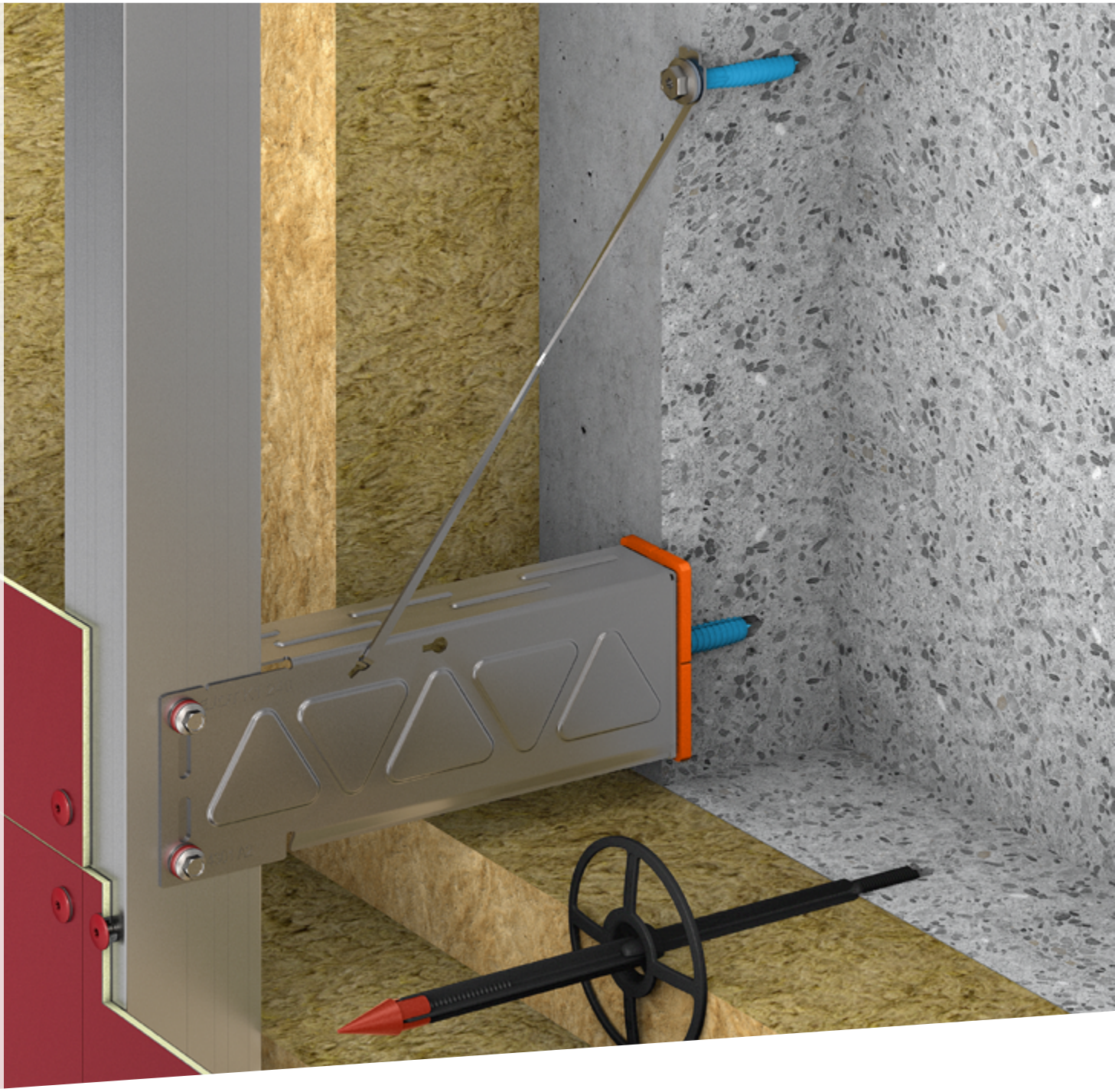
EJOT®

Rainscreen facades (RVF)



CROSS FIX

CROSSFIX®

The substructure system for rainscreen facades (RVF)

EJOT. Bringing it together.

