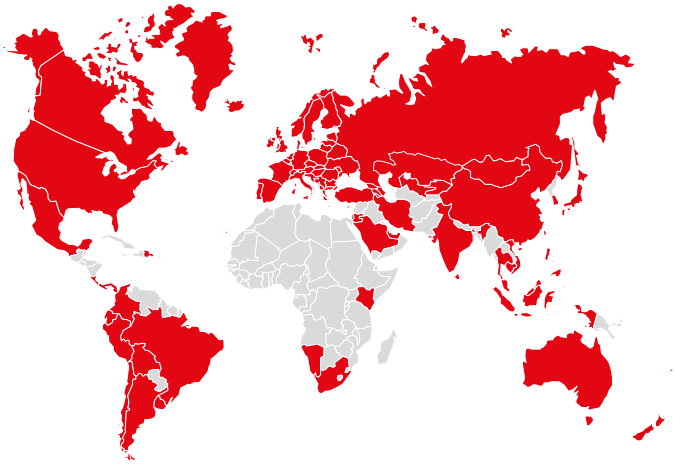
WÜRTH

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 IRELAND

Würth Irelands Head Office in Limerick

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.

CONTENTS

4 - 17 Mechanical Fixings
4 - 7 Concrete Screw Bolt W-BS
8 - 9 Fixanchor W-FAZ
10 - 11 Heavy-Duty Anchor W-HAZ
12 - 13 Fixanchor W-FA
14 - 15 Drop-in Anchor W-ED
16 Concrete Screw WB-S Compact
17 Hammer-in Anchor W-NA

18 - 35 Injection Systems
18 Bonded Anchor Overview
19 - 23 W-VIZ with WIT-VM 100
24 - 26 WITH-UH 300
27 - 29 WIT-VM 250
30 - 31 WIT-EA 200
32 - 34 WIT-PE 500
35 WIT-P 200

36 - 41 Injection Systems Accessories
36 Brushes for Masonry
37 Brushes for Concrete
38 - 39 Blow out & Injection Accessories
40 - 41 Threaded Rods

42 - 55 Light Duty Anchors
42 - 43 Frame-Fixing W-UR 8
44 - 45 Frame-Fixing W-UR 10
46 - 47 Amo® III Screw 7.5mm DIA.
48 - 49 Nylon Anchor
50 - 51 Zebra Shark® Anchors
52 - 53 W-MH Metal Hollow-Wall Anchor
54 - 55 W-GS Gypsum Plasterboard Anchors

56 - 59 Equipment & PPE
56 - 57 Installation Equipment
57 - 59 PPE
59 Approvals & Certificates

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.ie
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

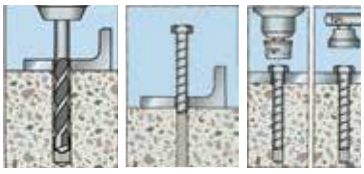
Advantages:

- 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 galvanized 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 y_M and safety factor for action y_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	
			3	
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**	-	
	120	75	65	55	**5929 128 075**	-	
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**	-	
	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**	-	
	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**	
10	90	35	15	5	**5929 131 035**	**5929 231 035**	25

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**	100
	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**	
	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]			TORX drive [mm]	Art. No.	P. Qty.
	t_{fix} [mm] for $h_{nom,1}$	t_{fix} [mm] for $h_{nom,2}$	t_{fix} [mm] for $h_{nom,3}$			$h_{1.1}$	$h_{1.2}$	$h_{1.3}$			
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]			Wrench size [mm]	Art. No.	P. Qty.
	t_{fix} [mm] for $h_{nom,1}$	t_{fix} [mm] for $h_{nom,2}$	t_{fix} [mm] for $h_{nom,3}$			$h_{1.1}$	$h_{1.2}$	$h_{1.3}$			
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]			Wrench size [mm]	Art. No.	P. Qty.
	t_{fix} [mm] for $h_{nom,1}$	t_{fix} [mm] for $h_{nom,2}$	t_{fix} [mm] for $h_{nom,3}$			$h_{1.1}$	$h_{1.2}$	$h_{1.3}$			
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: Galvanised (5 micron): M8 – M27

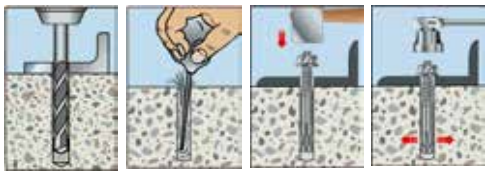
W-FAZ/A4: Stainless steel: M8 – M24

Machine Setting Tool

Art.No. 0904 908 016

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}	[kN]	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}		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}	[kN]	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}		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 y_M and safety factor for action y_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 $t_{fix}/t_{fix,\,red}$ [mm]	Drill hole Ø x Drill hole depth h_1; $h_{red,1}$ [mm]	Effective Anchorage depth $h_{ef}/h_{ef,\,red}$ [mm]	Wrench size [mm]	Art.No. W-FAZ/S	Art.No. W-FAZ/A4	P.Qty.
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**	50
M10	70	- / 10	10 x 75 / 40	60 / 40	17	**5928 251 010**	**5928 451 010**	
	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**	20
M16	115	- / 15	16 x 110 / 90	85 / 65	24	**5928 256 015**	**5928 456 015**	
	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**	10
	220	100 / -				**0904 521 603**	**0904 616 100**	
M20	165	30 / -	20 x 125	100 / -	30	**5928 220 030**	**5928 420 030**	
	195	60 / -				**5928 220 060**	**5928 420 060**	
	265	130 / -				**0904 522 003**	**0904 620 130**	5
	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**	
	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

Approved for:
C20/25 - C50/60 cracked and non-cracked concrete

Advantages:

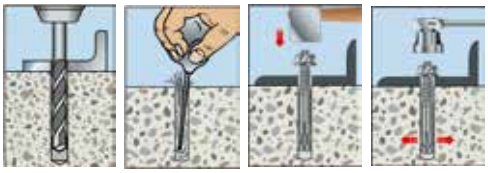
- Different head designs allow aesthetic installation and avoid injuries
- The plastic ring absorbs the vibrations, making it the ideal machine base

Applications

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

Installation



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	≥ 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	≥ 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 y_M and safety factor for action y_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 1 [mm]	Total length W-HAZ-S/S 1 [mm]	Drill hole size d_0 [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**	
	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**	25
	100	180	–			**0905 212 105**	**–**	
M10	0	96	91	15	17	**0905 215 101**	**0905 215 001**	
	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**	**–**	10
M16	0	137	130	24	24	**0905 224 101**	**0905 224 001**	
	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 1 [mm]	Drill hole size d_0 [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**	
	25	95				**0905 212 202**	
	50	120				**0905 212 203**	25
M10	10	100	15	6	24,5/5,7	**0905 215 201**	
	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**	

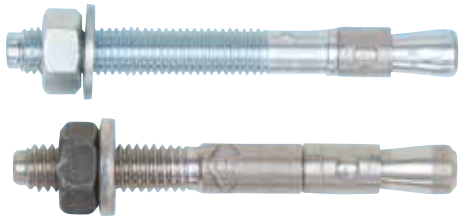
Please check with Wurth sales team for the stainless steel range.

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.

