WÜRTH

PARTNER FOR ANCHOR TECHNOLOGY

ANCHOR TECHNOLOGY PRODUCT CATALOGUE

WÜRTH INSIGHT

WÜRTH Headquarters – Künzelsau, Germany

- **More than 1,25,000 products**
- **More than 87,000 employees worldwide**
- **4 million customers worldwide**
- **Over 400 companies in more than 80 countries**
- **Standard & Poor's rating: A Stable**
- **2023 Sales: EUR 21 Billion**

We make connections worldwide

WUERTH INDIA

Central Support Centre – Mumbai

Regional Support Centre – Chennai | Delhi | Kolkata

Over 1045 employees working in across 35 locations to serve the customers

WUERTH INDIA PRESENCE

1045 EMPLOYEES	4 ZONAL OFFICES
34 BRANCHES	21 WAREHOUSES
734 SALES REPS	27000+ CUSTOMERS

Our product range includes products for Automotive Technology/Service Maintenance, Chemicals, Paints, Engine Oils, Adhesives/Abrasives, Cutting Devices, Fasteners, Furniture and Construction Fittings, Dowel Technology, Industrial Safety and much more.

BUSINESS AREAS

AUTO
- Auto Repair Shops
- Car Dealers
- Body Shops
- Motorcycle Repair Shops
- Smash Repair Shops
- Auto Electricians

MOTORBIKE
- Body Shops
- Motorcycle Repair Shops
- Smash Repair Shops
- Auto Electricians

CARGO
- OEM Dealers
- Authorized Workshops
- Multi-brand Workshops
- Forwarding Companies
- Transport Operators
- Body Building Units

METAL
- Metalworking Industry
- Fabrication Industry
- Maintenance, Repair & Operations
- Furniture Manufacturers
- Electrical Installations
- Turnery/Milling Shop

CONSTRUCTION
- Construction Companies
- Door & Window Frame Installation
- Facade Contractors
- Construction Project
- EPC Contractors

PAINTS
- Body Shops
- OEM Dealers
- Multi Brand Workshops
- Body Building Units
- Industries


Uhle Gerüstbau

ANCHOR SELECTION

Anchors		Base Material						Approvals				
		Cracked Concrete	Non-Cracked	Solid Brick & Block Masonary	Hallow Brick & Block Masonry	Aerated Concrete	Hallow Core slabs	ETA	Seismic	Fire	Sprinkler	Design
WIT-PE 1000		✓	✓					✓	✓	✓		✓
WIT-PE 510		✓	✓					✓		✓		✓
WIT- UH 300		✓	✓					✓	✓	✓		✓
WIT- VM 250		✓	✓	✓	✓	✓		✓	✓	✓		✓
WIT- VM 210		✓	✓	✓	✓	✓		✓	✓			✓
WIT-EA 200			✓	✓	✓	✓		✓				✓
W-HAZ		✓	✓					✓	✓	✓	✓	✓
W-FAZ Pro		✓	✓					✓	✓	✓	✓	✓
W-FAZ		✓	✓					✓	✓	✓	✓	✓
W-FA			✓					✓		✓	✓	✓
W-FB			✓					✓				✓
W-NAA			✓									
W-BS		✓	✓				✓	✓	✓	✓		✓
W-ED		✓	✓				✓	✓		✓	✓	✓
W-SLED			✓									
W-IFR			✓	✓	✓	✓		✓		✓		
W-ND			✓	✓								

Note: All the chemical anchors are having approval from

LEED tested NSF VOC conforming

WÜRTH

SYMBOLS

European Technical Assessment
Key document for designing an anchorage. It contains the performance parameter of the anchor.

Seismic actions
The ETA recommends the seismic performance categories for fasteners. They are C1 or C2.

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

An **EPD** (Environmental Product Declaration) is a multipage document that serves to provide transparency to the public regarding the environmental influences of building products. It is the basis for the ecological evaluation of buildings.

ASSESSMENT/APPROVAL

Component (anchor)

↓

Of relevance to building authorities
- If the anchor fails, danger to life and/or great economic damage may occure
- **Load-bearing structure** (e.g. anchoring steel support)
- **redundant, non-structural system** (e.g. mounting suspended ceiling)

Certificate required

Component (anchor)

↓

Of no relevance to building authorities
- No danger if the anchor fails
- e.g. mounting skirting boards, post boxes or the like

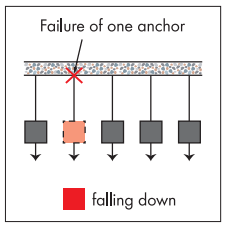
↓

No certificate necessary
Planner/executor is responsible

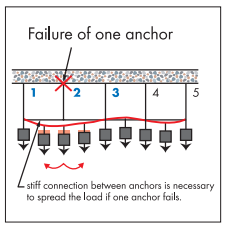
↓

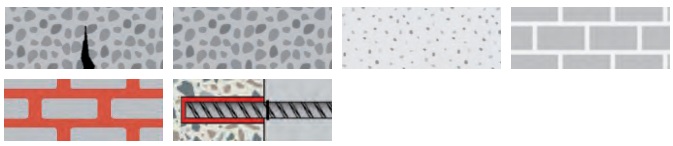
Approved for:

Single or group of fasteners
The loads are applied to the individual fasteners.



Fasteners in redundant non-structural systems
It is assumed that the load can be transmitted to adjacent fasteners without violating the requirements on the fixture.
(Requirements are given in ETA)





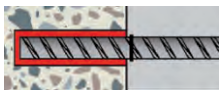
CONTENTS

CHEMICAL ANCHORS

INJECTION SYSTEM WIT-PE 1000

585 ml
Art. No. 5918 605 585





- **Two-component pure epoxy, stgrene free resin mortar**
- **Asseced for 100 years of service life in seismic condition.**
- **24 months shelf life**
- **High performance chemical anchor for challengic site conditions.**
- **Approved for TR69 Design Methodology.**
- **Bonded anchor mortar for concrete and reinforcement attachment with subsequent mortaring (REBAR).**

Features	Advantages
Pure epoxy resin mortar	Excellent bonding and low creap chemical
High bond strengths	Achieves the load requirements in lesser anchorage depth
Approved for cracked and non cracked	Option of working in both tension & compression zone
Approved for Dry, Wet & Flooded holes	Flexibility in execution of Job
Slow curing chemical	Gives an option to work with Higher diameters and deeper depths
Approved for Core cut holes	No additional forging required

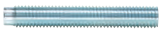
Application references




Applications

Suitable for structural expansions, ceiling and wall attachments, expansion of load-bearing structures, reinforcement of load-bearing structures, attachment of balconies and canopies, sealing of temporary openings and "missed" reinforcing bars.

Approvals and certificates

Threaded rod	Internal threaded rod	Rebar
 M8 - M30	 M6 to M20	ø8 to ø40

Temperature of base material	Gelling – working time	Min. curing time – dry conditions[1)]
5°C to 9°C	80 min	48 h
10°C to 14°C	60 min	28 h
15°C to 19°C	40 min	18 h
20°C to 24°C	30 min	12 h
25°C to 34°C	12 min	9 h
35°C to 39°C	8 min	6 h
+40°C	8 min	4 h

[1)] for wet base material the curing time must be doubled

Cartridge storage temperature min. +5°C; optimal +20°C and under 25°C.
Do not expose the cartridges to Sun Light exposure and Direct heat.

Type of installation

Pre-positioned	In-place	Stand-off
✓	-	✓

Installation condition

Dry concrete	Wet concrete	Flooded drill hole
✓	✓	✓

Drilling method

Hammer drill	Diamond drill	Hollow drill
✓	✓	✓

Rotary drilling in masonry required for some types of bricks and blocks

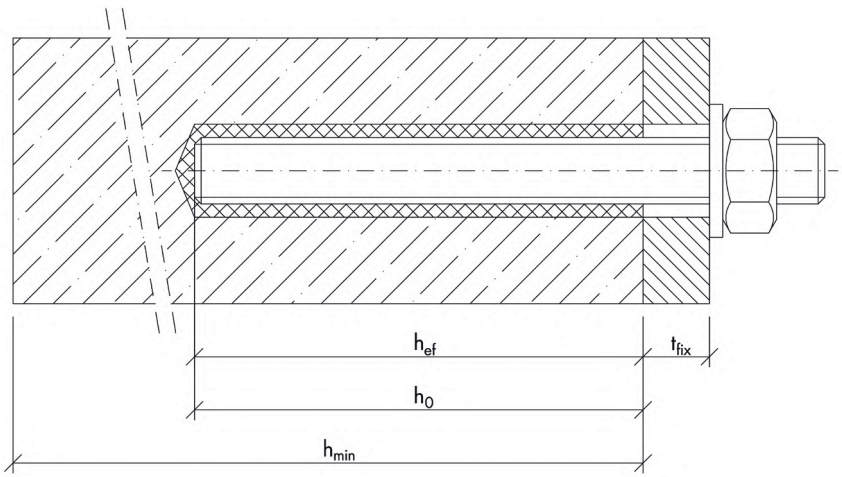
INJECTION SYSTEM WIT-PE 1000

Loads - Anchors - 50/100 years

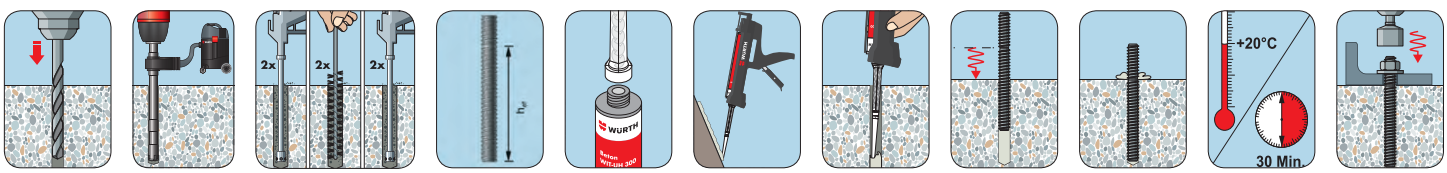
Thread size				M8	M10	M12	M16	M20	M24	M27	M30
Effective anchorage depth		h_{ef}	[mm]	80	90	110	125	170	210	240	270
Non-cracked Concrete											
Tension	5.8	Nrec	[kN]	8.6	13.8	20.0	32.7	51.9	71.3	87.1	103.9
	8.8			13.8	20.0	27.0	32.7	51.9	71.3	87.1	103.9
	A4-70			9.9	15.7	22.5	32.7	51.9	71.3	57.4	70.2
Shear	5.8	Vrk	[kN]	6.3	9.7	14.3	26.9	42.3	60.6	78.9	96.0
	8.8			8.6	13.1	19.4	36.0	56.0	80.6	105.1	128.0
	A4-70			6.0	9.2	13.7	25.2	39.4	56.8	34.5	42.2
Cracked Concrete											
Tension	5.8	Nrk	[kN]	6.2	8.8	14.8	22.4	36.3	49.9	61.0	72.7
	8.8			6.2	8.8	14.8	22.4	36.3	49.9	61.0	72.7
	A4-70			6.2	8.8	14.8	22.4	36.3	49.9	57.4	70.2
Shear	5.8	Vrk	[kN]	6.3	9.7	14.3	26.9	42.3	60.6	78.9	96.0
	8.8			8.6	13.1	19.4	36.0	56.0	80.6	105.1	128.0
	A4-70			6.0	9.2	13.7	25.2	39.4	56.8	34.5	42.2

[1] Loads are valid for single anchors. Normal spaced reinforcement in ≥ C20/25. Material safety factor γ_M and safety factor for action γ_L = 1.4 are included. The material safety factor depends on the failure mode.
[2] Loads for anchorages close to edge and/or with small spacing have to be reduced and should be calculated based on performance data given in the ETA.

Clearance-hole in fixture	Pre-positioned	d_f	[mm]	9	12	14	18	22	26	30	33
	Push through	d_f	[mm]	12	14	16	20	24	30	33	40
Drill depth		$h_0 = h_{ef}$	[mm]	80	90	110	125	170	210	240	270
Minimum thickness of concrete member		h_{min}	[mm]	110	120	140	161	214	266	300	340
Minimum edge distance		c_{min}	[mm]	35	40	45	50	60	65	75	80



Installation of Anchors



INJECTION SYSTEM WIT-PE 510

440 ml 585 ml

- **Two- component reactive resin mortar, pure epoxy, styrene-free, for concrete and reinforcement attachment with subsequent mortaring (REBAR).**
- **Long processing time, ideal for deep anchor depths.**
- **Side by Side Cartridge: 1:3 Ratio**

Features	Advantages
Pure epoxy resin mortar.	Excellent bonding and low shrinkage chemical.
High bond strengths.	Achieves the load requirements in lesser anchorage depth.
Approved for cracked and non cracked.	Option of working in both tension & compression zone.
Approved for Diamond Core holes.	Suitable for varied applications.
Slow curing chemical.	Gives an option to work with Higher diameters and deeper depths.
F240 fire resistance certification.	Fire resistance upto 240 minutes.
Shorter anchorage depths.	Reduces drilling depths & supports in anchorage in minimal base material thickness.

Applications




Temperature of base material	Gelling working time	Min. curing time in dry conditions	Min. curing time in dry conditions
5°C to 9°C	80 min	48 h	120 h
10°C to 14°C	60 min	28 h	96 h
15°C to 19°C	40 min	18 h	48 h
20°C to 24°C	30 min	12 h	24 h
25°C to 34°C	12 min	10 h	20 h
35°C to 39°C	8 min	7 h	14 h
+40°C	8 min	4 h	8 h

Applications

Suitable for attaching metal structures, metal profiles, wooden structures, brackets, pipes, cable conduits etc.

Suitable for structural expansions, ceiling and wall attachments, expansion of load-bearing structures, reinforcement of load-bearing structures, attachment of balconies and canopies, sealing of temporary openings and "forgotten" reinforcing bars.

Approvals and certificates

ETA CE LEED tested

Threaded rod	Rebar
 M8 - M30	ø8 to ø32

Type of installation

Pre-positioned	In-place	Stand-off
✓	-	✓

Installation condition

Dry concrete	Wet concrete	Flooded drill hole
✓	✓	✓

Drilling method

Hammer drill	Diamond drill	Hollow drill
✓	-	✓

INJECTION SYSTEM WIT-PE 510

Basic load data (for a single anchor)

All data in this section applies when:

- Installation is correct (see installation instructions)
- No edge distance and spacing influence
- Base material thickness and embedment depth are according to anchor characteristics
- Rebar material is according to specifications, steel grade B500B
- Concrete C 20/25, f_{ck} = 20 N/mm²
- Concrete C 50/60, f_{ck} = 60 N/mm²
- Temperature range I (min. base material temperature -40°C, max long term/short term base material temperature: +24°C/40°C).
- Dry or wet conditions of drill hole, hammer drilling

Recommended Load

Thread size				M8	M10	M12	M16	M20	M24
Effective anchorage depth		hef	[mm]	80	90	110	125	170	210
Non-cracked Concrete C20/25									
Tension	5.8	Nrec	[kN]	6.8	9.0	13.2	19.9	33.9	50.3
	8.8			6.8	9.0	13.2	19.9	33.9	50.3
	A4-70			6.8	9.0	13.2	19.9	33.9	50.3
Shear	5.8	Vrec	[kN]	6.3	9.7	14.3	26.9	42.3	60.6
	8.8			8.6	13.1	19.4	36.0	56.0	80.6
	A4-70			6.0	9.2	13.7	25.2	39.4	56.8
Cracked Concrete C20/25									
Tension	5.8	Nrec	[kN]	3.6	5.0	7.4	11.2		
	8.8			3.6	5.0	7.4	11.2		
	A4-70			3.6	5.0	7.4	11.2		
Shear	5.8	Vrec	[kN]	6.3	9.7	14.3	26.9		
	8.8			8.6	12.1	17.8	26.9		
	A4-70			6.0	9.2	13.7	25.2		

[1] Material safety factor γ_M and safety factor for action γ_L = 1.4 are included. The material safety factor depends on the failure mode.

INJECTION SYSTEM WIT-UH 300

420 ml

Art. No. 5918 500 420

- **Two-component hybrid, styrene-free mortar.**
- **Assessed for 100 years in siesmic conditions**
- **18 month shelf life**
- **Best in class bond strength.**
- **Two - component reactive resin mortar, urethane vinyl ester hybrid mortar, styrene - free**
- **High-performance mortar for concrete and reinforcement attachment with subsequent mortaring (REBAR).**
- **Approved for TR69 Design Methodology.**
- **Coaxial Cartridge: 1:10 Ratio**

Features	Advantages
Hybrid mortar.	Helps in achieving shorter embedment depths for high load requirements.
Approved for cracked & non-cracked.	Can work in both tension and compression zone.
Service temperature approval up to 160 degrees.	Gives an option to choose in extreme temperature conditions.
Fast curing in its class.	Help in quick completion of job.
Approved for both Dry, Wet & Flooded.	Flexibility at execution level.
Approved in seismic C1 and C2.	Can design for severe conditions of seismic.

Application references

Applications

Suitable for attaching metal structures, metal profiles, wooden structures, brackets, pipes, cable conduits, etc.

Suitable for structural expansions, ceiling and wall attachments, expansion of load-bearing structures, reinforcement of load-bearing structures, attachment of balconies and canopies, sealing of temporary openings and "missed" reinforcing bars.

Approvals and certificates

Threaded rod	Internal threaded rod	Rebar
 M8 - M30	 M6 - M20	ø8 to ø32

Temperature of base material	Gelling – working time	Min. curing time – dry conditions[1)]
-5°C to -1°C	50 min	5 h
0°C to 4°C	25 min	3.5 h
5°C to 9°C	15 min	2 h
10°C to 14°C	10 min	60 min
15°C to 19°C	6 min	40 min
20°C to 29°C	3 min	30 min
30°C to 40°C	2 min	30 min

[1)] for wet base material the curing time must be doubled

Cartridge storage temperature min. +5°C; optimal +20°C and under 25°C.
Do not expose the cartridges to Sun Light exposure and Direct heat.

