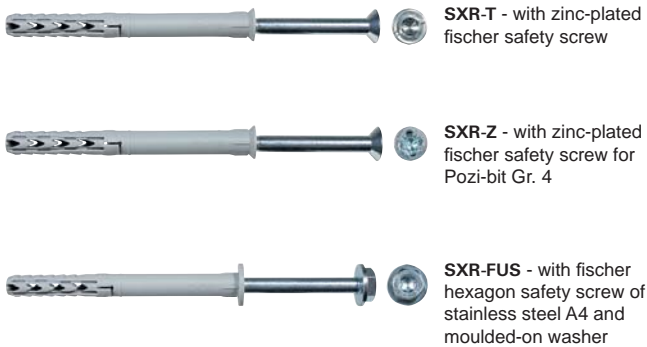




# Frame fixing SXR

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

Frame fixings / Stand-off install.

### Approved for:

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

### 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 opened 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 tightening 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



**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):  
tensile 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**

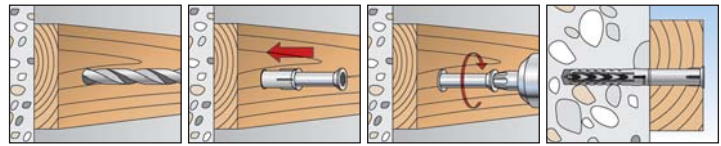
**Type of installation**

- Push-through installation

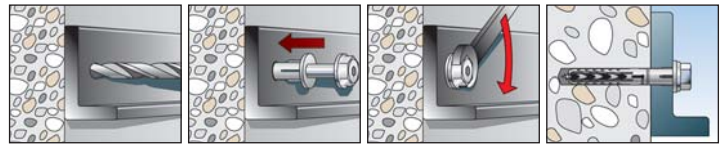
**Installation tips**

- 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  $\odot$ -socket.

**for timber structures**

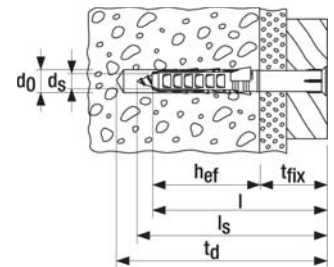


**for metal structures**



**TECHNICAL DATA**

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
				$d_0$ [mm]	$t_d$ [mm]	$h_{ef}$ [mm]	$l$ [mm]	$t_{fix}$ [mm]	$d_s \times l_s$ [mm]		pcs.
SXR 10 x 80 T	46263	8	ETA	10	90	50	80	30	7 x 87	T40	50
SXR 10 x 100 T	46264	5	ETA	10	110	50	100	50	7 x 107	T40	50
SXR 10 x 120 T	46265	2	ETA	10	130	50	120	70	7 x 127	T40	50
SXR 10 x 140 T	46266	9	ETA	10	150	50	140	90	7 x 147	T40	50
SXR 10 x 160 T	46267	6	ETA	10	170	50	160	110	7 x 167	T40	50
SXR 10 x 180 T	46268	3	ETA	10	190	50	180	130	7 x 187	T40	50
SXR 10 x 200 T	46269	0	ETA	10	210	50	200	150	7 x 207	T40	50
SXR 10 x 230 T	46270	6	ETA	10	240	50	230	180	7 x 237	T40	50
SXR 10 x 260 T	46271	3	ETA	10	270	50	260	210	7 x 267	T40	50
SXR 10 x 80 T A4	46272	0	ETA	10	90	50	80	30	7 x 87	T40	50
SXR 10 x 100 T A4	46274	4	ETA	10	110	50	100	50	7 x 107	T40	50
SXR 10 x 120 T A4	46278	2	ETA	10	130	50	120	70	7 x 127	T40	50
SXR 10 x 140 T A4	46279	9	ETA	10	150	50	140	90	7 x 147	T40	50
SXR 10 x 160 T A4	46283	6	ETA	10	170	50	160	110	7 x 167	T40	50
SXR 10 x 180 T A4	46285	0	ETA	10	190	50	180	130	7 x 187	T40	50
SXR 10 x 200 T A4	46286	7	ETA	10	210	50	200	150	7 x 207	T40	50
SXR 10 x 230 T A4	46287	4	ETA	10	240	50	230	180	7 x 237	T40	50
SXR 10 x 260 T A4	46288	1	ETA	10	270	50	260	210	7 x 267	T40	50