Approved for:
C20/25 - C50/60 non-cracked concrete

Advantages:

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

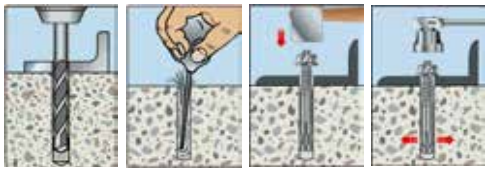
Machine Setting Tool

Art.No. 0904 908 016

Applications

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

Installation



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 y_M and safety factor for action y_L = 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_{fix} / $t_{fix,red}$ [mm]	Drill bit Ø x Hole depth h_1/$h_{1,red}$ [mm]	Effective anchorage h_{ef}/$h_{ef,red}$ [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**	**-**	25
M12	105	10 / 25	12 x 90 / 75	65 / 50	19	**5932 012 105**	**-**	
	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**	**-**	20
	255	160 / 175				**5932 012 255**	**-**	
M16	130	10 / 28	16 x 110 / 95	82 / 64	24	**5932 016 130**	**-**	
	150	30 / 48				**5932 016 150**	**0904 411 604**	
	180	60 / 78				**5932 016 180**	**-**	
	200	80 / 98				**5932 016 200**	**-**	10
	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	100 / 78	30	**5932 020 150**	**-**	
	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

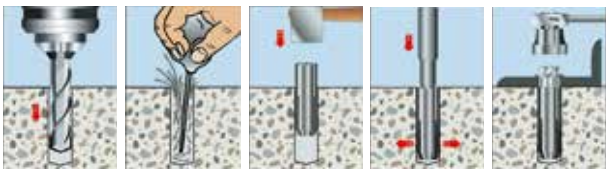
Art.No. 0904 040 08 ... M8 - M12

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

Installation



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.

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 y_M and safety factor for action y_L = 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_{th} [mm]	Min. Screw in depth L_{sdmin}[mm]	Art.No.	P.Qty.
W-ED/S	M5	25	8	25	10	6	**0904 5** [1)]	100
	M6	30	8	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**	
	M16	65	20	65	23	18	**0904 010 16**	25
	M20	80	25	80	34	22	**0904 010 20**	

W-ED/S-BND, Galvanised steel

Anchor type	Diame-ter-Ø	Length L_H [mm]	Drill hole-Ø d_0 [mm]	Drill hole depth h_0 [mm]	Max. Screw in depth L_{th}[mm]	Min. Screw in depth L_{sdmin} [mm]	Art.No.	P.Qty.
W-ED/S-BND	M6	25	8	25	12	6	**0904 040 006**	100
	M8	30	10	30	13	9	**0904 040 08**	
		40		40	20	9	**0904 040 081**	
	M10	30	12	30	12	10	**0904 040 101**	
		40		40	15	11	**0904 040 10**	
	M12	50	15	50	18	13	**0904 040 12**	

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

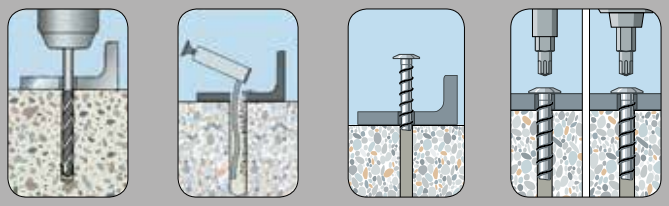
2. Advantages

- 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

Parlament



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

W-BS Compact											
Anchor type	**Diame-ter**	**Embedment Depth h_{nom} [mm]**	**Max. fixture thickness t_{fix} [mm]**	**Drill bit hole depth L [mm]**	**Drill Diameter d_0 [mm]**	**Drill hole depth $h_1 \geq$ [mm]**	**TORX drive**	**Head Diame-ter -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_0 [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.

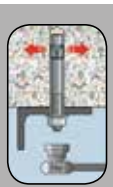
Anchor	Thread size	Drill hole diameter d_o	Effective anchorage depth h_{ef}	Fixture thickness t_{fix}	Art.No.	P. Qty.
	M6	[mm]	[mm]	[mm]		
W-NA/S	M6	6	30	0	**0905 362 005**	200
			25	5		
			30	5	**0905 362 010**	200
			25	10		
			30	10	**0905 362 015**	200
			25	15		
W-NA/A4	M6	6	30	5	**0905 372 005**	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_{inst} ≤4 Nm

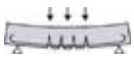
Push the W-NA-K through the component and knock it in

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

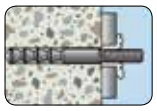
Individual attachment:
Cracked and non-cracked concrete

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)
European Technical Approval Option 1 for cracked and non-cracked concrete and seismic performance category C2	**Fire resistance** Direct flame effect	 **Ring gap between anchor rod and attached part must be filled with WIT-VM 100 or WIT-EXPRESS mortar.**
ETA		

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 surroanding 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

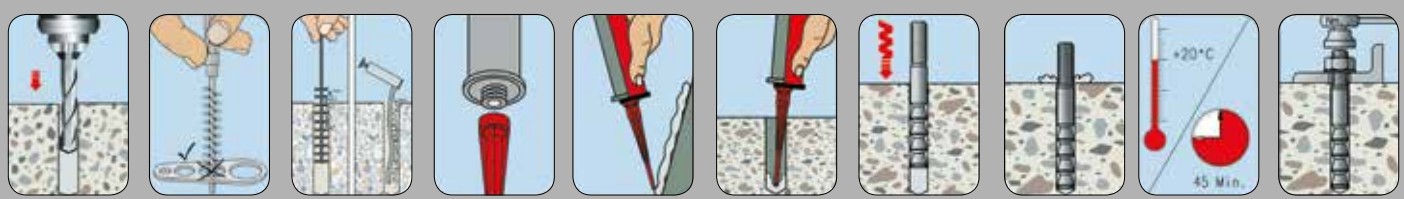
2. Benefits

- 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):



Produce drilled hole

Check diameter of cleaning brushes

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!)

Screw mixer onto cartridge

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

Fill composite mortar starting from base of drill hole

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

Visual check of mortar filling quantity, setting depth marking

Comply with hardening time of composite mortar

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_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/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	220					**0905 441 253**	
		110	25	155		115	27		**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**	
		125	30	180		133	18		**0905 441 601**	
			60	210					**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**	5
		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					**0905 442 402**	
		225	50	315		240	6		**0905 442 411**	

