

Performance Data															
Anchor diameter [mm]		M6		M8		M10		M12		M16		M20			
Standard anchoring depth/ Reduced anchoring depth		$h_{ef}/h_{ef\ red}$ [mm]		40	30	44	35	48	42	65	50	80	64	100	78
Perm. centered tensile load ¹⁾ of a single anchor without edge influence	Pressure zone (uncracked concrete C20/251), min. axial and edge spacing $s \geq 3 h_{ef}$, $c \geq 1.5 h_{ef}$)	N_{perm} [kN] = C20/25 ¹⁾		3.6	2.9	5.7	4.3	7.6	5.7	11.6	8.5	17.9	12.3	24.0	16.5
		V_{perm} [kN] = C20/25 ¹⁾		4.0	3.9	6.9	5.0	8.0	6.5	15.4	8.5	28.6	24.6	43.9	33.1
Anchoring of light ceiling coverings and joist constructions in accordance with DIN 18168 (Z-21.1-1598)		F_{perm} [kN] \geq C20/25 or B25		0.5		0.8		0.8		0.8		0.8			
Permissible bending torque		T_{perm} [Nm]		5.7/(4.9 ceiling)		13.7/(9.4 ceiling)		28/(18.7 ceiling)		48.6		113.7		231.6	
Permissible load under fire stress (R30, R60, R90, R120) see European Technical Approval ETA-06/0162 and ETA-06/0235															
Fire-resistance time Stainless steel A4	$F30$ [kN]		0.9	-	2.3	-	3.6	-	5.2	-	9.7	-	15.0	-	
	$F60$ [kN]		0.5	-	1.7	-	2.6	-	3.8	-	7.0	-	10.2	-	
	$F90$ [kN] (ceiling)		0.3 (0.3)	-	1.4 (0.5)	-	2.2 (0.8)	-	3.2	-	6.0	-	8.2	-	
	$F120$ [kN]		0.25 (0.25)	-	1.3 (0.4)	-	2.0 (0.8)	-	2.9	-	5.4	-	7.0	-	

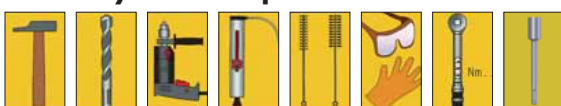
Characteristic Values															
Setting depth		$h_{nom}/h_{nom,red}$ [mm]		49	39	56	47	62	56	81	66	99	83	121	99
Nom. drill dia.		d_o [mm]		6		8		10		12		16		20	
Drill cutting dia.		$d_{cut} \leq$ [mm]		6.40		8.45		10.45		12.50		16.50		20.55	
Drilled hole depth		$h/h_{1,red} \geq$ [mm]		55	45	65	55	70	65	90	75	110	95	130	110
Through-hole in component being connected		$d_f \leq$ [mm]		7		9		12		14		18		22	

Individual attachment: Uncracked concrete, Option 7 (stainless steel A4 – M6 to M20: ETA-05/0019)															
Torque during anchoring		$T_{inst} =$ [Nm]		6		15		25		50		100		160	
Axial spacing		$s_{cr,N}$ [mm]		120	90	132	105	144	126	195	150	240	192	300	234
Edge spacing		$c_{cr,N}$ [mm]		60	45	66	53	72	63	98	75	120	96	150	117
Minimum axial spacing		s_{min} [mm] for $c \geq$ [mm]		35	35	35	60	45	55	60	100	80	110	100	140
Minimum edge spacing		c_{min} [mm] for $s \geq$ [mm]		35	40	45	60	55	65	70	100	80	110	100	140
Minimum component thickness		h_{min} [mm]		100	80	100	80	100	100	130	100	160	130	200	160

Multiple attachment: Anchoring of light ceiling coverings and joist constructions (stainless steel A4: ETA-06/0162/HCR: ETA-06/235)															
Torque while installing anchor		$T_{inst} =$ [Nm]		8											
Axial spacing (acc. to meas. process B)		s_{cr} [mm]		370	260										
Edge spacing (acc. to meas. process B)		c_{cr} [mm]		185	130										
Minimum axial spacing		s_{min} [mm]		50	50										
Minimum edge spacing		c_{min} [mm]		50	50										
Minimum component thickness		h_{min} [mm]		80	80										

Multiple attachment: Anchoring of light ceiling coverings and joist constructions (stainless steel A4: Z-21.1-1598 – in acc. with DIN 18168)															
Torque during anchoring		$T_{inst} =$ [Nm]		8		15		30							
Minimum axial spacing		s_{min} [mm]		160	160	200	-	200	-						
Minimum edge spacing		c_{min} [mm]		80	80	100	-	100	-						
Minimum component thickness		h_{min} [mm]		100	150	-	200	-							

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Würth System Components


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 here. For the combination of tensile and transverse loads, for edge influence and dowel groups, please refer to the Directive for European Technical Approval (ETAG) Appendix C.

¹⁾ The concrete has normal reinforcement. Higher values are possible for higher concrete strengths.

²⁾ W-FA/HCR is available on special order. Characteristic values and loads are contained in ETA-06/0235 and DIBt Z-21.1-1598 (M6) as well as in the MPA test report.