

fischer fixing compass

Solid and perforated brick masonry.



Our fixing specialists for solid and perforated brick masonry.

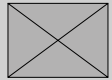
Injection system FIS V

The strongest and most flexible solution in masonry.

Maximum load-bearing capacity in solid brick Mz: 2.29 kN (229 kg)

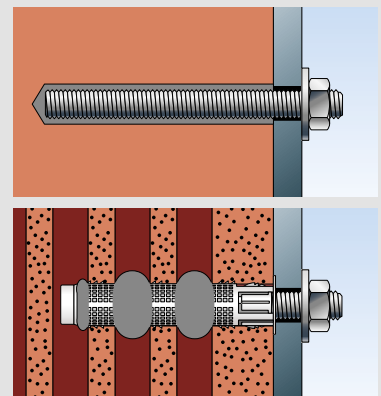


Maximum load-bearing capacity in perforated brick KSL: 1.71 kN (171 kg)



fischer injection mortar FIS V – securely binds the anchor part in solid and perforated brick masonry and allows for the highest loads

- Highest loads thanks to bonding technology in solid and perforated brick
 - The anchor rod FIS A can be anchored in solid brick at a depth of 50 – 100 mm in line with the approval. Larger anchorage depths are possible at all times
 - In perforated brick, the anchor sleeve provides the necessary distribution of the mortar and ensures an economical use of the mortar
- The push-through anchor sleeve allows for push-through installation for awkward attachments and for multiple fixing points; this considerably reduces installation effort and saves time
- Non-bearing plaster layers can be easily bridged
- Fully load-bearing after mortar curing time – *HIGH SPEED* mortar after just 30 minutes



Type

System in solid and perforated brick can be used with:



Metric anchor rod FIS A
for internal and external use

Metric internal thread anchor FIS E
for internal use with metric screws and anchor rods

Accessories for perforated brick masonry



Anchor sleeve FIS H K for anchorage in perforated masonry

Push-through anchor sleeve FIS H K for the anchorage of attachments with several fixing points using push-through installation

Type of installation



Frame fixing SXR

The all-rounder for solid and perforated brick masonry.

Maximum load-bearing capacity in solid brick Mz: **0.57 kN (57 kg)**

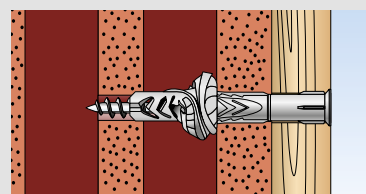
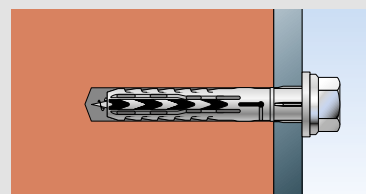


Maximum load-bearing capacity in perforated brick KSL: **0.57 kN (57 kg)**



fischer frame fixing SXR – the short expansion element allows for high loads with a low anchorage depth

- High loads thanks to the knotting/expanding of the anchor in the building material
 - In solid brick, the safety screw expands the expansion part against the drill hole wall
 - In perforated brick, the SXR knots behind the solid part of the block, thus ensuring a secure load application
- Pre-assembled set comprising fixing sleeve and safety screw
- Quick and easy push-through installation
- Approved for the anchorage of multiple fixings, e.g. façade sub-structures. Over 40 different solid and perforated bricks are catered for in the approval
- Can be loaded immediately after installation



Designs



Frame fixing SXR-T
for timber constructions



Frame fixing SXR-FUS
for metal constructions

Type of installation



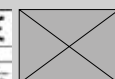
Frame fixing SXRL

The problem-solver with a long expansion part for perforated brick.