Type of installation

Pre-positioned	In-place	Stand-off
✓	-	✓

Installation condition

Dry concrete	Wet concrete	Flooded drill hole
✓	✓	✓

Drilling method

Hammer drill	Diamond drill	Hollow drill
✓	-	✓

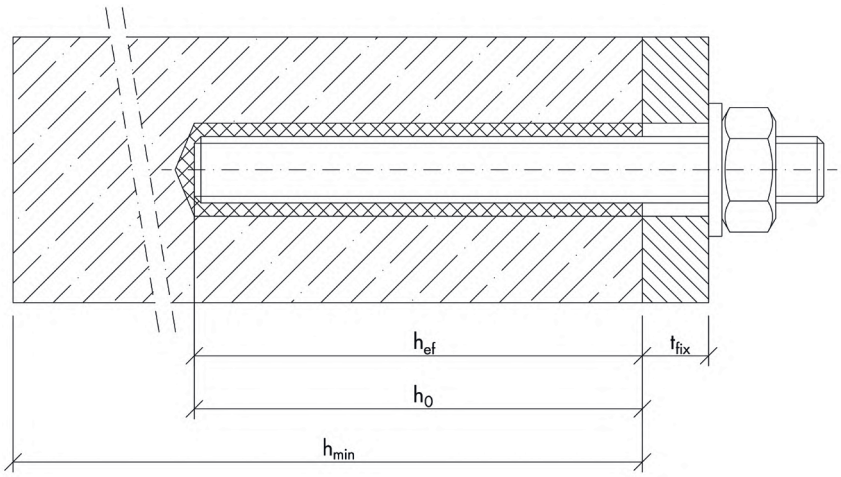
INJECTION SYSTEM WIT-UH 300

Loads – Anchors - 50/100 Years

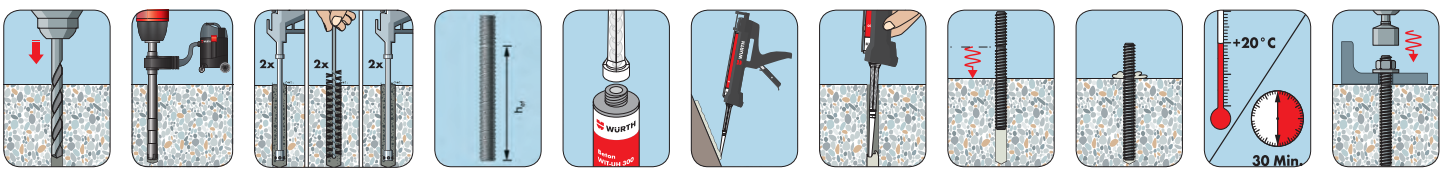
Thread size				M8	M10	M12	M16	M20	M24	M27	M30
Effective anchorage depth		h_{ef}	[mm]	80	90	110	125	170	210	240	270
Non-cracked Concrete											
Tension	5.8	N_{rec}	[kN]	8.7	13.8	20.1	32.7	51.9	71.3	87.1	103.9
	8.8			13.8	20.0	27.0	32.7	51.9	71.3	87.1	103.9
	A4-70			9.9	15.7	22.5	32.7	51.9	71.3	57.4	70.2
Shear	5.8	V_{rec}	[kN]	6.3	9.9	14.5	26.9	42.0	60.5	78.7	96.2
	8.8			8.6	13.1	19.4	36.0	56.0	80.6	105.1	128.0
	A4-70			6.0	9.2	13.7	25.2	39.4	56.8	34.5	42.0
Cracked Concrete											
Tension	5.8/8.8	N_{rec}	[kN]	6.7	10.1	15.8	22.9	36.3	49.9	61.0	72.7
	A4-70			6.7	10.1	15.8	22.9	36.3	49.9	57.4	70.2
Shear	5.8	V_{rec}	[kN]	6.3	9.9	14.5	26.9	42.0	60.5	78.7	96.2
	8.8			8.6	13.1	19.4	36.0	56.0	80.6	105.1	128.0
	A4-70			6.0	9.2	13.7	25.2	39.4	56.8	34.5	42.0

[1] Loads are valid for single anchors. Normal spaced reinforcement in ≥ C20/25. Material safety factor γ_M and safety factor for action γ_L = 1.4 are included. The material safety factor depends on the failure mode.
[2] Loads for anchorages close to edge and/or with small spacing have to be reduced and should be calculated based on performance data given in the ETA.

Clearance-hole in fixture	d_f	[mm]	9	12	14	18	22	26	30	33
Drill depth	$h_0 = h_{ef}$	[mm]	80	90	110	125	170	210	240	270
Minimum thickness of concrete member	h_{min}	[mm]	110	120	140	161	214	266	300	340
Minimum edge distance	c_{min}	[mm]	35	40	45	50	60	65	75	80



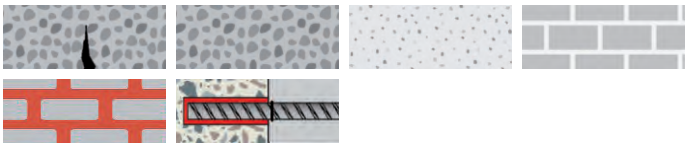
Installation of Anchor



INJECTION SYSTEM WIT-VM 250

- **All rounder chemical mortor suitable for anchoring rebar applications in varied substraits**
- **Shelf Life - 18 Months**
- **Coaxial Cartridge: 1:10 Ratio**

420 ml
Art. No. 0903 450 205



Features	Advantages
Approved for cracked & non-cracked.	Can work in both tension and compression zone.
Approved for masonry consisting of solid perforated brick, aerated concrete.	Can be used in any masonry works.
Fast curing time.	Help in quick completion of job.
Approved in seismic.	Can design for seismic buildings.
F120 fire resistance certification.	Fire resistance upto 120 minutes.
Vinyl Ester based chemical.	Can be used in challenging conditions
Service Temperature approved of 120°	

Application references




Applications

Anchoring in cracked and non-cracked concrete, masonry consisting of solid and perforated brick, aerated concrete and for subsequently installed reinforcement rods.

Suitable for attaching metal structures, metal profiles, wooden structures, brackets, grids, pipes, cable conduits etc.

Approvals and certificates

Threaded rod	Internal threaded rod	Rebar	Special insert
M8 - M30	IG-M6 - IG-M10	ø8 to ø32	

Temperature of base material	Gelling in working time	Min. curing time – dry conditions[1)]
-10°C to -6°C	90 min	24 h
-5°C to -1°C	90 min	14 h
0°C to 4°C	45 min	7 h
5°C to 9°C	25 min	2 h
10°C to 19°C	15 min	80 min
20°C to 29°C	6 min	45 min
30°C to 34°C	4 min	25 min
35°C to 39°C	2 min	20 min
> 40°C	90 s	15 min

[1)] for wet base material the curing time must be doubled

Cartridge storage temperature min. +5°C; optimal +20°C and under 25°C.
Do not expose the cartridges to Sun Light exposure and Direct heat.

Type of installation

Pre-positioned	In-place	Stand-off
✓	-	✓

Installation condition

Dry concrete	Wet concrete	Flooded drill hole
✓	✓	✓

Drilling method

Hammer drill	Diamond drill	Hollow drill
✓	-	

Rotary drilling in masonry required for some types of bricks and blocks

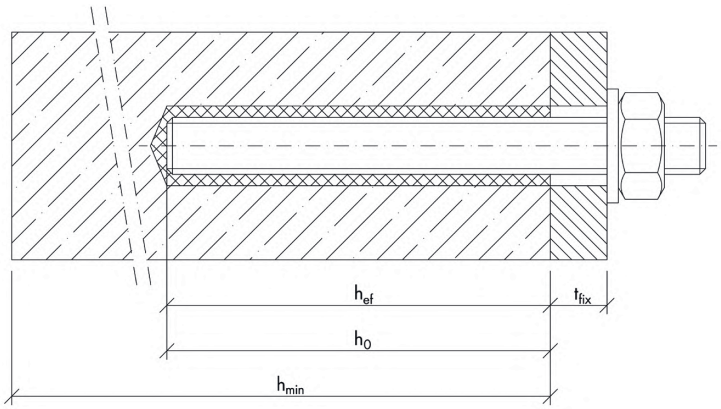
INJECTION SYSTEM WIT-VM 250

Loads – concrete

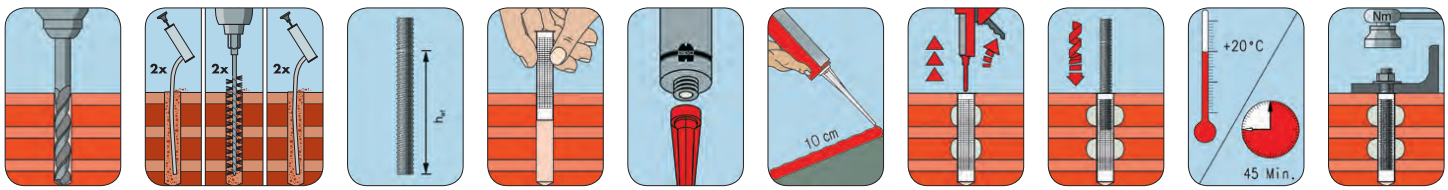
Thread size				M8	M10	M12	M16	M20	M24	M27	M30
Effective anchorage depth		$h_{ef,typ}$	[mm]	80	90	110	125	170	210	240	270
Non-cracked Concrete											
Tension	5.8	N_{rec}	[kN]	8.7	13.5	19.7	27.3	43.3	59.4	72.6	86.6
	8.8			9.6	13.5	19.7	27.3	43.3	59.4	72.6	86.6
	A4-70			9.6	13.5	19.7	27.3	43.3	59.4	57.4	70.2
Shear	5.8	V_{rec}	[kN]	6.3	9.9	14.5	26.9	42.0	60.5	78.7	96.2
	8.8			8.6	13.1	19.4	36.0	56.0	80.6	105.1	128.0
	A4-70			6.0	9.2	13.7	25.2	39.4	56.8	34.5	42.0
Cracked Concrete											
Tension	5.8/8.8/A4-70	N_{rec}	[kN]	3.8	5.6	9.1	13.7	23.3	34.6	50.8	60.6
Shear	5.8	V_{rec}	[kN]	6.3	9.9	14.5	26.9	42.0	60.5	78.7	96.2
	8.8			7.7	11.2	18.1	27.4	46.6	69.1	101.6	121.2
	A4-70			6.0	9.2	13.7	25.2	39.4	56.8	34.5	42.0

[1] Loads are valid for single anchors. Normal spaced reinforcement in ≥ C20/25. Material safety factor γ_M and safety factor for action γ_L = 1.4 are included. The material safety factor depends on the failure mode.
[2] Loads for anchorages close to edge and/or with small spacing have to be reduced and should be calculated based on performance data given in the ETA.

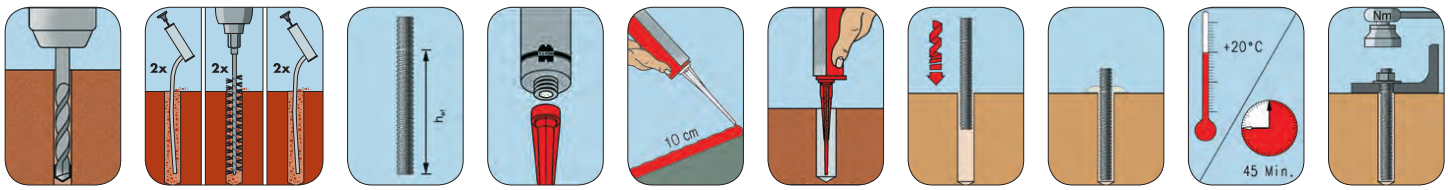
Clearance-hole in fixture	d_f	[mm]	9	12	14	18	22	26	30	33
Drill depth	h_1	[mm]	80	90	110	125	170	210	240	270
Minimum thickness of concrete member	h_{min}	[mm]	110	120	140	161	214	266	300	340
Minimum edge distance	c_{min}	[mm]	40	50	60	80	100	120	135	150



Installation of Anchors



Installation Masonry

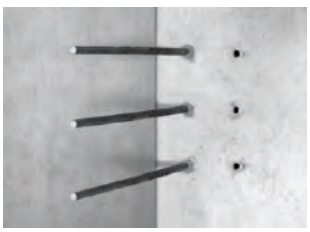


INJECTION SYSTEM WIT-VM 210

- **All rounder chemical mortor suitable for anchoring and rebar applications in varied substraits**
- **Specially designed for Tropical weather to ensure proper time for application.**
- **Excellent for Rebar applications for large and continuous applications.**
- **Shelf Life - 18 Months**
- **Coaxial Cartridge: 1:10 Ratio**

Features	Advantages
Approved for Craked & Non craked.	Can work in both tension and compression zone.
Approved for mansonry consisting of solid perforated brick, aerated concrete.	Can be used in any mansonry work
Fast curing time.	Help in quick completion of job.
Approved in seismic.	Can be designed for seismic applications.
Vinyl Ester based chemical	Can be used for challenging designs and large applications.

Application references




Applications

Anchoring in cracked and non-cracked concrete, masonry consisting of solid and perforated brick, aerated concrete and for subsequently installed reinforcement rods.

Suitable for attaching metal structures, metal profiles, wooden structures, brackets, grids, pipes, cable conduits etc.

Approvals and certificates


Threaded rod	Rebar	Special insert
 M8 - M24	ø8 to ø25	

Type of installation		
Pre-positioned	In-place	Stand-off
✓	–	✓

Installation condition		
Dry concrete	Wet concrete	Flooded drill hole
✓	✓	✓

Drilling method		
Hammer drill	Diamond drill	Hollow drill
✓	–	

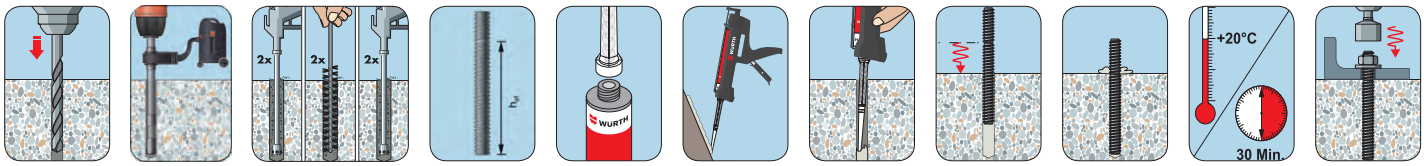
Rotary drilling in masonry required for some types of bricks and blocks

Concrete temperature	WIT-VM 210 Tropical	
	Max. working time	Min. Curing time
+10 to +14 °C	30 min	5 h
+15 to +19 °C	20 min	210 min
+20 to +29 °C	15 min	145 min
+30 to +34 °C	10 min	80 min
+35 to +39 °C	6 min	45 min
+40 to +44 °C	4 min	25 min
+45 °C	2 min	20 min
Cartridge temperature	**+5° C to + 45°C**	

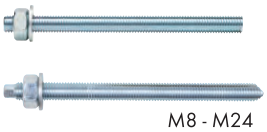
Recommended Loads

Thread size				M8	M10	M12	M16	M20	M24
Effective anchorage depth		hef	[mm]	80	90	110	125	170	210
Non-cracked Concrete C20/25									
Tension	5.8	Nrec	[kN]	6.8	9.0	13.2	19.9	33.9	50.3
	8.8			6.8	9.0	13.2	19.9	33.9	50.3
	A4-70			6.8	9.0	13.2	19.9	33.9	50.3
Shear	5.8	Vrec	[kN]	6.3	9.7	14.3	26.9	42.3	60.6
	8.8			8.6	13.1	19.4	36.0	56.0	80.6
	A4-70			6.0	9.2	13.7	25.2	39.4	56.8
Cracked Concrete C20/25									
Tension	5.8	Nrec	[kN]	3.6	5.0	7.4	11.2		
	8.8			3.6	5.0	7.4	11.2		
	A4-70			3.6	5.0	7.4	11.2		
Shear	5.8	Vrec	[kN]	6.3	9.7	14.3	26.9		
	8.8			8.6	12.1	17.8	26.9		
	A4-70			6.0	9.2	13.7	25.2		

Installation of Anchors



INJECTION SYSTEM WIT - EA 200



M8 - M24

420 ml
Art. No. 5918 320 420

- **Two-component Epoxy Acrylate styrene free chemical mortar, For anchoring in concrete and masonry.**
- **Coaxial Cartridge: 1:10 Ratio**

Features	Advantages
Class A1 reaction to fire.	Excellent resistance against fire, non-combustible.
Epoxy Acrylate chemical.	High Bonding, abrasion resistance.
Styrene free chemical anchoring system.	Low odour and safe in confined areas.
Universal chemical.	Fast, secure & expansion pressure-free anchoring into most of the base materials with fast curing.

Applications

Anchoring in natural stone, non-cracked concrete and masonry made of solid brick, perforated brick.

Suitable for signage board fixing, floor signage, handrail fixing, outdoor units, signage ceiling hanging.

Application references

Approvals and certificates

Threaded rod

M8 - M24

Special insert

Temperature of base material	Gelling – working time	Min. curing time – dry conditions[1)]
10°C to 14°C	30 min	5 h
15°C to 19°C	20 min	3 h 30 min
20°C to 29°C	15 min	2 h 25 min
30°C to 34°C	10 min	80 min
35°C to 39°C	6 min	45 min
40°C to 44°C	4 min	25 min
45°C	2 min	20 min

[1)] for wet base material the curing time must be doubled

Cartridge storage temperature min. +5°C; optimal +20°C and under 25°C.
Do not expose the cartridges to Sun Light exposure and Direct heat.

Type of installation

Pre-positioned	In-place	Stand-off
✓	-	✓

Installation condition

Dry concrete	Wet concrete	Flooded drill hole
✓	✓	✓

Drilling method

Hammer drill	Diamond drill	Hollow drill
✓	-	-

Rotary drilling in masonry required for some types of bricks and blocks

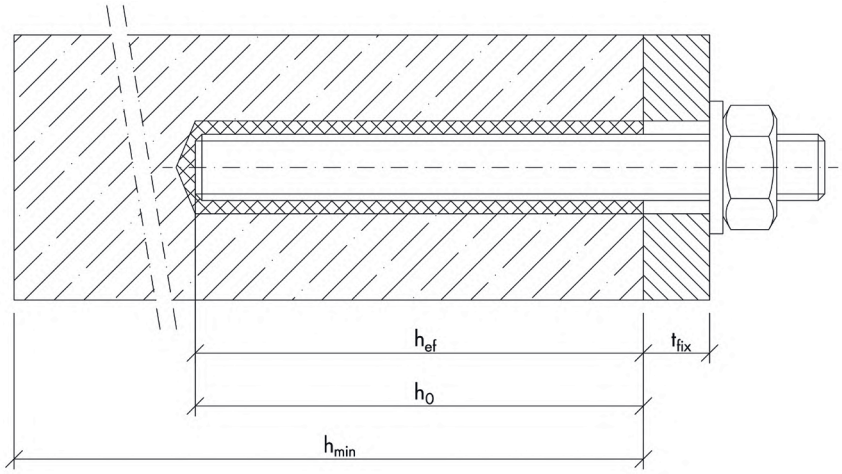
INJECTION SYSTEM WIT - EA 200

Loads – concrete

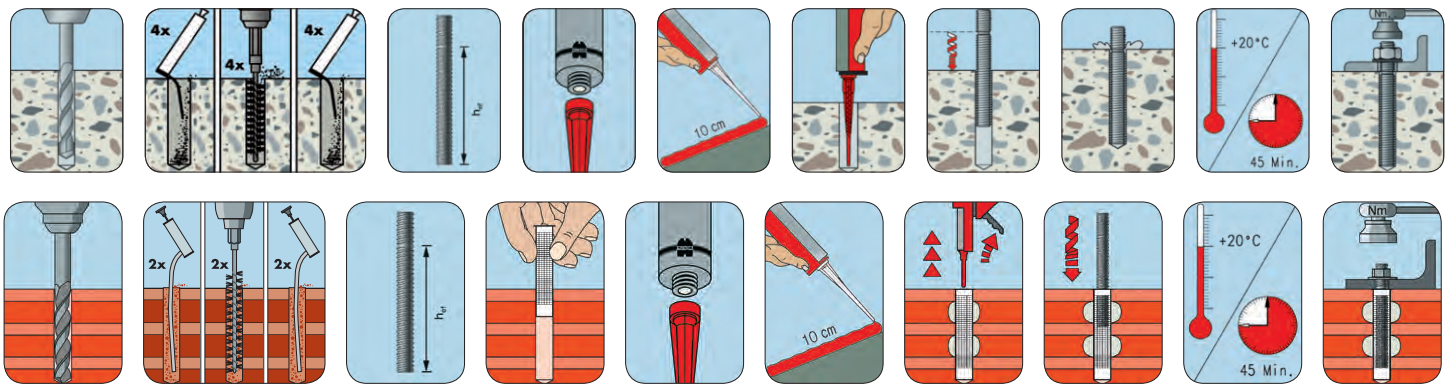
Thread size				M8	M10	M12	M16	M20	M24
Effective anchorage depth	h_{ef}	[mm]		80	90	110	125	170	210
Non-cracked Concrete									
Tension	5.8	N_{rec}	[kN]	6.8	9.0	13.2	19.9	33.9	50.3
	8.8			6.8	9.0	13.2	19.9	33.9	50.3
	A4-70			6.8	9.0	13.2	19.9	33.9	50.3
Shear	5.8	V_{rec}	[kN]	7.2	11.2	16.2	28.7	44.9	64.6
	8.8			11.5	18.0	25.9	46.0	71.8	103.4
	A4-70			8.1	12.6	18.2	32.3	50.5	72.7

Loads are valid for single anchors. Normal spaced reinforcement in ≥ C20/25. Material safety factor γ_M and safety factor for action γ_l = 1.4 are included. The material safety factor depends on the failure mode.
[2] Loads for anchorages close to edge and/or with small spacing have to be reduced and should be calculated based on performance data given in the ETA.

