

# Flat roof installations.



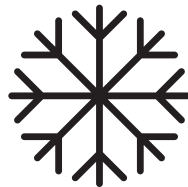
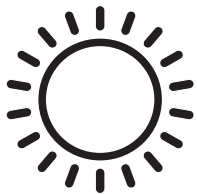


# Flat roof installations.

Flat roofs are used on all kinds of buildings, from single-family homes to blocks of flats, as well as in high-rise buildings, industrial and administrative buildings. Waterproof roof seals on top of flat roofs protect against penetration by water. The roof seal also needs to be resistant to burning brands and radiant heat in accordance with "EN V 1187 B roof t1". Typical materials used to seal flat roofs today include bituminous sheeting and sealing and synthetic roofing membranes (films). Other kinds of weather in addition to precipitation itself can influence the roofing materials, including temperature, wind, air pressure and humidity.

Flat roofs are a specialised type of building roof. Roof types are primarily differentiated into:

- Flat roofs with a slope of  $0^{\circ}$  –  $10^{\circ}$   
(in some countries  $0^{\circ}$  –  $5^{\circ}$ )
- Sloping roofs:  $>10^{\circ}$   
(or  $> 7^{\circ}$  DIN 1055, or  $> 5^{\circ}$  in some countries)



All of these influences impact a flat roof and result in requirements applicable to sealing, water drainage, and the materials used.

Flat roof installations include, in particular, mounting parts of the building installations such as air conditioning units, ventilation ducts, pipelines or cable systems on flat roofs. Commonly-used solutions for mounting and fixing installations on flat roofs include:

- Mounting on concrete or steelwork base structures
- Mounting on steel supports, placed on the roof structure, such as concrete
- Installation on concrete slabs for load distribution on the roof seal

These commonly-used solutions influence the roof seal, and therefore the protection of the rooms and building areas below. They require a specialised flat roof bracket to serve as a load distributor and flexible installation point for secure, sealed installation on flat roofs.

# Flat roof base FFRB and FFRBH.

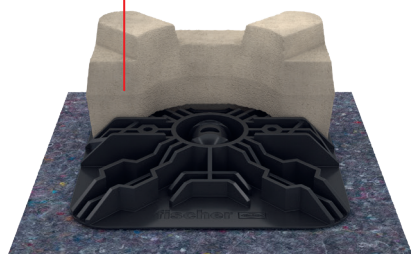
## Secure and variable thanks to tolerance compensation.



The rounded form of the base plate and the rounded edge on the bottom **prevent damage to the roofing membrane.**

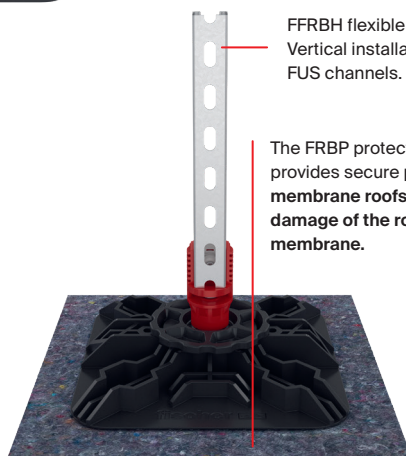
The flat roof base plate serves as the basis for 2 variants, and offers a design and dimensions that provide **optimal load distribution.**

The FFRBB ballast is simply set on the flat roof base to **prevent wind damage to installations.**



FFRBH flexible & variable:  
Vertical installation of FUS channels.

The FRBP protective fabric provides secure **protection for membrane roofs and prevents damage of the roofing membrane.**



FFRB simple & secure:  
Horizontal installation of FUS channels.



### Your advantages at a glance

- The fischer flat roof base allows for installation of air conditioning units, maintenance platforms, walkways, pipelines and cable trays, and is the optimal solution for all installations on flat roofs.
- The fischer flat roof base ensures load distribution and reduction of point loads and thus protects against notifications of defects and recourse claims.
- The fischer flat roof base ensures the system fit with the hot-dip galvanised steel version of the proven FUS channel system, allowing for economical installation.
- The base plate of the flat roof base ensures the stable, load-bearing attachment of installations on flat roofs, and can be used for a wide range of different applications.