Maximum load-bearing capacity in solid brick Mz: **1.57 kN (157 kg)**

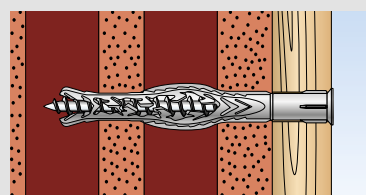
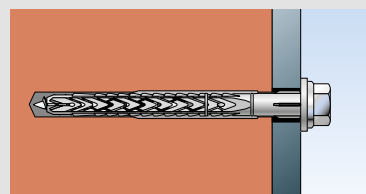


Maximum load-bearing capacity in perforated brick KSL: **0.71 kN (71 kg)**



fischer frame fixing SXRL – two expansion zones allow for an ideal load distribution and thus a high load-bearing capacity

- High load thanks to long, powerful expansion part
 - In solid brick, the two expansion zones combine to create a long expansion element
 - In perforated brick, the two expansion zones ensure a force transition that protects the building material
- With usage lengths up to 290 mm – for a wide range of applications
- Pre-assembled set comprising fixing sleeve and safety screw
- Quick and easy push-through installation
- Approved for the anchorage of multiple fixings, e.g. façade sub-structures
- Can be loaded immediately after installation



Designs



Frame fixing SXRL-T
for timber constructions



Frame fixing SXRL-FUS
for metal constructions

Type of installation



Frame fixing FUR

The adaptable lamella plug for solid and perforated masonry.

Maximum load-bearing capacity in solid brick Mz: **0.86 kN (86 kg)**

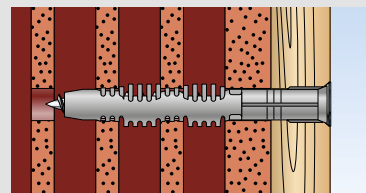
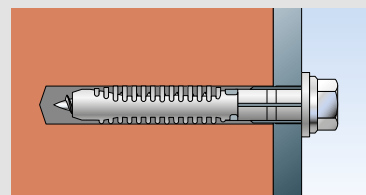


Maximum load-bearing capacity in perforated brick KSL: **0.57 kN (57 kg)**



fischer frame fixing FUR – the powerful specialist with lamella technology

- High loads in solid and perforated brick masonry thanks to the lamella teeth
- Gentle force transmission thanks to the adaptation of the asymmetric lamella teeth in the building material
- Pre-assembled set comprising fixing sleeve and safety screw
- A very user-friendly anchor – quick and easy push-through installation
- Approved for the anchorage of multiple fixings, e.g. façade sub-structures
- Can be loaded immediately after installation



Designs



Frame fixing FUR-T
for timber constructions



Frame fixing FUR-FUS
for metal constructions



Frame fixing FUR-SS
for metal constructions

Type of installation



Frame fixing SXS

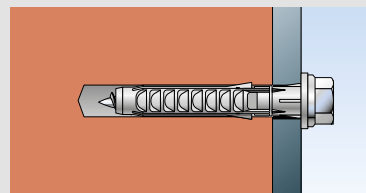
The specialist for solid brick.

Maximum load-bearing capacity in solid brick Mz: **0.43 kN (43 kg)**



fischer frame fixing SXS – the powerful specialist with 4-way expansion

- High loads thanks to CO-NA screw (conical expansion) and expansion in four directions in solid brick
- The largest possible screw diameter of the CO-NA screw allows for a high bending moment for challenging fixings
- Pre-assembled set comprising fixing sleeve and CO-NA safety screw
- Quick and easy push-through installation
- Approved for the anchorage of multiple fixings, e.g. façade sub-structures
- Can be loaded immediately after installation



Designs



Frame fixing SXS-T
for timber constructions



Frame fixing SXS-FUS
for metal constructions

Type of installation



Universal fixing UX

The universal solution in masonry for light loads.

