Frame fixing SXR

First fischer frame fixing with European Technical Approval (ETA).

OVERVIEW

SXR-T - with zinc-plated fischer safety screw

SXR-Z - with zinc-plated fischer safety screw for Pozi-bit Gr. 4

SXR-FUS - with fischer hexagon safety screw of stainless steel A4 and moulded-on washer

Approved for:
- Concrete
- Solid brick
- Solid sand-lime brick
- Perforated sand-lime brick
- Solid block made of lightweit or normal weight concrete
- Hollow block made from lightweight concrete
- Vertically perforated brick
- Thermal insulation block

European Technical Approval – for concrete and masonry

Fire resistance classification R 90 Anchor types see test report

HALOGENFREE

Also suitable for:
- Natural stone with dense structure
- Aerated concrete
- Solid block made from lightweight concrete

For fixing of:
- Gates
- Door frames
- Fire protection doors
- Windows
- Kitchen cabinets
- Wardrobes
- Squared timbers
- Facings
- Facade and roof substructures made of wood and metal
- Suspended ceilings
- Cable trays

DESCRIPTION

- First fischer frame fixing with European Technical Approval
- The approval covers the classical application area to facade subframes and the multiple fixing of non-loadbearing structures in general.
- For approved fixings on centric traction and in cracked or non-cracked concrete.
- New application areas are opend up, such as suspended ceilings, cable trays, piping brackets etc.

Advantages/benefits

- Diverse checks, comparative trials and user tests have proven that the mounting characteristics of the SXR are unique on the market.
  The decisive factor here is a comparatively low thightening torque in relation to a very high overtorque during the setting process.
- This fixing „holds“ even in porous stones with large cavities and ensures during installation that it is firmly and securely anchored in the substrate.
- In addition, the unique geometry of the SXR means that it can easily be hammered in without bending.
- It also has a distinct anti-rotation lock that works optimally even in critical building materials.

SXR - ADVANTAGES AT A GLANCE

NEW

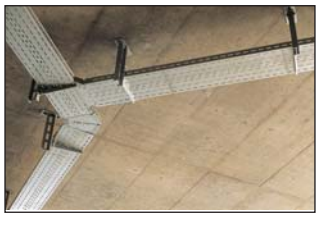
With an anchorage depth of 50 mm, approved for a number of solid and perforated building materials.

Complete assortment:
- Total fixing length from 52 - 260 mm
- Screw can be obtained in zinc-plated and A4 version
- **Three head variations**
  1. Countersunk head Torx 40
  2. Countersunk head Pozidrive 4
  3. Hexagon head SW 13 with moulded-on washer and T40

Optimum installation behaviour:
The “Feel Good Factor”.

fischer standards:
- Pre-assembled screw
- hammer-in stop
- Anti-rotation lock

Highest permissible loads:
- Concrete C16/20 (B25):
  tenisle load 2.0 kN
  shear load 5.4 kN
- Solid brick up to 1.4 kN



FIXING PRINCIPLES

In detail: The general principles for installation, the correct drilling procedure and much more on page 26.

STANDARDS

You will find everything that has standards on page 34 under the keyword approvals.

INSTALLATION

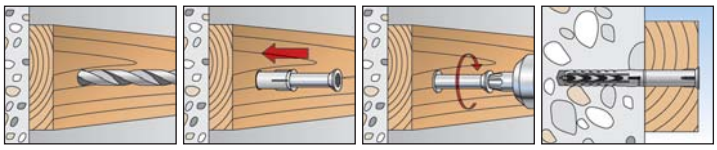
Type of installation

- Push-through installation

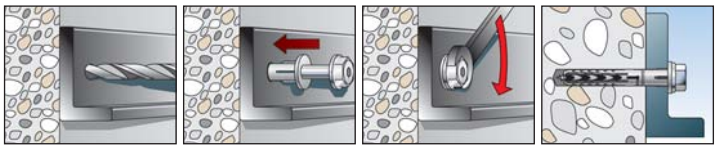
Installation tips

- We advise countersunk-head screws for fixing wooden structures, and anchor sleeves with a flat collar and hexagon-head bolts for metal structures.
- The hexagon-head with integral washer also has an integral ⬡ -socket.