Clearance-hole in fixture	d_f	[mm]	9	12	14	18	22	26
Drill depth	$h_0 = h_{ef}$	[mm]	80	90	110	125	170	210
Minimum thickness of concrete member	h_{min}	[mm]	110	120	140	161	218	266
Minimum edge distance	c_{min}	[mm]	40	50	60	80	100	120



Installation Concrete



INJECTION SYSTEM WIT-PE 110 N

585 ml
Art. No. 5997 698 854

Chemical Injection Mortar

Good for fixing in nearly all building materials

Features:

- Pure Epoxy system
- High grip force/high adhesive force
- Longer working time
- The product ingredient is odorless and non-toxic
- Wide temperature range (+5°C ~ +40°C)
- Styrene free
- Can be used for anchor & Rebars.

Items of Attention:

- Injection cartridges shall be stored at temperature higher than +10°C and in dry location at temperature (+10°C ~ +25°C)
- If the gelling time expires, use a new mixer nozzle

Anchor type			WIT-PE110 N							
Thread size	M	Metric	8	10	12	16	20	24	27	30
Hole diameter	d_0	[mm]	10	12	14	18	22	28	30	35
Effective anchorage depth	h_{ef}	[mm]	80	90	110	125	170	210	240	270

Recommended Resistance - Threaded rods - Non Cracked Concrete - Product WIT-PE110 N

Anchor diameter				M8	M10	M12	M16	M20	M24	M27	M30
Effective anchorage depth		hef	[mm]	80.00	90.00	110.00	125.00	170.00	210.00	240.00	270.00
Tensile	C20/25	NRk	[kN]	7.90	10.50	15.10	22.20	40.30	52.30	63.90	76.20
Shear	≥ C20/25	VRk	[kN]	5.10	8.60	12.00	22.30	34.90	50.30	65.70	80.00

WIT-PE 1000, WIT-PE 500, WIT-UH 300 and WIT-VM 250: Design loads versus anchorage depth





Bar Size	Cross Sectional area of reinforcement	Charatesirtic yeild strength of reinforcement B500B	Partial factor for reinforcing steel	Design resistancce of reinforcement bar	Design Bond Stress (Concrete)	Development Length	Minimum Anchorage length	Design Load for good bond condition , C20/25																																
ø	A_s	f_{yk}	γ_s	$N_{Rd,s}$	f_{bd}	l_{bd}	$l_{b,min}$	N_{bd}																																
mm	mm^2	N/mm^2		kN	N/mm^2	mm	mm	kN																																
8	50.3	500	1.15	21.9	2.3	386	116	5	6	7	8	9	11	14	17	20																							
10	78.5	500	1.15	34.1	2.3	483	145		7	9	11	12	14	18	21	25	28																						
12	113.1	500	1.15	49.2	2.3	580	174			11	13	14	17	21	25	30	34	42																					
14	152.9	500	1.15	66.9	2.3	676	203							25	30	35	40	49	59																				
16	201.1	500	1.15	87.4	2.3	773	232					19	23	28	34	40	45	57	68	79																			
20	314.2	500	1.15	136.6	2.3	966	290						29	36	42	49	57	71	85	99	113	127																	
25	490.9	500	1.15	213.4	2.3	1208	362							45	54	63	71	88	106	124	141	159	177	194	212													
28	615.8	500	1.15	267.7	2.3	1353	406											99	119	139	158	178	198	218	238	257												
32	804.2	500	1.15	349.7	2.3	1546	464									81	93	113	136	158	181	204	226	249	271	294	317	339										
40	1256.6	500	1.15	546.4	2.1	2100	630										106	132	158	182	208	234	260	286	312	338	364	390	416	442	468	494	520	546				
Anchorage Length (mm)								80	100	120	150	160	200	250	300	350	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100				

$$*f_{bd} = 2.25 \cdot \eta_1 \cdot \eta_2 \cdot \frac{f_{ctk,o.o5}}{1.5}$$

Compressive strength class		C12/15	C16/20	C20/25	C25/30	C30/37	C35/45	C40/50	C45/55	C50/60
$f_{ctk,0.05}$	[N/mm^2]	1.1	1.3	1.5	1.8	2.0	2.2	2.5	2.7	2.9

η_1 & η_2 are considered as 1.

Mortar Volume Calculation

Anchor Type: WIT-PE 1000, WIT-PE 510, WIT-UH 300 & WIT-VM 250, VM 210

Consumption Chart for inserting REINFORCEMENT RODS (REBAR) when using Chemical Anchors												
Rebar Dia.	mm	8		10		12		16	20	25	32	40
Drill hole dia.	mm	**10**	**12**	**12**	**14**	**14**	**16**	**20**	**25**	**32**	**40**	**55**
Depth (mm)	mm	10	10	10	10	10	10	10	10	10	10	10
Consumption per hole (ml) for every 10 mm depth (including wastage)	ml	**0.41**	**0.83**	**0.51**	**1.00**	**0.60**	**1.16**	**1.50**	**2.28**	**3.60**	**5.78**	**13.82**

Note: Wastage of Chemical Mortar largely depending on type of applications, skill of applicator, site conditions in continuous or stop and go applications etc

Spacing of bars and laps

The spacing of bars shall be such that the concrete can be placed and compacted satisfactorily for the development of adequate bond. The clear distance (horizontal and vertical) between individual parallel bars or horizontal layers of parallel bars should be not less than the max{Ø; (d_g + 5 mm) or 20mm} where d_g is the maximum size of aggregate (8.2; EN1992-1-1:2011-01).

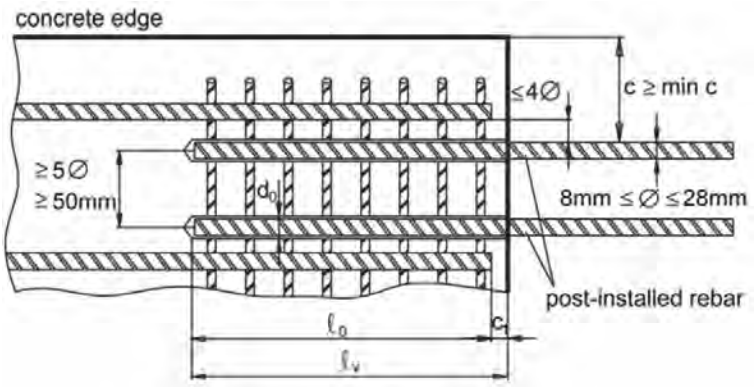


Fig. 8: Adjacent laps.

The spacing between post-installed reinforcing bars shall be greater max{5Ø; 50mm}.

ANCHOR RODS AND ELEMENTS

FOR USE IN CONCRETE

W-VI-A in combination with approvals for WIT-UH 300, WIT-VM 250, WIT-PE 1000, WIT-PE 510, WIT-EA 200, VM 210

Type	Anchor length l [mm]	Fixture thickness t_{fix} [mm]	Art. no.			Drill bit diameter d_o [mm]	Drill hole depth h_0 [mm]	Installation torque T_{inst} [Nm]	P.Qty.
			Carbon steel 5.8 galvanized	Carbon steel 8.8 galvanized	Stainless steel A4				
									
W-VI-A M8	100	10	0905 460 811	–	0905 470 811	10	80	10	10
	110	20	0905 460 812	–	0905 470 812				
	130	40	0905 460 813	–	0905 470 813				
	145	55	0905 460 814	–	0905 470 814				
	160	70	0905 460 815	–	0905 470 815				
	205	115	0905 460 816	–	0905 470 816				
	1000	–	5916 008 999	0959 008	0953 8				
	2000	–	–	–	0953 002 8				
	3000	–	–	–	0953 003 8				
W-VI-A M10	110	10	0905 461 011	–	0905 471 011	12	90	20	10
	130	30	0905 461 012	–	0905 471 012				
	150	50	0905 461 013	–	0905 471 013				
	165	65	0905 461 014	–	0905 471 014				
	190	90	0905 461 015	–	0905 471 015				
	260	160	0905 461 016	–	0905 471 016				
	1000	–	5916 010 999	959010	0953 10				
	2000	–	–	–	0953 002 10				
	3000	–	–	95900310	0953 003 10				
W-VI-A M12	135	10	0905 461 211	–	0905 471 211	14	110	40	10
	155	30	0905 461 212	–	0905 471 212				
	175	50	0905 461 213	–	0905 471 213				
	210	85	0905 461 214	–	0905 471 214				
	250	125	0905 461 215	–	0905 471 215				
	300	175	0905 461 216	–	0905 471 216				
	1000	–	5916 012 999	0959 012	0953 12				
	2000	–	–	5065812200	0953 002 12				
	3000	–	–	95900312	0953 003 12				
W-VI-A M16	160	15	0905 461 611	–	0905 471 611	18	125	60	10
	175	30	0905 461 612	–	0905 471 612				
	205	60	0905 461 613	–	0905 471 613				
	235	90	0905 461 614	–	0905 471 614				
	300	155	0905 461 615	–	0905 471 615				
	1000	–	5916 016 999	959016	0953 16				
	2000	–	–	5065816200	–				
	3000	–	–	95900316	0953 003 16				
W-VI-A M20	240	50	0905 462 011	–	0905 472 011	24*	170	100	10
	260	70	0905 462 012	–	–				
	285	95	0905 462 013	–	0905 472 013				
	300	210	0905 462 014	–	0905 472 014				
	350	160	0905 462 015	–	–				
	400	210	0905 462 016	–	–				
	1000	–	5916 020 999	959020	–				
	2000	–	–	5065 820 200	–				
	3000	–	–	0959 00320	–				
W-VI-A M24	290	55	0905 462 411	–	0905 472 411	28	210	170	5
	350	115	0905 462 412	–	0905 472 412				
	400	165	0905 462 413	–	0905 472 413				
	1000	–	5916 024 999	0959020	0953 24				
	2000	–	–	5065 824 200	–				
	3000	–	–	0959 003 24	–				
W-VI-A M30	370	90	0905 463 011	–	0905 473 011	35	250	300	5
	1000	–	–	0959030	–				
	2000	–	–	5065 830 200	–				
	3000	–	–	0959 003 30	–				

*Ø 22 only for WIT-UH 300

FOR USE IN CONCRETE

W-VD-A in combination with approvals for WIT-UH 300, WIT-VM 250, WIT-PE 1000, WIT-PE 500, WIT-EA 200

Type	Anchor length l [mm]	Fixture thickness t_{fix} [mm]	Art. no. Carbon steel 5.8 galvanized	Carbon steel 8.8 galvanized	Stainless steel A4	High corrosion resistant steel HCR	Drill bit diameter d_o [mm]	Drill hole depth h_0 [mm]	Installation torque T_{inst} [Nm]	P.Qty.
										
W-VD-A M8	110	20	5915 108 110	5915 308 110	5915 208 110	5916 408 110	10	80	10	10
	150	60	5915 108 150	5915 308 150	5915 208 150	–				
W-VD-A M10	115	15	5915 110 115	5915 310 115	5915 210 115	–	12	90	20	
	130	30	5915 110 130	5915 310 130	5915 210 130	5916 410 130				
	165	65	5915 110 165	5915 310 165	5915 210 165	–				
	190	90	5915 110 190	5915 310 190	5915 210 190	–				
W-VD–A M12	135	10	5915 112 135	5915 312 135	5915 212 135	–	14	110	40	
	160	35	5915 112 160	5915 312 160	5915 212 160	5916 412 160				
	210	85	5915 112 210	5915 312 210	5915 212 210	–				
	250	125	5915 112 250	5915 312 250	5915 212 250	–				
	300	175	5915 112 300	5915 312 300	5915 212 300	–				
W-VD-A M16	165	20	5915 116 165	5915 316 165	5915 216 165	–	18	125	80	
	190	45	5915 116 190	5915 316 190	5915 216 190	5916 416 190				
	230	85	5915 116 230	5915 316 230	5915 216 230	–				
	250	105	5915 116 250	5915 316 250	5915 216 250	–				
	300	155	5915 116 300	5915 316 300	5915 216 300	–				
W-VD-A M20	220	20	5915 120 220	5915 320 220	5915 220 220	–	24*	170	120	
	260	60	5915 120 260	5915 320 260	5915 220 260	–				
	300	100	5915 120 300	5915 320 300	5915 220 300	–				
W-VD-A M24	260	15	5915 124 260	5915 324 260	5915 224 260	–	28	210	160	5
	300	55	5915 124 300	5915 324 300	5915 224 300	–				

* Ø 22 only for WIT-UH 300

MORTAR VOLUME CALCULATION

Consumption Chart for inserting THREADED RODS when using Chemical Anchors										
Threaded rod dia.		**M8**	**M10**	**M12**	**M16**	**M20**		**M24**	**M27**	**M30**
Drill hole dia.	[mm]	**10**	**12**	**14**	**18**	**22**	**24**	**28**	**30**	**32**	**35**
Embedment Depth - hef (mm)	[mm]	10	10	10	10	10	10	10	10	10	10
Consumption per hole (ml) for every 10 mm embedment depth (including wastage)		**0.63**	**0.82**	**1.05**	**1.39**	**1.85**	**2.74**	**3.30**	**3.30**	**4.51**	**5.16**

Note: Wastage of Chemical Mortar largely depending on type of applications, skill of applicator, site conditions in continuous or stop and go applications etc

ACCESSORIES

SLEEVES

masonry: sleeve SH

WIT-VM 250, WIT-EA 200

	Drill-hole dia. d_0 [mm]	Drill-hole depth h_0 [mm]	Effective anchorage depth h_{ef} [mm]	Suitable for threaded rod W-VI-A, W-VI-IG or commercial standard rods with inspection certificate 3.1	Art.-No.	PU [qty.]
SH 12 x 80	12	85	80	M8	**0903 44 123**	20
SH 16 x 85	16	90	85	M8 and M10; IG-M6x80	**0903 44 164**	
SH 16 x 130	16	135	130	M8 and M10	**0903 44 165**	
SH 20 x 85	20	90	85	M12 and M16; IG-M8x80, IG-M10x80	**0903 44 203**	
SH 20 x 130	20	135	130	M12 and M16	**0903 44 204**	
SH 20 x 200	20	205	200	M12 and M16	**0903 44 205**	

DRILL-HOLE CLEANING

Cleaning brushes WIT-RB for concrete
Connection thread M8

WIT-UH 300, WIT-VM 250, WIT-PE 500, WIT-EA 200

Diameter External	Diameter Internal	Drill-hole dia. d_0 [mm]	Cleaning brush Art.-No. PU [qty.] = 1	Extension Art.-No. PU [qty.] = 1
M8	**M6**	10	**0903 489 510**	**0905 489 111**
M10	**M8**	12	**0903 489 512**	
M12	**M10**	14	**0903 489 514**	
M16	**M12**	18	**0903 489 518**	
M20	**M16**	22	**0903 489 522**	
M20	**M16**	24	**0903 489 525**	
M24	**M20**	28	**0903 489 528**	
M30	–	35	**0903 489 535**	

Cleaning brushes for masonry
Connection thread M6

WIT-VM 250, WIT-EA 200

Dia.	Sleeve	Drill-hole dia. d_0 [mm]	Cleaning brush Art.-No. PU [qty.] = 1	Handle Art.-No. PU [qty.] = 1
M8	**Without sleeve**	10	**0905 499 021**	**0905 499 103**
	With sleeve SH 12	12	**0905 499 022**	
	With sleeve SH 16	16	**0905 499 025**	
M10 IG-M6	**Without sleeve**	12	**0905 499 022**	
	With sleeve SH 16	16	**0905 499 025**	
M12 IG-M8	**Without sleeve**	14	**0905 499 023**	
	With sleeve SH 20	20	**0905 499 026**	
M16 IG-M10	**Without sleeve**	18	**0905 499 024**	
	With sleeve SH 20	20	**0905 499 026**	

DRILL-HOLE CLEANING

Cleaning brushes WIT-RB for REBAR
Connection thread M8

WIT-UH 300, WIT-PE 1000, WIT-VM 250, WIT-PE 510

REBAR dia. [mm]	Drill-hole dia. d_0 [mm]	Cleaning brush Art.-No. PU [qty.] = 1	Extension 2 x 345 mm Art.-No. PU [qty.] = 1
8	12	**0903 489 008**	**0903 489 111**
10	14	**0903 489 010**	
12	16	**0903 489 012**	
14	18	**0903 489 014**	
16	20	**0903 489 016**	
20	25	**0903 489 020**	
24	32	**0903 489 025**	
25	32	**0903 489 025**	
28	35	**0903 489 028**	
32	40	**0903 489 540**	

MORTAR INJECTION

Mixer nozzles				
		Suitable for cartridge size	Art.-No.	PU [qty.]
Mixer nozzle Fill & Clean for WIT-VM 250		coaxial (1:10): 420 ml	**0903 420 001**	10
Mixer nozzle For WIT-PE 510		Side-by-side (1:3): 585 ml	**0903 488 101**	10
Mixer nozzle MIX-DWL-PLA For WIT-UH 300		coaxial (1:10): 420 ml	**0903 488 102**	20
Mixer nozzle MISCH-DBL For WIT-PE 1000		Side-by-side (1:3): 585 ml	**0903 488 103**	20
WIT-PE 110 nozzle		Side-by-side (1:3): 385 ml, 585 ml	**5997711477**	10

Extensions for mixer nozzles			
		Art.-No.	PU [qty.]
Mixer nozzle extension – rigid WIT-MV 10 x 200 mm		**0903 420 004**	10
Mixer nozzle extension – rigid WIT-MV 10 x 2000 mm		**0903 488 121**	20
Mixer nozzle extension – flexible, WIT-MV 10 x 2000 mm		**0903 488 123**	10
Mixer nozzle extension – rigid, WIT-MV 16 x 2000 mm		**0903 488 122**	20
Mixer nozzle extension – flexible, WIT-MV 16 x 2000 mm		**0895 812**	1

PROFESSIONAL DISPENSING GUN 4 IN 1

For capacity 385 ml cartridges

Material: Steel

Art. No. 5997660492090 1

For capacity 420 ml cartridges

Material: Steel

Art. No. 5997660491090 1

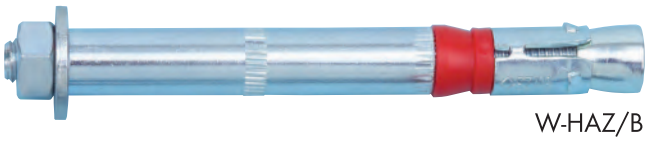
For capacity 585 ml cartridges

Material: Steel

Art. No. 5997660492090 1

HEAVY DUTY MECHANICAL ANCHORS

HIGH-PERFORMANCE ANCHOR W-HAZ



W-HAZ/B

W-HA/S

W-HA/SK

*We have stainless steel version in above heads.

