ONE HUNDRED YEARS

EJOT®

Applications | Products | Special

# Iso-Bar ECO

## Greening system for ETICS facades

Bringing it together.

# The trend: Facade greening

## Ecological facade design for a better quality of life

**The sustainable design of facades is an important issue. Climate change is heating up our cities, and at the same time green areas are becoming scarce. However, these are particularly necessary in city centres in order to have a positive influence on the $CO_2$ balance, reduce harmful substances and ensure good air quality. They also serve as recreational space and relaxation and increase well-being. The maintenance and expansion of these areas are particularly important.**

Vertical greening of facades can solve this problem. In urban areas in particular, in which no new planting is feasible due to a lack of space, it offers a flexible way of building green spaces, binding pollutants and thus sustainably improving the climate. Vertical greening has many advantages: in summer, it provides shade for the facade, keeping the interior pleasantly cool, and in winter, it has a heat-insulating effect. In addition, it has a positive impact on sound insulation. The plants absorb the noise. In addition to the positive aspects for the residents, the animal world also benefits from the green facade. The plants provide habitats for small animals and important beneficial insects, which are scarce in city centres. Many countries and cities have recognized this trend and support greening facades with various funding programs.

The greening of the facade does not only offer advantages from an ecological point of view. The flexible design possibilities for facades are almost endless here. This "green architecture" leads to an upgrading of the grey areas of the city. Green buildings have a special charm and shape a unique appearance.

# We bring life to ETICS facades

## Facade greening with the Iso-Bar ECO

When fastening greening systems to facades with thermal insulation (ETICS), the focus is not only on secure fastening, but also especially on an anchoring in the substrate optimised for thermal bridging. For this very special challenge, EJOT added a complete fastening system to its portfolio with the new Iso-Bar ECO. Greening on ETICS facades can now also be implemented easily, safely and in a way that optimises thermal bridges.

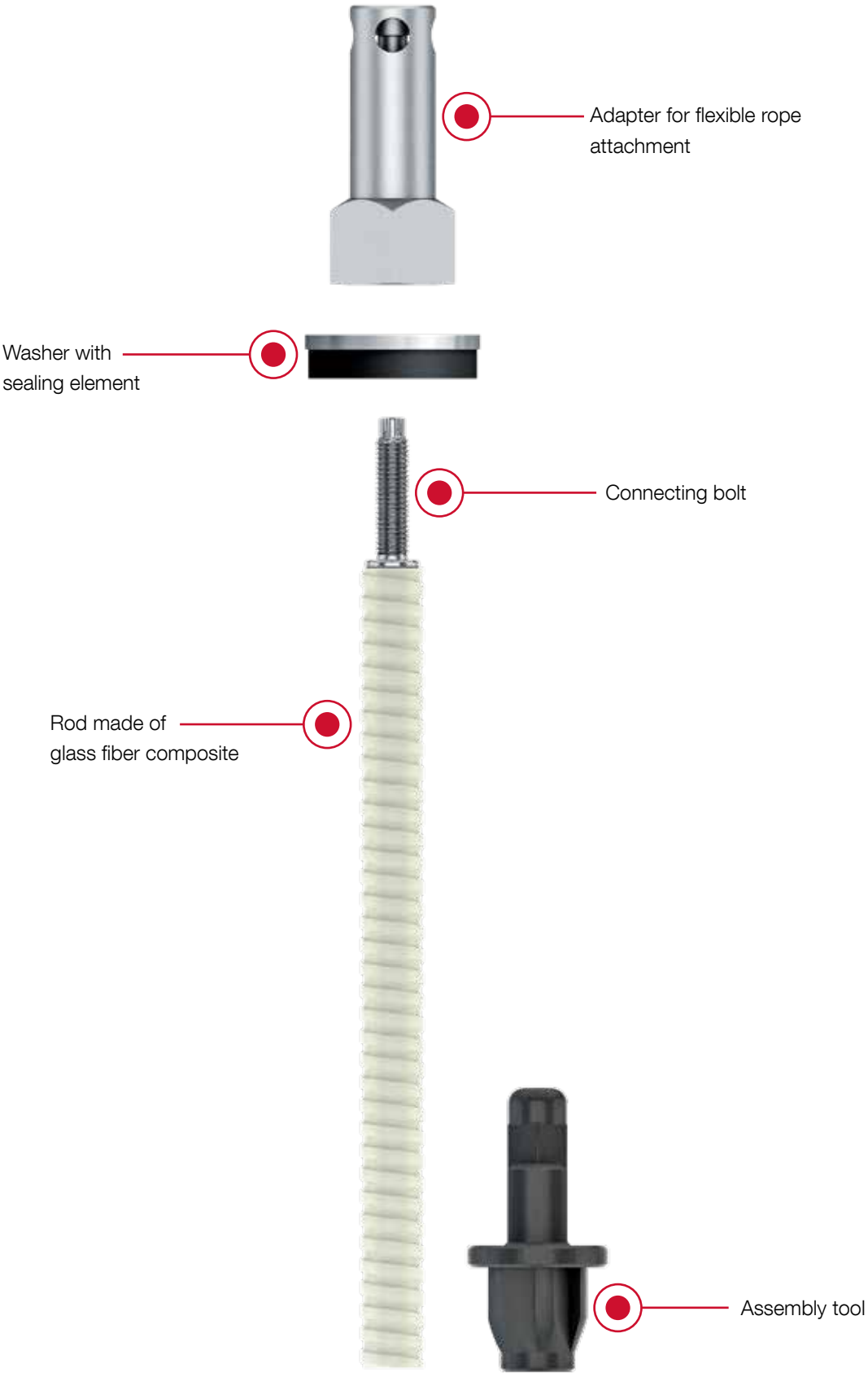
The EJOT Iso-Bar ECO is a thermally separated fastening element for subsequent and therefore flexible fastening on thermally insulated facades. The reinforced glass fibre plastic provides minimal thermal bridge effect. This way, unnecessary heat losses can be avoided.

