The all-round solution with short drill hole depth

VERSIONS

- Zinc-plated steel
- Stainless steel
- Hot-dip galvanised steel

APPROVALS

BUILDING MATERIALS

Approved for:

- Concrete C12/15
- Vertically perforated brick
- Hollow blocks made from lightweight concrete
- Perforated sand-lime brick
- Solid sand-lime brick
- Aerated concrete
- Solid block made from lightweight and normal weight concrete
- Solid brick
- Thermal insulation blocks

Also suitable for:

- Natural stone with dense structure
- Solid panel made from gypsum

ADVANTAGES

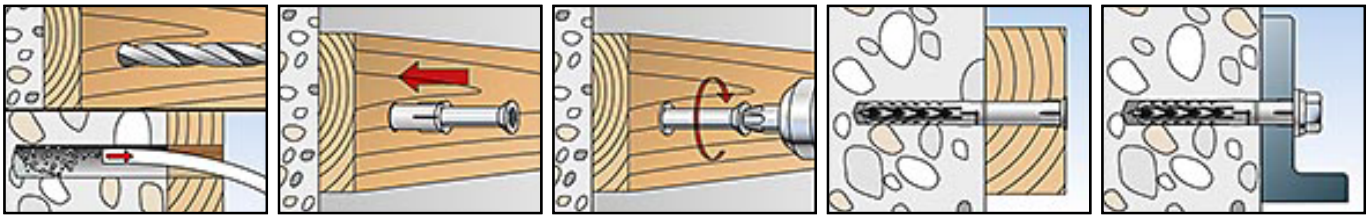
- The special functioning allows for use in solid and hollow building materials with an anchorage depth of just 50mm, ensuring an economical fixing.
- The ETA approval covers use in a range of solid and hollow building materials, and guarantees a secure fixing.
- The specially developed combination of plugs and screws ensures the very best handling. The plug has a noticeable hold, making installation more convenient.
- The extensive range with diameters of 6, 8 and 10mm offers the right plug for every fixing.

APPLICATIONS

- Façade, ceiling and roof substructures made of wood and metal
- Windows
- Gates and doors
- Wardrobes
- Cable trays
- Squared timbers
- Kitchen hanging cabinets

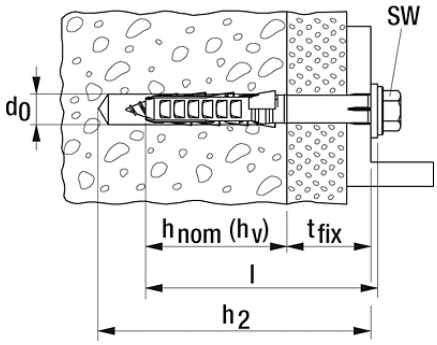
FUNCTIONING

- The SXR is suitable for push-through installation.
- The SXR expands in solid building materials and knots in hollow building materials.
- With vertically perforated bricks, only use rotary drilling (no impact drilling).
- Countersunk head screws are recommended for the installation of timber constructions; in the case of metal constructions, use plugs with a wide sleeve rim and a moulded washer on the screw, which also features an integrated hexagon socket.



TECHNICAL DATA

Frame fixing SXR-FUS



galvanized

Type	Art.-No.	ETA-approval	DIBt-approval	Drill hole diameter d_0 [mm]	Min. drill hole depth for through fixings h_2 [mm]	Min. anchorage depth h_{nom} (h_v) [mm]
SXR 10 x 60 FUS	**046329**	■		10	70	50

LOADS

Frame fixing SXR [4)]

Highest permissible loads[1)] for a single anchor for multiple fixings of non-structural applications in masonry.
For the design the complete approval ETA-07/0121 has to be considered.

					Solid brick masonry and perforated brick masonry		
Type	compressive brick strength f_b [N/mm²]	brick type, naming acc. DIN [-] [-]	min. anchorage depth h_{nom} [mm]	min. member thickness h_{min} [mm]	permissible load F_{perm} [3) 5)] [kN]	min. spacing s_{min} [2)] [mm]	min. edge distance c_{min} [2)] [mm]
Solid brick Mz							
SXR 8	≥ 20	Mz	50	100	0,71	100	100
SXR 10	≥ 20	Mz	50	100	0,86	100	100
Solid sand-lime brick and solid block KS							
SXR 8	≥ 10	KS	50	100	0,71	100	100
SXR 10	≥ 10	KS	50	100	0,86	100	100
Vertically perforated brick Hlz							
SXR 8	≥ 20	HLz	50	100	0,34	100	100
SXR 10	≥ 12	HLz	50	100	0,26	100	100
SXR 10	≥ 20	HLz	50	100	0,71	100	100
Perforated sand-lime brick KSL							
SXR 8	≥ 12	KSL	50	100	0,57	100	100
SXR 10	≥ 12	KSL	50	100	0,57	100	100
Hollow block of lightweight aggregate concrete Hbl							
SXR 8	≥ 10	Hbl	50	100	0,71	100	100
SXR 10	≥ 6	Hbl	50	100	0,71	100	100
SXR 10	≥ 10	Hbl	50	100	0,71	100	100
Solid brick and solid block of lightweight aggregate concrete V							
SXR 8	≥ 2	V	50	100	0,34	100	100
SXR 10	≥ 2	V	50	100	0,21	100	100
Aerated concrete blocks and reinforced panels AAC							
SXR 10	≥ 2	AAC	50	100	0,14[7)]	200	100
SXR 10	≥ 6	AAC	50	100	0,27	200	100

