

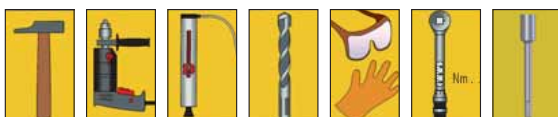
W-FAZ/S FIXING ANCHOR

02.5

Performance data														
Anchor diameter [in mm]		M8		M10		M12		M16		M20	M24	M27		
Standard anchoring depth/ Reduced anchoring depth		$h_{ef}/h_{ef,red}$ [mm]		46	35 ³⁾	60	40	70	50	85	65	100	115	125
Perm. centered tensile load ¹⁾ of a single anchor with no edge influence	Tensile zone (cracked concrete C20/25 ²⁾ , $s \geq 3 h_{ef}$, $c \geq 1.5 h_{ef}$)	N_{perm} [kN] = C20/25 ²⁾		2.4	2.4	4.3	3.6	7.6	6.1	11.9	9.0	17.1	21.1	24.0
	Pressure zone (uncracked concrete C20/25 ²⁾ , $s_{cr,sp}$ and $c_{cr,sp}$ see approval			5.7	3.6	7.6	4.3	11.9	8.5	16.7	12.6	24.0	29.7	33.6
Perm. trans- verse load ¹⁾ of one individual anchor with no edge influence	Tensile zone (cracked concrete C20/25 ²⁾ , $c \geq 10 h_{ef}$)	V_{perm} [kN] = C20/25 ²⁾		7.0	7.0	11.5	10.4	17.1	14.5	31.4	21.6	37.1	59.2	67.1
	Pressure zone (uncracked concrete C20/25 ²⁾ , $c \geq 10 h_{ef}$)			7.0	7.0	11.5	11.5	17.1	17.1	31.4	30.2	37.1	65.1	94.1
Permissible bending torque		M_{perm} [Nm]		13.1	13.1	26.9	26.9	46.9	46.9	123.4	123.4	195.0	513.1	760.9
Permissible load under fire load (R30, R60, R90, R120) see European Technical Approval ETA-99/0011														
Fire resistance		$F30$ [kN]		2.0	-	5.6	-	9.0	-	16.0	-	-	-	-
		$F60$ [kN]		1.0	-	2.2	-	3.5	-	7.0	-	-	-	-
		$F90$ [kN]		0.65	-	1.3	-	2.0	-	4.3	-	-	-	-
		$F120$ [kN]		0.5	-	0.8	-	1.3	-	3.0	-	-	-	-

Characteristic values																		
Anchor diameter [mm]		M8		M10		M12		M16		M20	M24	M27						
Standard anchoring depth/ Reduced anchoring depth		$h_{ef}/h_{ef,red}$ [mm]		46	35 ³⁾	60	40	70	50	85	65	100	115	125				
Setting depth		h_{nom} [mm]		52	41	68	48	80	60	97	77	114	133	146				
Axial spacing		$s_{cr,N}$ [mm]		138	105	180	120	210	150	255	195	300	345	375				
Edge spacing		$c_{cr,N}$ [mm]		69	52.5	90	60	105	75	127.5	97.5	150	172.5	187.5				
Standard component thickness		$h_{std} \geq$ [mm]		100	-	120	-	140	-	170	-	200	230	250				
Minimum axial spacing		$s_{min} \geq$ [mm]		40	40	45	45	60	60	65	65	95	90	100	100	125	125	
Cracked concrete	Uncracked concrete	for $c \geq$ [mm]		70	80	70	70	100	120	100	120	150	180	180	180	300	300	
Minimum edge spacing		$c_{min} \geq$ [mm]		40	50	45	50	60	75	60	80	95	130	100	100	180	180	
Cracked concrete	Uncracked concrete	for $s \geq$ [mm]		80	100	90	100	140	150	180	150	200	240	220	220	540	540	
Minimum component thickness		$h_{min} \geq$ [mm]		80	80	100	80	120	100	140	140	-	-	-	-	-	-	
Minimum axial spacing		$s_{min} \geq$ [mm]		40	40	50	50	60	60	50	50	70	80	65	65	-	-	
Cracked concrete	Uncracked concrete	for $c \geq$ [mm]		70	80	60	60	90	140	100	100	160	160	160	180	170	170	
Minimum edge spacing		$c_{min} \geq$ [mm]		40	50	40	40	50	90	65	65	60	75	65	100	80	90	100
Cracked concrete	Uncracked concrete	for $s \geq$ [mm]		80	100	185	185	115	140	180	180	140	150	250	185	180	200	250
Nom. drill dia.		d_0 [mm]		8		10		12		16		20		24		28		
Drill cutting edge dia.		$d_{cut} \leq$ [mm]		8.45		10.45		12.5		16.5		20.55		24.55		28.55		
Drill hole depth		h_1 [mm]		60	49	75	55	90	70	110	90	125	145	160				
Through-hole in the component being connected		$d_f \leq$ [mm]		9		12		14		18		22		26		30		
Torque for anchoring		$T_{inst} =$ [Nm]		20		25		45		90		160		200		300		

Würth system components



¹⁾ 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. For the combination of tensile and transverse loads, for edge influence and anchor groups, please refer to the Guideline for European Technical Approval (ETAG), Appendix C.
²⁾ The concrete has normal reinforcement. Higher values are possible for higher concrete strengths.
³⁾ Use is limited to the anchoring of statically undefined systems.