

ANCHOR TECHNOLOGY



WÜRTH INSIGHT

- More than 125,000 product lines
- More than 74,000 employees
- Over 3 million customers worldwide
- 2017 sales €12.7 billion
- Standards & poor's rating A stable
- Over 400 companies in more than 80 countries



WÜRTH UK

Würth UK Head Office in Erith, Kent

In the core business, the Würth Line, the product range for craft and industry comprises over 125,000 products: From screws, screw accessories and anchors to tools, chemical-technical products and personal protection equipment.

More than 3 million customers all over the world trust in Würth today. Human beings and a very special corporate philosophy are the driving forces of the long-standing success enjoyed by the Würth Group. Würth is a family business that was founded by Adolf Würth in 1945. Prof. Reinhold Würth, today's Chairman of the Supervisory Board of the Würth Group's Family Trusts, took over the business at the age of 19 after his father had passed away and developed it further in the following years. Starting from the early years of the company in post-war Germany, he turned the former two-man business into a worldwide operating trading group.

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WÜRTH ANCHOR DESIGN SOFTWARE

**Now you can calculate the capacity
of your anchors.**

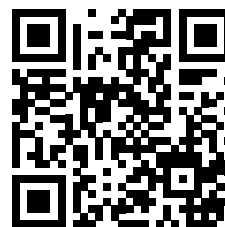


- Clear and concise layout
- Anchors and anchor plate geometry always in view
- The system allows bespoke designs

For more information visit:

www.wurth.co.uk

Services > Downloads > Anchor Software



CONCRETE SCREW BOLT W-BS

W-BS-S

W-BS-S/S: Galvanised (5 micron) Ø: 5 - 14 mm

W-BS-S/A4: Stainless steel Ø: 6 - 10 mm



W-BS-SK

W-BS-SK/S: Galvanised (5 micron) Ø: 5 - 10 mm

W-BS-SK/A4: Stainless steel Ø: 6 - 10 mm



Please check with your Würth sales rep for hot-dipped galvanised version.

Approved for:

C20/25 - C50/60 cracked and non-cracked concrete

Advantages:

- High load capacity
- Small edge and spacing distance
- Easy and fast to install
- Immediate load bearing capacity, no waiting time
- Thanks to the three possible fixing depths, it is particularly flexible (6-14 mm)
- Equal loads for galvanised steel and A4 versions
- Certified adjustably within the specified limits (8-14 mm)

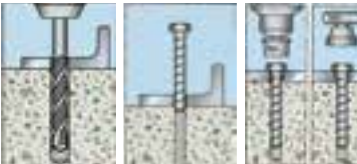
Applications



Approvals & Certificates



Installation




Technical Data:	
Head Configuration	Hex Head, Countersunk, Panhead Male & female thread
Environmental Conditions	Indoor, outdoor
Material Composition	Steel, galvanized / A4 stainless steel
Type of Fastening	Through fixing
Suitable for	Cracked and non-cracked concrete

Anchor size			[mm]	5	6	8	10	12	14									
Effective anchorage depth	h_{ef}	[mm]	27	31	44	35	43	52	43	60	68	50	67	80	58	79	92	
Drill hole diameter	d_0	[mm]	5	6	8	10	12	14										
Drill hole depth	$h_1 >$	[mm]	40	45	60	55	65	75	65	85	95	75	95	110	85	110	125	
Wrench size	SW	[mm]	10	13	13	15	17	21										
Non-cracked concrete																		
Tensile	C20/25	N_{perm}	[kN]	-	1.9	4.3	3.6	5.7	7.6	5.7	9.5	12.4	7.6	12.8	16.8	10.3	16.4	20.7
Shear	≥ C20/25	V_{perm}	[kN]	-	3.3	3.3	4.9	6.4	8.1	6.6	16.2	16.2	8.3	19.0	19.0	10.3	26.7	26.7
Cracked concrete																		
Tensile	C20/25	N_{perm}	[kN]	-	1.0	1.9	2.4	4.3	5.7	4.3	7.6	9.2	5.7	9.0	11.7	7.2	11.5	14.5
Shear	≥ C20/25	V_{perm}	[kN]	-	2.8	3.3	3.4	4.6	6.1	4.6	15.2	16.2	5.8	18.0	19.0	7.2	23.0	26.7

.Material safety factor γ_M and safety factor for action $\gamma_L = 1.4$ are included. The material safety factor depends on the failure mode

CONCRETE SCREW BOLT W-BS

Impact screwdriver recommendations for the installation				
Size	Material	Impact screwdriver	Level  1 2 3	Art.No.
5		ASS 12-A	-	0700 622 3
6		ASS 18-A EC Combi	2	5700 510 0 ...
8			2	
10			3	
12			3	
14		ASS 18 1/2"HT	-	0700 725 5



Anchor size [mm]	Total length [mm]	Max. fixture thickness t_{fix} [mm] for $h_{nom,1}$	Max. fixture thickness t_{fix} [mm] for $h_{nom,2}$	Max. fixture thickness t_{fix} [mm] for $h_{nom,3}$	Art.No. Zinc electroplated	Art.No. Stainless Steel A4	P.Qty.	
5	40	5	-	-	5929 125 005	-	100	
	50	15	-	-	5929 125 015	-		
	60	25	-	-	5929 125 025	-		
6	40	5	-	-	5929 126 005	-		
	50	15	10	-	5929 126 015	5929 226 015		
	60	25	20	5	5929 126 025	5929 226 025		
	80	45	40	25	5929 126 045	-		
8	50	5	-	-	5929 128 005	-		50
	60	15	5	-	5929 128 015	-		
	70	25	15	5	5929 128 025	5929 228 025		
	80	35	25	15	5929 128 035	5929 228 035		
	90	45	35	25	5929 128 045	-		
	100	55	45	35	5929 128 055	-		
10	60	5	-	-	5929 121 005	-	25	
	80	25	5	-	5929 121 025	-		
	90	35	15	5	5929 121 035	5929 221 035		
	100	45	25	15	5929 121 045	5929 221 045		
	120	65	45	35	5929 121 065	5929 221 065		
	140	85	65	55	5929 121 085	-		
12	80	15	-	-	5929 122 015	-	25	
	110	45	25	10	5929 122 045	-		
14	80	5	-	-	5929 124 005	-		
	110	35	10	-	5929 124 035	-		
	130	55	30	15	5929 124 055	-		

CONCRETE SCREW BOLT W-BS


W-BS/S , Galvanised steel, Countersunk Head Configuration





Diameter [mm]	Head diameter [mm]
5	12
6	13
8	20
10	22


Anchor size [mm]	Total length [mm]	Max. fixture thickness t_{fix} [mm] for $h_{nom,1}$	Max. fixture thickness t_{fix} [mm] for $h_{nom,2}$	Max. fixture thickness t_{fix} [mm] for $h_{nom,3}$	Art.No. Zinc electroplated	Art.No. Stainless Steel A4	P.Qty.
5	40	5	-	-	5929 135 005	-	100
	50	15	-	-	5929 135 015	-	
	60	25	-	-	5929 135 025	-	
6	40	5	-	-	5929 136 005	-	100
	50	15	10	-	5929 136 015	5929 236 015	
	60	25	20	5	5929 136 025	-	
	65	30	25	10	-	5929 236 030	
	80	45	40	25	5929 136 045	-	
	85	50	45	30	-	5929 236 050	
	100	65	60	45	5929 136 065	-	
	105	70	65	50	-	5929 236 070	
	120	85	80	65	5929 136 085	-	50
	140	105	100	85	5929 136 105	-	
160	125	120	105	5929 136 125	-		
8	80	35	25	15	5929 138 035	5929 238 035	25
10	90	35	15	5	5929 131 035	5929 231 035	

CONCRETE SCREW BOLT W-BS

W-BS/S concrete screw, galvanized steel with pan head, Type P					Head diameter:			
					Size	Head dia. [mm]		
					5	14		
					6	15		
Anchor size	Max. fixture thickness t_{fix} [mm]			Total length L [mm]	Torque drive	Art. No.	Art. No.	P. Qty.
	t_{fix} [mm] for $h_{nom,1}$	t_{fix} [mm] for $h_{nom,2}$	t_{fix} [mm] for $h_{nom,3}$					
5	5	-	-	40	TX30	5929 145 005	5929 246 015	
	15	-	-	50		5929 145 015	5929 246 025	
	25	-	-	60		5929 145 025	5929 246 045	
6	5	-	-	-	TX30	5929 146 005	5929 246 065	100
	15	10	-	50		5929 146 015	A4	
	25	20	5	60		5929 146 025		
	45	40	25	80		5929 146 045		
	65	60	45	100		5929 146 065		

W-BS/S concrete screw, galvanized steel with large pan head, Type P					Head diameter:						
					Size	Head dia. [mm]					
					6	18					
					Anchor size	Max. fixture thickness t_{fix} [mm]			Total length L [mm]	Drill bit dia d_0 [mm]	Drill hole depth h_1 [mm]
	t_{fix} [mm] for $h_{nom,1}$	t_{fix} [mm] for $h_{nom,2}$	t_{fix} [mm] for $h_{nom,3}$	$h_{1,1}$	$h_{1,2}$	$h_{1,3}$					
6	5	-	-	40	6	40	-	-	TX30	5929 156 005	100
	25	20	5	60		45	60	5929 156 025			

W-BS/S concrete screw, galvanized steel with inside thread, Type I					Stepped thread:						
					Size	Stepped thread					
					6	M8/M10					
					Anchor size	Max. fixture thickness t_{fix} [mm]			Total length L [mm]	Drill bit dia d_0 [mm]	Drill hole depth h_1 [mm]
	t_{fix} [mm] for $h_{nom,1}$	t_{fix} [mm] for $h_{nom,2}$	t_{fix} [mm] for $h_{nom,3}$	$h_{1,1}$	$h_{1,2}$	$h_{1,3}$					
6	0	-	-		6	40	-	-	13	5929 176 001	50
	-	-	0	55		-	-	60		5929 176 002	

W-BS/S concrete screw, galvanized steel with stud screw with countersunk head, Type ST					Connecting thread:							
					Size	Thread [mm]						
					6	M8 x 16						
					Anchor size	Max. fixture thickness t_{fix} [mm]			Total length L [mm]	Drill bit dia d_0 [mm]	Drill hole depth h_1 [mm]	
	t_{fix} [mm] for $h_{nom,1}$	t_{fix} [mm] for $h_{nom,2}$	t_{fix} [mm] for $h_{nom,3}$	$h_{1,1}$	$h_{1,2}$	$h_{1,3}$						
6	0	-	-	35	6	40	-	-	10	5929 186 000	100	
	20	15	0				45	60		5929 186 020		
	40	35	20	75								5929 186 040
	60	55	40	95								5929 186 060

FIXANCHOR W-FAZ



W-FAZ

W-FAZ/S: Galvanized (5 micron): M8 – M27

W-FAZ/A4: Stainless steel: M8 – M24

Machine Setting Tool

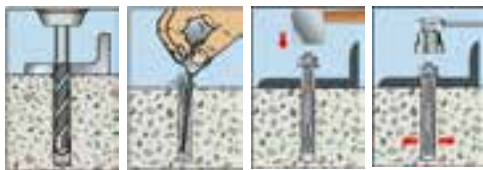
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Applications



Installation



Approved for:

C20/25 - C50/60 cracked and non-cracked concrete

Advantages:

- The approvals guarantee reliable operation in cracked and non-cracked concrete
- Due to the design of the tensioning jacket and the cone, it is possible to avoid a peripheral break at low edge distances
- Checking the exact mounting is indicated by the mark on the bolt
- Due to the variety of configurations, the most economical recording is in most cases
- The large washer version can be used for fixing tree structures (sledges)
- Maximum diameter in galvanized steel M27 stainless steel version M24

Approvals & Certificates



Technical Data:	
Head Configuration	External thread
Environmental Conditions	Indoor and outdoor
Material Composition	Steel, galvanized / A4 stainless steel
Type of Fastening	Through fixing
Suitable for	Cracked and non-cracked concrete

Anchor size			M8		M10		M12		M16		M20	M24	M27	
	$h_{ef}/h_{ef,red}$	[mm]	46	35	60	40	70	50	85	65	100	115	125	
Non-cracked concrete														
Tension	C20/25	N_{perm}	5.7	3.6	7.6	4.3	11.9	8.5	16.7	12.6	24.0	29.7	33.6	
Shear W-FAZ/S		V_{perm}	[kN]	7.0	7.0	11.5	11.5	17.1	17.1	37.1	30.2	37.1	84.3	94.1
Shear W-FAZ/A4			7.4	7.4	11.4	11.4	17.1	17.1	31.4	31.2	37.1	65.1	-	
Cracked concrete														
Tension	C20/25	N_{perm}	2.4	2.4	4.3	3.6	7.6	6.1	11.9	9.0	17.2	21.2	24.0	
Shear W-FAZ/S		V_{perm}	[kN]	8.6	7.0	12.6	10.4	17.1	14.5	26.9	21.6	34.4	42.4	67.1
Shear W-FAZ/A4			7.4	7.4	11.4	10.4	17.1	14.5	31.4	21.6	43.9	48	-	

.Material safety factor γ_m and safety factor for action $\gamma_L = 1.4$ are included. The material safety factor depends on the failure mode

FIXANCHOR W-FAZ

Anchor size	Total length [mm]	Max fixture thickness $t_{\text{fix}}/t_{\text{fix, red}}$ [mm]	Drill hole \varnothing x Drill hole depth $h_1; h_{\text{red,1}}$ [mm]	Effective Anchorage depth $h_{\text{ef}}/h_{\text{ef, red}}$ [mm]	Wrench size [mm]	Art.No.		P.Qty.
						W-FAZ/S	W-FAZ/A4	
M8	75	10 / 21	8 x 60 / 49	46 / 35	13	5928 208 010	5928 408 010	100
	80	15 / 26				5928 208 015	5928 408 015	
	95	30 / 41				5928 208 030	5928 408 030	
	115	50 / 61				5928 208 050	5928 408 050	
	165	100 / 111				5928 208 100	5928 408 100	
M10	70	- / 10	10 x 75 / 40	60 / 40	17	5928 251 010	5928 451 010	50
	80	- / 20				5928 251 020	5928 451 020	
	90	10 / 30				5928 210 010	5928 410 010	
	95	15 / 35				5928 210 015	5928 410 015	
	100	20 / 40				5928 210 020	5928 410 020	
	110	30 / 50				5928 210 030	5928 410 030	
	130	50 / 70				5928 210 050	5928 410 050	
	155	75 / 95				5928 210 075	5928 410 075	
	180	100 / 120				5928 210 100	5928 410 100	
M12	85	- / 10	12 x 90 / 70	70 / 50	19	5928 252 010	5928 452 010	25
	95	- / 20				5928 252 020	5928 452 020	
	110	15 / 35				5928 212 015	5928 412 015	
	115	20 / 40				5928 212 020	5928 412 020	
	125	30 / 50				5928 212 030	5928 412 030	
	145	50 / 70				5928 212 050	5928 412 050	
	160	65 / 85				5928 212 065	5928 412 065	
	180	85 / 105				5928 212 085	5928 412 085	
	200	105 / 125				5928 212 105	5928 412 105	
	220	125 / -				0904 521 217	0904 621 206	
	255	160 / -				0904 521 219	0904 621 207	
M16	115	- / 15	16 x 110 / 90	85 / 65	24	5928 256 015	5928 456 015	20
	125	5 / 25				5928 216 005	5928 416 005	
	135	15 / 35				5928 216 015	5928 416 015	
	145	25 / 45				5928 216 025	5928 416 025	
	170	50 / 70				5928 216 050	5928 416 050	
	200	80 / 100				5928 216 080	5928 416 080	
	220	100 / -				0904 521 603	0904 616 100	
M20	165	30 / -	20 x 125	100 / -	30	5928 220 030	5928 420 030	10
	195	60 / -				5928 220 060	5928 420 060	
	265	130 / -				0904 522 003	0904 620 130	
	285	150 / -				0904 522 004	0904 620 150	
M24	190 / 200*	30 / -	24 x 145 / 24 x 155*	115 / - 125 / -*	36	0904 522 401	0904 624 030	5
	220 / 230*	60 / -				0904 522 402	0904 624 060	
	235 / 245*	75 / -				0904 522 403	0904 624 075	
M27	210	30 / -	28 x 160	125 / -	41	0904 522 701	-	
	240	60 / -				0904 522 702	-	

HEAVY-DUTY ANCHOR W-HAZ

W-HAZ-B

W-HAZ-B/S: Galvanised (5 micron): M6 - M20

W-HAZ-B/A4: Stainless steel: M8 - M16



W-HAZ-S

W-HAZ-S/S: Galvanised (5 micron): M6 - M20

W-HAZ-S/A4: Stainless steel: M8 - M16



W-HAZ-SK

W-HAZ-SK/S: Galvanised (5 micron): M6 - M12

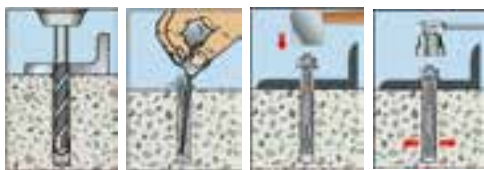
W-HAZ-SK/A4: Stainless steel: M8 - M12



Applications



Installation



Approved for:

C20/25 - C50/60 cracked and non-cracked concrete

Advantages:

- Different head designs allow aesthetic installation and avoid injuries
- The plastic ring absorbs the vibrations, making it the ideal machine base

Approvals & Certificates



Technical Data:

Head Configuration	Hex Head and countersunk
Environmental Conditions	Indoor, outdoor
Material Composition	Steel, galvanized / A4 stainless steel
Type of Fastening	Through fixing
Suitable for	Cracked and non-cracked concrete