for timber structures



for metal structures

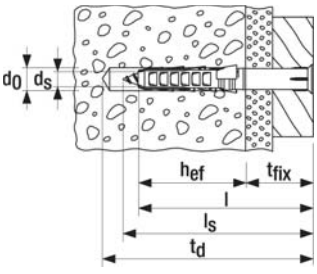


TECHNICAL DATA

SXR-T - with zinc-plated fischer safety screw

SXR-T A4 - with fischer safety screw made of stainless steel

Type	Art.-No.	ID	approval	drill	min. drill-hole depth for through fixings	effect. anchoring depth	anchor length	max. usable length	screw	actuation	Qty. per box
			ETA	d_0	t_d	h_{ef}	l	t_{fix}	$d_S \times l_S$		
				[mm]	[mm]	[mm]	[mm]	[mm]	[mm]		pcs.
SXR 10 x 80 T	**46263**	8	■	10	90	50	80	30	7 x 87	T40	50
SXR 10 x 100 T	**46264**	5	■	10	110	50	100	50	7 x 107	T40	50
SXR 10 x 120 T	**46265**	2	■	10	130	50	120	70	7 x 127	T40	50
SXR 10 x 140 T	**46266**	9	■	10	150	50	140	90	7 x 147	T40	50
SXR 10 x 160 T	**46267**	6	■	10	170	50	160	110	7 x 167	T40	50
SXR 10 x 180 T	**46268**	3	■	10	190	50	180	130	7 x 187	T40	50
SXR 10 x 200 T	**46269**	0	■	10	210	50	200	150	7 x 207	T40	50
SXR 10 x 230 T	**46270**	6	■	10	240	50	230	180	7 x 237	T40	50
SXR 10 x 260 T	**46271**	3	■	10	270	50	260	210	7 x 267	T40	50
SXR 10 x 80 T A4	**46272**	0	■	10	90	50	80	30	7 x 87	T40	50
SXR 10 x 100 T A4	**46274**	4	■	10	110	50	100	50	7 x 107	T40	50
SXR 10 x 120 T A4	**46278**	2	■	10	130	50	120	70	7 x 127	T40	50
SXR 10 x 140 T A4	**46279**	9	■	10	150	50	140	90	7 x 147	T40	50
SXR 10 x 160 T A4	**46283**	6	■	10	170	50	160	110	7 x 167	T40	50
SXR 10 x 180 T A4	**46285**	0	■	10	190	50	180	130	7 x 187	T40	50
SXR 10 x 200 T A4	**46286**	7	■	10	210	50	200	150	7 x 207	T40	50
SXR 10 x 230 T A4	**46287**	4	■	10	240	50	230	180	7 x 237	T40	50
SXR 10 x 260 T A4	**46288**	1	■	10	270	50	260	210	7 x 267	T40	50



SXR-Z - with zinc-plated fischer safety screw for Pozi-bit Gr. 4

Type	Art.-No.	ID	approval	drill	min. drill-hole depth for through fixings	effect. anchoring depth	anchor length	max. usable length	screw	actuation	Qty. per box
			ETA	d_0	t_d	h_{ef}	l	t_{fix}	$d_S \times l_S$		
				[mm]	[mm]	[mm]	[mm]	[mm]	[mm]		pcs.
SXR 10 x 80 Z	**47977**	3	■	10	90	50	80	30	7 x 87	PZ 4	50
SXR 10 x 100 Z	**47978**	0	■	10	110	50	100	50	7 x 107	PZ 4	50
SXR 10 x 120 Z	**47979**	7	■	10	130	50	120	70	7 x 127	PZ 4	50
SXR 10 x 140 Z	**47980**	3	■	10	150	50	140	90	7 x 147	PZ 4	50
SXR 10 x 160 Z	**47981**	0	■	10	170	50	160	110	7 x 167	PZ 4	50

DYNAMICS

Big efffect: Pages 33 are full of useful information.

CORROSION

Rust prevention tips: Everything you need to know about corrosion and how to prevent it is on page 32.

