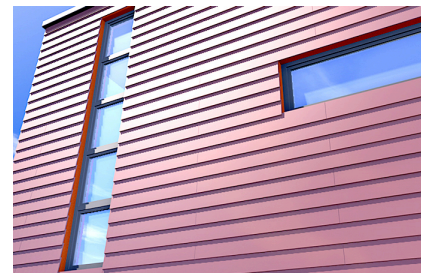


The all-round solution with short drill hole depth.



VERSIONS

- zinc-plated steel
- stainless steel

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

APPROVALS



ADVANTAGES

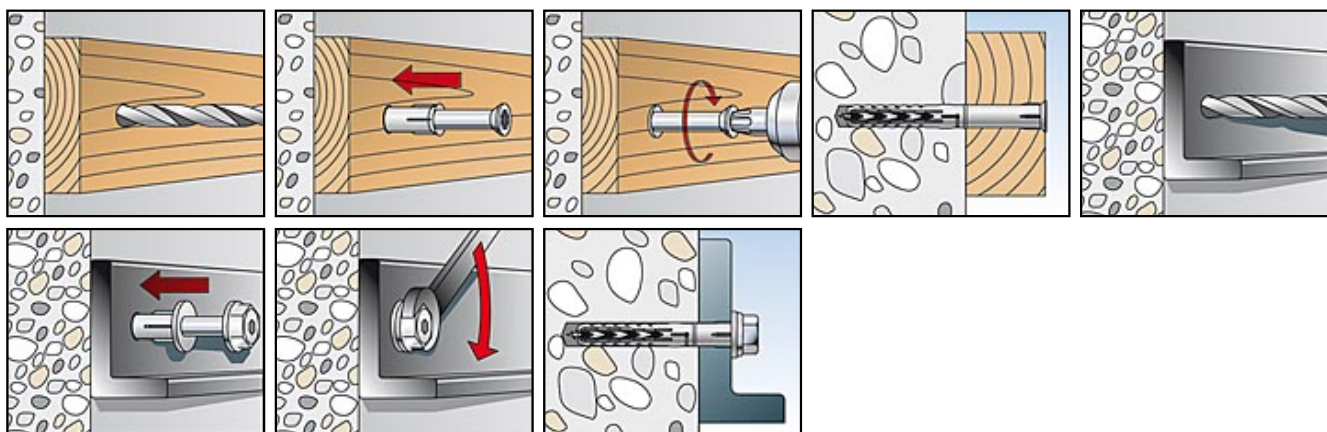
- The special functioning allows for use in solid and hollow building materials with an anchorage depth of just 50mm, ensuring an economical fixing.
- The ETA approval covers use in a range of solid and hollow building materials, and guarantees a secure fixing.
- The specially developed combination of 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
- Doors and gates
- Wardrobes
- Cable trays
- Squared timbers
- Kitchen cabinets

FUNCTIONING

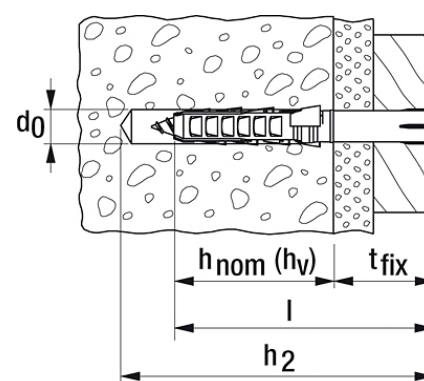
- The SXR is suitable for push-through installation.
- The SXR expands in solid building materials and knots in hollow building materials.
- With vertically perforated bricks, only use rotary drilling (no impact drilling).
- Countersunk head screws are recommended for the installation of timber constructions; 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



Universal frame fixing SXR-T



galvanized

Article name	Art.-No.		Approval	Drill hole diameter d_0 [mm]	Anchor length l [mm]	Max. fixture thickness t_{fix} [mm]	Fixture thickness t_{fix} [mm]
SXR 8 x 60 T	502999	●	■	8	60	10	
SXR 8 x 80 T	503000	●	■	8	80	30	
SXR 8 x 100 T	503001	●	■	8	100	50	
SXR 8 x 120 T	503002	●	■	8	120	70	
SXR 10 x 80 T	046263	●	■	10	80	30	
SXR 10 x 100 T	046264	●	■	10	100	50	
SXR 10 x 120 T	046265	●	■	10	120	70	
SXR 10 x 140 T	046266	●	■	10	140	90	
SXR 10 x 160 T	046267	●	■	10	160	110	
SXR 10 x 180 T	046268	●	■	10	180	130	
SXR 10 x 200 T	046269	●	■	10	200	150	
SXR 10 x 230 T	046270	●	■	10	230	180	
SXR 10 x 260 T	046271	●	■	10	260	210	