Anchor size				M6	M8	M10	M12	M16	M16L	M20	
		h_{ef}	[mm]	50	60	71	80	100	115	125	
Non-cracked concrete											
Tension		C20/25	N_{perm}	[kN]	7.6	9.5	14.3	17.2	24.0	29.6	33.5
Shear	B	$\geq C20/25$	V_{perm}	[kN]	9.1	14.0	20.7	34.3	48.0	52.1	67.1
	S SK				10.1	17.1	27.5	34.3	48.0	59.2	67.1
Cracked concrete											
Tension		C20/25	N_{perm}	[kN]	2.4	5.7	7.6	12.3	17.1	21.0	24.0
Shear	B	$\geq C20/25$	V_{perm}	[kN]	9.1	14.0	20.5	24.5	34.3	42.3	47.9
	S SK				10.1	15.9	20.5	24.5	34.3	42.3	47.9

.Material safety factor γ_M and safety factor for action $\gamma_L = 1.4$ are included. The material safety factor depends on the failure mode

HEAVY-DUTY ANCHOR W-HAZ

Anchor size	Max. fixture thickness t_{fix} [mm]	Total length W-HAZ-B/S l [mm]	Total length W-HAZ-S/S l [mm]	Drill hole size d_o [mm]	Wrench size WS [mm]	Art.No. W-HAZ-B/S	Art.No. W-HAZ-S/S	P.Qty.
M6	0	67	65	10	10	0905 210 101	0905 210 001	100
	10	77	75			0905 210 102	0905 210 002	50
	30	97	95			0905 210 103	0905 210 003	
	50	117	115			0905 210 104	0905 210 004	
	100	167	-			0905 210 105	-	
M8	0	80	75	12	13	0905 212 101	0905 212 001	50
	10	90	85			0905 212 102	0905 212 002	
	30	110	105			0905 212 103	0905 212 003	
	50	130	125			0905 212 104	0905 212 004	
	100	180	-			0905 212 105	-	
M10	0	96	91	15	17	0905 215 101	0905 215 001	25
	15	111	106			0905 215 102	0905 215 002	
	25	121	116			0905 215 103	0905 215 003	
	45	141	136			0905 215 104	0905 215 004	
	95	191	186			0905 215 105	0905 215 005	
M12	0	112	107	18	19	0905 218 101	0905 218 001	20
	10	122	117			0905 218 102	0905 218 002	
	20	132	127			0905 218 103	0905 218 003	
	40	152	147			0905 218 104	0905 218 004	
	70	182	177			0905 218 105	0905 218 005	
	100	212	-			0905 218 106	-	
M16	0	137	130	24	24	0905 224 101	0905 224 001	10
	20	157	150			0905 224 102	0905 224 002	
	50	187	180			0905 224 103	0905 224 003	
	100	237	-			0905 224 104	-	5
M20	10	181	172	28	30	0905 228 101	0905 228 001	10
	30	201	192			0905 228 102	0905 228 002	
	60	231	222			0905 228 103	0905 228 003	5
	100	271	262			0905 228 104	0905 228 004	

Anchor size	Fixture thickness t_{fix} [mm]	Total length W-HAZ-SK /S l [mm]	Drill hole size d_o [mm]	Head socket size [mm]	Anchor size / height [mm]	Art.No. W-HAZ-SK /S	P.Qty.
M6	10	70	10	4	16,5/3,9	0905 210 201	50
	25	85				0905 210 202	
	40	100				0905 210 203	
M8	10	80	12	5	20,5/5,0	0905 212 201	50
	25	95				0905 212 202	
	50	120				0905 212 203	
M10	10	100	15	6	24,5/5,7	0905 215 201	25
	25	110				0905 215 202	
	35	120				0905 215 203	
	50	135				0905 215 204	
M12	20	115	18	8	29,5/6,7	0905 218 203	20
	40	135				0905 215 204	

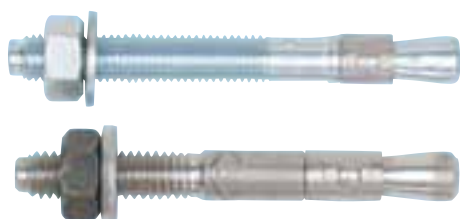
Please check with Würth sales team for the stainless steel range.

FIXANCHOR W-FA

W-FA

W-FA/S: Galvanised (5 micron): M6 – M20

W-FA/A4: Stainless steel: M6 – M20



Please check with your Würth sales rep for hot-dipped galvanised version.

Machine Setting Tool

Art.No. 0904 908 016

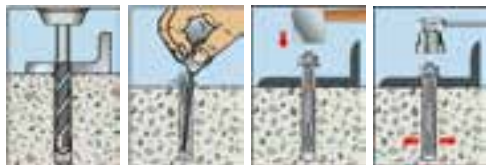


Applications



Metal structure, metal profiles, brackets, plates, beams, stud section, Cable channel, pipe line, wooden structures

Installation



Approved for:

C20/25 - C50/60 non-cracked concrete

Advantages:

- The fastener can be quickly and easily installed
- Long thread allows for leveling of surfaces and spacer mounting
- Due to the two certified recording depths, it is widely used
- Certificates guarantee reliable operation even at high loads

Approvals & Certificates



Technical Data:	
Head Configuration	External thread
Environmental Conditions	Indoor, outdoor
Material Composition	Steel, galvanized / A4 stainless steel
Type of Fastening	Through fixing
Suitable for	Non-cracked concrete

Anchor size			M6		M8		M10		M12		M16		M20		
	$h_{ef}/h_{ef,red}$	[mm]	40	30	44	35	48	42	65	50	82	64	100	78	
Non-cracked concrete															
Tension W-FA/S	C20/25	N_{perm}	[kN]	4.1	2.9	5.7	5.0	7.6	6.5	12.6	8.5	17.8	12.3	24.0	16.5
Tension W-FA/A4				3.6	2.9	5.7	4.3	7.6	5.7	11.6	8.5	17.9	12.3	24.0	16.5
Shear W-FA/S		V_{perm}		2.9	2.9	6.3	5.0	8.0	6.5	14.3	8.5	23.6	23.6	37.1	33.1
Shear W-FA/A4				4.0	3.9	6.9	5.0	8.0	6.5	15.4	8.5	28.6	24.6	43.9	33.1

.Material safety factor γ_m and safety factor for action $\gamma_t = 1.4$ are included. The material safety factor depends on the failure mode

FIXANCHOR W-FA

Anchor size [mm]	Full length [mm]	Max. fixture thickness $t_{\text{fix}} / t_{\text{fix,red}}$ [mm]	Drill bit \varnothing x Hole depth $h_1/h_{1,\text{red}}$ [mm]	Effective anchorage $h_{\text{ef}}/h_{\text{ef,red}}$ [mm]	Wrench size, SW[mm]	Art.No. W-FA/S	Art.No. W-FA/A4	P.Qty.
M6	40	5	6 x 55 / 45	18	10	5932 006 040	0904 411 061	100
	67	10 / 20		40 / 30		5932 006 067	0904 411 065	
	82	25 / 35				5932 006 082	0904 411 066	
	97	40 / 50				5932 006 097	0904 411 067	
M8	75	10 / 19	8 x 65 / 55	44 / 35	13	5932 008 075	0904 411 083	
	80	15 / 24				5932 008 080	0904 411 084	
	90	25 / 34				5932 008 090	-	
	95	30 / 39				5932 008 095	0904 411 087	
	110	45 / 54				5932 008 110	-	
	120	55 / 64				5932 008 120	0904 411 089	
M10	85	10 / 16	10 x 70 / 65	48 / 42	17	5932 010 085	0904 411 002	50
	90	15 / 21				5932 010 090	0904 411 003	
	95	20 / 26				5932 010 095	0904 411 004	
	105	30 / 36				5932 010 105	0904 411 005	
	120	45 / 51				5932 010 120	0904 411 006	
	145	70 / 76				5932 010 145	-	
	175	100 / 106				5932 010 175	-	
	215	140 / 146				5932 010 215	-	
M12	105	10 / 25	12 x 90 / 75	65 / 50	19	5932 012 105	-	25
	110	15 / 30				5932 012 110	0904 411 204	
	115	20 / 35				5932 012 115	-	
	125	30 / 45				5932 012 125	0904 411 206	
	145	50 / 65				5932 012 145	-	
	160	65 / 80				5932 012 160	-	
	180	85 / 100				5932 012 180	0904 411 209	
	200	105 / 120				5932 012 200	0904 411 210	
	220	125 / 140				5932 012 220	-	
	240	145 / 160				5932 012 240	-	
M16	130	10 / 28	16 x 110 / 95	82 / 64	24	5932 016 130	-	10
	150	30 / 48				5932 016 150	0904 411 604	
	180	60 / 78				5932 016 180	-	
	200	80 / 98				5932 016 200	-	
	220	100 / 118				5932 016 220	0904 411 607	
	250	130 / 148				5932 016 250	-	
	285	165 / 183				5932 016 285	-	
	320	200 / 218				5932 016 320	-	
	340	220 / 238				5932 016 340	-	
	M20	150				5 / 27	20 x 130 / 110	
180		35 / 57	5932 020 180	0904 412 002				
205		60 / 82	5932 020 205	-				
240		95 / 117	5932 020 240	-				

DROP-IN ANCHOR W-ED

W-ED/S

W-ED/S: Galvanised (5 micron): M6 - M20

W-ED/A4: Stainless steel: M6 - M20



W-ED/S-BND

Art.No. 0904 040 08 ... M8 - M12



Approved for:

C20/25 - C50/60 non-cracked concrete

Advantages:

- Small hole depth, high load capacity
- Easy to install
- Load can be applied immediately, no waiting time
- Marker / Input Tool for visually inspecting the placement and preventing hand injury
- The fixed component can be easily removed at any time



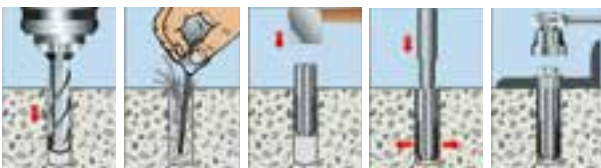
Approvals & Certificates



Technical Data:

Head Configuration	Internal thread
Environmental Conditions	Indoor, outdoor
Material Composition	Steel, galvanized / A4 stainless steel
Type of Fastening	pre-positioned
Suitable for	Uncracked and in case of redundant use also cracked concrete.


Installation




Anchor size				M6	M8	M10	M12	M16	M20
		h_{ef}	[mm]	30	30/40	40	50	65	80
Non-cracked concrete									
Tension W-ED/S	C20/25	N_{perm}	[kN]	3.3	2.8/3.6	5.1	7.1	10.5	14.3
Tension W-ED/A4				3.3	3.3/3.6	6.1	8.5	12.6	17.2
Shear W-ED/S		V_{perm}		2.1	3.9	4.1	9.0	16.8	26.2
Shear W-ED/A4				3.2	4.6	6.0	11.9	19.2	30.7
Multiple attachment of Non-load bearing systems in concrete									
	C20/25	N_{perm}	[kN]	1.2	1.7	2.0	2.4	-	-

.Material safety factor γ_m and safety factor for action $\gamma_t = 1.4$ are included. The material safety factor depends on the failure mode

DROP-IN ANCHOR W-ED

W-ED/S, Galvanised steel 


Anchor type	Diameter-Ø	Length L _H [mm]	Drill hole-Ø d ₀ [mm]	Drill hole depth h ₀ [mm]	Max. Screw in depth L _h [mm]	Min. Screw in depth L _{sadmin} [mm]	Art.No.	P.Qty.
W-ED/S	M5	25	8	25	10	6	0904 5 ¹⁾	100
	M6	30		30	13	7	0904 010 06	
	M8	30	10	30	13	9	0904 010 08	
		40		40	20	9	0904 010 081	
	M10	40	12	40	15	11	0904 010 10	50
	M12	50	15	50	18	13	0904 010 12	25
	M16	65	20	65	23	18	0904 010 16	
M20	80	25	25	80	34	22	0904 010 20	

W-ED/S-BND, Galvanised steel 


Anchor type	Diameter-Ø	Length L _H [mm]	Drill hole-Ø d ₀ [mm]	Drill hole depth h ₀ [mm]	Max. Screw in depth L _h [mm]	Min. Screw in depth L _{sadmin} [mm]	Art.No.	P.Qty.
W-ED/S-BND	M6	25	8	25	12	6	0904 040 006	100
	M8	30		30	13	9	0904 040 08	
		40		40	20	9	0904 040 081	
	M10	30	12	30	12	10	0904 040 101	50
		40		40	15	11	0904 040 10	
		M12	50	15	50	18	13	

Drilling and setting tool in one 


For drop-in anchor size	Art.No.	P.Qty.
M6 x 25	0904 024 060	1
M6 x 30	0904 024 06	
M8 x 25	0904 024 080	
M8 x 30	0904 024 08	
M8 x 40	0904 024 081	
M10 x 25	0904 024 100	
M10 x 30	0904 024 101	
M10 x 40	0904 024 10	

Setting Tool (with visual setting check) 

For drop-in anchor size	Art.No.	P.Qty.
M6 X 25	0904 022 060	1
M8 X 30	0904 022 08	
M8 X 40	0904 022 081	
M10 X 30	0904 022 101	
M10 X 40	0904 022 10	
M12 X 50	0904 022 12	
M16 X 65	0904 022 16	
M20 X 80	0904 022 20	

Stop drill bit 

For drop-in anchor size	Art.No.	P.Qty.
M6 x 25	0904 025 060	1
M6 x 30	0904 025 06	
M8 x 25	0904 025 080	
M8 x 30	0904 025 08	
M8 x 40	0904 025 081	
M10 x 25	0904 025 100	
M10 x 30	0904 025 101	
M10 x 40	0904 025 10	
M12 x 25	0904 025 120	
M12 x 50	0904 025 12	

Setting tool 

For drop-in anchor size	Art.No.	P.Qty.
M5 x 25	0904 05	1
M6 x 30	0904 020 06	
M8 x 30	0904 020 08	
M8 x 40	0904 020 081	
M10 x 30	0904 020 101	
M10 x 40	0904 020 10	
M12 x 50	0904 020 12	
M16 x 65	0904 020 16	
M20 x 80	0904 020 20	

CONCRETE SCREW WB-S COMPACT

Suitable for non-structural redundant applications

For cracked and non cracked concrete



1. Application

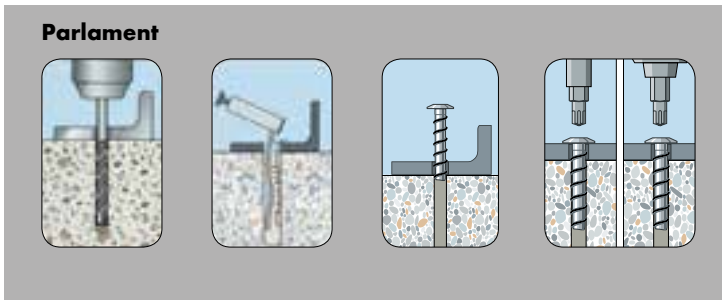
- Multiple mounting
- Anchoring in non carrying systems for cracked and non cracked concrete
- Suitable for installing mounting rails
- Suitable in concrete >C20/25 and pressure-resistant natural stone
- W-BS Compact is only suitable in dry indoor rooms



2. Advantages

- Fast and easy assembly – easy assembled by hand
- Shallow embedment depth, which helps avoid hitting of rebar
- Time and money saving

3. Characteristics

- Approval: ETA-15/0091
- Fire resistant: R30,R60,R90,R120 Technical Report TR020



Approvals & Certificates	
European Technical Approval Multiple attachment of non carrying system	Fire resistant Technical Report TR 020 R30 – R120
	

W-BS Compact											
Anchor type	Diameter	Embedment Depth h_{nom} [mm]	Max. fixture thickness t_{fix} [mm]	Drill bit hole depth L [mm]	Drill Diameter d_o [mm]	Drill hole depth $h_1 \geq$ [mm]	TORX drive	Head Diameter-Ø [mm]	Approval ETA	Art.No.	P.Qty
W-BS Compact	6	25	3	28	6	28	TX 30	14	ETA-15/0091	5929 506 028	100

Installation parameters		
Diameter		6
Drill hole-Ø	d_o [mm]	6
Bore hole depth	$h_1 \geq$ [mm]	28
Bore hole diameter	$d_f \leq$ [mm]	8
Torque wrench	T_{inst} [Nm]	10

Performance data		
Diameter [mm]		6
Suitable for non-structural redundant applications . For cracked and non cracked concrete	F_{perm} [kN] for C20/25 – C50/60	0,43

HAMMER-IN ANCHOR W-NA



Hammer-in Anchor W-NA/S

W-NA (with thread)

Non-structural redundant applications in cracked and non cracked concrete.



Hammer-in Anchor W-NA-K/S

W-NA-K (with nail head)

Non-structural redundant applications in cracked and non cracked concrete.



Hammer-in Anchor W-NA/A4

W-NA (with thread)

Non-structural redundant applications in cracked and non cracked concrete.



Nail Anchor W-NA-K/A4

W-NA-K (with nail head)

Non-structural redundant applications in cracked and non cracked concrete.

