



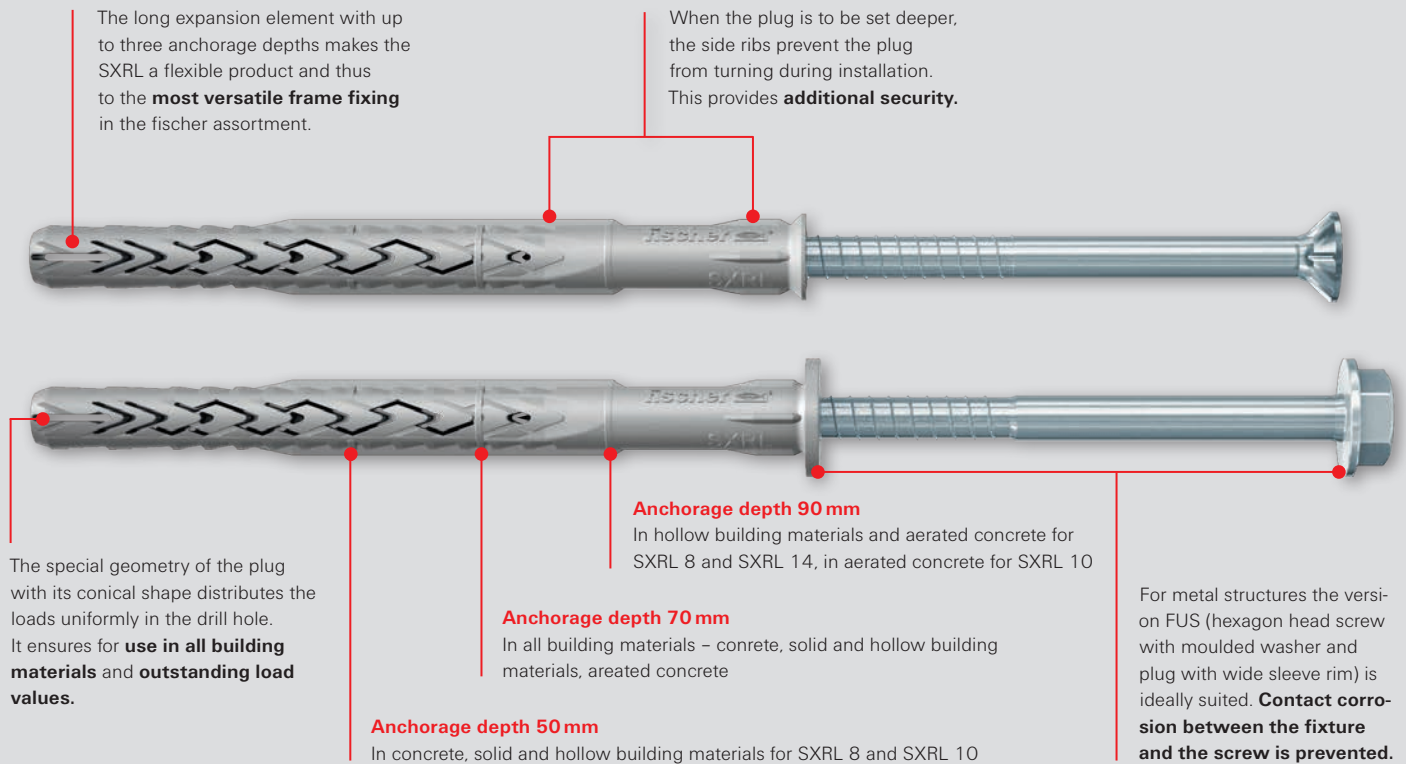
fischer frame fixings

The complete product range
for all requirements



SXRL frame fixing

The versatile with multiple anchorage depth



Our extensive assortment

- Diameter 8, 10 and 14
- fischer safety screws available in the versions of zinc-plated steel and stainless A4 steel
- Two head variants:
 - countersunk head
 - hexagon head with moulded washer



Overview of the advantages

- In the European Technical Assessment (ETA), which takes into consideration all classes of building materials, several anchorage depths are regulated: 50, 70 and 90 mm for SXRL 8 and SXRL 10, 70 and 90 mm for SXRL 14.
- The approval for single-point fixing in cracked concrete makes the SXRL 10 the designated specialist in concrete particularly for tasks such as the installation of awning roofs and outdoor railings compared to steel anchors.
- The SXRL 14 is additionally approved for applications that are subject to pressure and may be used for façade structures that are installed without wall brackets with a spacing.

Functionality

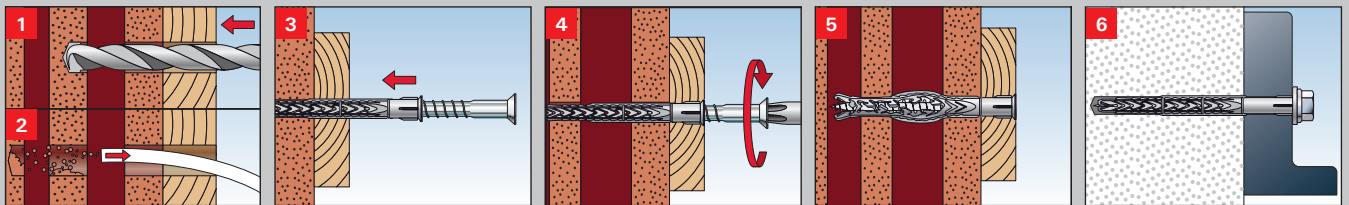


A In **hollow building materials** the force is transmitted equally through the two expansion zones. The internal substrate webs are not crushed by the expansion zones and so transmit the force safely.



