

DECLARATION OF PERFORMANCE
NR. LE_5918605140_03_M_WIT-PE 1000 (1)

LANGUAGE VERSIONS :

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DECLARATION OF PERFORMANCE

No. 5918605140_03_M_WIT-PE 1000(1)

This is an English translation of the original German wording.
In cases of doubt, the German version applies.

1. Unique identification code of the product type: Würth Injektionssystem WIT-PE 1000
[Würth WIT-PE 1000 injection system]
Art. no.: 5918605140; 5918605440; 5918605585; 591860*;
090546*; 090547*; 59151*; 59152*; 59153*; 59154*;
5916408110; 5916410130; 5916412160; 5916416190;
59156*; 59157*
2. Intended use(s): Bonded anchor for anchoring in concrete
3. Manufactured by: Adolf Würth GmbH & Co. KG,
Reinhold-Würth-Straße 12-17
D-74653 Künzelsau
4. System(s) of assessment and verification of constancy of performance: System 1
5. European Assessment Document: EAD 330499-01-0601-v01, Edition 11/2020
European Technical Assessment: ETA-19/0542 – 04/14/2022
Technical Assessment Body: Deutsches Institut für Bautechnik (DIBt), Berlin
Notified Body or Bodies: 2873, Institut für Stahlbau und Werkstoffmechanik (IFSW), Darmstadt
6. Declared performance:

Essential characteristics	Performance	Harmonized technical specification
Mechanical resistance and stability (BWR 1)		ETA-19/0542 EAD 330499-01-0601-v01
Characteristic tension resistance (static and quasi-static actions)	Annex C1–C6, C8–C11, C13–C16, B3	
Characteristic shear resistance (static and quasi-static actions)	Annex C1, C7, C12, C17	
Displacements under short term and long term loading	Annex C18–C20	
Characteristic resistance and displacements for seismic design category C1 and C2	Annex C21–C28	
Hygiene, health and environment (BWR 3)		
Contents, emission and/or release of hazardous substances	Performance not rated	

The performance of the above product corresponds to the declared performance. The declaration of performance is issued in compliance with EU Regulation 305/2011 under the sole responsibility of the above manufacturer.

Signed for and on behalf of the manufacturer by:

Original signed by:

Dipl.-Ing. Andreas Heck
(Head of Fastening Technology)

Künzelsau, 9/3/2024

Original signed by:

Dr. -Ing. Siegfried Beichter
(Authorized Signatory – Product Safety)

Approval body for construction products
and types of construction

Bautechnisches Prüfamt

An institution established by the Federal and
Laender Governments



European Technical Assessment

**ETA-19/0542
of 14 April 2022**

English translation prepared by DIBt - Original version in German language

General Part

Technical Assessment Body issuing the
European Technical Assessment:

Deutsches Institut für Bautechnik

Trade name of the construction product

Würth Injection system WIT-PE 1000 for concrete

Product family
to which the construction product belongs

Bonded fastener for use in concrete

Manufacturer

Adolf Würth GmbH & Co. KG
Reinhold-Würth-Straße 12-17
74653 Künzelsau
DEUTSCHLAND

Manufacturing plant

Werk 3

This European Technical Assessment
contains

46 pages including 3 annexes which form an integral part
of this assessment

This European Technical Assessment is
issued in accordance with Regulation (EU)
No 305/2011, on the basis of

EAD 330499-01-0601-v01 Edition 11/2020

This version replaces

ETA-19/0542 issued on 6 November 2020

**European Technical Assessment
ETA-19/0542**

English translation prepared by DIBt

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Specific Part

1 Technical description of the product

The "Würth Injection system WIT-PE 1000 for concrete" is a bonded anchor consisting of a mortar cartridge with injection mortar WIT-PE 1000 and a steel element according to Annex A 3.

The steel element is placed into a drilled hole filled with injection mortar and is anchored via the bond between metal part, injection mortar and concrete.

The product description is given in Annex A.

2 Specification of the intended use in accordance with the applicable European Assessment Document

The performances given in Section 3 are only valid if the anchor is used in compliance with the specifications and conditions given in Annex B.

The verifications and assessment methods on which this European Technical Assessment is based lead to the assumption of a working life of the anchor of at least 50 and/or 100 years. The indications given on the working life cannot be interpreted as a guarantee given by the producer, but are to be regarded only as a means for choosing the right products in relation to the expected economically reasonable working life of the works.

3 Performance of the product and references to the methods used for its assessment

3.1 Mechanical resistance and stability (BWR 1)

Essential characteristic	Performance
Characteristic resistance to tension load (static and quasi-static loading)	See Annex C 1 to C 6, C 8 to C 11, C 13 to C 16, B 3
Characteristic resistance to shear load (static and quasi-static loading)	See Annex C 1, C 7, C 12, C 17
Displacements under short-term and long-term loading	See Annex C 18 to C 20
Characteristic resistance and displacements for seismic performance categories C1 and C2	See Annex C 21 to C 28

3.2 Hygiene, health and the environment (BWR 3)

Essential characteristic	Performance
Content, emission and/or release of dangerous substances	No performance assessed

4 Assessment and verification of constancy of performance (AVCP) system applied, with reference to its legal base

In accordance with the European Assessment Document EAD 330499-01-0601 the applicable European legal act is: [96/582/EC].

The system to be applied is: 1

5 Technical details necessary for the implementation of the AVCP system, as provided for in the applicable European Assessment Document

Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited at Deutsches Institut für Bautechnik.

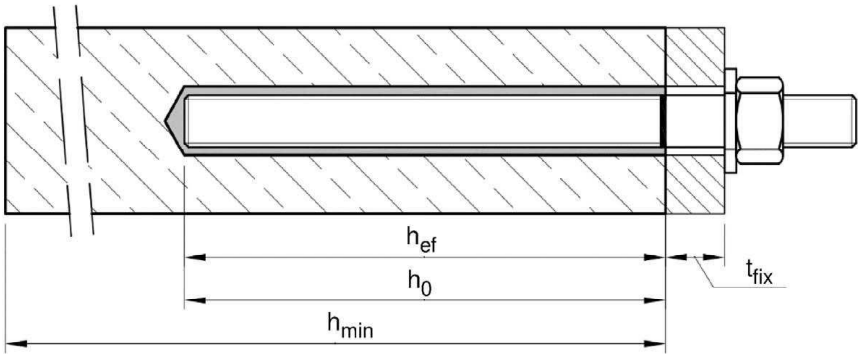
Issued in Berlin on 14 April 2022 by Deutsches Institut für Bautechnik

Dipl.-Ing. Beatrix Wittstock
Head of Section

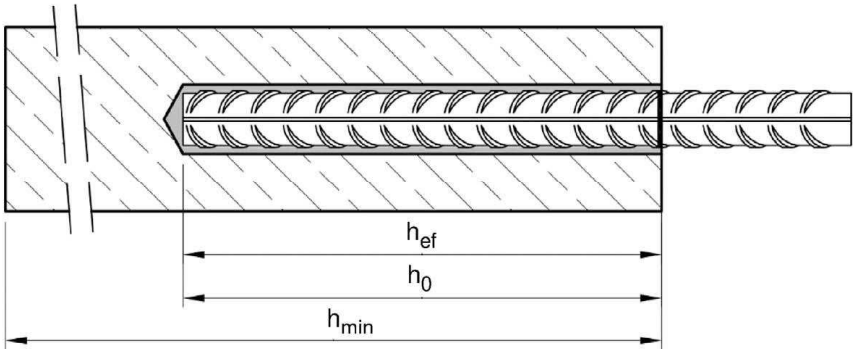
beglaubigt:
Baderschneider

Installation threaded rod M8 up to M30

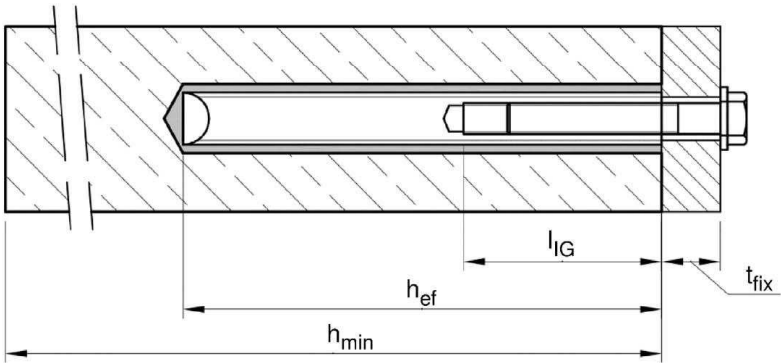
prepositioned installation or
push through installation (annular gap filled with mortar)



Installation reinforcing bar Ø8 up to Ø32



Installation internal threaded anchor rod IG-M6 up to IG-M20



t_{fix} = thickness of fixture
 h_{ef} = effective embedment depth
 h_{min} = minum thickness of member

h_0 = nominal drill hole diameter
 l_{IG} = thread engagement length

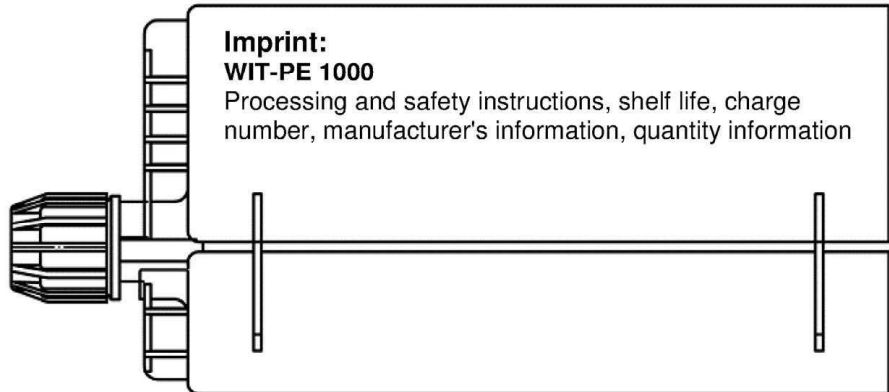
Würth injection system WIT-PE 1000 for concrete

Product description
Installed condition

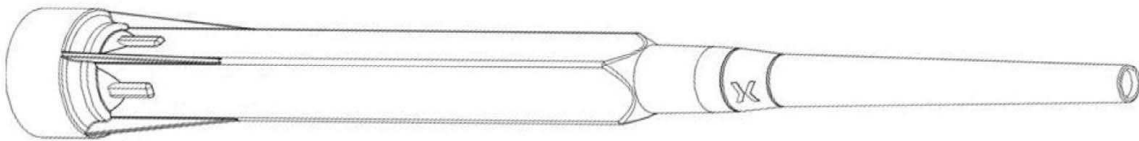
Annex A 1

Cartridge system

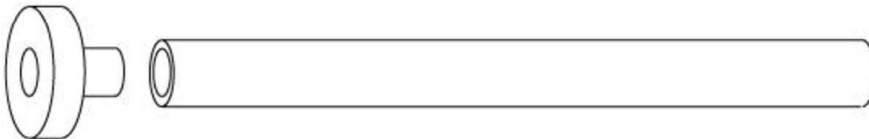
Side-by-Side Cartridge:
440 ml, 585 ml and 1400 ml



Static mixer WIT-PE / WIT-MX



Piston plug WIT-VS and mixer extension WIT-MV

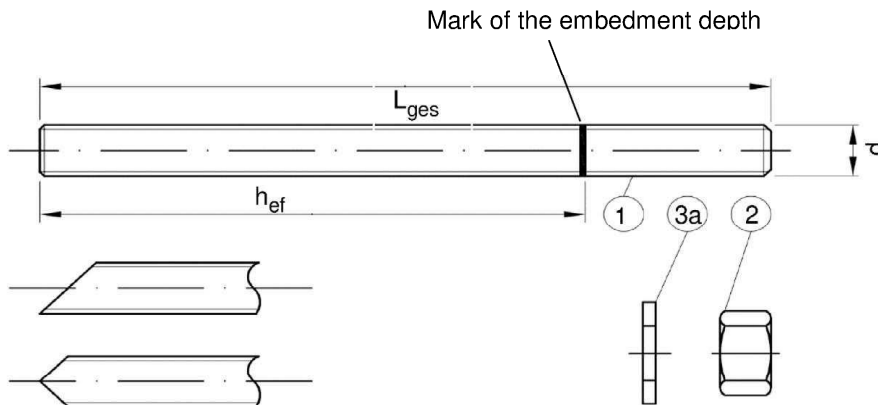


Würth injection system WIT-PE 1000 for concrete

Product description
Injection system

Annex A 2

Threaded rod M8 up to M30 with washer and hexagon nut

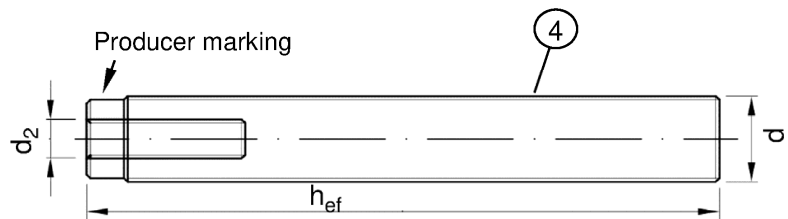
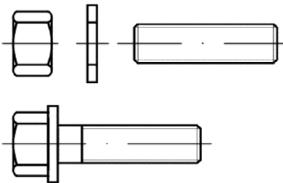


Commercial standard rod with:

- Materials, dimensions and mechanical properties acc. to Table A1
- Inspection certificate 3.1 acc. to EN 10204:2004. The document shall be stored.
- Marking of embedment depth

Internal threaded rod IG-M6 to IG-M10

Threaded rod or screw



Producer marking: e.g.  M8

 Marking Internal thread

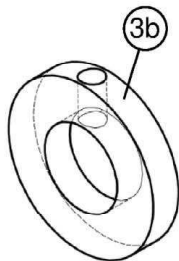
 Mark

M8 Thread size (Internal thread)

A4 additional mark for stainless steel

HCR additional mark for high-corrosion resistance steel

Filling washer WIT-SHB



Mixer reduction nozzle WIT-MR-X



Würth injection system WIT-PE 1000 for concrete

Product description

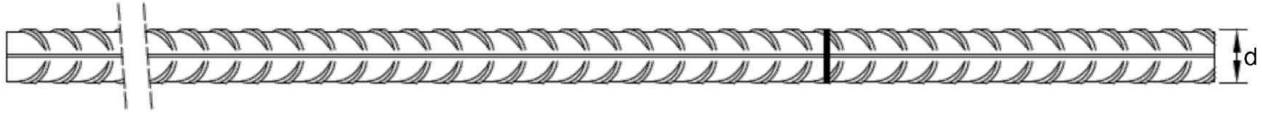
Threaded rod; Internal threaded rod
Filling washer; Mixer reduction nozzle

Annex A 3

Table A1: Materials

Part	Designation	Material				
Steel, zinc plated (Steel acc. to EN ISO 683-4:2018 or EN 10263:2001)						
- zinc plated ≥ 5 µm acc. to EN ISO 4042:2018 or						
- hot-dip galvanised ≥ 40 µm acc. to EN ISO 1461:2009 and EN ISO 10684:2004+AC:2009 or						
- sherardized ≥ 45 µm acc. to EN ISO 17668:2016						
1	Threaded rod	Property class	Characteristic steel ultimate tensile strength	Characteristic steel yield strength	Elongation at fracture	
		acc. to EN ISO 898-1:2013	4.6	f _{uk} = 400 N/mm ²	f _{yk} = 240 N/mm ²	A ₅ > 8%
			4.8	f _{uk} = 400 N/mm ²	f _{yk} = 320 N/mm ²	A ₅ > 8%
			5.6	f _{uk} = 500 N/mm ²	f _{yk} = 300 N/mm ²	A ₅ > 8%
			5.8	f _{uk} = 500 N/mm ²	f _{yk} = 400 N/mm ²	A ₅ > 8%
			8.8	f _{uk} = 800 N/mm ²	f _{yk} = 640 N/mm ²	A ₅ ≥ 12% ³⁾
2	Hexagon nut	acc. to EN ISO 898-2:2012	4	for anchor rod class 4.6 or 4.8		
			5	for anchor rod class 5.6 or 5.8		
			8	for anchor rod class 8.8		
3a	Washer	Steel, zinc plated, hot-dip galvanised or sherardized (e.g.: EN ISO 887:2006, EN ISO 7089:2000, EN ISO 7093:2000 or EN ISO 7094:2000)				
3b	Filling washer	Steel, zinc plated, hot-dip galvanised or sherardized				
4	Internal threaded anchor rod	Property class	Characteristic steel ultimate tensile strength	Characteristic steel yield strength	Elongation at fracture	
		acc. to EN ISO 898-1:2013	5.8	f _{uk} = 500 N/mm ²	f _{yk} = 400 N/mm ²	A ₅ > 8%
			8.8	f _{uk} = 800 N/mm ²	f _{yk} = 640 N/mm ²	A ₅ > 8%
Stainless steel A2 (Material 1.4301 / 1.4307 / 1.4311 / 1.4567 or 1.4541, acc. to EN 10088-1:2014)						
Stainless steel A4 (Material 1.4401 / 1.4404 / 1.4571 / 1.4362 or 1.4578, acc. to EN 10088-1:2014)						
High corrosion resistance steel (Material 1.4529 or 1.4565, acc. to EN 10088-1: 2014)						
1	Threaded rod ¹⁾⁴⁾	Property class	Characteristic steel ultimate tensile strength	Characteristic steel yield strength	Elongation at fracture	
		acc. to EN ISO 3506-1:2020	50	f _{uk} = 500 N/mm ²	f _{yk} = 210 N/mm ²	A ₅ ≥ 8%
			70	f _{uk} = 700 N/mm ²	f _{yk} = 450 N/mm ²	A ₅ ≥ 12% ³⁾
			80	f _{uk} = 800 N/mm ²	f _{yk} = 600 N/mm ²	A ₅ ≥ 12% ³⁾
2	Hexagon nut ¹⁾⁴⁾	acc. to EN ISO 3506-1:2020	50	for anchor rod class 50		
			70	for anchor rod class 70		
			80	for anchor rod class 80		
3a	Washer	A2: Material 1.4301 / 1.4307 / 1.4311 / 1.4567 or 1.4541, acc. to EN 10088-1:2014 A4: Material 1.4401 / 1.4404 / 1.4571 / 1.4362 or 1.4578, acc. to EN 10088-1:2014 HCR: Material 1.4529 or 1.4565, acc. to EN 10088-1: 2014 (e.g.: EN ISO 887:2006, EN ISO 7089:2000, EN ISO 7093:2000 or EN ISO 7094:2000)				
3b	Filling washer	Stainless steel A4, High corrosion resistance steel				
4	Internal threaded anchor rod ¹⁾²⁾	Property class	Characteristic steel ultimate tensile strength	Characteristic steel yield strength	Elongation at fracture	
		acc. to EN ISO 3506-1:2020	50	f _{uk} = 500 N/mm ²	f _{yk} = 210 N/mm ²	A ₅ > 8%
			70	f _{uk} = 700 N/mm ²	f _{yk} = 450 N/mm ²	A ₅ > 8%
1) Property class 70 or 80 for anchor rods and hexagon nuts up to M24 and Internal threaded anchor rods up to IG-M16						
2) for IG-M20 only property class 50						
3) A ₅ > 8% fracture elongation if no use for seismic performance category C2						
4) Property class 80 only for stainless steel A4 and HCR						
Würth injection system WIT-PE 1000 for concrete					Annex A 4	
Product description Materials threaded rod, Internal threaded anchor rod and filling washer						

Reinforcing bar: ø8 up to ø32



Minimum value of related rib area $f_{R,min}$ according to EN 1992-1-1:2004+AC:2010

Rib height of the bar shall be in the range $0,05d \leq h_{rib} \leq 0,07d$

(d: Nominal diameter of the bar; h_{rib} : Rib height of the bar)

Table A2: Materials Reinforcing bar

Part	Designation	Material
Rebar		
1	Reinforcing steel according to EN 1992 1 1:2004+AC:2010, Annex C	Bars and rebars from ring class B or C f_{yk} and k according to NDP or NCI according to EN 1992-1-1/NA $f_{uk} = f_{tk} = k \cdot f_{yk}$

Würth injection system WIT-PE 1000 for concrete

Product description
Materials reinforcing bar

Annex A 5

Specification of the intended use

Fasteners subject to (Static and quasi-static loads):

	Working life 50 years		Working life 100 years	
Base material	uncracked concrete	cracked concrete	uncracked concrete	cracked concrete
HD: Hammer drilling HDB: Hammer drilling with hollow drill bit CD: Compressed air drilling	M8 to M30, Ø8 to Ø32, IG-M6 to IG-M20		M8 to M30, Ø8 to Ø32, IG-M6 to IG-M20	
DD: Diamond drilling	M8 to M30, Ø8 to Ø32, IG-M6 to IG-M20	No performance assessed	M8 to M30, Ø8 to Ø32, IG-M6 to IG-M20	No performance assessed
Temperature Range:	I: - 40 C to +40 C ¹⁾ II: - 40 C to +72 C ²⁾		I: - 40 C to +40 C ¹⁾ II: - 40 C to +72 C ²⁾	

Fasteners subject to (seismic action):

	Performance Category C1	Performance Category C2
Base material	Cracked and uncracked concrete	Cracked and uncracked concrete
HD: Hammer drilling HDB: Hammer drilling with hollow drill bit CD: Compressed air drilling	M8 to M30, Ø8 to Ø32	M12 to M30
DD: Diamond drilling	No performance assessed	No performance assessed
Temperature Range:	I: - 40 C to +40 C ¹⁾ II: - 40 C to +72 C ²⁾	I: - 40 C to +40 C ¹⁾ II: - 40 C to +72 C ²⁾

1) (max. long-term temperature +24°C and max. short-term temperature +40°C)

2) (max. long-term temperature +50°C and max. short-term temperature +72°C)

Base materials:

- Compacted, reinforced or unreinforced normal weight concrete without fibres according to EN 206:2013 + A1:2016.
- Strength classes C20/25 to C50/60 according to EN 206:2013 + A1:2016.

Use conditions (Environmental conditions):

- Structures subject to dry internal conditions (all materials).
- For all other conditions according to EN 1993-1-4:2006+A1:2015 corresponding to corrosion resistance class:
 - Stainless steel Stahl A2 according to Annex A 4, Table A1: CRC II
 - Stainless steel Stahl A4 according to Annex A 4, Table A1: CRC III
 - High corrosion resistance steel HCR according to Annex A 4, Table A1: CRC V

Würth injection system WIT-PE 1000 for concrete

Intended Use
Specifications

Annex B 1

Design:

- Verifiable calculation notes and drawings are prepared taking account of the loads to be anchored. The position of the fastener is indicated on the design drawings (e. g. position of the fastener relative to reinforcement or to supports, etc.).
- Fasteners are designed under the responsibility of an engineer experienced in fasteners and concrete work.
- The fasteners are designed in accordance to EN 1992-4:2018 and Technical Report TR 055, Edition February 2018

Installation:

- Dry, wet concrete or flooded bore holes (not sea-water).
- Hole drilling by hammer (HD), hollow (HDB), compressed air (CD) or diamond drill mode (DD).
- Overhead installation allowed.
- Fastener installation carried out by appropriately qualified personnel and under the supervision of the person responsible for technical matters of the site.