It is installed using injection mortar and it can be fixed into concrete as well as into solid and perforated brick and aerated concrete, and can transfer high loads. The possibility of cutting to length on site to suit the insulation thickness enables the realisation of a lean product range.

The Iso-Bar ECO is available in four lengths and thus ensures a completely flexible usage on-site. A special adapter enables the climbing system to be accommodated for greening. In addition to the Iso-Bar ECO fastener, EJOT offers a complete greening system for thermally insulated facades and a wide variety of design options.

# Iso-Bar ECO

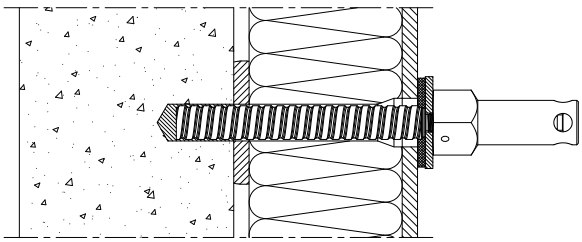
## Focus on the fastener



## Overview of the advantages

- Flexible rope attachment through adapter
- Variable rope designs / grid geometries
- Permanent seal against moisture through high-quality seal (BG1 according to DIN 18542)
- Low classified thermal bridge effect
- Subsequent, flexible installation
- Can be cut to length on site to suit the local side conditions
- Small product variety for insulation thicknesses up to 300 mm
- Easy and safe installation with innovative assembly tools
- Expansion-pressure free installation in the substrate
- Can also be used at temperatures down to -20 ° C in combination with Multifix USF Winter mortar
- Weather and UV-resistant

## Technical specifications



| Characteristic values | |
|---|---|
| Approval (DiBt Germany) | Z-21.8-2083 |
| Nominal diameter [rod] | 22 mm |
| Diameter [washer] | 60 mm |
| Diameter [seal] | 58 mm |
| **Lengths and effective lengths** | |
| Iso-Bar ECO | max. effective length* concrete / masonry |
| Iso-Bar ECO 200 | 160 / 120 mm |
| Iso-Bar ECO 260 | 220 / 180 mm |
| Iso-Bar ECO 320 | 280 / 240 mm |
| Iso-Bar ECO 380 | 340 / 300 mm |

*max. effective length = Thickness of non-bearing layers, e.g. glue, rendering, reinforcing material, insulating material, etc.

# Delivery

To simplify the handling, the EJOT® Iso-Bar ECO is delivered as a set.