Maximum load-bearing capacity in solid brick Mz: **0.50 kN (50 kg)**

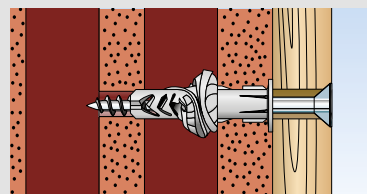
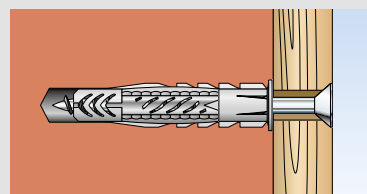


Maximum load-bearing capacity in perforated brick KSL: **0.60 kN (60 kg)**



fischer universal fixing UX – the universal expansion part ideally adapts to the building material

- Good holding values thanks to the universal expansion part
 - In solid brick, the anchor expands against the drill hole wall
 - In perforated brick, the UX knots behind the first solid part of brick
- Quick and easy pre-positioned and push-through installation
- Can be loaded immediately after installation

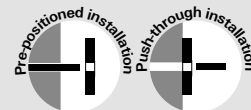


Designs



Universal fixing UX with or without edge for the use of screws, hooks and eyes

Type of installation



Expansion plug SX

The strong solution for medium loads in solid and perforated brick.

Maximum load-bearing capacity in solid brick Mz: **0.65 kN (65 kg)**

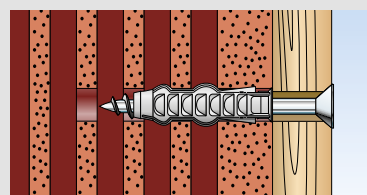
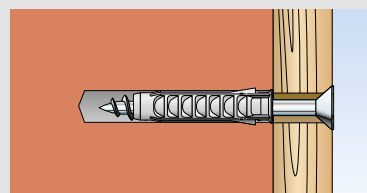


Maximum load-bearing capacity in perforated brick KSL: **0.30 kN (30 kg)**



fischer expansion plug SX – the 4-way expansion enables an ideal force transition in the building material

- Very good load-bearing capacity thanks to expansion in four directions, especially in solid brick
- Quick and easy pre-positioned and push-through installation
- Can be loaded immediately after installation

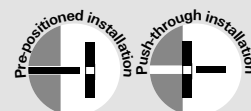


Designs



Universal fixing SX with edge for the use of screws, hooks and eyes

Type of installation



The right fixing for every application.

Designation	fischer Injection technology FIS V	fischer long-shaft fixings				fischer universal fixing	
		SXR 10	SXRL 10/14	FUR 10	SXS 10	UX	SX
Illustration							
Possible max. load with ø 10 in brick Mz	2.29 kN (229 kg) 	0.57 kN (57 kg) 	1.57 kN (157 kg) 	0.86 kN (86 kg) 	0.43 kN (43 kg) 	0.50 kN (50 kg) 	0.65 kN (65 kg) 
Possible max. load with ø 10 in perforated sand-lime brick KSL	1.71 kN (171 kg) 	0.57 kN (57 kg) 	0.71 kN (71 kg) 	0.57 kN (57 kg) 	-	0.60 kN (60 kg) 	0.30 kN (30 kg) 
Approval	Single point fixing	Multiple fixing	Multiple fixing	Multiple fixing	Multiple fixing	No approval	No approval
Functionality	Bonded	Expansion / knotting	Expansion	Expansion	Expansion	Expansion / knotting	Expansion
Application out-doors	Yes, with anchor rod A4	Yes, with safety screw A4	Yes, with safety screw A4	Yes, with safety screw A4	Yes, with safety screw A4	Yes, with screw A4	Yes, with screw A4
Pre-positioned installation	Yes	No	No	No	No	Yes	Yes
Push-through installation in perforated brick	Yes, with push-through anchor sleeve	Yes	Yes	Yes	Yes	Yes	Yes
Push-through installation in solid brick	Yes, with annular gap filling	Yes	Yes	Yes	Yes	Yes	Yes
Stand-off installation	Yes	No	No	No	No	No	No
Type of connection	External and internal thread	Safety screw	Safety screw	Safety screw	CO-NA safety screw	Chipboard screws	Chipboard screws
Usage length (conditional)	Anchor rod length	up to 210 mm	up to 220 mm / up to 290 mm	up to 160 mm	up to 130 mm	screw length	screw length
Anchorage depth in perforated brick	50 mm to 200 mm, depending on perforated sleeve	50 mm	70 mm and 90 mm	70 mm	-	Depends on anchor size	Depends on anchor size
Anchorage depth in solid brick	50 mm to 100 mm	50 mm	70 mm and 90 mm	70 mm	50 mm	Depends on anchor size	Depends on anchor size
Please note:							
Loading capacity	Note curing time	Instantly load-bearing	Instantly load-bearing	Instantly load-bearing	Instantly load-bearing	Instantly load-bearing	Instantly load-bearing
Installation	Sophisticated installation, accessories required	Simple and quick installation	Simple and quick installation	Simple and quick installation	Simple and quick installation	Simple and quick installation	Simple and quick installation
Installation through tiles	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Removal	Surface-flush removal with internal thread anchor	Surface-flush removal	Surface-flush removal	Surface-flush removal	Surface-flush removal	Surface-flush removal	Surface-flush removal
Application examples							
	<ul style="list-style-type: none"> - Canopies - Awnings - Railings - Consoles - Satellite antennas - Wooden beams and timber constructions (push-through anchor sleeve FIS H K) - Car ports (push-through anchor sleeve FIS H K) 	<ul style="list-style-type: none"> - Wood façade sub-structures - Aluminium façade sub-structures - Wall cabinets - Fixing of wooden beams - Screen mountings 					<ul style="list-style-type: none"> - Lighting - Light shelves - Hanging baskets - Curtain rails - Letter boxes