Würth injection system WIT-PE 1000 for concrete

Intended Use
Specifications (Continued)

Annex B 2

Table B1: Installation parameters for threaded rod

Threaded rod			M8	M10	M12	M16	M20	M24	M27	M30
Diameter of element	$d = d_{nom}$	[mm]	8	10	12	16	20	24	27	30
Nominal drill hole diameter	d_0	[mm]	10	12	14	18	22	28	30	35
Effective embedment depth	$h_{ef,min}$	[mm]	60	60	70	80	90	96	108	120
	$h_{ef,max}$	[mm]	160	200	240	320	400	480	540	600
Diameter of clearance hole in the fixture	Prepositioned installation $d_f \leq$	[mm]	9	12	14	18	22	26	30	33
	Push through installation d_f	[mm]	12	14	16	20	24	30	33	40
Maximum installation torque	$\max T_{inst} \leq$	[Nm]	10	20	40 ¹⁾	60	100	170	250	300
Minimum thickness of member	h_{min}	[mm]	$h_{ef} + 30 \text{ mm} \geq 100 \text{ mm}$			$h_{ef} + 2d_0$				
Minimum spacing	s_{min}	[mm]	40	50	60	75	95	115	125	140
Minimum edge distance	c_{min}	[mm]	35	40	45	50	60	65	75	80

1) Maximum installation torque for M12 with steel Grade 4.6 is 35 Nm

Table B2: Installation parameters for reinforcing bar

Reinforcing bar			Ø 8 ¹⁾	Ø 10 ¹⁾	Ø 12 ¹⁾	Ø 14	Ø 16	Ø 20	Ø 24 ¹⁾	Ø 25 ¹⁾	Ø 28	Ø 32
Diameter of element	$d = d_{nom}$	[mm]	8	10	12	14	16	20	24	25	28	32
Nominal drill hole diameter	d_0	[mm]	10 12	12 14	14 16	18	20	25	30 32	30 32	35	40
Effective embedment depth	$h_{ef,min}$	[mm]	60	60	70	75	80	90	96	100	112	128
	$h_{ef,max}$	[mm]	160	200	240	280	320	400	480	500	560	640
Minimum thickness of member	h_{min}	[mm]	$h_{ef} + 30 \text{ mm} \geq 100 \text{ mm}$			$h_{ef} + 2d_0$						
Minimum spacing	s_{min}	[mm]	40	50	60	70	75	95	120	120	130	150
Minimum edge distance	c_{min}	[mm]	35	40	45	50	50	60	70	70	75	85

1) both nominal drill hole diameter can be used

Table B3: Installation parameters for internal threaded anchor rod

Internal threaded anchor rod			IG-M6	IG-M8	IG-M10	IG-M12	IG-M16	IG-M20
Internal diameter of anchor rod	d_2	[mm]	6	8	10	12	16	20
Outer diameter of anchor rod ¹⁾	$d = d_{nom}$	[mm]	10	12	16	20	24	30
Nominal drill hole diameter	d_0	[mm]	12	14	18	22	28	35
Effective embedment depth	$h_{ef,min}$	[mm]	60	70	80	90	96	120
	$h_{ef,max}$	[mm]	200	240	320	400	480	600
Diameter of clearance hole in the fixture	$d_f \leq$	[mm]	7	9	12	14	18	22
Maximum installation torque	$\max T_{inst} \leq$	[Nm]	10	10	20	40	60	100
Thread engagement length min/max	l_{IG}	[mm]	8/20	8/20	10/25	12/30	16/32	20/40
Minimum thickness of member	h_{min}	[mm]	$h_{ef} + 30 \text{ mm} \geq 100 \text{ mm}$			$h_{ef} + 2d_0$		
Minimum spacing	s_{min}	[mm]	50	60	75	95	115	140
Minimum edge distance	c_{min}	[mm]	40	45	50	60	65	80

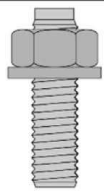
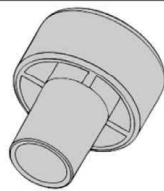
1) With metric threads according to EN 1993-1-8:2005+AC:2009

Würth injection system WIT-PE 1000 for concrete

Intended Use
Installation parameters

Annex B 3

Table B4: Parameter cleaning and installation tools

										
Threaded Rod	Re-inforcing bar	Internal threaded anchor rod	d ₀ Drill bit - Ø HD, HDB, CD, DD	d _b Brush - Ø		d _{b,min} min. Brush - Ø	Piston plug	Installation direction and use of piston plug		
[mm]	[mm]	[mm]	[mm]	WIT-	[mm]	[mm]	WIT-			
M8	8		10	RB10	11,5	10,5	No plug required			
M10	8 / 10	IG-M6	12	RB12	13,5	12,5				
M12	10 / 12	IG-M8	14	RB14	15,5	14,5				
	12		16	RB16	17,5	16,5				
M16	14	IG-M10	18	RB18	20,0	18,5	VS18	h _{ef} > 250 mm	h _{ef} > 250 mm	all
	16		20	RB20	22,0	20,5	VS20			
M20		IG-M12	22	RB22	24,0	22,5	VS22			
	20		25	RB25	27,0	25,5	VS25			
M24		IG-M16	28	RB28	30,0	28,5	VS28			
M27	24 / 25		30	RB30	31,8	30,5	VS30			
	24 / 25		32	RB32	34,0	32,5	VS32			
M30	28	IG-M20	35	RB35	37,0	35,5	VS35			
	32		40	RB40	43,5	40,5	VS40			

Cleaning and installation tools

HDB – Hollow drill bit system



The hollow drill system consists of Würth Extraction drill bit, MKT Extraction drill bit and a class M hoover with a minimum negative pressure of 253 hPa and a flow rate of minimum 150 m³/h (42 l/s).

CAC - Compressed air tool (min 6 bar)



Brush WIT-RB



Pistole Plug WIT-VS



Brush extension



Würth injection system WIT-PE 1000 for concrete

Intended Use

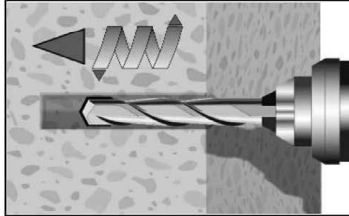
Cleaning and installation tools

Annex B 4

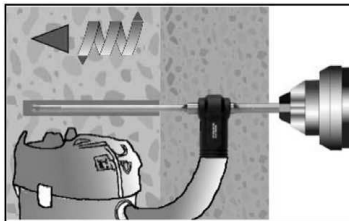
Table B5: Working and curing time				
Temperature in base material			Maximum working time	Minimum curing time ¹⁾
T			t _{work}	t _{cure}
+ 0 °C	to	+ 4 °C	90 min	144 h
+ 5 °C	to	+ 9 °C	80 min	48 h
+ 10 °C	to	+ 14 °C	60 min	28 h
+ 15 °C	to	+ 19 °C	40 min	18 h
+ 20 °C	to	+ 24 °C	30 min	12 h
+ 25 °C	to	+ 34 °C	12 min	9 h
+ 35 °C	to	+ 39 °C	8 min	6 h
+ 40 °C			8 min	4 h
Cartridge temperature			+5°C to +40°C	
¹⁾ The minimum curing time is only valid for dry base material. In wet base material the curing time must be doubled.				
Würth injection system WIT-PE 1000 for concrete				Annex B 5
Intended Use Working time and curing time				

Installation instructions

Drilling of the bore hole (HD, HDB, CD)



- 1a.** Hammer drilling (HD) / Compressed air drilling (CD)
Drill a hole to the required embedment depth.
Drill bit diameter according to Table B1, B2 or B3.
Aborted drill holes shall be filled with mortar.
Proceed with Step 2. Proceed with Step 2.

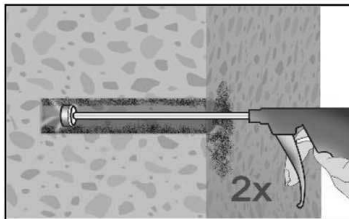


- 1b.** Hollow drill bit system (HDB) (see Annex B 4)
Drill a hole to the required embedment depth.
Drill bit diameter according to Table B1, B2 or B3.
The hollow drilling system removes the dust and cleans the bore hole.
Proceed with Step 3.

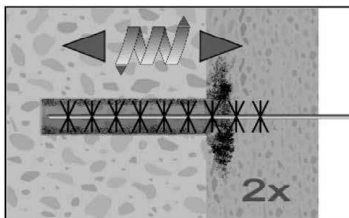
Attention! Standing water in the bore hole must be removed before cleaning.

Compressed Air Cleaning (CAC):

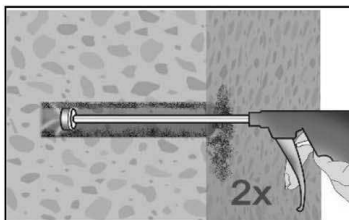
All diameter in cracked and uncracked concrete



- 2a.** Blow the bore hole clean minimum 2x with compressed air (min. 6 bar) (Annex B 4) over the entire embedment depth until return air stream is free of noticeable dust. (If necessary, an extension shall be used.)



- 2b.** Brush the bore hole minimum 2x with brush WIT-RB according to Table B4 over the entire embedment depth in a twisting motion. (If necessary, a brush extension shall be used.)



- 2c.** Finally blow the bore hole clean minimum 2x with compressed air (min. 6 bar) (Annex B 4) over the entire embedment depth until return air stream is free of noticeable dust. (If necessary, an extension shall be used.)

**Cleaned bore hole has to be protected against re-contamination in an appropriate way,
If necessary, repeat cleaning process directly before dispensing the mortar. In-flowing water must not contaminate the bore hole again.**

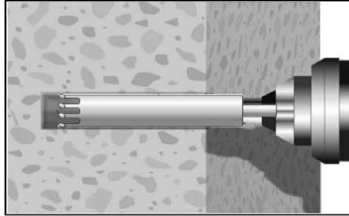
Würth injection system WIT-PE 1000 for concrete

Intended Use
Installation instructions

Annex B 6

Installation instructions (continuation)

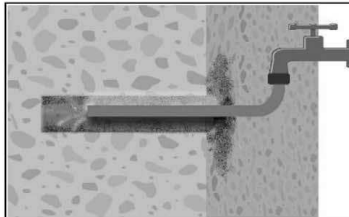
Drilling of the bore hole (DD)



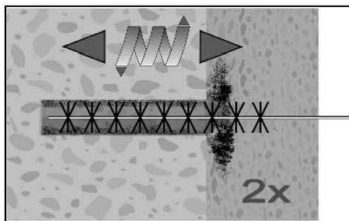
- 1a. Diamond drilling (DD)
Drill a hole to the required embedment depth required
Drill bit diameter according to Table B1, B2 or B3.
Aborted drill holes shall be filled with mortar.
Proceed with Step 2.

Flush & Compressed Air Cleaning (SPCAC):

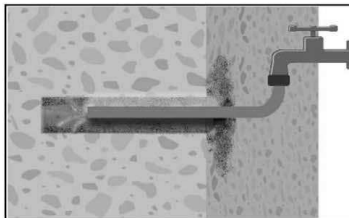
All diameter in uncracked concrete



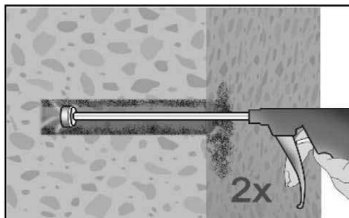
- 2a. Flushing with water until clear water comes out.



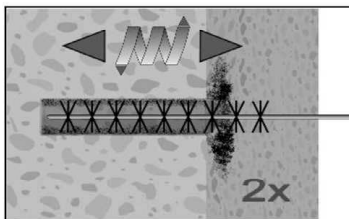
- 2b. Brush the bore hole minimum 2x with brush WIT-RB according to Table B4 over the entire embedment depth in a twisting motion. (If necessary, a brush extension shall be used.)



- 2c. Flushing again with water until clear water comes out.



- 2d. Blow the bore hole clean minimum 2x with compressed air (min. 6 bar) (Annex B 4) over the entire embedment depth until return air stream is free of noticeable dust. (If necessary, an extension shall be used.)



- 2e. Brush the bore hole minimum 2x with brush WIT-RB according to Table B4 over the entire embedment depth in a twisting motion. (If necessary, a brush extension shall be used.)

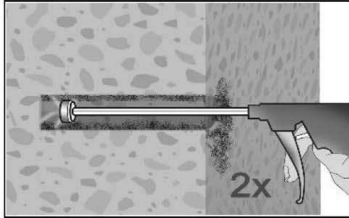
Würth injection system WIT-PE 1000 for concrete

Intended Use

Installation instructions (continuation)

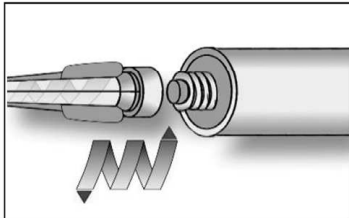
Annex B 7

Installation instructions (continuation)

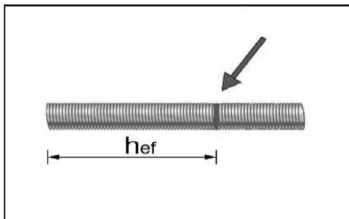


- 2f. Finally blow the bore hole clean minimum 2x with compressed air (min. 6 bar) (Annex B 4) over the entire embedment depth until return air stream is free of noticeable dust. (If necessary, an extension shall be used.)

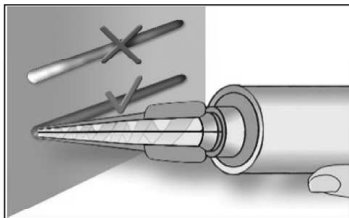
Cleaned bore hole has to be protected against re-contamination in an appropriate way, If necessary, repeat cleaning process directly before dispensing the mortar. In-flowing water must not contaminate the bore hole again.



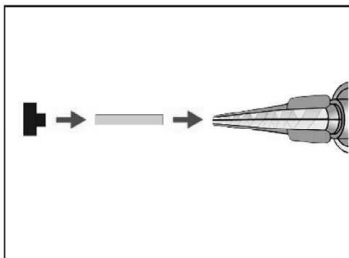
3. Screw on static-mixing nozzle WIT-PE / WIT-MX, and load the cartridge into an appropriate dispensing tool.
For every working interruption longer than the maximum working time t_{work} (Annex B 5) as well as for new cartridges, a new static-mixer shall be used.



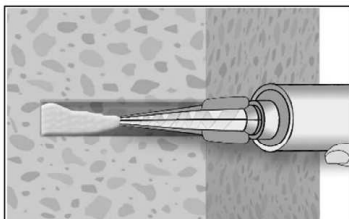
4. Mark embedment depth on the anchor rod.
The anchor rod shall be free of dirt, grease, oil or other foreign material.



5. Not proper mixed mortar is not sufficient for fastening.
Dispense and discard mortar until an uniform grey or red colour is shown (at least 3 full strokes).



6. Piston plugs WIT-VS and mixer nozzle extensions WIT-MV shall be used according to Table B4 for the following applications:
- Horizontal and vertical downwards direction: Drill bit- $\varnothing d_0 \geq 18$ mm and embedment depth $h_{ef} > 250$ mm
 - Vertical upwards direction: Drill bit- $\varnothing d_0 \geq 18$ mm
- Assemble mixing nozzle, mixer extension and piston plug before injecting mortar.



- 7a. **Injecting mortar without piston plug WIT-VS:**
Starting at bottom of the hole and fill the hole up to approximately two-thirds with adhesive. (If necessary, a mixer nozzle extension shall be used.)
Slowly withdraw of the static mixing nozzle avoid creating air pockets
Observe the temperature related working time t_{work} (Annex B 5).

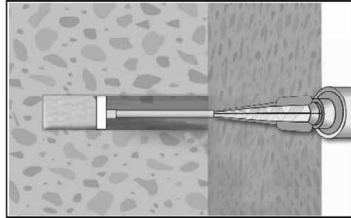
Würth injection system WIT-PE 1000 for concrete

Intended Use

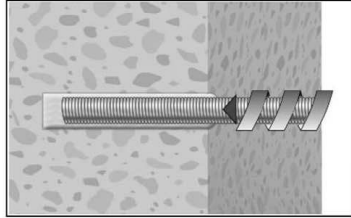
Installation instructions (continuation)

Annex B 8

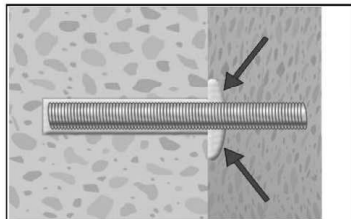
Installation instructions (continuation)



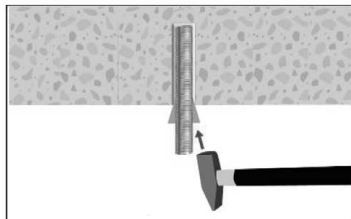
- 7b. Injecting mortar with piston plug WIT-VS:**
Starting at bottom of the hole and fill the hole up to approximately two-thirds with adhesive. (If necessary, a mixer nozzle extension shall be used.) During injection the piston plug is pushed out of the bore hole by the back pressure of the mortar.
Observe the temperature related working time t_{work} (Annex B 5).



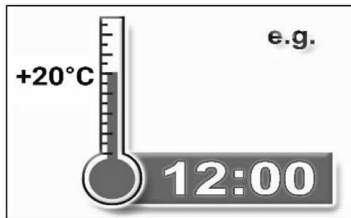
- 8.** Insert the anchor rod while turning slightly up to the embedment mark.



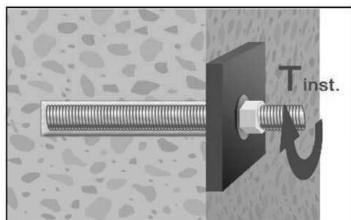
- 9.** Annular gap between anchor rod and base material must be completely filled with mortar. In case of push through installation the annular gap in the fixture must be filled with mortar also.
Otherwise, the installation must be repeated starting from step 7 before the maximum working time t_{work} has expired.



- 10.** For application in vertical upwards direction the anchor rod shall be fixed (e.g. wedges).



- 11.** Temperature related curing time t_{cure} (Annex B 5) must be observed.
Do not move or load the fastener during curing time.



- 12.** Install the fixture by using a calibrated torque wrench. Observe maximum installation torque (Table B1 or B3).
In case of static requirements (e.g. seismic), fill the annular gap in the fixture with mortar according to Annex 2. Therefore replace the washer by the filling washer WIT-SHB and use the mixer reduction nozzle WIT-MR-X.

Würth injection system WIT-PE 1000 for concrete

Intended Use

Installation instructions (continuation)

Annex B 9

Table C1: Characteristic values for steel tension resistance and steel shear resistance of threaded rods

Threaded rod			M8	M10	M12	M16	M20	M24	M27	M30	
Cross section area		A _s	[mm²]	36,6	58	84,3	157	245	353	459	561
Characteristic tension resistance, Steel failure ¹⁾											
Steel, Property class 4.6 and 4.8		N _{Rk,s}	[kN]	15 (13)	23 (21)	34	63	98	141	184	224
Steel, Property class 5.6 and 5.8		N _{Rk,s}	[kN]	18 (17)	29 (27)	42	78	122	176	230	280
Steel, Property class 8.8		N _{Rk,s}	[kN]	29 (27)	46 (43)	67	125	196	282	368	449
Stainless steel A2, A4 and HCR, class 50		N _{Rk,s}	[kN]	18	29	42	79	123	177	230	281
Stainless steel A2, A4 and HCR, class 70		N _{Rk,s}	[kN]	26	41	59	110	171	247	..3)	..3)
Stainless steel A4 and HCR, class 80		N _{Rk,s}	[kN]	29	46	67	126	196	282	..3)	..3)
Characteristic tension resistance, Partial factor ²⁾											
Steel, Property class 4.6 and 5.6		γ _{Ms,N}	[-]	2,0							
Steel, Property class 4.8, 5.8 and 8.8		γ _{Ms,N}	[-]	1,5							
Stainless steel A2, A4 and HCR, class 50		γ _{Ms,N}	[-]	2,86							
Stainless steel A2, A4 and HCR, class 70		γ _{Ms,N}	[-]	1,87							
Stainless steel A4 and HCR, class 80		γ _{Ms,N}	[-]	1,6							
Characteristic shear resistance, Steel failure ¹⁾											
Without lever arm	Steel, Property class 4.6 and 4.8	V ⁰ _{Rk,s}	[kN]	9 (8)	14 (13)	20	38	59	85	110	135
	Steel, Property class 5.6 and 5.8	V ⁰ _{Rk,s}	[kN]	11 (10)	17 (16)	25	47	74	106	138	168
	Steel, Property class 8.8	V ⁰ _{Rk,s}	[kN]	15 (13)	23 (21)	34	63	98	141	184	224
	Stainless steel A2, A4 and HCR, class 50	V ⁰ _{Rk,s}	[kN]	9	15	21	39	61	88	115	140
	Stainless steel A2, A4 and HCR, class 70	V ⁰ _{Rk,s}	[kN]	13	20	30	55	86	124	..3)	..3)
	Stainless steel A4 and HCR, class 80	V ⁰ _{Rk,s}	[kN]	15	23	34	63	98	141	..3)	..3)
With lever arm	Steel, Property class 4.6 and 4.8	M ⁰ _{Rk,s}	[Nm]	15 (13)	30 (27)	52	133	260	449	666	900
	Steel, Property class 5.6 and 5.8	M ⁰ _{Rk,s}	[Nm]	19 (16)	37 (33)	65	166	324	560	833	1123
	Steel, Property class 8.8	M ⁰ _{Rk,s}	[Nm]	30 (26)	60 (53)	105	266	519	896	1333	1797
	Stainless steel A2, A4 and HCR, class 50	M ⁰ _{Rk,s}	[Nm]	19	37	66	167	325	561	832	1125
	Stainless steel A2, A4 and HCR, class 70	M ⁰ _{Rk,s}	[Nm]	26	52	92	232	454	784	..3)	..3)
	Stainless steel A4 and HCR, class 80	M ⁰ _{Rk,s}	[Nm]	30	59	105	266	519	896	..3)	..3)
Characteristic shear resistance, Partial factor ²⁾											
Steel, Property class 4.6 and 5.6		γ _{Ms,V}	[-]	1,67							
Steel, Property class 4.8, 5.8 and 8.8		γ _{Ms,V}	[-]	1,25							
Stainless steel A2, A4 and HCR, class 50		γ _{Ms,V}	[-]	2,38							
Stainless steel A2, A4 and HCR, class 70		γ _{Ms,V}	[-]	1,56							
Stainless steel A4 and HCR, class 80		γ _{Ms,V}	[-]	1,33							
¹⁾ Values are only valid for the given stress area A _s . Values in brackets are valid for undersized threaded rods with smaller stress area A _s for hot-dip galvanised threaded rods according to EN ISO 10684:2004+AC:2009.											
²⁾ in absence of national regulation											
³⁾ Fastener type not part of the ETA											
Würth injection system WIT-PE 1000 for concrete								Annex C 1			
Performances Characteristic values for steel tension resistance and steel shear resistance of threaded rods											

Table C2: Characteristic values of tension loads under static and quasi-static action for a working life of 50 and 100 years

Fastener		All Fastener type and sizes		
Concrete cone failure				
Uncracked concrete	$k_{ucr,N}$	[-]	11,0	
Cracked concrete	$k_{cr,N}$	[-]	7,7	
Edge distance	$c_{cr,N}$	[mm]	$1,5 h_{ef}$	
Axial distance	$s_{cr,N}$	[mm]	$2 c_{cr,N}$	
Splitting				
Edge distance	$h/h_{ef} \geq 2,0$	$c_{cr,sp}$	[mm]	$1,0 h_{ef}$
	$2,0 > h/h_{ef} > 1,3$			$2 \cdot h_{ef} \left(2,5 - \frac{h}{h_{ef}} \right)$
	$h/h_{ef} \leq 1,3$			$2,4 h_{ef}$
Axial distance	$s_{cr,sp}$	[mm]	$2 c_{cr,sp}$	
</				