Anchor	Thread size	Drill hole diameter d_0	Effective anchorage depth h_{ef}	Fixture thickness t_{fix}	Art.No.	P. Qty.
	M6	[mm]	[mm]	[mm]		
W-NA/S	M6	6	30	0	0905 362 005	200
			25	5		
			30	5	0905 362 010	200
			25	10		
			30	10	0905 362 015	200
			25	15		
W-NA/A4	M6	6	30	5	0905 372 005	200
W-NA-K/S		6	30	0	0905 361 005	200
			25	5		
			30	5	0905 361 010	200
			25	10		
			30	30	0905 361 035	200
			25	35		
			30	50	0905 361 055	200
			25	55		
W-NA-K/A4		6	30	5	0905 371 005	200
			30	30	0905 371 030	200

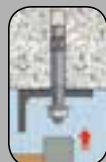
Setting instructions



Drill the hole



Clean the drilled hole



Push the W-NA through the component and knock it in



Apply torque. Max. torque $T_{max} \leq 4 \text{ Nm}$











Push the W-NA-K through the component and knock it in















Knock in the W-NA-K until it is flush

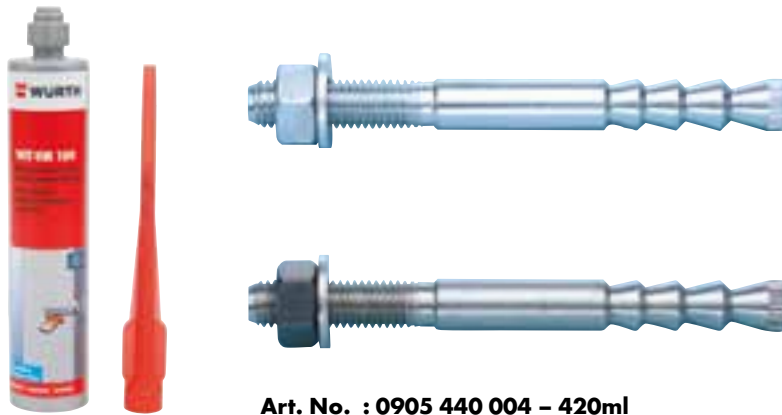
BONDED ANCHOR - OVERVIEW APPROVAL & COVERAGE

Product		W-VIZ-A/ - A-IG	W-VD-A / W-VI-A	Threaded rod sold by meter	Internally threaded sleeve	Rebar*
						
	WIT-PE 500		✓	✓		✓
	WIT-VM 100	✓				
	WIT-UH 300		✓	✓	✓	✓
	WIT-VM 250		✓	✓	✓	✓
	WIT-EA 200		✓	✓	✓	
	WIT-P 200		✓	✓	✓	

*Rebar not supplied by Würth

Product		ETA for tensile zone	ETA for compression zone	ETA for brick and masonry units	ETA for seismic actions	ETA for rebar*	Fire tested	Low VOC to Green standards
						*Rebar not supplied by Würth		
	WIT-PE 500	✓	✓		✓	✓	✓	✓
	WIT-VM 100	✓	✓		✓		✓	✓
	WIT-UH 300	✓	✓		✓	✓	✓	✓
	WIT-VM 250	✓	✓	✓	✓	✓	✓	✓
	WIT-EA 200		✓	✓				✓
	WIT-P 200							

INJECTION SYSTEM W-VIZ WITH WIT-VM 100



Art. No. : 0905 440 004 – 420ml




Individual attachment:
Cracked and non-cracked concrete

W-VIZ/S Galvanised steel

Individual attachment:
Cracked and non-cracked concrete

W-VIZ/A4 Stainless steel A4

Proof of performance

Permissions	Test reports	Pass-through mounting (M10 to M24)
<p>European Technical Approval Option 1 for cracked and non-cracked concrete and seismic performance category C2</p> 	<p>Fire resistance Direct flame effect</p> 	 <p>Ring gap between anchor rod and attached part must be filled with WIT-VM 100 or WIT-EXPRESS mortar.</p>

1. Areas of application

- **Individual attachment:** Standard concrete C20/25 to C50/60 (cracked and non-cracked concrete)
- Suitable for fastening metal structures, metal profiles, brackets, base plates, supports, railings, wooden structures, beams etc.
- The temperature in the area surrounding the mortar must not exceed +50°C or +72°C, short term +80°C or +120°C
- W-VIZ/A4 (stainless steel A4) can be used in dry indoor areas, outdoors (including in industrial atmospheres and coastal areas) or in wet rooms
- W-VIZ/HCR (HCR high corrosion-resistant steel) can be used in particularly aggressive conditions. These conditions include, e.g. constant, changing immersion in salt water or within the splash zone of salt water, atmospheres containing chlorine in indoor swimming pools or atmospheres with extreme chemical contamination (e.g. flue-gas desulphurisation systems or road tunnels in which de-icing agents are used)

Drill hole cleaning

Clean the drill hole: 2x blow-out, 2x mechanical brush-out, 2x blow-out
If the drill hole is M20 or larger, blow out with compressed air using the appropriate compressed air nozzles

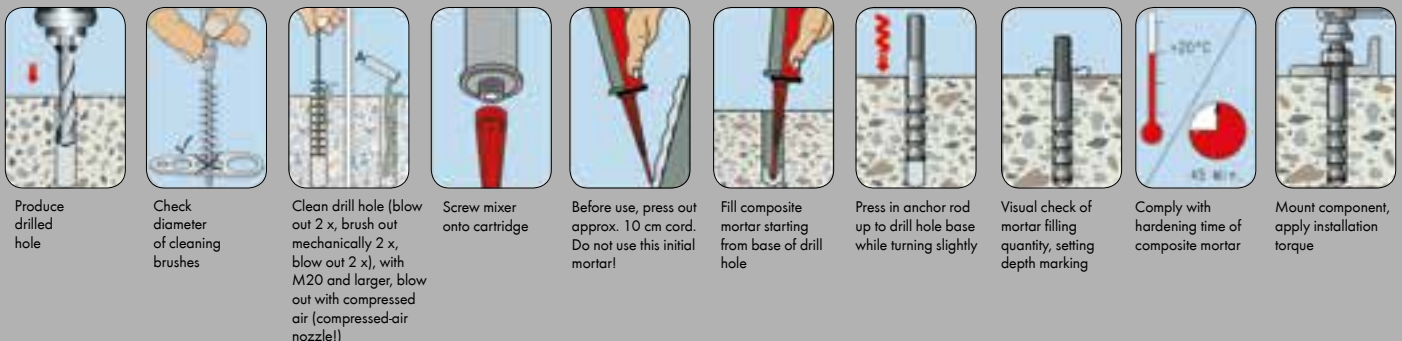
2. Benefits

- Through-bolt and cotter-pin mounting
- Highest load-bearing capacity, low axial and edge clearance
- Shallow drilling hole depth with deep anchoring depth
- The drill holes can be produced by the hammer drilling process (M8 to M24) and diamond drilling process (M10 to M24)
- Hardened injection mortar largely seals off the drill hole
- Attachment with low expansion pressure allows small axial and edge clearances
- Geometry of anchor bar allows safe subsequent expansion performance
- Cartridge can be reused by replacing static mixer or by reclosing with sealing cap

3. Properties

- Torque-controlled expanding anchors made of stainless steel A4 and HCR highly corrosion resistant steel
- Approval: **ETA-04/0095 for individual attachment** Option 1, cracked and non-cracked concrete, seismic performance category C2
- Fire resistance: F30, F60, F90 and F120
Exposure to fire according to DIN 4102-02: 1977-09 (uniform temperature curve)

Setting instructions (cotter-pin mounting M8 to M24):



1 Produce drilled hole

2 Check diameter of cleaning brushes

3 Clean drill hole (blow out 2 x, brush out mechanically 2 x, blow out 2 x), with M20 and larger, blow out with compressed air (compressed-air nozzle!)

4 Screw mixer onto cartridge

5 Before use, press out approx. 10 cm cord. Do not use this initial mortar!

6 Fill composite mortar starting from base of drill hole

7 Press in anchor rod up to drill hole base while turning slightly

8 Visual check of mortar filling quantity, setting depth marking

9 Comply with hardening time of composite mortar

10 Mount component, apply installation torque

INJECTION SYSTEM W-VIZ WITH WIT-VM 100

Dimensions of W-VIZ-A/S Anchor Bar, galvanized steel



Designation	Anchor dia.	Effective anchoring depth h_{ef} [mm]	Attachment height t_{fix} [mm]	Total length L [mm]	Drill bit nominal dia. d_o [mm]	Drill hole depth $h_o \geq$ [mm]	No. attachment points per cartridge Approx. qty.	Approval ETA	Art. No.	P. Qty.	
W-VIZ-A/S	M8	40	15	65	10	42	75	ETA-04/0095	0905 440 811	10	
		50	15	80		55	62		0905 440 801		
			30	95					0905 440 802		
			45	110					0905 440 803		
	M10	60	10	85	12	65	42		0905 441 001		
			20	95					0905 441 002		
			30	105					0905 441 003		
			60	135					0905 441 004		
			100	175					0905 441 005		
		75	20	110	80	36	0905 441 011				
		M12	70	25	115	14	75		37		0905 441 211
			80	10	110		85		30		0905 441 201
	25			125	0905 441 202						
	50			150	0905 441 203						
	100			200	0905 441 204						
	125			225	0905 441 205						
	165		265	0905 441 206							
	95		25	140	100		28		0905 441 221		
	100		25	145	105				0905 441 251		
			60	180					0905 441 252		
	100		100	220	115		27		0905 441 253		
	110		25	155					0905 441 261		
	125	25	170	130		0905 441 271					
	M16	90	30	145	18	98	23		0905 441 611		
		105	30	160		113	20		0905 441 621		
			30	180					0905 441 601		
		125	60	210		133	18		0905 441 602		
			100	250					0905 441 603		
			165	315					0905 441 604		
		145	30	200		153	16		0905 441 631		
	M20	115	30	175	22	120	12		0905 442 011		
		170	25	230	24	180	8		0905 442 001		
50			255	0905 442 002							
100			305	0905 442 003							
190	50	275	200	0905 442 021							
M24	200	50	290	26	215	7	0905 442 401				
	100	340	240		6	0905 442 402					
	225	50				315	0905 442 411				

Drill hole cleaning

Anchor diameter [mm]	M8	M10	M12	M16	M20 h_{ef} 115	M20	M24
Cleaning Brush (steel)	Art. No. 0905 499 001 P. Qty. = 1	0905 499 002	0905 499 003	0905 499 004	0905 499 007	0905 499 005	0905 499 006
Machine Mounting	Hexagon: Art. No. 0905 499 101 SDS-plus compatible Art. No. 0905 499 102						
Extension	Art. No. 0905 499 111 P. Qty. = 1						
Brush Template	Art. No. 0905 499 099 P. Qty. = 1						
Blow-Out Pump	Art. No. 0903 990 001 Blow-Out Pump: Art. No. 0903 990 001 M8 Reduction Attachment for blow-out pump: Art. No. 0905 499 202				Compressed-Air Nozzle ¹⁾ : Art. No. 0905 499 201		

¹⁾ Compressed-air nozzle designed for Blow-Out Gun Art. No. 0714 92 13

INJECTION SYSTEM W-VIZ WITH WIT-VM 100

W-VIZ-A/S Characteristic values M8 - M12													
Anchor diameter [mm]		M8 h _{ef} 40	M8 h _{ef} 50	M10 h _{ef} 60	M10 h _{ef} 75	M12 h _{ef} 70	M12 h _{ef} 80	M12 h _{ef} 95	M12 h _{ef} 100	M12 h _{ef} 110	M12 h _{ef} 125		
Minimum component thickness	h _{min} ≥ [mm]	80	80	100	110/100 ⁵⁾	110	110	130/125 ⁵⁾	130	140	160		
Minimal axis distance cracked concrete non-cracked concrete	s _{min} ≥ [mm]	40 40	40 40	40 50	40 50	55 55	40 55	40 55	50 80 ⁶⁾	50 80 ⁶⁾	50 80 ⁶⁾	50 80 ⁶⁾	50 80 ⁶⁾
Minimal edge clearance cracked concrete non-cracked concrete	c _{min} ≥ [mm]	40 40	40 40	40 50	40 50	55 55	50 55	50 55	50 55	50 55	50 55	50 55	50 55
Effective anchoring depth	h _{ef} ≥ [mm]	40	50	60	75	70	80	95	100	110	125		
Nom. drill dia.	d ₀ [mm]	10	10	12	12	14	14	14	14	14	14		
Drill hole depth	h ₀ ≥ [mm]	42	55	65	80	75	85	100	105	115	130		
Torque while installing anchor	T _{inst} = [Nm]	10	10	15	15	25	25	25	30	30	30		
Cleaning brush dia.	D ≥ [mm]	10.8	10.8	13.0	13.0	15.0	15.0	15.0	15.0	15.0	15.0		

Performance data M8 - M12														
Anchor diameter [mm]		M8 h _{ef} 40	M8 h _{ef} 50	M10 h _{ef} 60	M10 h _{ef} 75	M12 h _{ef} 70	M12 h _{ef} 80	M12 h _{ef} 95	M12 h _{ef} 100	M12 h _{ef} 110	M12 h _{ef} 125			
Perm. central tensile load ¹⁾ of a single anchor without edge influence	Tensile zone (cracked concrete C20/25 ²⁾ , s ≥ 3 h _{ef} , c ≥ 1.5 h _{ef})	N _{perm.} [kN] for C20/25 ²⁾	50 °C ³⁾ / 80 ° C ⁴⁾	4.3	6.1	8.0	11.1	10.0	12.3	15.9	17.1	19.8	24.0	
			72 ° C ³⁾ / 120 ° C ⁴⁾	2.4	3.6	5.7	5.7	7.6	9.5	9.5	14.3	14.3	14.3	
	Pressure zone (non-cracked concrete C20/25 ²⁾) Minimum axial and edge spacing (s _{cr,sp} ≥ 3 h _{ef} , c _{cr,sp} ≥ 1.5 h _{ef})	50 ° C ³⁾ / 80 ° C ⁴⁾	3.6	4.3	7.6	9.5	9.5	17.2	14.3	19.1	16.7	19.1		
			72 ° C ³⁾ / 120 ° C ⁴⁾	2.9	4.3	7.6	7.6	7.6	11.9	11.9	14.3	14.3	14.3	
Perm. transverse load ¹⁾ of a single anchor without edge influence	Tensile zone (cracked concrete C20/25 ²⁾ , c ≥ 10 h _{ef})	V _{perm.} [kN] for C20/25 ²⁾	50 ° C ³⁾ / 80 ° C ⁴⁾	4.3	8.5	11.2	11.9	14.1	17.2	19.1	24.0	23.8	23.8	
	Pressure zone (non-cracked concrete C20/25 ²⁾ , c ≥ 10 h _{ef})		8.0	8.0	12.0	12.0	19.4	19.4	19.4	19.4	19.4	19.4	19.4	
Permissible bending torque		T _{perm.} [Nm]		17.1	17.1	34.3	34.3	60	60	60	60	60	60	

W-VIZ-A/S Characteristic values M16 - M24													
Anchor diameter [mm]		M16 h _{ef} 90	M16 h _{ef} 105	M16 h _{ef} 125	M16 h _{ef} 145	M20 h _{ef} 115	M20 h _{ef} 170	M20 h _{ef} 190	M24 h _{ef} 200	M24 h _{ef} 225			
Minimum component thickness	h _{min} ≥ [mm]	130	150	170/160 ⁵⁾	190/180 ⁵⁾	160	230/220 ⁵⁾	250/240 ⁵⁾	270/260 ⁵⁾	300/290 ⁵⁾			
Minimal axis distance cracked concrete non-cracked concrete	s _{min} ≥ [mm]	50 50	50 60	60 60	60 60	80 80	80 80	80 80	80 105	80 105	80 105	80 105	80 105
Minimal edge clearance cracked concrete non-cracked concrete	c _{min} ≥ [mm]	50 50	50 60	60 60	60 60	80 80	80 80	80 80	80 105	80 105	80 105	80 105	80 105
Effective anchoring depth	h _{ef} ≥ [mm]	90	105	125	145	115	170	190	200	225			
Nom. drill dia.	d ₀ [mm]	18	18	18	18	22	24	24	26	26			
Drill hole depth	h ₀ ≥ [mm]	98	113	133	153	120	180	200	215	240			
Torque while installing anchor	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			

Performance data M8 - M24													
Anchor diameter [mm]		M16 h _{ef} 90	M16 h _{ef} 105	M16 h _{ef} 125	M16 h _{ef} 145	M20 h _{ef} 115	M20 h _{ef} 170	M20 h _{ef} 190	M24 h _{ef} 200	M24 h _{ef} 225			
Perm. central tensile load ¹⁾ of a single anchor without edge influence	Tensile zone (cracked concrete C20/25 ²⁾ , s ≥ 3 h _{ef} , c ≥ 1.5 h _{ef})	N _{perm.} [kN] for 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 (non-cracked concrete C20/25 ²⁾) Minimum axial and edge spacing (s _{cr,sp} ≥ 3 h _{ef} , c _{cr,sp} ≥ 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	
Perm. transverse load ¹⁾ of a single anchor without edge influence	Tensile zone (cracked concrete C20/25 ²⁾ , c ≥ 10 h _{ef})	V _{perm.} [kN] for C20/25 ²⁾	50 ° C ³⁾ / 80 ° C ⁴⁾	20.5	25.8	33.5	35.7	29.6	53.2	62.9	67.9	81.0	
	Pressure zone (non-cracked concrete C20/25 ²⁾ , c ≥ 10 h _{ef})		29.3	36.0	36.0	36.0	35.7	76.0	85.1	97.0	101.7		
Permissible bending torque		T _{perm.} [Nm]		152.0	152.0	152.0	152.0	200.0	296.6	296.6	512.0	512.0	