The ETA approved High performance Anchor W-HAZ is a through fastening Anchor System with plastic compression ring and with three part expansion sleeve. This allows for smaller spacings and edge distances with high loads.

Features	Advantages
Thick wall sleeve & 8.8 Grade threaded rod.	Works in High tension & shear loads.
Comes in variety of head ends - Stud, Bolt and Countersunk.	Gives flexibility to work in different applications.
Approved for cracked & Non- cracked.	Can be designed for both Tension & compression zone.
Approved for fire conditions.	Gives an option for designing in fire requirements.
Approved for seismic.	Works in extreme conditions of seismic.

Application references

Applications

Medium to high-load anchoring in cracked and non-cracked concrete, e.g. trusses, railings, machines, scaffolding and consoles.

Approvals and certificates

Type of installation

Pre-positioned	In-place	Stand-off
–	✓	–

Loads

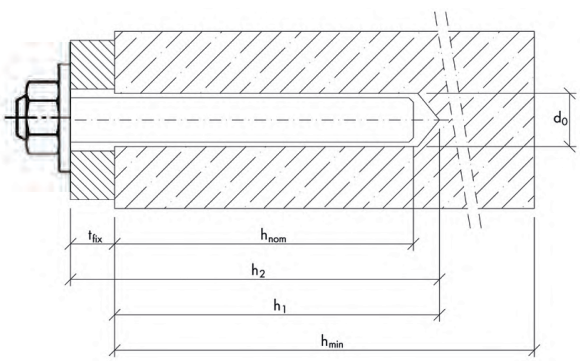
Thread size				10/M6	12/M8	15/M10	18M12	24/M16	24/M16L	28/M20	32/M24
Effective anchorage depth	h_{ef}		[mm]	50	60	71	80	100	115	125	150
Non-cracked Concrete											
Tension	S SK B; /S	N_{rec}	[kN]	7.6	9.5	14.0	16.8	23.4	28.9	32.7	43.0
	S SK B; /A4		[kN]	–	7.6	11.9	16.7		–	–	–
Shear	B; /S	V_{rec}	[kN]	9.1	14.3	20.6	33.5	46.9	52.0	65.5	86.1
	B; /A4		[kN]	–	13.7	21.1			–	–	–
	S SK; /S		[kN]	10.3	17.1	27.4	33.5	46.9	57.8	65.5	86.1
	S SK; /A4		[kN]	–	12.6	19.4	32.6		–	–	–
Cracked concrete											
Tension	S SK B; /S	N_{rec}	[kN]	2.4	5.7	7.6	11.7	16.4	20.2	22.9	30.1
	S SK B; /A4		[kN]	–	4.3				–	–	–
Shear	B; /S	V_{rec}	[kN]	9.1	14.3	19.6	23.5	32.8	40.4	45.8	60.2
	B; /A4		[kN]	–	13.7				–	–	–
	S SK; /S		[kN]	10.3	15.2	19.6	23.5	32.8	40.4	45.8	60.2
	S SK; /A4		[kN]	–	12.6	19.4			–	–	–

[1] Loads are valid for single anchors. Normal spaced reinforcement in ≥ C20/25. Material safety factor γ_M and safety factor for action γ_L = 1.4 are included. The material safety factor depends on the failure mode.
[2] Loads for anchorages close to edge and/or with small spacing have to be reduced and should be calculated based on performance data given in the ETA.

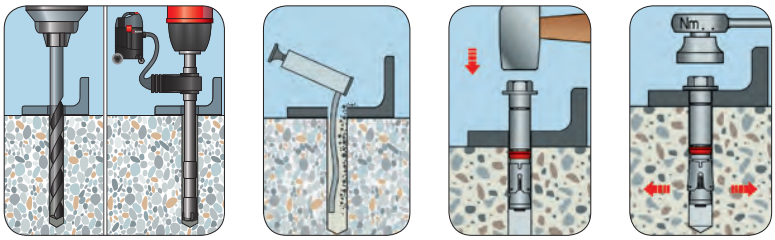
Clearance-hole in fixture	d_f		[mm]	12	14	17	20	26	26	31	35
Drill depth	h_1 ≥		[mm]	65	80	95	105	130	145	160	180
Minimum thickness of concrete member	h_{min}		[mm]	100	120	140	160	200	230	250	300

HIGH-PERFORMANCE ANCHOR W-HAZ - THREADED BOLT VERSION

	Anchor length	Fixture thickness for	Art. no.		Drill hole diameter	Drill hole depth for through installation	Installation torque		Wrench size	Approval		P. Qty.
Type	l [mm]	t_{fix} [mm]	Carbon steel galvanized	Stainless steel A4	d_o [mm]	h_2 [mm]	T_{inst} [Nm]		SW [mm]	ETA-02/0031	Sesimic C1/C2	[qty.]
W-HAZ-B threaded bolt												
M6	67	0	0905 210 101	–	10	65	15	–	10	✓	–	100
	77	10	0905 210 102	–		75				✓	–	50
	97	30	0905 210 103	–		95				✓	–	50
	117	50	0905 210 104	–		115				✓	–	50
	167	100	0905 210 105	–		165				✓	–	50
M8	80	0	0905 212 101	5932 612 101	12	80	30	35	13	✓	C1+C2	50
	90	10	0905 212 102	5932 612 102		90				✓	C1+C2	50
	110	30	0905 212 103	5932 612 103		110				✓	C1+C2	50
	130	50	0905 212 104	5932 612 104		130				✓	C1+C2	25
	180	100	0905 212 105	5932 612 105		180				✓	C1+C2	25
M10	95	0	–	5932 615 101	15	95	–	55	17	✓	C1+C2	25
	96	0	0905 215 101	–		95	50	–		✓	C1+C2	25
	110	15	–	5932 615 102		110	–	55		✓	C1+C2	25
	111	15	0905 215 102	–		110	50	–		✓	C1+C2	25
	120	25	–	5932 615 103		120	–	55		✓	C1+C2	25
	121	25	0905 215 103	–		120	50	–		✓	C1+C2	25
	140	45	–	5932 615 104		140	–	55		✓	C1+C2	25
	141	45	0905 215 104	–		140	50	–		✓	C1+C2	25
	190	95	–	5932 615 105		190	–	55		✓	C1+C2	25
	191	95	0905 215 105	–		190	50	–		✓	C1+C2	25
M12	112	0	0905 218 101	5932 618 101	18	105	80	90	19	✓	C1+C2	20
	122	10	0905 218 102	5932 618 102		115				✓	C1+C2	20
	131	20	–	5932 618 103		125	–			✓	C1+C2	20
	132	20	0905 218 103	–		125	80	–		✓	C1+C2	20
	151	40	–	5932 618 104		145	–	90		✓	C1+C2	20
	152	40	0905 218 104	–		145		–		✓	C1+C2	20
	182	70	0905 218 105	5932 618 105		175	80	90		✓	C1+C2	20
	212	100	0905 218 106	–		205		–		✓	C1+C2	10
M16	137	0	0905 224 101	5932 624 101	24	130	160	170	24	✓	C1+C2	10
	157	20	0905 224 102	5932 624 102		150				✓	C1+C2	10
	187	50	0905 224 103	5932 624 103		180				✓	C1+C2	10
	237	100	0905 224 104	–		230		–		✓	C1+C2	5
M16L	152	0	0905 224 101	–		145				✓	C1+C2	10
	182	30	0905 224 102	–		175				✓	C1+C2	10
	202	50	0905 224 103	–		195				✓	C1+C2	10
M20	181	10	0905 228 101	–	28	170	280	–	30	✓	C1+C2	10
	201	30	0905 228 102	–		190				✓	C1+C2	10
	231	60	0905 228 103	–		220				✓	C1+C2	5
	271	100	0905 228 104	–		260				✓	C1+C2	5

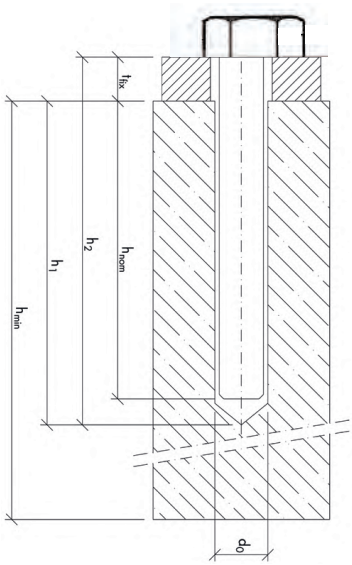


Installation



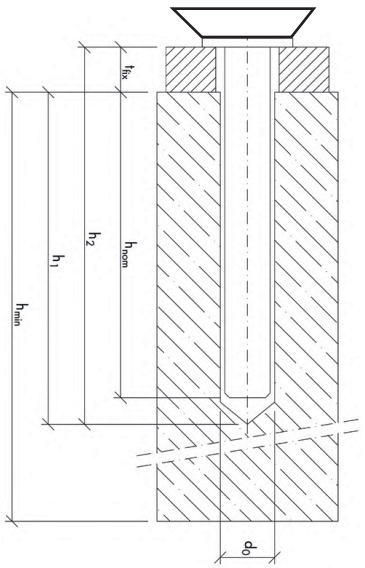
HIGH-PERFORMANCE ANCHOR W-HAZ - HEX BOLT VERSION

	Anchor length	Fixture thickness for	Art. no.		Drill hole diameter	Drill hole depth for through installation	Installation torque	Wrench	Approval		P. Qty.
Type	l [mm]	t_{fix} [mm]	Carbon steel galvanized	Stainless steel A4	d_o [mm]	h_2 [mm]	T_{inst} [Nm]	SW [mm]	ETA-02/0031	Sesimic C1/C2	[qty.]
W-HAZ-S hexagon head screw 											
M6	75	10	0905 210 002	–	10	75	15	10	✓	–	50
	95	30	0905 210 003	–		95			✓	–	50
	115	50	0905 210 004	–		115			✓	–	50
M8	105	30	0905 212 003	5932 612 003	12	110	30	13	✓	C1+C2	50
	125	50	0905 212 004	5932 612 004		130			✓	C1+C2	25
M10	106	15	0905 215 002	5932 615 002	15	110	50	17	✓	C1+C2	25
	116	25	0905 215 003	5932 615 003		120			✓	C1+C2	25
	136	45	0905 215 004	5932 615 004		140			✓	C1+C2	25
M12	117	10	0905 218 002	–	18	115	80	19	✓	C1+C2	20
	118	10	–	5932 618 002		115	–		✓	C1+C2	20
	127	20	0905 218 003	–		125	80		✓	C1+C2	20
	128	20	–	5932 618 003		125	–		✓	C1+C2	20
	147	40	0905 218 004	–		145	80		✓	C1+C2	20
	148	40	–	5932 618 004		145	–		✓	C1+C2	20
M16	130	0	0905 224 001	5932 624 001	24	130	160	24	✓	C1+C2	10
	150	20	0905 204 002	5932 624 002		150			✓	C1+C2	10
	180	50	0905 224 003	5932 624 003		180			✓	C1+C2	10
M20	172	10	0905 228 001	–	28	170	280	30	✓	C1+C2	10
	192	30	0905 228 002	–		190			✓	C1+C2	10
	222	60	0905 228 003	–		220			✓	C1+C2	5
	262	100	0905 228 004	–		260			✓	C1+C2	5

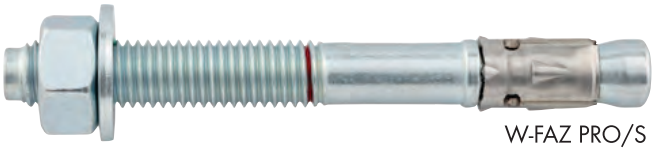


HIGH-PERFORMANCE ANCHOR W-HAZ - COUNTERSUNK VERSION

	Anchor length	Fixture thickness for	Art. no.		Drill hole diameter	Drill hole depth for through installation	Installation torque		for SK use hex bit	Approval		Countersunk head geometry	P. Qty.
Type	l [mm]	t_{fix} [mm]	Carbon steel galvanized	Stainless steel A4	d_o [mm]	h_2 [mm]	T_{inst} [Nm]		SW [mm]	ETA-02/0031	Sesimic C1/C2	t_{sk} [mm]	[qty.]
W-HAZ-SK countersunk washer and countersunk screw 													
M6	70	10	0905 210 201	–	10	75	10	–	4	✓	–	16.5x4	50
	85	25	0905 210 202	–		90				✓	–		50
	100	40	0905 210 203	–		105				✓	–		50
M8	80	10	0905 212 201	5932 612 201	12	90	25	17.5	5	✓	C1+C2	20.5x5	50
	95	25	0905 212 202	5932 612 202		105				✓	C1+C2		50
	120	50	0905 212 203	5932 612 203		130				✓	C1+C2		25
M10	100	10	0905 215 201	5932 615 201	15	105	55	42.5	6	✓	C1+C2	24.5x6	25
	110	25	0905 215 202	5932 615 202		120				✓	C1+C2		25
	120	35	0905 215 203	5932 615 203		130				✓	C1+C2		25
	135	50	0905 215 204	5932 615 204		145				✓	C1+C2		25
M12	115	20	0905 218 203	5932 618 203	18	125	70	50	8	✓	C1+C2	29.5x7	20
	135	40	0905 218 204	5932 618 204		145				✓	C1+C2		20



FIXANCHOR W-FAZ PRO



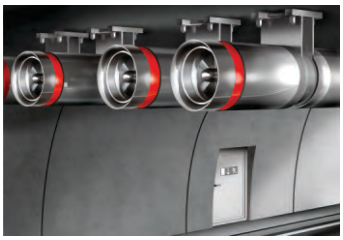
W-FAZ PRO/S

W-FAZ PRO/A4/HCR

This anchor has the highest approved tensile and shear loads with variable anchorage depths, the newly developed Wedge Anchor FAZ PRO with European Technical Assessment, sets standards in performance and flexibility of mechanical expansion anchors.

Features	Advantages
The wedge anchor with highest approved loads.	Helps to choose best optimal solution under any conditions.
Coloured marking of the minimum anchorage depth.	Ensures proper fixing of an anchor/ Helps in visual inspection.
Variable anchorage depths.	Flexibility and easy of fixing.
Fire test report 180.	Can work in extreme temperature conditions.
Approved for fatigue loading	

Application references



Applications

Anchoring of medium to heavy loads in cracked and non-cracked concrete: columns, steel beams, railings, cable routes, pipe routes, wooden constructions, consoles. Fastenings in earthquake areas etc.

Approvals and certificates

Type of installation

Pre-positioned	In-place	Stand-off
-	✓	✓

Loads

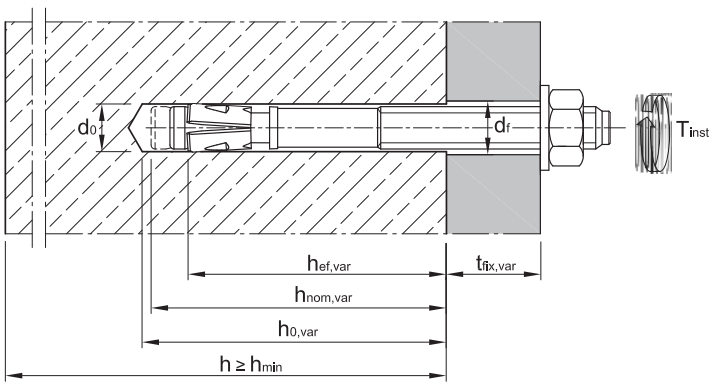
Thread size				M8			M10			M12			M16		
Effective anchorage depth		h_{ef}	[mm]	35	90	45	40	100	60	50	125	70	65	160	85
Non-cracked Concrete															
Tension	FAZ-Pro/S	N_{rec}	[kN]	4.9	6.7	6.7	5.9	11.4	10.9	8.3	14.3	13.7	12.3	23.8	18.4
	FAZ-Pro/A4			4.9	9.4	7.1	5.9	11.9	10.9	8.3	20.0	13.7	12.3	23.8	18.4
	FAZ-Pro/HCR			4.9	9.4	7.1	5.9	11.9	10.9	8.3	20.0	13.7	12.3	23.8	18.4
Shear	FAZ-Pro/S	V_{rec}	[kN]	9.0	9.0	9.0	15.3	15.3	15.3	21.9	21.9	21.9	34.3	34.3	34.3
	FAZ-Pro/A4			9.6	9.6	9.6	15.9	15.9	15.9	22.7	22.7	22.7	39.7	39.7	39.7
	FAZ-Pro/HCR			9.6	9.6	9.6	15.9	15.9	15.9	22.7	22.7	22.7	39.7	39.7	39.7
Cracked Concrete															
Tension	FAZ-Pro/S	N_{rec}	[kN]	3.4	4.5	4.5	4.1	7.1	7.1	5.8	10.5	9.6	8.6	14.3	12.9
	FAZ-Pro/A4			3.4	4.5	4.5	4.1	8.1	7.6	5.8	10.5	9.6	8.6	16.7	12.9
	FAZ-Pro/HCR			3.4	4.5	4.5	4.1	8.1	7.6	5.8	10.5	9.6	8.6	16.7	12.9
Shear	FAZ-Pro/S	V_{rec}	[kN]	9.0	9.0	9.0	12.9	15.3	15.3	17.4	21.9	21.9	30.9	34.3	34.3
	FAZ-Pro/A4			9.2	9.6	9.6	11.6	15.9	15.9	19.1	22.7	22.7	29.2	39.7	39.7
	FAZ-Pro/HCR			9.2	9.6	9.6	11.6	15.9	15.9	19.1	22.7	22.7	29.2	39.7	39.7

[1] Loads are valid for single anchors. Normal spaced reinforcement in ≥ C20/25. Material safety factor γ_M and safety factor for action γ_L = 1.4 are included. The material safety factor depends on the failure mode.
[2] Loads for anchorages close to edge and/or with small spacing have to be reduced and should be calculated based on performance data given in the ETA.