Drill hole cleaning								
Anchor diameter [mm]		**M8**	**M10**	**M12**	**M16**	**M20** h_{ef} 115	**M20**	**M24**
Cleaning Brush (steel)	**Art. No.** P. Qty. = 1	**0905 499 001**	**0905 499 002**	**0905 499 003**	**0905 499 004**	**0905 499 007**	**0905 499 005**	**0905 499 006**
Machine Mounting	**Art. No.** P. Qty. = 1	Hexagon: **Art. No. 0905 499 101** SDS-plus compatible **Art. No. 0905 499 102**						–
Extension	**Art. No.** P. Qty. = 1	**0905 499 111**						
Brush Template	**Art. No.** P. Qty. = 1	**0905 499 099**						
Blow-Out Pump	**Art. No.** P. Qty. = 1	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	$h_{min} \geq$ [mm]	80	80	100	110/100[5]	110	110	130/125[5]	130	140	160
Minimal axis distance cracked concrete / non-cracked concrete	$s_{min} \geq$ [mm]	40 / 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	$c_{min} \geq$ [mm]	40 / 40	40 / 40	40 / 50	40 / 50	55 / 55	50 / 55	50 / 55	50 / 55	50 / 55	50 / 55
Effective anchoring depth	$h_{ef} \geq$ [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	$h_0 \geq$ [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
Permissible central tensile load[1] of a single anchor without edge influence	**Tensile zone** (cracked concrete C20/25[2], $s \geq 3\ h_{ef}$, $c \geq 1.5\ h_{ef}$)	$N_{perm.}$ [kN] 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 ($s_{cr,sp} \geq 3\ h_{ef}$, $c_{cr,sp} \geq 1.5\ h_{ef}$)		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
	Pressure zone (non-cracked concrete C20/25[2]) maximum carrying capacity ($s_{cr,sp}$ and $c_{cr,sp}$ see permit)		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
Perm. transverse load[1] of a single anchor without edge influence	**Tensile zone** (cracked concrete C20/25[2], $c \geq 10\ h_{ef}$)	$V_{perm.}$ [kN] for C20/25[2]		8.0	8.0	12.0	12.0	19.4	19.4	19.4	19.4	19.4	19.4
	Pressure zone (non-cracked concrete C20/25[2], $c \geq 10\ h_{ef}$)			8.0	8.0	12.0	12.0	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	$h_{min} \geq$ [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	$s_{min} \geq$ [mm]	50 / 50	50 / 60	60 / 60	60 / 60	80 / 80	80 / 80	80 / 80	80 / 105	80 / 105
Minimal edge clearance cracked concrete / non-cracked concrete	$c_{min} \geq$ [mm]	50 / 50	50 / 60	60 / 60	60 / 60	80 / 80	80 / 80	80 / 80	80 / 105	80 / 105
Effective anchoring depth	$h_{ef} \geq$ [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	$h_0 \geq$ [mm]	98	113	133	153	120	180	200	215	240
Torque while installing anchor	$T_{inst} \leq$ [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
Permissible central tensile load[1] of a single anchor without edge influence	**Tensile zone** (cracked concrete C20/25[2], $s \geq 3\ h_{ef}$, $c \geq 1,5\ h_{ef}$)	$N_{perm.}$ [kN] 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 ($s_{cr,sp} \geq 3\ h_{ef}$, $c_{cr,sp} \geq 1.5\ h_{ef}$)		50 °C[3] / 80 °C[4]	19.1	23.8	23.8	28.6	29.6	53.2	54.8	67.9	66.7
			72 °C[3] / 120 °C[4]	11.9	16.7	23.8	23.8	19.1	35.7	35.7	45.2	45.2
	Pressure zone (non-cracked concrete C20/25[2]) maximum carrying capacity ($s_{cr,sp}$ and $c_{cr,sp}$ see permit)		50 °C[3] / 80 °C[4]	20.5	25.8	33.5	35.7	29.6	53.2	62.9	67.9	81.0
Perm. transverse load[1] of a single anchor without edge influence	**Tensile zone** (cracked concrete C20/25[2], $c \geq 10\ h_{ef}$)	$V_{perm.}$ [kN] for C20/25[2]		29.3	36.0	36.0	36.0	35.7	76.0	85.1	97.0	101.7
	Pressure zone (non-cracked concrete C20/25[2], $c \geq 10\ h_{ef}$)			36.0	36.0	36.0	36.0	35.7	85.1	85.1	101.7	101.7
Permissible bending torque		$T_{perm.}$ [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**	
			100	175					**0905 451 005**	
		75	20	110		80	36		**0905 451 011**	
	M12	70	25	115	14	75	37		**0905 451 211**	
		80	10	110		85	30		**0905 451 201**	
			25	125					**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	28		**0905 451 221**	
		100	25	145		105			**0905 451 251**	
			60	180					**0905 451 252**	
			100	220					**0905 451 253**	
		110	25	155		115	27		**0905 451 261**	
		125	25	170		130			**0905 451 271**	
	M16	90	30	145	18	98	23		**0905 451 611**	
		105	30	160		113	20		**0905 451 621**	
		125	30	180		133	18		**0905 451 601**	
			60	210					**0905 451 602**	
			100	250					**0905 451 603**	
			165	315					**0905 451 604**	
		145	30	200		153	16		**0905 451 631**	
	M20	115	30	175	22	120	12		**0905 452 011**	5
		170	25	230	24	180	8		**0905 452 001**	
			50	255					**0905 452 002**	
			100	305					**0905 452 003**	
		190	50	275		200			**0905 452 021**	
	M24	200	50	290	26	215	7		**0905 452 401**	
			100	340					**0905 452 402**	
		225	50	315		240	6		**0905 452 411**	

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	$h_{min} \geq$ [mm]	80	80	100	110/100[5]	110	110	130/125[5]	130	140	160
Minimal axis distance cracked concrete / non-cracked concrete	$s_{min} \geq$ [mm]	40 / 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	$c_{min} \geq$ [mm]	40 / 40	40 / 40	40 / 50	40 / 50	55 / 55	50 / 55	50 / 55	50 / 55	50 / 55	50 / 55
Effective anchoring depth	$h_{ef} \geq$ [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	$h_0 \geq$ [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], $s \geq 3\ h_{ef}$, $c \geq 1.5\ h_{ef}$)	$N_{perm.}$ [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 ($s_{cr,sp} \geq 3\ h_{ef}$, $c_{cr,sp} \geq 1.5\ h_{ef}$)		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
	Pressure zone (non-cracked concrete C20/25[2]) maximum carrying capacity ($s_{cr,sp}$ and $c_{cr,sp}$ see permit)		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
Perm. transverse load[1] of a single anchor without edge influence	**Tensile zone** (cracked concrete C20/25[2], $c \geq 10\ h_{ef}$)	$V_{perm.}$ [kN] for C20/25[2]		8.0	8.0	12.0	12.0	19.4	19.4	19.4	19.4	19.4	19.4
	Pressure zone (non-cracked concrete C20/25[2], $c \geq 10\ h_{ef}$)			8.0	8.0	12.0	12.0	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/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	$h_{min} \geq$ [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	$s_{min} \geq$ [mm]	50 / 50	50 / 60	60 / 60	60 / 60	80 / 80	80 / 80	80 / 80	80 / 105	80 / 105
Minimal edge clearance cracked concrete / non-cracked concrete	$c_{min} \geq$ [mm]	50 / 50	50 / 60	60 / 60	60 / 60	80 / 80	80 / 80	80 / 80	80 / 105	80 / 105
Effective anchoring depth	$h_{ef} \geq$ [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	$h_0 \geq$ [mm]	98	113	133	153	120	180	200	215	240
torque while installing anchor	$T_{inst} \leq$ [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], $s \geq 3\ h_{ef}$, $c \geq 1{,}5\ h_{ef}$)	$N_{perm.}$ [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 ($s_{cr,sp} \geq 3\ h_{ef}$, $c_{cr,sp} \geq 1.5\ h_{ef}$)		50 °C[3] / 80 °C[4]	19.1	23.8	23.8	28.6	29.6	53.2	54.8	67.9	66.7
			72 °C[3] / 120 °C[4]	11.9	16.7	23.8	23.8	19.1	35.7	35.7	45.2	45.2
	Pressure zone (non-cracked concrete C20/25[2]) maximum carrying capacity ($s_{cr,sp}$ and $c_{cr,sp}$ see permit)		50 °C[3] / 80 °C[4]	20.5	25.8	33.5	35.7	29.6	53.2	62.9	67.9	81.0
Perm. transverse load[1] of a single anchor without edge influence	**Tensile zone** (cracked concrete C20/25[2], $c \geq 10\ h_{ef}$)	$V_{perm.}$ [kN] for C20/25[2]		29.3	36.0	36.0	36.0	35.7	76.0	85.1	97.0	101.7
	Pressure zone (non-cracked concrete C20/25[2], $c \geq 10\ h_{ef}$)			36.0	36.0	36.0	36.0	35.7	85.1	85.1	101.7	101.7
Permissible bending torque		$T_{perm.}$ [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

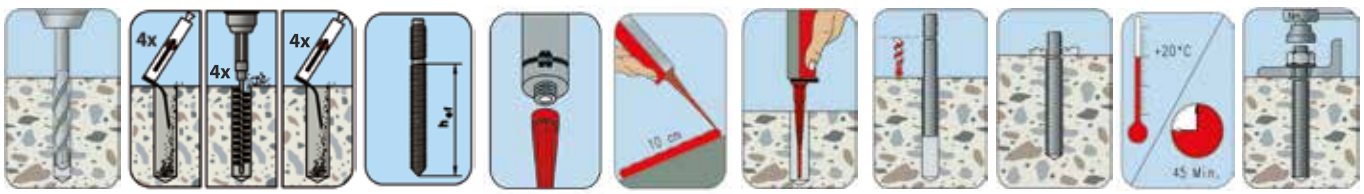
Benefits:

- 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:

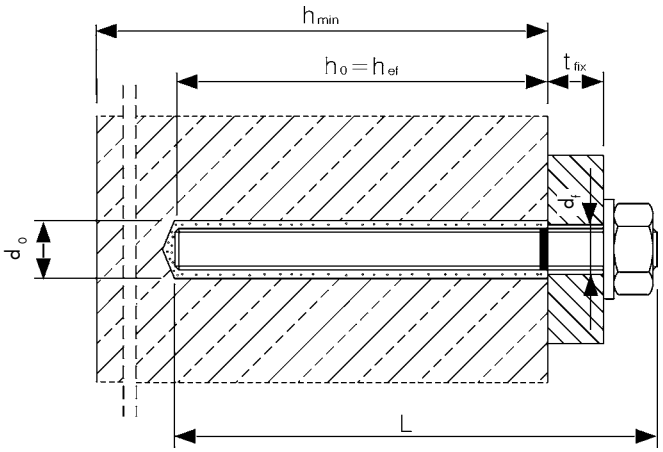


INJECTION SYSTEM WIT-UH 300

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	≥ 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	≥ 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 γ_L = 1.4 are included. The material safety factor depends on the failure mode. Steel grade 5.8

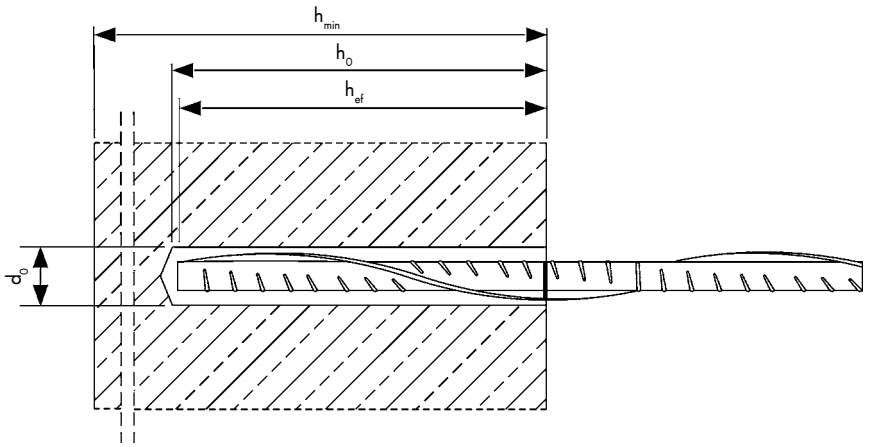
Anchor characteristic										
Thread size	**M**		**M8**	**M10**	**M12**	**M16**	**M20**	**M24**	**M27**	**M30**
Effective anchorage depth	$h_{ef,min}$	[mm]	60	60	70	80	90	96	108	120
	$h_{ef,max}$	[mm]	160	200	240	320	400	480	540	600
Nominal drill hole diameter	d_0	[mm]	10	12	14	18	22	28	30	35
Drill depth	h_0 / 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	Tinst	[Nm]	10	20	40	80	120	160	180	200
Min. thickness of concrete member	h_{min}	[mm]	$= h_{ef}$ +30mm ≥ 100mm			$= h_{ef} + 2d_0$				
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		**Ø**		**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]	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	≥ 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	≥ 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 γ_L = 1.4 are included. The material safety factor depends on the failure mode. f_{yk} = 500N/mm²												

Anchor characteristic											
Rebar size	**Ø**		**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_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 ≥ 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

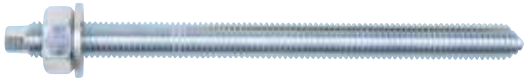


INJECTION SYSTEM WIT-VM 250

420 ml

Art. No. : 0903 450 205

Ø8 - Ø32



M8 - M30

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.

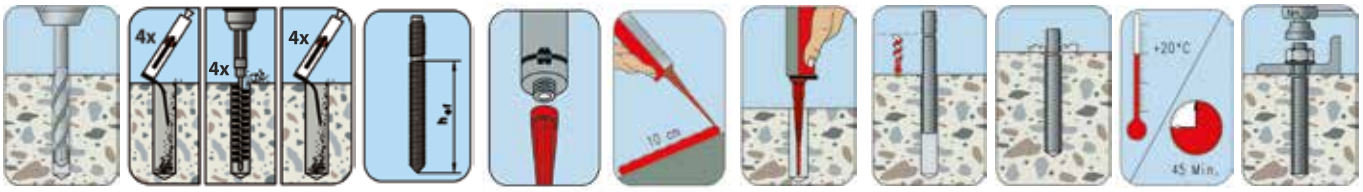
Approvals and Certificates:

Applications:

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°C [1]

Installation:

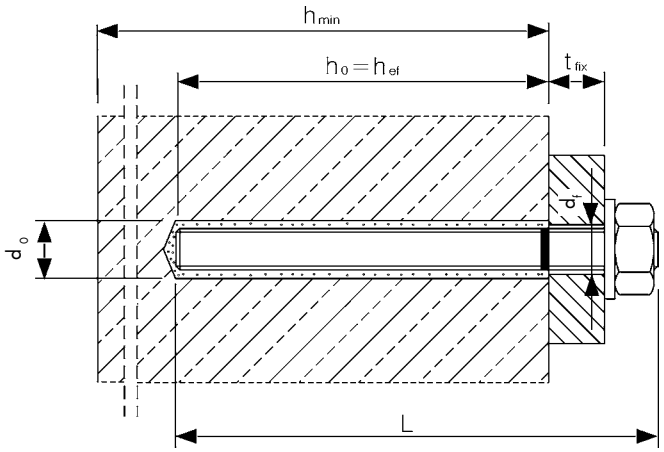


INJECTION SYSTEM WIT-VM 250

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	≥ 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	≥ C20/25	V_{perm}	[kN]			12.1	22.4	35.0	50.3	65.6	80.1

[1] Material safety factor y_M and safety factor for action y_L = 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_0	[mm]	10	12	14	18	24	28	32	35
Drill depth	h_0 / h_1	[mm]	$= h_{ef}$							
Diameter of steel brush	d_b ≥	[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 ≥ 100mm			$= h_{ef} + 2d_0$				
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

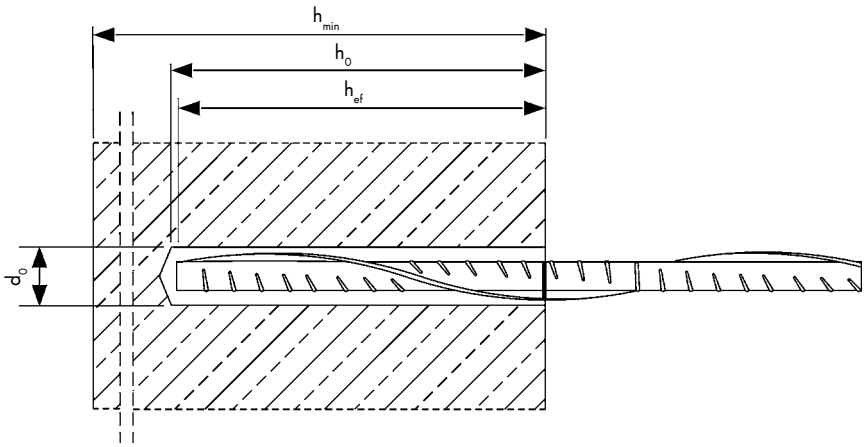


INJECTION SYSTEM WIT-VM 250

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 y_M and safety factor for action y_L = 1.4 are included. The material safety factor depends on the failure mode.