The rainscreen facade

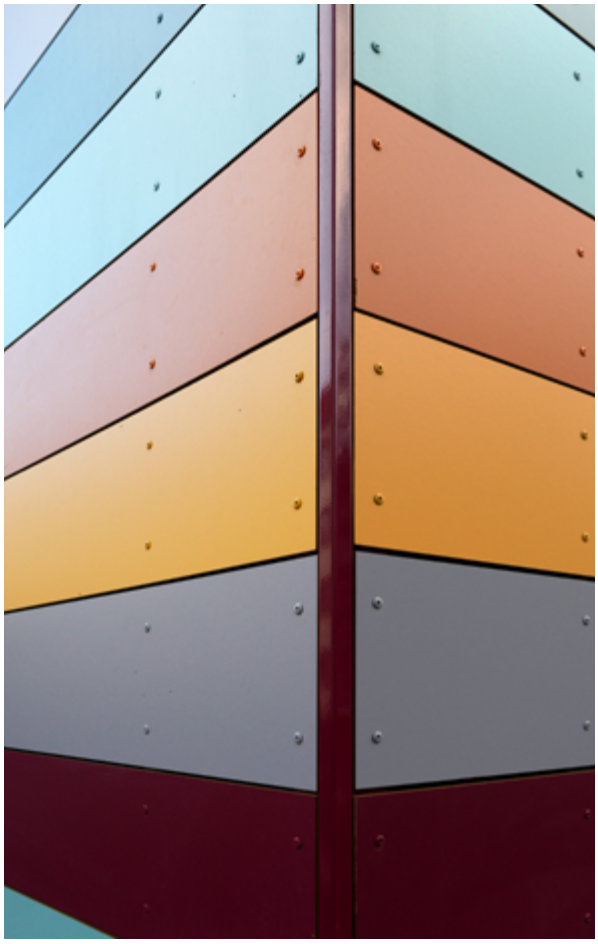
Manifold, energy efficient and durable

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, be-cause 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 load-bearing 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, sub-structure 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.

www.ejot.com/crossfix

ETA-21/0756

Fastening system for facade cladding

ETA-24/0547

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

cool, temperate climate
phB
CERTIFIED COMPONENT
Passive House Institute

EPD-EJO-20190101-CBD1-EN

Institute for Steel Construction

All advantages at a glance

> **Everything from one source**
EJOT 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-friedly**
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.

> **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.

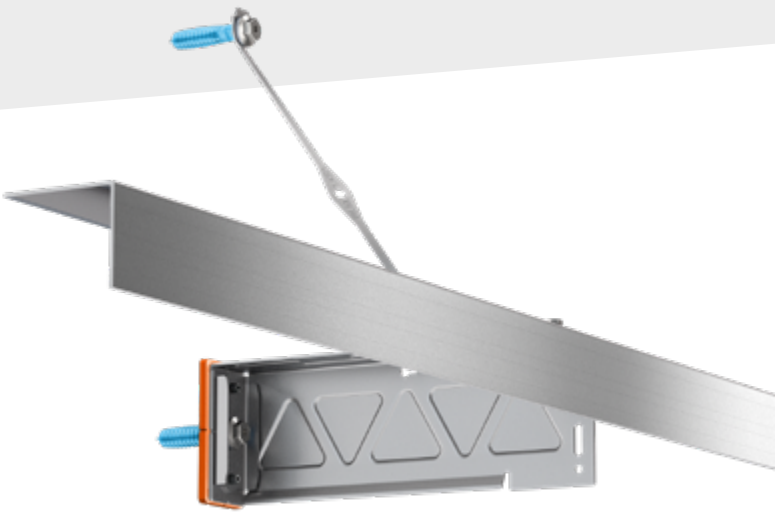
> **Dynamic load capacity**
Seismic tests confirm the dynamic load capacity of the CROSSFIX® console.

> **Fire protection**
The CROSSFIX® console is classified as non-combustible. The melting temperature of stainless steel is 1450 °C vs. 660 °C for aluminium.

> **Certified**
CROSSFIX® is ETA certified. This reduces the planning 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.