## SET EJOT® Iso-Bar ECO

| Order example | PU [set] | Article number |
|---|---|---|
| SET EJOT Iso-Bar ECO 200 | 1 | 8779200110 |
| SET EJOT Iso-Bar ECO 260 | 1 | 8779260110 |
| SET EJOT Iso-Bar ECO 320 | 1 | 8779320110 |
| SET EJOT Iso-Bar ECO 380 | 1 | 8779380110 |

### Included in delivery

> EJOT Iso-Bar 200/260/320/380
> Washer Ø 60 mm with seal Ø 58 mm
> Adapter incl. cylinder screw
> Assembly tool
> Perforated sleeve (for use in perforated masonry-brickwork)
> Mixing nozzle expansion

## Chemical installation

**USF Winter**
upon request

ETA-16/0107
ETA-16/0089

| Order description | PU [pieces] | Article number |
|---|---|---|
| Mortar cartridge Multifix USF 280 ml | 1 | 9571000280 |
| Mortar cartridge USF winter 300 ml* | 1 | 9571000300 |

Ordering information: mortar cartridges to be ordered separately.
*upon request

### Application range

> For installation in cracked concrete (option 1) and non-cracked concrete (option 7) (ETA-16/0107)
> For installation in masonry (ETA-16/0089)
> For installation in natural stone (without approval)

### Characteristics

> Vinyl resin, styrene-free

### Advantages

> Processing with common applicator gun possible
> Can be used in wet concrete and water-filled drill holes
> Delivery including mixing nozzle

## Optional accessories

| Order description | PU [pieces] | Article number |
|---|---|---|
| EJOT Iso-Bar Drill Ø24/310-250[1)] | 1 | 8779424250 |
| EJOT Iso-Bar Drill Ø24/450-400[1)] | 1 | 8779424400 |
| EJOT Iso-Bar Drill Ø26/250-200[2)] | 1 | 8779226200 |
| EJOT Iso-Bar Drill Ø26/450-400[2)] | 1 | 8779226400 |
| Blow-out pump | 1 | 9150300000 |
| Applicator gun AP 300 | 1 | 9570010300 |
| Cleaning brush Ø 26 mm[1)] | 1 | 9150300026 |
| Cleaning brush Ø 28 mm[2)] | 1 | 9150300028 |

[1)] For applications without perforated sleeve
[2)] For application with perforated sleeve

**Processing time and minimum curing time**

| Ambient temperature [°C] | Processing time | Curing time in dry weather | Curing time in wet weather |
|---|---|---|---|
| -10* | 1h 30’ | 24h | 48h |
| ≥ -5 | 1h 30’ | 14h | 28h |
| ≥ 0 | 45’ | 7h | 14h |
| ≥ +5 | 25’ | 2h | 4h |
| ≥ +10 | 15’ | 1h 20’ | 2h 40’ |
| ≥ +20 | 6’ | 45’ | 1h 30’ |
| ≥ +30 | 4’ | 25’ | 50’ |
| ≥ +35 | 2’ | 20’ | 40’ |
| +40 | 1.5’ | 15’ | 30’ |

*Min. cartridge temperature +15 °C

# System accessories for facade greening

Rope cross 90°
plastic

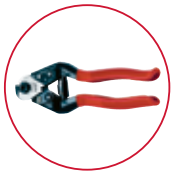
Rope cross 90°
A4

Rope cross adjustable
A4

Climbing rung
plastic

Round strand rope
Ø 4 mm
A4

Rope cap



Wire rope cutter

| Order description | PU [pieces] | Article number |
|---|---|---|
| Iso-Bar ECO rope cross 90° - plastic | 1 | 8779888002 |
| Iso-Bar ECO rope cross 90° - A4 | 1 | 8779888006 |
| Iso-Bar ECO rope cross adjustable - A4 | 1 | 8779888003 |
| Iso-Bar ECO climbing rung - plastic | 1 | 8779888004 |
| Iso-Bar ECO Round strand rope Ø 4 mm - A4 | 1 | 8779888001 |
| Iso-Bar ECO rope cap | 1 | 8779888005 |
| Wire rope cutter | 1 | 8779888991 |

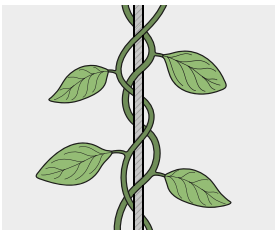
# 360° Service

## Selection aids and comprehensive services. Only available from EJOT®.

There are hardly any limits to the design options of green facades.