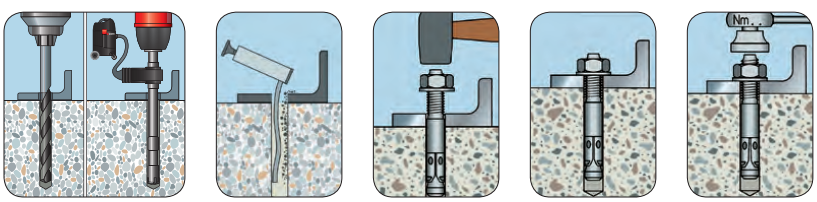
Clearance-hole in fixture		d_f	[mm]	9			12			14			18		
Drill depth		h_1	[mm]	43	98	53	49	109	69	60	135	80	79	174	99
Minimum edge distance		c_{min}	[mm]	40			45			55			65		
Minimum thickness of concrete member		h_{min}	[mm]	80	135	80	80	150	90	100	188	105	120	240	128

FIXANCHOR W-FAZ PRO

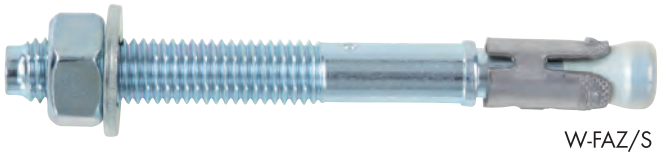
	Anchor length	Fixture thickness for		Art. No.			Drill hole diameter	Drill hole depth for through installation	Installation torque		Wrench size	Approval		Thread length	P. Qty.
	l	$t_{fix.std}$	$t_{fix.min}$ - $t_{fix.max}$	Carbon steel	Stainless steel	High corrosice resistant									
Type	[mm]	[mm]	[mm]	galvanized	A4	HCR	d_o [mm]	h_2 [mm]	T_{inst} [Nm]	[Nm]	SW [mm]	ETA-20/0229	Sesimic C1/C2	M x l [mm]	[qty.]
W-FAZ Pro															
M8	75	10	0-20	5930 208 010	5930 408 010	-	8	63	15	15	13	✓	C1+C2	M8x32	100
	80	15	0-25	5930 208 015	5930 408 015	-		68				✓	C1+C2	M8x37	
	95	30	0-40	5930 208 030	5930 408 030	-		83				✓	C1+C2	M8x52	
	115	50	5-60	5930 208 050	5930 408 050	-		103				✓	C1+C2	M8x72	
M10	80	0	0-20	5930 210 920	–	–	10	69	40	40	17	✓	C1+C2	M10x32	50
	90	10	0-30	-	5930 410 010	–		79				✓	C1+C2	M10x42	
	95	15	0-35	5930 210 015	–	–		84				✓	C1+C2	M10x47	
	100	20	0-40	-	5930 410 020	–		89				✓	C1+C2	M10x52	
	110	30	0-50	5930 210 030	–	–		99				✓	C1+C2	M10x62	
	130	50	10-70	5930 210 050	5930 410 050	–		119				✓	C1+C2	M10x82	
M12	95	0	0-20	5930 212 920	5930 412 920	–	12	80	60	55	19	✓	C1+C2	M12x36	25
	115	20	0-40	5930 212 020	5930 412 020	–		100				✓	C1+C2	M12x56	
	125	30	0-50	5930 212 030	5930 412 030	–		110				✓	C1+C2	M12x66	
	145	50	0-70	5930 212 050	5930 412 050	–		130				✓	C1+C2	M12x86	
	180	85	30-105	5930 212 085	–	–		165				✓	C1+C2	M12x121	
M16	115	0	0-15	5930 216 915	5930 416 915	–	16	99	110	100	24	✓	C1+C2	M16x26	20
	145	25	0-45	5930 216 025	5930 416 025	–		124				✓	C1+C2	M16x66	
	170	50	0-70	5930 216 050	5930 416 050	–		149				✓	C1+C2	M16x91	
	200	80	5-100	5930 216 080	–	–		179				✓	C1+C2	M16x121	10



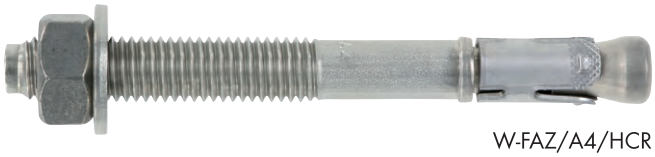
Installation



FIXANCHOR W-FAZ



W-FAZ/S



W-FAZ/A4/HCR

Due to its high performance as well as its easy and quick installation, the wedge anchor W-FAZ with European Technical Assessment can be used for a wide variety of applications.

Features	Advantages
Approved for cracked & non-cracked.	Can work in tensile and compression zone - Flexibility
Two approved anchorage depth.	Flexibility to use as per the load requirements.
Reduced anchorage depth.	Reduces drilling and installation time
Approved for seismic .	Works in extreme conditions of seismic
Approved under fire exposure	Gives and option of designing under fire requirements

Application references

Applications

Medium to heavy duty anchoring in cracked and non-cracked concrete:

Steel beams, base plates, channels, tracks, wood structures.

Approvals and certificates

Type of installation

Pre-positioned	In-place	Stand-off
–	✓	✓

Loads

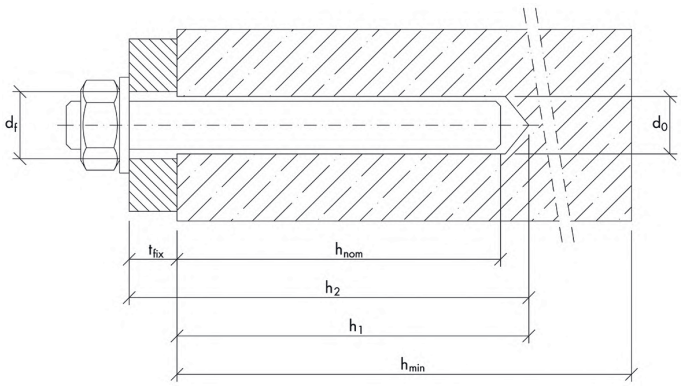
Thread size				M8		M10		M12		M16		M20	M24		M27
Effective anchorage depth	h_{ef}	[mm]		35	46	40	60	50	70	65	85	100	115	125	125
Non-cracked Concrete															
Tensile	W-FAZ/S	N_{rec}	[kN]	3.6	5.7	4.3	7.6	8.3	11.9	12.3	16.7	23.4	28.9	–	32.7
	W-FAZ/A4			3.6	5.7	4.3	7.6	8.3	11.9	12.3	16.7	23.4	–	32.7	–
Shear	W-FAZ/S	V_{rec}	[kN]	7.0	7.0	11.5	11.5	17.1	17.1	29.5	31.4	37.1	65.1	–	91.7
	W-FAZ/A4			7.4	7.4	11.4	11.4	17.1	17.1	29.5	31.4	43.9	–	70.6	–
Minimum edge distance	W-FAZ/S	c_{min}	[mm]	40	50	65	50	100	75	170	80	130	100	–	180
	W-FAZ/A4						60						–		
Cracked concrete															
Tensile	W-FAZ/S	N_{rec}	[kN]	2.4	2.4	3.6	4.3	5.8	7.6	8.6	11.9	16.4	20.2	–	22.9
	W-FAZ/A4			2.4	2.4	3.6	4.3	5.8	7.6	8.6	11.9	16.4	–	19.0	–
Shear	W-FAZ/S	V_{rec}	[kN]	7.0	7.0	10.0	11.5	13.9	17.1	20.6	30.8	37.1	56.6	–	64.2
	W-FAZ/A4			7.4	7.4	10.0	11.4	13.9	17.1	20.6	30.8	43.9	–	64.2	–
Minimum edge distance	W-FAZ/S	c_{min}	[mm]	40	40	65	45	65	60	100	60	95	100	–	180
	W-FAZ/A4						55						–	125	–

[1] Loads are valid for single anchors. Normal spaced reinforcement in ≥ C20/25. Material safety factor γ_M and safety factor for action γ_L = 1.4 are included. The material safety factor depends on the failure mode.
[2] Loads for anchorages close to edge and/or with small spacing have to be reduced and should be calculated based on performance data given in the ETA.

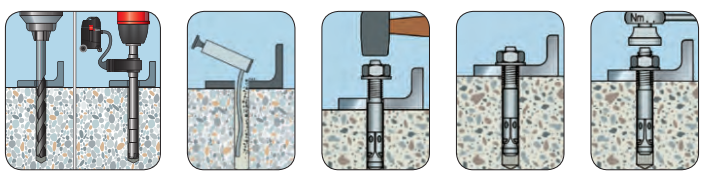
Clearance-hole in fixture	d_f	[mm]	9		12		14		18		22	26		30
Drill depth	h_1	[mm]	49	60	55	75	70	90	90	110	125	145	155	160
Minimum thickness of concrete member	h_{min}	[mm]	80	100	80	120	100	140	140	170/160	200	230	250	250

FIXANCHOR W-FAZ

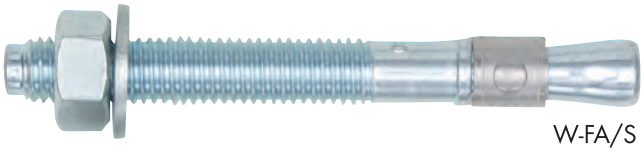
	Anchor length	Fixture thickness for		Art. no.				Drill hole dia-meter	Drill hole depth for through installa-tion	Installation torque		Wrench Size	Approval		Thread length	P. Qty.
		$h_{ef,std}$	$h_{ef,red}$													
	l	t_{fix}		Carbon steel	Carbon steel	Stainless steel	High corr. resist.									
Type	[mm]	[mm]	[mm]	galvanized	sherardized	A4	HCR	d_o [mm]	h_2 [mm]	$T_{inst} \leq$ [Nm]		SW [mm]	ETA-99/0011	Sesimic C1/C2	M x l [mm]	[qty.]
W-FAZ																
M8	75	10	21	5928 208 010	–	5928 408 010	5928 608 010	8	70	20	20	13	✓	C1+C2	M8x32	100
	95	30	41	5928 208 030	–	5930 408 030	5928 608 030		90				✓	C1+C2	M8x52	
	115	50	61	5928 208 050	–	5931 408 050	5928 608 050		110				✓	C1+C2	M8x72	
	165	100	111	5928 208 100	–	5932 408 100	–		160				✓	C1+C2	M8x122	50
M10	90	10	30	5928 210 010	5928 710 010	5928 410 010	5928 610 010	10	85	25	35	17	✓	C1+C2	M10x42	50
	95	15	35	5928 210 015	5928 710 015	5928 410 015	5928 610 015		90				✓	C1+C2	M10x47	
	100	20	40	5928 210 020	5928 710 020	5928 410 020	–		95				✓	C1+C2	M10x52	
	110	30	50	5928 210 030	5928 710 030	5928 210 030	5928 610 030		105				✓	C1+C2	M10x62	
	130	50	70	5928 210 050	5928 710 050	5928 410 050	5928 610 050		125				✓	C1+C2	M10x82	
	180	100	120	5928 210 100	–	5928 410 100	–		175				✓	C1+C2	M10x132	
	230	150	–	0904 521 005	–	–	–		225				✓	–	M10x80	25
M12	110	15	35	5928 212 015	5928 712 015	5928 412 015	5928 612 015	12	105	45	50	19	✓	C1+C2	M12x51	25
	115	20	40	5928 212 020	5928 712 020	5928 412 020	5928 612 020		110				✓	C1+C2	M12x56	
	125	30	50	5928 212 030	–	5928 412 030	5928 612 030		120				✓	C1+C2	M12x66	
	145	50	70	5928 212 050	5928 712 050	5928 412 050	5928 612 050		140				✓	C1+C2	M12x86	
	160	65	85	5928 212 065	5928 712 065	5928 412 065	–		155				✓	C1+C2	M12x101	
	180	85	105	5928 212 085	5928 712 085	5928 412 085	–		175				✓	C1+C2	M12x121	
M16	115	0	15	5928 256 015	–	5928 456 015	–	16	110	90	110	24	✓	–	M16x26	20
	125	5	25	5928 216 005	–	5928 416 005	–		115				✓	C1+C2	M16x36	
	135	15	35	5928 216 015	5928 716 015	5928 416 015	–		125				✓	C1+C2	M16x56	
	145	25	45	5928 216 025	5928 716 025	5928 416 025	5928 616 025		135				✓	C1+C2	M16x66	
	170	50	70	5928 216 050	5928 716 050	5928 416 050	5928 616 050		160				✓	C1+C2	M16x91	
	200	80	100	5928 216 080	5928 716 080	5928 416 080	–		190				✓	C1+C2	M16x121	10
M20	165	30	–	5928 220 030	5928 720 030	5928 420 030	5928 620 030	20	155	160	200	30	✓	C1+C2	M20x50	10
	195	60	–	5928 220 060	5928 720 060	5928 420 060	–		185				✓	C1+C2	M20x70	
	265	130	–	0904 522 003	–	0904 620 130	–		255				✓	–	M20x80	5
	285	150	–	0904 522 004	–	0904 620 150	–		275				✓	–	M20x80	
M24	190	30	–	0904 522 401	–	–	–	24	175	200	290	36	✓	–	M24x55	10
	220	60	–	0904 522 402	–	–	–		205				✓	–	M24x85	5
	260	100	–	0904 522 404	–	–	–		245				✓	–	M24x125	
M27	210	30	–	0904 522 701	–	–	–	28	190	300	–	41	✓	–	M27x62	5
	240	60	–	0904 522 702	–	–	–		220				✓	–	M27x92	
	280	100	–	0904 522 703	–	–	–		260				✓	–		



Installation

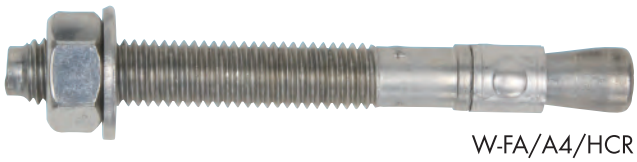


FIXANCHOR W-FA



W-FA/S

W-FA/F



W-FA/A4/HCR

Available in Bolt anchor for high loads in non-cracked concrete,zinc plated steel and stainless steel.

Features	Advantages
Torque-controlled expanding anchor.	Time saving pass through mounting.
Two anchorage depths.	Versatile in use for medium and heavy-load applications.
Approved for upto F120.	Fire resistance upto 120 mins.
Immediate loading.	No wait time and faster completion of job.

Applications

- Suitable for fastening metal structures, metal profiles, brackets, base plates, supports, cable conduits, pipes, wooden structures, beams, purlins etc.
- Can be used in concrete < C20/25 and compression-proof natural stone (without approval).
- The anchor may be used for anchoring with predominantly static loads (e.g. tare weight, fittings, stored materials) or quasi-static loads (e.g. façades, railings).

Approvals and certificates

uncracked concrete

cracked concrete

Type of installation

Pre-positioned	In-place	Stand-off
-	✓	✓

Application references

Loads

Thread size				M6		M8		M10		M12		M16		M20	
Effective anchorage depth		h_{ef}	[mm]	30	40	35	44	42	48	50	65	64	82	78	100
Non-cracked Concrete															
Tension	W-FA/S, F	N_{rec}	[kN]	2.9	4.1	4.9	5.7	6.4	7.6	8.3	12.3	12.0	17.4	16.1	23.4
	W-FA/A4; /HCR		[kN]	2.9	3.6	4.3	5.7	5.7	7.6	8.3	11.9	12.0	17.4	16.1	23.4
Shear	W-FA/S, F	V_{rec}	[kN]	2.9	2.9	4.9	6.3	6.4	7.8	8.3	14.3	23.6	23.6	32.3	37.1
	W-FA/A4; /HCR		[kN]	3.8	4.0	4.9	6.8	6.4	7.8	8.3	15.4	24.0	28.6	32.3	43.9

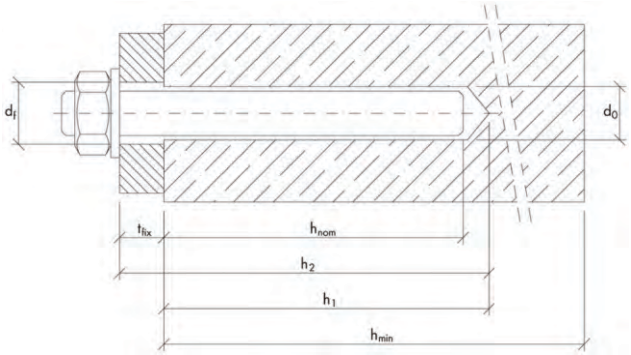
[1] Loads are valid for single anchors. Normal spaced reinforcement in ≥ C20/25. Material safety factor γ_M and safety factor for action γ_L = 1.4 are included. The material safety factor depends on the failure mode.
[2] Loads for anchorages close to edge and/or with small spacing have to be reduced and should be calculated based on performance data given in the ETA.

Clearance-hole in fixture		d_f	[mm]	7		9		12		14		18		22	
Drill depth		h_1	[mm]	45	55	55	65	65	70	75	90	95	110	110	130
Minimum thickness of concrete member	W-FA/S	h_{min}	[mm]	80	100	80	100	100	100	100	130	130	170	160	200
	W-FA/A4; /HCR												160		
Minimum edge distance	W-FA/S	c_{min}	[mm]	40	40	45	45	65	65	100	90	100	105	140	125
	W-FA/A4; /HCR		[mm]		35	60			55		70	110	80		100

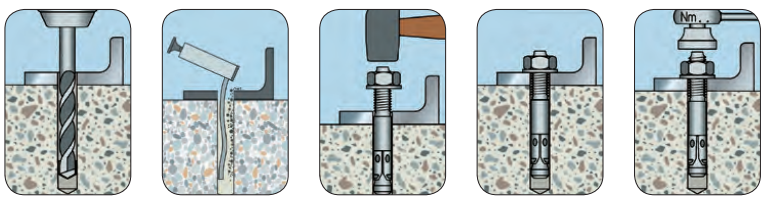
FIXANCHOR W-FA

	Anchor length	Fixture thickness for		Art. no.				Drill hole dia-meter	Drill hole depth for through installa-tion	Installation torque			Wrench Size	Approval	Thread length		P. Qty.
		$h_{ef,std}$	$h_{ef,red}$	Carbon steel	Carbon steel	Stainless steel	High corr. resist.			galv.	hot-dipped galv.	A4/ HCR					
	l	t_{fix}															
Type	[mm]	[mm]	[mm]	galvanized	hot-dipped galv.	A4	HCR	d_o [mm]	h_2 [mm]	$T_{inst} \leq$ [Nm]			SW [mm]	ETA-02/0001	M x l [mm]		[qty.]
W-FA																	
M6	67	10	20	5932 006 067	–	0904 411 065*	5932 206 020*	6	65	8	8	6	10	✓	M6x30		100
	82	25	35	5932 006 082	–	0904 411 066*	5932 206 035*		80						M6x35	M6x20 HCR only	
	97	40	50	5932 006 097	–	0904 411 067*	on demand		95						M6x35		
M8	75	10	19	5932 008 075	–	0904 411 083	–		75	15	15	15	13	✓	M8x40		100
	95	30	39	5932 008 095	5932 908 095	0904 411 087	–		95						M8x60		
	110	45	54	5932 008 110	–	0904 411 089	–		110						M8x75		
	120	55	64	5932 008 120	5932 908 120	–	–		120						M8x85		
M10	60	10	–	5932 010 060	–	–	–	10	80	30	30	25	17	–	M10x25		50
	90	15	21	5932 010 090	5932 910 090	0904 411 003	–		85					✓	M10x45		
	95	20	26	5932 010 095	–	0904 411 004	–		90						M10x50		
	105	30	36	5932 010 105	5932 910 105	0904 411 005	–		100						M10x60		
	120	45	51	5932 010 120	5932 910 120	0904 411 006	–		115						M10x75		
	145	70	76	5932 010 145	–	–	–		140						M10x80		
	175	100	106	5932 010 175	–	–	–		170						M10x80		
M12	75	5	–	5932 012 075	–	–	–	12	95	50	50	40	19	✓	M12x30		25
	105	10	25	5932 012 105	–	–	–		100						M12x60		
	110	15	30	5932 012 110	5932 910 110	0904 411 204	–		105						M12x65		
	115	20	35	5932 012 115	–	–	–		110						M12x70		
	125	30	45	5932 012 125	5932 910 125	0904 411 206	–		120						M12x80		
	145	50	65	5932 012 145	5932 910 145	–	–		140						M12x100		
	160	65	80	5932 012 160	–	–	–		155						M12x100		
	180	85	100	5932 012 180	5932 910 180	0904 411 209	–		175						M12x100	M12x80 A4 only	
	240	145	160	5932 012 240	–	–	–		235						M12x80		20
M16	115	13	–	5932 016 115	–	–	–	16	123	100	100	90	24	✓	M16x60		20
	130	10	28	5932 016 130	–	–	–		120						M16x70		
	150	30	48	5932 016 150	5932 916150	0904 411 604			140						M16x90		
	180	60	78	5932 016 180	–	–	–		170						M16x110		
	200	80	98	5932 016 200	–	–	–		190								10
	220	100	118	5932 016 220	–	0904 411 607			210						M16x80		
	250	130	148	5932 016 250	–	–	–		240						M16x80		
M20	150	5	27	5932 020 150	–	–	–	20	135	200	200	160	30	✓	M20x70		10
	180	35	57	5932 020 180	–	0904 411 002	–		165						M20x70		
	205	60	82	5932 020 205	–	–	–		195						M20x70		
	240	95	117	5932 020 240	–	–	–		225						M20x70		