# Flat roof base standard FFRB.

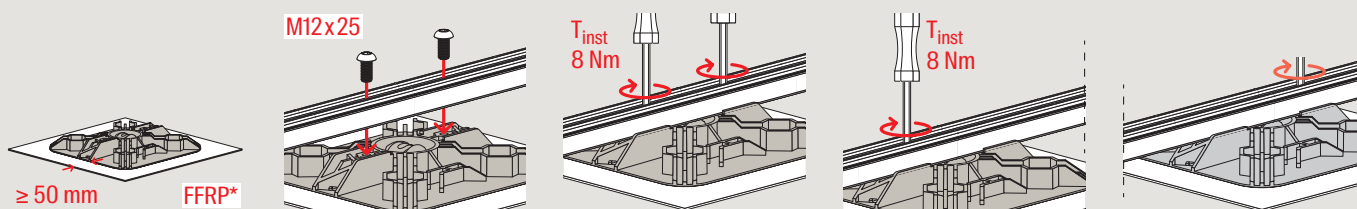
## Simple & secure:

## Horizontal installation of FUS channels.

The fischer flat roof base FFRB allows for custom-fit horizontal installation of FUS channels, and is the **simple and economical solution** for pipeline and cable trays.



Use as single or multi-flat roof base  
e.g. 2 x FFRB fischer flat roof base standard  
for an FUS channel.





# Flat roof base flexible FFRBH.

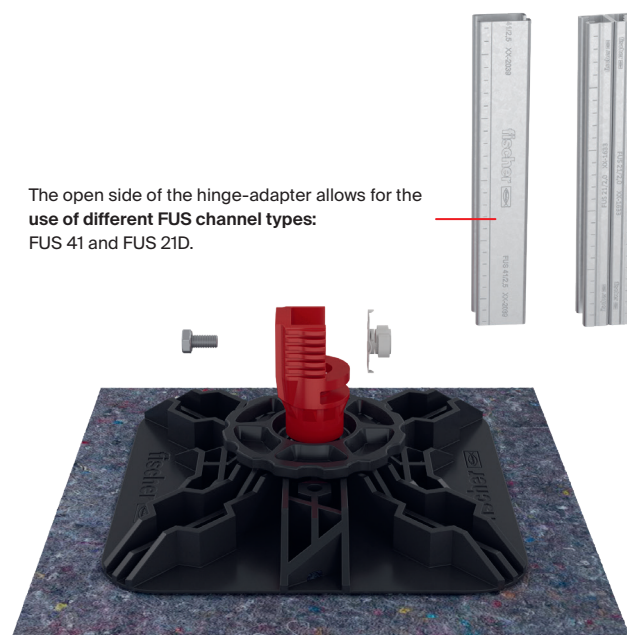
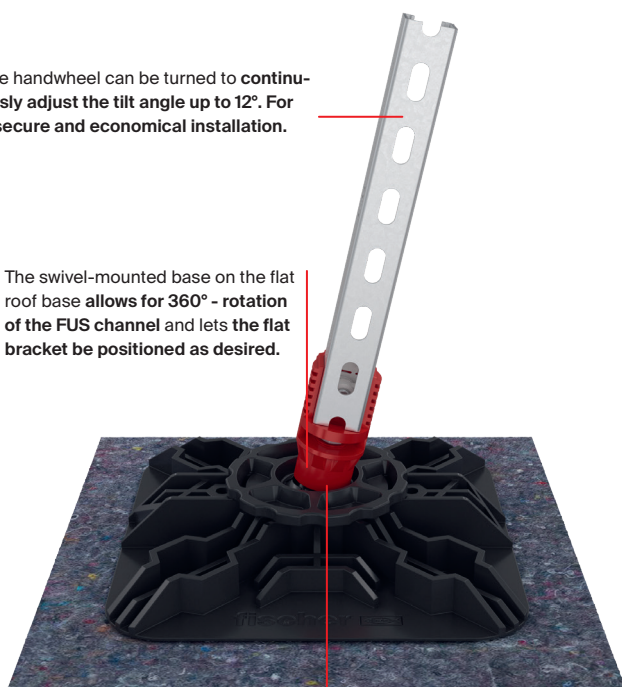
## Flexible & variable:

## Vertical installation of FUS channels.

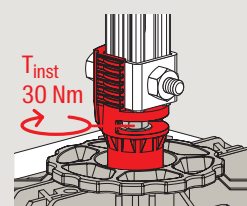
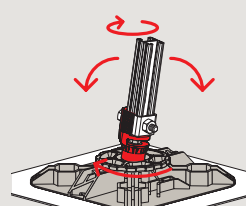
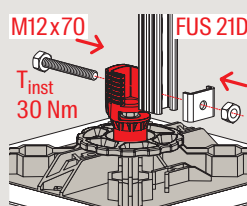
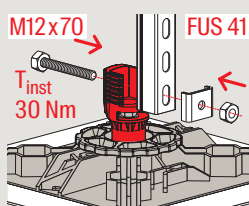
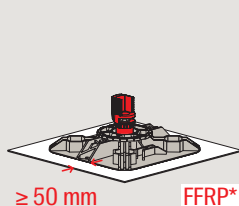
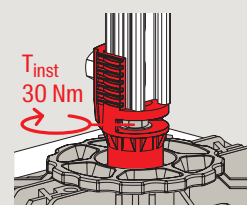
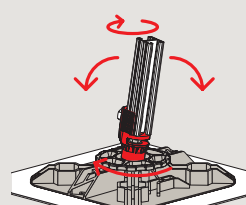
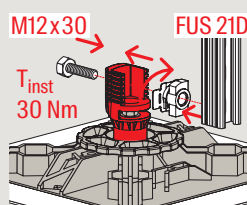
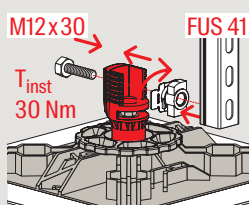
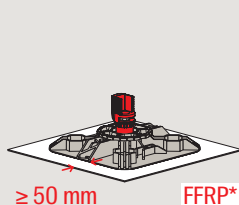
The handwheel can be turned to **continuously adjust the tilt angle up to 12°**. For a secure and economical installation.

The swivel-mounted base on the flat roof base **allows for 360° - rotation of the FUS channel** and lets the flat bracket be positioned as desired.

The open side of the hinge-adapter allows for the **use of different FUS channel types: FUS 41 and FUS 21D.**



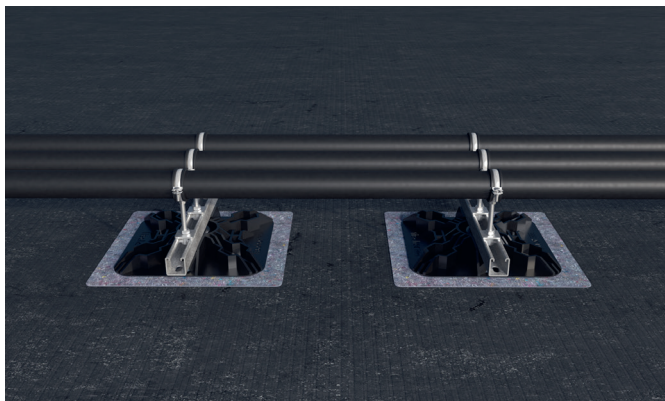
The fischer flat roof base with hinge-adapter FFRBH **allows for the custom-fit installation of vertical FUS channels**. This creates a secure structure for the installation of a variety of aggregates, walkways and cables.