Vertical assembly



Horizontal assembly

CROSSFIX® can be used universally

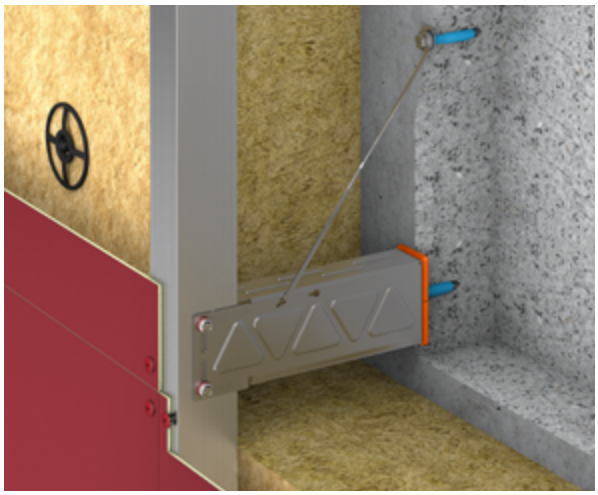
One console for different assembly purposes

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

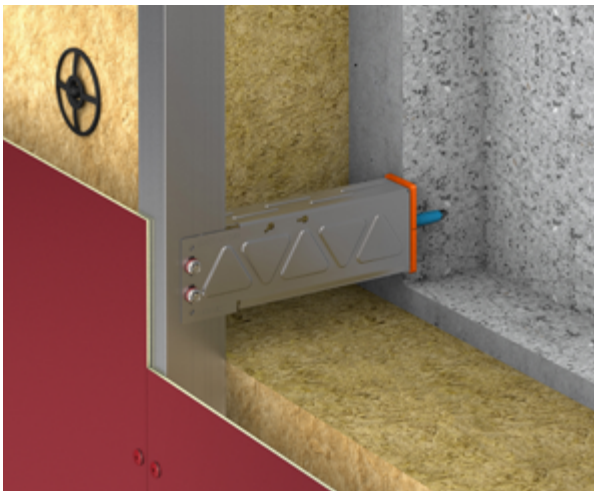
Regardless of whether it is a fixed point or sliding point installation. This eliminates the previous need to install different consoles.

Vertical assembly

Fixed and sliding point design for vertically running support profiles



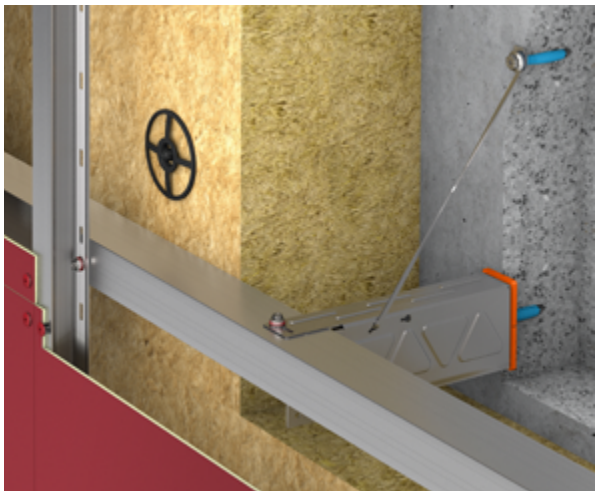
Vertical fixed point
Fixing through clearance hole, optionally with power key for better load transmission



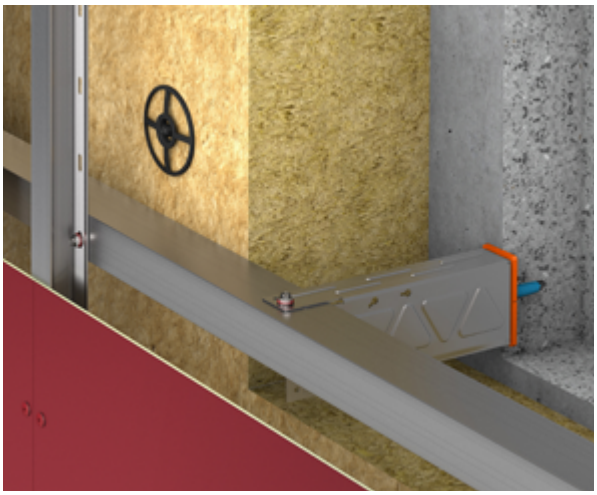
Vertical sliding point
Fastening through slotted hole

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 rainscreen 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.

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.