Frame fixing SXR

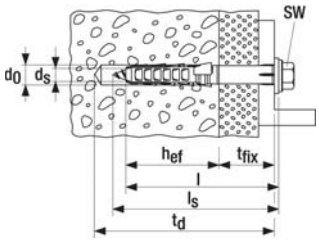
TECHNICAL DATA

SXR-FUS - with zinc-plated fischer hexagon safety screw and moulded-on washer

SXR-FUS A4 - with fischer hexagon safety screw made of stainless steel A4 and moulded-on washer

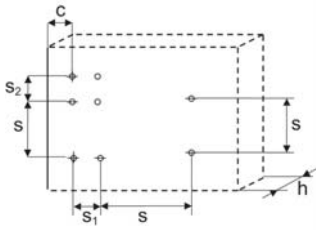
Type		Art.-No.	ID	approval	drill	min. drill-hole depth for through fixings	effect. anchoring depth	anchor length	max. usable length	screw	actuation	Qty. per box
				■ ETA	d_0	t_d	h_{ef}	l	t_{fix}	d_s x l_s		
					[mm]	[mm]	[mm]	[mm]	[mm]	[mm]		pcs.
SXR 10 x 52 FUS	1)	**502456**		■	10	62	50	52	2	7 x 61	T40/SW13	50
SXR 10 x 60 FUS		**46329**	1	■	10	70	50	60	10	7 x 69	T40/SW13	50
SXR 10 x 80 FUS		**46330**	7	■	10	90	50	80	30	7 x 89	T40/SW13	50
SXR 10 x 100 FUS		**46331**	4	■	10	110	50	100	50	7 x 109	T40/SW13	50
SXR 10 x 120 FUS		**46332**	1	■	10	130	50	120	70	7 x 129	T40/SW13	50
SXR 10 x 140 FUS		**46333**	8	■	10	150	50	140	90	7 x 149	T40/SW13	50
SXR 10 x 160 FUS		**46334**	5	■	10	170	50	160	110	7 x 169	T40/SW13	50
SXR 10 x 180 FUS		**46335**	2	■	10	190	50	180	130	7 x 189	T40/SW13	50
SXR 10 x 200 FUS		**46336**	9	■	10	210	50	200	150	7 x 209	T40/SW13	50
SXR 10 x 230 FUS		**46337**	6	■	10	240	50	230	180	7 x 239	T40/SW13	50
SXR 10 x 260 FUS		**46338**	3	■	10	270	50	260	210	7 x 269	T40/SW13	50
SXR 10 x 60 FUS A4		**46339**	0	■	10	70	50	60	10	7 x 69	T40/SW13	50
SXR 10 x 80 FUS A4		**46340**	6	■	10	90	50	80	30	7 x 89	T40/SW13	50
SXR 10 x 100 FUS A4		**46342**	0	■	10	110	50	100	50	7 x 109	T40/SW13	50
SXR 10 x 120 FUS A4		**46343**	7	■	10	130	50	120	70	7 x 129	T40/SW13	50
SXR 10 x 140 FUS A4		**46344**	4	■	10	150	50	140	90	7 x 149	T40/SW13	50
SXR 10 x 160 FUS A4		**46345**	1	■	10	170	50	160	110	7 x 169	T40/SW13	50
SXR 10 x 180 FUS A4		**46361**	1	■	10	190	50	180	130	7 x 189	T40/SW13	50
SXR 10 x 200 FUS A4		**46362**	8	■	10	210	50	200	150	7 x 209	SW 13	50
SXR 10 x 230 FUS A4		**46363**	5	■	10	240	50	230	180	7 x 239	SW 13	50
SXR 10 x 260 FUS A4		**46364**	2	■	10	270	50	260	210	7 x 269	SW 13	50

1) not pre-assembled



Maximum permissible loads[1] of one fixing point[2] in concrete and masonry.
For the design the complete approval ETA-07/0121 is to be observed.

Fixing type					**SXR 10**	
					gvz	**A4**
Effective anchorage depth			h_{ef}	[mm]	50	
Drill hole depth			$h_1 \geqq$	[mm]	60	
Minimum structural component thickness			h_{min}	[mm]	100	
Nominal drill hole diameter			d_0	[mm]	10	
Clearance-hole in fixture to be attached			$d_f \leqq$	[mm]	10,5	
Permissible bending moment				[Nm]	10,1	9,5
Permissible tensile load N_{perm}[1] of one fixing point [2] in concrete (use category "a")						
Concrete C12/15	Temperatue range ϑ [3]		30 ° / 50 °C	[kN]	1,4	
			50 ° / 80 °C	[kN]	1,2	
Concrete C16/20 - C50/60	Temperaturbereich ϑ [3]		30 ° / 50 °C	[kN]	2,0	
			50 ° / 80 °C	[kN]	1,8	
Permissible shear load V_{perm}[1] of one fixing point [2] in concrete (use category "a")						
Concrete C12/15	Temperaturbereich ϑ [3]		30 ° / 50 °C	[kN]	5,4	5,0
			50 ° / 80 °C			
Spacings and edge distances in concrete (use category "a")						
Concrete C12/15	Minimum spacing		s_{min}	[mm]	70	
			for $c_{min} \geqq$		210	
	Minimum edge distance		c_{min}	[mm]	85	
			for $s_{min} \geqq$		100	
	Characteristic edge distance		$c_{cr, N}$	[mm]	140	
Concrete C16/20 - C50/60	Minimum spacing		s_{min}	[mm]	50	
			for $c_{min} \geqq$		150	
	Minimum edge distance		c_{min}	[mm]	60	
			for $s_{min} \geqq$		70	
	Characteristic edge distance		$c_{cr, N}$	[mm]	100	



