The efficient with short expansion element

Façade substructures

Façade substructures

VERSIONS

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

CERTIFICATES

ETA-07/0121
ETAG 020 a, b, c, d
Multiple use in concrete and masonry for non-structural applications

Fire resistance classification R 90
for facade systems in concrete

ADVANTAGES

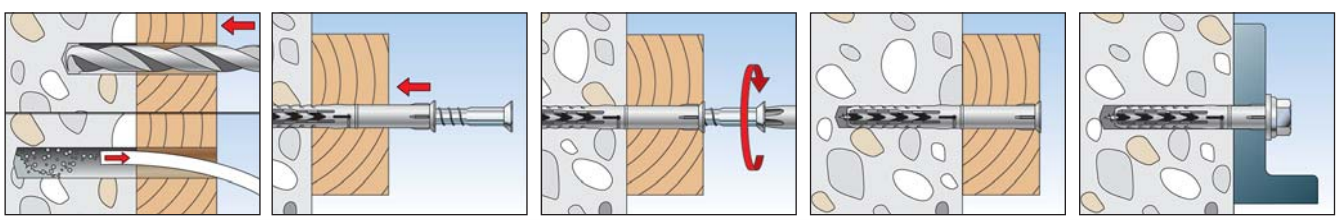
- The special functioning allows for use in solid and hollow building materials with an anchorage depth of just 50 mm, ensuring an economical fixing.
- The ETA assessment covers use in a range of solid and hollow building materials, and guarantees a secure fixing.
- The specially developed combination 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 10 mm, usable lengths up to 210 mm.

APPLICATIONS

- Façade, ceiling and roof substructures made of wood and metal
- Windows
- Gates and doors
- Wardrobes
- Kitchen hanging cabinets
- Squared timbers
- Beams
- TV consoles
- Wall covering
- Metal brackets
- Metal supports
- Cable ducts
- Cable trays

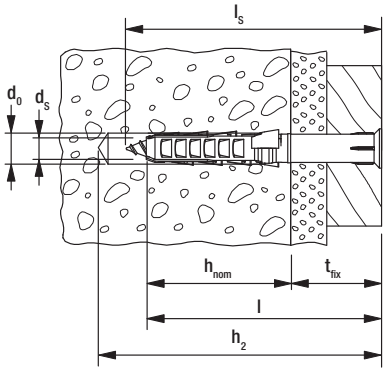
FUNCTIONING

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



TECHNICAL DATA

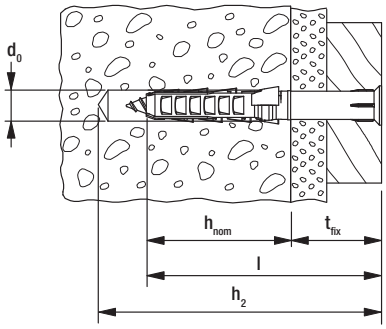
SXR - without screw



Item	Art.-No.	Drill hole diameter d_0 [mm]	Min. drill hole depth for through fixings h_2 [mm]	Min. anchorage depth h_{nom} [mm]	Anchor length l [mm]	Screw diameter d_s [mm]	Min. screw length l_s [mm]	Max. fixture thickness t_{fix} [mm]	Sales unit [pcs]
SXR 6 x 35	**503228**	6	45	30	35	4,5	40	5	100
SXR 6 x 50	**503229**	6	60	30	50	4,5	55	20	100
SXR 6 x 60	**503230**	6	70	30	60	4,5	65	30	100
SXR 8 x 60	**506194**	8	70	50	60	5,5 - 6,0	65	10	100
SXR 8 x 80	**506196**	8	90	50	80	5,5 - 6,0	85	30	100
SXR 8 x 100	**506198**	8	110	50	100	5,5 - 6,0	125	50	100
SXR 8 x 120	**506199**	8	130	50	120	5,5 - 6,0	105	70	100