B In **solid building materials and aerated concrete** the two expansion zones combine to form one long expansion element, thus providing for a uniform and even distribution of the load into substrate.

Installation



Recommendation



Approvals and markings



Applications



Façade substructures

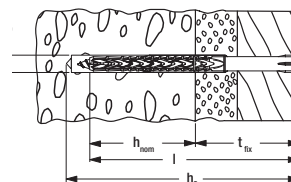


Interior fitting



Wood construction

SXRL technical data

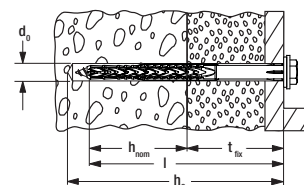


SXRL-T – fischer safety screw with countersunk head

Item	Steel, zinc-plated Art.-No. zinc-plated	Stainless steel Rostfrei A4 Art.-No. A4	Approval		Nominal drill hole diame- ter d_0 [mm]	Min. drill hole depth for push- through installation h_2 [mm]	Usable length at anchorage depth h_{nom}			Anchor length l [mm]	Drive type 	Sales unit [pcs]
			DIBt ²	ETA			50 mm t_{fix} [mm]	70 mm t_{fix} [mm]	90 mm t_{fix} [mm]			
SXRL 8 x 60 T	540113	540119	-	■	8	70	10	-	-	60	T30	50
SXRL 8 x 80 T	540114	540121	-	■	8	90	30	10	-	80	T30	50
SXRL 8 x 100 T	540115	540123	-	■	8	110	50	30	10	100	T30	50
SXRL 8 x 120 T	540116	540124	-	■	8	130	70	50	30	120	T30	50
SXRL 8 x 140 T	540117	540125	-	■	8	150	90	70	50	140	T30	50
SXRL 8 x 160 T	540118	540126	-	■	8	170	110	90	70	160	T30	50
SXRL 10 x 60 T	546477	546505	●	■	10	70	10	-	-	60	T40	50
SXRL 10 x 80 T	522698	522709	●	■	10	90	30	10	-	80	T40	50
SXRL 10 x 100 T	522699	522710	●	■	10	110	50	30	10	100	T40	50
SXRL 10 x 120 T	522700	522711	●	■	10	130	70	50	30	120	T40	50
SXRL 10 x 140 T	522701	522712	●	■	10	150	90	70	50	140	T40	50
SXRL 10 x 160 T	522703	522713	●	■	10	170	110	90	70	160	T40	50
SXRL 10 x 180 T	522704	522714	●	■	10	190	130	110	90	180	T40	50
SXRL 10 x 200 T	522705	522715	●	■	10	210	150	130	110	200	T40	50
SXRL 10 x 230 T	522706	522716	●	■	10	240	180	160	140	230	T40	50
SXRL 10 x 260 T	522707 1)	522717 1)	●	■	10	270	210	190	170	260	T40	50
SXRL 10 x 290 T	522708 1)	522718 1)	●	■	10	300	240	220	200	290	T40	50
SXRL 14 x 80 T	530920	530932	●	■	14	95	-	10	-	80	T50	50
SXRL 14 x 100 T	530921	530933	●	■	14	115	-	30	10	100	T50	50
SXRL 14 x 120 T	530922	530934	●	■	14	135	-	50	30	120	T50	50
SXRL 14 x 140 T	530923	530935	●	■	14	155	-	70	50	140	T50	50
SXRL 14 x 160 T	530924	530936	●	■	14	175	-	90	70	160	T50	50
SXRL 14 x 180 T	530925	530937	●	■	14	195	-	110	90	180	T50	50
SXRL 14 x 200 T	530926	530938	●	■	14	215	-	130	110	200	T50	50
SXRL 14 x 230 T	530927	530939	●	■	14	245	-	160	140	230	T50	50
SXRL 14 x 260 T	530928	530940	●	■	14	275	-	190	170	260	T50	50
SXRL 14 x 300 T	530929 1)	530941 1)	●	■	14	315	-	230	210	300	T50	20
SXRL 14 x 330 T	530930 1)	530942 1)	●	■	14	345	-	260	240	330	T50	20
SXRL 14 x 360 T	530931 1)	530943 1)	●	■	14	375	-	290	270	360	T50	20

1) Not pre-assembled

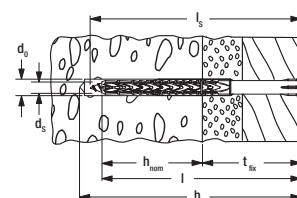
2) The intended use and the performance of the products are stated in the German general building authority approvals Z-21.2-2092 for SXRL 10 and Z-21.2-2037 for SXRL 14.



