

DECLARATION OF PERFORMANCE
NR. LE_5918420330_00_M_WIT-VM 210(2)

LANGUAGE VERSIONS :

Language	Site
EN	2
ETA-20/0645 (EN)	4
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DECLARATION OF PERFORMANCE

No. 5918420330_00_M_WIT-VM 210(2)

**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-VM 210, WIT-VM 210 Blue, WIT-VM 210 Tropical, WIT-VM 210 Express
[Würth WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Tropical, WIT-VM 210 Express injection system]
Art. no.: 591842*; 591843*; 591844*; 591845* |
| 2. Intended use(s): | Systems for subsequent mortared-in reinforcement attachments |
| 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:
European Technical Assessment:
Technical Assessment Body:
Notified Body or Bodies: | EAD 330087-00-0601, May 2018
ETA-20/0646 - 09/17/2020
Technical and Test Institute for Construction Prague (TZUS)
2873, Institut für Stahlbau und Werkstoffmechanik (IFSW), Darmstadt |
| 6. Declared performance: | |

Essential characteristics	Performance	Harmonized technical specification
Mechanical resistance and stability (BWR 1)		ETA-20/0646 EAD 330087-00-0601
Ultimate bond stresses	See Annex C1	
Reduction factor	See Annex C1	
Increase factor for minimum anchorage length	See Annex C1	
Fire protection (BWR 2)		
Fire behavior	of Class A1 according to EN 13501-1	
Fire resistance	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:




Frank Wolpert

Dr.-Ing. Siegfried Beichter

Authorized Signatory, Head of Product
Management

(Head of Quality, Authorized Signatory)

Künzelsau, January 01, 2021



**Technical and Test Institute
for Construction Prague**

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European Technical Assessment

**ETA 20/0645
of 17/09/2020**

(English language translation, the original version in Czech language)

Technical Assessment Body issuing the ETA: Technical and Test Institute
for Construction Prague

Trade name of the construction product

Würth Injection System WIT-VM 210
WIT-VM 210 Blue
WIT-VM 210 Tropical
WIT-VM 210 Express

**Product family to which the
construction product belongs**

Product area code: 33
Injection anchors for use in masonry

Manufacturer

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

Manufacturing plant(s)

Plant 3, Germany

**This European Technical Assessment
contains**

56 pages including 53 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 330076-00-0604 Metal injection
anchors for use in masonry

Translations of this European Technical Assessment in other languages shall fully correspond to the original issued document and should be identified as such.

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1. Technical description of the product

The WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Express, WIT-VM 210 Tropical for masonry is bonded anchor consisting of a cartridge with injection mortar, a steel element and a plastic sleeve. The steel elements are the commercial threaded rods with hexagon nut and washer. The steel elements are made of galvanized or zinc plated steel, stainless or high corrosion resistance steel.

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

The illustration and the description of the product are given in Annex A.

2. Specification of the intended use in accordance with the applicable EAD

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 provisions made in this European Technical Assessment are based on an assumed working life of the anchor of 50 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 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 values for resistance	Annex C6 to C40
Displacements	Annex C5 to C39
Durability	Annex B1

3.2 Safety in case of fire (BWR 2)

Essential characteristic	Performance
Reaction to fire	Anchorage satisfy requirements for Class A1

3.3 Hygiene, health and environment (BWR 3)

No performance determined.

3.4 General aspects relating to fitness for use

Durability and serviceability are only ensured if the specifications of intended use according to Annex B 1 are taken into account.

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

According to the Decision 97/177/EC of the European Commission¹ the system of assessment verification of constancy of performance (see Annex V to Regulation (EU) No 305/2011) given in the following table applies.

Product	Intended use	Level or class	System
Injection anchors for use in masonry	For fixing and/or supporting to masonry, structural elements (which contributes to the stability of the construction works) or heavy units	-	1

¹ Official Journal of the European Communities L 073 of 14.03.1997

5. Technical details necessary for the implementation of the AVCP system, as provided in the applicable EAD

5.1 Tasks of the manufacturer

The manufacturer may only use raw materials stated in the technical documentation of this European Technical Assessment.