INJECTION SYSTEM W-VIZ WITH WIT-VM 100

Anchor bar dimensions: W-VIZ-A/A4, A4 stainless steel



Designation	Anchor dia.	Effective anchoring depth h_{ef} [mm]	Attachment height t_{fix} [mm]	Total length L [mm]	Drill bit nominal dia. d_0 [mm]	Drill hole depth $h_0 \geq$ [mm]	No. attachment points per cartridge Approx. qty.	Approval ETA	Art. No.	P. Qty.	
W-VIZ-A/A4	M8	40	15	65	10	42	75	ETA-04/0095	0905 450 811	10	
		50	15	80		55	62		0905 450 801		
			30	95					0905 450 802		
			45	110					0905 450 803		
	M10	60	10	85	12	65	42		0905 451 001		
			20	95					0905 451 002		
			30	105					0905 451 003		
			60	135					0905 451 004		
		75	100	175		80	36		0905 451 005		
			20	110					0905 451 011		
			25	115					0905 451 211		
			10	110					0905 451 201		
	M12	80	25	125	14	85	30		0905 451 202		
			50	150					0905 451 203		
			100	200					0905 451 204		
			125	225					0905 451 205		
			165	265					0905 451 206		
			95	25					140		100
		100	25	145		105	0905 451 251				
			60	180			0905 451 252				
		110	100	220		115	27		0905 451 253		
			25	155					0905 451 261		
			25	170					130		0905 451 271
			90	30					145		18
	105	30	160	113	20	0905 451 621					
		30	180			133	18		0905 451 601		
	125	60	210	0905 451 602							
		100	250	0905 451 603							
	165	315	153	16	0905 451 604						
	145	30	200	153	16	0905 451 631					
	M20	115	30	175	22	120	12		0905 452 011		
			25	230					0905 452 001		
		170	50	255		24	180		8		0905 452 002
			100	305							0905 452 003
	190	50	275	200	0905 452 021						
		50	290		0905 452 401						
M24	200	100	340	26	215	7	0905 452 402				
		50	315				0905 452 411				
	225	50	315		240	6					

INJECTION SYSTEM W-VIZ WITH WIT-VM 100

W-VIZ-A/A4 Characteristic values M8 - M12																				
Anchor diameter [mm]		M8 h _{ef} 40	M8 h _{ef} 50	M10 h _{ef} 60	M10 h _{ef} 75	M12 h _{ef} 70	M12 h _{ef} 80	M12 h _{ef} 95	M12 h _{ef} 100	M12 h _{ef} 110	M12 h _{ef} 125									
Minimum component thickness	h _{min} ≥ [mm]	80		100	110/100 ⁵⁾		110	110	130/125 ⁵⁾		130	140	160							
Minimal axis distance cracked concrete non-cracked concrete	s _{min} ≥ [mm]	40	40	40	40	50	40	50	55	55	40	55	40	55	50	80 ⁶⁾	50	80 ⁶⁾	50	80 ⁶⁾
Minimal edge clearance cracked concrete non-cracked concrete	c _{min} ≥ [mm]	40	40	40	40	50	40	50	55	55	50	55	50	55	50	55	50	55	50	55
Effective anchoring depth	h _{ef} ≥ [mm]	40	50	60	75	70	80	95	100	110	125									
Nom. drill dia.	d ₀ [mm]	10	10	12	12	14	14	14	14	14	14									
Drill hole depth	h ₀ ≥ [mm]	42	55	65	80	75	85	100	105	115	130									
torque while installing anchor	T _{inst} ≤ [Nm]	10	10	15	15	25	25	25	30	30	30									
Cleaning brush dia.	D ≥ [mm]	10.8	10.8	13.0	13.0	15.0	15.0	15.0	15.0	15.0	15.0									

Performance data													
Anchor diameter [mm]		M8 h _{ef} 40	M8 h _{ef} 50	M10 h _{ef} 60	M10 h _{ef} 75	M12 h _{ef} 70	M12 h _{ef} 80	M12 h _{ef} 95	M12 h _{ef} 100	M12 h _{ef} 110	M12 h _{ef} 125		
Permissible central tensile load ¹⁾ of a single anchor without edge influence	Tensile zone (cracked concrete C20/25 ²⁾ , s ≥ 3 h _{ef} , c ≥ 1.5 h _{ef})	N _{perm.} [kN] for C20/25 ²⁾	50 °C ³⁾ / 80 ° C ⁴⁾	4.3	6.1	8.0	11.1	10.0	12.3	15.9	17.1	19.8	24.0
			72 ° C ³⁾ / 120 ° C ⁴⁾	2.4	3.6	5.7	5.7	7.6	9.5	9.5	14.3	14.3	14.3
			50 ° C ³⁾ / 80 ° C ⁴⁾	3.6	4.3	7.6	9.5	9.5	17.2	14.3	19.1	16.7	19.1
			72 ° C ³⁾ / 120 ° C ⁴⁾	2.9	4.3	7.6	7.6	7.6	11.9	11.9	14.3	14.3	14.3
Perm. transverse load ¹⁾ of a single anchor without edge influence	Tensile zone (cracked concrete C20/25 ²⁾ , c ≥ 10 h _{ef})	V _{perm.} [kN] for C20/25 ²⁾	50 ° C ³⁾ / 80 ° C ⁴⁾	4.3	8.5	11.2	11.9	14.1	17.2	19.1	24.0	23.8	23.8
	Pressure zone (non-cracked concrete C20/25 ²⁾) Minimum axial and edge spacing (s _{cr,sp} ≥ 3 h _{ef} , c _{cr,sp} ≥ 1.5 h _{ef})		8.0	8.0	12.0	12.0	19.4	19.4	19.4	19.4	19.4	19.4	19.4
Perm. transverse load ¹⁾ of a single anchor without edge influence	Pressure zone (non-cracked concrete C20/25 ²⁾) maximum carrying capacity (s _{cr,sp} and c _{cr,sp} see permit)	V _{perm.} [kN] for C20/25 ²⁾	50 ° C ³⁾ / 80 ° C ⁴⁾	8.0	8.0	12.0	12.0	19.4	19.4	19.4	19.4	19.4	19.4
	Tensile zone (cracked concrete C20/25 ²⁾ , c ≥ 10 h _{ef})		8.0	8.0	12.0	12.0	19.4	19.4	19.4	19.4	19.4	19.4	19.4
Permissible bending torque	T _{perm.} [Nm]	17.1	17.1	34.3	34.3	60	60	60	60	60	60	60	60

W-VIZ-A/A4 Characteristic values M16 - M24																	
Anchor diameter [mm]		M16 h _{ef} 90	M16 h _{ef} 105	M16 h _{ef} 125	M16 h _{ef} 145	M20 h _{ef} 115	M20 h _{ef} 170	M20 h _{ef} 190	M24 h _{ef} 200	M24 h _{ef} 225							
Minimum component thickness	h _{min} ≥ [mm]	130	150	170/160 ⁵⁾		190/180 ⁵⁾		160	230/220 ⁵⁾		250/240 ⁵⁾		270/260 ⁵⁾		300/290 ⁵⁾		
Minimal axis distance cracked concrete non-cracked concrete	s _{min} ≥ [mm]	50	50	50	60	60	60	60	80	80	80	80	80	80	105	80	105
Minimal edge clearance cracked concrete non-cracked concrete	c _{min} ≥ [mm]	50	50	50	60	60	60	60	80	80	80	80	80	80	105	80	105
Effective anchoring depth	h _{ef} ≥ [mm]	90	105	125	145	115	170	190	200	225							
Nom. drill dia.	d ₀ [mm]	18	18	18	18	22	24	24	26	26							
Drill hole depth	h ₀ ≥ [mm]	98	113	133	153	120	180	200	215	240							
torque while installing anchor	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							

Performance data												
Anchor diameter [mm]		M16 h _{ef} 90	M16 h _{ef} 105	M16 h _{ef} 125	M16 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 ≥ 3 h _{ef} , c ≥ 1.5 h _{ef})	N _{perm.} [kN] for 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
			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
Perm. transverse load ¹⁾ of a single anchor without edge influence	Pressure zone (non-cracked concrete C20/25 ²⁾) Minimum axial and edge spacing (s _{cr,sp} ≥ 3 h _{ef} , c _{cr,sp} ≥ 1.5 h _{ef})	V _{perm.} [kN] for C20/25 ²⁾	50 ° C ³⁾ / 80 ° C ⁴⁾	20.5	25.8	33.5	35.7	29.6	53.2	62.9	67.9	81.0
	Tensile zone (cracked concrete C20/25 ²⁾ , c ≥ 10 h _{ef})		29.3	36.0	36.0	36.0	35.7	76.0	85.1	97.0	101.7	
Perm. transverse load ¹⁾ of a single anchor without edge influence	Pressure zone (non-cracked concrete C20/25 ²⁾) maximum carrying capacity (s _{cr,sp} and c _{cr,sp} see permit)	V _{perm.} [kN] for C20/25 ²⁾	50 ° C ³⁾ / 80 ° C ⁴⁾	36.0	36.0	36.0	36.0	35.7	85.1	85.1	101.7	101.7
	Tensile zone (cracked concrete C20/25 ²⁾ , c ≥ 10 h _{ef})		36.0	36.0	36.0	36.0	35.7	85.1	85.1	101.7	101.7	
Permissible bending torque	T _{perm.} [Nm]	152.0	152.0	152.0	152.0	200.0	296.6	296.6	512.0	512.0		

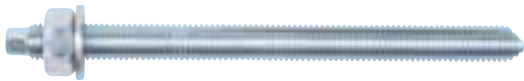
INJECTION SYSTEM WIT-UH 300



420ml
Art. No. 5918 500 420



ø8 - ø32



M8 - M30

Applications:



Approved for:

C20/25 to C50/60 cracked and non-cracked concrete

Benefits:

- Styrene-free, quick-curing high-performance vinylester mortar allows the anchorage to be finished in a short period of time.
- Most approvals guaranty optimized load capacities for threaded rods and rebar.
- Universal fixing system for a broad range of applications on building sites.
- The special chemical composition allows working in high corrosion areas.

Approvals and Certificates:



Temperature of Concrete	Gelling - working time	Minimum Curing time in dry concrete	Minimum Curing time in wet concrete
-5°C bis -1°C	50 min	5 h	10 h
0°C bis 4°C	25 min	3.5 h	7 h
5°C bis 9°C	15 min	2 h	4 h
10°C bis 14°C	10 min	60 min	2 h
15°C bis 19°C	6 min	40 min	80 min
20°C bis 29°C	3 min	30 min	60 min
30°C bis 40°C	2 min	30 min	60 min

1) Cartridge temperature 5°C to 40°C

Installation:

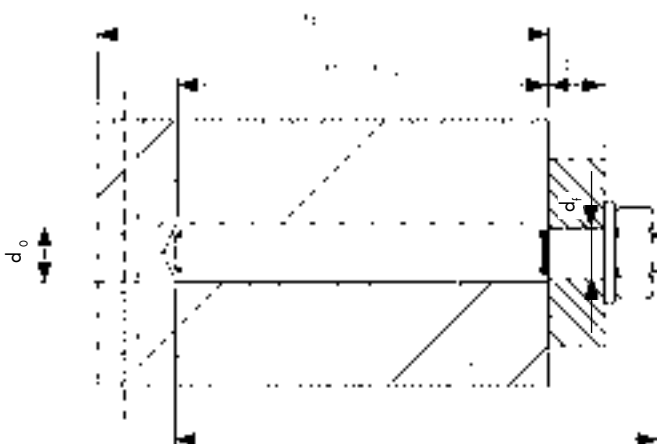


INJECTION SYSTEM WIT-UH 300

Recommended loads											
Thread size		M		M8	M10	M12	M16	M20	M24	M27	M30
Effective anchorage depth		$h_{ef,typ}$	[mm]	80	90	110	125	170	210	240	270
Non-cracked concrete											
Tensile	C20/25	N_{perm}	[kN]	8.7	13.5	19.7	28.0	44.4	61.0	74.5	88.9
	C50/60	N_{perm}	[kN]	8.7	13.8	20.1	30.8	48.9	67.1	82.0	97.8
Shear	\geq C20/25	V_{perm}	[kN]	5.3	8.3	12.1	22.4	35.0	50.3	65.6	80.1
Cracked concrete											
Tensile	C20/25	N_{perm}	[kN]	5.2	7.9	12.3	21.2	31.7	43.6	53.2	63.5
	C50/60	N_{perm}	[kN]	5.7	8.6	13.6	23.3	34.9	47.9	58.5	69.9
Shear	\geq C20/25	V_{perm}	[kN]	5.3	8.3	12.1	22.4	35.0	50.3	65.6	80.1

Material safety factor γ_M and safety factor for the loads $\gamma_L = 1.4$ are included. The material safety factor depends on the failure mode. Steel grade 5.8

Anchor characteristic											
Thread size		M		M8	M10	M12	M16	M20	M24	M27	M30
Effective anchorage depth		$h_{ef,min}$	[mm]	60	60	70	80	90	96	108	120
		$h_{ef,max}$	[mm]	160	200	240	320	400	480	540	600
Nominal drill hole diameter		d_o	[mm]	10	12	14	18	22	28	30	35
Drill depth		h_o / h_1	[mm]	$= h_{ef}$							
Clearance-hole in fixture to be attached		d_f	[mm]	9	12	14	18	22	26	30	33
Wrench size		SW	[mm]	13	17	19	24	30	36	41	46
Required torque		T_{inst}	[Nm]	10	20	40	80	120	160	180	200
Min. thickness of concrete member		h_{min}	[mm]	$= h_{ef} + 30mm \geq 100mm$				$= h_{ef} + 2d_o$			
Minimum spacing		s_{min}	[mm]	40	50	60	80	100	120	135	150
Minimum edge distances		c_{min}	[mm]	40	50	60	80	100	120	135	150

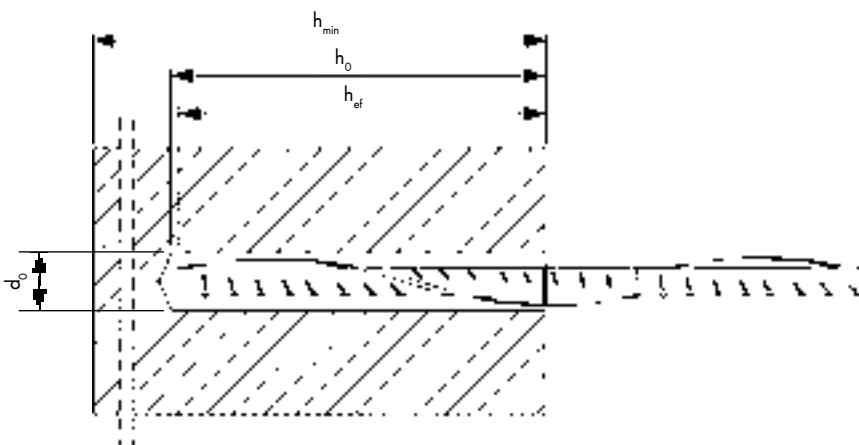


INJECTION SYSTEM WIT-UH 300

Recommended Loads												
Rebar size		\emptyset		$\emptyset 8$	$\emptyset 10$	$\emptyset 12$	$\emptyset 14$	$\emptyset 16$	$\emptyset 20$	$\emptyset 25$	$\emptyset 28$	$\emptyset 32$
Effective anchorage depth		$h_{ef,typ}$	[mm]	80	90	110	125	125	170	210	270	300
Non-cracked concrete												
Tensile	C20/25	N_{perm}	[kN]	13.4	18.8	27.6	33.6	33.6	44.4	61.0	88.9	104.1
	C50/60	N_{perm}	[kN]	14.1	20.7	30.4	37.0	37.0	48.9	67.1	97.8	114.5
Shear	$\geq C20/25$	V_{perm}	[kN]	6.6	10.3	14.8	20.2	26.3	41.1	64.3	80.6	105.3
Cracked concrete												
Tensile	C20/25	N_{perm}	[kN]	4.0	6.2	9.9	15.0	23.4	31.7	43.6	63.5	74.4
	C50/60	N_{perm}	[kN]	4.4	6.8	10.9	16.5	25.7	34.9	47.9	69.9	81.8
Shear	$\geq C20/25$	V_{perm}	[kN]	6.6	10.3	14.8	20.2	26.3	41.1	64.3	80.6	105.3

Material safety factor γ_M and safety factor for the loads $\gamma_L = 1.4$ are included. The material safety factor depends on the failure mode. $f_{yk} = 500N/mm^2$

Anchor characteristic												
Rebar size		\emptyset		$\emptyset 8$	$\emptyset 10$	$\emptyset 12$	$\emptyset 14$	$\emptyset 16$	$\emptyset 20$	$\emptyset 25$	$\emptyset 28$	$\emptyset 32$
Effective anchorage depth		$h_{ef,min}$	[mm]	60	60	70	75	80	90	100	112	128
		$h_{ef,max}$	[mm]	160	200	240	280	320	400	480	540	640
Nominal drill hole diameter		d_0	[mm]	12	14	16	18	20	25	32	35	40
Drill depth		h_0 / h_1	[mm]	$= h_{ef}$								
Min. thickness of concrete member		h_{min}	[mm]	$= h_{ef} + 30mm \geq 100mm$				$= h_{ef} + 2d_0$				
Minimum spacing		s_{min}	[mm]	40	50	60	70	80	100	125	140	160
Minimum edge distances		c_{min}	[mm]	40	50	60	70	80	100	125	140	160



INJECTION SYSTEM WIT-VM 250

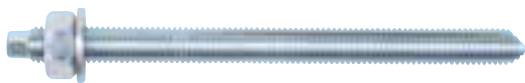


420 ml

Art. No. : 0903 450 205



∅8 - ∅32



M8 - M30

Applications:



Approved for:

Concrete C20 / 25 to C50/60, cracked and non-cracked

Benefits:

- Styrene-free, quick-curing high-performance vinylester mortar allows the anchorage to be finished in a short period of time.
- Most approvals guaranty optimized load capacities for threaded rods and rebar.
- Universal fixing system for a broad range of applications on building sites.
- The special chemical composition allows working in high corrosion areas.