SXRL-FUS – fischer hexagon head safety screw, moulded washer and integrated bit recess

Item	Steel, zinc-plated	Stainless steel	Approval		Nominal drill hole diame- ter	Min. drill hole depth for push- through installation	Usable length at anchorage depth h_{nom}			Anchor length	Drive type	Sales unit
	Art.-No. zinc-plated	 Art.-No. A4	DIBt ²⁾	ETA	d_0 [mm]	h_2 [mm]	50 mm	70 mm	90 mm	l [mm]		
							t_{fix} [mm]	t_{fix} [mm]	t_{fix} [mm]			
												[pcs]
SXRL 8 x 60 FUS	540127	540135	-	■	8	70	10	-	-	60	T30/SW10	50
SXRL 8 x 80 FUS	540129	540136	-	■	8	90	30	10	-	80	T30/SW10	50
SXRL 8 x 100 FUS	540130	540137	-	■	8	110	50	30	10	100	T30/SW10	50
SXRL 8 x 120 FUS	540131	-	-	■	8	130	70	50	30	120	T30/SW10	50
SXRL 8 x 140 FUS	540133	-	-	■	8	150	90	70	50	140	T30/SW10	50
SXRL 8 x 160 FUS	540134	-	-	■	8	170	110	90	70	160	T30/SW10	50
SXRL 10 x 60 FUS	546506	546507	●	■	10	70	10	-	-	60	T40/SW13	50
SXRL 10 x 80 FUS	522719	522730	●	■	10	90	30	10	-	80	T40/SW13	50
SXRL 10 x 100 FUS	522720	522731	●	■	10	110	50	30	10	100	T40/SW13	50
SXRL 10 x 120 FUS	522721	522732	●	■	10	130	70	50	30	120	T40/SW13	50
SXRL 10 x 140 FUS	522723	522733	●	■	10	150	90	70	50	140	T40/SW13	50
SXRL 10 x 160 FUS	522724	522734	●	■	10	170	110	90	70	160	T40/SW13	50
SXRL 10 x 180 FUS	522725	522735	●	■	10	190	130	110	90	180	T40/SW13	50
SXRL 10 x 200 FUS	522726	522736	●	■	10	210	150	130	110	200	T40/SW13	50
SXRL 10 x 230 FUS	522727	522737	●	■	10	240	180	160	140	230	T40/SW13	50
SXRL 10 x 260 FUS	522728 ¹⁾	522738 ¹⁾	●	■	10	270	210	190	170	260	T40/SW13	50
SXRL 10 x 290 FUS	522729 ¹⁾	522739 ¹⁾	●	■	10	300	240	220	200	290	T40/SW13	50
SXRL 14 x 80 FUS	530946	530955	●	■	14	95	-	10	-	80	T50/SW17	50
SXRL 14 x 100 FUS	530947	530956	●	■	14	115	-	30	10	100	T50/SW17	50
SXRL 14 x 120 FUS	530948	530957	●	■	14	135	-	50	30	120	T50/SW17	50
SXRL 14 x 140 FUS	530949	530958	●	■	14	155	-	70	50	140	T50/SW17	50
SXRL 14 x 160 FUS	530950	530959	●	■	14	175	-	90	70	160	T50/SW17	50
SXRL 14 x 180 FUS	530951	530960	●	■	14	195	-	110	90	180	T50/SW17	50
SXRL 14 x 200 FUS	530952	530961	●	■	14	215	-	130	110	200	T50/SW17	50
SXRL 14 x 230 FUS	530953	530962	●	■	14	245	-	160	140	230	T50/SW17	50
SXRL 14 x 260 FUS	530954	530963	●	■	14	275	-	190	170	260	T50/SW17	50

1) Not pre-assembled 2) The intended use and the performance of the products are stated in the German general building authority approvals Z-21.2-2092 for SXRL 10 and Z-21.2-2037 for SXRL 14.