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
				$d_0$ [mm]	$t_d$ [mm]	$h_{ef}$ [mm]	$l$ [mm]	$t_{fix}$ [mm]	$d_s \times l_s$ [mm]		pcs.
SXR 10 x 80 Z	47977	3	ETA	10	90	50	80	30	7 x 87	PZ 4	50
SXR 10 x 100 Z	47978	0	ETA	10	110	50	100	50	7 x 107	PZ 4	50
SXR 10 x 120 Z	47979	7	ETA	10	130	50	120	70	7 x 127	PZ 4	50
SXR 10 x 140 Z	47980	3	ETA	10	150	50	140	90	7 x 147	PZ 4	50
SXR 10 x 160 Z	47981	0	ETA	10	170	50	160	110	7 x 167	PZ 4	50

**DYNAMICS**

Big effect: 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



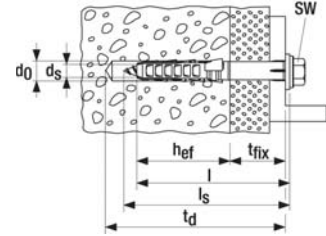
**SXR-FUS** - with zinc-plated fischer hexagon safety screw and moulded-on washer



**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	$d_0$	$t_d$	$h_{ef}$	$l$	$t_{fix}$	$d_s \times l_s$		pcs.
			[mm]	[mm]	[mm]	[mm]	[mm]	[mm]		
SXR 10 x 52 FUS	1) 502456	■	10	62	50	52	2	7 x 61	T40/SW13	50
SXR 10 x 60 FUS	46329	■	10	70	50	60	10	7 x 69	T40/SW13	50
SXR 10 x 80 FUS	46330	■	10	90	50	80	30	7 x 89	T40/SW13	50
SXR 10 x 100 FUS	46331	■	10	110	50	100	50	7 x 109	T40/SW13	50
SXR 10 x 120 FUS	46332	■	10	130	50	120	70	7 x 129	T40/SW13	50
SXR 10 x 140 FUS	46333	■	10	150	50	140	90	7 x 149	T40/SW13	50
SXR 10 x 160 FUS	46334	■	10	170	50	160	110	7 x 169	T40/SW13	50
SXR 10 x 180 FUS	46335	■	10	190	50	180	130	7 x 189	T40/SW13	50
SXR 10 x 200 FUS	46336	■	10	210	50	200	150	7 x 209	T40/SW13	50
SXR 10 x 230 FUS	46337	■	10	240	50	230	180	7 x 239	T40/SW13	50
SXR 10 x 260 FUS	46338	■	10	270	50	260	210	7 x 269	T40/SW13	50
SXR 10 x 60 FUS A4	46339	■	10	70	50	60	10	7 x 69	T40/SW13	50
SXR 10 x 80 FUS A4	46340	■	10	90	50	80	30	7 x 89	T40/SW13	50
SXR 10 x 100 FUS A4	46342	■	10	110	50	100	50	7 x 109	T40/SW13	50
SXR 10 x 120 FUS A4	46343	■	10	130	50	120	70	7 x 129	T40/SW13	50
SXR 10 x 140 FUS A4	46344	■	10	150	50	140	90	7 x 149	T40/SW13	50
SXR 10 x 160 FUS A4	46345	■	10	170	50	160	110	7 x 169	T40/SW13	50
SXR 10 x 180 FUS A4	46361	■	10	190	50	180	130	7 x 189	T40/SW13	50
SXR 10 x 200 FUS A4	46362	■	10	210	50	200	150	7 x 209	SW 13	50
SXR 10 x 230 FUS A4	46363	■	10	240	50	230	180	7 x 239	SW 13	50
SXR 10 x 260 FUS A4	46364	■	10	270	50	260	210	7 x 269	SW 13	50

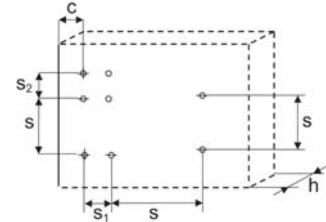
1) not pre-assembled



Frame fixings / Stand-off install.

**Maximum permissible loads<sup>1)</sup>** of one fixing point<sup>2)</sup> in concrete and masonry.  
For the design the complete approval ETA-07/O121 is to be observed.