Approvals and Certificates:



Temperature of Concrete	Gelling - working time	Minimum Curing time in dry concrete	Minimum Curing time in wet concrete
-10°C bis -4°C ¹⁾	90 min	24 h	48 h
-5°C bis -1°C	90 min	14 h	28 h
0°C bis 4°C	45 min	7 h	14 h
5°C bis 10°C	25 min	2 h	4 h
10°C bis 19°C	15 min	80 min	160 min
20°C bis 29°C	6 min	45 min	90 min
30°C bis 34°C	4 min	25 min	50 min
35°C bis 39°C	4 min	20 min	40 min
≥ 40°C	1.5 min	15 min	30 min

Cartridge temperature must be at min. 15°C¹⁾

Installation:

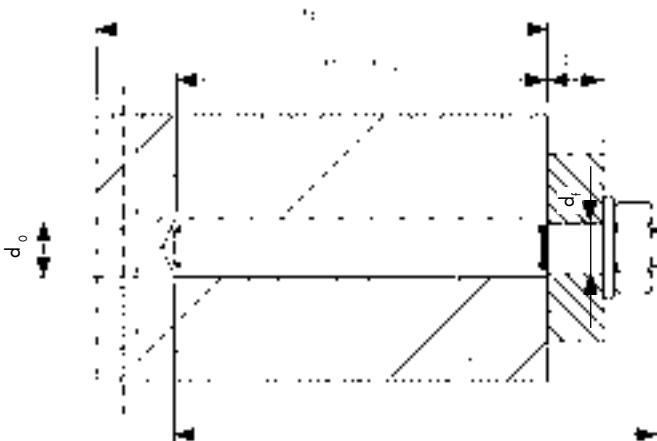


INJECTION SYSTEM WIT-VM 250

Recommended loads											
Thread size				M8	M10	M12	M16	M20	M24	M27	M30
Effective anchorage depth		$h_{ef,typ}$	[mm]	80	90	110	125	170	210	240	270
Non-cracked concrete											
Tensile	C20/25	N_{perm}	[kN]	8.7	13.5	19.7	28.0	44.4	61.0	74.5	88.9
	C50/60	N_{perm}	[kN]	8.7	13.8	20.1	30.8	48.9	67.1	82.0	97.8
Shear	$\geq C20/25$	V_{perm}	[kN]	5.3	8.3	12.1	22.4	35.0	50.3	65.6	80.1
Cracked concrete											
Tensile	C20/25	N_{perm}	[kN]			9.1	13.7	23.3	34.6	52.5	63.5
	C50/60	N_{perm}	[kN]			10.0	15.1	25.6	38.0	57.8	69.9
Shear	$\geq C20/25$	V_{perm}	[kN]			12.1	22.4	35.0	50.3	65.6	80.1

¹⁾ Material safety factor γ_{M1} and safety factor for action $\gamma_1 = 1.4$ are included. The material safety factor depends on the failure mode. Steel grade 5.8

Anchor Characteristics												
Thread size				M8	M10	M12	M16	M20	M24	M27	M30	
Effective anchorage depth	$h_{ef,min}$	[mm]		60	60	70	80	90	96	108	120	
	$h_{ef,max}$	[mm]		160	200	240	320	400	480	540	600	
Nominal drill hole diameter	d_o	[mm]		10	12	14	18	24	28	32	35	
Drill depth	h_0 / h_1	[mm]		$= h_{ef}$								
Diameter of steel brush	$d_b \geq$	[mm]		12	14	16	20	26	30	34	37	
Clearance-hole in fixture to be attached	d_f	[mm]		9	12	14	18	22	26	30	33	
Wrench size	SW	[mm]		13	17	19	24	30	36	41	46	
Required torque	T_{inst}	[Nm]		10	20	40	80	120	160	180	200	
Min. thickness of concrete member	h_{min}	[mm]		$= h_{ef} + 30mm \geq 100mm$				$= h_{ef} + 2d_o$				
Minimum spacing	s_{min}	[mm]		40	50	60	80	100	120	135	150	
Minimum edge distances	c_{min}	[mm]		40	50	60	80	100	120	135	150	

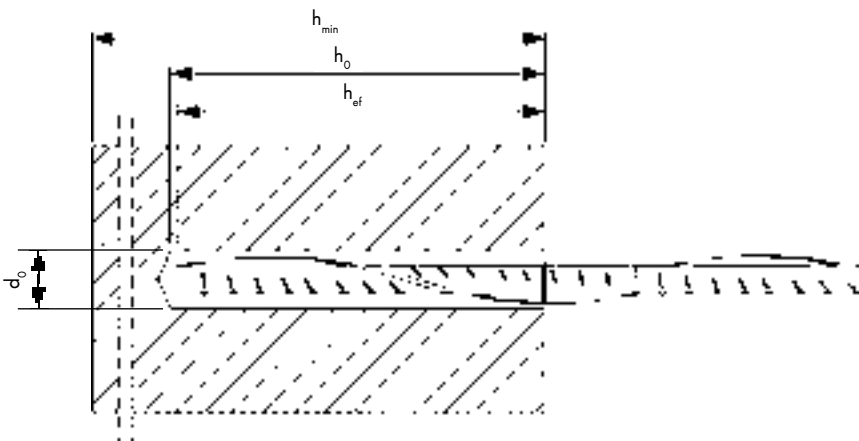


INJECTION SYSTEM WIT-VM 250

Recommended loads												
Rebar size				Ø8	Ø10	Ø12	Ø14	Ø16	Ø20	Ø25	Ø28	Ø32
Effective anchorage depth		$h_{ef,typ}$	[mm]	80	90	110	125	125	170	210	270	300
Non-cracked concrete												
Tensile	C20/25	N_{perm}	[kN]	9.6	13.5	19.7	28.0	28.0	44.4	61.0	88.9	101.7
	C50/60	N_{perm}	[kN]	10.5	14.8	21.7	30.8	30.8	48.9	67.1	97.8	111.9
Shear	≥ C20/25	V_{perm}	[kN]	6.6	10.3	14.8	20.2	26.3	41.1	64.3	80.6	80.6
Cracked concrete												
Tensile	C20/25	N_{perm}	[kN]			9.1	13.7	17.1	28.0	38.9	63.5	74.4
	C50/60	N_{perm}	[kN]			10.0	15.1	18.9	30.8	42.8	69.9	81.8
Shear	≥ C20/25	V_{perm}	[kN]			14.8	20.2	26.3	41.1	64.3	80.6	80.6

¹⁾ Material safety factor γ_{M1} and safety factor for action $\gamma_1 = 1.4$ are included. The material safety factor depends on the failure mode.

Anchor Characteristics												
Rebar size				Ø8	Ø10	Ø12	Ø14	Ø16	Ø20	Ø25	Ø28	Ø32
Effective anchorage depth	$h_{ef,min}$		[mm]	60	60	70	75	80	90	100	112	128
	$h_{ef,max}$		[mm]	160	200	240	280	320	400	480	540	640
Nominal drill hole diameter	d_o		[mm]	12	14	16	18	20	24	32	35	40
Drill depth	h_o / h_1		[mm]	= h_{ef}								
Diameter of steel brush	$d_b \geq$		[mm]	14	16	18	20	22	26	34	37	41.5
Min. thickness of concrete member	h_{min}		[mm]	= $h_{ef} + 30\text{mm}$ ≥ 100mm			= $h_{ef} + 2d_o$					
Minimum spacing	s_{min}		[mm]	40	50	60	70	80	100	125	140	160
Minimum edge distances	c_{min}		[mm]	40	50	60	70	80	100	125	140	160



INJECTION SYSTEM WIT-EA 200



420ml

Art. No. 5918 320 420

Approved for:

C20/25 to C50/60 non-cracked concrete and masonry

Benefits:

- Styrene free Epoxy Acrylate Mortar
- Fast Curing
- For non cracked concrete and masonry



M8 - M24

Applications:



Securing wooden structures, metal structures, metal profiles, brackets, screens, plumbing objects,, cable conduits

Approvals and Certificates:



Temperature of Concrete	Gelling - working time	Minimum Curing time in dry concrete	Minimum Curing time in wet concrete
5°C bis 9°C	60 min	72 h	142 h
10°C bis 19°C	45 min	45 h	90 h
20°C bis 29°C	30 min	10 h	20 h
30°C bis 39°C	20 min	6 h	12 h
≥ 40°C	12 min	4 h	8 h

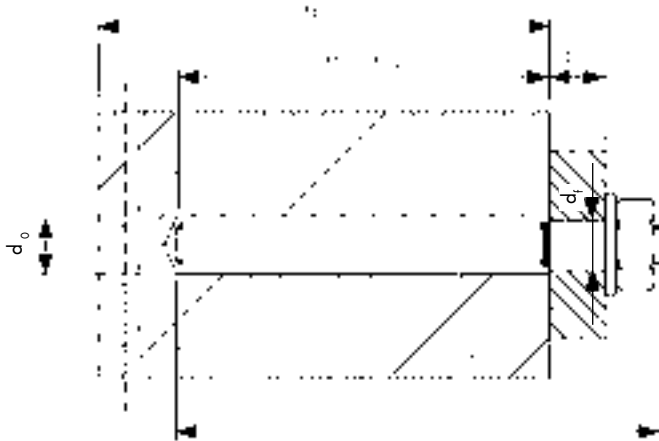
Installation:



INJECTION SYSTEM WIT-EA 200

Anchor size			M8	M10	M12	M16	M20	M24
Stressed cross section	A_s	[mm ²]	36.61	57.99	84.26	156.67	244.79	352.49
Nominal diameter	d_{nom}	[mm]	8	10	12	16	20	24
Typical anchorage depth	$h_{ef,typ}$	[mm]	80	90	110	125	170	210
Minimum thickness of base material	h_{min}	[mm]	110	120	140	160	215	260
Tightening torque	T_{inst}	[Nm]	10	20	40	60	120	150
Zinc Plated								
Recommended loads: non-cracked concrete C20/25								
Tensile, Zinc plated stud 5.8	N_{perm}	[kN]	6.3	13.8	13.9	19.8	29.8	37.7
Shear, Zinc plated stud 5.8	N_{perm}	[kN]	5.3	8.3	12.1	22.4	35.0	50.3
Stainless								
Recommended loads: non-cracked concrete C20/25								
Tensile, Zinc plated stud A4-70	N_{perm}	[kN]	6.3	13.9	13.9	19.8	29.8	37.7
Shear, Zinc plated stud A4-70	V_{perm}	[kN]	6.0	9.2	13.7	25.2	39.4	56.8

Material safety factor γ_m and safety factor for action $\gamma_L = 1.4$ are included. The material safety factor depends on the failure mode.



INJECTION SYSTEM WIT-PE 500

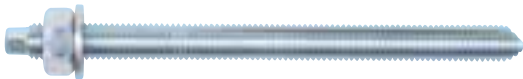


385 ml
Art. No. : 0903 480 001

585 ml
Art. No. : 0903 480 005



∅8 - ∅40



M8 - M30

Suitable for:

C20/25 to C50/60 cracked and non-cracked concrete

Benefits:

- The prolonged gelling/working time allows convenient adjustment at higher temperature and with large embedment depth.
- Most approvals guarantee the optimized load capacities for threaded rods and rebar.
- It is specially developed chemical composition that allows reliable installation in underwater conditions and when filled in diamond core drill holes.
- The low shrinkage of the mortar broadens the application spectrum in addition for big diameter fastener elements.

Applications:



Approvals and Certificates:



Temperature of Concrete	Gelling - working time	Minimum Curing time in dry concrete	Minimum Curing time in wet concrete
5°C to 9°C	60 min	72 h	142 h
10°C to 19°C	45 min	45 h	90 h
20°C to 29°C	30 min	10 h	20 h
30°C to 39°C	20 min	6 h	12 h
≥ 40°C	12 min	4 h	8 h

Installation:

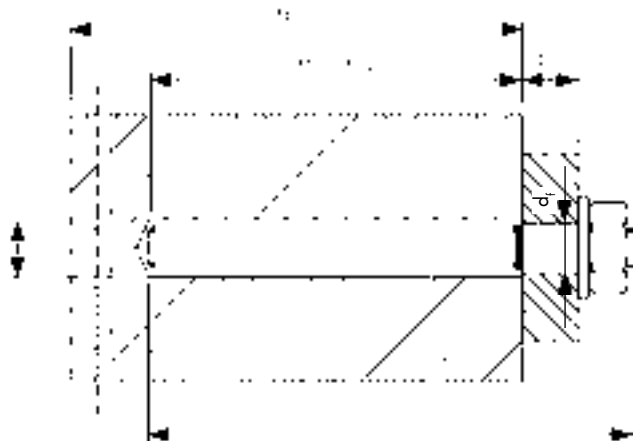


INJECTION SYSTEM WIT-PE 500

Recommended loads											
Thread size				M8	M10	M12	M16	M20	M24	M27	M30
Effective anchorage depth		$h_{ef,typ}$	[mm]	80	90	110	125	170	210	240	270
Non-cracked concrete											
Tensile	C20/25	N_{perm}	[kN]	8.7	13.8	20.1	28.0	38.1	52.3	63.9	76.2
	C50/60	N_{perm}	[kN]	8.7	13.8	20.1	30.8	41.9	57.5	70.3	83.8
Shear	$\geq C20/25$	V_{perm}	[kN]	5.3	8.3	12.1	22.4	35.0	50.3	65.6	80.1
Cracked concrete											
Tensile	C20/25	N_{perm}	[kN]			12.3	16.2	21.8	29.6	38.1	47.6
	C50/60	N_{perm}	[kN]			13.6	17.8	24.0	32.6	41.9	52.4
Shear	$\geq C20/25$	V_{perm}	[kN]			12.1	22.4	35.0	50.3	65.6	80.1

¹⁾ Material safety factor γ_M and safety factor for action $\gamma_L = 1.4$ are included. The material safety factor depends on the failure mode. Steel Grade 5.8

Anchor Characteristic											
Thread size				M8	M10	M12	M16	M20	M24	M27	M30
Effective anchorage depth	$h_{ef,min}$	[mm]		60	60	70	80	90	96	108	120
	$h_{ef,max}$	[mm]		96	120	144	192	240	288	324	360
Nominal drill hole diameter	d_o	[mm]		10	12	14	18	24	28	32	35
Drill depth	h_o / h_1	[mm]		= hef							
Clearance-hole in fixture to be attached	d_f	[mm]		9	12	14	18	22	26	30	33
Wrench size	SW	[mm]		13	17	19	24	30	36	41	46
Required torque	T_{inst}	[Nm]		10	20	40	80	120	160	180	200
Min. thickness of concrete member	h_{min}	[mm]		= hef + 30mm \geq 100mm				= hef + 2 d_o			
Minimum spacing	s_{min}	[mm]		40	50	60	80	100	120	135	150
Minimum edge distances	c_{min}	[mm]		40	50	60	80	100	120	135	150

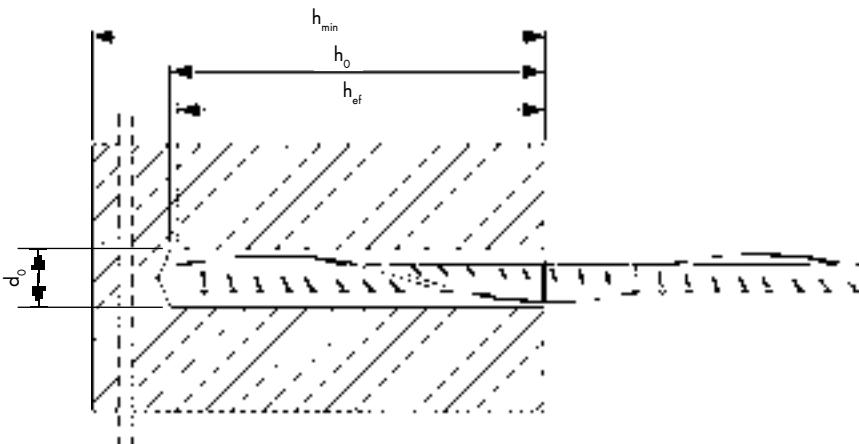


INJECTION SYSTEM WIT-PE 500

Recommended loads												
Rebar size				Ø8	Ø10	Ø12	Ø14	Ø16	Ø20	Ø25	Ø28	Ø32
Effective anchorage depth		$h_{ef,typ}$	[mm]	80	90	110	125	125	170	210	270	300
Non-cracked concrete												
Tensile	C20/25	N_{perm}	[kN]	11.2	15.7	21.4	28.0	28.0	38.1	52.3	76.2	89.3
	C50/60	N_{perm}	[kN]	12.3	17.3	23.5	30.8	30.8	41.9	57.5	83.8	98.2
Shear	≥ C20/25	V_{perm}	[kN]	6.6	10.3	14.8	20.2	26.3	41.1	64.3	80.6	105.3
Cracked concrete												
Tensile	C20/25	N_{perm}	[kN]			12.3	15.3	16.2	21.8	29.6	42.8	56.4
	C50/60	N_{perm}	[kN]			13.6	16.8	17.8	24.0	32.6	47.1	62.1
Shear	≥ C20/25	V_{perm}	[kN]			14.8	20.2	26.3	41.1	64.3	80.6	105.3

.Material safety factor γ_M and safety factor for action $\gamma_L = 1.4$ are included. The material safety factor depends on the failure mode

Anchor Characteristic												
Rebar size				Ø8	Ø10	Ø12	Ø14	Ø16	Ø20	Ø25	Ø28	Ø32
Effective anchorage depth	$h_{ef,min}$	[mm]		60	60	70	75	80	90	100	112	128
	$h_{ef,max}$	[mm]		96	120	144	168	192	240	300	336	384
Nominal drill hole diameter	d_o	[mm]		12	14	16	18	20	24	32	35	40
Drill depth	h_o / h_1	[mm]		= hef								
Min. thickness of concrete member	h_{min}	[mm]		= hef + 30mm ≥ 100mm				= hef + 2d _o				
Minimum spacing	s_{min}	[mm]		40	50	60	70	80	100	125	140	160
Minimum edge distances	c_{min}	[mm]		40	50	60	70	80	100	125	140	160

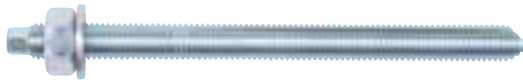


INJECTION SYSTEM WIT-P 200



420 ml

Art. No. : 5918 200 420



M8 - M20

Suitable for:

Masonry

Benefits:

- Styrene-free, quick-curing high-performance polyester mortar allows the anchorage to be finished in a short period of time.
- Universal fixing system for a broad range of applications on building sites.