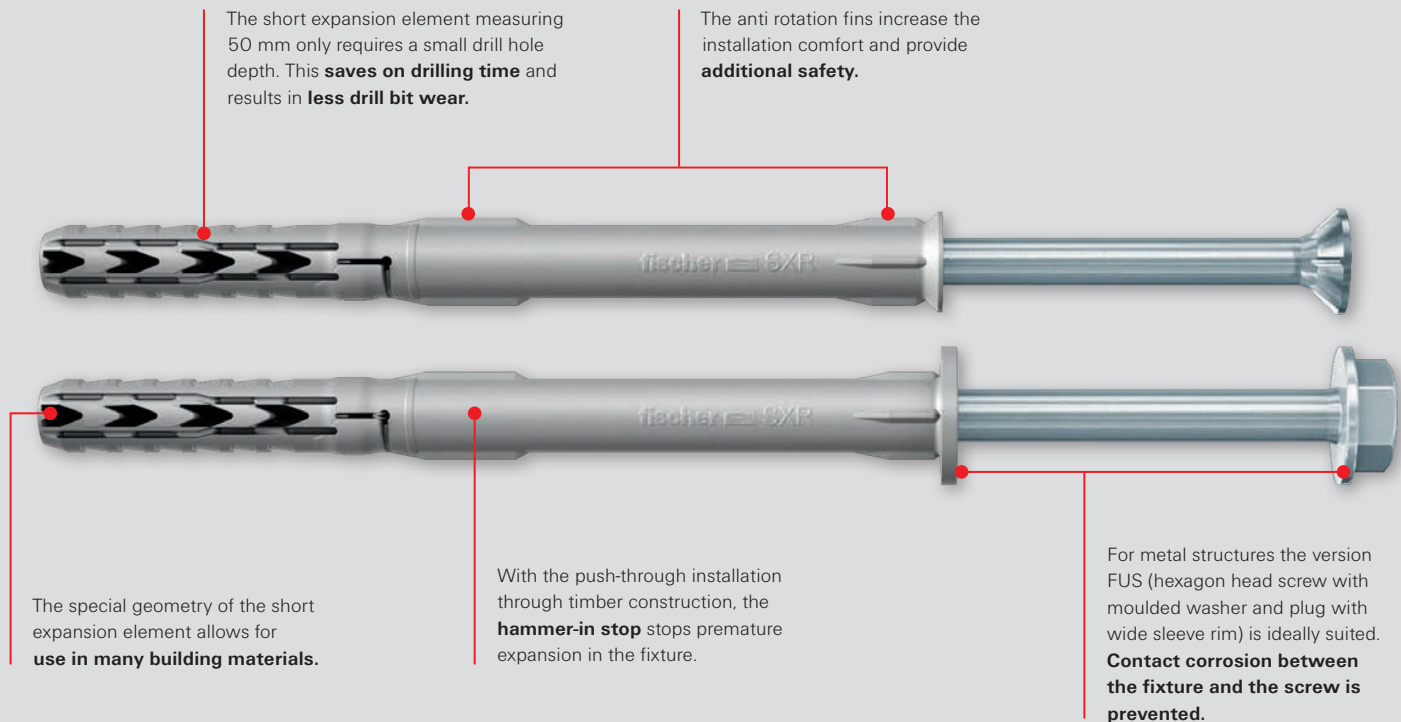


SXRL – without screw

Item	Art.-No.	Approval		Nominal drill hole diameter d ₀ [mm]	Min. drill hole depth for push- through h ₂ [mm]	Usable length at anchorage depth h _{nom}			Anchor length l [mm]	Screw diameter d _s [mm]	Screw length l _s [mm]	Sales unit [pcs]
		DIBt	ETA			50 mm	70 mm	90 mm				
SXRL 8 x 60	540879	-	-	8	70	10	-	-	60	5,5 – 6,0	65	100
SXRL 8 x 80	540880	-	-	8	90	30	10	-	80	5,5 – 6,0	85	100
SXRL 8 x 100	540881	-	-	8	110	50	30	10	100	5,5 – 6,0	105	100
SXRL 8 x 120	540882	-	-	8	130	70	50	30	120	5,5 – 6,0	125	100

SXR frame fixing

The efficient with short expansion element



Our extensive assortment

- Diameter 6, 8 and 10
- fischer safety screws available in the versions of zinc-plated steel and stainless A4 steel
- Two head variants:
 - countersunk head
 - hexagon head with moulded washer

Overview of the advantages

- The European Technical Assessment (ETA) for SXR 8 and 10 covers the use in various solid and hollow building materials and thus guarantees a secure fixing.
- The use of SXR 10 in thin concrete slabs (weather resistant shells of external wall panels) is regulated in the ETA.

Functionality

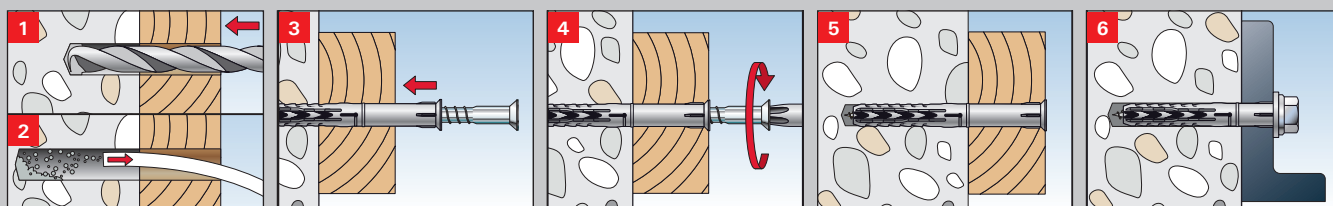


A In **hollow building materials** the loads are transmitted to the substrate webs.



B In **solid building materials** the SXR expands.