Table C3: Characteristic values of tension loads under static and quasi-static action for a working life of 50 years												
Threaded rod				M8	M10	M12	M16	M20	M24	M27	M30	
Steel failure												
Characteristic tension resistance		$N_{Rk,s}$	[kN]	$A_s \cdot f_{uk}$ (or see Table C1)								
Partial factor		$\gamma_{Ms,N}$	[-]	see Table C1								
Combined pull-out and concrete failure												
Characteristic bond resistance in uncracked concrete C20/25 in hammer drilled holes (HD) and compressed air drilled holes (CD)												
Temperature range	I: 40°C/24°C	Dry, wet concrete and flooded bore hole	$\tau_{Rk,ucr}$	[N/mm²]	20	20	19	19	18	17	16	16
	II: 72°C/50°C				15	15	15	14	13	13	12	12
Characteristic bond resistance in uncracked concrete C20/25 in hammer drilled holes with hollow drill bit (HDB)												
Temperature range	I: 40°C/24°C	Dry, wet concrete	$\tau_{Rk,ucr}$	[N/mm²]	17	16	16	16	15	14	14	13
	II: 72°C/50°C				14	14	14	13	13	12	12	11
	I: 40°C/24°C	flooded bore hole			16	16	16	15	15	14	14	13
	II: 72°C/50°C				14	14	14	13	13	12	12	11
Characteristic bond resistance in cracked concrete C20/25 in hammer drilled holes (HD) , compressed air drilled holes (CD) and in hammer drilled holes with hollow drill bit (HDB)												
Temperature range	I: 40°C/24°C	Dry, wet concrete and flooded bore hole	$\tau_{Rk,cr}$	[N/mm²]	7,0	7,0	8,5	8,5	8,5	8,5	8,5	8,5
	II: 72°C/50°C				6,0	6,0	7,0	7,0	7,0	7,0	7,0	7,0
Reduction factor ψ^0_{sus} in cracked and uncracked concrete C20/25 in hammer drilled holes (HD), compressed air drilled holes (CD) and in hammer drilled holes with hollow drill bit (HDB)												
Temperature range	I: 40°C/24°C	Dry, wet concrete and flooded bore hole	ψ^0_{sus}	[-]	0,80							
	II: 72°C/50°C				0,68							
Increasing factors for concrete		ψ_c	[-]	$(f_{ck} / 20)^{0,1}$								
Characteristic bond resistance depending on the concrete strength class		$\tau_{Rk,ucr} =$		$\psi_c \cdot \tau_{Rk,ucr,(C20/25)}$								
		$\tau_{Rk,cr} =$		$\psi_c \cdot \tau_{Rk,cr,(C20/25)}$								
Concrete cone failure												
Relevant parameter				see Table C2								
Splitting												
Relevant parameter				see Table C2								
Installation factor												
for dry and wet concrete (HD; HDB, CD)		γ_{inst}	[-]	1,0								
for flooded bore hole (HD; HDB, CD)				1,2								
Würth injection system WIT-PE 1000 for concrete										Annex C 3		
Performances												
Characteristic values of tension loads under static and quasi-static action for a working life of 50 years (threaded rod)												

Table C4: Characteristic values of tension loads under static and quasi-static action for a working life of 100 years												
Threaded rod				M8	M10	M12	M16	M20	M24	M27	M30	
Steel failure												
Characteristic tension resistance		$N_{Rk,s}$	[kN]	$A_s \cdot f_{uk}$ (or see Table C1)								
Partial factor		$\gamma_{Ms,N}$	[-]	see Table C1								
Combined pull-out and concrete failure												
Characteristic bond resistance in uncracked concrete C20/25 in hammer drilled holes (HD) and compressed air drilled holes (CD)												
Temperature range	I: 40°C/24°C	Dry, wet concrete and flooded bore hole	$\tau_{Rk,ucr,100}$	[N/mm²]	20	20	19	19	18	17	16	16
	II: 72°C/50°C				15	15	15	14	13	13	12	12
Characteristic bond resistance in uncracked concrete C20/25 in hammer drilled holes with hollow drill bit (HDB)												
Temperature range	I: 40°C/24°C	Dry, wet concrete	$\tau_{Rk,ucr,100}$	[N/mm²]	17	16	16	16	15	14	14	13
	II: 72°C/50°C				14	14	14	13	13	12	12	11
	I: 40°C/24°C	flooded bore hole			16	16	16	15	15	14	14	13
	II: 72°C/50°C				14	14	14	13	13	12	12	11
Characteristic bond resistance in cracked concrete C20/25 in hammer drilled holes (HD) , compressed air drilled holes (CD) and in hammer drilled holes with hollow drill bit (HDB)												
Temperature range	I: 40°C/24°C	Dry, wet concrete and flooded bore hole	$\tau_{Rk,cr,100}$	[N/mm²]	6,5	6,5	7,5	7,5	7,5	7,5	7,5	7,5
	II: 72°C/50°C				5,5	5,5	6,5	6,5	6,5	6,5	6,5	6,5
Reduction factor $\psi^0_{sus,100}$ in cracked and uncracked concrete C20/25 in hammer drilled holes (HD), compressed air drilled holes (CD) and in hammer drilled holes with hollow drill bit (HDB)												
Temperature range	I: 40°C/24°C	Dry, wet concrete and flooded bore hole	$\psi^0_{sus,100}$	[-]	0,80							
	II: 72°C/50°C				0,68							
Increasing factors for concrete			ψ_c	[-]	$(f_{ck} / 20)^{0,1}$							
Characteristic bond resistance depending on the concrete strength class			$\tau_{Rk,ucr,100} =$		$\psi_c \cdot \tau_{Rk,ucr,100,(C20/25)}$							
			$\tau_{Rk,cr,100} =$		$\psi_c \cdot \tau_{Rk,cr,100,(C20/25)}$							
Concrete cone failure												
Relevant parameter				see Table C2								
Splitting												
Relevant parameter				see Table C2								
Installation factor												
for dry and wet concrete (HD; HDB, CD)			γ_{inst}	[-]	1,0							
for flooded bore hole (HD; HDB, CD)					1,2							
Würth injection system WIT-PE 1000 for concrete									Annex C 4			
Performances												
Characteristic values of tension loads under static and quasi-static action for a working life of 100 years (threaded rod)												

Table C5: Characteristic values of tension loads under static and quasi-static action for a working life of 50 years

Threaded rod				M8	M10	M12	M16	M20	M24	M27	M30	
Steel failure												
Characteristic tension resistance		$N_{Rk,s}$	[kN]	$A_s \cdot f_{uk}$ (or see Table C1)								
Partial factor		$\gamma_{Ms,N}$	[-]	see Table C1								
Combined pull-out and concrete failure												
Characteristic bond resistance in uncracked concrete C20/25 in diamond drilled holes (DD)												
Temperature range	I: 40°C/24°C	Dry, wet concrete and flooded bore hole	$\tau_{Rk,ucr}$	[N/mm²]	15	14	14	13	12	12	11	11
	II: 72°C/50°C				12	12	11	10	9,5	9,5	9,0	9,0
Reduction factor ψ_{sus}^0 in uncracked concrete C20/25 in diamond drilled holes (DD)												
Temperature range	I: 40°C/24°C	Dry, wet concrete and flooded bore hole	ψ_{sus}^0	[-]	0,77							
	II: 72°C/50°C				0,72							
Increasing factors for concrete		ψ_c	[-]	$(f_{ck} / 20)^{0,2}$								
Characteristic bond resistance depending on the concrete strength class		$\tau_{Rk,ucr} =$			$\psi_c \cdot \tau_{Rk,ucr,(C20/25)}$							
Concrete cone failure												
Relevant parameter				see Table C2								
Splitting												
Relevant parameter				see Table C2								
Installation factor												
for dry and wet concrete (DD)		γ_{inst}	[-]	1,0								
for flooded bore hole (DD)				1,2				1,4				

Table C6: Characteristic values of tension loads under static and quasi-static action for a working life of 100 years

Threaded rod				M8	M10	M12	M16	M20	M24	M27	M30	
Steel failure												
Characteristic tension resistance		$N_{Rk,s}$	[kN]	$A_s \cdot f_{uk}$ (or see Table C1)								
Partial factor		$\gamma_{Ms,N}$	[-]	see Table C1								
Combined pull-out and concrete failure												
Characteristic bond resistance in uncracked concrete C20/25 in diamond drilled holes (DD)												
Temperature range	I: 40°C/24°C	Dry, wet concrete and flooded bore hole	$\tau_{Rk,ucr,100}$	[N/mm²]	15	14	14	13	12	12	11	11
	II: 72°C/50°C				11	11	10	10	9,5	9,0	8,5	8,5
Reduction factor $\psi_{sus,100}^0$ in uncracked concrete C20/25 in diamond drilled holes (DD)												
Temperature range	I: 40°C/24°C	Dry, wet concrete and flooded bore hole	$\psi_{sus,100}^0$	[-]	0,73							
	II: 72°C/50°C				0,70							
Increasing factors for concrete		ψ_c	[-]	$(f_{ck} / 20)^{0,2}$								
Characteristic bond resistance depending on the concrete strength class		$\tau_{Rk,ucr,100} =$		$\psi_c \cdot \tau_{Rk,ucr,100,(C20/25)}$								
Concrete cone failure												
Relevant parameter				see Table C2								
Splitting												
Relevant parameter				see Table C2								
Installation factor												
for dry and wet concrete (DD)		γ_{inst}	[-]	1,0								
for flooded bore hole (DD)				1,2				1,4				

Table C7: Characteristic values of shear loads under static and quasi-static action for a working life of 50 and 100 years										
Threaded rod			M8	M10	M12	M16	M20	M24	M27	M30
Steel failure without lever arm										
Characteristic shear resistance Steel, strength class 4.6, 4.8 and 5.6, 5.8	$V_{Rk,s}^0$	[kN]	$0,6 \cdot A_s \cdot f_{uk}$ (or see Table C1)							
Characteristic shear resistance Steel, strength class 8.8 Stainless Steel A2, A4 and HCR, all strength classes	$V_{Rk,s}^0$	[kN]	$0,5 \cdot A_s \cdot f_{uk}$ (or see Table C1)							
Partial factor	$\gamma_{Ms,V}$	[-]	see Table C1							
Ductility factor	k_7	[-]	1,0							
Steel failure with lever arm										
Characteristic bending moment	$M_{Rk,s}^0$	[Nm]	$1,2 \cdot W_{el} \cdot f_{uk}$ (or see Table C1)							
Elastic section modulus	W_{el}	[mm³]	31	62	109	277	541	935	1387	1874
Partial factor	$\gamma_{Ms,V}$	[-]	see Table C1							
Concrete pry-out failure										
Factor	k_8	[-]	2,0							
Installation factor	γ_{inst}	[-]	1,0							
Concrete edge failure										
Effective length of fastener	l_f	[mm]	$\min(h_{ef}; 12 \cdot d_{nom})$						$\min(h_{ef}; 300\text{mm})$	
Outside diameter of fastener	d_{nom}	[mm]	8	10	12	16	20	24	27	30
Installation factor	γ_{inst}	[-]	1,0							

Table C8: Characteristic values of tension loads under static and quasi-static action for a working life of 50 years

Internal threaded anchor rods				IG-M6	IG-M8	IG-M10	IG-M12	IG-M16	IG-M20	
Steel failure ¹⁾										
Characteristic tension resistance,	5.8	N _{Rk,s}	[kN]	10	17	29	42	76	123	
Steel, strength class	8.8	N _{Rk,s}	[kN]	16	27	46	67	121	196	
Partial factor, strength class 5.8 and 8.8		γ _{Ms,N}	[-]	1,5						
Characteristic tension resistance, Stainless Steel A4 and HCR, Strength class 70 ²⁾		N _{Rk,s}	[kN]	14	26	41	59	110	124	
Partial factor		γ _{Ms,N}	[-]	1,87						2,86
Combined pull-out and concrete cone failure										
Characteristic bond resistance in uncracked concrete C20/25 in hammer drilled holes (HD) and compressed air drilled holes (CD)										
Temperature range	I: 40°C/24°C	Dry, wet concrete and flooded bore hole	τ _{Rk,ucr}	[N/mm²]	20	19	19	18	17	16
	II: 72°C/50°C				15	15	14	13	13	12
Characteristic bond resistance in uncracked concrete C20/25 in hammer drilled holes with hollow drill bit (HDB)										
Temperature range	I: 40°C/24°C	Dry, wet concrete	τ _{Rk,ucr}	[N/mm²]	16	16	16	15	14	13
	II: 72°C/50°C				14	14	13	13	12	11
	I: 40°C/24°C	flooded bore hole			16	16	15	15	14	13
	II: 72°C/50°C				14	14	13	13	12	11
Characteristic bond resistance in cracked concrete C20/25 in hammer drilled holes (HD), compressed air drilled holes (CD) and in hammer drilled holes with hollow drill bit (HDB)										
Temperature range	I: 40°C/24°C	Dry, wet concrete and flooded bore hole	τ _{Rk,ucr}	[N/mm²]	7,0	8,5	8,5	8,5	8,5	8,5
	II: 72°C/50°C				6,0	7,0	7,0	7,0	7,0	7,0
Reduction factor ψ ⁰ _{sus} in cracked and uncracked concrete C20/25 in hammer drilled holes (HD), compressed air drilled holes (CD) and in hammer drilled holes with hollow drill bit (HDB)										
Temperature range	I: 40°C/24°C	Dry, wet concrete and flooded bore hole	ψ ⁰ _{sus}	[-]	0,80					
	II: 72°C/50°C				0,68					
Increasing factors for concrete			ψ _C	[-]	(f _{ck} / 20) ^{0,1}					
Characteristic bond resistance depending on the concrete strength class			τ _{Rk,ucr} =		ψ _C * τ _{Rk,ucr,(C20/25)}					
			τ _{Rk,cr} =		ψ _C * τ _{Rk,cr,(C20/25)}					
Concrete cone failure										
Relevant parameter				see Table C2						
Splitting failure										
Relevant parameter				see Table C2						
Installation factor										
for dry and wet concrete (HD; HDB, CD)			γ _{inst}	[-]	1,0					
for flooded bore hole (HD; HDB, CD)					1,2					
1) Fastenings (incl. nut and washer) must comply with the appropriate material and property class of the internal threaded rod. The characteristic tension resistance for steel failure is valid for the internal threaded rod and the fastening element.										
2) For IG-M20 strength class 50 is valid										

Würth injection system WIT-PE 1000 for concrete

Performances

Characteristic values of tension loads under static and quasi-static action for a working life of 50 years (Internal threaded anchor rod)

Annex C 8

Table C9: Characteristic values of tension loads under static and quasi-static action for a working life of 100 years

Internal threaded anchor rods				IG-M6	IG-M8	IG-M10	IG-M12	IG-M16	IG-M20	
Steel failure ¹⁾										
Characteristic tension resistance,	5.8	N _{Rk,s}	[kN]	10	17	29	42	76	123	
Steel, strength class	8.8	N _{Rk,s}	[kN]	16	27	46	67	121	196	
Partial factor, strength class 5.8 and 8.8		γ _{Ms,N}	[-]	[-]						
Characteristic tension resistance, Stainless Steel A4 and HCR, Strength class 70 ²⁾		N _{Rk,s}	[kN]	[kN]	26	41	59	110	124	
Partial factor		γ _{Ms,N}	[-]	[-]						2,86
Combined pull-out and concrete cone failure										
Characteristic bond resistance in uncracked concrete C20/25 in hammer drilled holes (HD) and compressed air drilled holes (CD)										
Temperature range	I: 40°C/24°C	Dry, wet concrete and flooded bore hole	τ _{Rk,ucr,100}	[N/mm ²]	20	19	19	18	17	16
	II: 72°C/50°C				15	15	14	13	13	12
Characteristic bond resistance in uncracked concrete C20/25 in hammer drilled holes with hollow drill bit (HDB)										
Temperature range	I: 40°C/24°C	Dry, wet concrete	τ _{Rk,ucr,100}	[N/mm ²]	16	16	16	15	14	13
	II: 72°C/50°C				14	14	13	13	12	11
	I: 40°C/24°C	flooded bore hole			16	16	15	15	14	13
	II: 72°C/50°C				14	14	13	13	12	11
Characteristic bond resistance in cracked concrete C20/25 in hammer drilled holes (HD), compressed air drilled holes (CD) and in hammer drilled holes with hollow drill bit (HDB)										
Temperature range	I: 40°C/24°C	Dry, wet concrete and flooded bore hole	τ _{Rk,ucr,100}	[N/mm ²]	6,5	7,5	7,5	7,5	7,5	7,5
	II: 72°C/50°C				5,5	6,5	6,5	6,5	6,5	6,5
Reduction factor ψ ⁰ _{sus,100} in cracked and uncracked concrete C20/25 in hammer drilled holes (HD), compressed air drilled holes (CD) and in hammer drilled holes with hollow drill bit (HDB)										
Temperature range	I: 40°C/24°C	Dry, wet concrete and flooded bore hole	ψ ⁰ _{sus,100}	[-]	0,80					
	II: 72°C/50°C				0,68					
Increasing factors for concrete			ψ _c	[-]	(f _{ck} / 20) ^{0,1}					
Characteristic bond resistance depending on the concrete strength class			τ _{Rk,ucr,100} =		ψ _c · τ _{Rk,ucr,100,(C20/25)}					
			τ _{Rk,cr,100} =		ψ _c · τ _{Rk,cr,100,(C20/25)}					
Concrete cone failure										
Relevant parameter				see Table C2						
Splitting failure										
Relevant parameter				see Table C2						
Installation factor										
for dry and wet concrete (HD; HDB, CD)			γ _{inst}	[-]	1,0					
for flooded bore hole (HD; HDB, CD)					1,2					
1) Fastenings (incl. nut and washer) must comply with the appropriate material and property class of the internal threaded rod. The characteristic tension resistance for steel failure is valid for the internal threaded rod and the fastening element. 2) For IG-M20 strength class 50 is valid										
Würth injection system WIT-PE 1000 for concrete								Annex C 9		
Performances Characteristic values of tension loads under static and quasi-static action for a working life of 100 years (Internal threaded anchor rod)										

Table C10: Characteristic values of tension loads under static and quasi-static action for a working life of 50 years

Internal threaded anchor rods				IG-M6	IG-M8	IG-M10	IG-M12	IG-M16	IG-M20	
Steel failure ¹⁾										
Characteristic tension resistance,	5.8	N _{Rk,s}	[kN]	10	17	29	42	76	123	
Steel, strength class	8.8	N _{Rk,s}	[kN]	16	27	46	67	121	196	
Partial factor, strength class 5.8 and 8.8		γ _{Ms,N}	[-]	1,5						
Characteristic tension resistance, Stainless Steel A4 and HCR, Strength class 70 ²⁾		N _{Rk,s}	[kN]	14	26	41	59	110	124	
Partial factor		γ _{Ms,N}	[-]	1,87						2,86
Combined pull-out and concrete cone failure										
Characteristic bond resistance in uncracked concrete C20/25 in diamond drilled holes (DD)										
Temperature range	I: 40°C/24°C	Dry, wet concrete and flooded bore hole	τ _{Rk,ucr}	[N/mm²]	14	14	13	12	12	11
	II: 72°C/50°C				12	11	10	9,5	9,5	9,0
Reduction factor ψ ⁰ _{sus} in uncracked concrete C20/25 in diamond drilled holes (DD)										
Temperature range	I: 40°C/24°C	Dry, wet concrete and flooded bore hole	ψ ⁰ _{sus}	[-]	0,77					
	II: 72°C/50°C				0,72					
Increasing factors for concrete			ψ _C	[-]	(f _{ck} / 20) ^{0,2}					
Characteristic bond resistance depending on the concrete strength class			τ _{Rk,ucr} =		ψ _C • τ _{Rk,ucr,(C20/25)}					
Concrete cone failure										
Relevant parameter				see Table C2						
Splitting failure										
Relevant parameter				see Table C2						
Installation factor										
for dry and wet concrete (DD)		γ _{inst}	[-]	1,0						
for flooded bore hole (DD)				1,2		1,4				
1) Fastenings (incl. nut and washer) must comply with the appropriate material and property class of the internal threaded rod. The characteristic tension resistance for steel failure is valid for the internal threaded rod and the fastening element. 2) For IG-M20 strength class 50 is valid										
Würth injection system WIT-PE 1000 for concrete								Annex C 10		
Performances Characteristic values of tension loads under static and quasi-static action for a working life of 50 years (Internal threaded anchor rod)										

Table C11: Characteristic values of tension loads under static and quasi-static action for a working life of 100 years

Internal threaded anchor rods				IG-M6	IG-M8	IG-M10	IG-M12	IG-M16	IG-M20	
Steel failure¹⁾										
Characteristic tension resistance,	5.8	$N_{Rk,s}$	[kN]	10	17	29	42	76	123	
Steel, strength class	8.8	$N_{Rk,s}$	[kN]	16	27	46	67	121	196	
Partial factor, strength class 5.8 and 8.8		$\gamma_{Ms,N}$	[-]	1,5						
Characteristic tension resistance, Stainless Steel A4 and HCR, Strength class 70 ²⁾		$N_{Rk,s}$	[kN]	14	26	41	59	110	124	
Partial factor		$\gamma_{Ms,N}$	[-]	1,87						2,86
Combined pull-out and concrete cone failure										
Characteristic bond resistance in uncracked concrete C20/25 in diamond drilled holes (DD)										
Temperature range	I: 40°C/24°C	Dry, wet concrete and flooded bore hole	$\tau_{Rk,ucr,100}$	[N/mm ²]	14	14	13	12	12	11
	II: 72°C/50°C				11	10	10	9,5	9,0	8,5
Reduction factor $\psi_{sus,100}^0$ in uncracked concrete C20/25 in diamond drilled holes (DD)										
Temperature range	I: 40°C/24°C	Dry, wet concrete and flooded bore hole	$\psi_{sus,100}^0$	[-]	0,73					
	II: 72°C/50°C				0,70					
Increasing factors for concrete			ψ_C	[-]	$(f_{ck} / 20)^{0,2}$					
Characteristic bond resistance depending on the concrete strength class			$\tau_{Rk,ucr,100} =$		$\psi_C \cdot \tau_{Rk,ucr,100,(C20/25)}$					
Concrete cone failure										
Relevant parameter				see Table C2						
Splitting failure										
Relevant parameter				see Table C2						
Installation factor										
for dry and wet concrete (DD)		γ_{inst}	[-]	1,0						
for flooded bore hole (DD)				1,2		1,4				
1) Fastenings (incl. nut and washer) must comply with the appropriate material and property class of the internal threaded rod. The characteristic tension resistance for steel failure is valid for the internal threaded rod and the fastening element. 2) For IG-M20 strength class 50 is valid										
Würth injection system WIT-PE 1000 for concrete								Annex C 11		
Performances Characteristic values of tension loads under static and quasi-static action for a working life of 100 years (Internal threaded anchor rod)										

Table C12: Characteristic values of shear loads under static and quasi-static action for a working life of 50 and 100 years