* additional ETA 06/0162 for multiple attachments



Installation

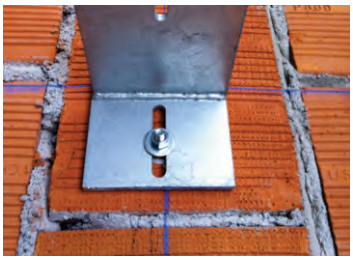
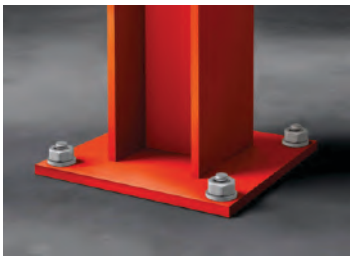


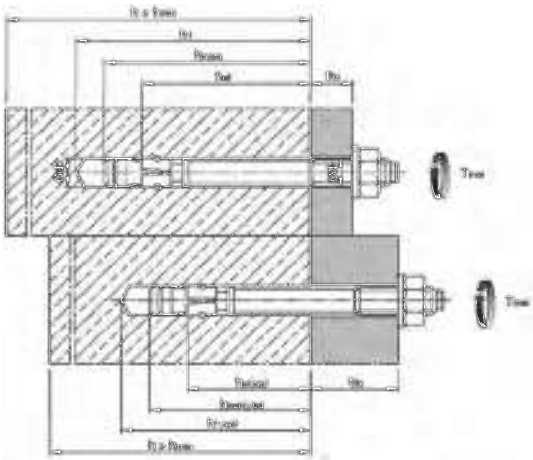
W - FB APPROVED FIX ANCHOR

Affordable Approved Performance

- **Economic performance with ETA Approval**
- **Multiple Embedment depths to suite multiple requirements**
- **Full range to meet all site requirements and applications**
- **German Wuerth Quality and assurance**
- **Excellent performance levels**
- **Suited for temporary non-structural applications**
- **Peace of mind with load certification**

Application references

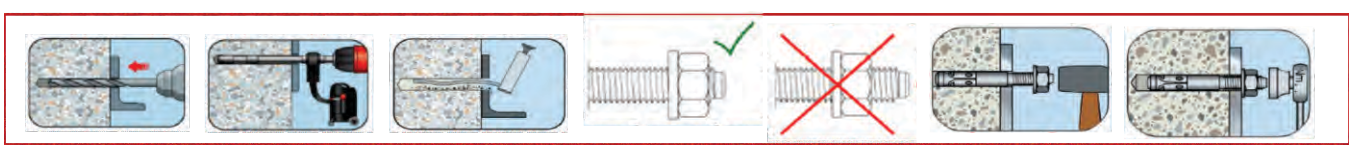




Fastener size			**M8**	**M10**	**M12**	**M16**
Nominal drill hole diameter	d_0 =	[mm]	8	10	12	16
Cutting diameter of drill bit	d_{cut} ≤	[mm]	8,45	10,45	12,50	16,50
Diameter of clearance hole in the fixture	d_f ≤	[mm]	9	12	14	18
Installation torque	T_{inst} =	[mm]	15	30	50	100
Standard anchorage depth						
Effective anchorage depth	h_{ef} ≥	[mm]	44	48	65	82
Depth of drill hole	h_1 ≥	[mm]	65	70	90	100
Embedment depth	h_{nom} ≥	[mm]	56	62	82	102
Reduced anchorage depth						
Effective anchorage depth	$h_{ef,red}$ ≥	[mm]	30	40	50	65
Depth of drill hole	$h_{1,red}$ ≥	[mm]	50	60	75	95
Embedment depth	$h_{nom,red}$ ≥	[mm]	42	54	67	85

Recommended loads

Thread size			M8		M10		M12		M16	
Effective anchorage depth	hef	[mm]	44	30	48	40	65	50	82	65
Non-cracked Concrete C20/25										
Tension	Nrec	[kN]	5.7	3.6	6.7	4.8	12.3	8.3	17.4	12.3
Shear	Vrec	[kN]	6.8	3.8	7.8	5.9	24.6	8.3	34.8	24.6



ANCHOR W-NAA - GALVANIZED / A2

Torque controlled expansion anchor for moderate loads in non-cracked concrete.

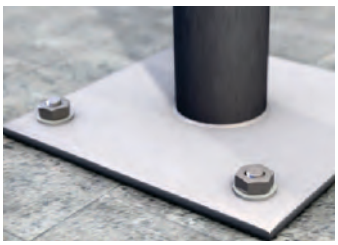
Features	Advantages
Torque-controlled expanding anchor.	Time saving pass through mounting.
Immediate loading.	No wait time and faster completion of job.

Applications

- Suitable for fastening metal structures, metal profiles, brackets, base plates, supports, cable conduits, pipes, wooden structures, beams, purlins etc.
- Can be used in concrete < C20/25 and compression-proof natural stone (without approval).
- The anchor may be used for anchoring with predominantly static loads (e.g. tare weight, fittings, stored materials) or quasi-static loads (e.g. facades, railings).
- Non structural applications in MEP and FACADE.

Application references

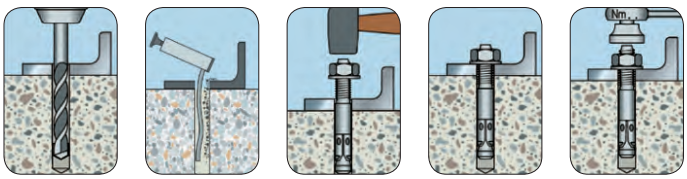





Type of installation

Pre-positioned	In-place	Stand-off
✓	✓	-

Installation



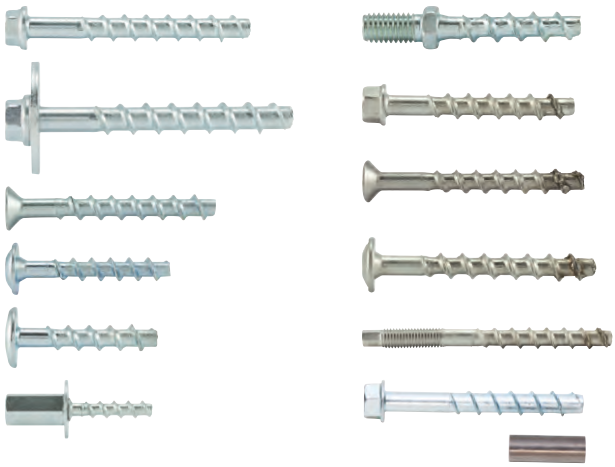
Recommended Load - A2 Anchors

Non-Cracked Concrete C20/25						
Diameter of anchor (mm)			**M8**	**M10**	**M12**	**M16**
Effective anchorage depth (mm)	hef	[mm]	40	50	65	80
Tensile resistance (kN)	Nrec	[kN]	4.0	6.8	9.9	12.8
Shear resistance (kN)	Vrec	[kN]	3.7	8.7	12.7	24.0

Recommended Load - Galvanized Anchors

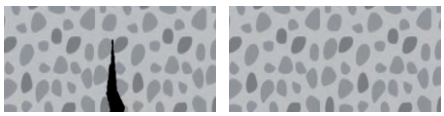
Diameter of anchor (mm)	M8	M10	M12	M16
Effective anchorage depth (mm)	40	50	65	80
Tensile resistance (kN)	4.9	7.0	9.9	14.0
Shear resistance (kN)	4.6	7.9	12.5	23.9

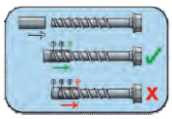
CONCRETE SCREW W-BS



Screw in anchor, extremely flexible to use with fastening adjustable upto twice after installation.

Features	Advantages
Three anchorage depths.	Option for different plate thickness in same diameter.
Suitable for multiple use.	Whole anchor can be removed & reused in different drill hole.
Screw in type fixing.	Virtually no expansion effect, enabling minimal axis & edge distances.
High load carrying capacity.	Absence of expanding component inside concrete.
Multiple types of anchor head options.	Aesthetically appealing.
Approved for Seisminc	Neusa tile Anchor





The concrete screw should be checked for wear before every use. The concrete screw may only be re-used when more than three thread turns can be inserted into the sleeve.

Application references

Applications

- For anchoring of non-load-bearing systems in cracked and non-cracked concrete.
- For attachment in hollow-core prestressed concrete ceilings, size 6.
- Suitable for attaching metal structures, metal profiles, brackets, footplates, supports, cable conduits, pipelines, railings etc.
- Can be used in concrete < C20/25 and hard natural stone (unapproved).

Approvals and certificates

Ø 6–14 Ø 5, 6

Type of installation

Pre-positioned	In-place	Stand-off
-	✓	-

Loads

Thread size				6		8			10			12			14		
Effective anchorage depth		h_{ef}	[mm]	31	44	35	43	52	43	60	68	50	67	80	58	79	92
Non-cracked Concrete																	
Tension	W-BS-S, SK; /S; /A4; /HCR	N_{rec}	[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		V_{rec}	[kN]	4.0	4.0	4.9	6.6	8.8	6.6	19.4	19.4	8.3	22.9	22.9	10.3	32.0	32.0
Cracked Concrete																	
Tension	W-BS-S, SK; /S; /A4; /HCR	N_{rec}	[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		V_{rec}	[kN]	2.8	4.0	3.4	4.6	6.1	4.6	15.2	18.4	5.8	18.0	22.9	7.2	23.0	28.9

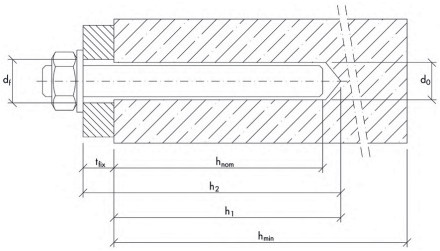
[1] Loads are valid for single anchors. Normal spaced reinforcement in ≥ C20/25. Material safety factor γ_M and safety factor for action γ_L = 1.4 are included. The material safety factor depends on the failure mode.
[2] Loads for anchorages close to edge and/or with small spacing have to be reduced and should be calculated based on performance data given in the ETA.

Clearance-hole in fixture	d_f	[mm]	8		12			14			16			18		
Drill depth	h_1	[mm]	45	60	55	65	75	65	85	95	75	95	110	85	110	125
Minimum thickness of concrete member	h_{min}	[mm]	100		100		120	100	130	130	120	130	150	130	150	170
Minimum edge distance	c_{min}	[mm]	40		40	50		50			50		70	50	70	

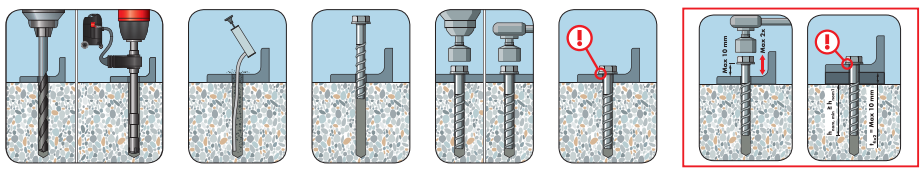
CONCRETE SCREW W-BS

Type	Anchor length l [mm]	Fixture thickness for t_{fix} [mm] $h_{ef,1}$	$h_{ef,2}$	$h_{ef,3}$	Art. no. W-BS hexagon head with pressed-on washer, Type S: Carbon steel galvanized	Carbon steel zinc-flake coating	Stainless steel A4	Drill hole diameter d_o [mm]	Drill hole depth for through installation h_2 [mm]	Installation torque $T_{inst} \leq$ [Nm]	Adjustability	Wrench Size/ Drive SW/ Torx [mm]	Approval ETA-16-0043*	Approval Sesimic C1/C2**	Head specification [mm]	P. Qty.
W-BS 8	50	5	–	–	5929 128 005	5929 328 005	–	8.0	60	20	✓	SW13	✓	C1+C2	Ø 16.0	50
	60	15	5	–	5929 128 015	5929 328 015	–	8.0	70	20	✓	SW13	✓	C1+C2	Ø 16.0	50
	70	25	15	5	5929 128 025	5929 328 025	5929 228 025	8.0	80	20	✓	SW13	✓	C1+C2	Ø 16.0	50
	80	35	25	15	5929 128 035	5929 328 035	5929 228 035	8.0	90	20	✓	SW13	✓	C1+C2	Ø 16.0	50
	90	45	35	25	5929 128 045	5929 328 045	–	8.0	100	20	✓	SW13	✓	C1+C2	Ø 16.0	50
	100	55	45	35	5929 128 055	5929 328 055	–	8.0	110	20	✓	SW13	✓	C1+C2	Ø 16.0	50
	120	75	65	55	5929 128 075	5929 328 075	–	8.0	130	20	✓	SW13	✓	C1+C2	Ø 16.0	50
	140	95	85	75	5929 128 095	5929 328 095	–	8.0	150	20	✓	SW13	✓	C1+C2	Ø 16.0	50
	160	115	105	95	5929 128 115	5929 328 115	–	8.0	170	20	✓	SW13	✓	C1+C2	Ø 16.0	50
W-BS 10	60	5	–	–	5929 121 005	5929 321 005	–	10.0	70	40	✓	SW15	✓	C1+C2	Ø 20.0	25
	80	25	5	–	5929 121 025	5929 321025	–	10.0	90	40	✓	SW15	✓	C1+C2	Ø 20.0	25
	90	35	15	5	5929 121 035	5929 321 035	5929 221 035	10.0	100	40	✓	SW15	✓	C1+C2	Ø 20.0	25
	100	45	25	15	5929 121 045	5929 321 045	5929 221 045	10.0	110	40	✓	SW15	✓	C1+C2	Ø 20.0	25
	120	65	45	35	5929 121 065	5929 321 065	5929 221 065	10.0	130	40	✓	SW15	✓	C1+C2	Ø 20.0	25
	140	85	65	55	5929 121 085	5929 321 085	–	10.0	150	40	✓	SW15	✓	C1+C2	Ø 20.0	25
	160	105	85	75	5929 121 105	5929 321 105	–	10.0	170	40	✓	SW15	✓	C1+C2	Ø 20.0	25
W-BS 12	80	15	–	–	5929 122 015	5929 322 015	–	12.0	90	60	✓	SW17	✓	C1+C2	Ø 23.0	25
	110	45	25	10	5929 122 045	5929 322 045	–	12.0	120	60	✓	SW17	✓	C1+C2	Ø 23.0	25
W-BS 14	80	5	–	–	5929 124 005	5929 324 005	–	14.0	90	80	✓	SW21	✓	C1+C2	Ø 28.0	25
	110	35	10	–	5929 124 035	5929 324 035	–	14.0	120	80	✓	SW21	✓	C1+C2	Ø 28.0	25
	130	55	30	15	5929 124 055	5929 324 055	–	14.0	140	80	✓	SW21	✓	C1+C2	Ø 28.0	25

* Size 5 and 6 approved for multiple attachment ETA-16/0128
** Seismic C2 not for stainless steel A4



Installation



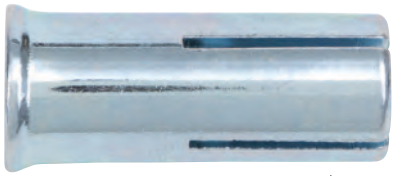
CONCRETE SCREW W-BS

Type	Anchor length l [mm]	Fixture thickness for t_{fix} [mm] $h_{ef,1}$	$h_{ef,2}$	$h_{ef,3}$	Art. no. W-BS countersunk head, Type SK: Carbon steel galvanized	Carbon steel zinc-flake coating	Stainless steel A4	Drill hole diameter d_o [mm]	Drill hole depth for through installation h_2 [mm]	Installation torque $T_{inst} \leq$ [Nm]	Adjustability	Wrench Size/ Drive SW/ Torx [mm]	Approval ETA-16-0043	Approval Sesimic C1/C2*	Head specification [mm]	P. Qty.
W-BS 6	40	5	–	–	5929 136 005	–	–	6.0	45	10	–	TX30	–	–	Ø 13.0	100
	50	15	10	–	5929 136 015	–	5929 236 015	6.0	55	10	–	TX30	✓	–	Ø 13.0	100
	60	25	20	5	5929 136 025	–	–	6.0	65	10	–	TX30	✓	–	Ø 13.0	100
	65	30	25	10	–	–	5929 236 030	6.0	70	10	–	TX30	✓	–	Ø 13.0	100
	80	45	40	25	5929 136 045	–	–	6.0	85	10	–	TX30	✓	–	Ø 13.0	100
	85	50	45	30	–	–	5929 236 050	6.0	90	10	–	TX30	✓	–	Ø 13.0	100
	100	65	60	45	5929 136 065	–	–	6.0	105	10	–	TX30	✓	–	Ø 13.0	100
	105	70	65	50	–	–	5929 236 070	6.0	110	10	–	TX30	✓	–	Ø 13.0	100
	120	85	80	65	5929 136 085	–	–	6.0	125	10	–	TX30	✓	–	Ø 13.0	100
	140	105	100	85	5929 136 105	–	–	6.0	145	10	–	TX30	✓	–	Ø 13.0	100
	160	125	120	105	5929 136 125	–	–	6.0	165	10	–	TX30	✓	–	Ø 13.0	100
W-BS 8	80	35	25	15	5929 138 035	–	5929 238 035	8.0	90	20	✓	TX40	✓	C1+C2	Ø 20.0	50
W-BS 10	90	35	15	5	5929 131 035	–	5929 231 035	10.0	100	40	✓	TX50	✓	C1+C2	Ø 22.0	25

* Seismic C2 not for stainless steel A4

DROP-IN ANCHOR W-ED

W-ED/S



W-ED/S-BND

W-ED/A4

Medium duty internal threaded displacement controlled expansion anchor fastener.

Features	Advantages
Medium duty displacement control anchor.	Easy installation due to low drive-in energy.
F120 fire resistance certification.	Fire resistance upto 120 mins.
Internal threaded anchor.	Attachment can easily by detached & reattached.
Shallow anchorage depth.	Fixings with minimum concrete thickness.
No installation torque required.	Easy for over head applications.

Applications

- Anchorage of non-load-bearing systems (M6–M16, cracked and non-cracked concrete) E.g. threaded rods, metal structures, metal profiles, grilles, cable conduits, pipes, mounting rails etc.
- Can be used in concrete < C20/25 and compression-proof natural stone (without approval).

Application references

Approvals and certificates

uncracked concrete

cracked concrete

Type of installation

Pre-positioned	In-place	Stand-off
✓	–	–

Loads

Thread size				M6x30	M8x30	M8x40	M10x30	M10x40	M12x50/80	M16x65/80	M20x80
Effective anchorage depth		h_{ef}	[mm]	30	30	40	30	40	50	65	80
Non-cracked Concrete											
Tension	W-ED/S	N_{rec}	[kN]	3.2	3.2	3.6	3.2	4.9	6.9	10.2	14.0
	W-ED/A4; /HCR		[kN]	3.8	3.8	4.3	-	5.9	8.3	12.3	16.8
Shear	W-ED/S	V_{rec}	[kN]	2.9	3.2	3.9	3.2	4.1	10.4	18.0	27.9
	W-ED/A4; /HCR		[kN]	3.2	4.9	4.9	-	6.1	11.5	19.2	30.4

[1] Loads are valid for single anchors. Normal spaced reinforcement in ≥ C20/25. Material safety factor γ_M and safety factor for action γ_L = 1.4 are included. The material safety factor depends on the failure mode.
[2] Loads for anchorages close to edge and/or with small spacing have to be reduced and should be calculated based on performance data given in the ETA.