Installation



Recommendation



Approvals and markings



Applications



Façade substructures

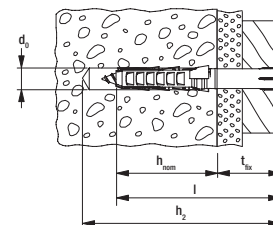


Interior fitting



Electrical installation

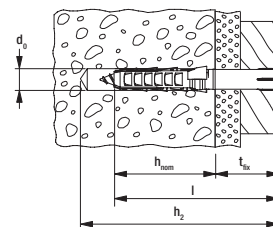
SXR technical data



SXR-Z – fischer safety screw with countersunk head and integrated cross drive PZ bit

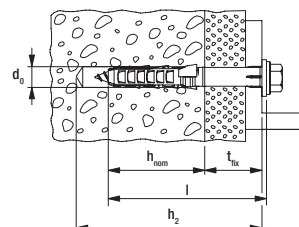
Item	Steel, zinc-plated	Approval	Nominal drill hole diameter	Min. drill hole depth for push-through installation	Min. anchorage depth	Anchor length	Max. fixture thickness	Drive type	Sales unit
	Art.-No. zinc-plated	ETA	d_0 [mm]	h_2 [mm]	h_{nom} [mm]	l [mm]	t_{fix} [mm]		[pcs]
SXR 6 x 60 Z	503233 1)	-	6	70	30	60	30	PZ2	60

1) not pre-assembled



SXR-T – fischer safety screw with countersunk head

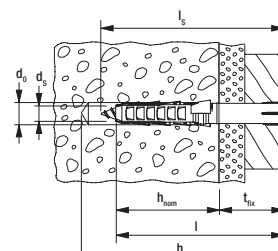
Item	Steel, zinc-plated	Stainless steel	Approval	Nominal drill hole diameter	Min. drill hole depth for push-through installation	Min. anchorage depth	Anchor length	Max. fixture thickness	Drive type	Sales unit
	Art.-No. zinc-plated	 Art.-No. A4	ETA	d_0 [mm]	h_2 [mm]	h_{nom} [mm]	l [mm]	t_{fix} [mm]		[pcs]
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 120 T	046265	046278	■	10	130	50	120	70	T40	50
SXR 10 x 140 T	046266	046279	■	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



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

Item	Steel, zinc-plated Art.-No. zinc-plated	Stainless steel Rost frei A4 Art.-No. A4	Approval ETA	Nominal drill hole diameter d_0 [mm]	Min. drill hole depth for push-through installation h_2 [mm]	Min. anchorage depth h_{nom} [mm]	Anchor length l [mm]	Max. fixture thickness t_{fix} [mm]	Drive type 	Sales unit [pcs]
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 80 FUS	046330	046340	■	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 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 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



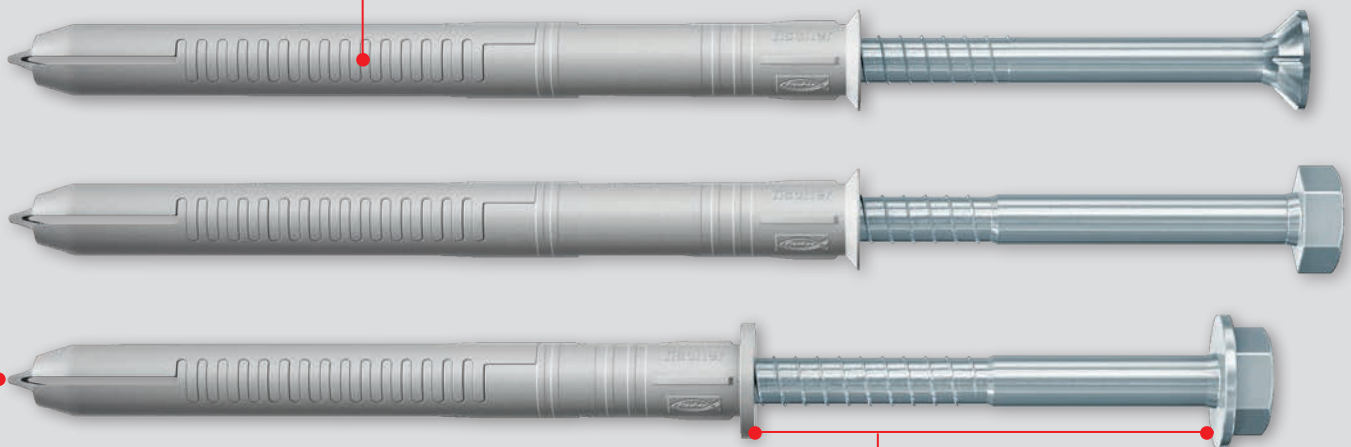
SXR – without screw

Item	Art.-No.	Approval ETA	Nominal drill hole diameter d_0 [mm]	Min. drill hole depth for push-through installation h_2 [mm]	Min. anchorage depth h_{nom} [mm]	Anchor length l [mm]	Screw diameter d_s [mm]	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

FUR frame fixing

The lamella plug with gentle power transfer

With its asymmetrical interlocking lamellae the FUR plug adapts to the hollow building material and provides for **gentle power transfer**.



Due to the plug sleeve's slender geometry the FUR can be **easily inserted** even into thick and waterlogged wooden attachments and smaller drill holes. The plug **does not bind in the attachment**.

For metal structures the version FUS (hexagon head screw with moulded washer and plug with wide sleeve rim) is ideally suited. **Contact corrosion between the fixture and the screw is prevented.**

Our assortment

- Diameter 8 und 10
- fischer safety screws available in the versions of zinc-plated steel and stainless A4 steel
- Three head variants:
 - countersunk head
 - hexagon head
 - hexagon head with moulded washer

Overview of the advantages

- The operating principle with 70 mm anchorage depth and tried and tested lamellae technology makes it an assembly-friendly plug even in unknown base material.
- With its low expansion forces, FUR is suitable for fixings near the edge (e. g. in door and gate construction).

