Loads

Concrete screw UltraCut FBS II US R hexagon head with integral washer and FBS II SK R countersunk head

Permissible loads of a single anchor[1] in normal concrete of strength class C20/25.
For the design the complete current assessment ETA-17/0740 of 2025.01.08 has to be considered.

					Cracked concrete				Non-cracked concrete			
					Permissible tension (N_{perm}) and shear loads (V_{perm}); minimum spacing (s_{min}) and edge distances (c_{min}) with reduced loads				Permissible tension (N_{perm}) and shear loads (V_{perm}); minimum spacing (s_{min}) and edge distances (c_{min}) with reduced loads			
Type	Material/ surface	Screw-in depth h_{nom} [mm]	Minimum member thickness h_{min} [mm]	Maximum Instal-lation torque $T_{imp.\ max}$[2] [Nm]	N_{perm}[3] [kN]	V_{perm}[3] [kN]	s_{min}[3] [mm]	c_{min}[3] [mm]	N_{perm}[3] [kN]	V_{perm}[3] [kN]	s_{min}[3] [mm]	c_{min}[3] [mm]
FBS II 6 R	R	60	100	240	1.4	7.2	35	35	3.4	7.2	35	35
FBS II 8 R	R	50	100	450	1.9	4.1	35	35	3.3	5.9	35	35
	R	65	120	450	4.3	6.1	35	35	6.7	8.8	35	35
FBS II 10 R	R	55	100	450	2.1	4.6	40	40	4.0	6.6	40	40
	R	65	120	450	2.9	6.0	40	40	6.7	8.5	40	40
	R	85	140	450	7.6	18.4	40	40	13.1	20.9	40	40
FBS II 12 R	R	60	110	650	2.1	5.3	50	50	4.8	7.5	50	50
	R	75	130	650	5.2	15.2	50	50	5.7	21.8	50	50
	R	100	150	650	12.0	23.9	50	50	17.1	26.2	50	50

[1] Design according to EN 1992-4:2018 (for static resp. quasi-static loads). The partial safety factors for material resistance as regulated in the ETA as well as a partial safety factor for load actions of $\gamma_L = 1.4$ are considered. As a single anchor counts e.g. an anchor with a spacing $s \geq 3 \times h_{ef}$ and an edge distance $c \geq 1.5 \times h_{ef}$. Accurate data see ETA.

[2] Maximum allowable torque for installation using any tangential impact screwdriver. For further technical information, see the ETA.

[3] In the case of combinations of tensile and shear loads, bending moments with reduced or minimal edge and axial spacings (anchor groups), the design must comply with the provisions of the complete ETA and EN 1992-4:2018. We recommend using our anchor design software C-FIX.