Clearance-hole in fixture	W-ED/S; /A4; /HCR	d_f	[mm]	7	9	9	12	12	14	18	22
Drill depth	W-ED/S	h_0	[mm]	30	30	40	30	40	50 / 80	65 / 80	80
Min. thickness of concrete member	W-ED/A4; /HCR	h_{min}	[mm]	100	100	100	120	120	130	160	200
	W-ED/S						–	130	140		250
Min. edge distance	W-ED/S	c_{min}	[mm]	95	95	95	115	135	165	200	260
	W-ED/A4; /HCR			80			–				

DROP-IN ANCHOR W-ED

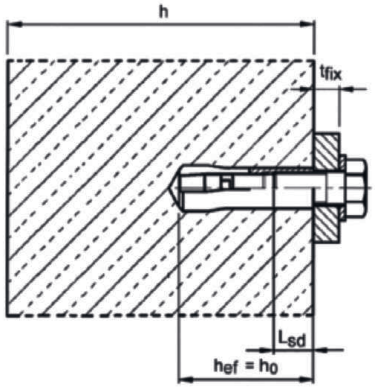
Type	Anchor length l [mm]	lip [mm]	Art. no. Carbon steel galvanized	Art. no. Stainless steel A4	Drill hole diameter d_o [mm]	Drill hole depth h_o [mm]	Installation torque $T_{inst} \leq$ [Nm]	Minimum screw-in depth $L_{sd\,min}$ [mm]	Maximum screw-in depth l_h [mm]	Approval ETA-02/0044	Approval ETA-05/0120	P. Qty.
												
M5	25	–	0904 5	–	8.0	25	3	6	10	–	–	100
M6	30	–	0904 010 06	0904 030 06		30	4	7	13	✓	✓	
M8	30	–	0904 010 08	0904 030 08	10.0	30	8	9	13	✓	✓	
	40	–	0904 010 081	0904 030 081		40	8	9	20	✓	✓	
M10	40	–	0904 010 10	0904 030 10	12.0	40	15	11	15	✓	✓	50
M12	50	–	0904 010 12	0904 030 12	15.0	50	35	13	18	✓	✓	
M16	65	–	0904 010 16	0904 030 16	20.0	65	60	18	23	✓	✓	25
M20	80	–	0904 010 20	0904 030 20	25.0	80	120	22	34	✓	✓	
												
M6	25	✓	0904 040 006	–	8.0	25	4	6	12	–	✓	100
M8	25	✓	0904 040 008	–	10.0	25	8	8		–	✓	
	30	✓	0904 040 08	–		30		9	13	✓	✓	
	40	✓	0904 040 081	–		40			20	✓	✓	
M10	25	✓	0904 040 100	–	12.0	25	15	10	12	–	✓	50
	30	✓	0904 040 101	–		30				✓	✓	
	40	✓	0904 040 10	–		40		11	15	✓	✓	
M12	25	✓	0940 040 120	–	15.0	25	35	12	12	–	✓	
	50	✓	0940 040 12	–		50		13	18	✓	✓	

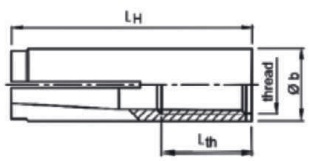
Loads when used for fixing a redundant non-structural system

Thread size					M6		M8			M10			M12		M16
Effective anchorage depth			h_{ef}	[mm]	25	30	25	30	40	25	30	40	25	50	65
Solid Concrete Slabs															
Load in any direction	C12/15 – C16/20	S/A4	F_{rec}	[kN]	1.2	–	1.2	–	–	1.7	–	–	1.7	–	–
	C20/25 – C50/60				1.7	1.2	1.9	1.7	2.0	2.1	2.0	2.0	2.1	2.4	6.3
Precast Pre-stressed Hollow Core Slabs					1.7										
Load in any direction	C30/37 – C50/60	S/A4	F_{rec}	[kN]		–	1.9	–	–	2.1	–	–	2.1	–	–

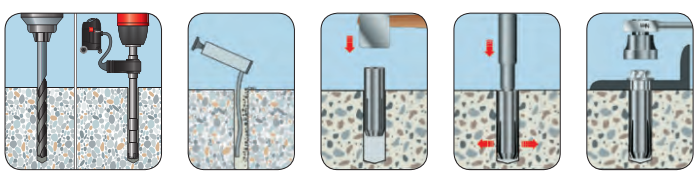
[1] Loads are valid for anchors in indeterminate non-structural applications. Material safety factor γ_M and safety factor for action γ_L = 1.4 are included.
[2] Loads for anchorages close to edge and/or with small spacing have to be reduced and should be calculated based on performance data given in the ETA.

Clearance-hole in fixture		d_f	[mm]	7		9			12			14		18
Drill depth		h_0	[mm]	25	30	25	30	40	25	30	40	25	50	65
Minimum thickness of concrete member		h_{min}	[mm]	80	100	80	100	100	80	120	120	80	130	160
Minimum edge distance	S/A4	c_{min}	[mm]	60	95/80	100	95	95	100	115/-	135	130	165	200
Minimum edge distance, precast		c_{min}	[mm]	150	–	150	–	–	150	–	–	150	–	–





Installation



ACCESSORIES FOR DROP-IN ANCHOR W-ED

Marking/expander tool with hand guard (visual installation check)

For Drop-in anchor	Art.no.	P.Qty.
M6 x 25	**0904 022 060**	1
M6 x 30	**0904 022 06**	
M8 x 25	**0904 022 080**	
M8 x 30	**0904 022 08**	
M8 x 40	**0904 022 081**	
M10 x 25	**0904 022 100**	
M10 x 30	**0904 022 101**	
M10 x 40	**0904 022 10**	
M12 x 25	**0904 022 120**	
M12 x 50	**0904 022 12**	
M16 x 65	**0904 022 16**	
M20 x 80	**0904 022 20**	

Machine expander tool (no visual installation check)

For Drop-in anchor	Art.no.	P.Qty.
M8 x 30	**0904 023 08**	1
M10 x 40	**0904 023 10**	
M12 x 50	**0904 023 12**	

Stop drill bit with clip-on expander tool

For Drop-in anchor	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**	

Expander tool (no visual installation check)

For Drop-in anchor	Art.no.	P.Qty.
M5 x 25[1)]	**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**	

[1)] ohne Zulassung

Stop drill bit

For Drop-in anchor	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**	

DROP-IN ANCHOR WSL - ED

Internal threaded displacement controlled expansion anchor fastener

Features	Advantages
Displacement controlled anchor.	Can be used for medium to heavy loads.
Perfect expansion.	Built-in plug ensures full expansion of anchor.
Internal threaded anchor.	Attachment can easily by detached and reattached.
Shallow anchorage depth.	Fixings with minimum concrete thickness.
No installation torque required.	Easy for over head applications.

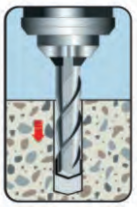
Applications

- Suitable for uncracked concrete ≥ C20/25 and pressure resistant natural stone.
- Can be used in dry interior rooms.
- Suitable for all kind of metric connection (e.g. Threaded rods, metal structures, metal profiles, grids and bolts for attaching).

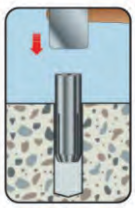
Performance Data								
Anchor Diameter			**M6**	**M8**	**M10**	**M12**		**M16**
Safety Load 1) 2)	N_{rec}	[kN]	1.5	2.1	3.3	4.8	4.8	7.0
min. member thickness	h_{min}	[mm]	100	100	120	130	130	160
Axial spacing	Scr, N	[mm]	75	90	120	150	150	195
Edge spacing	Ccr, N	[mm]	37.5	45	60	75	75	97.5
Embendment depth	h_{ef}	[mm]	25	30	40	50	50	65
Nominal diameter of drill bit in mm	d_0	[mm]	8	10	12	16	15	20
Drill hole depth	h_0	[mm]	25	30	40	50	50	65
Through-hole in the comp. to be connected	d_f	[mm]	7	9	12	14	14	18
Max torque	T_{inst}	[Nm]	4	8	15	35	35	60
Total Length	L_H	[mm]	25	30	40	50	50	65
Available thread length Lth	L_{th}	[mm]	10	14	15	20	20	25
Min screw-in depth	L_{sdmin}	[mm]	7	9	11	13	13	18
Designation			WSL-ED-M6×25-D8	WSL-ED-M8×30-D10	WSL-ED-M10×40-D12	WSL-ED-M12×50-D16	WSL-ED-M12×50-D15	WSL-ED-M16×65-D20
Art. No.			**5932 806 01**	**5932 808 01**	**5932 810 01**	**5932 812 01**	**5932 812 02**	**5932 816 01**
Packing Qty Box/Ctn			100/2000	100/2000	50/1000	50/500	50/500	25/200

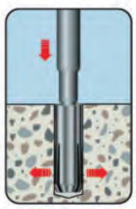
1) Tested in concrete C20/25.
2) Local regulations are not included. Please check with local engineers.

Setting instructions:


Drill hole


Clean drilled hole

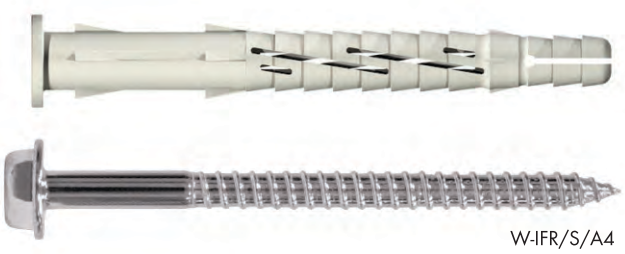

Knock in anchor until flush


Anchor with spreading tool

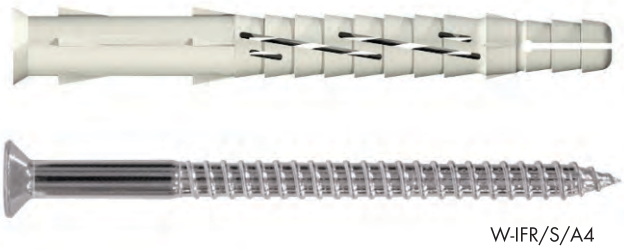

Secure component apply torque

GENERAL FIXINGS

FRAME FIXING W-IFR



W-IFR/S/A4



W-IFR/S/A4

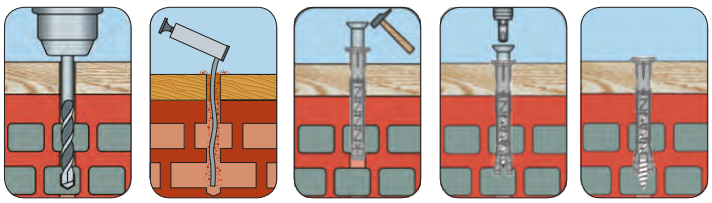
Approvals and certificates

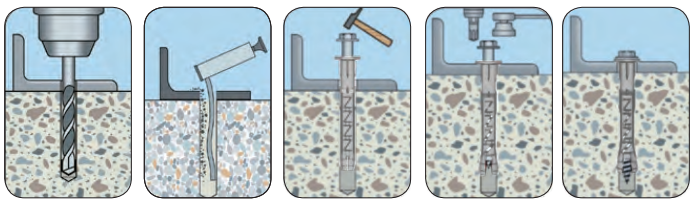
Type of installation

Pre-positioned	In-place	Stand-off
–	✓	

Application references

Installation





Loads in Concrete

Screw Diameter				**Ø 8**	**Ø 10**
Nominal embedment depth		h_{nom}	[mm]	70	70
Concrete ≥ C16/20					
Tension	W-IFR /S	N_{rec}	[kN]	1.4	1.8
Shear 1),2)		V_{rec}	[kN]	3.2	4.5
Tension	W-IFR /A4	N_{rec}	[kN]	1.4	1.8
Shear 1),2)		V_{rec}	[kN]	4.5	6.2
Edge distance	W-IFR /S /A4	c_{min}	[mm]	90	100

1) Loads are valid for anchors in indeterminate non-structural applications. Material safety factor γM and safety factor for action γL = 1.4 are included.
2) Loads for anchorages close to edge and/or with small spacing have to be reduced and should be calculated based on performance data given in the ETA.
3) The loads given are valid for the bricks and blocks which have been given. The loads can be taken for bricks and blocks of larger sizes, larger compressive strength of the masonry unit and same configuration of the cavities. The loads of the injection anchor may be determined by the so-called „"job site tests"" according to ETAG029 and TR053.

FRAME FIXING W-IFR

Brick and Block	Type	Compressive strength	Density	Drilling method	Screw Diameter	Nominal Embedment depth	Edge distance	In any direction[1),2)]
		$f_b \geq$ [N/mm²]	$\rho \geq$ [kg/dm³]			^{h}nom [mm]	^{c}min [mm]	^{F}rec [kN]
Solid Clay Brick 110x60x240	solid	39	1.7	Rotary + Hammer	Ø 8	70	120	0.86
					Ø 10	70	120	0.57
Solid Clay Brick 250x120x55	solid	27	1.7	Rotary + Hammer	Ø 8	70	125	1.14
					Ø 10	70	125	1.43
Vulcanic Tuff Brick 370x370x100	solid	7.5	2.4	Rotary + Hammer	Ø 10	70	185	0.09
Calcium silicate Solid Brick KS	solid	28.2	1.9	Rotary + Hammer	Ø 8	70	120	1.57
					Ø 10	70	120	1.71
Perforated clay brick 120x245x250	hollow	13	0.9	Rotary	Ø 10	70	125	0.09
Perforated clay brick 120x250x250	hollow	2	0.6	Rotary	Ø 8	70	125	0.09
Perforated clay brick T 24	hollow	7	0.9	Rotary	Ø 8	70	120	0.26
					Ø 10	70	120	0.26
Perforated clay brick 2 DF	hollow	16.4	0.9	Rotary	Ø 8	70	120	0.26
					Ø 10	70	120	0.26
Calcium silicate Solid Brick KSL	hollow	16.3	1.5	Rotary	Ø 8	70	120	1.43
					Ø 10	70	120	1.57
Non-cracked aerated autoclaved concrete	AAC	3.5	0.5	Rotary	Ø 8	70	120	0.18
					Ø 10	70	120	0.21

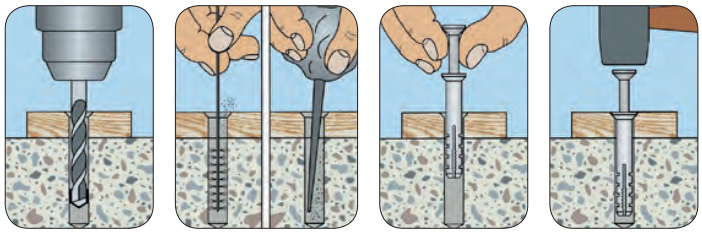
	Total length	Fixture thickness	Art. no.		P. Qty.
	l	t_{fix}	Carbon steel	Stainless steel	
Type	[mm]	[mm]	galvanized	A4	
W-IFR					
M8 - Countersunk Head	80	10	5912 1000 11	5912 1000 21961 100	50
	100	30	5912 1000 12	5912 1000 22961 50	
	120	50	5912 1000 13	5912 1000 23961 50	
M8 - Hexagonal Head	80	10	5912 1000 31	5912 1000 41961 100	50
	100	30	5912 1000 32	5912 1000 42961 50	
	120	50	5912 1000 33	–	
M10 - Countersunk Head	80	10	5912 1004 11	5912 1005 11961 50	50
	100	30	5912 1004 12	5912 1005 12961 50	
	120	50	5912 1004 13	–	
	140	70	5912 1004 14	–	
M10 - Hexagonal Head	80	10	5912 1006 11	5912 1007 11961 50	50
	100	30	5912 1006 12	5912 1007 12961 50	
	120	50	5912 1006 13	–	
	140	70	5912 1006 14	–	

HAMMER-IN ANCHOR W-ND

Type of installation		
Pre-positioned	In-place	Stand-off
–	✓	–

Application references

Installation



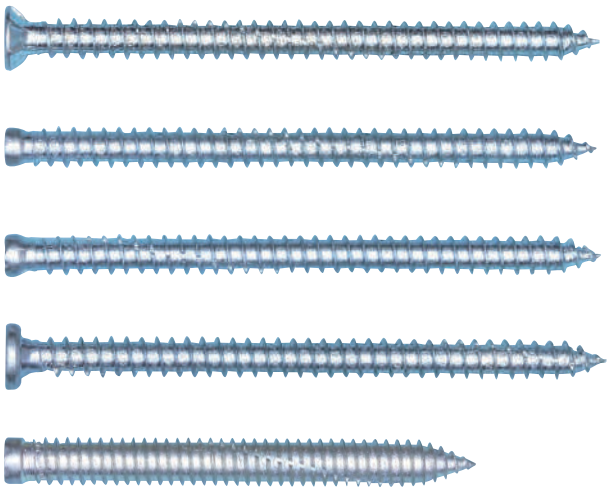
Recommended Loads

Diameter of anchor (mm)	6	8	10
Concrete C12/15 (kN)	0.20	0.23	0.50
Concrete C20/25 (kN)	0.29	0.54	0.54
Clay bricks MZ (kN)	0.27	0.29	0.54
Calciate silicate bricks KS (kN)	0.25	0.29	0.54

Variants

Anchor Type	Anchor-Ø	Anchor length	fixture thickness t_{fix}	Art. No.	Drive
	[mm]	[mm]	[mm]		
Countersunk	6	60	30	5997 631 946 090 1	Z2
		80	50	5997 631 947 090 1	
	8	80	40	5997 631 945 090 1	
		100	60	5997 631 944 090 1	
		120	70	5997 651 618 090 1	
	10	140	90	5997 651 619 090 1	

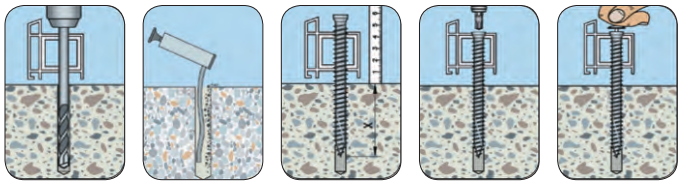
AMO III



Type of installation		
Pre-positioned	In-place	Stand-off
–	✓	–

Application references

Installation



Loads

Fire Resistance [min]	30	60	90	120
Tension Load	**max. N [kN]**			
AMO III-Screw Ø 7,5 mm (Type 1 and Type 3)	≤ 0.80	≤ 0.55	≤ 0.45	≤ 0.40
Shear load and oblique tension force up to 30°	**max. F/max. V [kN]**			
AMO III-Screw Ø 7,5 mm (Type 2)	≤ 0,50	≤ 0,50	≤ 0,50	≤ 0,50
AMO III-Screw Ø 11,5 mm				

[1] Loads are valid for anchors in indeterminate non-structural applications.