Functionality

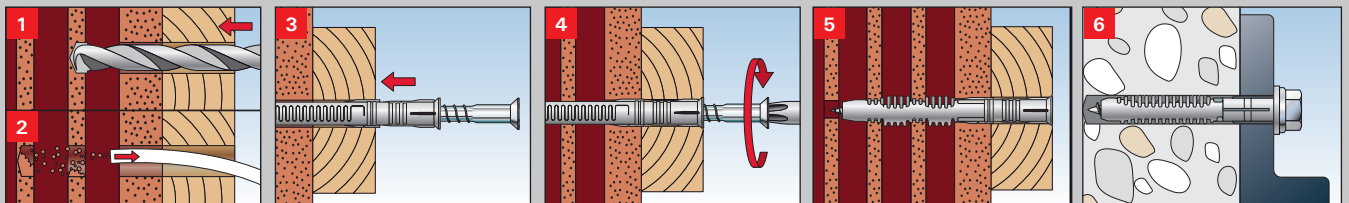


A Inserting the screw causes the expansion of the individual lamella. In **solid building materials** the lamellae generate uniform expansion forces.



B In **hollow building materials** the lamellae expand into the voids and locks the fixing into the material.

Installation



Recommendation



Approvals and markings



Applications



Façade substructures

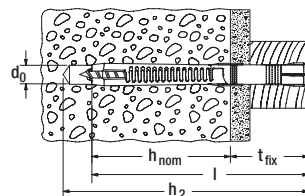


Door and gate construction



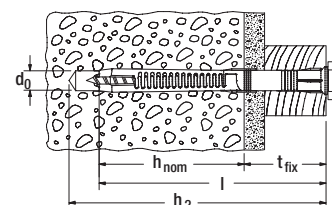
Window installation

FUR technical data



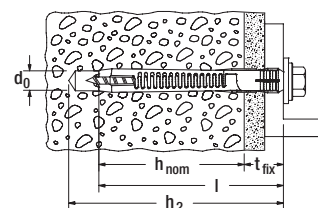
FUR-T – fischer safety screw with countersunk head

Item	Steel, zinc-plated Art.-No. zinc-plated	Stainless steel  Art.-No. A4	Approval ETA	Nominal drill hole diameter d_0 [mm]	Min. drill hole depth for push-through installation h_2 [mm]	Min. anchorage depth h_{nom} [mm]	Anchor length l [mm]	Max. fixture thickness t_{fix} [mm]	Drive type 	Sales unit [pcs]
FUR 8 x 80 T	070110	070120	–	8	90	70	80	10	T30	50
FUR 8 x 100 T	070111	070121	–	8	110	70	100	30	T30	50
FUR 8 x 120 T	070112	070122	–	8	130	70	120	50	T30	50
FUR 10 x 80 T	088756	088784	■	10	90	70	80	10	T40	50
FUR 10 x 100 T	088757	088785	■	10	110	70	100	30	T40	50
FUR 10 x 115 T	088760	088791	■	10	125	70	115	45	T40	50
FUR 10 x 135 T	088758	088786	■	10	145	70	135	65	T40	50
FUR 10 x 160 T	088759	088787	■	10	170	70	160	90	T40	50
FUR 10 x 185 T	088761	088788	■	10	195	70	185	115	T40	50
FUR 10 x 200 T	088764	088789	■	10	210	70	200	130	T40	50
FUR 10 x 230 T	088762	088790	■	10	240	70	230	160	T40	50



FUR-SS – fischer hexagon head safety screw

Item	Steel, zinc-plated Art.-No. zinc-plated	Stainless steel  Art.-No. A4	Approval ETA	Nominal drill hole diameter d_0 [mm]	Min. drill hole depth for push-through installation h_2 [mm]	Min. anchorage depth h_{nom} [mm]	Anchor length l [mm]	Max. fixture thickness t_{fix} [mm]	Drive type 	Sales unit [pcs]
FUR 8 x 80 SS	070130	070140	–	8	90	70	80	10	SW 10	50
FUR 8 x 100 SS	070131	070141	–	8	110	70	100	30	SW 10	50
FUR 8 x 120 SS	070132	–	–	8	130	70	120	50	SW 10	50
FUR 10 x 80 SS	088776	088792	■	10	90	70	80	10	SW 13	50
FUR 10 x 100 SS	088777	088793	■	10	110	70	100	30	SW 13	50
FUR 10 x 115 SS	088783	088799	■	10	125	70	115	45	SW 13	50
FUR 10 x 135 SS	088778	088794	■	10	145	70	135	65	SW 13	50
FUR 10 x 160 SS	088779	088795	■	10	170	70	160	90	SW 13	50
FUR 10 x 185 SS	088780	088796	■	10	195	70	185	115	SW 13	50
FUR 10 x 200 SS	088781	088797	■	10	210	70	200	130	SW 13	50
FUR 10 x 230 SS	088782	088798	■	10	240	70	230	160	SW 13	50



FUR-FUS – fischer hexagon head safety screw, moulded washer and integrated T40 bit recess