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

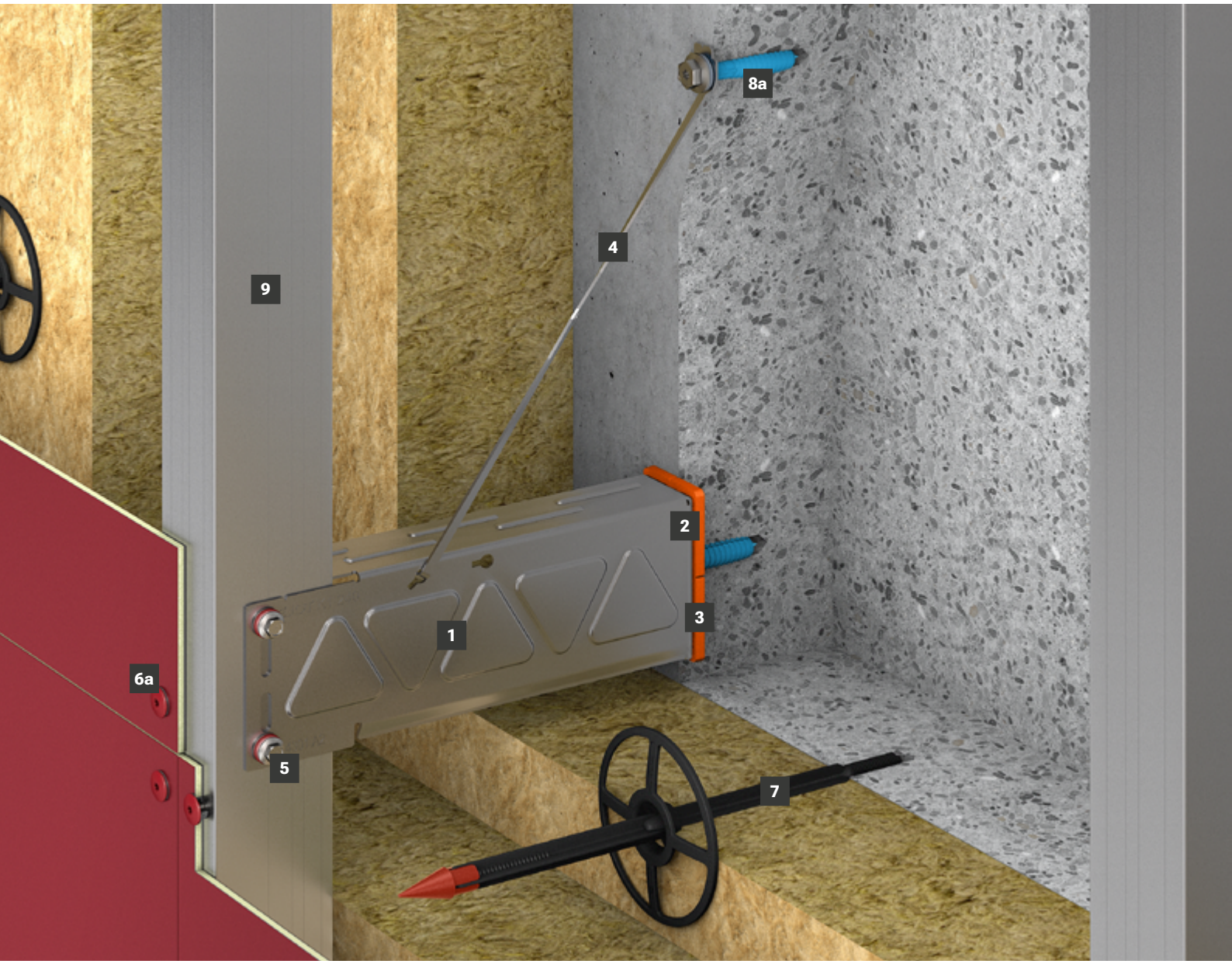
With the CROSSFIX® substructure system, compared to aluminium consoles, only a minimal thermal bridge forms (image 2) and the wall in the interior cools significantly less. This example clearly shows how the use of a stainless steel substructure significantly increases energy efficiency.