A4

Article name	Art.-No.		Approval	Drill hole diameter d_0 [mm]	Anchor length l [mm]	Max. fixture thickness t_{fix} [mm]	Fixture thickness t_{fix} [mm]
SXR 10 x 80 T A4	046272	●	■	10	80	30	
SXR 10 x 100 T A4	046274	●	■	10	100	50	
SXR 10 x 120 T A4	046278	●	■	10	120	70	
SXR 10 x 140 T A4	046279	●	■	10	140	90	
SXR 10 x 160 T A4	046283	●	■	10	160	110	
SXR 10 x 180 T A4	046285	●	■	10	180	130	
SXR 10 x 200 T A4	046286	●	■	10	200	150	
SXR 10 x 230 T A4	046287	●	■	10	230	180	
SXR 10 x 260 T A4	046288	●	■	10	260	210	

hot dipped galvanized

Article name	Art.-No.		Approval	Drill hole diameter d_0 [mm]	Anchor length l [mm]	Max. fixture thickness t_{fix} [mm]	Fixture thickness t_{fix} [mm]
	509534			10	100	50	
	509535			10	120	70	
	509536			10	140	90	

LOADS

Frame fixing SXR ⁴⁾

Highest permissible loads¹⁾ for a single anchor for multiple fixings of facades in normal concrete \geq C12/15 resp. \geq B15.

For the design the complete approval Z-21.2-1862 has to be considered.

Type	Min. embedment depth	Min. member thickness	Cracked or Non-cracked concrete		
			Permissible load	Min. spacing	Min. edge distance
	$h_{nom} (h_v)$ [mm]	$h (d)$ [mm]	$F_{perm}^{3)}$ [kN]	$s_{min} (a)^{2)}$ [mm]	$c_{min} (a_r)^{2)}$ [mm]
SXR 8	50	100	0,5	100	50
SXR 10	50	100	1,6	100	50

¹⁾ The required safety factors as regulated in the approval are considered.

²⁾ Minimum possible axial spacings resp. edge distance while reducing the permissible load.

³⁾ Valid for tensile load, shear load and oblique load under any angle. Restrictions for permanently acting tensile loads see approval. For combinations of tensile loads, shear loads, bending moments see approval table 4.

⁴⁾ gvz and A4. For exterior applications of galvanised screws measures against incoming humidity have to be taken.

LOADS

Frame fixing SXR ⁴⁾

Highest permissible loads¹⁾ for a single anchor for multiple fixings of non-structural applications in normal concrete \geq C12/15 resp. \geq B15. For the design the complete approval ETA-07/0121 has to be considered.

Type	Min. embedment depth $h_{nom} (h_v)$ [mm]	Min. member thickness h_{min} [mm]	Cracked or Non-cracked concrete			
			Permissible tensile load $N_{perm}^{6)}$ [kN]	Permissible shear load $V_{perm}^{6)}$	Min. spacing $s_{min}^{2)}$ [mm]	Min. edge distance $c_{min}^{2)}$ [mm]
SXR 8	50	100	1,0	4,2 (3,4) ⁵⁾	50	50
SXR 10	50	100	1,8	5,4 (5,0) ⁵⁾	50	100

¹⁾ The required partial safety factors for material resistance as well as a partial safety factor for load actions of $\gamma_L = 1,4$ are considered.

²⁾ Minimum possible axial spacings resp. edge distance for concrete \geq C16/20 while reducing the permissible load.

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

⁴⁾ gvz and A4. For exterior applications measures against incoming humidity have to be taken.

⁵⁾ Values in brackets apply for A4-type - stainless steel of the corrosion resistance class III, e.g. A4.

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 ⁴⁾

Highest permissible loads¹⁾ for a single anchor for multiple fixings of facades in masonry.

For the design the complete approval Z-2 1.2-1862 has to be considered.