Item	Steel, zinc-plated Art.-No. zinc-plated	Stainless steel  Art.-No. A4	Approval ETA	Nominal drill hole diameter d_0 [mm]	Min. drill hole depth for push-through installation h_2 [mm]	Min. anchorage depth h_{nom} [mm]	Anchor length l [mm]	Max. fixture thickness t_{fix} [mm]	Drive type 	Sales unit [pcs]
FUR 10 x 80 FUS	093527	093528	■	10	90	70	80	10	T40/SW13	50
FUR 10 x 100 FUS	097797	–	■	10	110	70	100	30	T40/SW13	50

Accessories for SXRL, SXR and FUR



Corrosion protection spray FTC-CP professionally prevents the penetration of moisture into the anchor shaft and securely protects the connection from corrosion

Corrosion protection spray

Item	Art.-No.	Colour	Content per canister [ml]	Sales unit [pcs]
FTC-CP	511440	black	500 1)	12

1) With one can about 300 screw heads can be coated.



Cover cap ADT for a discreet covering of the screw heads

Cover caps

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



Washer U made of stainless A2 steel,
e. g. for façade substructures with slotted holes

Washer

Item	Art.-No.	Outer diameter [mm]	Hole [Ø mm]	Thickness [mm]	Matches 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



FDB Diamond Bit



FPB Profi Bit



FMB Maxx Bit

Bits

Item	Art.-No.	Drive type	Length [mm]	Contents	Sales unit [pcs]
FDB T30 Diamant Bit W 10	533140	TX30	25	10	10
FDB T40 Diamant Bit W 10	533141	TX40	25	10	10
FPB T30 Profi Bit W 10	533116	TX30	25	10	10
FPB T40 Profi Bit W 10	533117	TX40	25	10	10
FPB T50 Profi Bit W 1	533085	TX50	25	1	10
FMB T30 Maxx Bit W 5	533158	TX30	29	5	10
FMB T40 Maxx Bit W 5	533159	TX40	29	5	10



FBH Bit Holder W 1



FBH Quick Bit Magnet W 1



FBH Quick Bit Slim W 1

Bit holder

Item	Art.-No.	Drive type	Length [mm]	Contents	Sales unit [pcs]
FBH Bit Holder W 1	533148	1/4"	50	1	1
FBH Quick Bit Magnet W 1	533149	1/4"	50	1	1
FBH Quick Bit Slim W 1	533150	1/4"	80	1	1



Aerated concrete hole punch GBS

Aerated concrete hole punch for SXR

Item	Art.-No.	Drill hole [Ø mm]	Min. drill hole depth for push-through installation [mm]	Matches	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 aerated concrete hole punch GBS must be used for drill-hole production in aerated concrete PB < 4N/mm².

Fixing selection aid

Anchor diameter		Ø 6	Ø 8					Ø 10					Ø 14	
Product		SXR	SXRL			SXR	FUR	SXRL			SXR	FUR	SXRL	
Anchorage depth [mm]		50	50	70	90	50	70	50	70	90	50	70	70	90
Max. usable length [mm]	T 	30	110	90	70	70	50	240	220	200	210	160	190	170
	FUS 	-	110	90	70	-	50	240	220	200	210	160	290	270
Concrete	Concrete (multiple fixing)			++		++	+		++		++	+		
	Concrete (single fixing)													
	Thin concrete slabs and weather resistant shells of external wall panels					++		++						
	Pre-stressed hollow concrete core slabs					++					++			
Solid building material	Solid bricks		++			++	+	++			++	+		
	Solid sand-lime bricks		++			++	+	++			++	+		
	Solid lightweight concrete bricks		++			++	+	++			++	+		
	Aerated concrete			++					++		+		++	
Hollow building material	Vertically perforated brick		+		++	++	+	+		++	++	+		++
	Perforated sand-lime bricks		+		++	++	+			++	++	+		++
	Hollow lightweight concrete blocks		++			++	+	++			++	+		++
	Ceilings made of vertically perforated bricks			++			+		++			+		
Approvals			■	■	■	■		■	■ ○	■	■	■	■ ○	■ ○



fischer recommendation
per Ø

++

very good

+

good



ETA



DiBt

Permissible loads

Permissible loads of a single anchor as part of a multiple fixing of non-structural systems in concrete and masonry according to European Technical Assessment or Approval (ETA).