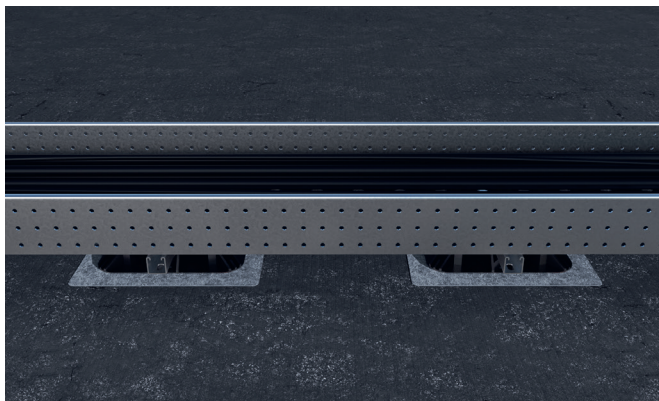
# Applications

## Flat roof installations.

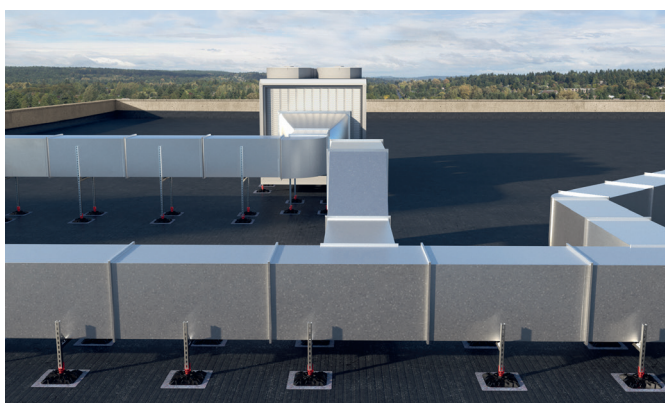
### Applications



Pipelines and pipeline routes:  
Solution with FFRB flat roof base standard



Electric cables and cable trays:  
Solution with FFRB flat roof base standard



Ventilation systems and ventilation ducts:  
Solution with FFRBH flat roof base flexible



Air conditioning systems, heat exchangers and cooling towers:  
Solution with FFRBH flat roof base flexible



Maintenance platforms, walkways and bridges:  
Solution with FFRBH flat roof base flexible



Solar thermal energy including accumulator, or photovoltaic:  
Solution with FFRB flat roof base standard



# Assortment and loads.

## fischer Flat roof base



FFRB



FFRBH



FFRP



FFRBB

Item	Art.-No.	Length L [mm]	Width B [mm]	Height H [mm]	Height H <sub>1</sub> [mm]	Tightening torque t <sub>inst</sub> [Nm]	Max. recommended static load (upright) n <sub>rec.</sub> [kN]	Thread	Drive
FFRB Flat roof base standard	559127	340	340	52	-	30	20	-	-
FFRBH Flat roof base hinged	559128	340	340	168	50	30	20	-	-
FFRP Flat roof base protector	559129	450	450	-	-	-	-	-	-
FFRBB Flat roof base ballast	559130	330	135	150	-	-	-	-	-
LKS Oval head screw M12x25 A2	559972	25	-	-	-	-	-	12	S 8

A variety of materials are used as insulation on flat roofs, and differ significantly in their compressive strength. Mineral wool is used frequently due to its other material properties, but has a low compressive strength (see the table below). In accordance with EN 13162, mineral wool insulation may be used as a sealing

material underlay for roofs with solar systems or other systems if the compressive strength is min. 70 kPa at 10 % compression, and if there is a load-distributing layer above the insulation.

Insulation material roof	Compressive strength insulation material	Max. resulting load for an area of 0,105 m <sup>2</sup>
Mineral wool	70 kPa	7,35 kN
EPS / PIR	100 kPa	10,5 kN
EPS / PIR	150 kPa	15,8 kN
EPS / PIR Max.	200 kPa	21,0 kN