Internal threaded anchor rods				IG-M6	IG-M8	IG-M10	IG-M12	IG-M16	IG-M20
Steel failure without lever arm ¹⁾									
Characteristic shear resistance, Steel, strength class	5.8	V ⁰ _{Rk,s}	[kN]	5	9	15	21	38	61
	8.8	V ⁰ _{Rk,s}	[kN]	8	14	23	34	60	98
Partial factor, strength class 5.8 and 8.8	γ _{Ms,V}	[-]	1,25						
Characteristic shear resistance, Stainless Steel A4 and HCR, Strength class 70 ²⁾		V ⁰ _{Rk,s}	[kN]	7	13	20	30	55	40
Partial factor	γ _{Ms,V}	[-]	1,56						2,38
Ductility factor	k ₇	[-]	1,0						
Steel failure with lever arm ¹⁾									
Characteristic bending moment, Steel, strength class	5.8	M ⁰ _{Rk,s}	[Nm]	8	19	37	66	167	325
	8.8	M ⁰ _{Rk,s}	[Nm]	12	30	60	105	267	519
Partial factor, strength class 5.8 and 8.8	γ _{Ms,V}	[-]	1,25						
Characteristic bending moment, Stainless Steel A4 and HCR, Strength class 70 ²⁾		M ⁰ _{Rk,s}	[Nm]	11	26	52	92	233	456
Partial factor	γ _{Ms,V}	[-]	1,56						2,38
Concrete pry-out failure									
Factor	k ₈	[-]	2,0						
Installation factor	γ _{inst}	[-]	1,0						
Concrete edge failure									
Effective length of fastener	l _f	[mm]	min(h _{ef} ; 12 • d _{nom})						min(h _{ef} ; 300mm)
Outside diameter of fastener	d _{nom}	[mm]	10	12	16	20	24	30	
Installation factor	γ _{inst}	[-]	1,0						
1) Fastenings (incl. nut and washer) must comply with the appropriate material and property class of the internal threaded rod. The characteristic tension resistance for steel failure is valid for the internal threaded rod and the fastening element. 2) For IG-M20 strength class 50 is valid									
Würth injection system WIT-PE 1000 for concrete								Annex C 12	
Performances Characteristic values of shear loads under static and quasi-static action for a working life of 50 and 100 years (Internal threaded anchor rod)									

Table C13: Characteristic values of tension loads under static and quasi-static action for a working life of 50 years															
Reinforcing bar				Ø 8	Ø 10	Ø 12	Ø 14	Ø 16	Ø 20	Ø 24	Ø 25	Ø 28	Ø 32		
Steel failure															
Characteristic tension resistance		$N_{Rk,s}$	[kN]	$A_s \cdot f_{uk}^{1)}$											
Cross section area		A_s	[mm²]	50	79	113	154	201	314	452	491	616	804		
Partial factor		$\gamma_{Ms,N}$	[-]	1,4 ²⁾											
Combined pull-out and concrete failure															
Characteristic bond resistance in uncracked concrete C20/25 in hammer drilled holes (HD) and compressed air drilled holes (CD)															
Temperature range	I: 40°C/24°C	Dry, wet concrete and flooded bore hole	$\tau_{Rk,ucr}$	[N/mm²]	16	16	16	16	16	16	15	15	15	15	
	II: 72°C/50°C				12	12	12	12	12	12	12	12	11	11	
Characteristic bond resistance in uncracked concrete C20/25 in hammer drilled holes with hollow drill bit (HDB)															
Temperature range	I: 40°C/24°C	Dry, wet concrete	$\tau_{Rk,ucr}$	[N/mm²]	14	14	13	13	13	13	13	13	13	13	
	II: 72°C/50°C				12	12	12	11	11	11	11	11	11	11	
	I: 40°C/24°C	flooded bore hole			13	13	13	13	13	13	13	13	13	13	13
	II: 72°C/50°C				11	11	11	11	11	11	11	11	11	11	
Characteristic bond resistance in cracked concrete C20/25 in hammer drilled holes (HD), compressed air drilled holes (CD) and in hammer drilled holes with hollow drill bit (HDB)															
Temperature range	I: 40°C/24°C	Dry, wet concrete and flooded bore hole	$\tau_{Rk,cr}$	[N/mm²]	7,0	7,0	8,5	8,5	8,5	8,5	8,5	8,5	8,5	8,5	
	II: 72°C/50°C				6,0	6,0	7,0	7,0	7,0	7,0	7,0	7,0	7,0	7,0	
Reduction factor ψ_{sus}^0 in cracked and uncracked concrete C20/25 in hammer drilled holes (HD), compressed air drilled holes (CD) and in hammer drilled holes with hollow drill bit (HDB)															
Temperature range	I: 40°C/24°C	Dry, wet concrete and flooded bore hole	ψ_{sus}^0	[-]	0,80										
	II: 72°C/50°C				0,68										
Increasing factors for concrete		ψ_c	[-]	$(f_{ck} / 20)^{0,1}$											
Characteristic bond resistance depending on the concrete strength class		$\tau_{Rk,ucr} =$		$\psi_c \cdot \tau_{Rk,ucr,(C20/25)}$											
		$\tau_{Rk,cr} =$		$\psi_c \cdot \tau_{Rk,ucr,(C20/25)}$											
Concrete cone failure															
Relevant parameter				see Table C2											
Splitting															
Relevant parameter				see Table C2											
Installation factor															
for dry and wet concrete (HD; HDB, CD)		γ_{inst}	[-]	1,0											
for flooded bore hole (HD; HDB, CD)				1,2											
1) f_{uk} shall be taken from the specifications of reinforcing bars															
2) in absence of national regulation															
Würth injection system WIT-PE 1000 for concrete												Annex C 13			
Performances															
Characteristic values of tension loads under static and quasi-static action for a working life of 50 years (reinforcing bar)															

Table C14: Characteristic values of tension loads under static and quasi-static action for a working life of 100 years														
Reinforcing bar				Ø 8	Ø 10	Ø 12	Ø 14	Ø 16	Ø 20	Ø 24	Ø 25	Ø 28	Ø 32	
Steel failure														
Characteristic tension resistance		$N_{Rk,s}$	[kN]	$A_s \cdot f_{uk}^{1)}$										
Cross section area		A_s	[mm²]	50	79	113	154	201	314	452	491	616	804	
Partial factor		$\gamma_{Ms,N}$	[-]	1,4 ²⁾										
Combined pull-out and concrete failure														
Characteristic bond resistance in uncracked concrete C20/25 in hammer drilled holes (HD) and compressed air drilled holes (CD)														
Temperature range	I: 40°C/24°C	Dry, wet concrete and flooded bore hole	$\tau_{Rk,ucr,100}$	[N/mm²]	16	16	16	16	16	16	15	15	15	15
	II: 72°C/50°C				12	12	12	12	12	12	12	12	11	11
Characteristic bond resistance in uncracked concrete C20/25 in hammer drilled holes with hollow drill bit (HDB)														
Temperature range	I: 40°C/24°C	Dry, wet concrete	$\tau_{Rk,ucr,100}$	[N/mm²]	14	14	13	13	13	13	13	13	13	13
	II: 72°C/50°C				12	12	12	11	11	11	11	11	11	11
	I: 40°C/24°C	flooded bore hole			13	13	13	13	13	13	13	13	13	13
	II: 72°C/50°C				11	11	11	11	11	11	11	11	11	11
Characteristic bond resistance in cracked concrete C20/25 in hammer drilled holes (HD), compressed air drilled holes (CD) and in hammer drilled holes with hollow drill bit (HDB)														
Temperature range	I: 40°C/24°C	Dry, wet concrete and flooded bore hole	$\tau_{Rk,ucr,100}$	[N/mm²]	6,5	6,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5
	II: 72°C/50°C				5,5	5,5	6,5	6,5	6,5	6,5	6,5	6,5	6,5	6,5
Reduction factor $\psi^0_{sus,100}$ in cracked and uncracked concrete C20/25 in hammer drilled holes (HD), compressed air drilled holes (CD) and in hammer drilled holes with hollow drill bit (HDB)														
Temperature range	I: 40°C/24°C	Dry, wet concrete and flooded bore hole	$\psi^0_{sus,100}$	[-]	0,80									
	II: 72°C/50°C				0,68									
Increasing factors for concrete		ψ_c	[-]	$(f_{ck} / 20)^{0,1}$										
Characteristic bond resistance depending on the concrete strength class		$\tau_{Rk,ucr,100} =$		$\psi_c \cdot \tau_{Rk,ucr,100,(C20/25)}$										
		$\tau_{Rk,ucr,100} =$		$\psi_c \cdot \tau_{Rk,ucr,100,(C20/25)}$										
Concrete cone failure														
Relevant parameter				see Table C2										
Splitting														
Relevant parameter				see Table C2										
Installation factor														
for dry and wet concrete (HD; HDB, CD)		γ_{inst}	[-]	1,0										
for flooded bore hole (HD; HDB, CD)				1,2										
1) f_{uk} shall be taken from the specifications of reinforcing bars														
2) in absence of national regulation														
Würth injection system WIT-PE 1000 for concrete											Annex C 14			
Performances														
Characteristic values of tension loads under static and quasi-static action for a working life of 100 years (reinforcing bar)														

Table C15: Characteristic values of tension loads under static and quasi-static action for a working life of 50 years

Reinforcing bar			Ø 8	Ø 10	Ø 12	Ø 14	Ø 16	Ø 20	Ø 24	Ø 25	Ø 28	Ø 32	
Steel failure													
Characteristic tension resistance		N _{Rk,s}	[kN]	A _s · f _{uk} ¹⁾									
Cross section area		A _s	[mm²]	50	79	113	154	201	314	452	491	616	804
Partial factor		γ _{Ms,N}	[-]	1,4 ²⁾									
Combined pull-out and concrete failure													
Characteristic bond resistance in uncracked concrete C20/25 in diamond drilled holes (DD)													
Temperature range I: 40°C/24°C II: 72°C/50°C	Dry, wet concrete and flooded bore hole	τ _{Rk,ucr}	[N/mm²]	14	13	13	13	12	12	11	11	11	11
				11	11	10	10	10	9,5	9,5	9,5	9,0	9,0
Reduction factor ψ ⁰ _{sus} in uncracked concrete C20/25 in diamond drilled holes (DD)													
Temperature range I: 40°C/24°C II: 72°C/50°C	Dry, wet concrete and flooded bore hole	ψ ⁰ _{sus}	[-]	0,77									
				0,72									
Increasing factors for concrete		ψ _c	[-]	(f _{ck} / 20) ^{0,2}									
Characteristic bond resistance depending on the concrete strength class		τ _{Rk,ucr} =		ψ _c · τ _{Rk,ucr,(C20/25)}									
Concrete cone failure													
Relevant parameter				see Table C2									
Splitting													
Relevant parameter				see Table C2									
Installation factor													
for dry and wet concrete (DD)		γ _{inst}	[-]	1,0									
for flooded bore hole (DD)				1,2			1,4						
1) f _{uk} shall be taken from the specifications of reinforcing bars 2) in absence of national regulation													
Würth injection system WIT-PE 1000 for concrete									Annex C 15				
Performances Characteristic values of tension loads under static and quasi-static action for a working life of 50 years (reinforcing bar)													

Table C16: Characteristic values of tension loads under static and quasi-static action for a working life of 100 years

Reinforcing bar			Ø 8	Ø 10	Ø 12	Ø 14	Ø 16	Ø 20	Ø 24	Ø 25	Ø 28	Ø 32		
Steel failure														
Characteristic tension resistance		N _{Rk,s}	[kN]	A _s · f _{uk} ¹⁾										
Cross section area		A _s	[mm²]	50	79	113	154	201	314	452	491	616	804	
Partial factor		γ _{Ms,N}	[-]	1,4 ²⁾										
Combined pull-out and concrete failure														
Characteristic bond resistance in uncracked concrete C20/25 in diamond drilled holes (DD)														
Temperature range	I: 40°C/24°C	Dry, wet concrete and flooded bore hole	τ _{Rk,ucr,100}	[N/mm²]	14	13	13	13	12	12	11	11	11	11
	II: 72°C/50°C				11	10	10	10	9,5	9,0	9,0	9,0	8,5	8,5
Reduction factor ψ ⁰ _{sus,100} in uncracked concrete C20/25 in diamond drilled holes (DD)														
Temperature range	I: 40°C/24°C	Dry, wet concrete and flooded bore hole	ψ ⁰ _{sus,100}	[-]	0,73									
	II: 72°C/50°C				0,70									
Increasing factors for concrete		ψ _c	[-]	(f _{ck} / 20) ^{0,2}										
Characteristic bond resistance depending on the concrete strength class		τ _{Rk,ucr,100} =		ψ _c · τ _{Rk,ucr,100,(C20/25)}										
Concrete cone failure														
Relevant parameter			see Table C2											
Splitting														
Relevant parameter			see Table C2											
Installation factor														
for dry and wet concrete (DD)		γ _{inst}	[-]	1,0										
for flooded bore hole (DD)				1,2			1,4							
1) f _{uk} shall be taken from the specifications of reinforcing bars 2) in absence of national regulation														
Würth injection system WIT-PE 1000 for concrete									Annex C 16					
Performances Characteristic values of tension loads under static and quasi-static action for a working life of 100 years (reinforcing bar)														

Table C17: Characteristic values of shear loads under static and quasi-static action for a working life of 50 and 100 years

Reinforcing bar			Ø 8	Ø 10	Ø 12	Ø 14	Ø 16	Ø 20	Ø 24	Ø 25	Ø 28	Ø 32
Steel failure without lever arm												
Characteristic shear resistance	$V_{Rk,s}^0$	[kN]	$0,5 \cdot A_s \cdot f_{uk}^{1)}$									
Cross section area	A_σ	[mm²]	50	79	113	154	201	314	452	491	616	804
Partial factor	$\gamma_{Ms,V}$	[-]	1,5 ²⁾									
Ductility factor	k_7	[-]	1,0									
Steel failure with lever arm												
Characteristic bending moment	$M_{Rk,s}^0$	[Nm]	$1,2 \cdot W_{el} \cdot f_{uk}^{1)}$									
Elastic section modulus	W_{el}	[mm³]	50	98	170	269	402	785	1357	1534	2155	3217
Partial factor	$\gamma_{Ms,V}$	[-]	1,5 ²⁾									
Concrete pry-out failure												
Factor	k_8	[-]	2,0									
Installation factor	γ_{inst}	[-]	1,0									
Concrete edge failure												
Effective length of fastener	l_f	[mm]	$\min(h_{ef}; 12 \cdot d_{nom})$							$\min(h_{ef}; 300\text{mm})$		
Outside diameter of fastener	d_{nom}	[mm]	8	10	12	14	16	20	24	25	28	32
Installation factor	γ_{inst}	[-]	1,0									
1) f_{uk} shall be taken from the specifications of reinforcing bars 2) in absence of national regulation												
Würth injection system WIT-PE 1000 for concrete									Annex C 17			
Performances Characteristic values of shear loads under static and quasi-static action for a working life of 50 and 100 years (reinforcing bar)												

**Table C18: Displacements under tension load¹⁾
in hammer drilled holes (HD), compressed air drilled holes (CD) and in
hammer drilled holes with hollow drill bit (HDB)**

Threaded rod			M8	M10	M12	M16	M20	M24	M27	M30
Uncracked concrete under static and quasi-static action for a working life of 50 and 100 years										
Temperature range I: 40°C/24°C	δ_{N0} -factor	[mm/(N/mm ²)]	0,028	0,029	0,030	0,033	0,035	0,038	0,039	0,041
	$\delta_{N\infty}$ -factor	[mm/(N/mm ²)]	0,028	0,029	0,030	0,033	0,035	0,038	0,039	0,041
Temperature range II: 72°C/50°C	δ_{N0} -factor	[mm/(N/mm ²)]	0,038	0,039	0,040	0,044	0,047	0,051	0,052	0,055
	$\delta_{N\infty}$ -factor	[mm/(N/mm ²)]	0,047	0,049	0,051	0,055	0,059	0,064	0,067	0,070
Cracked concrete under static and quasi-static action for a working life of 50 and 100 years										
Temperature range I: 40°C/24°C	δ_{N0} -factor	[mm/(N/mm ²)]	0,069	0,071	0,072	0,074	0,076	0,079	0,081	0,082
	$\delta_{N\infty}$ -factor	[mm/(N/mm ²)]	0,100	0,115	0,122	0,128	0,135	0,142	0,155	0,171
Temperature range II: 72°C/50°C	δ_{N0} -factor	[mm/(N/mm ²)]	0,092	0,095	0,096	0,099	0,102	0,106	0,109	0,110
	$\delta_{N\infty}$ -factor	[mm/(N/mm ²)]	0,134	0,154	0,163	0,172	0,181	0,189	0,207	0,229
¹⁾ Calculation of the displacement $\delta_{N0} = \delta_{N0}\text{-factor} \cdot \tau$; τ : action bond stress for tension $\delta_{N\infty} = \delta_{N\infty}\text{-factor} \cdot \tau$;										

**Table C19: Displacements under tension load¹⁾
in diamond drilled holes (DD)**

Threaded rod			M8	M10	M12	M16	M20	M24	M27	M30
Uncracked concrete under static and quasi-static action for a working life of 50 years										
Temperature range I: 40°C/24°C	δ_{N0} -factor	[mm/(N/mm ²)]	0,011	0,012	0,012	0,013	0,014	0,014	0,015	0,015
	$\delta_{N\infty}$ -factor	[mm/(N/mm ²)]	0,018	0,019	0,019	0,020	0,022	0,023	0,024	0,025
Temperature range II: 72°C/50°C	δ_{N0} -factor	[mm/(N/mm ²)]	0,013	0,014	0,014	0,015	0,016	0,016	0,018	0,018
	$\delta_{N\infty}$ -factor	[mm/(N/mm ²)]	0,052	0,053	0,055	0,058	0,062	0,065	0,068	0,070
Uncracked concrete under static and quasi-static action for a working life of 100 years										
Temperature range I: 40°C/24°C	δ_{N0} -factor	[mm/(N/mm ²)]	0,011	0,012	0,012	0,013	0,014	0,014	0,015	0,015
	$\delta_{N\infty}$ -factor	[mm/(N/mm ²)]	0,020	0,021	0,021	0,023	0,024	0,025	0,026	0,027
Temperature range II: 72°C/50°C	δ_{N0} -factor	[mm/(N/mm ²)]	0,013	0,014	0,014	0,015	0,016	0,016	0,018	0,018
	$\delta_{N\infty}$ -factor	[mm/(N/mm ²)]	0,038	0,039	0,040	0,043	0,045	0,047	0,049	0,051
¹⁾ Calculation of the displacement $\delta_{N0} = \delta_{N0}\text{-factor} \cdot \tau$; τ : action bond stress for tension $\delta_{N\infty} = \delta_{N\infty}\text{-factor} \cdot \tau$;										

**Table C20: Displacements under shear load¹⁾
for all drilling methods**

Threaded rod			M8	M10	M12	M16	M20	M24	M27	M30
Uncracked and cracked concrete under static and quasi-static action for a working life of 50 and 100 years										
All temperature ranges	δ_{V0} -factor	[mm/kN]	0,06	0,06	0,05	0,04	0,04	0,03	0,03	0,03
	$\delta_{V\infty}$ -factor	[mm/kN]	0,09	0,08	0,08	0,06	0,06	0,05	0,05	0,05
¹⁾ Calculation of the displacement $\delta_{V0} = \delta_{V0}\text{-factor} \cdot V$; V : action shear load $\delta_{V\infty} = \delta_{V\infty}\text{-factor} \cdot V$;										

Würth injection system WIT-PE 1000 for concrete

Performances

Displacements under static and quasi-static action
for a working life of 50 and 100 years (threaded rod)

Annex C 18

**Table C21: Displacements under tension load¹⁾
in hammer drilled holes (HD), compressed air drilled holes (CD) and
in hammer drilled holes with hollow drill bit (HDB)**

Internal threaded anchor rods			IG-M6	IG-M8	IG-M10	IG-M12	IG-M16	IG-M20
Uncracked concrete under static and quasi-static action for a working life of 50 and 100 years								
Temperature range I: 40°C/24°C	δ_{N0} -factor	[mm/(N/mm ²)]	0,029	0,030	0,033	0,035	0,038	0,041
	$\delta_{N\infty}$ -factor	[mm/(N/mm ²)]	0,029	0,030	0,033	0,035	0,038	0,041
Temperature range II: 72°C/50°C	δ_{N0} -factor	[mm/(N/mm ²)]	0,039	0,040	0,044	0,047	0,051	0,055
	$\delta_{N\infty}$ -factor	[mm/(N/mm ²)]	0,049	0,051	0,055	0,059	0,064	0,070
Cracked concrete under static and quasi-static action for a working life of 50 and 100 years								
Temperature range I: 40°C/24°C	δ_{N0} -factor	[mm/(N/mm ²)]	0,071	0,072	0,074	0,076	0,079	0,082
	$\delta_{N\infty}$ -factor	[mm/(N/mm ²)]	0,115	0,122	0,128	0,135	0,142	0,171
Temperature range II: 72°C/50°C	δ_{N0} -factor	[mm/(N/mm ²)]	0,095	0,096	0,099	0,102	0,106	0,110
	$\delta_{N\infty}$ -factor	[mm/(N/mm ²)]	0,154	0,163	0,172	0,181	0,189	0,229
¹⁾ Calculation of the displacement $\delta_{N0} = \delta_{N0}\text{-factor} \cdot \tau$; τ : action bond stress for tension $\delta_{N\infty} = \delta_{N\infty}\text{-factor} \cdot \tau$;								

**Table C22: Displacements under tension load¹⁾
in diamond drilled holes (DD)**

Internal threaded anchor rods			IG-M6	IG-M8	IG-M10	IG-M12	IG-M16	IG-M20
Uncracked concrete under static and quasi-static action for a working life of 50 years								
Temperature range I: 40°C/24°C	δ_{N0} -factor	[mm/(N/mm ²)]	0,012	0,012	0,013	0,014	0,014	0,015
	$\delta_{N\infty}$ -factor	[mm/(N/mm ²)]	0,019	0,019	0,020	0,022	0,023	0,025
Temperature range II: 72°C/50°C	δ_{N0} -factor	[mm/(N/mm ²)]	0,014	0,014	0,015	0,016	0,016	0,018
	$\delta_{N\infty}$ -factor	[mm/(N/mm ²)]	0,053	0,055	0,058	0,062	0,065	0,070
Uncracked concrete under static and quasi-static action for a working life of 100 years								
Temperature range I: 40°C/24°C	δ_{N0} -factor	[mm/(N/mm ²)]	0,012	0,012	0,013	0,014	0,014	0,015
	$\delta_{N\infty}$ -factor	[mm/(N/mm ²)]	0,021	0,021	0,023	0,024	0,025	0,027
Temperature range II: 72°C/50°C	δ_{N0} -factor	[mm/(N/mm ²)]	0,014	0,014	0,015	0,016	0,016	0,018
	$\delta_{N\infty}$ -factor	[mm/(N/mm ²)]	0,039	0,040	0,043	0,045	0,047	0,051
¹⁾ Calculation of the displacement $\delta_{N0} = \delta_{N0}\text{-factor} \cdot \tau$; τ : action bond stress for tension $\delta_{N\infty} = \delta_{N\infty}\text{-factor} \cdot \tau$;								

**Table C23: Displacements under shear load¹⁾
for all drilling methods**

Internal threaded anchor rods			IG-M6	IG-M8	IG-M10	IG-M12	IG-M16	IG-M20
Uncracked and cracked concrete under static and quasi-static action for a working life of 50 and 100 years								
All temperature ranges	δ_{V0} -factor	[mm/kN]	0,07	0,06	0,06	0,05	0,04	0,04
	$\delta_{V\infty}$ -factor	[mm/kN]	0,10	0,09	0,08	0,08	0,06	0,06
¹⁾ Calculation of the displacement $\delta_{V0} = \delta_{V0}\text{-factor} \cdot V$; V : action shear load $\delta_{V\infty} = \delta_{V\infty}\text{-factor} \cdot V$;								

