

Dealer:

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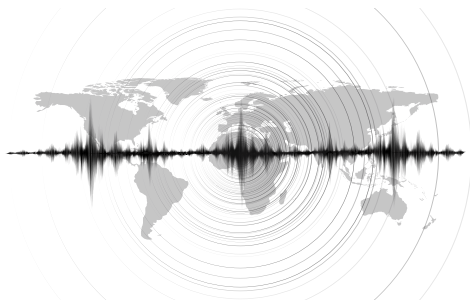


fischer 

Seismic product range.

Seismic bracing elements –
for a secure installation in seismic areas.

Necessity of seismic bracing elements.



In recent years, the necessity of preventing negative impacts on equipment and systems caused by seismic activity has become more important worldwide. The risk of damage from earthquakes has increased significantly due to denser populations in cities and towns, and a high concentration of assets in industrial countries. This risk affects not only "classic" earthquake-prone regions, but central Europe as well, an area where, in some cases, the threat of earthquakes has been underestimated in the past. Large investments and specialised equipment are required to protect technical equipment and systems in buildings from the seismic effects of earthquakes.



This brochure provides practical information on installing seismic bracing equipment (non load-bearing components). Looking at infrastructure systems and buildings such as hospitals, water utility and telecommunications systems, for instance, which must continue operating after an earthquake, it is clear that preventing property and subsequent damages, as well as operational disruptions and interruptions caused by earthquake damage to non-structural facilities is vital to human survival. Despite the severe consequences caused by earthquakes, the practical information and materials available to engineers and planners on

this topic are limited. These documents provide information on and solutions for the planning and installation of seismic bracing devices. They offer easy to understand design examples and solutions for seismic restraint devices and installations. These examples allow consulting engineers and planners to identify effective seismic safety mechanisms and ensure better safety in buildings and public facilities.



What is seismic bracing?

During an earthquake, seismic forces place stress on the building and its contents. These forces act horizontally on the construction of the building itself, as well as on pipelines, cable trays, air ducts and other building systems installed inside. Typical brackets used to hold pipelines, cable paths and other equipment are designed for a standard weight force or for vertical loads; however, they do

not account for the horizontal loads caused by an earthquake. Seismic anchors (such as braces) resist horizontal forces and keep the systems securely in place. The most important purpose of seismic anchoring is safety - to avoid the loss of human life due to an earthquake.

Requirements for seismic bracing:

Rules and requirements governing seismic anchoring are published in model building codes, standards or Eurocodes:

Each code includes a chapter on structural forces, defining the strength of the seismic force that occurs when measuring seismic anchors. The amount of seismic force (specified by the regulation) is indicated as a percentage of the value of the weight of the components or as a g-force. For example, if the horizontal force

is 50 percent for a pipeline, then the seismic force is 0.5g. The seismic “g-value” can vary widely, depending on the type of project. Critical buildings in zones with high seismic activity, for instance, have higher requirements for g-value than a warehouse in zone 1.

Factors that influence seismic g-values include:

- Seismic zone
- Soil type
- Building type
- Height within the building
- Type of anchor
- Anchorage of the system

Planners must use these factors and applicable building code requirements for their specific project and region to determine the correct g-values.

fischer seismic product range – for earthquake-safe anchoring of installation systems.

Advantages

- The FM approval of the FSSC and FSF products guarantees objectively tested functional safety.
- The possibility of installing the bracings at different angles ensures a high degree of flexibility in the application.
- The horizontal forces occurring in the event of seismic activity are safely absorbed.
- A subsequent installation of the bracing elements on already existing constructions is possible without any problems.



S-VA

Threaded rod brace connector S-VA with maximum installation flexibility for seismic bracing with threaded rods; allows the installation on the channel profile as well as to the wall or ceiling.



S-VB

Channel brace connector S-VB with maximum installation flexibility for seismic bracing with channel profiles; allows the installation on the channel profile as well as to the wall or ceiling surface.



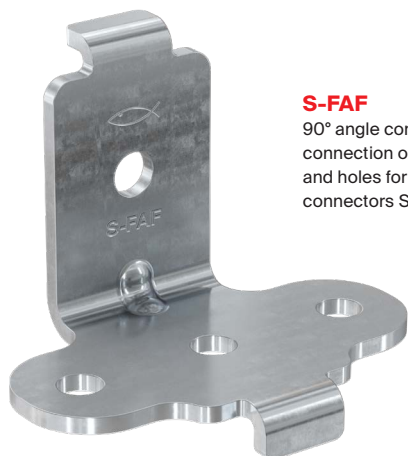
S-ROD

Threaded rod brace connector with increased angle adjustability to install threaded rods for seismic bracing.



SAE

Shaped reinforcement strut SAE for bracing of channel profiles FUS and cantilever arms FCA.



S-FAF

90° angle connector for the connection of two channel profiles and holes for attaching brace connectors S-VA and S-VB.



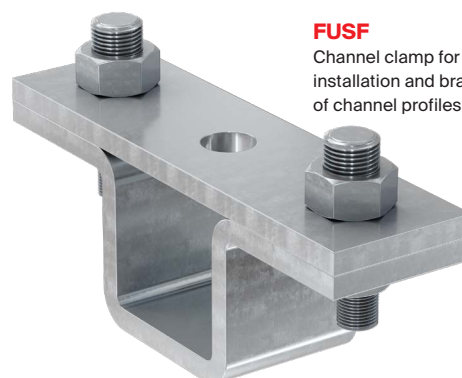
FSF-FM

Sway brace bracket with FM approval for both lateral and longitudinal sway brace applications.