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 load-bearing 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 (A2/A4** 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

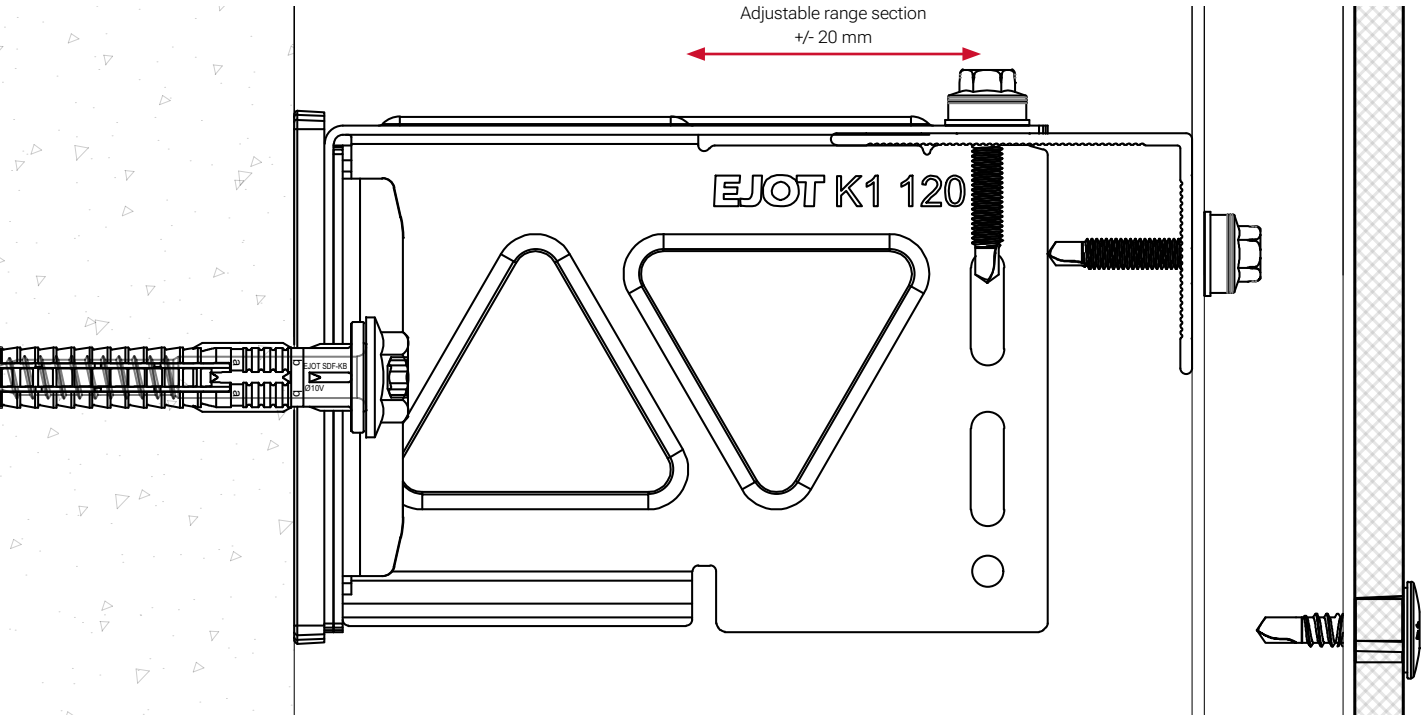
CROSSFIX® system structure

System depth

Front edge of the static load-bearing substrate

System depth (average value, all data in mm)			
Thermal stop	Wall bracket CROSSFIX® console	1st profile position min/mean/max Overhang + material thickness	2nd profile position (optional) Overhang + material thickness
5	80	2/20/40 (adjustable range +/- 20)	27
	100		
	120		
	140		
	160		
	180		
	200		
	220		
	240		
	260		
	280		
	300		
	320		
	340		
	360		
	380		
	400		

Front edge of the last position of support profile (without hanging or special profile or similar)



