including sliding washer with buffer zone for connecting consoles and metal sections



**6a** LT System Classic

The classic – fastening system for facade panels to reduce thermally induced constraints



**6b** LT-XT System

The specialist – fastening system for facade panels with protective film for residue-free film removal



**6c** LT-TD System

The revolution – fastening system (thermally decoupled) for facade cladding with maximum installation safety



**7** Insulation support anchor

For fixing insulating material



**8a** Direct anchoring in the substrate\*

Facade anchors, metal anchors or chemical anchors for fastening the console and power key in the loadbearing wall



**8b** Anchoring with intermediate layer\*

Screws for fastening the console and power key in the load-bearing wall with intermediate layer



**8c** Anchoring to existing composite thermal insulation systems\*

Screws for fastening the console to the claw (A/2A4\*\* stainless steel) and facade anchors for anchoring the claw to the load-bearing substrate



\* Depending on structural requirements

\*\* In Germany, only A4 stainless steel may be used.

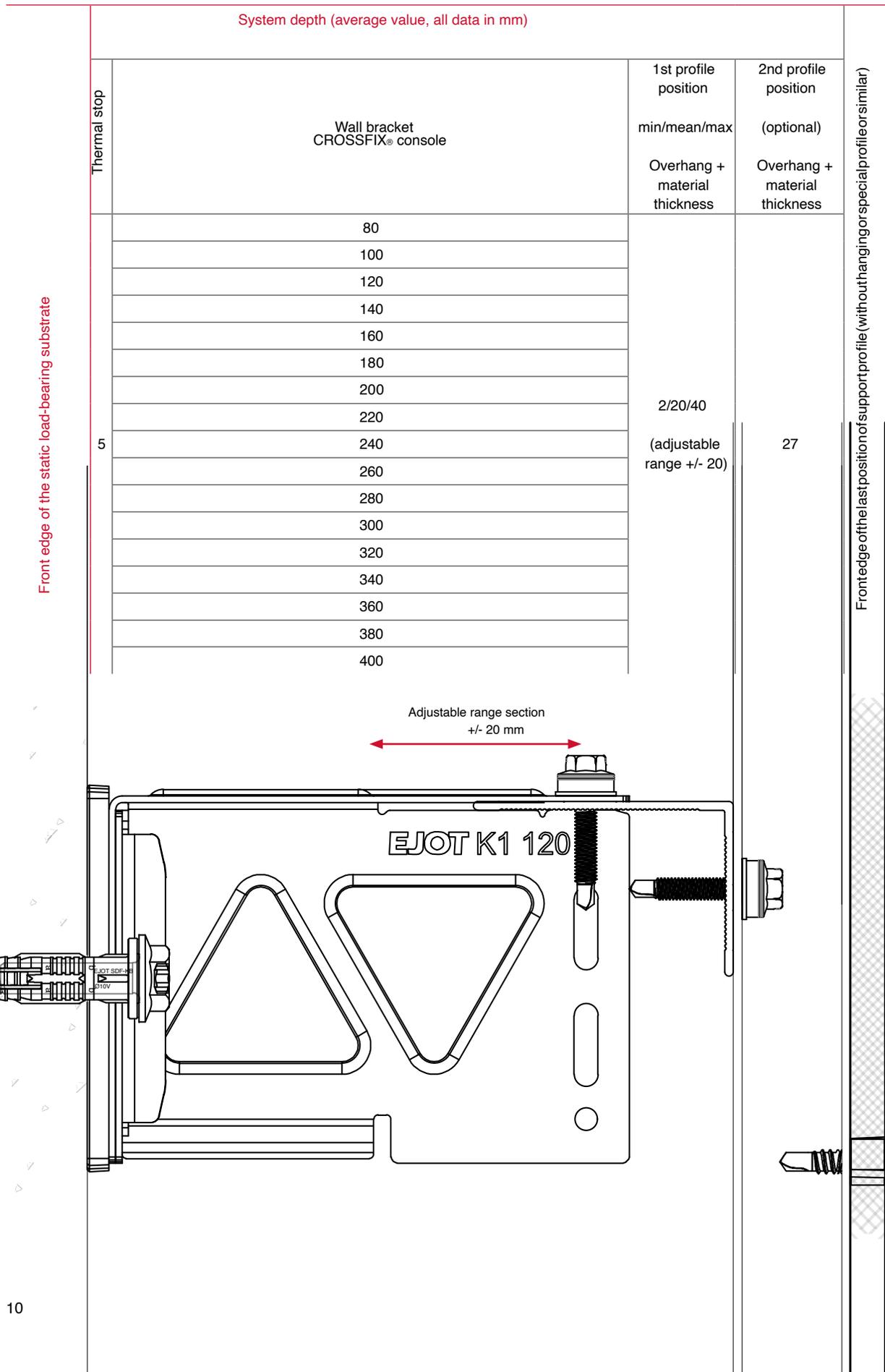
**9** Support profiles

Metal profiles in different versions for cladding panels



# CROSSFIX® system structure

## System depth



# Calculation example

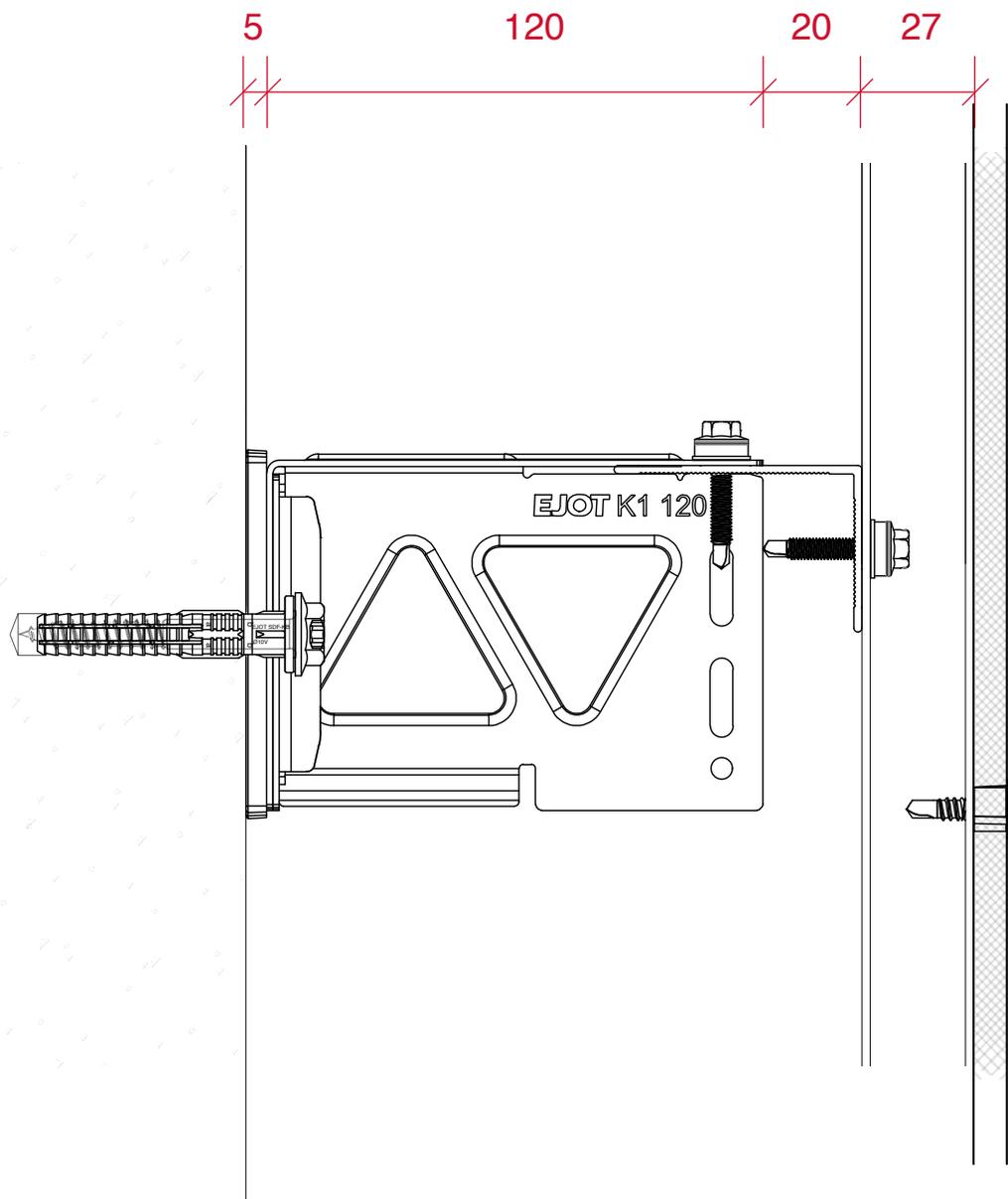
## Standard system-depth console K1-120 with two-layer profile structure

**General information:**

The relevance of the correctly selected system depth results from the definition of the insulation thickness and the requirements for the rear ventilation cross-section.

Furthermore, the choice of the correct system depth has an influence on the assembly of the support profiles.

System components	Tiefe [mm]
Thermal stop	5
Console K1	120
1st profile position, angle profile, horizontal	20
2nd profile position, omega profile, vertical	27
System depth total	172





**Product Manager:** Sam Adams  
**Email:** [Sam.adams@polyplas.com.au](mailto:Sam.adams@polyplas.com.au)  
**Phone:** +61 433 555 542