Würth injection system WIT-PE 1000 for concrete

Performances

Displacements under static and quasi-static action
for a working life of 50 and 100 years (Internal threaded anchor rod)

Annex C 19

Table C24: Displacements under tension load ¹⁾ in hammer drilled holes (HD), compressed air drilled holes (CD) and in hammer drilled holes with hollow drill bit (HDB)												
Reinforcing bar			Ø 8	Ø 10	Ø 12	Ø 14	Ø 16	Ø 20	Ø 24	Ø 25	Ø 28	Ø 32
Uncracked concrete under static and quasi-static action for a working life of 50 and 100 years												
Temp.- range I: 40°C/24°C	δ _{N0} -factor	[mm/(N/mm²)]	0,028	0,029	0,030	0,031	0,033	0,035	0,038	0,038	0,040	0,043
	δ _{N∞} -factor	[mm/(N/mm²)]	0,028	0,029	0,030	0,031	0,033	0,035	0,038	0,038	0,040	0,043
Temp.- range II: 72°C/50°C	δ _{N0} -factor	[mm/(N/mm²)]	0,038	0,039	0,040	0,042	0,044	0,047	0,051	0,051	0,054	0,058
	δ _{N∞} -factor	[mm/(N/mm²)]	0,047	0,049	0,051	0,053	0,055	0,059	0,065	0,065	0,068	0,072
Cracked concrete under static and quasi-static action for a working life of 50 and 100 years												
Temp.- range I: 40°C/24°C	δ _{N0} -factor	[mm/(N/mm²)]	0,069	0,071	0,072	0,073	0,074	0,076	0,079	0,079	0,081	0,084
	δ _{N∞} -factor	[mm/(N/mm²)]	0,115	0,122	0,128	0,135	0,142	0,155	0,171	0,171	0,181	0,194
Temp.- range II: 72°C/50°C	δ _{N0} -factor	[mm/(N/mm²)]	0,092	0,095	0,096	0,098	0,099	0,102	0,106	0,106	0,109	0,113
	δ _{N∞} -factor	[mm/(N/mm²)]	0,154	0,163	0,172	0,181	0,189	0,207	0,229	0,229	0,242	0,260
1) Calculation of the displacement δ _{N0} = δ _{N0} -factor · τ; δ _{N∞} = δ _{N∞} -factor · τ; τ: action bond stress for tension												
Table C25: Displacements under tension load ¹⁾ in diamond drilled holes (DD)												
Reinforcing bar			Ø 8	Ø 10	Ø 12	Ø 14	Ø 16	Ø 20	Ø 24	Ø 25	Ø 28	Ø 32
Uncracked concrete under static and quasi-static action for a working life of 50 years												
Temp.- range I: 40°C/24°C	δ _{N0} -factor	[mm/(N/mm²)]	0,008	0,009	0,009	0,01	0,011	0,012	0,013	0,013	0,014	0,015
	δ _{N∞} -factor	[mm/(N/mm²)]	0,018	0,018	0,019	0,020	0,021	0,024	0,027	0,027	0,028	0,031
Temp.- range II: 72°C/50°C	δ _{N0} -factor	[mm/(N/mm²)]	0,009	0,011	0,011	0,012	0,013	0,014	0,015	0,015	0,016	0,018
	δ _{N∞} -factor	[mm/(N/mm²)]	0,048	0,051	0,054	0,058	0,061	0,068	0,076	0,076	0,081	0,088
Uncracked concrete under static and quasi-static action for a working life of 100 years												
Temp.- range I: 40°C/24°C	δ _{N0} -factor	[mm/(N/mm²)]	0,008	0,009	0,009	0,010	0,011	0,012	0,013	0,013	0,014	0,015
	δ _{N∞} -factor	[mm/(N/mm²)]	0,018	0,020	0,021	0,022	0,024	0,026	0,029	0,029	0,031	0,034
Temp.- range II: 72°C/50°C	δ _{N0} -factor	[mm/(N/mm²)]	0,009	0,011	0,011	0,012	0,013	0,014	0,015	0,015	0,016	0,018
	δ _{N∞} -factor	[mm/(N/mm²)]	0,035	0,037	0,040	0,042	0,045	0,049	0,055	0,055	0,059	0,064
1) Calculation of the displacement δ _{N0} = δ _{N0} -factor · τ; δ _{N∞} = δ _{N∞} -factor · τ; τ: action bond stress for tension												
Table C26: Displacements under shear load ¹⁾ for all drilling methods												
Reinforcing bar			Ø 8	Ø 10	Ø 12	Ø 14	Ø 16	Ø 20	Ø 24	Ø 25	Ø 28	Ø 32
Uncracked and cracked concrete under static and quasi-static action for a working life of 50 and 100 years												
All temperature ranges	δ _{V0} -factor	[mm/kN]	0,06	0,05	0,05	0,04	0,04	0,04	0,03	0,03	0,03	0,03
	δ _{V∞} -factor	[mm/kN]	0,09	0,08	0,08	0,06	0,06	0,05	0,05	0,05	0,04	0,04
1) Calculation of the displacement δ _{V0} = δ _{V0} -factor · V; δ _{V∞} = δ _{V∞} -factor · V; V: action shear load												
Würth injection system WIT-PE 1000 for concrete											Annex C 20	
Performances Displacements under static and quasi-static action for a working life of 50 and 100 years (reinforcing bar)												

**Table C27: Characteristic values of tension loads under seismic action
(performance category C1) for a working life of 50 years**

Threaded rod				M8	M10	M12	M16	M20	M24	M27	M30	
Steel failure												
Characteristic tension resistance		$N_{Rk,s,eq,C1}$	[kN]	$1,0 \cdot N_{Rk,s}$								
Partial factor		$\gamma_{Ms,N}$	[-]	see Table C1								
Combined pull-out and concrete failure												
Characteristic bond resistance in cracked and uncracked concrete C20/25 in hammer drilled holes (HD), compressed air drilled holes (CD) and in hammer drilled holes with hollow drill bit (HDB)												
Temperature range	I: 40°C/24°C	Dry, wet concrete and flooded bore hole	$\tau_{Rk,eq,C1}$	[N/mm²]	7,0	7,0	8,5	8,5	8,5	8,5	8,5	
	II: 72°C/50°C		$\tau_{Rk,eq,C1}$	[N/mm²]	6,0	6,0	7,0	7,0	7,0	7,0	7,0	
Increasing factors for concrete			ψ_c	[-]	1,0							
Characteristic bond resistance depending on the concrete strength class			$\tau_{Rk,eq,C1} =$		$\psi_c \cdot \tau_{Rk,eq,C1,(C20/25)}$							
Installation factor												
for dry and wet concrete (HD; HDB, CD)			γ_{inst}	[-]	1,0							
for flooded bore hole (HD; HDB, CD)					1,2							

**Table C28: Characteristic values of tension loads under seismic action
(performance category C1) for a working life of 100 years**

Threaded rod				M8	M10	M12	M16	M20	M24	M27	M30
Steel failure											
Characteristic tension resistance		$N_{Rk,s,eq,C1}$	[kN]	$1,0 \cdot N_{Rk,s}$							
Partial factor		$\gamma_{Ms,N}$	[-]	see Table C1							
Combined pull-out and concrete failure											
Characteristic bond resistance in cracked and uncracked concrete C20/25 in hammer drilled holes (HD), compressed air drilled holes (CD) and in hammer drilled holes with hollow drill bit (HDB)											
Temperature range	I: 40°C/24°C	Dry, wet concrete and flooded bore hole	$\tau_{Rk,eq,C1}$	[N/mm²]	6,5	6,5	7,5	7,5	7,5	7,5	7,5
	II: 72°C/50°C		$\tau_{Rk,eq,C1}$	[N/mm²]	5,5	5,5	6,5	6,5	6,5	6,5	6,5
Increasing factors for concrete		ψ_c	[-]	1,0							
Characteristic bond resistance depending on the concrete strength class		$\tau_{Rk,eq,C1} =$		$\psi_c \cdot \tau_{Rk,eq,C1,(C20/25)}$							
Installation factor											
for dry and wet concrete (HD; HDB, CD)		γ_{inst}	[-]	1,0							
for flooded bore hole (HD; HDB, CD)				1,2							

**Table C29: Characteristic values of shear loads under seismic action
(performance category C1) for a working life of 50 and 100 years**

Threaded rod			M8	M10	M12	M16	M20	M24	M27	M30
Steel failure										
Characteristic shear resistance (Seismic C1)	$V_{Rk,s,eq,C1}$	[kN]	$0,70 \cdot V_{Rk,s}^0$							
Partial factor	$\gamma_{Ms,V}$	[-]	see Table C1							
Factor for annular gap	α_{gap}	[-]	0,5 (1,0) ¹⁾							

1) Value in brackets valid for filled annular gap between fastener and clearance hole in the fixture. Use of special filling washer Annex A 3 is recommended.

Würth injection system WIT-PE 1000 for concrete

Performances

Characteristic values of shear loads under seismic action (performance category C1)
for a working life of 50 and 100 years (threaded rod)

Annex C 23

**Table C30: Characteristic values of tension loads under seismic action
(performance category C1) for a working life of 50 years**

Reinforcing bar				Ø 8	Ø 10	Ø 12	Ø 14	Ø 16	Ø 20	Ø 24	Ø 25	Ø 28	Ø 32
Steel failure													
Characteristic tension resistance		$N_{Rk,s,eq,C1}$	[kN]	$1,0 \cdot A_s \cdot f_{uk}^{1)}$									
Cross section area		A_s	[mm²]	50	79	113	154	201	314	452	491	616	804
Partial factor		$\gamma_{Ms,N}$	[-]	$1,4^{2)}$									
Combined pull-out and concrete failure													
Characteristic bond resistance in cracked and uncracked concrete C20/25 in hammer drilled holes (HD), compressed air drilled holes (CD) and in hammer drilled holes with hollow drill bit (HDB)													
Temperature range	I: 40°C/24°C	Dry, wet concrete and flooded bore hole	$\tau_{Rk,eq,C1}$	[N/mm²]	7,0	7,0	8,5	8,5	8,5	8,5	8,5	8,5	8,5
	II: 72°C/50°C		$\tau_{Rk,eq,C1}$	[N/mm²]	6,0	6,0	7,0	7,0	7,0	7,0	7,0	7,0	7,0
Increasing factors for concrete		ψ_c	[-]	1,0									
Characteristic bond resistance depending on the concrete strength class		$\tau_{Rk,eq,C1} =$		$\psi_c \cdot \tau_{Rk,eq,C1,(C20/25)}$									
Installation factor													
for dry and wet concrete (HD; HDB, CD)		γ_{inst}	[-]	1,0									
for flooded bore hole (HD; HDB, CD)				1,2									
1) f_{uk} shall be taken from the specifications of reinforcing bars 2) in absence of national regulation													
Würth injection system WIT-PE 1000 for concrete										Annex C 24			
Performances Characteristic values of tension loads under seismic action (performance category C1) for a working life of 50 years (reinforcing bar)													

**Table C31: Characteristic values of tension loads under seismic action
(performance category C1) for a working life of 100 years**

Reinforcing bar				Ø 8	Ø 10	Ø 12	Ø 14	Ø 16	Ø 20	Ø 24	Ø 25	Ø 28	Ø 32
Steel failure													
Characteristic tension resistance		$N_{Rk,s,eq,C1}$	[kN]	$1,0 \cdot A_s \cdot f_{uk}^{1)}$									
Cross section area		A_s	[mm²]	50	79	113	154	201	314	452	491	616	804
Partial factor		$\gamma_{Ms,N}$	[-]	$1,4^{2)}$									
Combined pull-out and concrete failure													
Characteristic bond resistance in cracked and uncracked concrete C20/25 in hammer drilled holes (HD), compressed air drilled holes (CD) and in hammer drilled holes with hollow drill bit (HDB)													
Temperature range	I: 40°C/24°C	Dry, wet concrete and flooded bore hole	$\tau_{Rk,eq,C1}$	[N/mm²]	6,5	6,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5
	II: 72°C/50°C		$\tau_{Rk,eq,C1}$	[N/mm²]	5,5	5,5	6,5	6,5	6,5	6,5	6,5	6,5	6,5
Increasing factors for concrete		ψ_c	[-]	1,0									
Characteristic bond resistance depending on the concrete strength class		$\tau_{Rk,eq,C1} =$		$\psi_c \cdot \tau_{Rk,eq,C1,(C20/25)}$									
Installation factor													
for dry and wet concrete (HD; HDB, CD)		γ_{inst}	[-]	1,0									
for flooded bore hole (HD; HDB, CD)				1,2									
1) f_{uk} shall be taken from the specifications of reinforcing bars 2) in absence of national regulation													
Würth injection system WIT-PE 1000 for concrete											Annex C 25		
Performances Characteristic values of tension loads under seismic action (performance category C1) for a working life of 100 years (reinforcing bar)													

**Table C32: Characteristic values of shear loads under seismic action
(performance category C1) for a working life of 50 and 100 years**

Reinforcing bar			Ø 8	Ø 10	Ø 12	Ø 14	Ø 16	Ø 20	Ø 24	Ø 25	Ø 28	Ø 32
Steel failure												
Characteristic shear resistance	$V_{Rk,s,eq,C1}$	[kN]	$0,35 \cdot A_s \cdot f_{uk}^{1)}$									
Cross section area	A_s	[mm ²]	50	79	113	154	201	314	452	491	616	804
Partial factor	$\gamma_{Ms,V}$	[-]	1,5 ²⁾									
Factor for annular gap	α_{gap}	[-]	0,5 (1,0) ³⁾									

1) f_{uk} shall be taken from the specifications of reinforcing bars

2) in absence of national regulation

3) Value in brackets valid for filled annular gap between fastener and clearance hole in the fixture. Use of special filling washer Annex A 3 is recommended.

Würth injection system WIT-PE 1000 for concrete

Performances

Characteristic values of shear loads under seismic action (performance category C1)
for a working life of 50 and 100 years (reinforcing bar)

Annex C 26

**Table C33: Characteristic values of tension loads under seismic action
(performance category C2) for a working life of 50 and 100 years**

Threaded rod				M12	M16	M20	M24	M27	M30	
Steel failure										
Characteristic tension resistance, Steel, strength class 8.8 Stainless Steel A4 and HCR, Strength class ≥70		$N_{Rk,s,eq,C2}$	[kN]	$1,0 \cdot N_{Rk,s}$						
Partial factor		$\gamma_{Ms,N}$	[-]	see Table C1						
Combined pull-out and concrete failure										
Characteristic bond resistance in cracked and uncracked concrete C20/25 in hammer drilled holes (HD), compressed air drilled holes (CD) and in hammer drilled holes with hollow drill bit (HDB)										
Temperature range	I: 40°C/24°C	Dry, wet concrete and flooded bore hole	$\tau_{Rk,eq,C2}$	[N/mm²]	5,8	4,8	5,0	5,1	4,8	5,0
	II: 72°C/50°C		$\tau_{Rk,eq,C2}$	[N/mm²]	5,0	4,1	4,3	4,4	4,1	4,3
Increasing factors for concrete		ψ_c	[-]	1,0						
Characteristic bond resistance depending on the concrete strength class		$\tau_{Rk,eq,C2} =$		$\psi_c \cdot \tau_{Rk,eq,C2,(C20/25)}$						
Installation factor										
for dry and wet concrete (HD; HDB, CD)		γ_{inst}	[-]	1,0						
for flooded bore hole (HD; HDB, CD)				1,2						

**Table C34: Characteristic values of shear loads under seismic action
(performance category C2) for a working life of 50 and 100 years**

Threaded rod				M12	M16	M20	M24	M27	M30
Steel failure									
Characteristic shear resistance Steel, strength class 8.8 Stainless Steel A4 and HCR, Strength class ≥ 70		$V_{Rk,s,eq,C2}$	[kN]	$0,70 \cdot V_{Rk,s}^0$					
Partial factor		$\gamma_{Ms,V}$	[-]	see Table C1					
Factor for annular gap		α_{gap}	[-]	$0,5 (1,0)^1$					

¹⁾ Value in brackets valid for filled annular gap between fastener and clearance hole in the fixture. Use of special filling washer Annex A 3 is recommended.

Würth injection system WIT-PE 1000 for concrete

Performances

Characteristic values of tension and shear loads under seismic action (performance category C2)
for a working life of 50 and 100 years (threaded rod)

Annex C 27

Table C35: Displacements under tension load (threaded rod)

Threaded rod			M12	M16	M20	M24	M27	M30
Uncracked and cracked concrete under seismic action (performance category C2) for a working life of 50 and 100 years								
All temperature ranges	$\delta_{N,eq,C2(DLS)}$	[mm]	0,21	0,24	0,27	0,36	0,92	0,70
	$\delta_{N,eq,C2(ULS)}$	[mm]	0,54	0,51	0,54	0,63	1,70	0,92

Table C36: Displacements under shear load (threaded rod)

Threaded rod			M12	M16	M20	M24	M27	M30
Uncracked and cracked concrete under seismic action (performance category C2) for a working life of 50 and 100 years								
All temperature ranges	$\delta_{V,eq,C2(DLS)}$	[mm]	3,1	3,4	3,5	4,2	4,0	3,8
	$\delta_{V,eq,C2(ULS)}$	[mm]	6,0	7,6	7,3	10,9	11,1	11,2

Würth injection system WIT-PE 1000 for concrete

Performances

Displacements under seismic action (performance category C2)
for a working life of 50 and 100 years (threaded rod)

Annex C 28

ДЕКЛАРАЦИЯ ЗА ЕКСПЛОАТАЦИОННИ ПОКАЗАТЕЛИ

№ 5918605140_03_M_WIT-PE 1000(1)

Настоящият текст е превод от немски на български.

В случай на съмнение важи оригиналът на немски.

- Уникален идентификационен код на типа на продукта: Würth Injektionssystem WIT-PE 1000 (Würth инжекционна система WIT-PE 1000)
Арт. №: 5918605140; 5918605440; 5918605585; 591860*; 090546*; 090547*; 59151*; 59152*; 59153*; 59154*; 5916408110; 5916410130; 5916412160; 5916416190; 59156*; 59157*
- Предвидена употреба/употреби: Verbunddübel zur Verankerung im Beton (Свързващ дюбел за закотвяне в бетон)
- Производител: Adolf Würth GmbH & Co. KG,
Reinhold-Würth-Straße 12 – 17
D – 74653 Künzelsau
- Система (и) за оценка и проверка на постоянството на експлоатационните показатели: Система 1
- Европейски документ за оценяване: EAD 330499-01-0601-v01, издание 11/2020
Европейска техническа оценка: ETA-19/0542 - 14.4.2022 г.
Орган за техническа оценка: Deutsches Institut für Bautechnik (DIBt), Berlin
Нотифициран(и) орган(и): 2873, Institut für Stahlbau und Werkstoffmechanik (IFSW), Darmstadt
- Деклариран(и) експлоатационен(и) показател(и):

Основни характеристики	Експлоатационни показатели	Хармонизирана техническа спецификация
Механична якост и устойчивост (BWR 1)		ETA-19/0542 EAD 330499-01-0601-v01
Характерно съпротивление на натоварване на опън (статични и квазистатични въздействия)	Приложение С 1 до С 6, С 8 до С 11, С 13 до С 16, В3	
Характерно съпротивление при напречно натоварване (статични и квазистатични въздействия)	Приложение С 1, С 7, С 12, С 17	
Измествания под краткотрайно и дълготрайно натоварване	Приложение С 18 до С 20	
Характерно съпротивление и измествания за сеизмична категория експлоатационни характеристики С1 и С2	Приложение С 21 до С 28	
Хигиена, здравеопазване и опазване на околната среда (BWR 3)		
Съдържание, емисия и/или освобождаване на опасни вещества	Експлоатационният показател не е оценяван	

Експлоатационните показатели на продукта, посочен по-горе, са в съответствие с декларираните експлоатационни показатели. Отговорност за издаването на декларацията за експлоатационни показатели носи изцяло производителя в съответствие с Регламент на (ЕС) № 305/2011.

Подписана за производителя и от името на производителя от:

В оригинал подписана от:

Дипл. инж. Андреас Хек
(Ръководител отдел продукт
крепежна техника)

Кюнцелзау, 03.09.2024 г.

В оригинал подписана от:

Д-р. инж. Зигфрид Байхтер
(Прокурисл - Безопасност на
продуктите)

PROHLÁŠENÍ O VLASTNOSTECH

Č. 5918605140_03_M_WIT-PE 1000(1)

Jedná se o verzi přeloženou z němčiny.
V případě pochybností platí německý originál.

1. Jednoznačný identifikační kód typu výrobku: Injekční systém Würth WIT-PE 1000
Č. vyr.: 5918605140; 5918605440; 5918605585; 591860*; 090546*; 090547*; 59151*; 59152*; 59153*; 59154*; 5916408110; 5916410130; 5916412160; 5916416190; 59156*; 59157*
2. Zamýšlené/zamýšlená použití: Chemická kotva pro ukotvení v betonu
3. Výrobce: Adolf Würth GmbH & Co. KG,
Reinhold-Würth-Straße 12 – 17
D – 74653 Künzelsau
4. Systém(y) pro hodnocení a kontrolu stálosti vlastností: Systém 1
5. Evropský dokument pro posuzování: EAD 330499-01-0601-v01, vydání 11/2020
Evropské technické posouzení: ETA-19/0542 – 14.4.2022
Subjekt pro technické posuzování: Deutsches Institut für Bautechnik, Berlin (DIBt, Německý institut pro stavební techniku v Berlíně)
Oznámený subjekt/oznámené subjekty: 2873, Institut für Stahlbau und Werkstoffmechanik (IFSW), Darmstadt
6. Deklarovaná vlastnost/Deklarované vlastnosti:

Podstatné charakteristické vlastnosti	Výkon	Harmonizovaná technická specifikace
Mechanická pevnost a stálost (BWR 1)		ETA-19/0542 EAD 330499-01-0601-v01
Charakteristická odolnost při namáhání tahem (statické a kvazistatické účinky)	Příloha C 1 až C 6, C 8 až C 11, C 13 až C 16, B3	
Charakteristická odolnost při příčném namáhání (statické a kvazistatické účinky)	Příloha C 1, C 7, C 12, C 17	
Posuny při krátkodobém a dlouhodobém zatížení	Příloha C 18 až C 20	
Charakteristická odolnost a posuny pro seizmickou kategorii C1 a C2	Příloha C 21 až C 28	
Hygiena, zdraví a ochrana životního prostředí (BWR 3)		
Obsah, emise a/nebo uvolňování nebezpečných látek	Vlastnost není hodnocená	

Vlastnosti výše uvedeného výrobku jsou ve shodě se souborem deklarovaných vlastností. Toto prohlášení o vlastnostech se v souladu s nařízením (EU) č. 305/2011 vydává na výhradní odpovědnost výrobce uvedeného výše.

Podepsal za výrobce a jeho jménem:

V originále podepsal:

Dipl.-Ing. Andreas Heck
(Vedoucí oddělení produktů
upevňovacích technologií)

Künzelsau, 01.07.2024

V originále podepsal:

Dr.-Ing. Siegfried Beichter
(Prokurista – bezpečnost výrobků)

YDEEVNEDEKLARATION

Nr. 5918605140_03_M_WIT-PE 1000(1)

Denne version er oversat fra tysk.
I tvivlstilfælde gælder den tyske original.