Loads

Highest recommended loads of an individual anchor in kN.

fischer injection technique

Designation	Permissible tension load N_{app} and Permissible shear load V_{app}	Vertically perforated brick HLz	Perforated sand-lime brick KSL	Brick Mz	Solid sand-lime brick KS
Injection system FIS V with anchor rod FIS A (ETA-10/0383), valid for temperature range -40 °C to +80 °C and dry masonry (d/d) ^{1,3}					
M6	N_{app}	1.57 ^a	1.29 ^a	2.00 ^a	2.29 ^a
	F_{app}	1.43 ^a	1.14 ^a	1.14 ^a	1.29 ^a
M8	N_{app}	1.57 ^a	1.71 ^a	2.00 ^a	3.43 ^a
	F_{app}	2.71 ^a	1.71 ^a	1.43 ^a	2.57 ^a
M10	N_{app}	100 ^a	1.71 ^a	2.14 ^a	3.43 ^a
	F_{app}	1.86 ^a	1.71 ^a	1.57 ^a	3.14 ^a
M12	N_{app}	1.29 ^a	1.71 ^a	2.29 ^a	3.43 ^a
	F_{app}	3.43 ^a	1.71 ^a	1.57 ^a	3.43 ^a
M16	N_{app}	1.29 ^a	1.71 ^a	2.29 ^a	3.43 ^a
	F_{app}	3.43 ^a	1.71 ^a	1.43 ^a	3.43 ^a
Injection system FIS V with internal thread anchor FIS E (ETA-10/0383), valid for temperature range -40 °C to +80 °C and dry masonry (d/d) ^{1,3}					
FIS E 11x85 M6	N_{app}	1.00 ^a	1.43 ^a	1.57 ^a	3.43 ^a
	F_{app}	1.43 ^a	1.14 ^a	1.14 ^a	1.29 ^a
FIS E 11x85 M8	N_{zul}	1.00 ^a	1.43 ^a	1.57 ^a	3.43 ^a
	F_{app}	1.86 ^a	1.71 ^a	1.43 ^a	2.57 ^a
FIS E 15x85 M10	N_{app}	1.29 ^a	1.71 ^a	1.57 ^a	3.43 ^a
	F_{app}	-	1.71 ^a	1.43 ^a	3.14 ^a
FIS E 15x85 M12	N_{app}	1.29 ^a	1.71 ^a	1.57 ^a	3.43 ^a
	F_{app}	-	1.71 ^a	1.43 ^a	3.43 ^a