FSSC-FM

Seismic pipe clamp with FM approval for fixing and bracing of pipes.



FUSF

Channel clamp for a safe installation and bracing of channel profiles.



FTRC

Threaded rod stiffener FTRC for attaching strut channel to a threaded rod to accommodate compression loads.



SKS-TB

The hexagonal torque bolt ensures maximum safety during installation, as the tearing off of the additionally applied hexagonal head shows that the optimum torque has been reached.

Applications



S-VA
Bracing of frame construction with threaded rods



S-VB
Bracing of frame construction with channel profiles



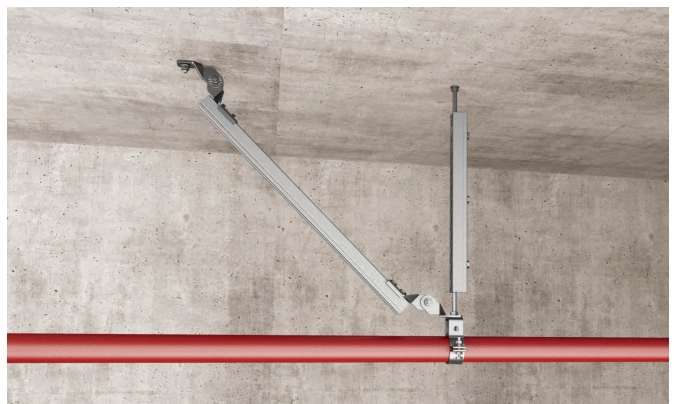
S-ROD
Bracing of pipeline with threaded rods



SAE
Bracing of cantilever construction



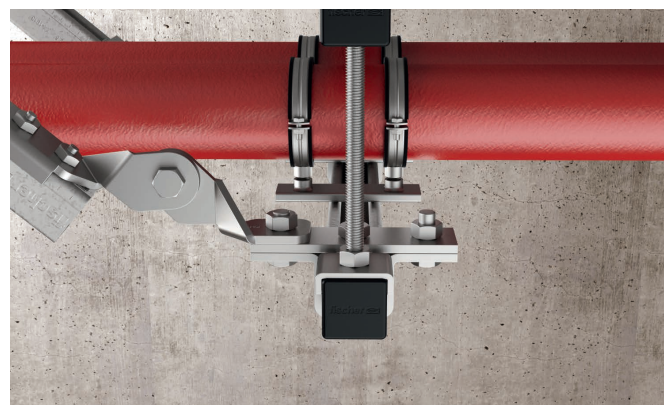
S-FAF
Connection of channel profiles and bracing elements



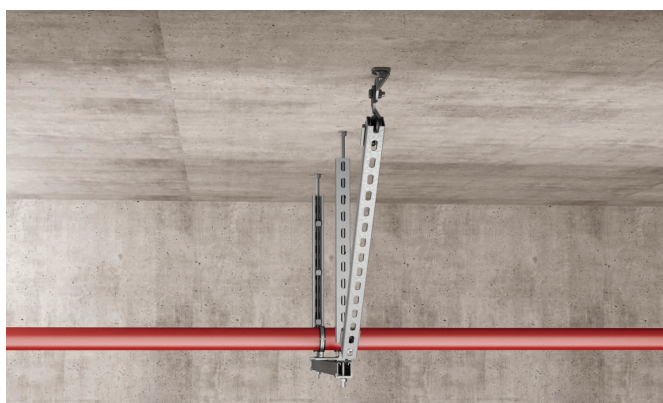
FSF-FM
Bracing of pipeline with channel profiles



FSSC-FM
Pipe installation with seismic pipe clamp



FUSF
Bracing of channel construction



FTRC
Rod stiffening for vertical seismic support

Assortment

Product range



FSSC-FM



FSF-FM



FUSF



FTRC M 12



SKS TB

Article description	Art.-No	Description	Sales unit [pcs]
FSSC-FM	547765	FSSC-FM 73 GVZ	24
FSSC-FM	547766	FSSC-FM 76 GVZ	24
FSSC-FM	547767	FSSC-FM 89 GVZ	15
FSSC-FM	547768	FSSC-FM 108 GVZ	15
FSSC-FM	547769	FSSC-FM 114 GVZ	12
FSSC-FM	547770	FSSC-FM 133 GVZ	12
FSSC-FM	547771	FSSC-FM 139 GVZ	12
FSSC-FM	547772	FSSC-FM 159 GVZ	10
FSSC-FM	547773	FSSC-FM 168 GVZ	10
FSF-FM	547763	FSF-FM GVZ	10
FUSF	547783	FUSF 41 GVZ	20
FUSF	547784	FUSF 62 GVZ	15
FUSF	547785	FUSF 41D GVZ	15
FUSF	547786	FUSF 62D GVZ	10
FTRC M 12	547791	FTRC M12 GVZ	50
SKS TB M	552441	SKS TB M12X30	100

Product range



S-VA



S-ROD



S-VB



S-FAF



SAE 300/500

Article description	Art.-No	Sales unit [pcs]
S-VA	552360	10
S-ROD	552361	10
S-VB	552362	10
S-FAF	552363	10
SAE 300	512114	10
SAE 500	512115	10

fischer Service

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