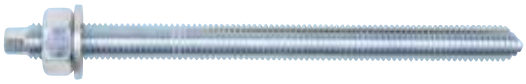
Anchor Characteristics												
Rebar size				**Ø8**	**Ø10**	**Ø12**	**Ø14**	**Ø16**	**Ø20**	**Ø25**	**Ø28**	**Ø32**
Effective anchorage depth	$h_{ef,min}$	[mm]		60	60	70	75	80	90	100	112	128
	$h_{ef,max}$	[mm]		160	200	240	280	320	400	480	540	640
Nominal drill hole diameter	d_0	[mm]		12	14	16	18	20	24	32	35	40
Drill depth	h_0 / h_1	[mm]		$= h_{ef}$								
Diameter of steel brush	d_b ≥	[mm]		14	16	18	20	22	26	34	37	41.5
Min. thickness of concrete member	h_{min}	[mm]		$= h_{ef}$ +30mm ≥ 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-EA 200

420ml

Art. No. 5918 320 420



M8 - M24

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

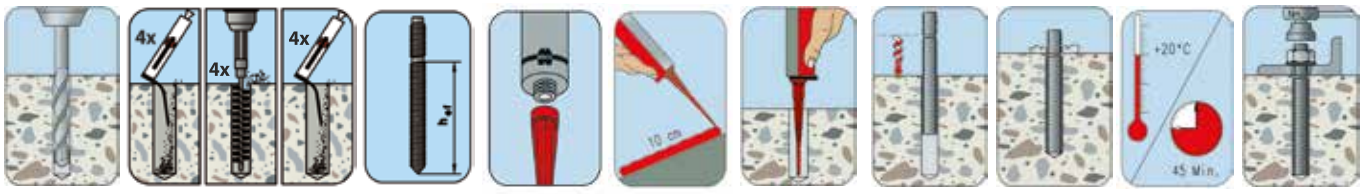
Applications:

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

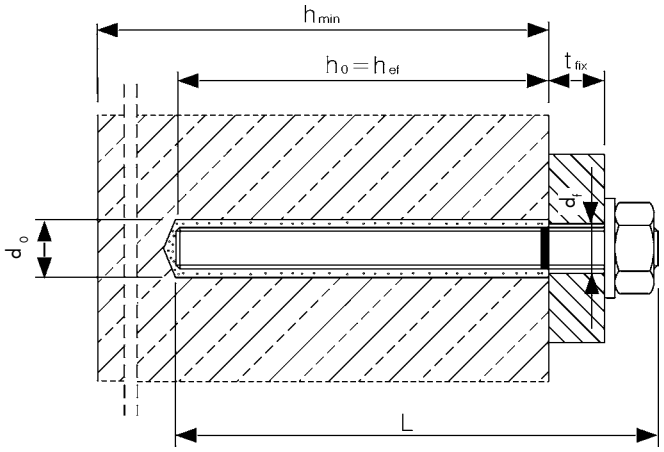
Installation:



INJECTION SYSTEM WIT-EA 200

Anchor size			M8	M10	M12	M16	M20	M24
Stressed cross section	A_s	[mm²]	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 y_M and safety factor for action y_L = 1.4 are included. The material safety factor depends on the failure mode.

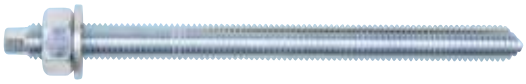


INJECTION SYSTEM WIT-PE 500

385 ml
Art. No. : 0903 480 001

585 ml
Art. No. : 0903 480 005

ø8 - ø40



M8 - M30

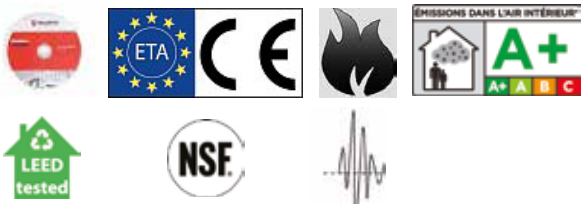
Suitable for:
C20/25 to C50/60 cracked and non-cracked concrete

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 anderwater 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.

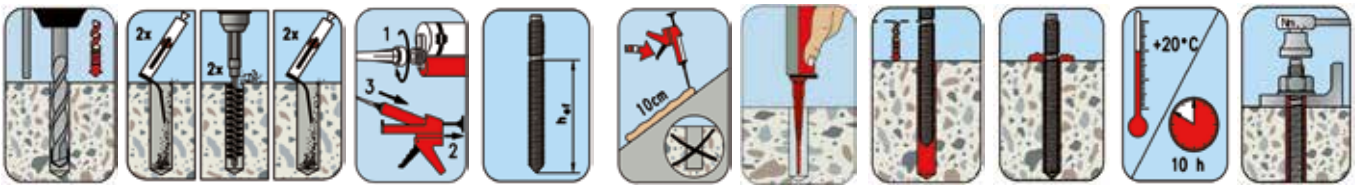
Applications:

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:

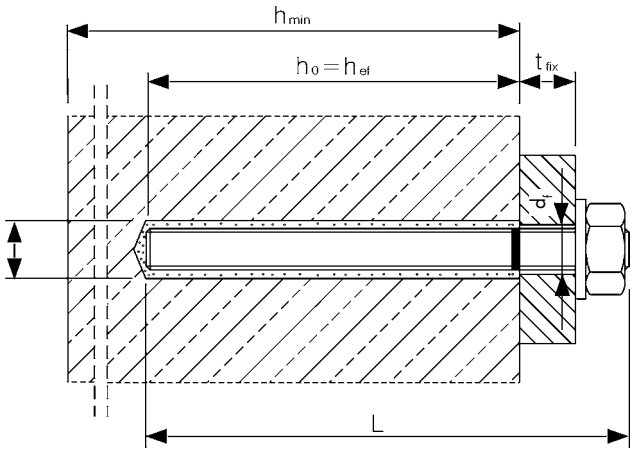


INJECTION SYSTEM WIT-PE 500

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	≥ 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	≥ C20/25	V_{perm}	[kN]			12.1	22.4	35.0	50.3	65.6	80.1

[1] Material safety factor y_M and safety factor for action y_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_0	[mm]	10	12	14	18	24	28	32	35
Drill depth	h_0 / 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 ≥ 100mm				= hef + $2d_0$			
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

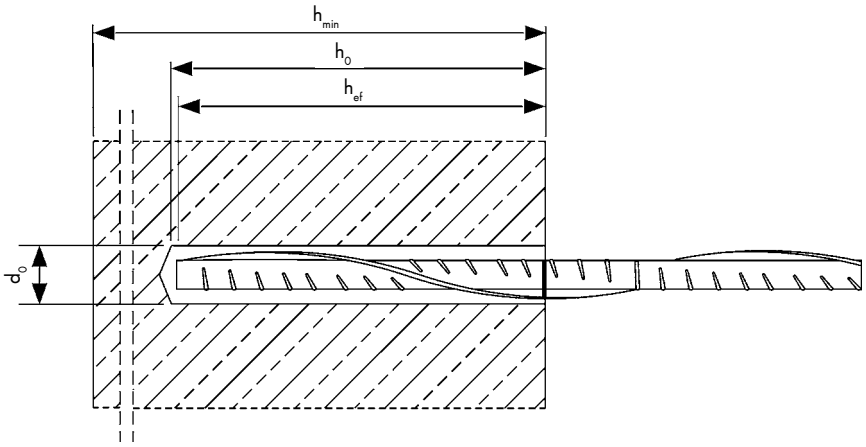


INJECTION SYSTEM WIT-PE 500

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 y_M and safety factor for action y_L = 1.4 are included. The material safety factor depends on the failure mode

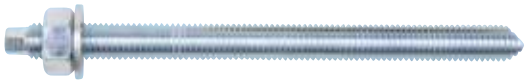
Anchor Characteristic												
Rebar size			**Ø8**	**Ø10**	**Ø12**	**Ø14**	**Ø16**	**Ø20**	**Ø25**	**Ø28**	**Ø32**
Effective anchorage depth	$h_{ef,min}$	[mm]	60	60	70	75	80	90	100	112	128
	$h_{ef,max}$	[mm]	96	120	144	168	192	240	300	336	384
Nominal drill hole diameter	d_0	[mm]	12	14	16	18	20	24	32	35	40
Drill depth	h_0 / h_1	[mm]	= hef								
Min. thickness of concrete member	h_{min}	[mm]	= hef + 30mm ≥ 100mm				= hef + $2d_0$				
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-P 200

420 ml

Art. No. : 5918 200 420



M8 - M20

Suitable for:

Masonry

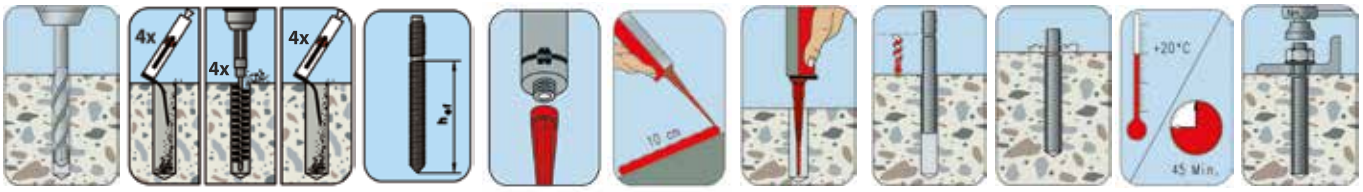
Benefits:

- 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_s [mm]	Drill hole-Ø d_0 [mm]	Brush-Ø d_b [mm]	Minimum-Brush-Ø $d_{b,min}$ [mm]	Cleaning brush (Connection thread M8) Art.No. VE [St.] = 1 WIT-RB		Extension 2 x 345 mm (Connection thread M8) Art.No. VE [St.] = 1	SDS plus compatible fitting M8Art.No. VE [St.] = 1
M8		10	10	5	RB 10	**0903 489 510**		
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	**0903 489 525**		
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-Ø d_0 ≤ 20 mm and Bore hole depthh_0 ≤ 10 x dia Ø)
Hand slide valve (diameter)

Anchor diameter-Ø d_s [mm]	**Drill hole-Ø d_0 [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				
20	25	26			
22	28				
24	32		Ø 20 mm x 3 m **0699 903 13**		
25	32				
28	35				
32	40				

Dia. Ø [mm]	**Threaded rod-Ø [mm]**	**Drill hole-Ø [mm]**		**Piston WIT-VS Nr.**	**Cartage size (coaxial 1:10): 280 ml, 320 ml, 420 ml**				**Cartage (side-by-side): 825 ml**	
					Hand pump		**Automatic pump**		**Automatic pump**	
		Hammer drill	**Compressed air**		**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	80	WIT-MV 10	80	WIT-MV 10
10		14	–	Nr. 14			100		100	
12	M12	16		Nr. 16			100		120	WIT-MV 16
14		18		Nr. 18					140	
16	M16	20		Nr. 20					160	
20	M20	25	26	Nr. 25	50		70		200	
22		28		Nr. 28						
24		32		Nr. 32			50			
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
Injection Adapter	**Ø 8 mm**	**d_0 = 12 mm** (Hammer drilling)	**–**	**–**	
	Ø 10 mm	**d_0 = 14 mm** (Hammer drilling)	**Nr. 14**	**0903 488 055**	10
	Ø 12 mm	**d_0 = 16 mm** (Hammer drilling + Pressure Air Drilling)	**Nr. 16**	**0903 488 056**	10
	Ø 14 mm	**d_0 = 18 mm** (Hammer drilling + Pressure Air Drilling)	**Nr. 18**	**0903 488 057**	10
	Ø 16 mm	**d_0 = 20 mm** (Hammer drilling + Pressure Air Drilling)	**Nr. 20**	**0903 488 058**	10
	Ø 20 mm	**d_0 = 25 mm** (Hammer drilling); **d_0 = 26 mm** (Pressure Air Drilling)	**Nr. 25**	**0903 488 059**	10
	Ø 24 mm	**d_0 = 32 mm** (Hammer drilling + Pressure Air Drilling)	**Nr. 32**	**0903 488 053**	10
	Ø 25 mm	**d_0 = 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

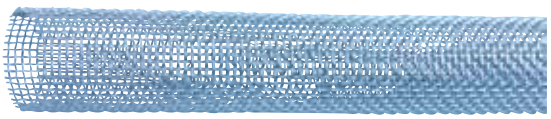
Double Application Gun

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 steelA4-70

Diameter	Fixture thickness t_{fix} [mm]	Length L [mm]	Effective anchor depth h_{ef} [mm]	Drill hole-Ø 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**	
	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**	10
	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**	5
	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 steelA4-70

Diameter	Drill bit hole depth L [mm]	Effective anchor depth h_{ef} [mm]	Drill hole-Ø 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**	
M10	1000	60-200	12	60-200	**5916 010 999**	**5916 210 999**	**5916 110 999**	10
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 steelA4-70

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	
	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	
	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	
	155					**0905 461 212**	0905 471 212	
	175					**0905 461 213**	0905 471 213	10
	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	
	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	
	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	
	350					**0905 462 412**	0905 472 412	
	400					**0905 462 413**	0905 472 413	5
M30	370	120–600	L – h_{ef} –30 mm	35	120–600	**0905 463 011**	0905 473 011	

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:

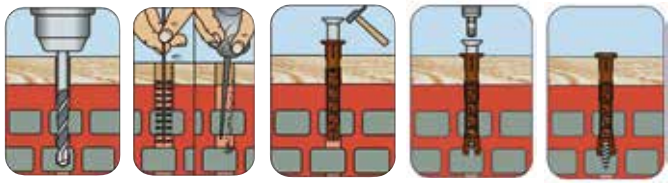
- Can be loaded immediately – no waiting time
- Expanding in four directions - High loads
- Universal frame-fixing anchor (concrete, masonry of perforated and solid brick, aerated concrete)
- The anchor sleeve and special screw are pre-assembled, which reduces installation time

Applications:

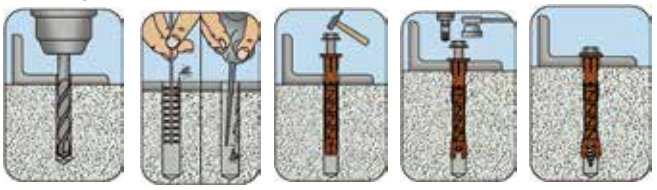
Approvals and Certificates:

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	$d_f \leq$	[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	C12/15	V_{perm}	[kN]	3.37	
	A4		V_{perm}	[kN]	3.16	

Load characteristics for masonry					
	Format	Density [kg/dm³]	Compressive strenghts [kg/dm³]	F_{perm} [kN]	
Lightweight concrete hollow block HBL EN 771-3	≥ 498 x 240 x 238	≥ 0.7	2	-	0.11
			4	-	0.26
			6	-	0.34
Lightweight concrete hollow block Liapor-Super K	≥ 498 x 240 x 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	l	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		
	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			
	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		
	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		
	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

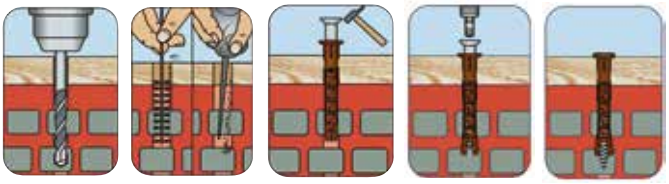
Applications:

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

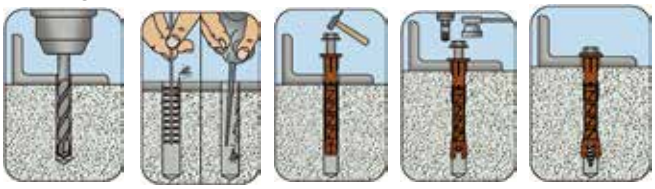
Approvals and Certificates:

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_0	[mm]	10
Drill hole depth	$h_1 \geq$	[mm]	80
Setting depth of anchor sleeve	h_{nom}	[mm]	70
Through - hole in attachment part	$d_f \leq$	[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	C12/15	V_{perm}	[kN]	5.37
	A4		V_{perm}	[kN]	4.99

Load characteristics for masonry				
	Format	Density [kg/dm³]	Compressive strenghts [kg/dm³]	**F_{perm} [kN]**
Lightweight concrete hollow block HBL EN 771-3	≥ 498 x 240 x 238	≥ 0.7	2	0.09
			4	0.17
			6	0.26
Lightweight concrete hollow block Liapor-Super K	≥ 498 x 240 x 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 h_{nom}=70mm	Drive	Wrench Size		PU
	Zinc plated	Stainless steel	l	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

Test reports

Fire protection Test Report No. 3174/0649-2 from 12th January, 2000

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

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

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

Guidelines for mounting/ RAL Quality Association

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.