Fixing type	SXR 10		
	gvz	A4	
Effective anchorage depth	$h_{ef}$ [mm]	50	
Drill hole depth	$h_1 \geq$ [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	$d_f \leq$ [mm]	10,5	
Permissible bending moment	[Nm]	10,1	
<b>Permissible tensile load <math>N_{perm}</math><sup>1)</sup> of one fixing point<sup>2)</sup> in concrete (use category "a")</b>			
Concrete C12/15	Temperaturbereich $\Theta$ <sup>3)</sup>	30 ° / 50 °C [kN]	1,4
		50 ° / 80 °C [kN]	1,2
Concrete C16/20 - C50/60	Temperaturbereich $\Theta$ <sup>3)</sup>	30 ° / 50 °C [kN]	2,0
		50 ° / 80 °C [kN]	1,8
<b>Permissible shear load <math>V_{perm}</math><sup>1)</sup> of one fixing point<sup>2)</sup> in concrete (use category "a")</b>			
Concrete C12/15	Temperaturbereich $\Theta$ <sup>3)</sup>	30 ° / 50 °C [kN]	5,4
		50 ° / 80 °C	5,0
<b>Spacings and edge distances in concrete (use category "a")</b>			
Concrete C12/15	Minimum spacing	$s_{min}$ [mm]	70
		for $c_{min} \geq$	210
	Minimum edge distance	$c_{min}$ [mm]	85
		for $s_{min} \geq$	100
Characteristic edge distance	$c_{cr, N}$ [mm]	140	
	Concrete C16/20 - C50/60	Minimum spacing	$s_{min}$ [mm]
for $c_{min} \geq$			150
Minimum edge distance		$c_{min}$ [mm]	60
		for $s_{min} \geq$	70
Characteristic edge distance	$c_{cr, N}$ [mm]	100	



<sup>1)</sup> Material safety factors according to approval and safety factor for load  $\gamma_F = 1.4$  are considered. For combined tension and shear please observe the ETA approval and the design method (ETAG 020, Annex C)."

<sup>2)</sup> 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  $s_2 \geq s_{2,min}$ ."