Applications:



Temperature of Concrete	Gelling - working time	Minimum Curing time in dry concrete	Minimum Curing time in wet concrete
5°C to 10°C	25 min	2 h	4 h
10°C to 19°C	15 min	80 min	160 min
20°C to 29°C	6 min	45 min	90 min
30°C to 34°C	4 min	25 min	50 min
35°C	2 min	20 min	40 min

Installation:



BRUSHES FOR MASONRY



Size	Sleeve	Drill hole-Ø d ₀ [mm]	Art.No.	P.Qty.
M6		8	0905 499 020	1
	Suitable for WIT-SH 12/50	12	0905 499 022	1
M8		10	0905 499 021	1
	Suitable for SH 12	12	0905 499 022	1
		10	0905 499 021	1
	Suitable for WIT-SH 12/50	12	0905 499 022	1
		10	0905 499 021	1
	Suitable for WIT-SH 18/95	18	0905 499 024	1
M10		12	0905 499 022	1
	Suitable for SH 16	16	0905 499 025	1
		12	0905 499 022	1
	Suitable for WIT-SH 18/95	18	0905 499 024	1
M12		14	0905 499 023	1
	Suitable for SH 20	20	0905 499 026	1
		14	0905 499 023	1
	Suitable for WIT-SH 18/95	18	0905 499 024	1
M16		18	0905 499 024	1
	Suitable for SH 20	20	0905 499 026	1

ACCESSORIES



Handle for masonry cleaning brush

Connection thread M6

Art.No. 0905 499 103

P.Qty. 1

Connection thread M8

Art.No. 0903 489 103

P.Qty. 1



Extension

270 mm, Connection thread M6

Art.No. 0905 499 111

P.Qty. 1

345mm, Connection thread M8

Art.No. 0903 489 111

P.Qty. 1

BRUSHES FOR CONCRETE



Cleaning accessories: Cleaning brush with Connection thread M8



Rod Diameter	Rebar-Ø d _r [mm]	Drill hole-Ø d ₀ [mm]	Brush-Ø d _b [mm]	Minimum-Brush-Ø d _{b,min} [mm]	Cleaning brush (Connection thread M8)		Extension 2 x 345 mm (Connection thread M8)	SDS plus compatible fitting
					Art.No. VE [St.] = 1	Art.No. VE [St.] = 1		
M8		10	10	5	RB 10	0903 489 510		M8Art.No. VE [St.] = 1
M10	8	12	14	12.5	RB 12	0903 489 512	0903 489 111	SDS plus compatible: 0903 489 101
M12	10	14	16	14.5	RB 14	0903 489 514		
	12	16	18	16.5	RB 16	0903 489 516		
M16	14	18	20	18.5	RB 18	0903 489 518		
M20	16	20	22	20.5	RB 20	0903 489 520		
		22	22	24	RB22	0903 489 522		
		20	25	27	25.5	RB 25		
M24	22	28	30	28.5	RB 28	0903 489 528		
	24	32	34	32.5	RB 32	0903 489 532		
	25	32	34	32.5	RB 32	0903 489 532		
M30	28	35	37	35.5	RB 35	0903 489 535		
	32	40	41.5	40.5	RB 40	0903 489 540		

¹⁾Cleaning brush with Connection thread M8



Reducing pipe for pump

Reduces the diameter from 10 mm to 8 mm.

Art.No. 0905 499 202

P.Qty. 1



Blow Out Gun

Art.No. 0903 990 001

P.Qty. 1



Extension nozzle for blow-out gun

Art.No. 0714 921 4

P.Qty. 1


BLOW OUT & INJECTION ACCESSORIES FOR REBAR

Cleaning accessories: Blow out pump (Drill hole- $\varnothing d_o \leq 20$ mm and Bore hole depth $h_o \leq 10 \times \text{dia } \varnothing$)
Hand slide valve (diameter)



Anchor diameter- $\varnothing d_s$ [mm]	Drill hole- $\varnothing d_o$ [mm]		Compressed air WIT-SDD (vormontiert) Art.No. VE [St.] = 1	Hand slide valve (vormontiert) Art.No. VE [St.] = 1	Blow out pump Art.No. VE [St.] = 1
	Hammer drill	Compressed air			
8	12	-	Ø 10 mm x 2 m 0699 903 7	0699 903 38	0903 990 001
10	14	-			
12	16	-			
14	18	-			
16	20	26			
20	25	26			
22	28	-	Ø 20 mm x 3 m 0699 903 13		
24	32	-			
25	32	-			
28	35	-			
32	40	-			

Dia. \varnothing [mm]	Threaded rod- \varnothing [mm]	Drill hole- \varnothing [mm]		Piston WIT-VS Nr.	Cartage size (coaxial 1:10): 280 ml, 320 ml, 420 ml				Cartage (side-by-side): 825 ml					
		Hammer drill	Compressed air		Hand pump		Automatic pump		Automatic pump					
					Maximum Anchor depth $l_{v,max}$ [cm]	Static mixer	Maximum Anchor depth $l_{v,max}$ [cm]	Static mixer	Maximum Anchor depth $l_{v,max}$ [cm]	Static mixer				
8		12	-	-	70	WIT-MV 10	WIT-MV 10	WIT-MV 10	WIT-MV 10	WIT-MV 10				
10		14	-	Nr. 14							80	80	100	100
12	M12	16		Nr. 16							100	100	120	120
14		18		Nr. 18	50	WIT-MV 10	WIT-MV 10	WIT-MV 10	WIT-MV 10	WIT-MV 10				
16	M16	20		Nr. 20							70	70	140	140
20	M20	25	26	Nr. 25							50	50	160	160
22		28		Nr. 28	50	WIT-MV 10	WIT-MV 10	WIT-MV 10	WIT-MV 10	WIT-MV 10				
24		32		Nr. 32							200	200	200	200
25		32		Nr. 32										
28		35		Nr. 35										
32		40		Nr. 40										

Mixer Extension – rigid, WIT-MV 10 x 200 mm				0903 420 004	10
Mixer Extension – rigid, WIT-MV 10 x 2000 mm				0903 488 121	20
Mixer Extension – flexible, WIT-MV 10 x 2000 mm				0903 488 123	10
	Ø 8 mm	$d_o = 12$ mm (Hammer drilling)	-	-	
	Ø 10 mm	$d_o = 14$ mm (Hammer drilling)	Nr. 14	0903 488 055	10
	Ø 12 mm	$d_o = 16$ mm (Hammer drilling + Pressure Air Drilling)	Nr. 16	0903 488 056	10
	Ø 14 mm	$d_o = 18$ mm (Hammer drilling + Pressure Air Drilling)	Nr. 18	0903 488 057	10
	Ø 16 mm	$d_o = 20$ mm (Hammer drilling + Pressure Air Drilling)	Nr. 20	0903 488 058	10
	Ø 20 mm	$d_o = 25$ mm (Hammer drilling); $d_o = 26$ mm (Pressure Air Drilling)	Nr. 25	0903 488 059	10
	Ø 24 mm	$d_o = 32$ mm (Hammer drilling + Pressure Air Drilling)	Nr. 32	0903 488 053	10
	Ø 25 mm	$d_o = 32$ mm (Hammer drilling + Pressure Air Drilling)	Nr. 32	0903 488 053	10

ACCESSORIES FOR REBAR & PERFORATED SIEVE



Mixer Nozzles

For multi concrete WIT-UH 300 injection system

Art.No. 0903 488 102

P.Qty. 20



Fill & Clean Mixer Nozzles

For WIT cartridges WIT-VM 250, WIT-VM 100, WIT-P 200, WIT-EA 150, WIT200 / 100,

Art.No. 0903 420 001

P.Qty. 10



Mixer Nozzles

Suitable for chemical injection mortar: WIT-PE 500

Art.No. 0903 488 101

P.Qty. 10



Application Gun 420ml

For WIT cartridges WIT-UH 300, WIT-VM 250, WIT-VM 100, WIT-P 200, WIT-EA 150, WIT200 / 100

Art.No. 0891 450 10

P.Qty. 1



Double Application Gun

Suitable for chemical injection mortar: WIT-PE 500

Art.No. 0891 450 100

P.Qty. 1



Anchor type	Drill hole-Ø d_0 [mm]	Drill hole depth h_0 [mm]	Anchorage depth h_{ef} [mm]	For thread diameter	Art.No.	P.Qty.
SH 12 x 80	12	85	80	M8	0903 44 123	20
SH 16 x 85	16	90	85	M8 and M10	0903 44 164	20
SH 16 x 130	16	135	130	M8 and M10	0903 44 165	20
SH 20 x 85	20	90	85	M12 and M16	0903 44 203	20



Anchor type	Drill hole-Ø d_0 [mm]	For thread diameter	Art.No.	P.Qty.
11 x 1000	12	M6	0903 44 128	1
14 x 1000	16	M8, M10	0903 44 168	1
20 x 1000	20	M10, M12	0903 44 208	1

THREADED RODS

W-VD-A, Galvanised steel 5.8 and 8.8, Stainless steel A4-70



Diameter	Fixture thickness t_{fix} [mm]	Length L [mm]	Effective anchor depth h_{ef} [mm]	Drill hole- \emptyset d_0 [mm]	Drill hole depth $h_0 \geq$ [mm]	Galvanised steel 5.8 Art.No.	Galvanised steel 8.8 Art.No.	Stainless steel A4-70 Art.No.	P.Qty.
M8	20	110	80	10	80	5915 108 110	5915 308 110	5915 208 110	10
	60	150				5915 108 150	5915 308 150	5915 208 150	
M10	15	115	90	12	90	5915 110 115	5915 310 115	5915 210 115	
	30	130				5915 110 130	5915 310 130	5915 210 130	
	65	165				5915 110 165	5915 310 165	5915 210 165	
	90	190				5915 110 190	5915 310 190	5915 210 190	
M12	10	135	110	14	110	5915 112 135	5915 312 135	5915 212 135	
	35	160				5915 112 160	5915 312 160	5915 212 160	
	85	210				5915 112 210	5915 312 210	5915 212 210	
	125	250				5915 112 250	5915 312 250	5915 212 250	
	175	300				5915 112 300	5915 312 300	5915 212 300	
M16	20	165	125	18	125	5915 116 165	5915 316 165	5915 216 165	
	45	190				5915 116 190	5915 316 190	5915 216 190	
	85	230				5915 116 230	5915 316 230	5915 216 230	
	105	250				5915 116 250	5915 316 250	5915 216 250	
	155	300				5915 116 300	5915 316 300	5915 216 300	
M20	20	220	170	22	170	5915 120 220	5915 320 220	5915 220 220	
	60	260				5915 120 260	5915 320 260	5915 220 260	
	100	300				5915 120 300	5915 320 300	5915 220 300	
M24	15	260	210	28	210	5915 124 260	5915 324 260	5915 224 260	
	55	300				5915 124 300	5915 324 300	5915 224 300	

Threaded rod with accepted certification 3.1, Galvanised steel 5.8 and 8.8, Stainless steel A4-70



Diameter	Drill bit hole depth L [mm]	Effective anchor depth h_{ef} [mm]	Drill hole- \emptyset d_0 [mm]	Bore hole depth $h_0 \geq$ [mm]	Galvanised steel 5.8 Art.No.	Galvanised steel 8.8 Art.No.	Stainless steel A4-70 Art.No.	P.Qty.
M8	1000	60-160	10	60-160	5916 008 999	5916 208 999	5916 108 999	10
M10	1000	60-200	12	60-200	5916 010 999	5916 210 999	5916 110 999	
M12	1000	70-240	14	70-240	5916 012 999	5916 212 999	5916 112 999	
M16	1000	80-320	18	80-320	5916 016 999	5916 216 999	5916 116 999	
M20	1000	90-400	22	90-400	5916 020 999	-	5916 120 999	5
M24	1000	96-480	28	96-480	5916 024 999	-	5916 124 999	

THREADED RODS

W-VI-A, Galvanised steel 5.8, Stainless steel A4-70



Diameter	Drill bit hole depth L [mm]	Effective anchor depth h_{ef} [mm]	Fixture thickness t_{fix} [mm]	Drill hole-Ø d_0 [mm]	Drill hole depth $h_0 = h_{ef}$ [min]	Galvanised steel 5.8 Art.No.	Stainless steel A4-70 Art.No.	P.Qty.
M8	100	60-160	$L - h_{ef} - 10$ mm	10	60-160	0905 460 811	0905 470 811	10
	110					0905 460 812	0905 470 812	
	130					0905 460 813	0905 470 813	
	145					0905 460 814	0905 470 814	
	160					0905 460 815	0905 470 815	
	205					0905 460 816	0905 470 816	
M10	110	60-200	$L - h_{ef} - 10$ mm	12	60-200	0905 461 011	0905 471 011	10
	130					0905 461 012	0905 471 012	
	150					0905 461 013	0905 471 013	
	165					0905 461 014	0905 471 014	
	190					0905 461 015	0905 471 015	
	260					0905 461 016	0905 471 016	
M12	135	70-240	$L - h_{ef} - 15$ mm	14	70-240	0905 461 211	0905 471 211	10
	155					0905 461 212	0905 471 212	
	175					0905 461 213	0905 471 213	
	210					0905 461 214	0905 471 214	
	250					0905 461 215	0905 471 215	
	300					0905 461 216	0905 471 216	
M16	160	80-320	$L - h_{ef} - 20$ mm	18	80-320	0905 461 611	0905 471 611	10
	175					0905 461 612	0905 471 612	
	205					0905 461 613	0905 471 613	
	235					0905 461 614	0905 471 614	
	300					0905 461 615	0905 471 615	
M20	240	90-400	$L - h_{ef} - 20$ mm	22	90-400	0905 462 011	0905 472 011	5
	260					0905 462 012	-	
	285					0905 462 013	0905 472 013	
	300					0905 462 014	0905 472 014	
	350					0905 462 015	-	
	400					0905 462 016	-	
M24	290	96-480	$L - h_{ef} - 25$ mm	28	96-480	0905 462 411	0905 472 411	5
	350					0905 462 412	0905 472 412	
	400					0905 462 413	0905 472 413	
M30	370	120-600	$L - h_{ef} - 30$ mm	35	120-600	0905 463 011	0905 473 011	5

FRAME-FIXING W-UR 8



W-UR 8 with countersunk screw



W-UR F 8 with hexagon screw + pressed-on washer



W-UR F 8 with panhead screw



W-UR F 8 with connecting thread M6 + M8

Benefits:

- Can be loaded immediately - no waiting time
- Expanding in four directions - High loads
- Universal frame-fixing anchor (concrete, masonry of perforated and solid brick, aerated concrete)
- The anchor sleeve and special screw are pre-assembled, which reduces installation time

Applications:



Approvals and Certificates:



Technical Data:	
Head configuration	Hexagon, Countersunk and Pan Head
Environmental conditions	Indoor, Outdoor
Material composition	Steel, galvanized / A4 stainless steel
Type of fastening	Through fastening
Suitable for	Non-cracked concrete

Installation: Setting Instruction I



Setting Instruction II



FRAME-FIXING W-UR 8

Anchor characteristics for concrete and masonry				
Size			W-UR 8	
Drill dia.	d_0	[mm]	8	
Drill hole depth	$h_1 \geq$	[mm]	60	80
Setting depth of anchor sleeve	h_{nom}	[mm]	50	70
Through - hole in attachment part	$d_1 \leq$	[mm]	8.5	

Load characteristics for concrete					
Tensile load	C12/15	N_{perm}	[kN]	1.2	1.6
	C16/20	N_{perm}	[kN]	1.8	1.4
Shear load	Zinc A4	C12/15	V_{perm}	[kN]	3.37
			V_{perm}	[kN]	3.16

Load characteristics for masonry					
	Format	Density [kg/dm ³]	Compressive strenghts [kg/dm ³]	F_{perm} [kN]	
Lightweight concrete hollow block HBL EN 771-3	$\geq 498 \times 240 \times 238$	≥ 0.7	2	-	0.11
			4	-	0.26
			6	-	0.34
Lightweight concrete hollow block Liapor-Super K	$\geq 498 \times 240 \times 238$	≥ 0.8	2	-	0.17
			4	-	0.34
Aerated concrete AAC			2	-	0.14
			7	-	0.85

Article Description	Art. No.	Art. No.	Anchor length	Fixture thickness for		Drive	Wrench Size	PU
				$h_{nom}=50mm$	$h_{nom}=70mm$			
	Zinc plated	Stainless steel		t_{fix}	t_{fix}		SW	
		A4	mm	mm	mm			Qty.
Frame fixing W-UR 8 with countersunk screw	0912 808 402	0912 808 502	60	10	-	AW [®] 30		50
	0912 808 403	0912 808 503	80	30	10			
	0912 808 404	on demand	100	50	30			
	0912 808 405	on demand	120	70	50			
	0912 808 406	-	140	90	70			
	0912 808 407	-	160	110	90			
Frame fixing W-UR F 8 with hexagon screw + pressed-on washer	0912 808 602	0912 808 702	60	10	-	AW [®] 25	10	50
	0912 808 603	0912 808 703	80	30	10			
	0912 808 604	on demand	100	50	30			
	0912 808 605	on demand	120	70	50			
Frame fixing W-UR F 8 with pan head screw	0912 808 802	0912 808 902	60	10	-	AW [®] 30		50
	0912 808 803	0912 808 903	80	30	10			
Frame fixing W-UR F 8 with M6 stud screw	0912 808 202	0912 808 302	60	10	-		10	50
	0912 808 203	0912 808 303	80	30	10			
Frame fixing W-UR F 8 with M8 stud screw	0912 808 252	-	60	10	-		10	50
	0912 808 253	-	80	30	10			

FRAME-FIXING W-UR 10

W-UR 10 with countersunk screw



W-UR F 10 with hexagon screw and pressed-on washer



Benefits:

- Can be loaded immediately - no waiting time
- Very strong twist lock
- Universal frame-fixing anchor (concrete, masonry of perforated and solid brick, aerated concrete)
- The anchor sleeve and special screw are pre-assembled, which reduces installation time