TECHNICAL DATA

SXR-Z - with zinc-plated countersunk head screw with cross drive PZ

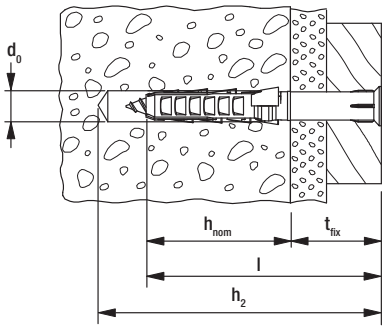


Item	Art.-No.	Drill hole diameter d_0 [mm]	Min. drill hole depth for through fixings h_2 [mm]	Min. anchorage depth h_{nom} [mm]	Anchor length l [mm]	Max. fixture thickness t_{fix} [mm]	Drive	Sales unit [pcs]
SXR 6 x 60 Z	**503233** 1)	6	70	30	60	30	PZ2	50

1) not pre-assembled

TECHNICAL DATA

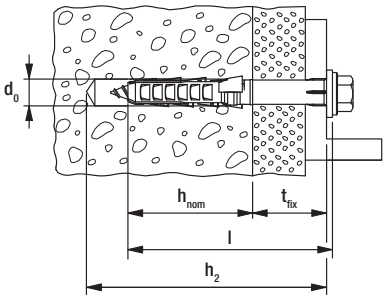
SXR-T - with fischer countersunk head safety screw



	Zinc-plated steel	Stainless steel	Hot-dip galvanised steel	Approval	Drill hole diameter	Min. drill hole depth for through fixings	Min. anchorage depth	Anchor length	Max. fixture thickness	Drive	Sales unit
	Art.-No.	Art.-No.	Art.-No.	ETA	d_0 [mm]	h_2 [mm]	h_{nom} [mm]	l [mm]	t_{fix} [mm]		[pcs]
Item	gvz	A4	hdg								
SXR 8 x 60 T	502999	–	–	■	8	70	50	60	10	T30	50
SXR 8 x 80 T	503000	–	–	■	8	90	50	80	30	T30	50
SXR 8 x 100 T	503001	–	–	■	8	110	50	100	50	T30	50
SXR 8 x 120 T	503002	–	–	■	8	130	50	120	70	T30	50
SXR 10 x 80 T	046263	046272	–	■	10	90	50	80	30	T40	50
SXR 10 x 100 T	046264	046274	–	■	10	110	50	100	50	T40	50
SXR 10 x 100 T	–	–	509534	–	10	110	50	100	50	T40	50
SXR 10 x 120 T	046265	046278	–	■	10	130	50	120	70	T40	50
SXR 10 x 120 T	–	–	509535	–	10	130	50	120	70	T40	50
SXR 10 x 140 T	046266	046279	–	■	10	150	50	140	90	T40	50
SXR 10 x 140 T	–	–	509536	–	10	150	50	140	90	T40	50
SXR 10 x 160 T	046267	046283	–	■	10	170	50	160	110	T40	50
SXR 10 x 180 T	046268	046285	–	■	10	190	50	180	130	T40	50
SXR 10 x 200 T	046269	046286	–	■	10	210	50	200	150	T40	50
SXR 10 x 230 T	046270	046287	–	■	10	240	50	230	180	T40	50
SXR 10 x 260 T	046271	046288	–	■	10	270	50	260	210	T40	50

TECHNICAL DATA

SXR-FUS - with fischer hexagon head safety screw, moulded washer and integrated T40 bit recess

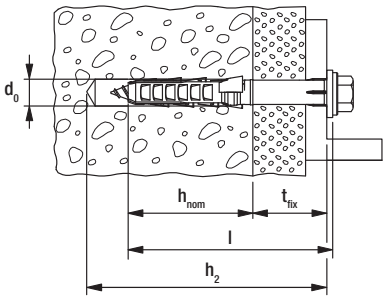


	Zinc-plated steel	Stainless steel	Hot-dip galvanised steel	Approval	Drill hole diameter	Min. drill hole depth for through fixings	Min. anchorage depth	Anchor length	Max. fixture thickness	Drive	Sales unit
	Art.-No.	Art.-No.	Art.-No.	ETA	d_0 [mm]	h_2 [mm]	h_{nom} [mm]	l [mm]	t_{fix} [mm]		[pcs]
Item	gvz	A4	hdg								
SXR 10 x 52 FUS	502456 1)	–	–	■	10	62	50	52	2	T40/SW13	50
SXR 10 x 60 FUS	046329	046339	–	■	10	70	50	60	10	T40/SW13	50
SXR 10 x 60 FUS	–	–	509537	–	10	70	50	60	10	T40/SW13	50
SXR 10 x 80 FUS	046330	046340	–	■	10	90	50	80	30	T40/SW13	50
SXR 10 x 80 FUS	–	–	509538	–	10	90	50	80	30	T40/SW13	50
SXR 10 x 100 FUS	046331	046342	–	■	10	110	50	100	50	T40/SW13	50
SXR 10 x 100 FUS	–	–	509539	–	10	110	50	100	50	T40/SW13	50
SXR 10 x 120 FUS	046332	046343	–	■	10	130	50	120	70	T40/SW13	50
SXR 10 x 140 FUS	046333	046344	–	■	10	150	50	140	90	T40/SW13	50
SXR 10 x 140 FUS	–	–	509540	–	10	150	50	140	90	T40/SW13	50