<sup>3)</sup> In the temperature ranges  $\Theta = (30^\circ/50^\circ \text{ C})$  and  $\Theta = (50^\circ/80^\circ \text{ C})$  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 Trade name of the brick	Brick size [-] [mm]	Brick characteristics		Min. compressive strength [N/mm <sup>2</sup> ]	Temperature range $\Theta$ <sup>3)</sup> 30°/50° C   50°/80° C
			Bulk density class [kg/dm <sup>3</sup> ]			
Terracotta solid brick <b>MZ</b> e.g. DIN 105, DIN EN 771-1	e.g. Vollmeter Mz, Schlagmann Mz	NF	240 x 115 x 71	≳ 1.8	20 [10] <sup>4)</sup> 36	[kN] 1.0   0.9 [kN] 1.4   1.4
		3 DF	240 x 175 x 113	≳ 1.8	20 [10] <sup>4)</sup>	[kN] 0.6   0.6 1.3 <sup>5)</sup>   1.1 <sup>5)</sup>
Sand-lime solid brick <b>KS</b> e.g. DIN 106, DIN EN 771-2	e.g. KS Wemding KS	NF	240 x 115 x 71	≳ 1.8	20 [10] <sup>4)</sup>	[kN] 0.7   0.7 [kN] 1.1 <sup>5)</sup>   1.1 <sup>5)</sup>
		NF	240 x 115 x 71	≳ 2.0	20 [10] <sup>4)</sup> 36	[kN] 1.0   0.9 [kN] 1.4   1.4
		-	175 x 500 x 235	≳ 2.0	20 [10] <sup>4)</sup> 28	[kN] 1.3   1.3 [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 <sup>5)</sup>   0.3 <sup>5)</sup>
		-	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 <b>VBN</b> e.g. DIN 18153, DIN EN 771-3	e.g. Adolf Blatt VBN	-	246 x 240 x 245	≳ 1.8	20 [10] <sup>4)</sup>	[kN] 1.3   1.3
Solid brick of normal-weight concrete <b>VBN</b>	e.g. Tarmac	-	440 x 215 x 100	≳ 1.8	20 [10] <sup>4)</sup>	[kN] 1.3   1.1
Solid brick of light-weight concrete <b>VBL</b>	e.g. Tarmac	-	440 x 215 x 100	≳ 1.4	6	[kN] 0.6   0.6 [kN] 0.7 <sup>5)</sup>   0.7 <sup>5)</sup>
		-	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 Trade name of the brick	Brick size [-] [kg/dm <sup>3</sup> ]	Brick characteristics		Min. compressive strength [N/mm <sup>2</sup> ]	Temperature range $\Theta$ <sup>3)</sup> 30°/50° C   50°/80° C				
			Bulk density class [kg/dm <sup>3</sup> ]							
Vertical perforated brick Form B <b>Hlz</b> e.g. DIN 105, DIN EN 771-1	e.g. Wienerberger Hlz	2 DF	240 x 115 x 113	≳ 1.0	20 [10] <sup>4)</sup>	[kN] 0.6   0.6				
				≳ 1.2		[kN] 0.9 <sup>5)</sup>   0.7				
	e.g. Schlagmann Planfüllziegel e.g. Schlagmann Poroton T14	12 DF -	380 x 240 x 240 300 x 240 x 240	≳ 0.7 ≳ 0.7	6 6	[kN] 0.6   0.6 [kN] 0.1   0.1				
Vertical perforated brick Form B <b>Hlz</b> e.g. NF-P 13-301, DIN EN 771-1	e.g. Imerys Optibric e.g. Wienerberger Porotherm GF R20	-	560 x 200 x 274 500 x 200 x 299	≳ 0.6 ≳ 0.7	10 10	[kN] 0.3   0.3 [kN] 0.2   0.2				
				e.g. Imerys Gellimatic e.g. Terreal Calibric	- -	270 x 200 x 500 500 x 200 x 314	≳ 0.6 ≳ 0.7	6 8	[kN] 0.2   0.2 [kN] 0.2   0.2	
Vertical perforated brick Form B <b>Hlz</b> e.g. NF-P 13-301, DIN EN 771-1	e.g. Bouyer Leroux BGV e.g. Wienerberger Porotherm 30 R	-	570 x 200 x 314 370 x 300 x 249	≳ 0.6 ≳ 0.7	6 10	[kN] 0.2   0.2 [kN] 0.3 <sup>5)</sup>   0.3 <sup>5)</sup> [kN] 0.1   0.1 [kN] 0.2 <sup>5)</sup>   0.2 <sup>5)</sup>				
				Perforated sand-lime brick <b>KSL</b> e.g. DIN 106, DIN EN 771-2	e.g. KS Wemding KSL	5 DF	300 x 240 x 115	≳ 1.4	16 [10] <sup>4)</sup>	[kN] 1.0 <sup>5)</sup>   0.9
				P10		495 x 98 x 248	≳ 1.2	6	[kN] 0.4   0.4 [kN] 0.7 <sup>5)</sup>   0.6 <sup>5)</sup>	
Hollow block of light-weight concrete <b>Hbl</b> 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 <sup>5)</sup>				
						Hollow block of normal-weight concrete <b>Hbn</b> e.g. DIN 18153, DIN EN 771-3	e.g. Adolf Blatt Hbn	10 DF	300 x 240 x 240	≳ 1.6

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 <sup>6)</sup>
Minimum spacing within a group of anchors, parallel to the free edge	$s_{2, min}$ [mm]	400 <sup>6)</sup>
Minimum edge distance	$c_{min}$ [mm]	100

<sup>1)</sup> Material safety factors according to approval and safety factor for load  $\gamma_F = 1.4$  are considered. For combined tension and shear please observe the ETA approval and the design method (ETAG 020, Annex C.)

<sup>2)</sup> 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  $s_2 \geq s_{2, min}$ .

<sup>3)</sup> In the temperature ranges  $\Theta = (30^\circ/50^\circ \text{ C})$  and  $\Theta = (50^\circ/80^\circ \text{ C})$  the first value indicates the maximum long-term temperature and the second value indicates the maximum short-term temperature.

<sup>4)</sup> For a minimum compressive strength of the brick between 10 N/mm<sup>2</sup> and 20 N/mm<sup>2</sup>:  $F_{perm} = 0.7 \times F_{perm}$

<sup>5)</sup> Valid for an edge distance of  $c \geq 200$  mm only; Intermediate values by linear interpolation.

<sup>6)</sup> 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  $c \geq 200$  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.