Applications:



The attachment of facade, ceiling, or roof substructures (made of wood or steel), wood beams, wood laths, metal brackets, metal rails, suspended ceilings, cable routes, angle brackets, profiles, wall-mounted cabinets, shelf units

Approvals and Certificates:



Technical Data:	
Head configuration	Hexagon, Countersunk and Pan Head
Environmental conditions	Indoor, Outdoor
Material composition	Steel, galvanized / A4 stainless steel
Type of fastening	Through fastening
Suitable for	Multiple attachment of non-structural systems in concrete and masonry

Installation: Setting Instruction I



Setting Instruction II



FRAME-FIXING W-UR 10

Anchor characteristics for concrete and masonry			
Size	W-UR 10		
Drill dia.	d_o	[mm]	10
Drill hole depth	$h_1 \geq$	[mm]	80
Setting depth of anchor sleeve	h_{nom}	[mm]	70
Through - hole in attachment part	$d_i \leq$	[mm]	10.5

Load characteristics for concrete				
Tensile load	C12/15	N_{perm}	[kN]	1.0
	C16/20	N_{perm}	[kN]	1.6
Shear load	Zinc A4	C12/15	V_{perm}	[kN]
		V_{perm}	[kN]	4.99

Load characteristics for masonry				
	Format	Density [kg/dm ³]	Compressive strengths [kg/dm ³]	F_{perm} [kN]
Lightweight concrete hollow block HBL EN 771-3	$\geq 498 \times 240 \times 238$	≥ 0.7	2	0.09
			4	0.17
			6	0.26
Lightweight concrete hollow block Liapor-Super K	$\geq 498 \times 240 \times 238$	≥ 0.8	2	0.17
			4	0.34
Aerated concrete AAC			2	0.21
			7	0.88

Article Description	Art. No.	Art. No.	Anchor length	Fixture thickness for	Drive	Wrench Size		PU
				$h_{nom}=70mm$				
	Zinc plated	Stainless steel		t_{fix}		SW		
		A4	mm	mm				Qty.
Frame fixing W-UR 10 with countersunk screw	0912 810 401	0912 810 501	80	10	AW [®] 40	13		50
	0912 810 402	0912 810 502	100	30				
	0912 810 403	0912 810 503	115	45				
	0912 810 404	0912 810 504	135	65				
	0912 810 405	0912 810 505	160	90				
	0912 810 406	0912 810 506	185	115				
	0912 810 407	0912 810 507	200	130				
	0912 810 408	-	230	160				
	0912 810 409	-	260	190				
	0912 810 410	-	290	220				
	0912 810 411	-	320	250				
Frame fixing W-UR F 10 with hexagon screw + pressed-on washer	0912 810 601	0912 810 701	80	10	AW [®] 40 (only zinc version)	13		40
	0912 810 602	0912 810 702	100	30				
	0912 810 603	0912 810 703	115	45				
	0912 810 604	0912 810 704	135	65				
	0912 810 605	0912 810 705	160	90				
	0912 810 606	-	185	115				
	0912 810 607	-	200	130				
	0912 810 608	-	230	160				

AMO® III SCREW 7.5 MM DIA.



Type 1 with AW30
Head dia. 12.0 mm



Type 2 with AW25
Head dia. 7.5 mm





Type 2 with AW30
Head dia. 8.0 mm



Type 3 with AW30
Head dia. 12.5 mm

Steel, yellow galvanised

Galvanised steel,
blue passivated

Proof of performance			Guidelines for mounting/ RAL Quality Association	Window walls former DIN 18056
Test reports <div style="display: flex; justify-content: space-between;"> <div style="width: 30%;"> <p>Fire protection Test Report No. 3174/0649-2 from 12th January, 2000</p>  </div> <div style="width: 30%;"> <p>Testing of suitability for attaching a flood-proof window in accordance with ift directive FE-07/1 by the ift Rosenheim in Germany. Test Report No. 202 31790 from 17th May, 2006</p>  </div> <div style="width: 30%;"> <p>Testing of a fastening element: Evaluation of the test results for practical use in window mounting by the ift Rosenheim in Germany. Test Report No. 23511241/2 from 13th February, 1990</p> <p>Testing of suitability for attaching a window to the structure with brick masonry by the ift Rosenheim in Germany. Test Report No. 50922462 from 11th October, 2000</p> </div> </div>			<p>The attachment must safely transfer all planned forces affecting the window to the structure. The loads, i.e. the load of the window, the wind load and the working load, must be determined (see DIN 1055). In accordance with the respective valid building regulation, buildings and their components must be planned in such a way that the life and health of people are not endangered and public safety is not impaired. Attachment of the windows must also comply with this criterion.</p> <p>We recommend anchors 51, 52, 53, 55.1 and 55.2 for this application.</p>	<p>This standard applies for window walls with an area of at least 9 m² and a side length of at least 200 cm, consisting of a support frame (frame, posts, bar) with fills (e.g. glazing). This standard does not apply to walls and glass blocks.</p> <p>We recommend anchors with a construction permit for this application.</p>

1. Applications

- Tension-free spaced mounting for wooden, plastic and aluminium window frames
- Frame coupling
- Mounting of window shackles, rotary anchors and knock-in claws (short version of Type 3)

2. Advantages

- Saves time – no anchor required
- Short installation times, as no setting tools are required
- Thanks to AW® drive, longer bit service life, improved force transmission and no ejection forces
- Through-bolt mounting
- Can be loaded immediately – no wait time after setting
- High loadability through positive locking
- Removable
- Virtually no spreading forces during setting

3. Properties

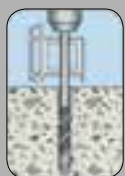
- Spreading-pressure-free, positive locking and removable anchoring
- Function of load pick-up is retained even under thermal loading
- Tested fire-resistance duration of 120 minutes

Information: The correct installation of components must be checked under consideration of the respective building situation (e.g. casementweight, surface properties, hole pattern of the stone).

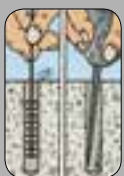
Good to know:

- Drill perforated and hollow blocks in rotating gear (without impact mechanism).
- Align window frames with alignment clamps or Amo Bag.
- Screw length = frame width + distance + screw-in depth (also see under 55.2 Amo® III 11.5 mm).

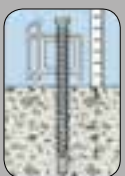
Setting instructions



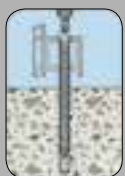
Create drill hole



Clean drill hole



Align and affix
window frame



Screw in screw

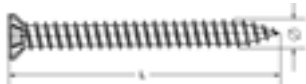
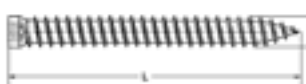
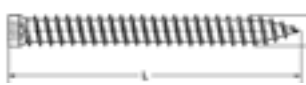
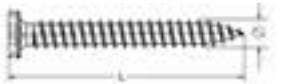


Press on cover cap

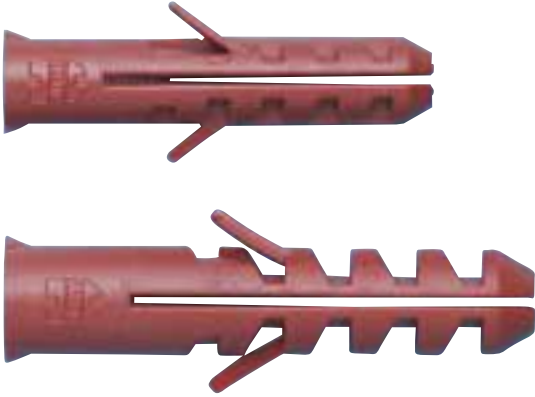
AMO® III SCREW 7.5 MM DIA.

Performance Data			Type 1	Type 2	Type 3
Fire resistance duration Concrete strength class at least C20/25 and maximum C50/60	Centered tensile load	F30 [in kN]	0.80	-	0.80
		F60 [in kN]	0.55	-	0.55
		F90 [in kN]	0.45	-	0.45
		F120 [in kN]	0.40	-	0.40
	Transverse or oblique pull up to 30°	F30 [in kN]	0.50	0.50	0.50
		F60 [in kN]	0.50	0.50	0.50
		F90 [in kN]	0.50	0.50	0.50
		F120 [in kN]	0.50	0.50	0.50

Characteristic values			
Minimum edge clearance	Concrete	c _{min} [in mm]	50
	Chalky sandstone, solid brick, vertically perforated brick (at least 2 walls), pumice, light concrete, coniferous wood		60
Minimum screw-in depth	Concrete	h _{nom,min} [in mm]	30
	Chalky sandstone, solid brick		50
	Vertically perforated brick (at least 2 walls), pumice, light concrete, coniferous wood		60
Drill hole diameter	Concrete	d ₀ [in mm]	6.5
	Chalky sandstone, solid brick, vertically perforated brick (at least 2 walls), pumice, light concrete		6.0
	Coniferous wood		No pre-drilling required
Drill hole depth		h ₁ [in mm]	Screw-in depth +10 mm + any existing plaster layer

Anchor Dimensions		l [in mm]															
Total length		32	42	52	62	72	82	92	102	112	122	132	152	182	212	252	302
Type 1 with AW®30 Head diameter 12.0 mm  Suitable application: Light countersinking with wood and plastic profiles	Art. No. Steel, yellow galvanized					023473072	023473082	023473092	0234730102	0234730112	0234730122	0234730132	0234730152	0234730182	0234730212		
	Art. No. Galvanized steel, blue passivated																
Type 2 with AW®25 Head diameter 7.5 mm  Suitable application: Thanks to the small head, screwing in is possible with small window rebate widths. Preferably for use in brick surface with all frame materials Suitable cover caps: Art. No. 0590 425 ...	Art. No. Steel, yellow galvanized								0234225102	0234225112	0234225122	0234225132	0234225152	0234225182	0234225212		
	Art. No. Galvanized steel, blue passivated								0234225102	0234225112	0234225122	0234225132	0234225152	0234225182	0234225212		
Type 2 with AW®30 Head diameter 8.0 mm  Suitable application: Preferably for use in concrete surface with the frame materials wood and plastic	Art. No. Steel, yellow galvanized					023423072	023423082	023423092	0234230102	0234230112	0234230122	0234230132	0234230152	0234230182	0234230212		
	Art. No. Galvanized steel, blue passivated																
Type 3 with AW®30 Head diameter 12.5 mm  Suitable application: Thanks to the large flat head, the head makes clean contact on window profiles, providing advantages when using cover caps Suitable cover caps: Art. No. 0590 790 ...	Art. No. Steel, yellow galvanized		023433032	023433042	023433052	023433062	023433072	023433082	023433092	0234330102	0234330112	0234330122	0234330132	0234330152	0234330182	0234330212	
	Art. No. Galvanized steel, blue passivated	023493032															
Packing unit	P. Qty.	200														100	

NYLON ANCHOR



Polyamide (Nylon)

Ø 5-8

Polyamide (Nylon)

Ø 10-20

1. Applications

- Plastic anchors for lower load range (secondary fastening)
- Can be used in concrete, solid brick, solid sand-lime brick, aerated concrete and pressure-resistant natural stone.
- Suitable for securing curtain rails, wall shelves, light hanging cupboards, picture frames, cable ducts, cable clamps, electrical switches, hand towel rails, signs, motion detectors, hanging baskets, etc.
- For the attachment of components in conjunction with a wood or particle board screw (no drill bit, counter thread or ring thread)
- Can be used outside or in rooms subject to moisture in conjunction with a stainless-steel screw

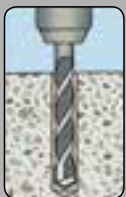
2. Advantages

- The knock-in lock prevents premature spreading during through-bolt mounting
- The twist lock prevents turning in the drilled hole
- Spreading-pressure-free dowel neck prevents damage to plaster and tiles
- Through-bolt and cotter-pin mounting

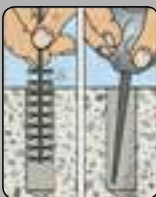
3. Features

- High-quality polyamide (nylon)
- Halogen- and silicone-free
- Temperature-resistant from -40°C to +80°C

Placement



Drill hole



Clean drilled hole



Set anchor in place



Watching spreading part position in edge area



Secure component

NYLON ANCHOR

Performance data											
Diameter [mm]			4	5	6	8	10	12	14	16	20
Rec- omended ¹⁾	Concrete ≥ B25; C20/25	F _{rec.} [kN]	0.15	0.25	0.38	0.6	0.9	1.4	1.9	2.3	3.0
	Masonry ≥ Mz12		0.14	0.25	0.3	0.5	-	-	-	-	-
	Limestone ≥ KS12		0.14	0.25	0.3	0.5	-	-	-	-	-

Characteristics											
Distance	a ≥ [mm]		40	50	60	80	100	120	140	160	200
Edge spacing	a _r ≥ [mm]		20	25	30	40	50	60	70	80	100
Drill hole depth	t ≥ [mm]		30	35	40	50	65	75	85	95	105
Embedment depth	h _s ≥ [mm]		20	25	30	40	50	60	75	80	90
Drill hole-Ø	d ₀ [mm]		4	5	6	8	10	12	14	16	20
Wood screw-Ø	d _{wood screw} [mm]		2-3	3.5-4	4.5-5	4.5-6	6-8	8-10	10-12	12-14	16
Chipboard screw-Ø	d _{chipboard screw} [mm]		3	4.5	5	6	-	-	-	-	-
Screw length	l _s [mm]		Fixture thickness + render / insulation thickness + fixing length + screw diameter								

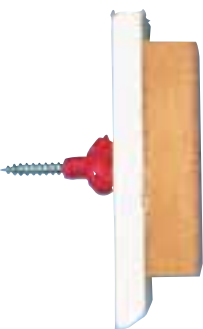
Nylon Anchor Diameter											
		4	5	6	8	10	12	14	16	20	
Drill bit hole depth	l [mm]	20	25	30	40	50	60	75	80	90	
max. Mounting height	d _a [mm]	Depending on screw length									
Anchor type		4 x 20	5 x 25	6 x 30	8 x 40	8 x 40 / M6	10 x 50	12 x 60	14 x 75	16 x 80	20 x 90
Art.No.		0903 4 20	0903 5 25*	0903 6 30*	0903 8 40		0903 10 50	0903 12 60	0903 14 75	0903 16 80	0903 20 90
for use with M6 screw bolts and threaded studs											
Art.No.						0903 8 406 VE [St.] = 100					
Packaging	VE [Pieces]										
in ORSY®-Cardboard		200	100/1000	100/500	100/300	50/200	25	20	10	5	
in ORSY®-Cardboard + Outer carton		-	5400/à 100 8000/à 1000	4000/à 500 4800/à 100	2400/à 300 2300/à 100	1200/à 50 1600/à 200	600/à 25	480/à 20	-	-	

ORSY® Stackable

Würth system components



ZEBRA SHARK® ANCHORS



Without collar (mother of pearl red)

Ø 5-8

With collar (mother of pearl white)

Ø 10-20

6, 8, 10 mm dia. Installation Impact Tool
Used for creation of the "drill hole" in aerated concrete (≤ PB4, poand in in stages: install, release etc.)



Art. No. 0906 100 00 P. Qty. 1



Proof of Performance

1. Applications

- Can be used with the largest possible screw diameter in solid and hollow-chamber stone, always enabling strong hold
- Pre-formed thread in head
- Three-part division for form-fitting or frictionally engaged anchoring
- Wings as twist lock in solid or hollow-chamber stone

2. Advantages

- Low screw-in torque of Wüpfast® screw due to pre-formed thread
- Twist lock due to locking edge running lengthwise
- One screw diameter can be used - regardless of application
- In hollow stones/walls, form-fitting results due to knotting together or bending out of spreading segments

3. Properties

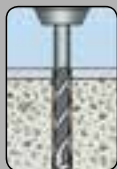
- The universal plug for subordinate securing in nearly all building materials
- In solid and hollow-chamber stone of any kind
- In gypsum plasterboard sheets, pressboard, wood panels etc.
- For use with stud screws, hooks, ring screws, Wüpfast®, Ecofast® screws and wood screws
- Fully resistant to rotting, weather and aging
- Temperature-neutral from -40°C to +100°C

Setting instruction

Surface: Concrete and solid stone

Surface: hollow-chamber stone

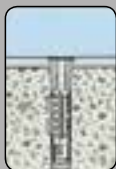
Surface: Gypsum plasterboard



Drill hole



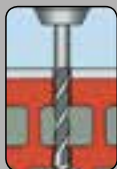
Clean borehole



Set anchor in place



Screw in screw until flush



Drill hole



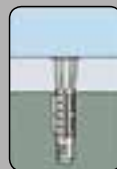
Set anchor in place



Screw in screw until flush



Drill hole



Set anchor in place



Screw in screw until flush

ZEBRA SHARK® ANCHORS

Performance Data										
Anchor diameter [mm]		5	6	7 ¹⁾	7 ¹⁾	8	10	12	14	
Recommended Loads ²⁾	Concrete ≥ B25; C20/25	F _{recom.} [kN]	0.2	0.3	0.3	0.3	0.4	1.0	1.1	1.3
	Solid stone ≥ Mz12; KS12		0.2	0.3	0.3	0.3	0.35	0.4	0.45	0.45
	Vertically perforated brick ≥ Hlz12 ³⁾		0.1	0.15	0.15	0.15	0.2	0.25	0.25	0.3
	Perforated sand-lime brick ≥ KSL12 ³⁾		0.2	0.2	0.2	0.2	0.4	0.4	0.5	0.6
	Aerated concrete PB2; PP2 ³⁾		0.04	0.1	0.12	0.12	0.15	0.2	0.2	0.3
	Gypsum plasterboard d ≥ 12.5 mm		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	Gypsum plasterboard d ≥ 25 mm		0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Pumice	0.11	0.13	0.15	0.15	0.18	0.23	0.25	0.28		

Characteristic values									
Screw dia.	d _{scr.} [mm]	3.5	4.5	5	5	6	7	8-10	10-12
Screw length		= anchor length + material thickness to be attached + screw dia. + any plaster/insulation thickness							
Nom. drill dia.	d _{dril.} [mm]	5.0	6	7	7	8	10	12	14
Drill hole depth	p ≥ [mm]	40	45	45	60	60	70	80	85
Setting depth	h _s ≥ [mm]	30	36	35	50	51	60	70	75
Hole dia. in comp.	d _{con.} ≥ [mm]	5.5	6.5	7.5	7.5	7	10.5	12.5	14.5

Anchor Dimensions																	
Total length	l [in mm]	31	32	36	37	36	37	51	52	51	52	61	62	71	72	75	76
Max. attachment height	d _a [in mm]	Depends on screw length															
Designation		5 x 31	5 x 32	6 x 36	6 x 37	7 x 36	7 x 37	7 x 51	7 x 52	8 x 51	8 x 52	10 x 61	10 x 62	12 x 71	12 x 72	14 x 75	14 x 76
Art. No. ZEBRA Shark® anchors without collars		0906 005 31		0906 006 36		0906 007 36¹⁾		0906 007 51¹⁾		0906 008 51		0906 010 61		0906 012 71		0906 014 75	
Art. No. ZEBRA Shark® anchors with collars			0906 005 32		0906 006 37		0906 007 37¹⁾		0906 007 52¹⁾		0906 008 52		0906 010 62		0906 012 72		0906 014 76
Packing unit	P. Qty.	200	200	200	200	100	100	100	100	200	200	100	100	25	25	20	20

¹⁾ dia. 7 mm still without pre-formed thread.

