W-HAZ/S HIGH-PERFORMANCE ANCHOR

Performance Data

Anchor diameter [mm]			M6	M8	M10	M12	M16	M16L	M20
Permissible centric tensile load[1] on a single anchor without 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	5.7	7.6	12.3	17.1	21.1	24.0
	Pressure zone (uncracked concrete C20/25[2]) minimum axial and edge spacing ($s_{cr,sp} \geq 3\ h_{ef}$, $c_{cr,sp} \geq 1.5\ h_{ef}$)		7.6	9.5	14.3	17.2	24.0	29.6	33.5
Perm. transverse load[1] on a single anchor without edge influence	**Tensile zone** (cracked concrete C20/25[2], $c \geq 10\ h_{ef}$) W-HAZ-B/S/ W-HAZ-S/S and W-HAZ-SK/S	$V_{perm.}$ [kN] = C20/25[2]	9.1/10.1	14.0/15.9	20.5/20.5	24.5/24.5	34.3/34.3	42.3/ 42.3	47.9/47.9
	Pressure zone (uncracked concrete C20/25[2], $c \geq 10\ h_{ef}$) W-HAZ-B/S / W-HAZ-S/S and W-HAZ-SK/S		9.1/10.1	14.0/17.1	20.7/27.5	34.3/34.3	48.0/48.0	52.1/59,2	67.1/67.1
Permissible bending torque		$M_{perm,}$ [Nm]	6.9	17.1	34.3	60	152	152	296.6
Permissible load under fire load (R30, R60, R90, R120) see European Technical Approval ETA-02/0031									
Fire resistance time		**F30 [kN]**	1.8	2.6	7.0	10.0	16.0	–	–
		F60 [kN]	0.85	1.4	2.9	4.1	6.9	–	–
		F90 [kN]	0.55	0.95	1.75	2.5	4.25	–	–
		F120 [kN]	0.4	0.75	1.2	1.7	3.0	–	–

Characteristic values

Minimum axial spacing	$s_{min} \geq$ [mm]	50	60	70	80	100	100	125
	for c ≥ [mm]	80	100	120	160	180	180	300
Axial spacing	$s_{cr,N}$ [mm]	150	180	213	240	300	345	375
Minimum edge clearance	$c_{min} \geq$ [mm]	50	60	70	80	100	100	180
	for s ≥ [mm]	100	120	175	200	220	220	540
Edge spacing	$c_{cr,N}$ [mm]	75	90	106.5	120	150	172.5	187,5
Minimum component thickness	h_{min} [mm]	100	120	140	160	200	230	250
Effective anchoring depth	h_{ef} [mm]	50	60	71	80	100	115	125
Drill nominal dia.	d_0 [mm]	10	12	15	18	24	24	28
Drill cutting dia.	$d_{cut} \leq$ [mm]	10.45	12.5	15.5	18.5	24.55	24.55	28.55
Drilled hole depth	$h_1 \geq$ [mm]	65	80	95	105	130	145	160
Through-hole in component to be connected	$d_f \leq$ [mm]	12	14	17	20	26	26	31
Torque for anchoring	T_{inst} = [Nm]	15/10[3]	30/25[3]	50/55[3]	80/70[3]	160	160	280

Würth Systemkomponenten

[1] The part-safety coefficients of the resistances regulated in the approval and a part-safety coefficient of the effects of γ_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] For Würth W-HAZ-SK/S.