The factory production control shall be in accordance with the control plan which is a part of the technical documentation of this European Technical Assessment. The control plan is laid down in the context of the factory production control system operated by the manufacturer and deposited at Technical and Test Institute for Construction Prague² The results of factory production control shall be recorded and evaluated in accordance with the provisions of the control plan.

5.2 Tasks of the notified bodies

The notified body shall retain the essential points of its actions referred to above and state the results obtained and conclusions drawn in a written report.

The notified certification body involved by the manufacturer shall issue a certificate of constancy of performance of the product stating the conformity with the provisions of this European Technical Assessment.

In cases where the provisions of the European Technical Assessment and its control plan are no longer fulfilled the notified body shall withdraw the certificate of constancy of performance and inform Technical and Test Institute for Construction Prague without delay.

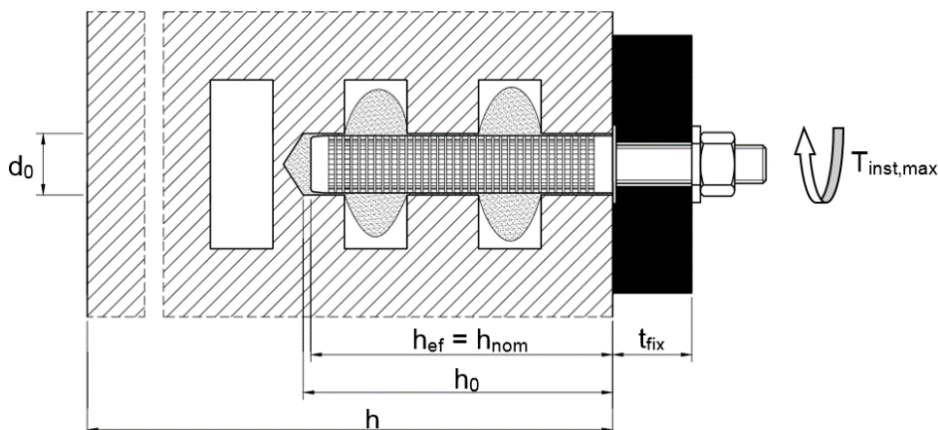
Issued in Prague on 17.09.2020

By

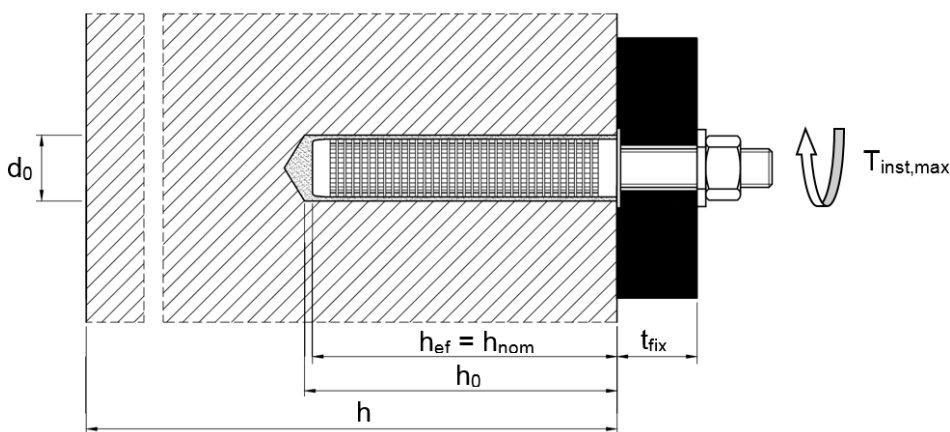
Ing. Mária Schaan
Head of the TAB

² The control plan is a confidential part of the documentation of the European technical assessment, but not published together with the ETA and only handed over to the approved body involved in the procedure of AVCP.