					Solid brick masonry and Perforated brick masonry		
Type	Compressive brick strength f_b [N/mm ²]	Brick type, naming acc. DIN [-]	Min. embedment depth $h_{nom} (h_v)$ [mm]	Min. member thickness $h (d)$ [mm]	Permissible load $F_{perm}^{3) 5)}$ [kN]	Min. spacing $s_{min} (a_{min})^{2)}$ [mm]	Min. edge distance $c_{min} (a_r)^{6)}$ [mm]
Solid brick Mz							
SXR 8	≥ 12	Mz	50	115	0,50	100	100
SXR10	≥ 12	Mz	50	115	0,80	100	100
Solid sand-lime brick and solid block KS							
SXR 8	≥ 12	KS	50	115	0,50	100	100
SXR10	≥ 12	KS	50	115	0,80	100	100
Vertically perforated brick HLz							
SXR 8	≥ 12	HLz	50	115	-	100	100
SXR10	≥ 12	HLz	50	115	0,3 ⁷⁾	250	100
Perforated sand-lime brick KSL							
SXR 8	≥ 6	KSL	50	115	-	100	100
SXR10	≥ 6	KSL	50	115	0,40	100	100
Hollow block of lightweight aggregate concrete Hbl							
SXR 8	≥ 6	Hbl	50	115	-	100	100
SXR10	≥ 6	Hbl	50	115	0,25	250	100
Solid brick and solid block of lightweight aggregate concrete V							
SXR 8	≥ 2	V	50	115	0,15	100	100
SXR10	≥ 2	V	50	115	0,25	100	100
Aerated concrete block PB2/ PP2 as well as wall panels of aerated concrete P3.3 with approval							
SXR10	≥ 2	PB2/PP2/P2,2	50	115	0,2 ⁸⁾	150	100 ⁸⁾
Aerated concrete block ≥ PB4/PP4 as well as wall panels of aerated concrete ≥ P4.4 with approval							
SXR10	≥ 3/ ≥ 4,4	PP3/PB3/P4,4	50	115	0,30	200	100 ⁸⁾

¹⁾ The required safety factors as regulated in the approval are considered.

²⁾ Minimum permissible spacing without reducing the permissible load. In certain cases the spacing within pairs of anchors may be reduced up to 100 mm while reducing the permissible load.

³⁾ Valid for tensile load, shear load and oblique load under any angle. Restrictions for permanently acting tensile loads see approval. For combinations of tensile loads, shear loads, bending moments see approval table 4.

⁴⁾ gvz and A4. For exterior applications of galvanised screws measures against incoming humidity have to be taken.

⁵⁾ The given values apply for rotary drilling (without impact) in perforated bricks and aerated concrete.

⁶⁾ Minimum permissible edge distance with surcharge as well as to not solidified joints. For edge distance without surcharge see approval.

⁷⁾ Valid for raw density higher than 1,0 kg/dm³. Otherwise the permissible load has to be determined by tests on site.

⁸⁾ Drill hole created by punching.

LOADS

Frame fixing SXR⁴⁾

Highest permissible loads¹⁾ 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/mm ²]	Brick type, naming acc. DIN [-]	Min. embedment depth h_{nom} (h_v) [mm]	Min. member thickness h_{min} [mm]	Permissible load F_{perm} ^{3) 5) 6)} [kN]	Min. spacing s_{min} ²⁾ [mm]	Min. edge distance c_{min} ²⁾ [mm]
Solid brick Mz							
SXR 8	≥ 20	Mz	50	100	0,70	100	100
SXR10	≥ 20	Mz	50	100	1,29	100	100
Solid sand-lime brick and solid block KS							
SXR 8	≥ 10	KS	50	100	0,70	100	100
SXR10	≥ 10	KS	50	100	1,29	100	100
Vertically perforated brick HLz							
SXR 8	≥ 6	HLz	50	100	0,34	100	100
SXR10	≥ 6	HLz	50	100	0,57	100	100
Perforated sand-lime brick KSL							
SXR 8	≥ 12	KSL	50	100	0,57	100	100
SXR10	≥ 12	KSL	50	100	0,70	100	100
Hollow block of lightweight aggregate concrete Hbl							
SXR 8	≥ 10	Hbl	50	100	0,70	100	100
SXR10	≥ 10	Hbl	50	100	0,70	100	100
Solid brick and solid block of lightweight aggregate concrete V							
SXR 8	≥ 2	V	50	100	0,70	100	100
SXR10	≥ 2	V	50	100	0,85	100	100
Aerated concrete block PB2/ PP2							
SXR10	≥ 2	PP2/PB2/P2,2	50	100	0,15 ⁷⁾	200	100
Aerated concrete block ≥ PB4/PP4							
SXR10	≥ 3/ ≥ 4,4	PP3/PB3/P4,4	50	100	0,26	200	100

¹⁾ The required partial safety factors for material resistance as well as a partial safety factor for load actions of $\gamma_L = 1,4$ are considered.

²⁾ Minimum possible axial spacing (anchor group) while reducing the permissible load.

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⁾ gvz and A4. For exterior applications of galvanised screws measures against incoming humidity have to be taken.

⁵⁾ The given values apply for rotary drilling (without impact). The given loads are reference values which may change due to type of brick and manufacturer.

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

Highest recommended loads¹⁾ 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 ($\rho \geq 1.0 \text{ kg/dm}^3$)	[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.