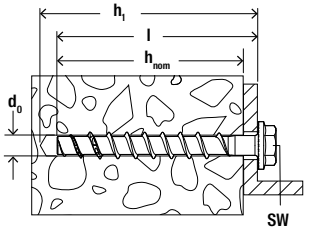
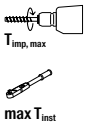
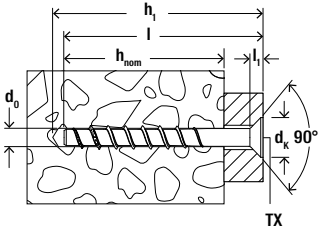
fischer UltraCut FBS II 8-14 GVZ/CP

FBS II US
(gvz, CP)



FBS II SK
(gvz, CP)





UltraCut FBS II		8			10			12	14
d_0	[mm]	8	8	8	10	10	10	12	14
h_{nom1}	[mm]	50	50	50	55	55	55	60	65
h_{nom2}	[mm]	–	–	–	65	–	–	75	85
h_{nom3}	[mm]	65	–	–	85	–	–	100	115
$h_1 \geq$	[mm]	l + 10	l + 10	l + 10	l + 10	l + 10	l + 10	l + 10	l + 15
l_1	[mm]	6	6	6	7	7	7	–	–
d_K	[mm]	20	20	20	23	23	23	–	–
$T_{imp, max}$	[Nm]	600	80	65	650	80	65	650	650
max T_{inst}	[Nm]	85	20	4	100	20	8	150	250
SW	[-]	13	13	13	15	15	15	17	21
TX	[-]	40 (SK/US)	40 (SK/US)	40 (SK/US)	50 (SK)	50 (SK)	50 (SK)	–	–

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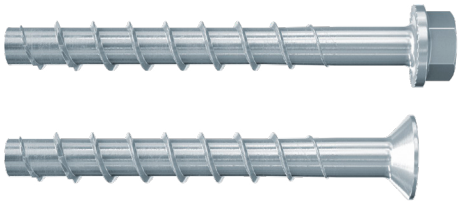
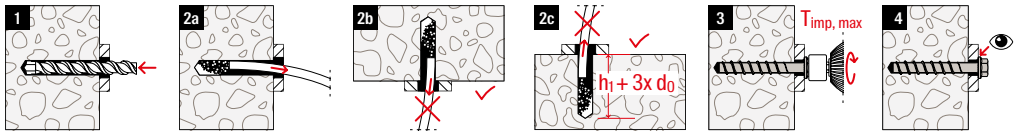
UltraCut
FBS II 8-14 GVZ/CP



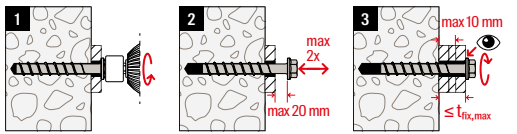
DE Montageanleitung
EN Installation instructions
FR Instructions de montage
NL Montagehandleiding
IT Istruzioni per l'installazione
ES Instrucciones de montaje
PT Instruções de montagem
DA Monteringsvejledning
SV Installationsinstruktioner
NO Installasjonsveiledning
FI Asennusohjeet
PL Instrukcje montażu
CS Návod k montáži
SK Návod na montáž
HU Szerelési útmutató
RO Instrucțiuni de montare
SL Navodila za montažo
HR Upute za instalaciju
SR Navodila za sestavljanje
BS Instalacijski vodic
SQ Udhëzimet e montimit
TR Montaj talimatları
EL Οδηγίες Εγκατάστασης
HE הכברה תוארוה
BG Инструкции за инсталиране
RU Инструкция по установке
UK Інструкція з використання
ZH 使用说明书
JA 取扱説明書
KO 사용 설명서
TH คำแนะนำการชุมนุม
VI hướng dẫn lắp ráp
AR تعليمات الاستخدام

Post-installed fastening in cracked or uncracked concrete (Option 1, Seismic Performance Category C1 and C2) acc. ETA-15/0352; 15; EAD 330232-01-0601; DoP: 0227; www.fischer.de/sdb; 2873; fischerwerke GmbH &Co. KG, Klaus-Fischer-Str.1, 72178 Waldachtal