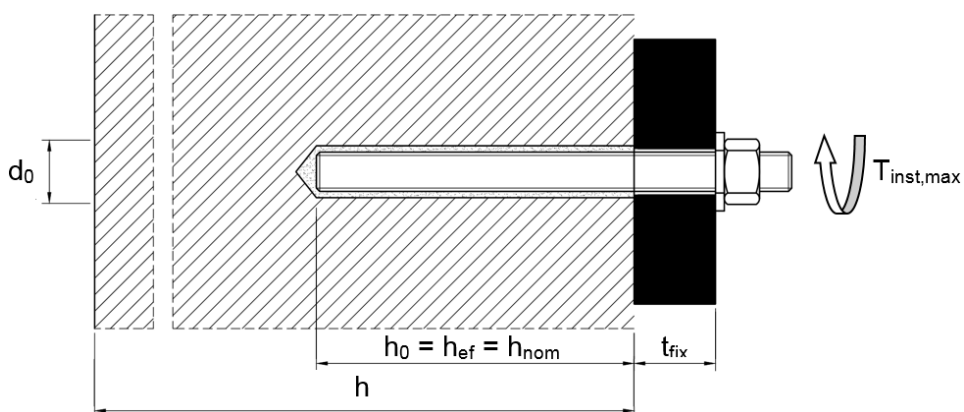
Installation in hollow brick; threaded rod with sleeve



Installation in solid brick; threaded rod with sleeve



Installation in solid brick; threaded rod without sleeve



d_0 = nominal drill hole diameter
 t_{fix} = thickness of fixture
 $T_{inst,max}$ = max installation torque moment

h = thickness of member
 h_0 = depth of drill hole at shoulder
 h_{ef} = effective anchorage depth
 h_{nom} = overall embedment depth

Würth Injection System for masonry
WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Express, WIT-VM 210 Tropical

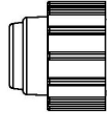
Product description
 Installed condition

Annex A 1

Cartridge: WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Express, WIT-VM 210 Tropical

150 ml, 280 ml, 300 ml up to 333 ml, 380 ml up to 420 ml cartridge (Type: coaxial)

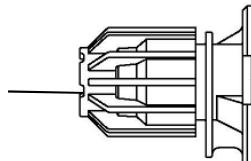
Sealing/Screw cap



Imprint: WIT-VM 210, Blue, Tropical, Express
processing notes, charge-code, shelf life, hazard-code,
storage temperature, curing- and processing time
(depending on the temperature), optional: with travel
scale

235 ml, 345 ml up to 360 ml, 825 ml cartridge (Type: “side-by-side”)

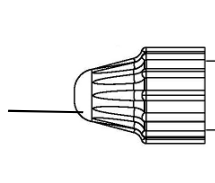
Sealing/Screw cap



Imprint: WIT-VM 210, Blue, Tropical, Express
processing notes, charge-code, shelf life, hazard-code,
storage temperature, curing- and processing time
(depending on the temperature), optional: with travel
scale

165 ml and 300 ml cartridge (Type: “foil tube”)

Sealing/Screw cap



Imprint: WIT-VM 210, Blue, Tropical, Express
processing notes, charge-code, shelf life, hazard-code,
storage temperature, curing- and processing time
(depending on the temperature), optional: with travel
scale