We recommend anchors 51, 52, 53, 55.1 and 55.2 for this application.

Window walls former DIN 18056

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.

We recommend anchors with a construction permit for this application.

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 ander thermal loading
- Tested fire-resistance duration of 120 minutes

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

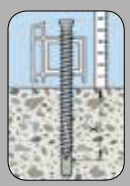
Good to know:

- **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 ander 55.2 Amo® III 11.5 mm).**

Setting instructions

Create drill hole

Clean drill hole



Align and affix window frame

Screw in screw

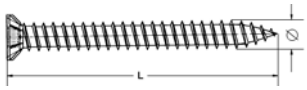
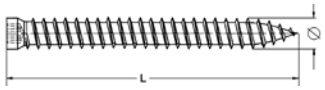
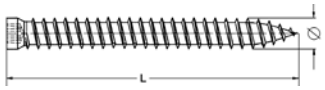
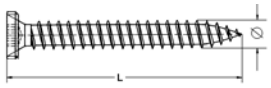
Press on cover cap

AMO® III SCREW 7.5 MM DIA.

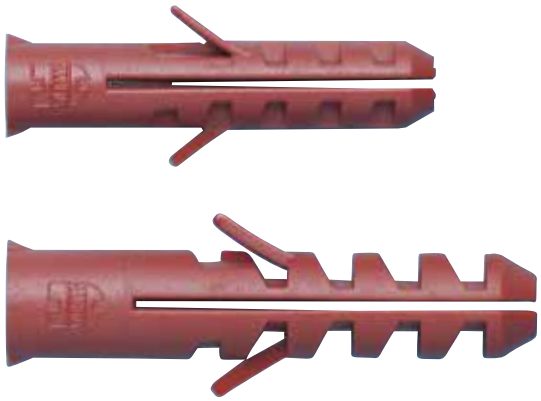
Performance Data					
Anchor type			**Type 1**	**Type 2**	**Type 3**
Fire resistance duration Concrete strength class at least C20/25 and maximum C50/60	**Centered tensile load**	**F30 [in kN]**	0.80	–	0.80
		F60 [in kN]	0.55	–	0.55
		F90 [in kN]	0.45	–	0.45
		F120 [in kN]	0.40	–	0.40
	Transverse or 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

Total length	**l [in mm]**	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	-	-	-	-	**0234 130 72**	**0234 130 82**	**0234 130 92**	**0234 130 102**	**0234 130 112**	**0234 130 122**	**0234 130 132**	**0234 130 152**	**0234 130 182**	**0234 130 212**	-	-
	Art. No. Galvanized steel, blue passivated	-	-	-	-	**0234 730 72**	**0234 730 82**	**0234 730 92**	**0234 730 102**	**0234 730 112**	**0234 730 122**	**0234 730 132**	**0234 730 152**	**0234 730 182**	**0234 730 212**	-	-
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	-	-	-	-	-	-	-	**0234 225 102**	**0234 225 112**	**0234 225 122**	**0234 225 132**	**0234 225 152**	**0234 225 182**	**0234 225 212**	-	-
	Art. No. Galvanized steel, blue passivated	-	-	-	-	-	-	-	**0234 825 102**	**0234 825 112**	**0234 825 122**	**0234 825 132**	**0234 825 152**	**0234 825 182**	**0234 825 212**	-	-
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	-	-	-	-	**0234 230 72**	**0234 230 82**	**0234 230 92**	**0234 230 102**	**0234 230 112**	**0234 230 122**	**0234 230 132**	**0234 230 152**	**0234 230 182**	**0234 230 212**	-	-
	Art. No. Galvanized steel, blue passivated	-	-	-	-	**0234 830 72**	**0234 830 82**	**0234 830 92**	**0234 830 102**	**0234 830 112**	**0234 830 122**	**0234 830 132**	**0234 830 152**	**0234 830 182**	**0234 830 212**	**0234 830 252**	**0234 830 302**
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	**0234 330 32**	**0234 330 42**	**0234 330 52**	**0234 330 62**	**0234 330 72**	**0234 330 82**	**0234 330 92**	**0234 330 102**	**0234 330 112**	**0234 330 122**	**0234 330 132**	**0234 330 152**	**0234 330 182**	**0234 330 212**	-	-
	Art. No. Galvanized steel, blue passivated	**0234 930 32**	**0234 930 42**	**0234 930 52**	**0234 930 62**	**0234 930 72**	**0234 930 82**	**0234 930 92**	**0234 930 102**	**0234 930 112**	**0234 930 122**	**0234 930 132**	**0234 930 152**	**0234 930 182**	**0234 930 212**	-	-
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

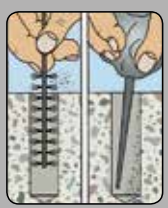
- The knock-in lock prevents premature spreading during through-bolt mounting
- The twist lock prevents turning in the drilled hole
- Spreading-pressure-free dowel neck prevents damage to plaster and tiles
- Through-bolt and cotter-pin mounting

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-comended[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	–	–	–	–	–

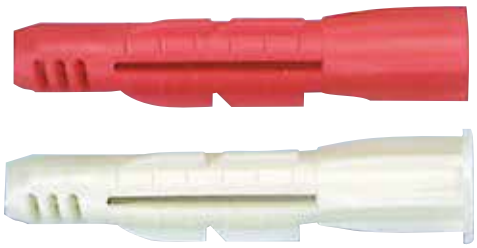
Characteristics										
Distance	**a ≥ [mm]**	40	50	60	80	100	120	140	160	200
Edge spacing	**a_r ≥ [mm]**	20	25	30	40	50	60	70	80	100
Drill hole depth	**t ≥ [mm]**	30	35	40	50	65	75	85	95	105
Embedment depth	**h_s ≥ [mm]**	20	25	30	40	50	60	75	80	90
Drill hole-Ø	**d_0 [mm]**	4	5	6	8	10	12	14	16	20
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 Nylon Anchor		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. Nylon Anchor		**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

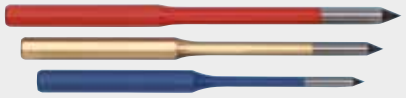
ZEBRA SHARK® ANCHORS



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

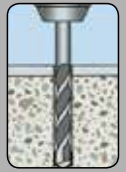
- Low screw-in torque of Wüpofast® screw due to pre-formed thread
- Twist lock due to locking edge running lengthwise
- One screw diameter can be used – regardless of application
- In hollow stones/walls, form-fitting results due to knotting together or bending out of spreading segments

3. Properties

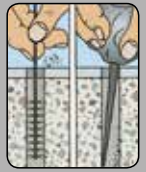
- The universal plug for subordinate securing in nearly all building materials
- In solid and hollow-chamber stone of any kind
- In gypsum plasterboard sheets, pressboard, wood panels etc.
- For use with stud screws, hooks, ring screws, Wüpofast®, Ecofast® screws and wood screws
- Fully resistant to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

Setting instruction

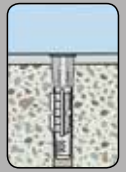
Surface: Concrete and solid stone



Drill hole



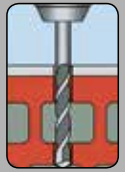
Clean borehole



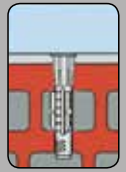
Set anchor in place

Screw in screw until flush

Surface: hollow-chamber stone



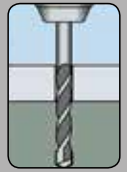
Drill hole



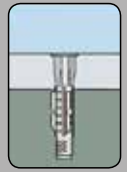
Set anchor in place

Screw in screw until flush

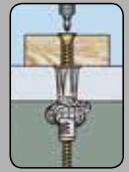
Surface: Gypsum plasterboard



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_{drl} [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 36[1)]**		**0906 007 51[1)]**		**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 37[1)]**		**0906 007 52[1)]**		**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