[1] Material safety factors according to approval and safety factor for load γ_F = 1.4 are considered. For combined tension and shear please observe the ETA approval and the design method (ETAG 020, Annex C)."

[2] A fixing point can consist of a single anchor, a group of two anchors with $s_1 \geq s_{1,min}$ or a group of four anchors with $s_1 \geq s_{1,min}$ and $s_2 \geq s_{2,min}$."

[3] In the temperature ranges ϑ = (30°/50° C) and ϑ = (50°/80° C) the first value indicates the maximum long-term temperature and the second value indicates the maximum short-term temperature."

LOADS

Permissible load F_{perm} [1] of one fixing point [2] in solid masonry (use category "b") for tension, shear or combined shear and tension.

Type of brick	Supplier	Brick characteristics					Temperature range ϑ [3]	
		Brick size		Bulk density class	Min. compressive strength			
	Trade name of the brick	[-]	[mm]	[kg/dm³]	[N/mm²]		30°/50° C	50°/80° C
Terracotta solid brick **MZ** e.g. DIN 105, DIN EN 771-1	e.g. Vollmeter *Mz*, Schlagmann *Mz*	NF	240 x 115 x 71	≥ 1.8	20 [10][4]	[kN]	1.0	0.9
					36	[kN]	1.4	1.4
		3 DF	240 x 175 x 113	≥ 1.8	20 [10][4]	[kN]	0.6	0.6
							1.3[5]	1.1[5]
Sand-lime solid brick **KS** e.g. DIN 106, DIN EN 771-2	e.g. KS Wemding *KS*	NF	240 x 115 x 71	≥ 1.8	20 [10][4]	[kN]	0.7	0.7
						[kN]	1.1[5]	1.1[5]
		NF	240 x 115 x 71	≥ 2.0	20 [10][4]	[kN]	1.0	0.9
					36	[kN]	1.4	1.4
		-	175 x 500 x 235	≥ 2.0	20 [10][4]	[kN]	1.3	1.3
					28	[kN]	1.4	1.4
Solid brick of light-weight concrete e.g. DIN 18152, DIN EN 771-3	e.g. KLB *V*	2 DF	240 x 115 x 113	≥ 1.2	2	[kN]	0.2	0.2
						[kN]	0.3[5]	0.3[5]
		-	240 x 490 x 115	≥ 1.2	2	[kN]	0.3	0.3
		-	250 x 240 x 245	≥ 1.6	6	[kN]	0.7	0.7
		-	240 x 490 x 115	≥ 1.6	8	[kN]	0.9	0.9
Solid brick of normal-weight concrete **VBN** e.g. DIN 18153, DIN EN 771-3	e.g. Adolf Blatt *VBN*	-	246 x 240 x 245	≥ 1.8	20 [10][4]	[kN]	1.3	1.3
Solid brick of normal-weight concrete **VBN**	e.g. Tarmac	-	440 x 215 x 100	≥ 1.8	20 [10][4]	[kN]	1.3	1.1
Solid brick of light-weight concrete **VBL**	e.g. Tarmac	-	440 x 215 x 100	≥ 1.4	6	[kN]	0.6	0.6
						[kN]	0.7[5]	0.7[5]
Heat insulation block	e.g. Gisoton *WDB*	-	390 x 240 x 250	≥ 0.7	2	[kN]	0.4	0.4

Permissible load F_{perm} [1] of one fixing point [2] in hollow or perforated masonry (use category "c") for tension, shear or combined shear and tension.