1. Produkttypens entydige identifikationskode: Würth injektionssystem WIT-PE 1000
Art.-nr.: 5918605140; 5918605440; 5918605585; 591860*; 090546*; 090547*; 59151*; 59152*; 59153*; 59154*; 5916408110; 5916410130; 5916412160; 5916416190; 59156*; 59157*
2. Anvendelsesformål: Skruefybel til forankring i beton
3. Producent: Adolf Würth GmbH & Co. KG,
Reinhold-Würth-Straße 12 – 17
D – 74653 Künzelsau
4. System(er) til bedømmelse og kontrol af ydeevnebestandigheden: System 1
5. Europæisk vurderingsdokument: EAD 330499-01-0601-v01, udgave 11/2020
Europæisk teknisk bedømmelse: ETA-19/0542 – 14-04-2022
Teknisk evalueringsmyndighed: Deutsches Institut für Bautechnik (DIBt), Berlin
Notificeret myndighed/notificerede myndigheder: 2873, Institut für Stahlbau und Werkstoffmechanik (IFSW), Darmstadt
6. Deklareret ydeevne/deklarerede ydeevner:

Væsentlige egenskaber	Ydelse	Harmoniseret teknisk specifikation
Mekanisk modstandsdygtighed og stabilitet (BWR 1)		ETA-19/0542 EAD 330499-01-0601-v01
Karakteristisk modstand under trækbelastning (statiske og kvasi-statistiske påvirkninger)	Appendiks C 1 til C 6, C 8 til C 11, C 13 til C 16, B3	
Karakteristisk modstand under tværbelastning (statiske og kvasi-statistiske påvirkninger)	Tillæg C 1, C 7, C 12, C 17	
Forskydninger under korttids- og langtidsbelastning	Tillæg C 18 til C 20	
Karakteristisk modstand og forskydninger til seismisk ydelseskategori C1 og C2	Tillæg C 21 til C 28	
Hygiejne, sundhed og miljøbeskyttelse (BWR 3)		
Indhold, emission og/eller frigørelse af farlige stoffer	Ydelse ikke evalueret	

Det ovenstående produkts ydeevne svarer til den deklarerede ydeevne/de deklarerede ydeevner. Ovenstående producent er eneansvarlig for udstedelsen af ydeevnedeklarationen i henhold til forordning (EU) nr. 305/2011.

Underskrevet for og på vegne af producenten af:

Originalen underskrevet af:

Dipl.-Ing. Andreas Heck
(Afdelingsleder
produktmontageteknologi)

Künzelsau, den 03.09.2024

Originalen underskrevet af:

Dr.-ing. Siegfried Beichter
(Prokurist produktsikkerhed)

LEISTUNGSERKLÄRUNG

Nr. 5918605140_03_M_WIT-PE 1000(1)

1. Eindeutiger Kenncode des Produkttyps: Würth Injektionssystem WIT-PE 1000
Art.-Nr.: 5918605140; 5918605440; 5918605585; 591860*;
090546*; 090547*; 59151*; 59152*; 59153*; 59154*;
5916408110; 5916410130; 5916412160; 5916416190;
59156*; 59157*
2. Verwendungszweck(e): Verbunddübel zur Verankerung im Beton
3. Hersteller: Adolf Würth GmbH & Co. KG,
Reinhold-Würth-Straße 12 - 17
D - 74653 Künzelsau
4. System(e) zur Bewertung und Überprüfung der Leistungsbeständigkeit: System 1
5. Europäisches Bewertungsdokument: EAD 330499-01-0601-v01, Edition 11/2020
Europäische Technische Bewertung: ETA-19/0542 - 14.04.2022
Technische Bewertungsstelle: Deutsches Institut für Bautechnik (DIBt), Berlin
Notifizierte Stelle(n): 2873, Institut für Stahlbau und Werkstoffmechanik (IFSW), Darmstadt
6. Erklärte Leistung(en):

Wesentliche Merkmale	Leistung	Harmonisierte technische Spezifikation
Mechanische Festigkeit und Standsicherheit (BWR 1)		ETA-19/0542 EAD 330499-01-0601-v01
Charakteristischer Widerstand unter Zugbeanspruchung (statische und quasi-statische Einwirkungen)	Anhang C 1 bis C 6, C 8 bis C 11, C 13 bis C 16, B3	
Charakteristischer Widerstand unter Querbeanspruchung (statische und quasi-statische Einwirkungen)	Anhang C 1, C 7, C 12, C 17	
Verschiebungen unter Kurzzeit- und Langzeitbelastung	Anhang C 18 bis C 20	
Charakteristischer Widerstand und Verschiebungen für seismische Leistungskategorie C1 und C2	Anhang C 21 bis C 28	
Hygiene, Gesundheit und Umweltschutz (BWR 3)		
Inhalt, Emission und/oder Freisetzung von gefährlichen Stoffen	Leistung nicht bewertet	

Die Leistung des vorstehenden Produkts entspricht der erklärten Leistung/den erklärten Leistungen. Für die Erstellung der Leistungserklärung im Einklang mit der Verordnung (EU) Nr. 305/2011 ist allein der obengenannte Hersteller verantwortlich.

Unterzeichnet für den Hersteller und im Namen des Herstellers von:



Andreas Heck
04.09.2024 13:45:21 [UTC+2]

Dipl.-Ing. Andreas Heck
(Abteilungsleiter - Produkt Befestigung)



Siegfried Beichter
18.09.2024 09:52:08 [UTC+2]

Dr. -Ing. Siegfried Beichter
(Prokurist - Produktsicherheit)

Künzelsau, den 03.09.2024

DECLARACIÓN DE PRESTACIONES

N° 5918605140_03_M_WIT-PE 1000(1)

Esta versión está traducida del alemán.
En caso de duda es aplicable el original alemán.

1. Código de identificación única del producto tipo: Sistema de inyección Würth WIT-PE 1000
N° de art.: 5918605140; 5918605440; 5918605585; 591860*; 090546*; 090547*; 59151*; 59152*; 59153*; 59154*; 5916408110; 5916410130; 5916412160; 5916416190; 59156*; 59157*
2. Uso(s) previsto(s): Taco químico para anclaje en hormigón
3. Fabricante: Adolf Würth GmbH & Co. KG,
Reinhold-Würth-Straße 12 – 17
D – 74653 Künzelsau
4. Sistema(s) de evaluación y verificación de la constancia de las prestaciones: Sistema 1
5. Documento de evaluación europeo: EAD 330499-01-0601-v01, edición 11/2020
Evaluación Técnica Europea: ETA-19/0542 – del 14/04/2022
Organismo de Evaluación Técnica: Deutsches Institut für Bautechnik (DIBt, Instituto alemán de tecnología de la construcción), Berlín
Organismo(s) notificado(s): 2873, Institut für Stahlbau und Werkstoffmechanik (IFSW, Instituto para la construcción de acero y mecánica de materiales), Darmstadt
6. Prestaciones declaradas:

Características esenciales	Prestación	Especificación técnica armonizada
Resistencia mecánica y estabilidad (BWR 1)		ETA-19/0542 EAD 330499-01-0601-v01
Resistencia característica bajo esfuerzo de tracción (efectos estáticos o cuasiestáticos)	Anexos C 1 a C 6, C 8 a C 11, C 13 a C 16, B3	
Resistencia característica bajo esfuerzo transversal (efectos estáticos o cuasiestáticos)	Anexos C 1, C 7, C 12, C 17	
Desplazamientos bajo esfuerzo a corto y largo plazo	Anexos C 18 a C 20	
Resistencia característica y desplazamientos para las categorías de actividad sísmicas C1 y C2	Anexos C 21 a C 28	
Higiene, salud y protección medioambiental (BWR 3)		
Contenido, emisión y liberación de sustancias peligrosas	Prestación no evaluada	

Las prestaciones del producto identificado anteriormente son conformes con el conjunto de prestaciones declaradas. La presente declaración de prestaciones se emite de conformidad con el Reglamento (UE) n.º 305/2011, bajo la sola responsabilidad del fabricante arriba identificado.

Firmado por y en nombre del fabricante por:

Firmante del original:

Dipl. Ing. Andreas Heck
(Director del departamento de
producto de tecnología de fijación)

Künzelsau, el 03/09/2024

Firmante del original:

Dr. Ing. Siegfried Beichter
(Apoderado - seguridad del producto)

TOIMIVUSDEKLARATSIOON

Nr. 5918605140_03_M_WIT-PE 1000(1)

Tegemist on saksa keelest tõlgitud versiooniga.
Kahiluste korral kehtib saksakeelne originaaltekst.

1. Tootetüübi kordumatu identifitseerimiskood: Würthi ankurdussüsteem WIT-PE 1000
Art-nr: 5918605140; 5918605440; 5918605585; 591860*; 090546*; 090547*; 59151*; 59152*; 59153*; 59154*; 5916408110; 5916410130; 5916412160; 5916416190; 59156*; 59157*
2. Kavandatud kasutusotstarve (-otstarbed): Sidumisankur kinnitamiseks betooni
3. Tootja: Adolf Würth GmbH & Co. KG,
Reinhold-Würth-Straße 12 – 17
D – 74653 Künzelsau
4. Toimivuse püsivuse hindamise ja kontrolli süsteem(id): Süsteem 1
5. Euroopa hindamisdokument: EAD 330499-01-0601-v01, väljaanne 11/2020
Euroopa tehniline hinnang: ETA-19/0542 – 14.04.2022
Tehnilise hindamise asutus: Deutsches Institut für Bautechnik (DIBt), Berliin
Teavitatud asutus(ed): 2873, Institut für Stahlbau und Werkstoffmechanik (IFSW), Darmstadt
6. Deklareeritud toimivus(ed):

Põhiomadused	Toimivus	Ühtlustatud tehniline kirjeldus
Mehaaniline tugevus ja vastupidavus (BWR 1)		ETA-19/0542 EAD 330499-01-0601-v01
Iseloomulik vastupanu tõmbejõule (staatiline ja poolstaatiline mõju)	Lisa C 1 kuni C 6, C 8 kuni C 11, C 13 kuni C 16, B3	
Iseloomulik vastupanu külgjõule (staatiline ja poolstaatiline mõju)	Lisa C 1, C 7, C 12, C 17	
Nihked lühiajalisel ja pikaajalisel koormamisel	Lisa C 18 kuni C 20	
Iseloomulik vastupanu ja nihked seismiliste toimivuskategooriate C1 ja C2 puhul	Lisa C 21 kuni C 28	
Hügieen, tervishoid ja keskkonnakaitse (BWR 3)		
Ohtlike ainete sisaldus, eraldumine ja/või vabanemine	Toimivus hindamata	

Eespool nimetatud toodete toimivus vastab deklareeritud toimivusele / deklareeritud toimivustele. Vastavusdeklaratsiooni koostamise eest kooskõlas määrusega (EL) nr 305/2011 vastutab ainuiskuliselt eespool nimetatud tootja.

Tootja poolt ja nimel allkirjastanud:

Originaali allkirjastanud:

Dipl ins Andreas Heck
(kinnitusvahendite tooteosakonna juht)

Künzelsau, 03.09.2024

Originaali allkirjastanud:

Dr ins Siegfried Beichter
(prokurist – tooteohutus)

SUORITUSTASOILMOITUS

Nro 5918605140_03_M_WIT-PE 1000(1)

Tämä on käännös saksankielisestä.
Epäilyksissä pätee saksankielinen alkuperäisilmoitus.

1. Tuotetypin yksilöllinen tunnistus: Würth injektiojärjestelmä WIT-PE 1000
Tuote-nrot: 5918605140; 5918605440; 5918605585; 591860*;
090546*; 090547*; 59151*; 59152*; 59153*; 59154*;
5916408110; 5916410130; 5916412160; 5916416190;
59156*; 59157*
2. Aiottu käyttötarkoitus (aiotut käyttötarkoitukset): Vaarnaruuvi betoniin ankkuroimiseksi
3. Valmistaja: Adolf Würth GmbH & Co. KG,
Reinhold-Würth-Straße 12-17
D - 74653 Künzelsau, Saksa
4. Suoritustason arvioinnin ja tarkistamisen järjestelmä(t): Järjestelmä 1
5. Eurooppalainen arviointidokumentti: EAD 330499-01-0601-v01, julkaisu 11/2020
Eurooppalainen tekninen arviointi: ETA-19/0542 - 14.4.2022
Teknisestä arvioinnista vastaava laitos: Deutsches Institut für Bautechnik (DIBt; Saksan rakennustekninen instituutti), Berliini
Ilmoitettu laitos / ilmoitetut laitokset: 2873, Institut für Stahlbau und Werkstoffmechanik (IFSW;
teräsrakenneteollisuuden ja materiaalimekaniikan instituutti), Darmstadt
6. Ilmoitettu suoritustaso/ilmoitetut suoritustasot:

Perusominaisuudet	Suoritustaso	Yhdenmukaistetut tekniset eritelmät
Mekaaninen lujuus ja vakaus (BWR 1)		ETA-19/0542 EAD 330499-01-0601-v01
Ominaisvastus vetokuormituksessa (staattiset ja kvasistaattiset vaikutukset)	Liitteet C 1 – C 6, C 8 – C 11, C 13 – C 16, B3	
Ominaisvastus poikkikuormituksessa (staattiset ja kvasistaattiset vaikutukset)	Liite C 1, C 7, C 12, C 17	
Siirtymä lyhytaikaisessa ja pitkäaikaisessa kuormituksessa	Liite C 18 - C 20	
Ominaisvastus ja siirtymä seismisille teholuokille C1 ja C2	Liite C 21 - C 28	
Hygienia, terveys ja ympäristönsuojelu (BWR 3)		
Vaarallisten aineiden sisältö, päästöt ja/tai vapautuminen	Suoritustasoa ei arvioitu	

Edellä yksilöidyn tuotteen suoritustaso on ilmoitettujen suoritustasojen joukon mukainen. Tämä suoritustasoilmoitus on asetuksen (EU) N:o 305/2011 mukaisesti annettu edellä ilmoitetun valmistajan yksinomaisella vastuulla.

Valmistajan puolesta allekirjoittanut:

Alkuperäisen asiakirjan allekirjoittanut:

Dipl. ins. Andreas Heck
(Kiinnitysteknisten tuotteiden
osastonjohtaja)

Künzelsau, 03.09.2024

Alkuperäisen asiakirjan allekirjoittanut:

Tri -ins. Siegfried Beichter
(Prokuristi – tuoteturvallisuus)

DÉCLARATION DES PERFORMANCES

N° 5918605140_03_M_WIT-PE 1000(1)

Il s'agit ici de la version traduite à partir de l'allemand.
En cas de doute, l'original allemand fait foi.

1. Code d'identification unique du produit type : Système à injecter Würth WIT-PE 1000
N° d'art. 5918605140; 5918605440; 5918605585; 591860*;
090546*; 090547*; 59151*; 59152*; 59153*; 59154*;
5916408110; 5916410130; 5916412160; 5916416190;
59156*; 59157*
2. Usage ou usages prévu(s) : Cheville composite d'ancrage dans le béton
3. Fabricant : Adolf Würth GmbH & Co. KG
Reinhold-Würth-Str. 12 - 17
D - 74653 Künzelsau
4. Système(s) d'évaluation et de vérification de la constance des performances : Système 1
5. Document d'évaluation européen : EAD 330499-01-0601-v01, édition 11/2020
Évaluation technique européenne : ETA-19/0542 - 14/04/2022
Organisme d'évaluation technique : Deutsches Institut für Bautechnik (DIBt), Berlin
Organisme(s) notifié(s) : 2873, Institut für Stahlbau und Werkstoffmechanik (Institut pour la construction acier et la mécanique des matériaux - IFSW), Darmstadt
6. Performance(s) déclarée(s) :

Caractéristiques essentielles	Performance	Spécification technique harmonisée
Résistance mécanique et stabilité (BWR 1)		ETA-19/0542 EAD 330499-01-0601-v01
Résistance caractéristique sous contrainte de traction (forces pénétrantes statiques et quasi-statiques)	Annexes C1 à C6, C8 à C11, C13 à C16, B3	
Résistance caractéristique sous contrainte transversale (forces pénétrantes statiques et quasi-statiques)	Annexes C1, C7, C12, C17	
Déplacements sous contrainte de courte et de longue durée	Annexes C18 à C20	
Résistance caractéristique et déplacements pour la catégorie de performance sismique C1 et C2	Annexes C21 à C28	
Hygiène, santé et environnement (BWR 3)		
Dégagement de substances dangereuses	Performance non évaluée	

La performance du produit susmentionné correspond à la performance / aux performances déclarée(s). Conformément au règlement (UE) n° 305/2011, la présente déclaration des performances est établie sous la seule responsabilité du fabricant mentionné ci-dessus.

Signée pour le fabricant et en son nom par :

Original signé par :

Ingénieur diplômé Andreas Heck
(Directeur département Produits)

Original signé par :

Dr.-Ing. Siegfried Beichter
(Fondé de pouvoir – Sécurité des
produits)

Künzelsau, le 03/09/2024

DEARBHÚ FEIDHMÍOCHTA

Uimh. 5918605140_03_M_WIT-PE 1000(1)

Is é seo an leagan a aistríodh ón nGearmáinis.
Má tá aon amhras ort tá feidhm ag an bunleagan Gearmáinise.

1. Cód aitheantais uathúil an chineáil táirge: Córás insteallta Würth WIT-PE 1000
Uimh. Earra: 5918605140; 5918605440; 5918605585; 591860*; 090546*; 090547*; 59151*; 59152*; 59153*; 59154*; 5916408110; 5916410130; 5916412160; 5916416190; 59156*; 59157*
2. Úsáid(i) b(h)eartaithe: Ancaire nasctha le haghaidh ancaireachta i gcoincreít
3. Monaróir: Adolf Würth GmbH & Co. KG
Reinhold-Würth-Strasse 12 – 17
D – 74653 Künzelsau
4. Córa(i)s chun seasmhacht feidhmíochta a mheas agus a scrúdú: Córás 1
5. Doiciméad Measúnaithe Eorpach: EAD 330499-01-0601-v01, Eagrán 11/2020
Measúnú Teicniúil Eorpach: ETA-19/0542 – 14/04/2022
Ionad Measúnaithe Teicniúil: Deutsches Institut für Bautechnik, DIBt (Ionad Teicniócht Tógála na Gearmáine), Beirlín
Iona(i)d dá dtugtar fógra: 2873, An Institiúid um Struchtúir Cruach agus Meicnic Ábhar (IFSW), Darmstadt
6. Feidhmíocht(aí) d(h)earbhaithe:

Príomhthréithe	Feidhmíocht	Sonraíocht theicniúil chomhchuibhithe
Friotaíocht agus Cobhsaíocht Mheicniúil (BWR 1)		ETA-19/0542 EAD 330499-01-0601-v01
Seasmhacht shaintréitheach faoi straidhn tarraingthe (tionchair statacha agus cuasastatacha)	Aguisín C 1 go C 6, C 8 go C 11, C 13 go C 16, B3	
Seasmhacht shaintréitheach faoi straidhn trasna (tionchair statacha agus cuasastatacha)	Aguisín C1, C7, C12, C17	
Díláithriúcháin faoi luchtú gearrthéarmach agus fadtéarmach	Aguisín C 18 go C 20	
Friotaíocht shaintréitheach agus díláithriúcháin le haghaidh feidhmíochta seismí catagóire C1 agus C2	Aguisín C 21 go C 28	
Sláintíocht, Sláinte agus Cosaint Comhshaoil (BWR 3)		
Ábhar, astú agus/nó scaoileadh substaintí guaiseacha	Níor measadh an fheidhmíocht	

Tá feidhmíocht an táirge thuas ag teacht leis an bhfeidhmíocht dhearbhaithe/na feidhmíochtaí dearbhaithe. Is ar an déantúsóir thuasluaite amháin atá an fhreagracht Dearbhú Feidhmíochta a dhéanamh de réir Rialacháin (AE) Uimh. 305/2011.

Arna shíniú ar son an déantúsóra agus thar a cheann ag:

Leagan bunaidh sínithe ag:

Dipl.-Ing. Andreas Heck
(Ceann Roinne um Teicneolaíocht
Daingnithe Táirgí)

Künzelsau, 03/09/2024

Leagan bunaidh sínithe ag:

Dr. -Ing. Siegfried Beichter
(Ionadaí údaraithe - Sábháilteacht
táirgí)

ΔΗΛΩΣΗ ΕΠΙΔΟΣΕΩΝ

Αρ. 5918605140_03_M_WIT-PE 1000(1)

Το παρόν είναι μετάφραση από τη γερμανική έκδοση.
Σε περίπτωση ενδοιασμών, ισχύει το γερμανικό πρωτότυπο.

1. Μοναδικός κωδικός ταυτοποίησης του προϊόντος: Σύστημα έγχυσης Würth WIT-PE 1000
Αρ. τεμ.: 5918605140, 5918605440, 5918605585, 591860*, 090546*, 090547*, 59151*, 59152*, 59153*, 59154*, 5916408110, 5916410130, 5916412160, 5916416190, 59156*, 59157*
2. Προτεινόμενη(-ες) χρήση(-εις): Συνδετικός πείρος για αγκύρωση σε μπετόν
3. Κατασκευαστής: Adolf Würth GmbH & Co. KG
Reinhold-Würth-Straße 12 – 17
D – 74653 Künzelsau
4. Σύστημα(τα) αξιολόγησης και επαλήθευσης της σταθερότητας της απόδοσης: Σύστημα 1
5. Ευρωπαϊκό έντυπο αξιολόγησης: EAD 330499-01-0601-v01, έκδοση 11/2020
Ευρωπαϊκή Τεχνική Αξιολόγηση: ETA-19/0542 – 14/04/2022
Τεχνική υπηρεσία αξιολόγησης: Deutsches Institut für Bautechnik (DIBt), Berlin (Γερμανικό ινστιτούτο για οικοδομική τεχνολογία (DIBt), Βερολίνο)
Κοινοποιημένος (-οι) οργανισμός (-οί): 2873, Institut für Stahlbau und Werkstoffmechanik (IFSW), Darmstadt
6. Δηλωμένη (-ες) επίδοση (-εις):

Ουσιώδη χαρακτηριστικά	Απόδοση	Εναρμονισμένη τεχνική προδιαγραφή
Μηχανική αντοχή και ευστάθεια (BWR 1)		ETA-19/0542 EAD 330499-01-0601-v01
Χαρακτηριστική αντίσταση υπό δύναμη έλξης (στατικές και σχεδόν στατικές επιδράσεις)	Παράρτημα C 1 έως C 6, C 8 έως C 11, C 13 έως C 16, B3	
Χαρακτηριστική αντίσταση υπό εγκάρσια καταπόνηση (στατικές και σχεδόν στατικές επιδράσεις)	Παράρτημα C 1, C 7, C 12, C 17	
Μετατοπίσεις υπό σύντομης ή μεγάλης διάρκειας φορτίο	Παράρτημα C 18 έως C 20	
Χαρακτηριστική αντίσταση και μετατοπίσεις για σεισμική κατηγορία ισχύος C1 και C2	Παράρτημα C 21 έως C 28	
Υγιεινή, υγεία και περιβαλλοντική προστασία (BWR 3)		
Περιεχόμενο, εκπομπή και/ή απελευθέρωση επικίνδυνων ουσιών	Μη αξιολογημένη απόδοση	

Η απόδοση του παρόντος προϊόντος ανταποκρίνεται στη δηλωθείσα απόδοση/δηλωθείσες αποδόσεις. Για τη σύνταξη της δήλωσης επιδόσεων σε συμμόρφωση με τον κανονισμό (ΕΕ) αρ. 305/2011 ο μόνος υπεύθυνος είναι ο προαναφερόμενος κατασκευαστής.

