Performance Data

Anchor diameter [mm]				M16 h_{ef} 90	M 16 h_{ef} 105	M 16 h_{ef} 125	M 16 h_{ef} 145	M20 h_{ef} 115	M20 h_{ef} 170	M20 h_{ef} 190	M24 h_{ef} 200	M24 h_{ef} 225
Permissible central tensile load[1] of 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]	50 °C[3]/80 °C[4]	14.6	18.4	24.0	29.9	21.1	38.0	44.9	48.5	57.9
			72 °C[3]/120 °C[4]	9.5	14.3	23.8	23.8	14.3	28.6	28.6	35.7	35.7
	Pressure zone (uncracked concrete C20/25[2]) minimum axial and edge clearances ($s_{cr,sp} \geq 3\ h_{ef}$, $c_{cr,sp} \geq 1.5\ h_{ef}$)		50 °C[3]/80 °C[4]	19.1	23.8	23.8	28.6	29.6	53.2	54.8	67.9	66.7
			72 °C[3]/120 °C[4]	11.9	16.7	23.8	23.8	19.1	35.7	35.7	45.2	45.2
	Pressure zone (uncracked concrete C20/25[2]) maximum load-bearing capacity ($s_{cr,sp}$ and $c_{cr,sp}$ see approval)		50 °C[3]/80 °C[4]	20.5	25.8	33.5	35.7	29.6	53.2	62.9	67.9	81.0
Perm. transv. load[1] of a single anchor w/o edge influence	**Tensile zone** (cracked concrete C20/25[2], $c \geq 10\ h_{ef}$)	$V_{perm.}$ [kN] = C20/25[2]		29.3	36.0	36.0	36.0	35.7	76.0	85.1	97.0	101.7
	Pressure zone (uncracked concrete C20/25[2], $c \geq 10\ h_{ef}$)			36.0	36.0	36.0	36.0	35.7	85.1	85.1	101.7	101.7
Permissible bending torque		**$M_{perm.}$ [Nm]**		152.0	152.0	152.0	152.0	200.0	296.6	296.6	512.0	512.0
Fire-resistance time		**F30 [kN]**		–	–	12.0	–	–	17.0	–	24.5	–
		F60 [kN]		–	–	6.4	–	–	8.8	–	12.7	–
		F90 [kN]		–	–	4.4	–	–	6.0	–	8.6	–
		F120 [kN]		–	–	3.4	–	–	4.5	–	6.5	–

Characteristic Values

Minimum component thickness	**$h_{min} \geq$ [mm]**	130		150		170/160[5]		190/180[5]		160		230/220[5]		250/240[5]		270/260[5]		300/290[5]	
Minimum axial spacing cracked concr. / uncracked concr.	**$s_{min} \geq$ [mm]**	50	50	50	60	60	60	60	60	80	80	80	80	80	80	80	105	80	105
Minimum edge spacing cracked concr. / uncracked concr.	**$c_{min} \geq$ [mm]**	50	50	50	60	60	60	60	60	80	80	80	80	80	80	80	105	80	105
Axial spacing	**$s_{cr,N}$ [mm]**	270		315		375		435		345		510		570		600		675	
Edge spacing	**$c_{cr,N}$ [mm]**	135		157.5		187.5		217.5		172.5		255		285		300		337.5	
Effective anchoring depth	**h_{ef} [mm]**	90		105		125		145		115		170		190		200		225	
Drill nominal dia.	**d_0 [mm]**	18		18		18		18		22		24		24		26		26	
Drill cutting dia.	**$d_{cut} \leq$ [mm]**	18.5		18.5		18.5		18.5		22.5		24.5		24.5		26.5		26.5	
Drill hole depth	**$h_0 \geq$ [mm]**	98		113		133		153		120		180		200		215		240	
Through-hole in component to be connected	**$d_f \leq$ [mm]**	18		18		18		18		22		24		24		26		26	
Torque for anchoring	**T_{inst} = [Nm]**	50		50		50		50		80		80		80		120		120	
Cleaning brush dia.	**D ≥ [mm]**	19		19		19		19		23		25		25		27		27	

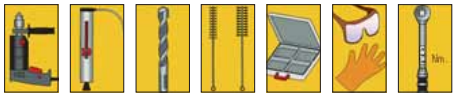
Drill Hole Cleaning

M16: 2x blow-out, 2x mechanical brush-out, 2x blow-out
M20 – M24: 2x blow-out with compressed air (6 bar), 2x mechanical brush-out, 2x blow-out with compressed air (6 bar)

Cleaning brush (steel)	**Art. No.** P. [Qty.] = 1	**0905 499 004**	**0905 499 007[7]**	**0905 499 005**	**0905 499 006**
Machine holder	**Art. No.** P. [Qty.] = 1	Hexagon: **Art. No. 0905 499 101**	SDS-plus: **Art. No. 0905 499 102**		
Extension	**Art. No.** P. [Qty.] = 1	**0905 499 111**			
Brush template	**Art. No.** P. [Qty.] = 1	**0905 499 099**			
Blow-out pump / comp. air nozzle for use with Art. No. 0714 92 13	**Art. No.** P. [Qty.] = 1	Blow-out pump: **Art.-Nr. 0903 990 001**		Compressed-air nozzle[6]: **Art. No. 0905 499 201**	

Anchor Dimensions

W-VIZ/S		M16							M20					M24		
Effective anchoring depth	**h_{ef} [mm]**	90	105	125				145	115	170			190	200		225
Total length	**l [mm]**	145	160	180	210	250	315	200	175	230	255	305	275	290	340	315
max. attachment height	**t_{fix} [mm]**	30	30	30	60	100	165	30	30	25	50	100	50	50	100	50
Designation	**W-VIZ-A/S**	M16-90-30/145	M16-105-30/160	M16-125-30/180	M16-125-60/210	M16-125-100/250	M16-125-165/315	M16-145-30/200	M20-115-30/175	M20-170-25/230	M20-170-50/255	M20-170-100/305	M20-190-50/275	M24-200-50/290	M24-200-100/340	M24-225-50/315
Anchor bar W-VIZ-A/S Galvanized steel	**Art. No.**	**0905 441 611**	**0905 441 621**	**0905 441 601**	**0905 441 602**	**0905 441 603**	**0905 441 604**	**0905 441 631**	Special order	**0905 442 001**	**0905 442 002**	**0905 442 003**	**0905 442 021**	**0905 442 401**	Special order	Special order
Packing unit	**P. Qty.**	10	10	10	10	10	10	10	5	5	5	5	5	5	5	5
WIT-VM 100 mortar cartridge		Mortar cartridge 300 ml (incl. 1 static mixer) **Art. No. 0905 440 001** P. [Qty.]=1/12														
No. of fastening points/cartridge	**approx. pieces**	23	20	18				16	12	8			8	7		6
Static mixer	**Art. No.** P. Qty.=10	**0903 420 001**														
Extension for static mixer	**Art. No.** P. Qty.=10	**0903 420 004**														



[1] The part safety coefficients of the resistances 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 dowel groups, please refer to the Directive for European Technical Approval (ETAG) Appendix C.
[2] The concrete has normal reinforcement. Higher values are possible for higher concrete strengths.
[3] Maximum long-term temperature.
[4] Maximum short-term temperature.
[5] The back of the concrete component must be checked to ensure that no chipping has occurred during drilling€(see ETA-04/0095).
[6] Compressed air nozzle fitting blow-out gun Art. No. 0714 92 13.
[7] Cleaning brush without connecting thread M6.