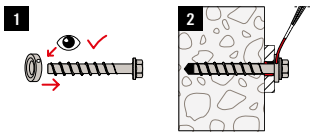
1.1



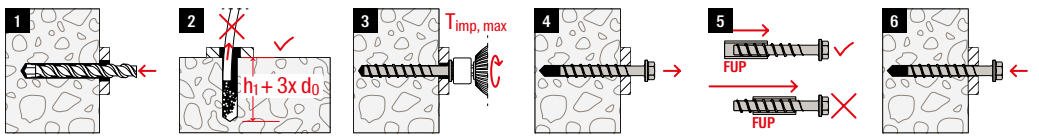
1.2

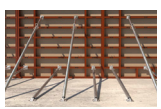


1.3



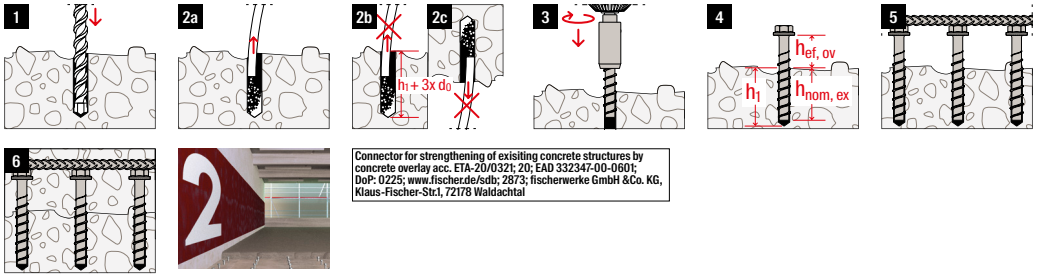
2.0





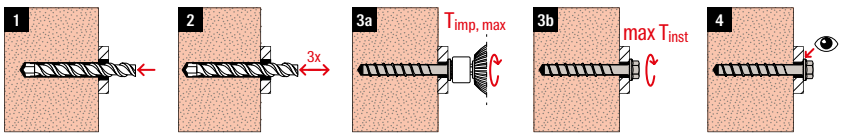
aBG
Z-21.8-2049

3.0

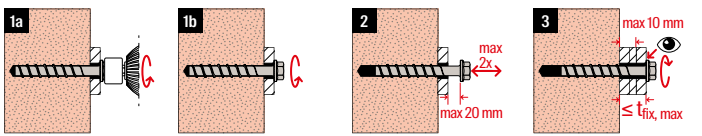


Connector for strengthening of exisiting concrete structures by concrete overlay acc. ETA-20/0321; 20; EAD 332347-00-0601; DoP: 0225; www.fischer.de/sdb; 2873; fischerwerke GmbH &Co. KG, Klaus-Fischer-Str.1, 72178 Waldachtal

4.1



4.2

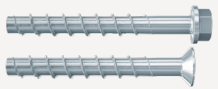


Screw anchors for use in masonry bricks made of clay, calcium silicat, solid brick masonry, and hollow brick masonry acc. ETA-20/0134; 22; EAD 330460-00-0604; DoP: 0311; www.fischer.de/sdb; 2873; fischerwerke GmbH &Co. KG, Klaus-Fischer-Str.1, 72178 Waldachtal

Performance parameter according to ETA-15/0352




$N_{Rk,p,ucr} \geq N^0_{Rk,c}$; ψ_c=1,12-1,58; γ_{inst}=1,0; $k_{cr,N}$=7,7; $k_{ucr,N}$=11; $c_{cr,N}$=1,5 x h_{ef}; $N^0_{Rk,sp}$=min ($N^0_{Rk,c}$; $N_{Rk,p}$); $c_{cr,sp}$=1,5 x h_{ef}; k_7=1; α_{gap}=0,5-1,0; $A_s \geq 8\%$
Durability: (gvz) dry internal conditions
Resistance to fire: Class A1