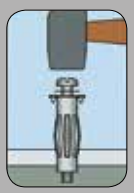
Hand-Mounting Pliers

Art. No. 0903 20
P.Qty. 1

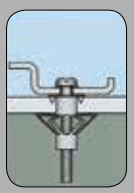
Art. No. 0903 201
P.Qty. 1

Setting instructions

Drill hole


Set anchor in place

Expand anchor fully with pliers


Secure part

W-MH METAL HOLLOW-WALL ANCHOR

Performance data						
Anchor diameter [mm]			**M4**	**M5**	**M6**	**M8**
Recommended loads[1]	**Gypsum plasterboard d ≥ 12 mm**	**$F_{recom.}$ [kN]**	0.20	0.20	0.20	0.20
	Gypsum plasterboard d ≥ 25 mm	**$F_{recom.}$ [kN]**	0.30	0.30	0.30	0.30
	Hard particle board d ≥ 4 mm	**$F_{recom.}$ [kN]**	0.20	0.20	0.25	0.30
	Hard particle board d ≥ 10 mm	**$F_{recom.}$ [kN]**	0.20	0.20	0.30	0.30
	Wood particle board d ≥ 10 mm	**$F_{recom.}$ [kN]**	0.25	0.25	0.25	0.25
	Hollow ceiling brick d ≥ 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 ≥ [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 * Short screw hook for optimum attachment of hanging cabinett		-	-	-	-	-	-	-	-	-	**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

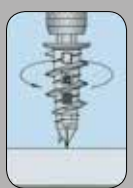
Range of W-GS Gypsum Plasterboard Anchors
Contents:
Anchors: 100 pcs. 14.5 x 33 mm plastic,
100 pcs. 14.5 x 33 mm diecast zinc
Screws: 200 pcs. 4.5 x 35 mm
+ 1 pc. ZEBRA® Screwdriver
Art. No. 0613 253 2 = 401 parts.
Art. No. 0964 903 250

- 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)

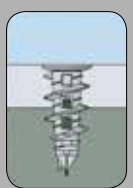
3. Properties

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

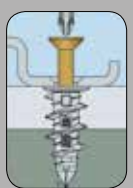
Setting instructions



Press anchor tips into attachment surface

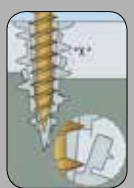


Screw in anchor until flush



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 ≥ 12.5 mm**	**$F_{rec.}$ [kN]**	0.1	0.1
	Gypsum plasterboard d ≥ 25 mm		0.1	0.1
	Gypsum fibrous panels		0.12	–
Recommended transverse load	**Gypsum plasterboard d ≥ 12.5 mm**	**$F_{rec.}$ [kN]**	0.12	0.12
	Gypsum plasterboard d ≥ 25 mm		0.15	0.12
	Gypsum fibrous panels		0.15	–

Characteristic values			
Axial spacing	**a ≥ [mm]**	100	
Edge spacing	**$a_{r\geq [mm]}$**	50	
Minimum component thickness	**d ≥ [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 ⅜"

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

- With switchover square drive, fine-toothed ratchet head (72 teeth)
- Accuracy of ± 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

⅜" | Art. No. 071471 21 | P.Qty. 1
½" | Art. No. 071471 22 | P.Qty. 1

½" Socket Wrench Assortment 17PCS

Pack contains

- 1 ½ 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

½" 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

⅜" Socket Wrench Insert WS17

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

Length: 64mm

⅜" | Art. No. 0713 122 117 | P.Qty. 1

½" Socket Wrench WS20

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

Length: 77mm

⅜" | 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 enviroments
- Excellent voice recognition
- Very comfortable

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

PPE

Adventure S3 Saftey 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
	Eurpean 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 CodeTM and related codes in the United States of America.
	Fire resistance classification
	Leed certificated 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

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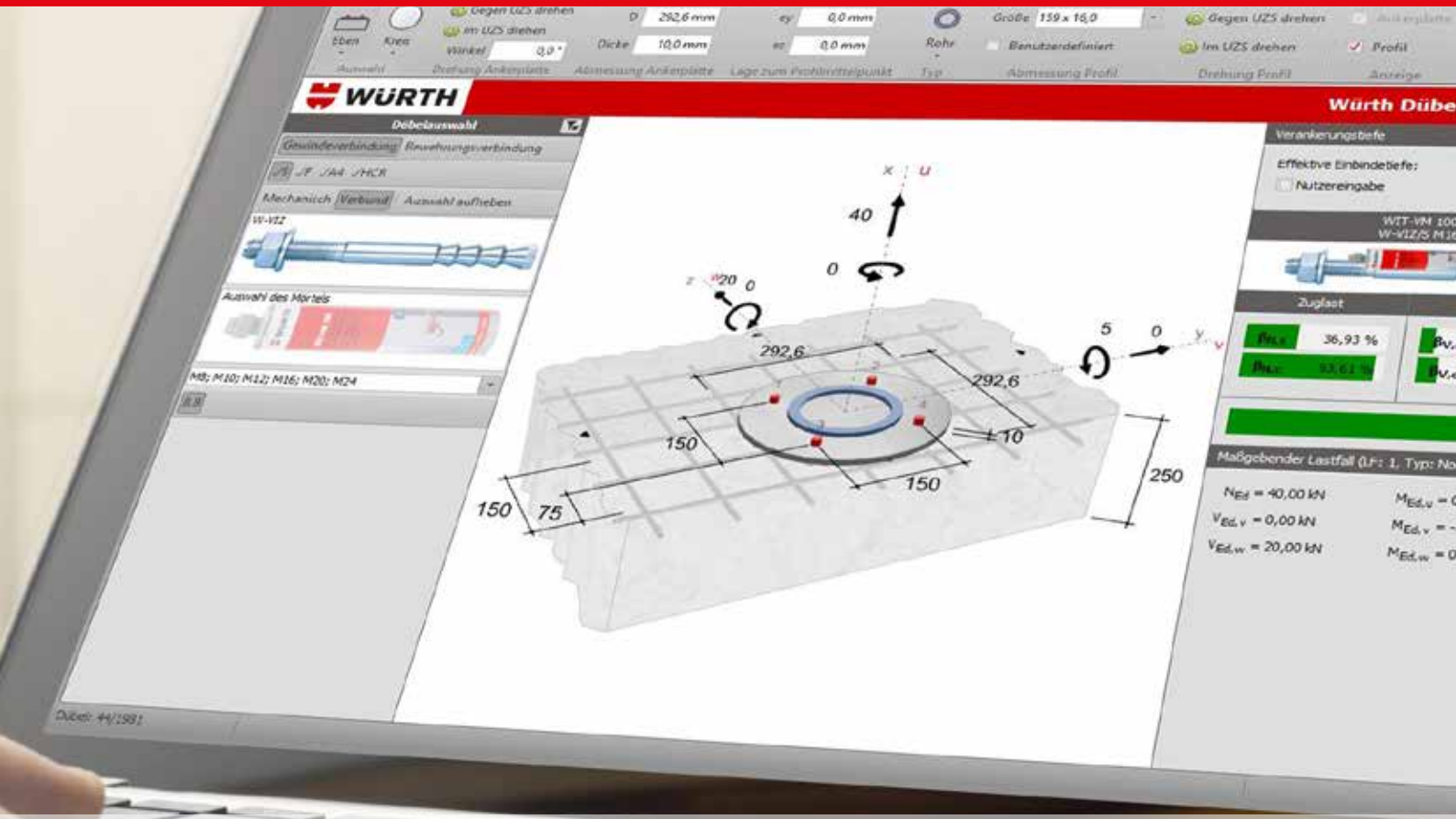
All information and prices are correct at the time of going to print 25th November 2018 and may change without notice. While we endeavour to hold sufficient stock to meet all orders, if we have insufficient stock this item will be placed on back order(excluding discontinued/end of line or (while stocks last) for your account and delivered as soon as stock becomes available. Some products are delivered directly from Germany and may take 3-5 days to arrive. For full delivery terms visit us online.



WÜRTH ANCHOR DESIGN SOFTWARE