Calculation example

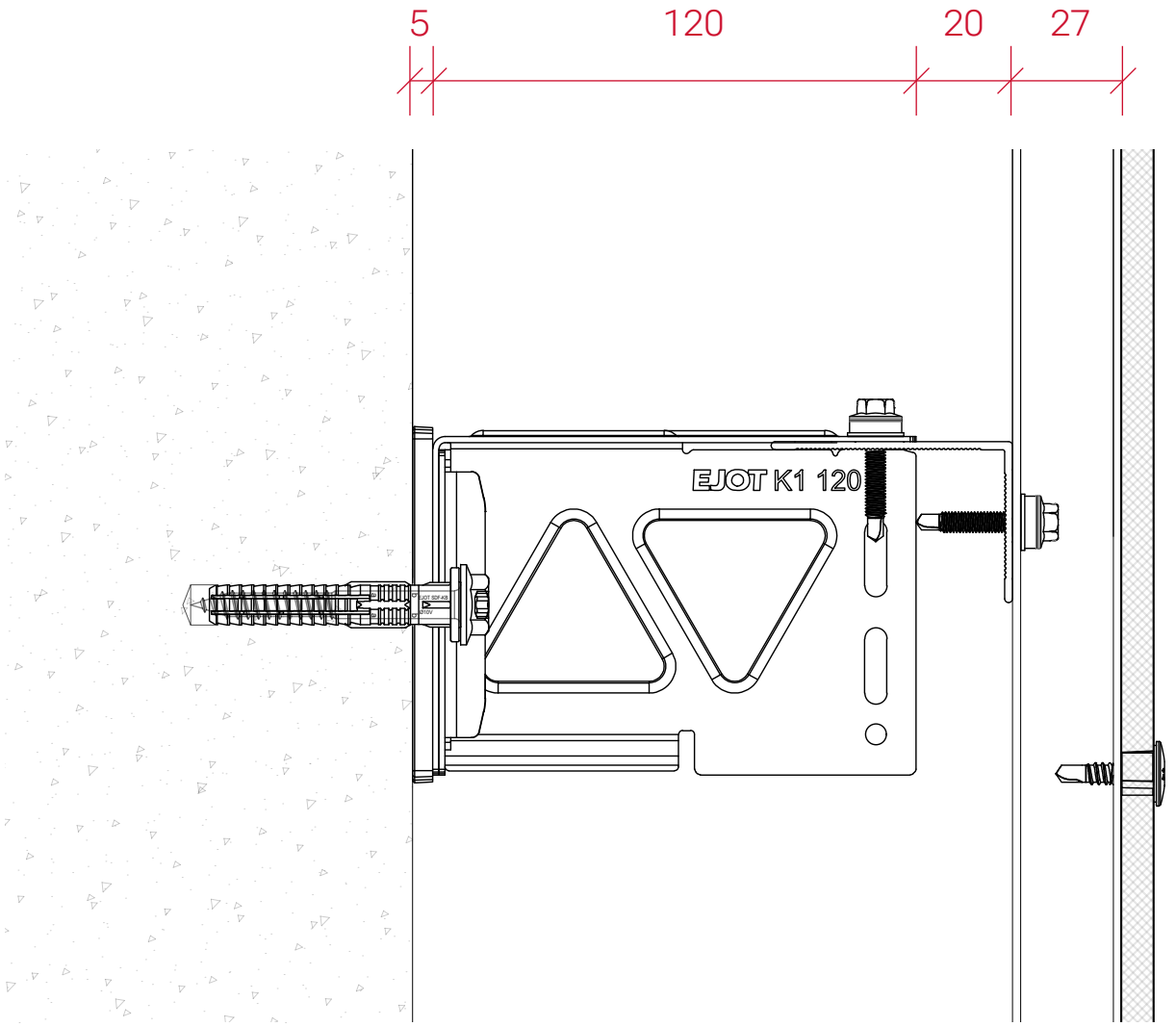
Standard system-depth console K1-120 with two-layer profile structure

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**



Our service – your advantage

Your satisfaction is our top priority

With the EJOT CROSSFIX® system we offer you a complete facade substructure system from a single supplier. You provide all the information about your project and we will develop the right solution for you.
In addition to our complete range of services we offer you the following optional services specifically for your CROSSFIX® project:

Support with the design of the facade (cladding)
Supporting architects, designers and cladding manufacturers in planning cladding layouts and cladding drawings for production (cutting lists and drilling plans).

Initial sizing
Checking the static load capacity of the entire CROSSFIX® substructure system and all its components based on the project-specific requirements.

Optimised mounting plans
To meet all project requirements (architectural, structural, thermal and financial), EJOT optimises the arrangement of the fastening elements for each project individually.

Manufacturing drawings and installation plans
Project-specific, detailed assembly drawings, created in consultation with the project participants (architects, engineers, contractors, etc.), enable easy installation of the facade system. If required, we will support you throughout the project until its completion.