	Characteristic resistance to tension load (static and quasi-static loading)						Characteristic resistance to shear load (static and quasi-static loading)			Displacements				Characteristic resistance and displacements for seismic performance categories C1 or C2										Resistance to fire			
	$N_{Rk,s}$ [kN]	$N_{Rk,p,cr}$ [kN]	h_{ef} [mm]	c_{min} [mm]	s_{min} [mm]	h_{min} [mm]	$V^0_{Rk,s}$ [kN]	$M^0_{Rk,s}$ [Nm]	k_8 [-]	δ_{N0} [mm]	$\delta_{N\infty}$ [mm]	δ_{V0} [mm]	$\delta_{V\infty}$ [mm]	$N_{Rk,s,C1}$ [kN]	$N_{Rk,p,C1}$ [kN]	$N_{Rk,s,C2}$ [kN]	$N_{Rk,p,C2}$ [kN]	$V_{Rk,s,C1}$ [kN]	$V_{Rk,s,C2}$ [kN]	$\delta_{N,C2}$ (DLS) [mm]	$\delta_{N,C2}$ (ULS) [mm]	$\delta_{V,C2}$ (DLS) [mm]	$\delta_{V,C2}$ (ULS) [mm]	$N_{Rk,s,fi}$ [kN]	$N_{Rk,p,fi}$ [kN]	$V_{Rk,s,fi}$ [kN]	$M^0_{Rk,s,fi}$ [Nm]
D8 - h_{nom} = 50 (US, S) - GVZ/CP	35	6	40	35	35	100	13,1	51	1	0,5	1,3	1,4	2,0	–	–	–	–	–	–	–	–	–	–	1,04-2,33	1,2-1,5	1,04-2,33	1,17-2,62
D8 - h_{nom} = 65 (US, S) - GVZ/CP	35	12	52	35	35	120	19,0	51	2	0,9	1,0	1,4	2,1	35	12	35	2,1	11,4	13,3	0,5	1,7	1,6	3,9	1,04-2,33	2,4-3,0	1,04-2,33	1,17-2,62
D10 - h_{nom} = 55 (US, S) - GVZ/CP	55	9	43	40	40	100	29,4	95	1	0,7	0,7	3,2	4,9	–	–	–	–	–	–	–	–	–	–	1,64-3,45	1,8-2,3	1,64-3,45	2,34-4,92
D10 - h_{nom} = 65 (US, S) - GVZ/CP	55	12	51	40	40	120	29,4	95	2	0,7	0,7	3,2	4,9	–	–	–	–	–	–	–	–	–	–	1,64-3,45	2,4-3,0	1,64-3,45	2,34-4,92
D10 - h_{nom} = 85 (US, S) - GVZ/CP	55	≥ $N^0_{Rk,c}$	68	40	40	140	34,9	95	2	0,8	0,8	3,2	4,9	55	≥ $N^0_{Rk,c}$	55	6,0	22,3	20,4	0,8	2,8	2,7	7,1	1,64-3,45	4,0-5,0	1,64-3,45	2,34-4,92
D12 - h_{nom} = 60 (US, S) - GVZ/CP	76	≥ $N^0_{Rk,c}$	47	50	50	110	31,9	165	2	0,7	1,3	2,5	3,8	–	–	–	–	–	–	–	–	–	–	2,2-4,62	2,3-2,9	2,2-4,62	3,73-7,83
D12 - h_{nom} = 75 (US, S) - GVZ/CP	76	≥ $N^0_{Rk,c}$	60	50	50	130	31,9	165	2	0,9	0,9	2,5	3,8	–	–	–	–	–	–	–	–	–	–	2,2-4,62	3,3-4,2	2,2-4,62	3,73-7,83
D12 - h_{nom} = 100 (US, S) - GVZ/CP	76	≥ $N^0_{Rk,c}$	81	50	50	150	42,7	165	2	0,8	0,8	3,4	5,1	76	≥ $N^0_{Rk,c}$	76	8,9	26,9	29,9	0,9	2,7	3,1	5,3	2,2-4,62	5,2-6,6	2,2-4,62	3,73-7,83