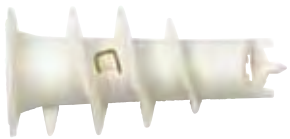
Type	Total Length	Head Diameter	Art. no.			Drive	P. Qty.
	l [mm]	[mm]	Steel, Yellow Galvanized	Galvanized steel, blue passivated	A2		
AMO III Ø 7,5 Type 2	72	Ø 8,0	0234 230 72	0234 830 72	–	AW 30	200
	82		0234 230 82	0234 830 82	–		200
	92		0234 230 92	0234 830 92	–		200
	102		0234 230 102	0234 830 102	–		200
	112		0234 230 112	0234 830 112	–		200
	122		0234 230 122	0234 830 122	–		200
	132		0234 230 132	0234 830 132	–		200
	152		0234 230 152	0234 830 152	–		200
	182		0234 230 182	0234 830 182	–		200
	212		0234 230 212	0234 830 212	–		100
	252		–	0234 830 252	–		100
	302		–	0234 830 302	–		100
AMO III Ø 7,5 Type 2	112	Ø 8,0	–	–	0239 230 112	AW 30	100
	132		–	–	0239 230 132		100
	152		–	–	0239 230 152		100
	182		–	–	0239 230 182		100

GYPSUMBOARD FIXING W-GS

Type Z

Type Z/L

Type K

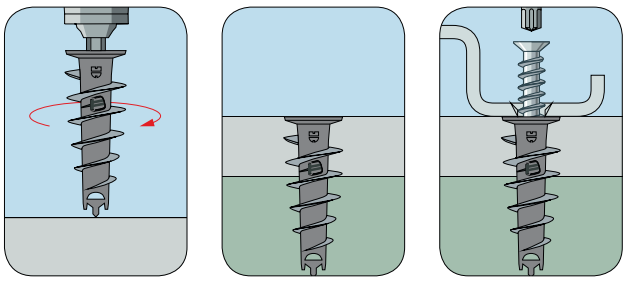


Type of installation		
Pre-positioned	In-place	Stand-off
✓	-	-

Application references




Installation



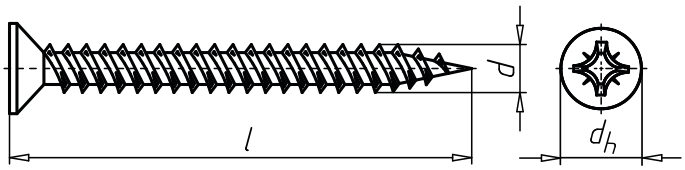
Performance data

Anchor Type				Type Z	Type Z/L	Type K
Recommended tension load	Gypsum Plasterboard d ≥ 12.5 mm	N_{rec}	[kN]	0.10	0.10	0.10
	Gypsum Plasterboard d ≥ 25 mm		[kN]	0.10	0.12	0.10
	Gypsum fiber boards		[kN]	0.12	0.12	-
Recommended shear load	Gypsum Plasterboard d ≥ 12.5 mm	V_{rec}	[kN]	0.12	0.12	0.12
	Gypsum Plasterboard d ≥ 25 mm		[kN]	0.15	0.15	0.12
	Gypsum fiber boards		[kN]	0.15	0.15	-

[1] Loads are valid for anchors in indeterminate non-structural applications. Material safety factor γ_M and safety factor for action γ_L = 1.4 are included.

Description	Screw Length	Min. member thickness	Thread-Ø screw	Art. no.	Hole-Ø in member	Edge distance	P. Qty
	l [mm]	d [mm]	ds [mm]		d_{mem} [mm]	c [mm]	
W-GS Type Z	33	9.5	4.5	**0903 252 1**	6.5	50	200
W-GS Type Z/L	39	9.5	4.5	**0903 253 1**	6.5	50	200
W-GS Type K	33	9.5	4.5-5.0	**0903 251 1**	6.5	50	200

WÜPOFAST®, BLUE GALVANISED PARTICLE BOARD SCREW



Steel, blue galvanised, full thread, countersunk head, PZ recessed head.

Pozidrive recessed head

Plastic slide coating
Screws in easily due to sharp threads with glide-promoting coating.

Bending angle
The larger the bending angle, the more elastic the screw – minimises breaking off.

Breaking torque
High degree of user safety due to quality monitoring of the hardened steel.

Screw-in torque
Dependent on the plastic glide coating and clean thread, as well as thread flanks – enabling easy, fast screwing (user-friendly).

25° tip
Precision positioning on hard surfaces such as coated and waterproof chipboard and all types of wood, wooden materials and MDF.

Material	Steel
Surface	Zinc plated
RoHS-compliant	Yes

Nominal diameter (d)	Length (l)	Thread length (lg)	Head diameter (d_h)	Internal drive	Art. No.	P. Qty.
2.4 mm	12 mm		5 mm	Z1	**0198 24 12**	1000 /5000
2.4 mm	16 mm		5 mm	Z1	**0198 24 16**	1000 /2000
3 mm	10 mm		6 mm	Z1	**0198 3 10**	1000 /2000
3 mm	12 mm		6 mm	Z1	**0198 3 12**	1000 /2000
3 mm	13 mm		6 mm	Z1	**0198 3 13**	1000 /2000
3 mm	15 mm		6 mm	Z1	**0198 3 15**	1000 /2000
3 mm	16 mm		6 mm	Z1	**0198 3 16**	1000 /2500
3 mm	17 mm		6 mm	Z1	**0198 3 17**	1000 /2000
3 mm	20 mm		6 mm	Z1	**0198 3 20**	1000 /3000
3 mm	25 mm		6 mm	Z1	**0198 3 25**	1000 /2000

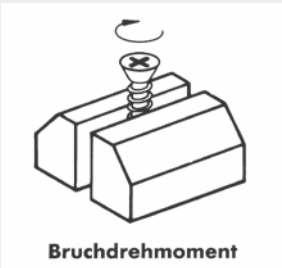
WÜPOFAST®, BLUE GALVANISED PARTICLE BOARD SCREW

Nominal diameter (d)	Length (l)	Thread length (lg)	Head diameter (d_h)	Internal drive	Art. No.	P. Qty.
3 mm	30 mm		6 mm	Z1	**0198 3 30**	1000 /2000
3 mm	35 mm		6 mm	Z1	**0198 3 35**	1000
3 mm	40 mm		6 mm	Z1	**0198 3 40**	500/1000
3 mm	45 mm		6 mm	Z1	**0198 3 45**	500
3.5 mm	12 mm		7 mm	Z2	**0198 35 12**	1000
3.5 mm	13 mm		7 mm	Z2	**0198 35 13**	1000 /2000
3.5 mm	15 mm		7 mm	Z2	**0198 35 15**	1000 /2000
3.5 mm	16 mm		7 mm	Z2	**0198 35 16**	1000 /2000
3.5 mm	17 mm		7 mm	Z2	**0198 35 17**	1000 /2000
3.5 mm	20 mm		7 mm	Z2	**0198 35 20**	1000 /2000
3.5 mm	22 mm		7 mm	Z2	**0198 35 22**	1000 /2500
3.5 mm	25 mm		7 mm	Z2	**0198 35 25**	1000 /2500
3.5 mm	30 mm		7 mm	Z2	**0198 35 30**	1000 /2000
3.5 mm	35 mm		7 mm	Z2	**0198 35 35**	1000
3.5 mm	40 mm		7 mm	Z2	**0198 35 40**	500
3.5 mm	45 mm		7 mm	Z2	**0198 35 45**	500/1500
3.5 mm	50 mm		7 mm	Z2	**0198 35 50**	500/1000
4 mm	12 mm		8 mm	Z2	**0198 4 12**	1000 /2000
4 mm	13 mm		8 mm	Z2	**0198 4 13**	1000
4 mm	15 mm		8 mm	Z2	**0198 4 15**	1000 /2000
4 mm	16 mm		8 mm	Z2	**0198 4 16**	1000 /2000
4 mm	17 mm		8 mm	Z2	**0198 4 17**	1000 /2000
4 mm	20 mm		8 mm	Z2	**0198 4 20**	1000 /2000
4 mm	22 mm		8 mm	Z2	**0198 4 22**	1000
4 mm	25 mm		8 mm	Z2	**0198 4 25**	1000 /2000
4 mm	27 mm		8 mm	Z2	**0198 4 27**	500/2000
4 mm	30 mm		8 mm	Z2	**0198 4 30**	500/2000
4 mm	35 mm		8 mm	Z2	**0198 4 35**	500
4 mm	40 mm		8 mm	Z2	**0198 4 40**	500/1000
4 mm	45 mm		8 mm	Z2	**0198 4 45**	500/1000
4 mm	50 mm		8 mm	Z2	**0198 4 50**	500/1000
4 mm	55 mm		8 mm	Z2	**0198 4 55**	250/500
4 mm	60 mm		8 mm	Z2	**0198 4 60**	500
4.5 mm	15 mm		9 mm	Z2	**0198 45 15**	500
4.5 mm	16 mm		9 mm	Z2	**0198 45 16**	500
4.5 mm	17 mm		9 mm	Z2	**0198 45 17**	500
4.5 mm	20 mm		9 mm	Z2	**0198 45 20**	500/2000
4.5 mm	25 mm		9 mm	Z2	**0198 45 25**	500/1000
4.5 mm	30 mm		9 mm	Z2	**0198 45 30**	500/1000
4.5 mm	35 mm		9 mm	Z2	**0198 45 35**	500/1000
4.5 mm	40 mm		9 mm	Z2	**0198 45 40**	500/1000

WÜPOFAST®, BLUE GALVANISED PARTICLE BOARD SCREW

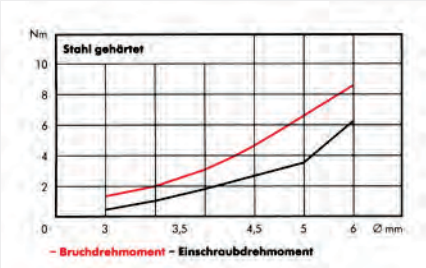
Nominal diameter (d)	Length (l)	Thread length (lg)	Head diameter (d_h)	Internal drive	Art. No.	P. Qty.
4.5 mm	45 mm		9 mm	Z2	**0198 45 45**	500/1000
4.5 mm	50 mm		9 mm	Z2	**0198 45 50**	250/500
4.5 mm	55 mm		9 mm	Z2	**0198 45 55**	250/500
4.5 mm	60 mm		9 mm	Z2	**0198 45 60**	250/500
5 mm	16 mm		10 mm	Z2	**0198 5 16**	500
5 mm	17 mm		10 mm	Z2	**0198 5 17**	500
5 mm	20 mm		10 mm	Z2	**0198 5 20**	500/1000
5 mm	25 mm		10 mm	Z2	**0198 5 25**	500/1000
5 mm	30 mm		10 mm	Z2	**0198 5 30**	500/1000
5 mm	35 mm		10 mm	Z2	**0198 5 35**	500
5 mm	40 mm		10 mm	Z2	**0198 5 40**	500/1000
5 mm	45 mm		10 mm	Z2	**0198 5 45**	200/250 /500
5 mm	50 mm		10 mm	Z2	**0198 5 50**	250/500
5 mm	55 mm		10 mm	Z2	**0198 5 55**	250/500
5 mm	60 mm		10 mm	Z2	**0198 5 60**	200/250
5 mm	65 mm		10 mm	Z2	**0198 5 65**	200
5 mm	70 mm		10 mm	Z2	**0198 5 70**	200
5 mm	80 mm		10 mm	Z2	**0198 5 80**	100/200
6 mm	40 mm		12 mm	Z3	**0198 6 40**	250/500
6 mm	45 mm		12 mm	Z3	**0198 6 45**	250
6 mm	50 mm		12 mm	Z3	**0198 6 50**	250
6 mm	55 mm	1 cm	12 mm	Z3	**0198 6 55**	250
6 mm	60 mm		12 mm	Z3	**0198 6 60**	200/500
6 mm	70 mm		12 mm	Z3	**0198 6 70**	200
6 mm	80 mm		12 mm	Z3	**0198 6 80**	100/200

Details/Application


Bruchdrehmoment


Einschraubdrehmoment

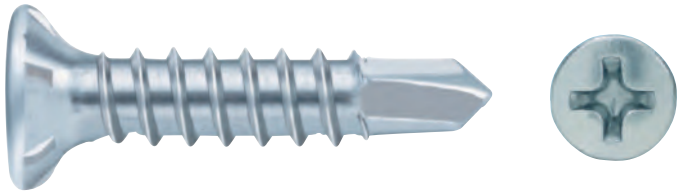
Biegewinkel



Notice

Not for outdoor use

FEBOS® WITH COUNTERSUNK MILLING HEAD



Galvanized steel, blue passivated (A2K)

- Tapping screw thread

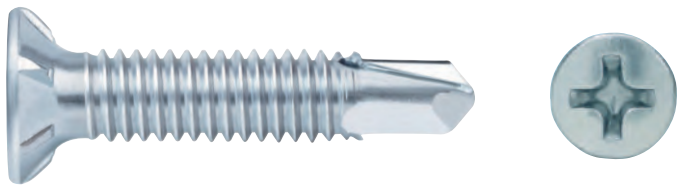
Self-tapping window construction screw for use in plastic window construction. For the connection of plastic profiles with the metal reinforcement (up to 2.5 mm) and for securing fittings on profiles with metal stiffening (up to 2.5 mm).

Drive	Nominal dia. in mm	Length l in mm	Art. No.	P. Qty.
PH2	3.9	13	**0207 083 913**	8,000
		16	**0207 083 916**	6,000
		19	**0207 083 919**	5,000
		25	**0207 083 925**	4,000
		32	**0207 083 932**	2,500
		38	**0207 083 938**	2,000

Can be stored in ORSY® System.

Please also observe the information on the overview page.

FEBOS® M WITH COUNTERSUNK MILLING HEAD



Steel, galv., blue passivated (A2K)

- Metric thread

Self-tapping window construction screw for use in plastic window construction. For the connection of plastic profiles with the metal reinforcement (up to 2.5 mm) and for securing fittings on profiles with metal stiffening (up to 2.5 mm).

Drive	Nominal dia. in mm	Length l in mm	Art. No.	P. Qty.
PH2	4.0	13	**0207 084 013**	8,000
		16	**0207 084 016**	6,000
		20	**0207 084 020**	5,000
		25	**0207 084 025**	4,000
		32	**0207 084 032**	2,500

Can be stored in ORSY® System.

- More load-bearing thread turns for thin iron reinforcements.
- The danger of forced feed with large distances between plastic and metal stiffening is minimized by the flat metric thread.
  (If a forced feed results, the drilling tip can tear out or the screw can break during processing.)

Please also observe the information on the overview page.

1-COMPONENT EXPANDING PU FOAM

Art No. 0892188020045 12

1-component mounting and filling foam for single application

Benefits

- Outstanding adhesion to virtually all construction surfaces
- Improved sound and heat insulation characteristics over mineral wool, cork and fibreglass
- Quick to fully harden
- Resistant to a large number of solvents, paints and chemicals
- Resistant to ageing and not-rotting

Details/Application

Safe insulation, filling and insulating of window joints, roof finishing, door frames, pipe openings, joints, wall joints, roller shutter boxes, wall openings and cavities etc. Adheres to concrete, stone, hard PVC, metal and wood.

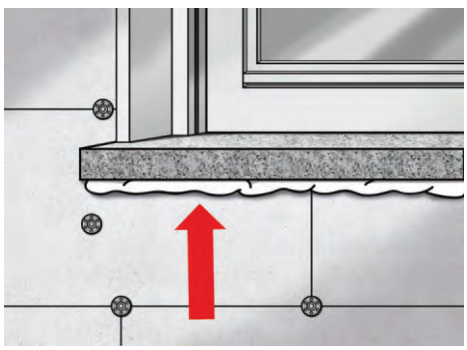
Instructions

The surfaces must be clean, solid and free from dust and grease. Pre-treat highly absorbent surfaces. Adhesion surfaces must be moistened with water before the foam is applied.
Screw the enclosed adapter tube onto the valve and shake the can vigorously, with the valve facing downwards, approx. 30 times so that the contents of the can are well mixed and the foam quality is optimised. Only fill the joints or cavities to approx. 1/3 with foam because the foam will expand. Moisten again if several foam beads are applied. Immediately remove fresh foam splashes with PURLOGIC® Clean and remove foam residue that has already hardened with PURLOGIC® foam cleaner. Cut away excess, fully hardened foam with a knife.

Notice

Does not adhere to PE, PP, PTFE and silicone. Not UV-resistant.

Application references



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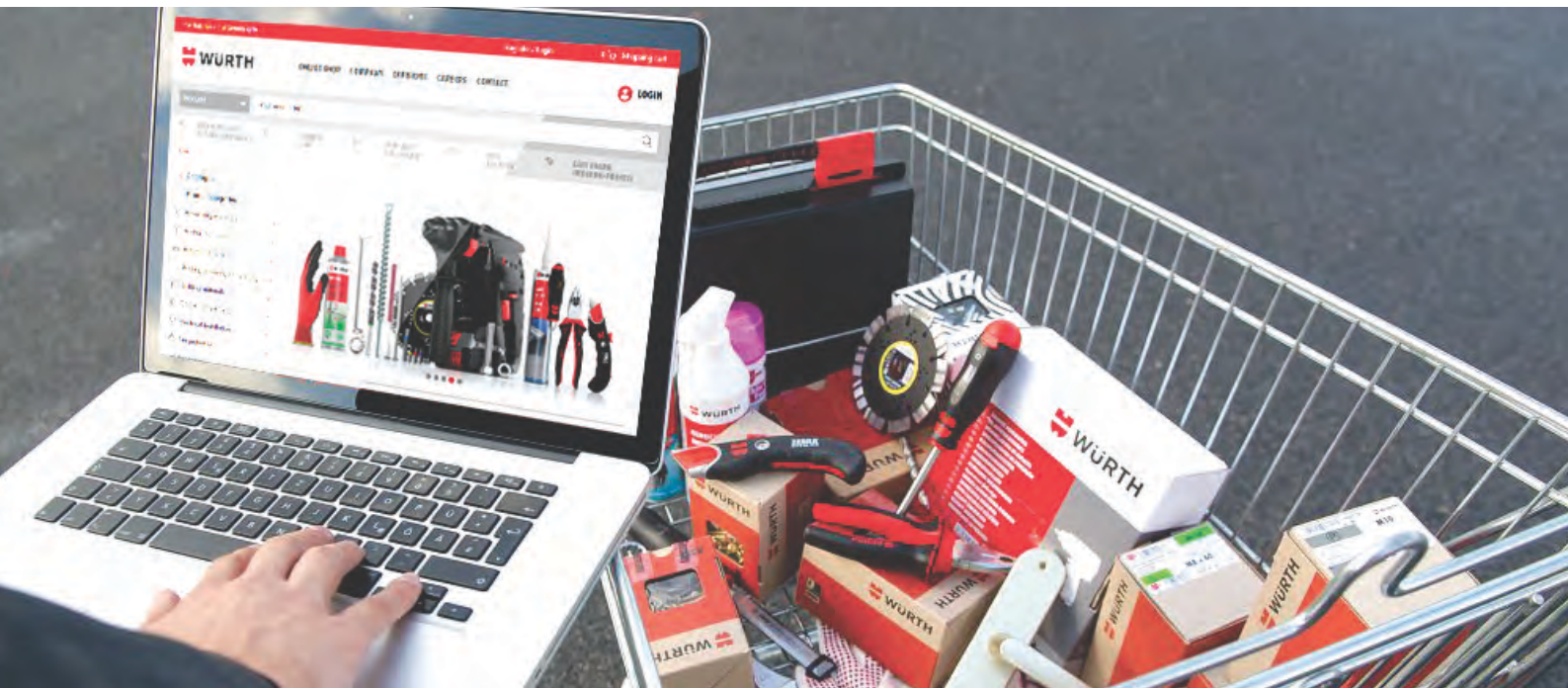

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February 2024