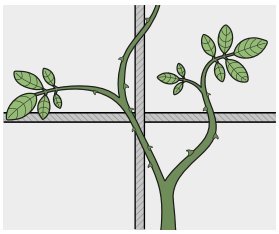
In order to make the best possible use of the scope and the wealth of variants, the project-related selection of the plant species and the construction of the greening system are particularly important. The table is intended to support you in the first selection of the suitable plant species or the appropriate rope guide for your green facade.

## EJOT® Iso-Bar ECO – Selection aid for plant species and geometric design

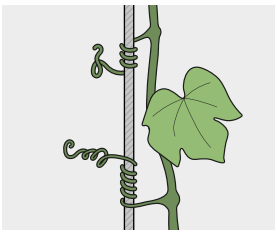


Creeper/Climber

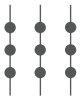
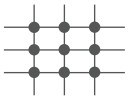
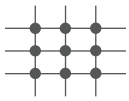
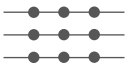
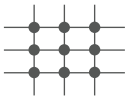
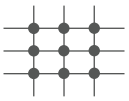
Leaf and petiole climbers



Incumbent climbers



Shoot tendrils

| Plant species | Plant example | Rope guidance | | Grid height [mm] | Grid width [mm] | Growing height [m] | Plant weight[2] [kN/m²] |
|---|---|---|---|---|---|---|---|
| Creeper/climber[1] | Wisteria<br>Lonicera<br>Fallopia<br>Actinida | Vertical |  | – | 400 - 1500 | 3 - 30 | 0.10 - 0.26 |
| | | Grid-like |  | 400 - 600 | 400 - 1500 | | |
| Leaf and petiole climbers | Clematis<br>Tropaeolum | Grid-like |  | 400 - 600 | 400 - 1500 | 3 - 10 | 0.03 - 0.12 |
| Incumbent climbers | Jasminum<br>Pink | Horizontal |  | – | 400 - 1500 | 2 - 8 | 0.06 - 0.12 |
| | Rubus | Grid-like |  | 400 - 600 | 400 - 1500 | | |
| Shoot tendrils | Vitis<br>Ampelopsis | Grid-like |  | 400 - 600 | 400 - 1500 | 3 - 30 | 0.12 - 0.25 |

[1] In the case of light to medium-strong creepers/climbers, the ropes can be looped around in a spiral. In the case of strong creepers/climbers, the plants should be tied to the ropes outside and guided. Sufficient distance to other building structures (down pipes, marquees, awnings, parapets, etc.) prevents them from being damaged by the growth in thickness of the creepers/climbers. For vertical ropes, we recommend the use of climbing rungs at a distance of max. 800 mm (for self-assembly on site).

[2] Plants soaked: value + 25%, plants iced: value + 80%.

## Pre-dimensioning – A service by EJOT®

Specifically for facade greening with the Iso-Bar ECO, EJOT offers pre-dimensioning of your greening system as a service.

**With the pre-dimensioning you will receive:**

- Proof of load-carrying capacity, e.g. based on your individual pre-planning
- Portfolio overview/part list (rough overview for the preparation of offers)

A special form is available to easily query all relevant data. It serves as the basis for the pre-dimensioning.

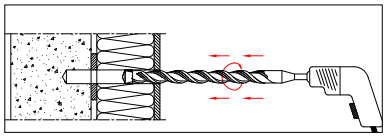
**Note:**
Pre-dimensioning serves only as a first orientation. It does not replace the static dimensioning of the system.

**Are you interested in pre-dimensioning for your facade greening?**
**Contact our ETICS service team.**

# Assembly instruction

Mounting parameters see Z-21.8-2083 amendment 5 / note mounting instruction ETA compound anchor.

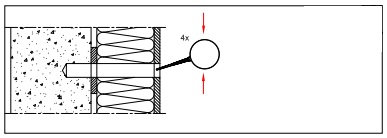
**1. Create drill hole**
Pre-drilling (centring hole) with Ø 10 or Ø 12 mm is necessary!