D14 - h_{nom} = 65 (US, S) - GVZ/CP	103	≥ $N^0_{Rk,c}$	50	60	60	120	46,5	269	2	0,8	1,1	2,8	4,2	–	–	–	–	–	–	–	–	–	–	3,08-6,46	2,5-3,2	3,08-6,46	6,14-12,89
D14 - h_{nom} = 85 (US, S) - GVZ/CP	103	≥ $N^0_{Rk,c}$	67	60	60	140	46,5	269	2	1,0	1,0	2,8	4,2	–	–	–	–	–	–	–	–	–	–	3,08-6,46	3,9-4,9	3,08-6,46	6,14-12,89
D14 - h_{nom} = 115 (US, S) - GVZ/CP	103	≥ $N^0_{Rk,c}$	93	60	60	180	61,7	269	2	0,8	1,1	5,4	8,1	103	≥ $N^0_{Rk,c}$	103	17,1	38,3	35,2	1,3	5,0	4,1	8,7	3,08-6,46	6,5-8,1	3,08-6,46	6,14-12,89
D8 - h_{nom} = 50 (SK, US TX, S TX) - GVZ/CP	35	6	40	35	35	100	13,1	51	1	0,5	1,3	1,4	2,0	–	–	–	–	–	–	–	–	–	–	0,99-2,12	1,2-1,5	0,99-2,12	1,17-2,62
D8 - h_{nom} = 65 (SK, US TX, S TX) - GVZ/CP	35	12	52	35	35	120	19,0	51	2	0,9	1,0	1,4	2,1	35	12	35	2,1	11,4	13,3	0,5	1,7	1,6	3,9	0,99-2,12	2,4-3,0	0,99-2,12	1,17-2,62
D10 - h_{nom} = 55 (SK, US TX, S TX) - GVZ/CP	55	9	43	40	40	100	29,4	95	1	0,7	0,7	3,2	4,9	–	–	–	–	–	–	–	–	–	–	1,21-2,96	1,8-2,3	1,21-2,96	2,34-4,92
D10 - h_{nom} = 65 (SK, US TX, S TX) - GVZ/CP	55	12	51	40	40	120	29,4	95	2	0,7	0,7	3,2	4,9	–	–	–	–	–	–	–	–	–	–	1,21-2,96	2,4-3,0	1,21-2,96	2,34-4,92
D10 - h_{nom} = 85 (SK, US TX, S TX) - GVZ/CP	55	≥ $N^0_{Rk,c}$	68	40	40	140	34,9	95	2	0,8	0,8	3,2	4,9	55	≥ $N^0_{Rk,c}$	55	6,0	22,3	20,4	0,8	2,8	2,7	7,1	1,21-2,96	4,0-5,0	1,21-2,96	2,34-4,92
D12 - h_{nom} = 60 (SK, US TX, S TX) - GVZ/CP	76	≥ $N^0_{Rk,c}$	47	50	50	110	31,9	165	2	0,7	1,3	2,5	3,8	–	–	–	–	–	–	–	–	–	–	–	–	–	–
D12 - h_{nom} = 75 (SK, US TX, S TX) - GVZ/CP	76	≥ $N^0_{Rk,c}$	60	50	50	130	31,9	165	2	0,9	0,9	2,5	3,8	–	–	–	–	–	–	–	–	–	–	–	–	–	–
D12 - h_{nom} = 100 (SK, US TX, S TX) - GVZ/CP	76	≥ $N^0_{Rk,c}$	81	50	50	150	42,7	165	2	0,8	0,8	3,4	5,1	76	≥ $N^0_{Rk,c}$	76	8,9	26,9	29,9	0,9	2,7	3,1	5,3	–	–	–	–
D14 - h_{nom} = 65 (SK, US TX, S TX) - GVZ/CP	103	≥ $N^0_{Rk,c}$	50	60	60	120	46,5	269	2	0,8	1,1	2,8	4,2	–	–	–	–	–	–	–	–	–	–	–	–	–	–
D14 - h_{nom} = 85 (SK, US TX, S TX) - GVZ/CP	103	≥ $N^0_{Rk,c}$	67	60	60	140	46,5	269	2	1,0	1,0	2,8	4,2	–	–	–	–	–	–	–	–	–	–	–	–	–	–
D14 - h_{nom} = 115 (SK, US TX, S TX) - GVZ/CP	103	≥ $N^0_{Rk,c}$	93	60	60	180	61,7	269	2	0,8	1,1	5,4	8,1	103	≥ $N^0_{Rk,c}$	103	17,1	38,3	35,2	1,3	5,0	4,1	8,7	–	–	–	–

