

CONCRETE SCREW WIT

23.3

Cracked and uncracked concrete: Performance data <u>before</u> hardening of the mortar¹⁾						
Temperature range: 50 °C ²⁾ /80 °C ³⁾						
Embedment base: Dry and wet concrete						
Pressure resistance of concrete: C20/25 (C25/30 to C50/60 see ETA-16/0043, without congested reinforcement)						
Anchor size		10		12	14	
Effective anchoring depth	$h_{ef} = h_{nom}$ [mm]	80 – 84	85-110	100-105	100-114	115-120
Cracked concrete						
Permissible central tensile load ⁴⁾ , (single anchor without edge influence)	N_{perm} [kN]	8.0	9.6	12.3	12.0	15.1
Permissible transverse load ⁴⁾ , (single anchor without edge influence)	V_{perm} [kN]	15.9	19.2	24.0	24.1	30.2
Uncracked concrete						
Permissible central tensile load ⁴⁾ , (single anchor without edge influence)	N_{perm} [kN]	9.5	12.4	17.2	16.9	21.2
Permissible transverse load ⁴⁾ , (single anchor without edge influence)	V_{perm} [kN]	19.4		24.0	32.0	

Cracked and uncracked concrete: Performance data and installation parameters <u>after</u> the mortar hardens									
Temperature range: 50 °C ²⁾ /80 °C ³⁾									
Embedment base: Dry and wet concrete									
Pressure resistance of concrete: C20/25 (C25/30 to C50/60 see Z-21.1.2075, without congested reinforcement)									
Anchor size		10			12		14		
Effective embedment depth – variable ⁵⁾	$h_{ef} = h_{nom}$ [mm]	80	100	110	100	105	100	110	120
Cracked concrete									
Permissible central tensile load ⁴⁾ , (single anchor without edge influence)	N_{perm} [kN]	12.3	17.1	19.8	17.1	18.4	17.1	19.8	22.5
Permissible transverse load ⁴⁾ , (single anchor without edge influence)	V_{perm} [kN]	19.4			24.0		32.0		
Uncracked concrete									
Permissible central tensile load ⁴⁾ , (single anchor without edge influence)	N_{perm} [kN]	17.2	21.4	21.4	24.0	25.8	24.0	27.7	31.6
Permissible transverse load ⁴⁾ , (single anchor without edge influence)	V_{perm} [kN]	19.4			24.0		32.0		
Nominal drill diameter	d_0 [mm]	10			12		14		
Anchoring depth	h_{ef} [mm]	80	100	110	100	105	100	110	120
Drill hole depth	h_1 [mm]	90	110	120	110	115	110	120	130
Minimum edge spacing	c_{min} [mm]	40			50		60		
Minimum axis distance	s_{min} [mm]	40			50		60		
Minimum component thickness	h_{min} [in mm]	$h_{ef} + 60$			$h_{ef} + 70$		$h_{ef} + 70$		
Diameter of clearance hole in the fixture	$d_f \leq$ [mm]	14			16		18		
Moment of torque when embedding nuts of type ST	$T_{inst} \leq$ [Nm]	40			60		80		
Mortar required for each drill hole	[ml]	3.15	3.85	4.2	5.01	5.24	6.85	7.18	7.78
Fill volume required based on divisions shown on cartridge	150 ml [mm]	2	3	3	3	4	4	5	5
	410 ml [mm]	2	2	2	2	2	3	3	3
Number of fastenings/cartridges	150 ml	34	28	26	21	21	16	15	14
	410 ml	117	96	88	73	70	56	51	47

¹⁾The permissible load values were determined using the specifications from Approval ETA-16/0043.

²⁾Maximum long-term temperature.

³⁾Maximum short-term temperature.

⁴⁾The part safety coefficients of the resistances regulated in the approval and a part safety coefficient of the effects of $\gamma_F = 1.4$ have been taken into account. With a combination of tensile and transverse loads, with edge influence and anchor groups, please observe EOTA Technical Report TR 029 "Design of Bonded Anchors."

⁵⁾The effective embedment depth is variable in use. The permissible load values are to be determined using the specifications from the approval.

Temperature in anchoring base	Processing time	Minimum hardening time in dry concrete	Minimum hardening time in wet concrete
-5 °C to -1 °C	60 min	360 min	720 min
0 °C to +4 °C	60 min	180 min	360 min
+5 °C to +9 °C	60 min	120 min	240 min
+10 °C to +19 °C	45 min	80 min	160 min
+20 °C to +29 °C	15 min	45 min	90 min
+30 °C to +34 °C	5 min	25 min	50 min
≥ +35 °C	4 min	20 min	40 min

Cartridge temperature: +5 °C to +25 °C