Project coordination and management
As the central point of contact for assembly and production in the planning and design of the facade, EJOT supports the coordination with all project-relevant parties and takes over the management of measures and activities to ensure a smooth project flow.

Access the project check list via QR code
Simply scan the QR code, fill in the checklist and return it by e-mail with all project documents.
www.ejot.com/crossfix

***Please note:**
To be able to use the form functions of the PDF document to their full extent, you must first save it locally and open it with a program that supports filling in forms (e.g. Adobe Acrobat DC).

We are committed

EJOT® is a member of various trade associations and organisations

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www.fvhf.de

Deutscher Schraubenverband e. V.
www.schraubenverband.de

Verband Fenster + Fassade
www.window.de

Fachverband Werkzeugindustrie e. V.
www.werkzeug.org

ift Rosenheim, Institut für Fenstertechnik e. V.
www.ift-rosenheim.de

Institut Bauen und Umwelt e. V.
www.ibu-epd.com

Industrieverband für Bausysteme im Metallleichtbau e. V.
www.ifbs.de

Global Fastener Alliance®
www.globalfasteneralliance.com

Warenzeichenverband Edelstahl Rostfrei e.V.
www.wzv-rostfrei.de

Verband für Dämmsysteme, Putz und Mörtel e. V.
www.vdpm.info

www.ppa-europe.eu

www.mcrma.co.uk

Österreichischer Fachverband für hinterlüftete Fassaden
www.oefhf.at

Schweizerischer Fachverband für hinterlüftete Fassaden
www.sfhf.ch

Europäischer Fachverband für Wärmedämm-Verbundsysteme
www.ea-etics.com

ARGE Qualitätsgruppe Wärmedämmsysteme
www.waermedaemmsysteme.at

Österreichische Arbeitsgemeinschaft Putz
www.oeap.at

Stifterverband für die Deutsche Wissenschaft e.V.
www.stifterverband.org

BuGG Bundesverband GebäudeGrün e. V.
www.gebaeudegruen.info/

At home in many trades

The product segments of the Market Unit Construction

With the Market Unit Construction, EJOT offers professional fastening solutions for the building industry in the Building Fasteners and ETICS Fasteners sectors.

With EJOT you get everything you need for almost every application from a single supplier with the usual high product quality.

Timber Construction
High-quality fastening technology for anchor and direct assembly in timber construction

www.ejot.com/timber-construction

Industrial Lightweight Construction
High-quality fasteners for fixing profiled sheets and sandwich panels in the industrial lightweight construction sector

www.ejot.com/industrial-lightweight-construction

Solar
Fastening technology for solar and photovoltaic installations on trapezoidal steel profile and sandwich element roofs as well as for use on fibre cement roofs

www.ejot.com/solar

Flat Roofing
Fasteners, and installation tools for the efficient fixing of insulation and waterproofing membrane to flat roofs and slightly sloping roofs

www.ejot.com/flat-roofing

Rainscreen Facades (RVF)
Complete substructure system with consoles, screws, anchoring solutions, insulation support anchors and anchors

www.ejot.com/rainscreen-facades

Anchoring Technology
Special products for mechanical anchoring in non-cracked and cracked concrete as well as chemical and thus expansion pressure-free products for heavy-duty fastening in concrete and masonry

www.ejot.com/anchoring-technology

Window and Glass Facade Technology
High quality fastening elements for window and door assembly and for use in aluminium/glass facade systems

www.ejot.com/window-and-glass-facade-technology

Interior Work
Special products for fastening wood chipboards and for fastening attachments in plasterboard, masonry or concrete

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Fastening solutions for External Thermal Insulation Composite Systems (ETICS)
Special anchors for fixing insulation on external wall systems

www.ejot.com/etics-fasteners

Mounting Elements for Attachments
Fastening solutions for the planned and subsequent fastening of attachments to ETICS facades

www.ejot.com/etics-mounting-elements

Profiles for External Thermal Insulation Composite systems (ETICS)
Profiles for high quality render finishes

www.ejot.com/etics-profiles

Fastening solutions for the building industry

The EJOT Construction Division supplies to selected segments of the building industry. This includes professional applications on building facades as well as installation solutions for technical facilities inside the building.

Striving for high product quality is not an end in itself for EJOT. The customer really benefits from our screws and anchors. Therefore reliable installation also means low failure costs for the customer. Moreover, durable quality joints provide the best protection against expensive customer complaints. This is why our strategic product lines are manufactured according to highest quality standards.