Performance parameter according to ETA-20/0321



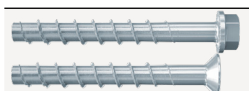

$\psi_{c,ex}$=1,12-1,58; γ_{inst}=1,0; $k_{cr,N,ex}$=7,7; $k_{ucr,N,ex}$=11; $c_{cr,N,ex}$=1,5 x h_{ef}; $k_{cr,N,ov}$=8,9; $k_{ucr,N,ov}$=12,7; $c_{cr,N,ov}$=1,5 x $h_{ef,ov}$; $h_{ef,ov}$=40-(L-$h_{nom,ex}$-2 R_L); $c_{cr,sp,ov}$=3 x $h_{ef,ov}$; $c_{min,ov}$=10+c_{nom}; α_{M1}=0,8; $h_{min,ov}$=$h_{nom,ov}$+c_{nom}; α_{k2}=1
Resistance to fire: Class A1

	Existing Concrete						Concrete Overlay					
	$h_{ef,ex}$ [mm]	$N_{Rk,s,ex}$ [kN]	$N_{Rk,p,ex}$ [kN]	$c_{min,ex}$ [mm]	$s_{min,ex}$ [mm]	$h_{min,ex}$ [mm]	$N_{Rk,s,ov}$ [kN]	A_h [mm²]	t_h [mm]	$s_{min,ov}$ [mm]	f_{yk} [N/mm²]	A_s [mm²]
D8 - h_{nom} = 50 (US,US TX) - GVZ	40	35	6	35	35	100	35	205	8,4	40	800	43,0
D8 - h_{nom} = 65 (US,US TX) - GVZ	52	35	12	35	35	120	35	205	8,4	40	800	43,0
D10 - h_{nom} = 55 (US,US TX) - GVZ	43	55	9	40	40	100	55	255	9,9	40	750	69,4
D10 - h_{nom} = 65 (US, US TX) - GVZ	51	55	12	40	40	120	55	255	9,9	40	750	69,4
D10 - h_{nom} = 85 (US, US TX) - GVZ	68	55	≥ $N^0_{Rk,c,ex}$	40	40	140	55	255	9,9	40	750	69,4
D12 - h_{nom} = 60 (US, US TX) - GVZ	47	76	≥ $N^0_{Rk,c,ex}$	50	50	110	76	308	10,3	45	750	100,3
D12 - h_{nom} = 75 (US, US TX) - GVZ	60	76	≥ $N^0_{Rk,c,ex}$	50	50	130	76	308	10,3	45	750	100,3
D12 - h_{nom} = 100 (US, US TX) - GVZ	81	76	≥ $N^0_{Rk,c,ex}$	50	50	150	76	308	10,3	45	750	100,3
D14 - h_{nom} = 65 (US,US TX) - GVZ	50	103	≥ $N^0_{Rk,c,ex}$	60	60	120	103	472	11,5	55	750	138,9
D14 - h_{nom} = 85 (US, US TX) - GVZ	67	103	≥ $N^0_{Rk,c,ex}$	60	60	140	103	472	11,5	55	750	138,9
D14 - h_{nom} = 115 (US, US TX) - GVZ	93	103	≥ $N^0_{Rk,c,ex}$	60	60	180	103	472	11,5	55	750	138,9

Performance parameter according to ETA-20/0134




$V_{Rk,s,fi}$=$N_{Rk,s,fi}$; $c_{min,fi}$=xy; $s_{min,fi}$=xy
Durability: (gvz) dry internal conditions
Resistance to fire: Class A1



	Characteristic resistance																					Displacements				Resistance to fire		
	$N_{Rk,s}$ [kN]	$V_{Rk,s}$ [kN]	$M^0_{Rk,s}$ [Nm]	$N_{Rk,p}$ [kN]	$N_{Rk,b}$ [kN]	$N_{Rk,p,c}$ [kN]	$N_{Rk,h,c}$ [kN]	$N_{Rk}{}^g$ [kN]	$\alpha_{g,N}$ [-]	$V_{Rk,b}$ [kN]	$V_{Rk,cII}$ [kN]	$V_{Rk,c,\perp}$ [kN]	$V^0_{Rk,b}$ [kN]	$V^g_{Rk,cII}$ [kN]	$V^g_{Rk,c,\perp}$ [kN]	$\alpha_{g,V}$ [-]	c_{cr} [mm]	c_{min} [mm]	s_{cr} [mm]	$s_{min,II}$ [mm]	$s_{min,\perp}$ [mm]	h_{min} [mm]	X [-]	δ_{N0} [mm]	$\delta_{N\infty}$ [mm]	δ_{V0} [mm]	$\delta_{V\infty}$ [mm]	$N_{Rk,s,fi}$ [kN]	$N_{Rk,p,fi}$ [kN]	$M^0_{Rk,s,fi}$ [Nm]
D8 - h_{nom} ≥ 50 (US/S/SK/US Tx/S Tx) - GVZ/CP	35	13,1	51	0,8-2,5	0,8-2,5	0,8-2,5	0,8-2,5	$\alpha_{g,N}$ x N_{Rk}	2	1,4-5,8	2,3-5,8	1,4-2,4	$\alpha_{g,V}$ x V_{Rk}	$\alpha_{g,V}$ x V_{RkII}	$\alpha_{g,V}$ x $V_{Rk,\perp}$	1,75	1,5xh$_{nom}$	60	3xh$_{nom}$	80	80	108-175	1,3	0,15-0,2	0,3-0,4	0,75-4,5	1,13-6,75	0,5-1,1	1-1,3	0,8-1,5
D10 - h_{nom} ≥ 55 (US/S/SK/US Tx/S Tx) - GVZ/CP	55	29,4	95	0,8-2,6	0,8-2,6	0,8-2,6	0,8-2,6	$\alpha_{g,N}$ x N_{Rk}	2	1,3-6,2	2,7-6,2	1,3-3,0	$\alpha_{g,V}$ x V_{Rk}	$\alpha_{g,V}$ x V_{RkII}	$\alpha_{g,V}$ x $V_{Rk,\perp}$	1,75	1,5xh$_{nom}$	70	3xh$_{nom}$	80	80	108-175	1,3	0,15-0,3	0,3-0,6	0,5-1,25	0,75-1,88	1,0-1,8	1,13	1,7-3,1