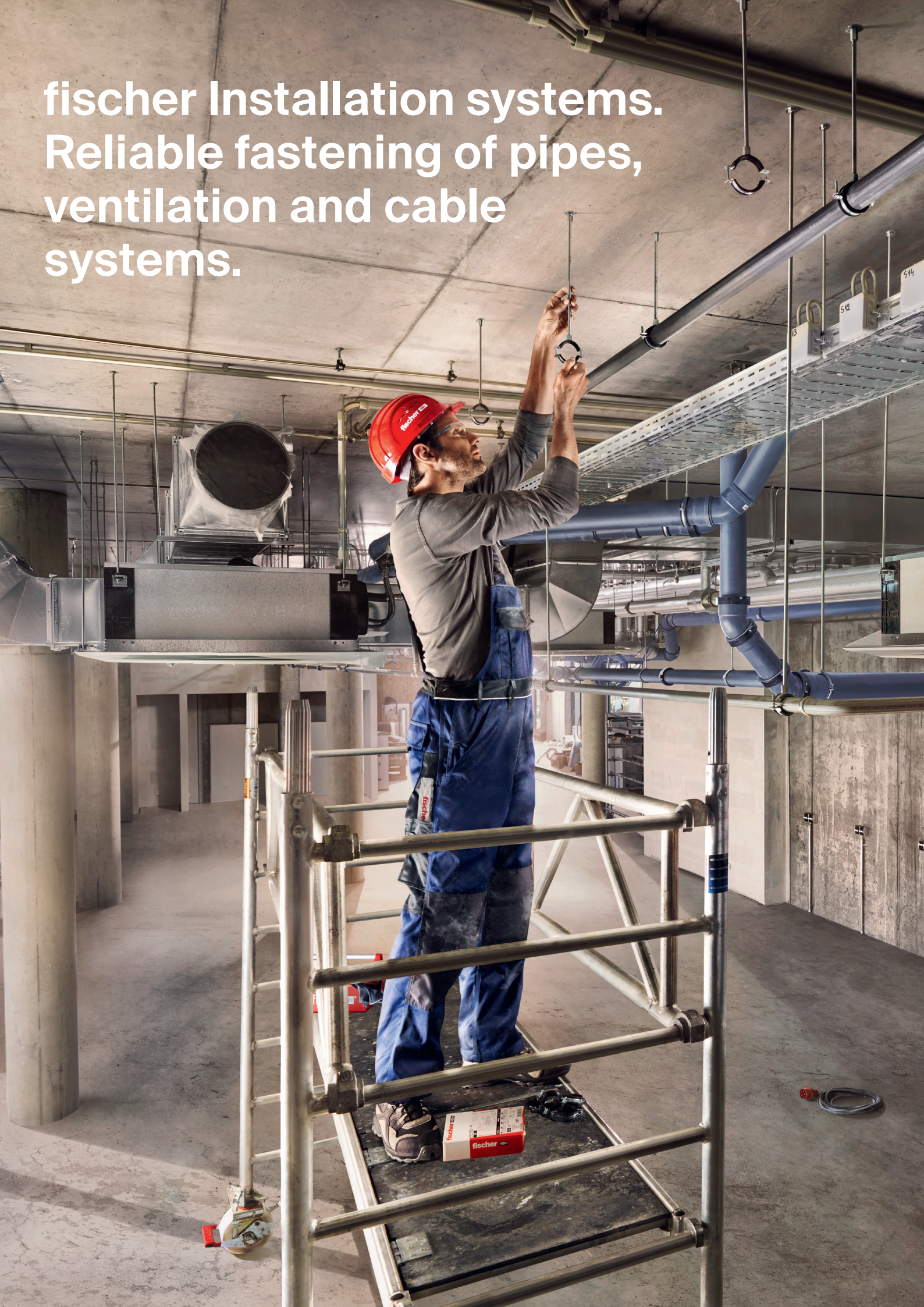
As a result, in the worst-case scenario when using mineral wool as insulation, a base frame consisting of 2 beams and 4 FFRBH flexible flat roof bases can provide load transmission of up to 2940 kg ~ 3 t, depending on the construction of the frame and position where the load is applied to the frame. The insulating

material and its compressive strength must be taken into consideration when calculating the load. In addition to the insulation, the load-bearing capacity of the entire roof structure must be taken into consideration with respect to handling the additional load of equipment, etc.

Item	Art.-No.	Length x Width [mm]	Sales unit [pcs]
FFRB Flat roof base standard	559127	340 x 340	2
FFRBH Flat roof base hinged	559128	340 x 340	2
FFRP Flat roof base protector	559129	450 x 450	10
FFRBB Flat roof base ballast	559130	330 x 135	1
LKS Oval head screw M12x25 A2	559972	25	50



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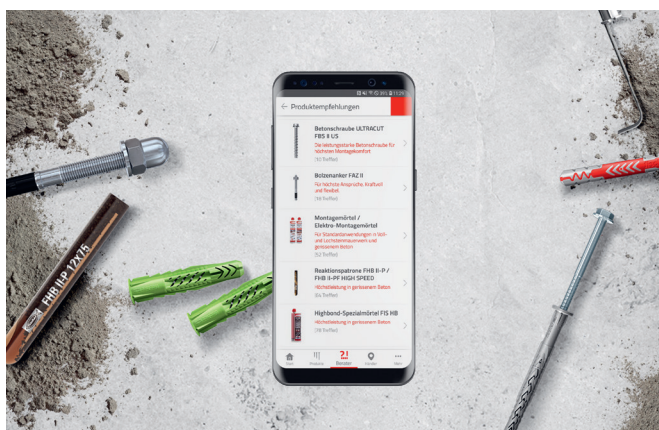
The fischer design Software FiXperience gives you safe and reliable support in measuring your projects whether you are a planer, structural engineer or craftsman. Measuring has never been so simple!

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