1) not pre-assembled

TECHNICAL DATA

SXR-FUS - with fischer hexagon head safety screw, moulded washer and integrated T40 bit recess



	Zinc-plated steel	Stainless steel	Hot-dip galvanised steel	Approval	Drill hole diameter	Min. drill hole depth for through fixings	Min. anchorage depth	Anchor length	Max. fixture thickness	Drive	Sales unit
	Art.-No.	Art.-No.	Art.-No.	ETA	d_0 [mm]	h_2 [mm]	h_{nom} [mm]	l [mm]	t_{fix} [mm]		[pcs]
Item	gvz	A4	hdg								
SXR 10 x 160 FUS	**046334**	**046345**	–	■	10	170	50	160	110	T40/SW13	50
SXR 10 x 180 FUS	**046335**	**046361**	–	■	10	190	50	180	130	T40/SW13	50
SXR 10 x 200 FUS	**046336**	**046362**	–	■	10	210	50	200	150	T40/SW13	50
SXR 10 x 230 FUS	**046337**	**046363**	–	■	10	240	50	230	180	T40/SW13	50
SXR 10 x 260 FUS	**046338**	**046364**	–	■	10	270	50	260	210	T40/SW13	50

1) not pre-assembled

ACCESSORIES

Cover cap **ADT**

Item	Art.-No.	Colour	Cap [Ø mm]	Match	Sales unit [pcs]
ADT 15 W	**060326**	white	15	Safety screw with integrated bit recess T40	100
ADT 15 DB	**060329**	dark brown	15	Safety screw with integrated bit recess T40	100
ADT 18 W	**060334**	white	18	Safety screw with integrated bit recess T40	100
ADT 18 DB	**060337**	dark brown	18	Safety screw with integrated bit recess T40	100

ACCESSORIES

Washer **U**

Item	Art.-No.	External-Ø d [mm]	Hole-Ø D [mm]	Thickness S [mm]	Matching anchor type	Sales unit [pcs]
U 11,5 x 21 x 1,5 DIN 522 A2	**010026**	21	11.5	1.5	SXR 10, SXRL 10, FUR 10	500

ACCESSORIES

Aircrete hole punch **GBS**

Item	Art.-No.	Drill hole d_0 [Ø mm]	Min. drill hole depth for through fixings h_2 [mm]	Match	Sales unit [pcs]
GBS 10 x 80	**050590** 1)	9	85	SXR 10 x 52, SXR 10 x 60, SXR 10 x 80	1
GBS 10 x 100	**050591** 1)	9	105	SXR 10 x 100	1
GBS 10 x 135	**050593** 1)	9	140	SXR 10 x 120	1
GBS 10 x 160	**050594** 1)	9	165	SXR 10 x 140, SXR 10 x 160	1
GBS 10 x 185	**050595** 1)	9	190	SXR 10 x 180	1
GBS 10 x 230	**050596** 1)	9	235	SXR 10 x 200, SXR 10 x 230	1

1) According to the ETA, the aircrete hole punch GBS must be used for drill-hole production in aerated concrete PB < 4N/mm².

LOADS

Frame fixing SXR[4)]

Highest permissible loads[1)2)] of a single anchor as part of a multiple fixing of non-structural systems.
For the design the complete assessment ETA-07/0121 has to be considered.