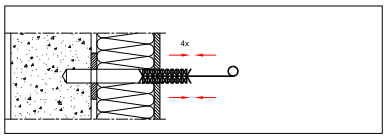
Final drill hole creation
Note drill hole diameter $d_0$:
Solid building material without mesh sleeve:
$d_0$ = 24 mm
Solid and perforated building material with mesh sleeve:
$d_0$ = 26 mm

Concrete, solid and block brick (sand-lime), perforated brick and cavity block (sand-lime): hammer drilling
Clay brick, perforated brick, solid brick (light concrete), cavity block (light concrete): only rotary drilling!

**2. Clean drill hole**

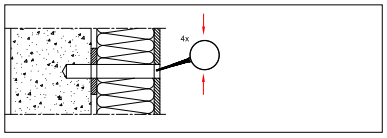



Blow out 4 times



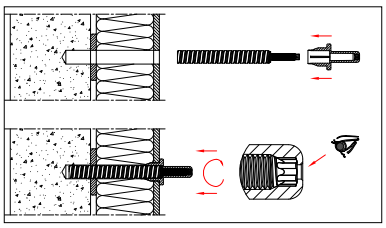

Brush out 4 times

Note the brush diameter $d_B$ depending on the diameter of the drill hole $d_0$:
Solid building materials without mesh sleeve
($d_0$ = 24 mm): $d_B$ = 26 mm
Solid and perforated building materials with mesh sleeves
($d_0$ = 26 mm): $d_B$ = 28 mm




Blow out 4 times

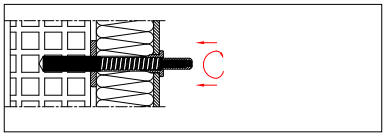
**3. Expansion of the render**



Push the installation tool onto the cut length of the Iso-Bar acc. to attachment 4, until it is set (also see attachment 7)

Check its position via back opening (see detailed illustration)

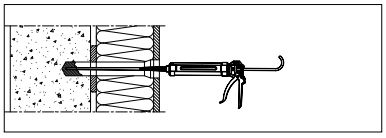
With perforated building materials and cavities in solid building materials, use an additional perforated sleeve acc. to attachment 6 on the end of the bar.



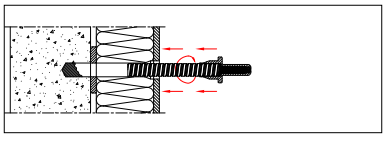
Rotate the Iso-Bar ECO into the drill hole until the stop position of the installation tool is set. With hard / thick render coatings, use e.g. an open-end wrench (SW 19).

Carefully pull the Iso-Bar ECO out of the drill hole so that the position of the mesh sleeve remains unchanged.

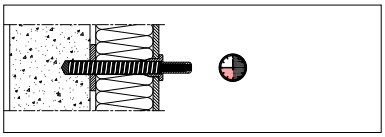
**4. Installation of the Iso-Bar ECO**



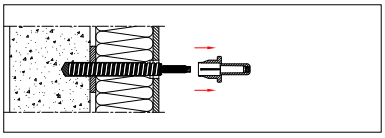
Fill the drilled hole or perforated sleeve, free of cavities, from the base of the hole. For the amount of mortar required, see attachment 7.
Depending on the thickness of the insulation, an extension hose may need to be used!



Insert the Iso-bar ECO by rotating it and using the collar on the installation tool as end stop.

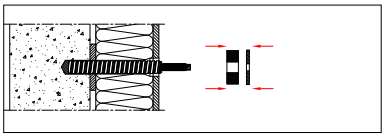


Note the curing and processing time according to ETA compound anchors.

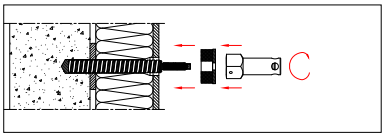


At the end of the curing time:
Remove the installation tool in an axial direction!

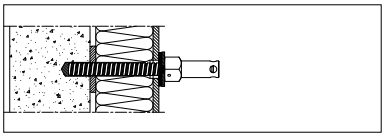
**5. Installing the attachment**



Install the sealing element*.