Υπογράφεται για τον κατασκευαστή και στο όνομα του κατασκευαστή από:

Στο πρωτότυπο υπογράφεται από:

Dipl.-Ing. Andreas Heck
(Διευθυντής τομέα προϊόντων
Τεχνολογία στερέωσης)

Künzelsau, 03/09/2024

Στο πρωτότυπο υπογράφεται από:

Dr. -Ing. Siegfried Beichter
(Γενικός εμπορικός πληρεξούσιος -
Ασφάλεια προϊόντων)

IZJAVA O SVOJSTVIMA

Br. 5918605140_03_M_WIT-PE 1000(1)

Ova je verzija teksta prevedena s njemačkog.
U slučaju sumnje vrijedi njemački original.

- | | |
|---|--|
| 1. Jedinstvena identifikacijska oznaka tipa proizvoda: | Würth injekcijski sustav WIT-PE 1000
Br. art.: 5918605140; 5918605440; 5918605585; 591860*;
090546*; 090547*; 59151*; 59152*; 59153*; 59154*;
5916408110; 5916410130; 5916412160; 5916416190;
59156*; 59157* |
| 2. Namjena(e): | Spojni zatik za kotvljenje u betonu |
| 3. Proizvođač: | Adolf Würth GmbH & Co. KG,
Reinhold-Würth-Straße 12 – 17
D – 74653 Künzelsau |
| 4. Sustav/i za ocjenjivanje i provjeru stalnosti svojstava: | Sustav 1 |
| 5. Europski dokument za ocjenjivanje:
Europska tehnička ocjena:
Tijelo za tehničku ocjenu:
Prijavljeno tijelo/a: | EAD 330499-01-0601-v01, izdanje 11/2020
ETA-19/0542 – 14. 4. 2022.
Deutsches Institut für Bautechnik (DIBt), Berlin
2873, Institut za čelične konstrukcije i mehaniku materijala (IFSW), Darmstadt |
| 6. Navedeno svojstvo/a: | |

Bitna obilježja	Svojstvo	Usklađene tehničke specifikacije
Mehanička čvrstoća i stabilnost (BWR 1)		ETA-19/0542 EAD 330499-01-0601-v01
Karakteristični otpor pri uzdužnom opterećenju (statično i kvazistatično djelovanje)	Prilog C 1 do C 6, C 8 do C 11, C 13 do C 16, B3	
Karakteristični otpor pri poprečnom opterećenju (statično i kvazistatično djelovanje)	Prilog C 1, C 7, C 12, C 17	
Pomicanje pri kratkotrajnom i dugotrajnom opterećenju	Prilog C 18 do C 20	
Karakteristični otpor i pomicanje za kategoriju seizmičkog učinka C1 i C2	Prilog C 21 do C 28	
Higijena, zdravlje i zaštita okoliša (BWR 3)		
Sadržaj, emisije i/ili oslobađanje opasnih tvari	Svojstvo nije ocijenjeno	

Svojstvo gore navedenog proizvoda odgovara navedenom svojstvu / navedenim svojstvima. Za izradu Izjave o svojstvima prema Odredbi (EU) br. 305/2011 isključivo je odgovoran gore navedeni proizvođač.

Potpisano za i u ime proizvođača od strane:

Originalni dokument potpisao/la:

Dipl.-Ing. Andreas Heck
(Voditelj odjela proizvoda Tehnologija
pričvršćivanja)

Künzelsau, 03.09.2024.

Originalni dokument potpisao/la:

Dr. -Ing. Siegfried Beichter
(Ovlašteni potpisnik - sigurnost
proizvoda)

TELJESÍTMÉNYNYILATKOZAT

5918605140_03_M_WIT-PE 1000(1) sz.

Ez a német nyelvről lefordított változat.
Eltérés esetén a német eredetit kell érvényesnek tekinteni.

1. Terméktípus egyértelmű azonosító kódja: Würth WIT-PE 1000 injekciós rendszer
Cikkszám: 5918605140; 5918605440; 5918605585; 591860*;
090546*; 090547*; 59151*; 59152*; 59153*; 59154*;
5916408110; 5916410130; 5916412160; 5916416190;
59156*; 59157*
2. Felhasználási cél(ok): Kötéanyaggal rögzített horgony betonban való horgonyzáshoz
3. Gyártó: Adolf Würth GmbH & Co. KG,
Reinhold-Würth-Straße 12 – 17
D – 74653 Künzelsau
4. A teljesítményállandóság értékelésére és ellenőrzésére szolgáló rendszer(ek): 1-as rendszer
5. Európai értékelési dokumentum: EAD 330499-01-0601-v01, 2020/11-es kiadás
Európai Műszaki Értékelés: ETA-19/0542 - 2022.04.14.
Műszaki értékelő szervezet: Deutsches Institut für Bautechnik (DIBt), Berlin
Bejelentett szerv(ek): 2873, Institut für Stahlbau und Werkstoffmechanik (IFSW), Darmstadt
6. Nyilatkozatban szereplő teljesítmény(ek):

Lényeges jellemzők	Teljesítmény	Harmonizált műszaki specifikáció
Mechanikai szilárdság és állékonyság (BWR 1)		ETA-19/0542 EAD 330499-01-0601-v01
Jellemző ellenállás húzó igénybevétel esetén (statikus és kvázi-statisz hatások)	C 1 – C 6, C 8 – C 11, C 13 – C 16, B3 melléklet	
Jellemző ellenállás keresztirányú igénybevétel esetén (statikus és kvázi-statisz hatások)	C 1, C 7, C 12, C 17 melléklet	
Elmozdulások rövid idejű és hosszú idejű terhelés alatt	C 18 – C 20 melléklet	
Jellemző ellenállás és eltolódások a C1 és C2 szeizmikus teljesítménykategória esetén	C 21 – C 28 melléklet	
Higiénia, egészség és környezetvédelem (BWR 3)		
Veszélyesanyag-tartalom, -emisszió és/vagy veszélyes anyagok felszabadulása	A teljesítmény nincs értékelve	

A fent megnevezett termék teljesítménye megfelel a teljesítménynyilatkozatban rögzített teljesítménynek/teljesítményeknek. A 305/2011 sz. EU rendelet előírásai alapján készült teljesítménynyilatkozat összeállítása kizárólag a fent nevezett gyártó felelőssége.

A gyártó képviselőjében és nevében aláírta:

Az eredeti példányt aláírta:

Dipl.-Ing. Andreas Heck
(Rögzítéstechnikai termékek
osztályvezető)

Künzelsau, 2024.09.03.

Az eredeti példányt aláírta:

Dr. -Ing. Siegfried Beichter
(Cégvezető - Termékbiztonság)

DICHIARAZIONE DI PRESTAZIONE

N. 5918605140_03_M_WIT-PE 1000(1)

La presente è la versione tradotta dal tedesco.
In caso di incertezze si considera valido l'originale in tedesco.

1. Codice di identificazione unico del prodotto-tipo: Würth Injektionssystem WIT-PE 1000 (Ancorante chimico - sistema ad iniezione Würth WIT-PE 1000)
Art. n.: 5918605140; 5918605440; 5918605585; 591860*; 090546*; 090547*; 59151*; 59152*; 59153*; 59154*; 5916408110; 5916410130; 5916412160; 5916416190; 59156*; 59157*
2. Utilizzo/i previsto/i: Tassello chimico per l'ancoraggio in calcestruzzo
3. Azienda produttrice: Adolf Würth GmbH & Co. KG,
Reinhold-Würth-Straße 12 - 17
D - 74653 Künzelsau
4. Sistema/i di valutazione e verifica della prestazione: Sistema 1
5. Documento per la Valutazione Europea: EAD 330499-01-0601-v01, edizione 11/2020
Valutazione tecnica europea: ETA-19/0542 - 14.04.2022
Organismo di valutazione tecnica: Deutsches Institut für Bautechnik (DIBt), Berlino
Organismo/i notificato/i: 2873, Institut für Stahlbau und Werkstoffmechanik (IFSW), Darmstadt
6. Prestazione/i dichiarata/e:

Caratteristiche essenziali	Prestazione	Norma tecnica armonizzata
Resistenza meccanica e stabilità (BWR 1)		ETA-19/0542 EAD 330499-01-0601-v01
Resistenza caratteristica a trazione (carichi statici e quasi statici)	Allegati da C 1 a C 6, da C 8 a C 11, da C 13 a C 16, B3	
Resistenza caratteristica ai carichi orizzontali (carichi statici e quasi statici)	Allegati C 1, C 7, C 12, C 17	
Variazioni con carichi a breve e lungo termine	Allegati da C 18 a C 20	
Resistenza caratteristica e variazioni per categoria sismica C1 e C2	Allegati da C 21 a C 28	
Igiene, salute e ambiente (BWR 3)		
Contenuto, emissione e/o rilascio di sostanze pericolose	Prestazione non valutata	

La prestazione del prodotto di cui sopra è conforme alla prestazione dichiarata/alle prestazioni dichiarate. Si rilascia la presente dichiarazione di prestazione ai sensi del Regolamento (UE) N. 305/2011 sotto la responsabilità esclusiva del suddetto fabbricante.

Firmato a nome e per conto del fabbricante da:

Firmato in originale da:

Dipl.-Ing. Andreas Heck
(Responsabile di settore Produzione
Elementi di fissaggio)

Künzelsau, 03.09.2024

Firmato in originale da:

Dr. -Ing. Siegfried Beichter
(Procuratore - Sicurezza del prodotto)

EKSPLOATACINIŲ SAVYBIŲ DEKLARACIJA

Nr. 5918605140_03_M_WIT-PE 1000(1)

Tai yra vertimas iš vokiečių kalbos.

Kilus abejonėms, vadovautis originalu vokiečių kalba.

- Produkto tipo unikalus atpažinimo kodas: „Würth injekcinė sistema WIT-PE 1000“
Prekės Nr.: 5918605140; 5918605440; 5918605585; 591860*;
090546*; 090547*; 59151*; 59152*; 59153*; 59154*;
5916408110; 5916410130; 5916412160; 5916416190;
59156*; 59157*
- Naudojimo paskirtis (-ys): sujungimo kaištis tvirtinimui betone
- Gamintojas: „Adolf Würth GmbH & Co. KG“
Reinhold-Würth g. 12-17
D - 74653 Künzelsau
- Ekspluatacinių savybių atsparumo įvertinimo ir patikrinimo sistema (-os): 1 sistema
- Europos įvertinimo dokumentas: EAD 330499-01-0601-v01, 2020 m. lapkričio mėn. leidimas
Europos techninis įvertinimas: ETA-19/0542, atliktas 2022.04.14
Techninio vertinimo įstaiga: „Deutsches Institut für Bautechnik (DIBt)“, Berlynas
Notifikuotoji (-osios) įstaiga (-os): 2873, „Institut für Stahlbau und Werkstoffmechanik“ (IFSW), Darmštatas
- Deklaruojama (-os) eksploatacinė (-s) savybė (-s):

Pagrindinės charakteristikos	Ekspluatacinės savybės	Darnusis techninis standartas
Mechaninis stiprumas ir stabilumas (BWR 1)		ETA-19/0542 EAD 330499-01-0601-v01
Būdingas pasipriešinimas tempimo įtampai (statinė ir kvazistatinė apkrova)	Priedai: C 1 iki C 6, C 8 iki C 11, C 13 iki C 16 B3	
Būdingas pasipriešinimas skersinei įtampai (statinė ir kvazistatinė apkrova)	Priedai: C 1, C 7, C 12, C 17	
Poslinkiai esant trumpalaikiai ir ilgalaikiai apkrovai	Priedai: C 18 iki C 20	
Būdingas atsparumas ir poslinkis seisminei eksploatacinių savybių kategorijai C1 ir C2	Priedai: C 21 iki C 28	
Higiena, sveikata ir aplinkosauga (BWR 3)		
Pavojingų medžiagų turinys, emisija ir (arba) išskyrimas	Neįvertinta eksploatacinė savybė	

Turimo produkto eksploatacinės savybės atitinka deklaruotas eksploatacines savybes. Už eksploatacinių savybių deklaracijos, atitinkančios potvarkį (ES) Nr. 305/2011, sudarymą atsako tik nurodytas gamintojas.

Pasirašo gamintojas ir atstovas gamintojo vardu:

Originalą pasirašė:

Dipl. inž. Andreas Heck
(Tvirtinimo technologijų gaminių
padalinio vadovas)

Kiuncelsau, 2024-09-03

Originalą pasirašė:

Dr. inž. Siegfried Beichter
(Produktų saugos įgaliotasis asmuo)

EKSPLUATĀCIJAS ĪPAŠĪBU DEKLARĀCIJA

Nr. 5918605140_03_M_WIT-PE 1000(1)

**Šī ir no vācu valodas tulkota dokumenta versija.
Šaubu gadījumā spēkā ir oriģināls vācu valodā**

1. Nepārprotams produkta tipa identifikācijas kods: Würth injekcijas sistēma WIT-PE 1000
Art.-Nr.: 5918605140; 5918605440; 5918605585; 591860*; 090546*; 090547*; 59151*; 59152*; 59153*; 59154*; 5916408110; 5916410130; 5916412160; 5916416190; 59156*; 59157*
2. Lietojuma mērķis(-i): savienošanas dībelis enkurošanai betonā
3. Ražotājs: Uzņēmums: *Adolf Würth GmbH & Co. KG*
Reinhold-Würth-Straße 12 - 17
D - 74653 Künzelsau (Kincelzava)
4. Eksploatācijas īpašību noturības novērtējuma un pārbaudes sistēma(-as): 1. sistēma
5. Eiropas novērtējuma dokuments: EAD 330499-01-0601-v01, Edition 11/2020
Eiropas tehniskais novērtējums: ETA-19/0542 - 14.04.2022
Tehniskā novērtējuma iestāde: Deutsches Institut für Bautechnik, DIBt (Vācijas Būvniecības tehnoloģiju institūts), Berlīne.
Paziņotā(-ās) iestāde(-es): 2873, Institut für Stahlbau und Werkstoffmechanik (IFSW), Darmstadt (Darmštate)
6. Deklarētā(-ās) eksploatācijas īpašība(-as)

Būtiskie raksturlielumi	Eksploatācijas īpašības	Saskaņotā tehniskā specifikācija
Mehāniskā izturība un stiprība <i>(BWR 1)</i>		ETA-19/0542 EAD 330499-01-0601-v01
Raksturīgā pretestība stiepes slodzei (statiska un kvazistatiska iedarbība)	Pielikums C 1 līdz C 6, C 8 līdz C 11, C 13 līdz C 16, B3	
Raksturīgā pretestība šķērsslodzei (statiska un kvazistatiska iedarbība)	Pielikums C 1, C 7, C 12, C 17	
Novirzes īslaicīgas un ilglaicīgas slodzes ietekmē	Pielikums C 18 līdz C 20	
Raksturīgā pretestība un bīde saistībā ar seismisko īpašību kategoriju C1 un C2	Pielikums C 21 līdz C 28	
Higiēna, veselība un vides aizsardzība <i>(BWR 3)</i>		
Bīstamu vielu saturs, emisija un/vai izdalīšana	Īpašība nav vērtēta	

Šā produkta eksploatācijas īpašības atbilst deklarētajai(-ām) eksploatācijas īpašībai(-ām). Par eksploatācijas īpašību deklarācijas sagatavošanu saskaņā ar Regulu (ES) Nr. 305/2011 ir atbildīgs tikai iepriekš minētais ražotājs.

Ražotāja un ražotāja pārstāvja paraksts:

Dipl.-inž. Dr. Andreas Heks (Andreas Heck)

(Produktu nostiprināšanas tehnoloģijas nodaļas vadītājs)

Künzelsau (Kincelzava, Vācijā),

03.09.2024.

Dr.-inž. Zigfrīds Beihters (Siegfried Beichter)

(Prokūrists - produktu drošība)

DIKJARAZZJONI TA' PRESTAZZJONI

Nru 5918605140_03_M_WIT-PE 1000(1)

Din hija l-verżjoni tradotta mill-Ġermaniż.

F'każ ta' dubju jgħodd id-dokument oriġinali bil-lingwa Ġermaniża.

- Kodiċi uniku ta' identifikazzjoni tat-tip ta' prodott: Würth Sistema b'Injezzjoni WIT-PE 1000
Nru tal-oġġett: 5918605140; 5918605440; 5918605585; 591860*; 090546*; 090547*; 59151*; 59152*; 59153*; 59154*; 5916408110; 5916410130; 5916412160; 5916416190; 59156*; 59157*
- Użu/i intenzjonat/i: Kaviġja għat-twaħħil, għall-ankraġġ fil-konkrit
- Manifattur: Adolf Würth GmbH & Co. KG,
Reinhold-Würth-Str. 12 – 17
D – 74653 Künzelsau
- Sistema jew sistemi ta' valutazzjoni u verifika tal-kostanza ta' prestazzjoni: Sistema 1
- Dokument Ewropew ta' valutazzjoni: EAD 330499-01-0601-v01, Edizzjoni 11/2020
Valutazzjoni Teknika Ewropea: ETA-19/0542 – 14/04/2022
Korp tal-Valutazzjoni Teknika: Deutsches Institut für Bautechnik (DIBt), Berlin
Korp/i nnotifikat/i: 2873, Institut für Stahlbau und Werkstoffmechanik (IFSW), Darmstadt, Germany
- Prestazzjoni/jiet ddikjarata/i:

Karatteristiċi essenzjali	Prestazzjoni	Speċifikazzjoni teknika armonizzata
Stabbiltà u ebusija mekkanika (BWR 1)		ETA-19/0542 EAD 330499-01-0601-v01
Reżistenza karatteristika taħt stress tensili (tagħbija statika u kważi statika)	Annessi C 1 sa C 6, C 8 sa C 11, C 13 sa C 16, B3	
Reżistenza karatteristika taħt stress trasversali (tagħbija statika u kważi statika)	Annessi C 1, C 7, C 12, C 17	
Spostamenti taħt tagħbija għal hin qasir u hin twil	Annessi C 18 sa C 20	
Reżistenza karatteristika u spostamenti għall-kategorija ta' prestazzjoni siżmika C1 u C2	Annessi C 21 sa C 28	
Iġjene, saħħa u protezzjoni tal-ambjent (BWR 3)		
Kontenut, emissjoni u/jew rilaxx ta' sustanzi perikolużi	Prestazzjoni mhux stabbilita	

Il-prestazzjoni tal-prodott identifikat hawn fuq hija konformi mal-prestazzjonijiet iddikjarati. Din id-dikjarazzjoni ta' prestazzjoni hi maħruġa skont ir-Regolament (UE) Nru 305/2011 taħt ir-responsabbiltà unika tal-manifattur identifikat hawn fuq.

Iffirmat għal u f'isem il-manifattur minn:

Fid-dokument oriġinali, iffirmit minn:

Dipl.-Ing. Andreas Heck
(Kap, Dipartiment tal-Prodotti –
Teknoloġija tat-Twaħħil)

Künzelsau, 03/09/2024

Fid-dokument oriġinali, iffirmit minn:

Dr. -Ing. Siegfried Beichter
(Rapp. Awtorizzat – Sigurtà tal-Prodotti)

PRESTATIEVERKLARING

Nr. 5918605140_03_M_WIT-PE 1000(1)

Dit is een uit het Duits vertaalde versie.
In twijfelgevallen geldt het Duitse origineel.

1. Eenduidige identificatiecode van het producttype: Würth injectiesysteem WIT-PE 1000
Art.nr.: 5918605140; 5918605440; 5918605585; 591860*; 090546*; 090547*; 59151*; 59152*; 59153*; 59154*; 5916408110; 5916410130; 5916412160; 5916416190; 59156*; 59157*
2. Gebruiksdoel(en): compoundanker voor verankering in beton
3. Fabrikant: Adolf Würth GmbH & Co. KG,
Reinhold-Würth-Straße 12 – 17
D – 74653 Künzelsau
4. Systeem/systemen voor beoordeling en verificatie van de prestatiebestendigheid: Systeem 1
5. Europees beoordelingsdocument: EAD 330499-01-0601-v01, editie 11/2020
Europese technische beoordeling: ETA-19/0542 – 14/04/2022
Technische beoordelingsinstantie: Deutsches Institut für Bautechnik (DIBt), Berlijn
Aangemelde instantie(s): 2873, Institut für Stahlbau und Werkstoffmechanik (IFSW), Darmstadt
6. Vastgestelde prestatie(s):

Belangrijkste eigenschappen	Prestatie	Geharmoniseerde technische specificatie
Mechanische sterkte en stabiliteit (BWR 1)		ETA-19/0542 EAD 330499-01-0601-v01
Karakteristieke weerstand bij trekbelasting (statische en quasi-statische inwerkingen)	Bijlage C 1 t/m C 6, C 8 t/m C 11, C 13 t/m C 16, B3	
Karakteristieke weerstand bij dwarsbelasting (statische en quasi-statische inwerkingen)	Bijlage C 1, C 7, C 12, C 17	
Verschuivingen bij kortstondige en langdurige belasting	Bijlage C 18 t/m C 20	
Karakteristieke weerstand en verschuivingen voor seismische prestatie-categorie C1 en C2	Bijlage C 21 t/m C 28	
Hygiëne, gezondheid en milieubescherming (BWR 3)		
Inhoud, emissie en / of vrijkomen van gevaarlijke stoffen	prestatie niet beoordeeld	

De prestatie van het bovenvermelde product voldoet aan de vastgestelde prestatie(s). Voor het opstellen van de prestatieverklaring overeenkomstig verordening (EU) nr. 305/2011 is uitsluitend de bovengenoemde fabrikant verantwoordelijk.

Ondertekend voor de fabrikant en in naam van de fabrikant door:

Origineel ondertekend door:

dipl.-ing. Andreas Heck
(Hoofd van de afdeling Product
Fastening Technology)

Künzelsau, 03/09/2024

Origineel ondertekend door:

dr.-ing. Siegfried Beichter
(Procuratiehouder - Productveiligheid)

YTSESERKLÆRING

Nr. 5918605140_03_M_WIT-PE 1000(1)

Dette er en versjon som er oversatt fra tysk.
Skulle det oppstå tvil, gjelder den tyske originalen.

1. Entydig kode for produkttypen: Würth injeksjonssystem WIT-PE 1000
Art.-nr.: 5918605140; 5918605440; 5918605585; 591860*;
090546*; 090547*; 59151*; 59152*; 59153*; 59154*;
5916408110; 5916410130; 5916412160; 5916416190;
59156*; 59157*
2. Bruksområde: Komposittplugg til forankring i betong
3. Produsent: Adolf Würth GmbH & Co. KG,
Reinhold-Würth-Straße 12 – 17
D – 74653 Künzelsau
4. System(er) til vurdering og kontroll av ytelsesbestandigheten: System 1
5. Europeisk vurderingsdokument: EAD 330499-01-0601-v01, Edition 11/2020
Europeisk teknisk godkjenning: ETA-19/0542 – 14.04.2022
Teknisk godkjenningsorgan: Deutsches Institut für Bautechnik, Berlin
Teknisk(e) kontrollorgan(er): 2873, Institut für Stahlbau und Werkstoffmechanik (IFSW), Darmstadt, Tyskland
6. Erklært(e) ytelse(r):

Vesentlige egenskaper	Ytelse	Harmonisert teknisk spesifikasjon
Mekanisk fasthet og stabilitet (BWR 1)		ETA-19/0542 EAD 330499-01-0601-v01
Karakteristisk motstand ved strekkbelastning (statisk og nesten-statisk belastning)	Vedlegg C 1 til C 6, C 8 til C 11, C 13 til C 16, B3	
Karakteristisk motstand ved tverrbelastning (statisk og nesten-statisk belastning)	Vedlegg C 1, C 7, C 12, C 17	
Forskyvninger ved kortvarig og langvarig belastning	Vedlegg C 18 til C 20	
Karakteristisk motstand og forskyvninger for seismisk kategori C1 og C2	Vedlegg C 21 til C 28	
Hygiene, helse og miljøvern (BWR 3)		
Innhold, emisjon og/eller utslipp av farlige stoffer	Ytelse ikke vurdert	

Ytelsen til dette produktet tilsvarende den erklærte ytelsen / de erklærte ytelsene. Produsenten som er nevnt over, er eneansvarlig for at det lages en ytelseserklæring i henhold til forordningen (EU) nr. 305/2011.