²⁾ These values apply to the use of wood screws with a large screw diameter.

³⁾ The drill hole must be made with a rotary drill (without impacting or hammering).

Würth system components



W-MH METAL HOLLOW-WALL ANCHOR



Sleeve/screw: Galvanized steel

- Fillister head M4, M5, M6

- Hexagon head M8

- Threaded rod M8/Washer/Nut

- Eyebolt M6

- Screw hook M6

- Screw hook with short hook M6
Optimal for hanging cabinets

Proof of performance

Test reports

Fire resistance

Direct flame effect



Good to know:

- Pressing the front ratchet-plier lever forward releases the ratchet pliers again.

Assortment case



W-MH hollow-wall anchor assortment

Contents: M4 x 47 = 100 pc.,
M5 x 50 = 50 pc.,
M6 x 50 = 50 pc.,
Hand-Mounting Pliers = 1 pc. = 201 pieces.

Art. No. 0964 903 P. Qty. 1

1. Areas of use

- The anchor for attachments in gypsum plasterboards and other boards, hard particle boards, perforated brick ceilings, hollow-body ceilings up to 45 mm thick, behind which is empty space
- For the attachment of lamps, shelving units, curtain rods, wall ducts, picture frames, small boilers, coat racks, laths and rails, brackets, pipe clamps etc.
- The noses at the collar (turn-prevention mechanism) must be bent straight for hard attachment surfaces, e.g. tiles.

2. Advantages

- The screw accompanying the anchor as standard can be replaced by another securing element with a metric thread, e.g. screw hooks, ring eyelets, screws with a special head, A2/A4 brass screws, threaded rods etc., after expansion of the anchor.
- Screw can be loosened without loss of holding power
- The ratchet function enables easy and fatigue-free working with the ratchet hand-mounting pliers. Thanks to the pull length of 30 mm, subsequent spreading is only rarely required

3. Features

- Outstanding holding power via expanding support elements with a large contact radius
- Premounted with metric screw/ threaded rod
- Turn-prevention mechanism at the collar prevents turning in the drill hole
- Fire resistance only tested in hollow pumice stone

Hand-Mounting Pliers



Art. No. 0903 20

P. Qty. 1



Art. No. 0903 201

P. Qty. 1

Setting instructions



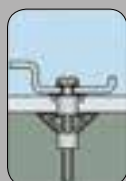
Drill hole



Set anchor in place



Expand anchor fully with pliers



Secure part

W-MH METAL HOLLOW-WALL ANCHOR

Performance data			M4	M5	M6	M8
Anchor diameter [mm]						
Recommended loads ¹	Gypsum plasterboard $d \geq 12$ mm	$F_{recom.}$ [kN]	0.20	0.20	0.20	0.20
	Gypsum plasterboard $d \geq 25$ mm	$F_{recom.}$ [kN]	0.30	0.30	0.30	0.30
	Hard particle board $d \geq 4$ mm	$F_{recom.}$ [kN]	0.20	0.20	0.25	0.30
	Hard particle board $d \geq 10$ mm	$F_{recom.}$ [kN]	0.20	0.20	0.30	0.30
	Wood particle board $d \geq 10$ mm	$F_{recom.}$ [kN]	0.25	0.25	0.25	0.25
	Hollow ceiling brick $d \geq 30$ mm	$F_{recom.}$ [kN]	0.30	0.30	0.30	0.30
Fire resistance duration ²		$F90$ [kN]	-	-	0.12	0.30

Characteristic values					
Drill hole depth	$t \geq$ [mm]	Anchor length + 5 mm	Anchor length + 5 mm	Anchor length + 5 mm	Anchor length + 5 mm
Thread dia.	$d_{thr.}$ [mm]	M4	M5	M6	M8
Nom. drill dia.	d_{drl} [mm]	8.0	10.0	12.0	13.0
Hole dia. in comp.	d_{com} [mm]	5	6	7	9

Total sleeve length	l [mm]	33	40	46	54	59	37	53	65	80	53	53	66	37	53	66	81	55	68	84	55	68	84
Screw length	$l_{scr} <$ [mm]	41	47	58	61	65	49	66	74	89	62	62	74	49	66	78	92	82	95	111	65	80	90
Max. board thickness/mirror thickness	d_a [mm]	3-9	8-15	8-20	18-28	32-38	5-13	5-16	16-32	32-45	5-16	5-16	16-32	5-13	5-16	16-32	32-45	5-16	16-32	32-45	5-16	16-32	32-45
Designation		W-MH 4/9	W-MH 4/15	W-MH 4/20	W-MH 4/28	W-MH 4/38	W-MH 5/13	W-MH 5/16	W-MH 5/32	W-MH 5/45	W-MH 6/16	W-MH 6/16	W-MH 6/32	W-MH 6/13	W-MH 6/16	W-MH 6/32	W-MH 6/45	W-MH 8/16	W-MH 8/32	W-MH 8/45	W-MH 8/16	W-MH 8/32	W-MH 8/45
Art. No. Galvanized Steel Fillister Head Screw		0903 543 2	0903 524 40	0903 524 46	0903 524 54	0903 524 59	0903 525 37	0903 525 53	0903 525 65	0903 525 80	-	-	-	0903 526 37	0903 526 55	0903 526 66	0903 526 81	-	-	-	-	-	-
Art. No. Galvanized Steel Hexagon Head Bolt		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0903 528 56	0903 528 69	0903 528 85
Art. No. Galvanized Steel Threaded Rod, Washer, Hexagon Nut		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0903 528 55	0903 528 68	0903 528 84	-	-	-
Art. No. Galvanized Steel Eye Bolt		-	-	-	-	-	-	-	-	-	-	0903 526 54	0903 526 67	-	-	-	-	-	-	-	-	-	-
Art. No. Galvanized Steel Screw Hook		-	-	-	-	-	-	-	-	-	0903 526 53	-	-	-	-	-	-	-	-	-	-	-	-
Packing unit	P. Qty.	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	50	50	50	50	50	50

Storable in [®]ORSY

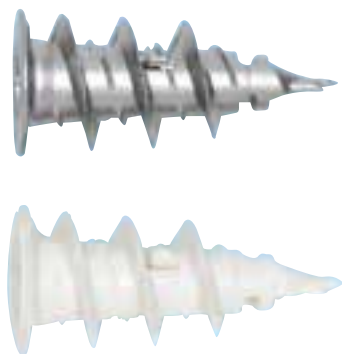
Würth system components



¹ Safety factor 3.

² Test report No. 32540301-1-CM must be heeded.

W-GS GYPSUM PLASTERBOARD ANCHORS



Type Z
Diecast zinc

Type K
Plastic

Performance facts

1. Applications

- For secondary attachments in gypsum plasterboards/fibrous panels and light building boards
- For the attachment of components in conjunction with a wood or particle board screw (no drill tip, counter thread, ring thread)
- Can be used outside or in rooms subject to moisture in conjunction with a stainless-steel screw
- We recommend using type Z/L for double-planked boards
- Recommended universal bit mount:
Bit Mount with quick-action chuck - Art. No. 0614 176 711
Universal Mount - Art. No. 0614 176 708

2. Advantages

- The patented drive enables setting of an anchor with a PZ bit, AW bit or Torx bit, as the power transmission takes place via the hexagon (Detail 1)
- The patented twist lock is triggered by screwing in a screw. When unscrewing the screw, the gypsum plasterboard plug does not turn back and remains in the anchoring base (Detail 2)
- Less space required behind the board (only 15 mm)
- For use without a setting tool with a battery-powered screwdriver and appropriate bit for the respective screw

Product Range Case



Range of W-GS Gypsum Plasterboard Anchors

Contents:
Anchors: 100 pcs. 14.5 x 33 mm plastic,
100 pcs. 14.5 x 33 mm diecast zinc
Screws: 200 pcs. 4.5 x 35 mm
+ 1 pc. ZEBRA® Screwdriver
Art. No. 0613 253 2 = 401 parts.
Art. No. 0964 903 250

ORSY

- The gypsum plasterboard anchor and the screw can be inserted with the same bit
- The new centering tip enables easy starting and drilling into the board
- Inexpensive, fast installation without pre-drilling
- Fast installation with a battery-powered screwdriver
- The component can be secured with wood or particle board screws (type Z + type Z/L = screw dia. of 4.5 mm/type K = screw dia. of 4.5 - 5 mm)

3. Properties

- High plastic or diecast zinc quality
- Temperature-neutral from -40°C to +80°C
- Form-fitting fastening

Setting instructions



Press anchor tips into attachment surface



Screw in anchor until flush



Fit the component



Detail 1:
The patented drive enables setting with PZ bit, AW bit or Torx bit



Detail 2:
Patented twist lock

W-GS GYPSUM PLASTERBOARD ANCHORS

Performance data				
Anchor type			Type Z	Type K
Recommended tensile load	Gypsum plasterboard $d \geq 12.5$ mm	$F_{rec.}$ [kN]	0.1	0.1
	Gypsum plasterboard $d \geq 25$ mm		0.1	0.1
	Gypsum fibrous panels		0.12	-
Recommended transverse load	Gypsum plasterboard $d \geq 12.5$ mm	$F_{rec.}$ [kN]	0.12	0.12
	Gypsum plasterboard $d \geq 25$ mm		0.15	0.12
	Gypsum fibrous panels		0.15	-

Characteristic values			
Axial spacing	$a \geq$ [mm]	100	
Edge spacing	$a_{r \geq}$ [mm]	50	
Minimum component thickness	$d \geq$ [mm]	9.5	
Thread dia. of screw	$d_{thr.}$ [mm]	4.5	4.5 - 5
Hole dia. in comp.	$d_{comp.}$ [mm]	6.5	

Anchor dimensions			
Total length	l [mm]	33	33
Max. attachment height	d_a [mm]	Depends on screw length	
Designation		W-GS type Z	W-GS type K
Art. No.		0903 252	0903 251
Packing unit	P. Qty.	200	

Storable in [®]ORSY

Würth system components



INSTALLATION EQUIPMENT



Torque Wrench 3/8"

With switchover square drive, fine-toothed ratchet head (72 teeth).

- With switchover square drive, fine-toothed ratchet head (72 teeth)
- Accuracy of $\pm 3\%$ to the set value, in accordance with DIN EN ISO 6789:2003
- Simple and precise setting by turning the handle Scaling in Nm and also in pound force per square foot
- Acoustic and tangible torque triggering prevents over-tightening of bolts
- Anti-slip 2-component handle
- With calibration certificate

3/8" | Art. No. 071471 21 | P.Qty. 1

1/2" | Art. No. 071471 22 | P.Qty. 1



1/2" Socket Wrench Assortment 17PCS

Pack contains

- 1 1/2 inch ratchet
- 125 mm extension 1
- 250 mm extension
- 1 cardan joint 13 socket
- wrench inserts: Sizes 10, 11, 12, 13, 14, 15, 17, 19, 22, 24, 27, 30, 32

Art. No. 0965 13 170 | P.Qty. 1



1/2" Socket Wrench Assortment 23PCS

Pack contains

- 1/2 inch Ratchet
- Inset socket 10-28, 30,32
- Extensions 125mm and 250mm
- 1/2 inch Cardan joint

Art. No. 0965 132 30 | P.Qty. 1

3/8" Socket Wrench Insert WS17

Chrome-plated, polished/matt Drive: 3/8" square socket, ball catch groove Tip: For hexagon head POWERDRIV®

Length: 64mm

3/8" | Art. No. 0713 122 117 | P.Qty. 1

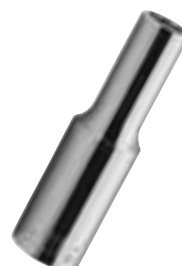


1/2" Socket Wrench WS20

Chrome-plated, polished/matt Drive: 1/2" square socket, ball catch groove Tip: For hexagon head POWERDRIV®.

Length: 77mm

3/8" | Art. No. 0712 132 320 | P.Qty. 1



INSTALLATION EQUIPMENT & PPE



Hammer Drill Plus Quadro-L Vario Bit Box, 7 PCS

7 pieces. Perfect solution for reinforcements and hard materials, featuring a symmetrical, one-piece head with four cutting edges and a four-spiral Vario feed helix with core reinforcement.

The pack contains the following sizes:

- D10-L165-WL100
- D12-L160-WL100
- D5-L115-WL50
- D6-L115-WL50
- D6-L165-WL100
- D8-L115-WL50
- D8-L165-WL100

Art. No. 0648 050 001 | P.Qty. 1

Hammer drill bit Plus Quadro-L Vario

- 4 point system
- Noticeably faster drilling; Optimized tip geometry
- Optimized drilling behaviour when hitting reinforcement; Strengthened carbide element
- Diameter: 14mm
- Length: 310mm
- Working Length: 260mm

Art. No. 0648 051 431 | P.Qty. 1

Plus Duo-S Vario Hammer Drill Bit

- 2 point system
- Noticeably faster drilling; Optimized tip geometry
- Diameter: 18mm
- Length: 250mm
- Working Length: 200mm

Art. No. 0648 551 825 | P.Qty. 1



Ear Defenders

- Lightweight and comfortable design
- Easy height adjustment of the headband
- Versatile in use
- Tested in accordance to EN 352

Art. No. 0899 300 210 | P.Qty. 1

Ear Plugs x-100 37db



- Ergonomic, cone shaped disposable ear plugs for use in extremely noisy environments
- Excellent voice recognition
- Very comfortable

Art. No. 0899 300 331 | P.Qty. 200



Adventure S3 Safety Boots

- Trendy and robust safety boots with a heat resistant HRO outsole. Ultimate combination of functionality and style
- Breathable nubuck leather
- Fabric inner lining
- Plastic protective toe cap, fabric anti perforation protection

Size 9 | Art. No. M422 122 043 | P.Qty. 1



Tigerflex Plus Nitrile Protective Gloves

- Skin-friendly seamless round-knit nylon/Lycra® base fabric (15 gauge)
- Nitrile foam-coated palms with additional nitrile Tiger grip
- Breathable
- Comfortable to wear
- The soft fabric and close fit ensure an excellent grip and outstanding dexterity thanks to new nylon fabric

Size 9 | Art. No. 0899 411 019 | P.Qty. 12



Protective Glove Nitrilon Plus

- Outstanding mechanical resistance
- Excellent dry grip properties for safe handling of work pieces and tools
- Size 9-10

Art. No. 0899 400 662 | P.Qty. 6



White hard hat

- Robust design with reinforce roof area
- Shell made from polyethylene (PE)
- Pin lock closure for optimum fit

Art. No. 0899 200 111 | P.Qty. 1



Full-vision Goggles Andromeda

- Panoramic field of vision
- Optimum ventilation for ideal eye comfort
- High impact-resistant polycarbonate lens
- Scratch-resistant lens surface and permanent mist-free coating on inside
- 100% UV protection up to 400nm

Art. No. 0899 102 110 | P.Qty. 1

PPE



Exor Safety Goggles

- Provides a 180° field of vision
- Exceptionally light and comfortable
- Includes adjustable neck band










Clear | Art. No. 0899 102 400 | P.Qty. 1

Dark | Art. No. 0899 107 81 | P.Qty. 1

Yellow | Art. No. 0899 102 401 | P.Qty. 1

APPROVALS & CERTIFICATES

The used symbols are listed below:

Symbol	Description
	Calculation with Design Software possible
	European Technical Approval Key document for the calculation. It contains design method, details of the anchor specification and performance characteristics.
	The anchor may also be used under seismic action according to ETA and /or ICC-ESR.
	International Code Council ICC Evaluation Service Inc. (ICC ES) issues evaluation reports, based on the Uniform Building Code™ and related codes in the United States of America.
	Fire resistance classification
	Leed certified The system looks at numerous factors that were divided into five categories, which relate to and include the health of humans and the environment.
	VOC Emissions class label In the context of analyzing the air a group of pollutants is analyzed, which can have serious health effects on humans. The term VOC (volatile organic compounds) is grouped together, a plurality of volatile organic compounds.
	NSF International The National Sanitation Foundation (NSF) is a nonprofit organization that ensures the safety of public health and environmental protection. It ensures that the materials and additives used in food, water or air are not harmful to health.
	For sprinkler systems

ANCHOR TECHNOLOGY 2018

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WÜRTH ANCHOR DESIGN SOFTWARE