Product			SXRL ⁵⁾							SXR ⁵⁾			FUR ⁵⁾	
Anchor diameter		[mm]	Ø 8			Ø 10			Ø 14		Ø 8	Ø 10	Ø 10	
Anchorage depth		h _{nom}	[mm]	50	70	90	50	70	90	70	90	50	50	70
Anchorage in concrete ≥ C12/15														
Permissible tensile load		[kN]	1,59	1,98		1,98	2,58		3,37		0,99	1,79	1,79	
Permissible shear load	Zinc-plated steel	[kN]	4,23			5,98			12,40		4,23	5,98	5,37	
	Stainless steel A4	[kN]	3,93			5,98			11,63		3,93	5,98	4,98	
Minimum member thickness	h _{min}	[mm]	80	100	120	100		120	110	130	100	100	110	
Characteristic edge distance	c _{cr,N}	[mm]	85			140			140		70	140	140	
Characteristic spacing	a resp. s _{cr, N}	[mm]	90	105		120			135		70	100	90	
Minimum spacing with an edge distance	s _{min}	[mm]	85			70			85		70	70	70	
	c ≥	[mm]	85			140			140		70	210	140	
Minimum edge distance with a spacing	c _{min}	[mm]	85			70			85		70	85	70	
	s ≥	[mm]	85			175			175		70	100	210	
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]	–			0,99	–		–		–	1,19	–	
Permissible shear load		[kN]	–			5,98	–		–		–	5,98	–	
Anchorage in pre-stressed hollow-core concrete slabs (mirror thickness d _b ≥ 30 mm) made of concrete ≥ C45/55														
Permissible tensile load		[kN]	–			1,39	–		–		–	–	–	
Permissible shear load		[kN]	–			5,98	–		–		–	–	–	
Anchorage in masonry														
Permissible load in solid brick	≥ Mz 12 a. ≥ NF	[kN]	0,57	0,71		0,57	1,14	–	0,86		0,57	0,57	0,86	
	≥ Mz 20 a. ≥ NF		0,86	1,14		1,00	1,14	–	1,14		0,71	0,86	0,86	
Permissible load in solid sand-time brick	≥ KS 10 a. ≥ NF	[kN]	0,57			0,57	0,71	–	0,86		0,57	0,57	0,57	
	≥ KS 20 a. ≥ NF		0,71	0,86		1,00		–	1,29		0,71	0,71	0,71	
Permissible load in lightweight concrete block	≥ V 2; ρ ≥ 1,2 kg/dm³	[kN]	0,11	0,26		0,11		–	0,26		0,26	0,21	–	
	≥ V 6; ρ ≥ 1,6 kg/dm³		0,34	0,57		0,57	1,29	–	0,57		0,26	0,71	0,57	
Permissible load in vertically perforated brick	≥ HLz 10 ρ ≥ 1,0 kg/dm³	[kN]	0,17			–	0,21	–	0,57	0,71	0,17	0,26	0,37	
Permissible load in perforated sand-time brick	≥ KSL 6	[kN]	–			–	0,21	–	0,26	0,34	0,26	0,43	–	
	≥ KSL 12		0,34	0,43		–	0,71	–	0,43	0,71	0,57	0,57	0,57	
Permissible load in hollow lightweight concrete blocks	≥ Hbl 2	[kN]	0,43	0,57	0,43	0,57	0,71	–	0,34	0,21	–	0,43	–	
	≥ Hbl 6		0,43	0,71	0,43	0,71	0,43	–	0,57	–	0,43	0,57	–	
Permissible load in ceilings made of vertically perforated bricks	f _b ≥ 10 N/mm² ρ ≥ 0,7 kg/dm³	[kN]	–			–	0,57	–	–		–	–	–	
Minimum member thickness	h _{min}	[mm]	115			110			115		100	100	110	
Minimum spacing (single anchor)	a _{min}	[mm]	250			250			250		250	250	250	
Minimum spacing (anchor group)	s _{min}	[mm]	100			100			100		100	100	100	
Minimum edge distance (anchor group)	c _{min}	[mm]	100			100			100		100	100	100	
Anchorage in aerated concrete														
Permissible load in aerated concrete	2 N/mm²	[kN]	–	0,14	0,21	–	0,18	0,21	0,32	0,43	–	0,14 ¹⁾	–	
	4 N/mm²	[kN]	–	0,32	0,43	–	0,43	0,54	0,89	1,07	–	0,27	–	
	6 N/mm²	[kN]	–	0,54	0,71	–	0,71	0,89	1,43	1,79	–	0,27	–	
Minimum member thickness	h _{min}	[mm]	–	175		–	100	120	175 ²⁾ / 300 ³⁾		–	100	–	
Minimum spacing (single anchor)	a _{min}	[mm]	–	250		–	250		250		–	250	–	
Minimum spacing (anchor group)	s _{min}	[mm]	–	80 ²⁾ / 110 ⁴⁾		–	100 ²⁾ / 120 ⁴⁾		80	100 ²⁾ / 125 ³⁾	–	400	–	
Minimum edge distance (anchor group)	c _{min}	[mm]	–	90 ²⁾ / 110 ⁴⁾		–	120		120	120 ²⁾ / 150 ³⁾	–	100	–	

For the design the related assessment (ETA) has to be considered.

All loads refer to a long-term temperature of 50 °C and a short-term temperature of 80 °C.

The material safety factor γ_M and the safety factor of $\gamma_F = 1,4$ were included in the calculation.

For details on block parameters and joints please see relevant ETA.

With other bricks/blocks or increased spacings and edge distances, higher loads can be achieved.

¹⁾ Drill holes to be made with aerated concrete hole punch

²⁾ Only valid for AAC with compression strength ≥ 2 to < 4 N/mm²

³⁾ Only valid for AAC with compression strength ≥ 4 N/mm²

⁴⁾ Only valid for AAC with compression strength ≥ 6 N/mm²

⁵⁾ ETA-07/0121 (SXR/SXRL), ETA-13/0235 (FUR) resp. ETA-09/0352 (SXS)

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