Undertegnet for produsenten og på vegne av produsenten:

Originalen underskrevet av:

Dipl.-Ing. Andreas Heck
(avdelingsleder produkt festeteknikk)

Künzelsau, den 03.09.2024

Originalen underskrevet av:

Dr.-Ing. Siegfried Beichter
(Prokurist – produktsikkerhet)

DEKLARACJA WŁAŚCIWOŚCI UŻYTKOWYCH

Nr 5918605140_03_M_WIT-PE 1000(1)

Ten dokument jest wersją przełożoną z języka niemieckiego.
W razie wątpliwości obowiązuje wersja niemiecka.

1. Niepowtarzalny kod identyfikacyjny typu wyrobu: System iniekcyjny Würth WIT-PE 1000
Nr artykułu: 5918605140; 5918605440; 5918605585; 591860*; 090546*; 090547*; 59151*; 59152*; 59153*; 59154*; 5916408110; 5916410130; 5916412160; 5916416190; 59156*; 59157*
2. Zamierzone zastosowanie lub zastosowania: kotwa chemiczna do wykonywania zamocowań w betonie
3. Producent: Adolf Würth GmbH & Co. KG,
Reinhold-Würth-Straße 12 – 17
D – 74653 Künzelsau
4. System (systemy) oceny i weryfikacji stałości właściwości użytkowych: System 1
5. Europejski Dokument Oceny: EAD 330499-01-0601-v01, edycja 11/2020
Europejska Ocena Techniczna: ETA-19/0542 – 14.04.2022
Jednostka ds. oceny technicznej: Deutsches Institut für Bautechnik (DIBt), Berlin
Jednostka/-i notyfikowana/-e: 2873, Institut für Stahlbau und Werkstoffmechanik (Instytut konstrukcji stalowych i mechaniki tworzyw), Darmstadt
6. Deklarowane właściwości użytkowe:

Zasadnicze charakterystyki	Właściwości użytkowe	Zharmonizowana specyfikacja techniczna
Nośność i stateczność (Wymaganie Podstawowe 1)		ETA-19/0542 EAD 330499-01-0601-v01
Nośności charakterystyczne przy naprężeniach rozciągających (oddziaływania statyczne i quasi statyczne)	Załącznik C 1 do C 6, C 8 do C 11, C 13 do C 16, B3	
Nośności charakterystyczne przy naprężeniach ścinających (oddziaływania statyczne i quasi statyczne)	Załącznik C 1, C 7, C 12, C 17	
Przemieszczenia pod wpływem oddziaływań krótko- i długotrwałych	Załącznik C 18 do C 20	
Nośności charakterystyczne i przemieszczenia dla kategorii właściwości sejsmicznych C1 i C2	Załącznik C 21 do C 28	
Higiena, zdrowie i środowiska (Wymaganie Podstawowe 3)		
Zawartość, emisja i / lub uwalnianie substancji niebezpiecznych	NPD	

Właściwości użytkowe określonego powyżej wyrobu są zgodne z zestawem deklarowanych właściwości użytkowych. Niniejsza deklaracja właściwości użytkowych wydana zostaje zgodnie z rozporządzeniem (UE) nr 305/2011 na wyłączną odpowiedzialność producenta określonego powyżej.

Podpisano za producenta i w jego imieniu:

Oryginał podpisany przez:

Dypl. inż. Andreas Heck
(Kierownik działu produktów, technika
mocowań)

Oryginał podpisany przez:

Dr inż. Siegfried Beichter
(Prokurent – bezpieczeństwo
produktów)

Künzelsau, dnia 03.09.2024 r.

DECLARAÇÃO DE DESEMPENHO

N.º 5918605140_03_M_WIT-PE 1000(1)

Versão traduzida da versão alemã.
Em caso de dúvida é válido o original alemão.

- Código de identificação inequívoco do tipo de produto: Sistema de injeção WIT-PE 1000 Würth
N.º art.: 5918605140; 5918605440; 5918605585; 591860*; 090546*; 090547*; 59151*; 59152*; 59153*; 59154*; 5916408110; 5916410130; 5916412160; 5916416190; 59156*; 59157*
- Fim/fins de utilização: Cavilha de fixação por aderência para ancoragem em betão
- Fabricante: Adolf Würth GmbH & Co. KG,
Reinhold-Würth-Straße 12 – 17
D – 74653 Künzelsau
- Sistema(s) para avaliação e verificação da constância do desempenho: Sistema 1
- Documento de avaliação europeu: EAD 330499-01-0601-v01, edição 11/2020
Avaliação Técnica Europeia: ETA-19/0542 – 14.04.2022
Organismo de Avaliação Técnica: Deutsches Institut für Bautechnik (DIBt), Berlim
Organismo(s) notificado(s): 2873, Institut für Stahlbau und Werkstoffmechanik (IFSW), Darmstadt
- Desempenho(s) declarado(s):

Características essenciais	Desempenho	Especificação técnica harmonizada
Resistência mecânica e estabilidade (BWR 1)		ETA-19/0542 EAD 330499-01-0601-v01
Resistência característica sob esforço de tração (cargas estáticas e quase-estáticas)	Anexo C 1 até C 6, C 8 até C 11, C 13 até C 16, B3	
Resistência característica sob esforço transversal (cargas estáticas e quase-estáticas)	Anexo C 1, C 7, C 12, C 17	
Deslocamentos sob esforço a curto prazo e a longo prazo	Anexo C 18 até C 20	
Resistência característica e deslocamentos para a categoria de desempenho sísmico C1 e C2	Anexo C 21 até C 28	
Higiene, saúde e proteção do ambiente (BWR 3)		
Teor, emissão e/ou libertação de substâncias perigosas	Desempenho não avaliado	

O desempenho do produto corresponde ao(s) desempenho(s) declarado(s). O fabricante acima mencionado é o único responsável pela elaboração da declaração de desempenho, em conformidade com o Regulamento (EU) n.º 305/2011.

Assinado pelo fabricante e em nome do fabricante por:

Documento original assinado por:

Engenheiro Andreas Heck
(Diretor do Departamento Tecnologia
de Fixação de Produtos)

Künzelsau, a 03.09.2024

Documento original assinado por:

Dr. Eng.º Siegfried Beichter
(Procurador - Segurança do Produto)

DECLARAȚIE DE PERFORMANȚĂ

Nr. 5918605140_03_M_WIT-PE 1000(1)

Prezenta versiune este o traducere din limba germană.
În caz de dubiu se aplică originalul în limba germană.

1. Cod unic de identificare al tipului de produs: Sistem de injecție WIT-PE 1000 Würth
Articol Nr.: 5918605140; 5918605440; 5918605585; 591860*; 090546*; 090547*; 59151*; 59152*; 59153*; 59154*; 5916408110; 5916410130; 5916412160; 5916416190; 59156*; 59157*
2. Scopul sau scopurile de utilizare: Diblu de îmbinare pentru ancorare în beton
3. Producător: Adolf Würth GmbH & Co. KG,
Reinhold-Würth-Straße 12 – 17
D – 74653 Künzelsau
4. Sistem(e) pentru evaluarea și verificarea constanței performanței: Sistem 1
5. Document european de evaluare: EAD 330499-01-0601-v01, Ediția 11/2020
Evaluare tehnică europeană: ETA-19/0542 – 14.04.2022
Organism de evaluare tehnică: Deutsches Institut für Bautechnik (DIBt), Berlin
Organism(e) notificat(e): 2873, Institut für Stahlbau und Werkstoffmechanik (Institutul pentru Construcții din Oțel și Mecanica Materialelor – IFSW), Darmstadt
6. Performanța(e) declarată(e):

Caracteristici esențiale	Performanță	Specificație tehnică armonizată
Rezistență mecanică și stabilitate (BWR 1)		ETA-19/0542 EAD 330499-01-0601-v01
Rezistență caracteristică la solicitarea de tracțiune (efecte statice și cvazistatice)	Anexa C 1 până la C 6, C 8 până la C 11, C 13 până la C 16, B3	
Rezistență caracteristică la solicitarea transversală (efecte statice și cvazistatice)	Anexa C 1, C 7, C 12, C 17	
Deplasări în condiții de solicitare pe termen scurt și pe termen lung	Anexa C 18 până la C 20	
Rezistență caracteristică și deplasarea pentru categoria de performanțe seismice C1 și C2	Anexa C 21 până la C 28	
Igienă, sănătate și protecția mediului înconjurător (BWR 3)		
Conținut, emisie și/sau degajarea de substanțe periculoase	Performanța nu este evaluată	

Performanța produsului prezentat este în conformitate cu performanța declarată / cu performanțele declarate. Pentru realizarea declarației de performanță în conformitate cu Ordonanța (UE) nr. 305/2011, singurul responsabil este producătorul menționat mai sus.

Semnată pentru și în numele producătorului, de către:

Semnat în original de:

Dipl.-Ing. Andreas Heck
(manager departament Tehnologie de
fixare)

Künzelsau, 03.09.2024

Semnat în original de:

Dr.-Ing. Siegfried Beichter
(Semnatar autorizat - Siguranța
produselor)

ДЕКЛАРАЦИЯ ХАРАКТЕРИСТИК

№ 5918605140_03_M_WIT-PE 1000(1)

Здесь речь идет о переведенной с немецкого языка версии.
В случае сомнений руководствоваться немецким оригиналом.

1. Однозначная маркировка типа продукта: Система инъекции Würth WIT-PE 1000
Арт.№: 5918605140; 5918605440; 5918605585; 591860*;
090546*; 090547*; 59151*; 59152*; 59153*; 59154*;
5916408110; 5916410130; 5916412160; 5916416190;
59156*; 59157*
2. Цель(и) применения: Комбинированный дюбель для анкеровки в бетоне
3. Изготовитель: Adolf Würth GmbH & Co. KG,
Reinhold-Würth-Straße 12 – 17
D – 74653 Künzelsau
4. Система(ы) оценки и проверки стабильности характеристик: Система 1
5. Европейский оценочный документ: EAD 330499-01-0601-v01, редакция от 11/2020
Европейская техническая оценка: ETA-19/0542 – 14.04.2022
Орган технической оценки: Германский институт строительных технологий (DIBt), Берлин
Уполномоченный(е) орган(ы): 2873, Институт стальных конструкций и механики материалов (IFSW),
Дармштадт
6. Заявленная(ые) характеристика(и):

Важные признаки	Характеристика	Гармонизированная техническая спецификация
Механическая прочность и устойчивость (BWR 1)		ETA-19/0542 EAD 330499-01-0601-v01
Типичное сопротивление при растяжении (статические и квазистатические воздействия)	Приложения с C 1 по C 6, с C 8 по C 11, с C 13 по C 16, B3	
Типичное сопротивление при поперечных нагрузках (статические и квазистатические воздействия)	Приложения C 1, C 7, C 12, C 17	
Перемещения при кратковременном и длительном нагружении	Приложения с C 18 по C 20	
Типичные сопротивления и смещения для категорий сейсмостойкости C1 и C2	Приложения с C 21 по C 28	
Гигиена, здоровье и охрана окружающей среды (BWR 3)		
Состав, эмиссия и/или выделение опасных веществ	характеристика не определена	

Характеристика вышеприведенного продукта соответствует заявленной характеристике/заявленным характеристикам. За составление декларации характеристик в соответствии с предписанием (EU) № 305/2011 отвечает исключительно вышеупомянутый изготовитель.

Подписано за изготовителя и от имени изготовителя:

Оригинал подписан:

Д-р-инж. Андреас Хек
(руководитель отдела технологий
крепежа изделий)

Кюнцельзау, 03.09.2024

Оригинал подписан:

Д-р-инж. Зигфрид Байхтер
(прокурисл по безопасности
продукции)

PRESTANDEKLARATION

Nr. 5918605140_03_M_WIT-PE 1000(1)

Denna version är översatt från tyska.
I tveksamma fall gäller originalet på tyska.

1. Produkttypens unika identifikationskod: Würth injektionssystem WIT-PE 1000
Art.-nr.: 5918605140; 5918605440; 5918605585; 591860*;
090546*; 090547*; 59151*; 59152*; 59153*; 59154*;
5916408110; 5916410130; 5916412160; 5916416190;
59156*; 59157*
2. Användningsändamål: Ankarplugg för förankring i betong
3. Tillverkare: Adolf Würth GmbH & Co. KG,
Reinhold-Würth-Straße 12 – 17
D – 74653 Künzelsau
4. System för bedömning och kontroll av prestandabeständighet: System 1
5. Europeiskt bedömningsdokument: EAD 330499-01-0601-v01, Edition 11/2020
Europeisk teknisk bedömning: ETA-19/0542 - 2022-04-14
Tekniskt bedömningsorgan: Deutsches Institut für Bautechnik (DIBt), Berlin
Notificerade organ: 2873, Institut für Stahlbau und Werkstoffmechanik (IFSW), Darmstadt
6. Deklarerad prestanda:

Väsentliga egenskaper	Prestanda	Harmoniserad teknisk specifikation
Mekanisk hållfasthet och stabilitet (BWR 1)		ETA-19/0542 EAD 330499-01-0601-v01
Karakteristiskt motstånd vid dragpåkänning (statisk och kvasistatisk påverkan)	Bilaga C 1 till C 6, C 8 till C 11, C 13 till C 16, B3	
Karakteristiskt motstånd vid tvärbelastning (statisk och kvasistatisk påverkan)	Bilaga C 1, C 7, C 12, C 17	
Förskjutningar vid korttids- och långtidsbelastning	Bilaga C 18 till C 20	
Karakteristiskt motstånd och förskjutningar för seismisk prestandakategori C1 och C2	Bilaga C 21 till C 28	
Hygien, hälsa och miljöskydd (BWR 3)		
Innehåll, emission och/eller frisättning av farliga ämnen	Prestanda ej bedömd	

Ovanstående produkts prestanda överensstämmer med den prestanda som anges. Denna prestandadeklARATION utfärdas i överensstämmelse med förordning (EU) nr. 305/2011 på eget ansvar av ovanstående tillverkare.

Undertecknad för tillverkaren och på tillverkarens vägnar av:

I originalet undertecknad av:

Civ.ing. Andreas Heck
(Avdelningschef produkt fästteknik)

Künzelsau, 2024-09-03

I originalet undertecknad av:

Dr.-ing. Siegfried Beichter
(Prokurist - produktsäkerhet)

VYHLÁSENIE O VLASTNOSTIACH

Č. 5918605140_02_M_WIT-PE 1000(1)

Jedná sa tu o preloženú nemeckú verziu.
V prípade pochybností platí nemecký originál.

- Jednoznačný identifikačný kód typu výrobku: Würth Injekčný systém WIT-PE 1000
Č. výr.: 5918605140; 5918605440; 5918605585; 591860*;
090546*; 090547*; 59151*; 59152*; 59153*; 59154*;
5916410130; 5916412160; 5916416190;
59156*; 59157*
- Účel(y) použitia: Spojovacie hmoždinky na ukotvenie do betónu
- Výrobca: Adolf Würth GmbH & Co. KG,
Reinhold-Würth-Straße 12 – 17
D – 74653 Künzelsau
- Systém (systémy) na posudzovanie a overovanie odolnosti parametrov: Systém 1
- Európsky vyhodnocovací dokument: EAD 330499-01-0601-v01, Edícia 11/2020
Európske technické posúdenie: ETA-19/0542 – 14.04.2022
Orgán pre technické posudzovanie: Deutsches Institut für Bautechnik (Nemecký inštitút pre stavebnú techniku) (DIBt),
Berlín
Notifikovaný orgán (-y): 2873, Inštitút pre oceľové konštrukcie a mechaniku materiálov (IFSW), Darmstadt
- Vlastnosť (vlastnosti) uvedené vo vyhlásení:

Podstatné znaky	Vlastnosť	Harmonizovaná technická špecifikácia
Mechanická pevnosť a stabilita (BWR 1)		ETA-19/0542 EAD 330499-01-0601-v01
Charakteristická odolnosť pri ťahovom namáhaní (statické a kvázi-statické účinky)	Príloha C 1 až C 6, C 8 až C 11, C 13 až C 16, B3	
Charakteristický odpor pri priečnom namáhaní (statické a kvázi-statické vplyvy)	Príloha C 1, C 7, C 12, C 17	
Posuny pri krátkodobom a dlhodobom zaťažení	Príloha C 18 až C 20	
Charakteristický odpor a posuny pre seizmickú kategóriu parametrov C1 a C2	Príloha C 21 až C 28	
Hygiena, ochrana zdravia a životného prostredia (BWR 3)		
Obsah, emisie a/alebo uvoľňovanie nebezpečných látok	Vlastnosť nie je hodnotená	

Vlastnosť vyššie uvedeného produktu zodpovedá vyhlásenej vlastnosti/vyhláseným vlastnostiam. Za zhotovenie vyhlásenia o parametroch v súlade s Nariadením (EÚ) č. 305/2011 je zodpovedný výhradne hore uvedený výrobca.

Podpísané pre výrobcu a v mene výrobcu:

Pôvodne podpísal:

Dipl.-Ing. Andreas Heck
(vedúci oddelenia výrobkov pre
upevňovacie techniku)

Künzelsau, 03.09.2024

Pôvodne podpísal:

Dr. -Ing. Siegfried Beichter
(Prokurista - bezpečnosť výrobkov)

IZJAVA O LASTNOSTIH

Št. 5918605140_03_M_WIT-PE 1000(1)

To besedilo je prevod iz nemščine.
Ob dvomu velja nemški izvirnik.

- | | |
|---|---|
| 1. Enotna identifikacijska oznaka tipa izdelka: | Vbrizgalni sistem Würth WIT-PE 1000
Št. art.: 5918605140; 5918605440; 5918605585; 591860*;
090546*; 090547*; 59151*; 59152*; 59153*; 59154*;
5916408110; 5916410130; 5916412160; 5916416190;
59156*; 59157* |
| 2. Nameni uporabe: | Lepljeno sidro za sidranje v beton |
| 3. Proizvajalec: | Adolf Würth GmbH & Co. KG,
Reinhold-Würth-Straße 12 – 17
D – 74653 Künzelsau, Nemčija |
| 4. Sistemi za vrednotenje in preverjanje trajnosti lastnosti: | Sistem 1 |
| 5. Evropski ocenjevalni dokument:
Evropsko tehnično vrednotenje:
Organ, ki je opravil tehnično vrednotenje:
Obveščeni organ: | EAD 330499-01-0601-v01, izdaja 11/2020
ETA-19/0542 – 14. 4. 2022
Deutsches Institut für Bautechnik (DIBt), Berlin
2873, Institut für Stahlbau und Werkstoffmechanik (IFSW), Darmstadt |
| 6. Navedene lastnosti: | |

Bistvene značilnosti	Lastnost	Harmonizirana tehnična specifikacija
Mehanska odpornost in stabilnost (BWR 1)		ETA-19/0542 EAD 330499-01-0601-v01
Značilna odpornost pri potezni obremenitvi (statični in kvazistatični učinki)	Priloge od C 1 do C 6, od C 8 do C 11, od C 13 do C 16, B3	
Značilna odpornost pri prečni obremenitvi (statični in kvazistatični učinki)	Priloga C 1, C 7, C 12, C 17	
Premikanje pri kratkotrajni in dolgotrajni obremenitvi	Priloga od C 18 do C 20	
Značilna odpornost in premik pri seizmičnih obremenitvah, kategoriji zmogljivosti C1 in C2	Priloga od C 21 do C 28	
Higiena, zdravje in varovanje okolja (BWR 3)		
Vsebnost, izpusti in/ali sproščanje nevarnih snovi	Lastnost ni ocenjena	

Lastnosti tega izdelka ustrezajo navedenim lastnostim. Za pripravo izjave o lastnostih po uredbi (EU) št. 305/2011 je odgovoren izključno zgoraj navedeni proizvajalec.

Podpis za proizvajalca in v njegovem imenu:

Original podpisal:

Dipl.-Ing. Andreas Heck
(vodja oddelka za tehnologijo
pritrjevanja izdelkov)

Künzelsau, 03. 09. 2024

Original podpisal:

Dr. -Ing. Siegfried Beichter
(prokurist – varnost izdelkov)

PERFORMANS BEYANI**No. 5918605140_03_M_WIT-PE 1000 (1)**

Burada söz konusu olan Almanca dilinden yapılmış bir çeviridir.
Şüpheli durumlarda Almanca orijinal metin geçerli olacaktır.

- Ürün tipinin açık kodu: Würth Enjeksiyon sistemi WIT-PE 1000
Ürün No.: 5918605140; 5918605440; 5918605585; 591860*;
090546*; 090547*; 59151*; 59152*; 59153*; 59154*;
5916408110; 5916410130; 5916412160; 5916416190;
59156*; 59157*
- Kullanma amacı (amaçları): Betona ankraj için kimyasal dübel
- Üretici: Adolf Würth GmbH & Co. KG,
Reinhold-Würth-Straße 12 – 17
D – 74653 Künzelsau
- Performansın sürdürülebilirliğinin değerlendirilmesi ve kontrolü için sistem(lar): Sistem 1
- Avrupa Değerlendirme Belgesi: EAD 330499-01-0601-v01, Baskı 2020
Avrupa Teknik Değerlendirmesi: ETA-19/0542 – 14.04.2022
Teknik Değerlendirme Kuruluşu: Deutsches Institut für Bautechnik (DIBt), Berlin
Akredite kuruluş(lar): 2873, Institut für Stahlbau und Werkstoffmechanik (IFSW), Darmstadt
- Beyan edilen performans(lar):

Önemli özellikler	Performans	Uyumlandırılmış teknik nitelik
Mekanik dayanıklılık ve kararlılık (BWR 1)		ETA-19/0542 EAD 330499-01-0601-v01
Çekme yükü altında karakteristik direnç (statik ve duruğumsu etkiler)	Ek C 1 - C 6, C 8 ila C 11, C 13 ila C 16, B3	
Enine yük altında karakteristik direnç (statik ve duruğumsu etkiler)	Ek C 1, C 7, C 12, C 17	
Kısa ve uzun süreli yük altında kaydırmalar	Ek C 18 ila C 20	
Sismik güç kategorileri C1 ve C2 için karakteristik direnç ve kaydırmalar	Ek C 21 ila C 28	
Hijyen, sağlık ve çevre koruma (BWR 3)		
İçerik, emisyon ve/veya tehlikeli maddelerin açığa çıkması	Performans değerlendirilmedi	

Mevcut ürünün performansı, beyan edilen performans/beyan edilen performanslara uygundur. Performans beyanının 305/2011 numaralı yönetmelikle (AB) uyumlu olarak oluşturulmasından üretici tek başına sorumludur.

Üretici için ve üretici adına imzalayan:

Orijinalini imzalayan:

Yüksek Mühendis Andreas Heck
(Ürün sabitleme teknolojisi departman
yöneticisi)

Künzelsau, 03.09.2024

Orijinalini imzalayan:

Dr. Müh. Siegfried Beichter
(İmza yetkilisi - Ürün güvenliği)