1) The required partial safety factors for material resistance as well as a partial safety factor for load actions γ_L = 1,4 are considered. As an single anchor counts e.g. an anchor with a minimum spacing s_{min} according table 11 resp. table15 of the approval.

2) Minimum possible axial spacings (anchor group) resp. edge distance while reducing the permissible load. The combination of the given min. spacing and min. edge distance is not possible. One of them has to be increased according approval.

3) Valid for tensile load, shear load and oblique load under any angle. For combinations of tensile loads, shear loads and bending moments see approval.

4) Valid for zinc coated screws and for screws made of stainless steel. For exterior use of the zinc coated screws measures against incoming humidity according approval have to be taken.

5) The given values for hollow or perforated masonry apply for rotary drilling (without impact). The given loads are reference values which may change due to type of brick and manufacturer. If the embedment depth is higher than h_{nom} = 50 mm, job site tests have to be carried out.

6) Valid for temperatures in the substrate up to +50 °C (resp. short term up to 80 °C). For long term temperatures up to 30 °C higher permissible loads may be possible.

7) Drill hole created by punching.

LOADS

Frame fixing SXR [4)]

Highest permissible loads[1) 6)] for a single anchor for multiple fixings of non-structural applications in normal concrete ≥ C12/15 resp. ≥ B15. For the design the complete approval ETA-07/0121 has to be considered.

			Cracked or Non-cracked concrete			
Type	**Min. anchorage depth h_{nom} [mm]**	**Min. member thickness h_{min} [mm]**	**Permissible tensile load N_{perm}[3)] [kN]**	**Permissible shear load V_{perm}[3)]**	**Min. spacing s_{min}[2)] [mm]**	**Min. edge distance c_{min}[2)] [mm]**
SXR 8	50	100	1,0	1,2[5)]	50	50
SXR 10	50	100	1,8	2,0[5)]	50	60

1) The required partial safety factors for material resistance as well as a partial safety factor for load actions γ_L = 1,4 are considered. As an single anchor counts e.g. an anchor with a spacing $s \geq s_{cr,N}$ and an edge distance $c \geq c_{cr,N}$ according table 8 of the approval.

2) Minimum possible axial spacings (anchor group) resp. edge distance for concrete ≥ C16/20 while reducing the permissible load. The combination of the given min. spacing and min. edge distance is not possible. One of them has to be increased according approval. Values for concrete C12/15 see approval.

3) For combinations of tensile loads, shear loads, bending moments as well as reduced edge distances or spacings (anchor groups) see approval.

4) Valid for zinc coated screws and for screws made of stainless steel. For exterior use of the zinc coated screws measures against incoming humidity according approval have to be taken.

5) The permissible shear load determined acc. ETAG 020, Annex C considers exclusively steel failure of the screw. For SXR 8 It amounts V_{perm} = 4,2 kN for galvanised screws and V_{perm} = 3,4 kN for screws made of stainless steel. For SXR 10 it amounts V_{perm} = 6,0 kN. Due to that the expected displacements will disable the proper function of the fixture a maximum shear load on the basis of table 7 of the approval is recommended.

6) Valid for temperatures in the substrate up to +50 °C (resp. short term up to 80 °C). For long term temperatures up to 30 °C higher permissible loads may be possible.

LOADS

Frame fixing SXR

Highest recommended loads[1)] for a single anchor.

The given loads are valid for wood screws with the specified diameter.

Type			**SXR 6**
Screw diameter	Ø	[mm]	4,5
Min. edge distance in concrete	a_r	[mm]	50
Recommended loads in the respective base material F_{rec}[2)]			
Concrete	≥ C20/25	[kN]	0,25
Solid brick	≥ Mz 12	[kN]	0,20
Solid sand-lime brick	≥ KS 12	[kN]	0,20
Vertically perforated brick	≥ Hlz 12 ($\rho \geq 1.0$ kg/dm³)	[kN]	0,10
Perforated sand-lime brick	≥ KSL 12	[kN]	0,20

1) Required safety factors are considered.

2) Valid for tensile load, shear load and oblique load under any angle.