We convey expert knowledge about the use of our products to all our customers. And if required, we are on hand with advice and support for fastening systems.

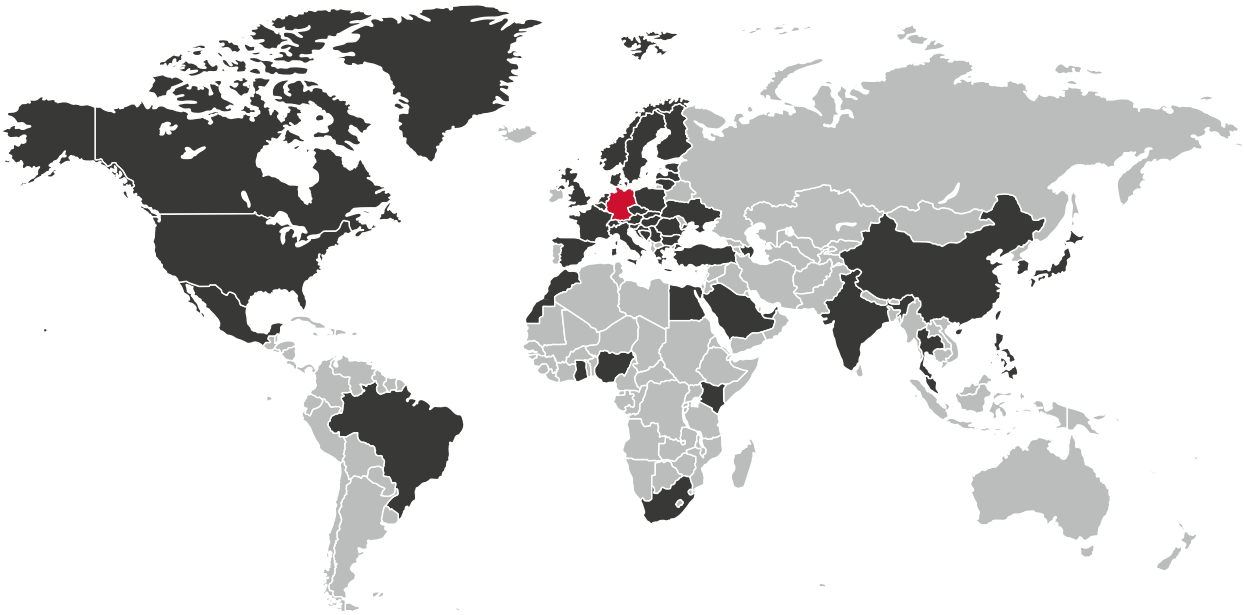
Other services include advice over the telephone, application advice on-site, initial sizing, component tests in the EJOT Test Centre and a comprehensive training programme for system providers, architects, specifiers, assemblymen and contractors with the EJOT TEC ACADEMY.

Innovative products are the key to success.
We leave nothing to chance. We identify our customers' needs under real conditions on the job site. Communication from the market and about market requirements to the development departments is ensured by a regular exchange between our technical experts and specialists and users from the international building industry. This is how we develop innovative product solutions that offer a clear added value and inspire customers.

EJOT quality online:
www.ejot.com/quality

The International EJOT® Group

The origin is in Germany, the future in the world



Locations wordwide

www.ejot.com/subsidiary_selector

Find your contact for all EJOT sales and production companies as well as our partner and sales offices - worldwide. We are looking forward to hearing from you.

53 Mio.

Screws

In our manufacturing plants around the world, we produce up to 52 million items for construction and industry every day.

33,000

Products

Screws, anchors, through bolts or complex part groups – the EJOT portfolio is made up of around 36,000 products.

2,400

Patents

Unsere Ingenieure entwickeln stetig neue Produktlösungen, die durch mehr als 2.400 Patente geschützt sind.

1922

founded

The history of EJOT dates back to the early 20th century.

4,400

Employees

More than 4,500 employees work for our worldwide customers every day.

ENGINEERED IN GERMANY

The majority of the EJOT portfolio is produced in Germany and developed by our own R&D department.

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GERMAN INNOVATION AWARD '21 WINNER

DETAIL PRODUCT AWARD WINNER 2020

EJOT. Bringing it together.

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