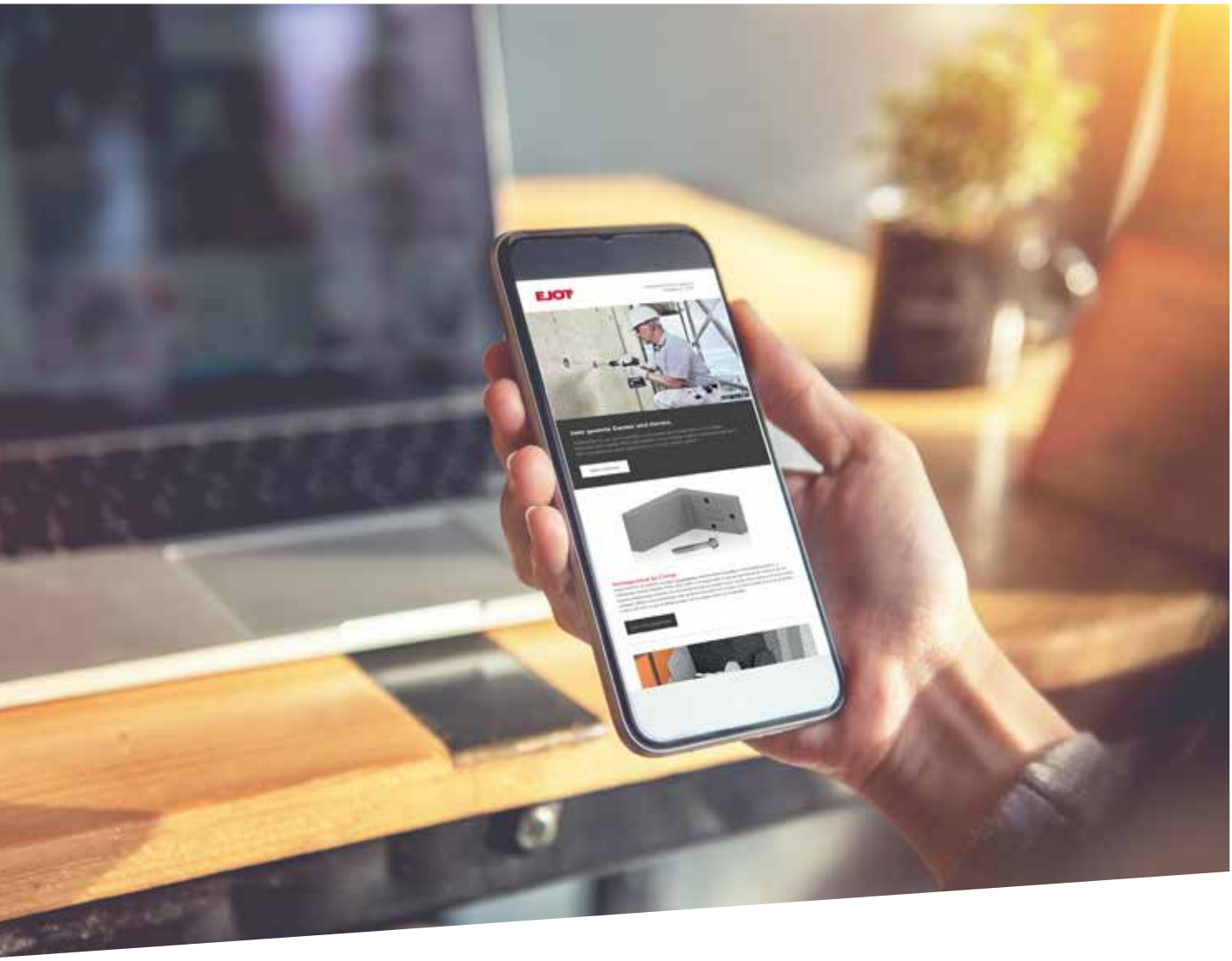


Screw on the adapter hand-tight as far as it will go. (Compressed height of sealing element approx. 5 mm).
The end position is locked (safety lock against torsion) using the M6 headless screw on the side (3 mm hexagon socket drive).



The adapter is ready to take in the rope system. The rope is locked using a cylinder head screw (8 mm hexagon socket drive).

*The sealing effect depends on the actual (render) surface and must be assessed individually

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