fischer frame fixing and general fixing

Designation	Anchorage depth h_{ef}	Vertically perforated brick HLz	Perforated sand-lime brick KSL	Brick Mz	Solid sand-lime brick KS
Frame fixing					
Frame fixing SXR 10 (ETA-07/0121) ^{1,3}	50	0.26	0.57	0.57	0.86
Frame fixing SXRL 10 (ETA-07/0121) ^{1,3}	70	0.21	0.71	1.57	0.71
	90	0.21	0.71	1.57	2.43
Frame fixing SXRL 14 (ETA-14/0297) ^{1,3}	70	0.57	0.43	1.29	3.14
	90	0.71	0.71	-	-
Frame fixing FUR 10 (ETA-13/0235) ^{1,3}	70	0.37	0.57	0.86	1.00
Frame fixing SXS 10 (ETA-09/0352) ^{1,3}	50	-	-	0.43	0.71
fischer universal fixing UX (without approval), Recommended loads for a single anchor ^{2,3,12}					
UX 6x50	50	0.20	0.40	0.30	-
UX 8x50	50	0.20	0.50	0.30	-
UX 10x60	60	0.20	0.60	0.50	-
Universal fixing SX (without approval), Recommended loads for a single anchor ^{2,3,12}					
SX 6x50	50	0.07	0.30	0.30	0.50
SX 8x40	40	0.17	0.35	0.60	0.60
SX 10x50	50	0.30	0.30	0.65	1.20

When dimensioning, observe the approval in its entirety. Permissible edge distances and spacing and the minimum member thickness h_{min} should be taken from the relevant approval.

¹⁾ The required material safety factors and safety value of

$\gamma_F=1.4$ are considered

²⁾ Contains safety factor 7

³⁾ Applies to tension load, shear load and diagonal pull under each angle

⁴⁾ When using perforated sleeve FIS H 12x50 K

⁵⁾ When using perforated sleeve FIS H 12x85 K

⁶⁾ When using perforated sleeve FIS H 16x85 K

⁷⁾ When using perforated sleeve FIS H 16x130 K

⁸⁾ When using perforated sleeve FIS H 20x85 K

⁹⁾ Anchorage depth h_{ef} = 50 mm

¹⁰⁾ Anchorage depth h_{ef} = 85 mm

¹¹⁾ Anchorage depth h_{ef} = 100 mm

¹²⁾ Load values apply when using with wood screws:

6 mm anchor with screw diameter 5 mm

8 mm anchor with screw diameter 6 mm

10 mm anchor with screw diameter 8 mm

What is solid and perforated brick masonry?



Masonry shows a very large variety in contrast to a concrete base material. The spectrum of different bricks that are joined together using various mortars or adhesives into a single masonry compound is very large.

Perforated blocks with a dense structure like vertically perforated brick (HLz) or perforated sand-lime brick (KSL) are often made from the same compressive strength materials as solid bricks. However, they feature cavities. If higher loads are introduced into these building materials, special fixings should be used (e.g. injection technique or frame fixings), like those which bridge or fill out the cavities.

Solid blocks with a dense structure like masonry bricks (bricks or clinker bricks) or solid sand-lime bricks are building materials that are very resistant to compressive loads without cavities or with only a low percentage of hole surfaces (up to max. 15 %, e.g. as grip-hole). They are very well suited for anchoring fixings.

Our all-round service for you.



We are a reliable partner, one that will stand by your side and address your individual requirements with advice and action:

- Our products range from chemical systems and steel anchors to plastic anchors.
- Competence and innovation through own research and development.
- Global presence and active sales service in more than 100 countries.
- Qualified application-specific advice for economic installation solutions that are compliant with directives. If need be we are there for you – even at the construction site.
- Training measures (some with certification) at your premises or at the fischer ACADEMY.
- Construction and design software for challenging fixings.