Type of brick	Supplier	Brick characteristics					Temperature range ϑ [3]	
		Brick size		Bulk density class	Min. compressive strength			
	Trade name of the brick	[-]	[kg/dm3)]	[kg/dm³]	[N/mm²]		30°/50° C	50°/80° C
Vertical perforated brick Form B **Hlz** e.g. DIN 105, DIN EN 771-1	e.g. Wienerberger *Hlz*	2 DF	240 x 115 x 113	≥ 1.0	20 [10][4]	[kN]	0.6	0.6
				≥ 1.2		[kN]	0.9[5]	0.7
	e.g. Schlagmann *Planfüllziegel*	12 DF	380 x 240 x 240	≥ 0.7	6	[kN]	0.6	0.6
	e.g. Schlagmann *Poroton T14*	-	300 x 240 x 240	≥ 0.7	6	[kN]	0.1	0.1
Vertical perforated brick Form B **Hlz** e.g. NF-P 13-301, DIN EN 771-1	e.g. Imerys *Optibric*	-	560 x 200 x 274	≥ 0.6	10	[kN]	0.3	0.3
	e.g. Wienerberger *Porotherm GF R20*	-	500 x 200 x 299	≥ 0.7	10	[kN]	0.2	0.2
Vertical perforated brick Form B **Hlz** e.g. NF-P 13-301, DIN EN 771-1	*e.g* Imerys *Gellimatic*	-	270 x 200 x 500	≥ 0.6	6	[kN]	0.2	0.2
	e.g Terreal *Calibric*	-	500 x 200 x 314	≥ 0.7	8	[kN]	0.2	0.2
	e.g Bouyer Leroux *BGV*	-	570 x 200 x 314	≥ 0.6	6	[kN]	0.2	0.2
		-				[kN]	0.3[5]	0.3[5]
	e.g Wienerberger *Porotherm 30 R*	-	370 x 300 x 249	≥ 0.7	10	[kN]	0.1	0.1
		-				[kN]	0.2[5]	0.2[5]
Perforated sand-lime brick **KSL** e.g DIN 106, DIN EN 771-2	e.g. KS Wemding *KSL*	5 DF	300 x 240 x 115	≥ 1.4	16 [10][4]	[kN]	1.0[5]	0.9
		P10	495 x 98 x 248	≥ 1.2	6	[kN]	0.4	0.4
						[kN]	0.7[5]	0.6[5]
Hollow block of light-weight concrete **Hbl** e.g. DIN 18151, DIN EN 771-3	e.g. KLB *Hbl*	-	-	≥ 1.2	2	[kN]	0.4	0.4
Hollow block of light-weight concrete e.g. NF-P 14-301, DIN EN 771-3	e.g. Sepa *Parpaing*	-	500 x 200 x 200	≥ 0.9	4	[kN]	0.3	0.3
							0.4[5]	
Hollow block of normal-weight concrete **HbN** e.g. DIN 18153, DIN EN 771-3	e.g. Adolf Blatt *Hbn*	10 DF	300 x 240 x 240	≥ 1.6	6	[kN]	0.7	0.7

Spacings and edge distances in masonry (use category "b" and "c")

Minimum interspacing (between single anchors or groups of anchors)	s_{min}	[mm]	250
Minimum spacing within a group of anchors, perpendicular to the free edge	$s_{1, min}$	[mm]	200[6]
Minimum spacing within a group of anchors, prarallel to the free edge	$s_{2, min}$	[mm]	400[6]
Minimum edge distance	c_{min}	[mm]	100

[1] Material safety factors according to approval and safety factor for load γ_F = 1.4 are considered. For combined tension and shear please observe the ETA approval and the design method (ETAG 020, Annex C)."

[2] A fixing point can consist of a single anchor, a group of two anchors with $s_1 \geq s_{1,min}$ or a group of four anchors with $s_1 \geq s_{1,min}$ and $s_2 \geq s_{2,min}$."

[3] In the temperature ranges ϑ = (30°/50° C) and ϑ = (50°/80° C) the first value indicates the maximum long-term temperature and the second value indicates the maximum short-term temperature."

[4] For a minimum compressive strength of the the brick between 10 N/mm² and 20 N/mm²: $F'_{perm} = 0,7 \times F_{perm}$."

[5] Valid for an edge distance of c ≥ 200 mm only; Intermediate values by linear interpolation."

[6] In solid masonry (use category "b") the spacing may be reduced to $s_{1,min} = s_{2,min}$ = 100 mm. For an edge distance of c ≥ 200 mm in hollow or perforated masonry (use category "c") the spacing may be reduced to $s_{1,min} = s_{2,min}$ = 100 mm only if the permissible load according to above load table is reduced by the factor 0.5; Intermediate values by linear interpolation."