Product			SXR	
Anchor diameter		[mm]	Ø 8	Ø 10
Anchorage depth	h_{nom}	[mm]	50	50
Anchorage in concrete ≥ C12/15				
Permissible tensile load		[kN]	0,99	1,79
Permissible shear load	Zinc-plated steel	[kN]	4,23	5,98
	Stainless steel A4	[kN]	3,93	5,98
Minimum member thickness	h_{min}	[mm]	100	100
Characteristic edge distance	$c_{cr,N}$	[mm]	70	140
Characteristic spacing	a resp. $s_{cr,N}$	[mm]	70	100
Minimum spacing	s_{min}	[mm]	70	70
with an edge distance	c ≥	[mm]	70	210
Minimum edge distance	c_{min}	[mm]	70	85
with a spacing	s ≥	[mm]	70	100
Anchorage in narrow concrete members (h ≥ 40 mm) made of concrete ≥ C12/15, e.g. weather shells of triple-skin outer wall panels				
Permissible tensile load		[kN]	-	1,19
Permissible shear load		[kN]	-	5,98
Anchorage in masonry				
Permisible load[3)] in solid brick	≥ Mz 12 a. ≥ NF	[kN]	0,57	0,57
	≥ Mz 20 a. ≥ NF	[kN]	0,71	0,86
Permissible load[3)] in solid sand-lime brick	≥ KS 10 a. ≥ NF	[kN]	0,57	0,57
	≥ KS 20 a. ≥ NF	[kN]	0,71	0,71
Permissible load[3)] in lightweight concrete block	≥ V 2; $\rho \geq 1,2$ kg/dm³	[kN]	0,26	0,21
	≥ V 6; $\rho \geq 1,6$ kg/dm³	[kN]	0,26	0,71
Permissible load[3)5)] in vertically perforated brick (e.g. Poroton)	≥ HLz 10; $\rho \geq 1,0$ kg/dm³	[kN]	0,17	0,26
Permissible load[3)] in perforated sand-lime brick	≥ KSL 6	[kN]	0,26	0,43
	≥ KSL 12	[kN]	0,57	0,57
Permissible load[3)5)] in hollow lightweight concrete blocks	≥ HBL 2	[kN]	-	0,43
	≥ HBL 6	[kN]	0,43	0,57
Minimum member thickness	h_{min}	[mm]	100	100
Minimum spacing (single anchor)	a_{min}	[mm]	250	250
Minimum spacing (anchor group)	s_{min}	[mm]	100	100
Minimum edge distance (anchor group)	c_{min}	[mm]	100	100
Anchorage in aerated concrete				
Permissible load[3)] in aerated concrete	2 N/mm²	[kN]	-	0,14[6)]
	4 N/mm²	[kN]	-	0,27
	6 N/mm²	[kN]	-	0,27
Minimum member thickness	h_{min}	[mm]	-	100
Minimum spacing (single anchor)	a_{min}	[mm]	-	250
Minimum spacing (anchor group)	s_{min}	[mm]	-	400
Minimum edge distance (anchor group)	c_{min}	[mm]	-	100

[1)] The required partial safety factors for material resistance as well as a partial safety factor for load actions $\gamma_L = 1,4$ are considered.
As a single anchor counts e.g. an anchor with a minimum spacing a according to table B4.1 resp. table B4.2 of the assessment.

[2)] 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.

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

[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 to assessment have to be taken.

[5)] Rotary drilling.

[6)] Drill holes to be made with aerated concrete hole punch.

LOADS

Frame fixing SXR[3]

Highest recommended loads[1] for a single anchor as part of a multiple fixing of non-structural systems.
The given loads are valid for wood screws with the specified diameter.

Type			SXR 6	SXR 8
Anchorage depth	h_{nom}	[mm]	30	50
Screw diameter	Ø	[mm]	4,5	6,0
Min. edge distance concrete	a_r	[mm]	50	60
Recommended loads in the respective base material F_{rec}[2]				
Concrete	≥ C20/25	[kN]	0,25	0,40
Solid brick	≥ Mz 12	[kN]	0,20	0,30
Solid sand-lime brick	≥ KS 12	[kN]	0,20	0,30
Vertically perforated brick	≥ Hlz 12 (ρ ≥ 1,0 kg/dm³)	[kN]	0,10	0,10
Perforated sand-lime brick	≥ KSL 12	[kN]	0,20	0,30

[1] Required safety factors are considered.

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

[3] Valid for zinc coated screws and for screws made of stainless steel. For exterior use of the zinc coated screws measures against incoming humidity have to be taken.