Static mixer

14W



or

Fill & Clean

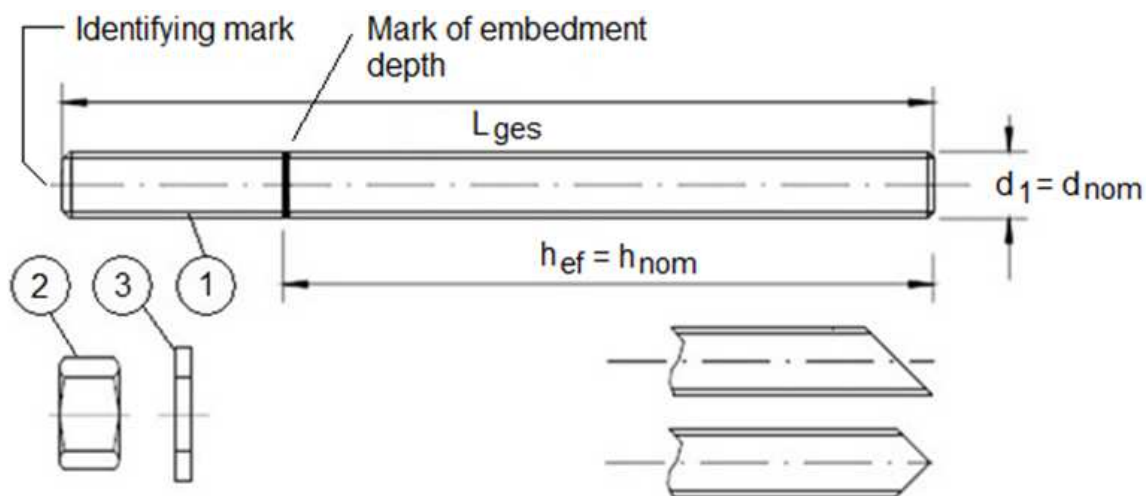


Würth Injection System for masonry
WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Express, WIT-VM 210 Tropical

Product description
Injection system

Annex A 2

Threaded rod M8 / M10 / M12 / M16



Commercial standard threaded rod with:

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

Würth Injection System for masonry
WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Express, WIT-VM 210 Tropical

Product description
 Threaded rod

Annex A 3

Table A1: Materials

Part	Designation	Material		
Steel, zinc plated (Steel acc. to EN 10087:1998 or EN 10263:2001) zinc plated ≥ 5 µm acc. to EN ISO 4042:1999 or hot-dip galvanised ≥ 40 µm acc. to EN ISO 1461:2009 and EN ISO 10684:2004+AC:2009 or sherardized ≥ 40 µm acc. to EN ISO 17668:2016				
1	Anchor rod	Property class acc. to EN ISO 898-1:2013	4.6	f _{uk} =400 N/mm²; f _{yk} =240 N/mm²; A ₅ > 8% fracture elongation
			4.8	f _{uk} =400 N/mm²; f _{yk} =320 N/mm²; A ₅ > 8% fracture elongation
			5.6	f _{uk} =500 N/mm²; f _{yk} =300 N/mm²; A ₅ > 8% fracture elongation
			5.8	f _{uk} =500 N/mm²; f _{yk} =400 N/mm²; A ₅ > 8% fracture elongation
			8.8	f _{uk} =800 N/mm²; f _{yk} =640 N/mm²; A ₅ > 8% fracture elongation
2	Hexagon nut	Property class 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
3	Washer, (e.g.: EN ISO 887:2006, EN ISO 7089:2000, EN ISO 7093:2000 oder EN ISO 7094:2000)	Steel, zinc plated, hot-dip galvanised or sherardized		
Stainless steel A2 (Material 1.4301 / 1.4303 / 1.4307 / 1.4567 or 1.4541, acc. to EN 10088-1:2014) and Stainless steel A4 (Material 1.4401 / 1.4404 / 1.4571 / 1.4362 or 1.4578, acc. to EN 10088-1:2014)				
1	Anchor rod ¹⁾	Property class acc. to EN ISO 3506-1:2009	50	f _{uk} =500 N/mm²; f _{yk} =210 N/mm²; A ₅ > 8% fracture elongation
			70	f _{uk} =700 N/mm²; f _{yk} =450 N/mm²; A ₅ > 8% fracture elongation
			80	f _{uk} =800 N/mm²; f _{yk} =600 N/mm²; A ₅ > 8% fracture elongation
2	Hexagon nut ¹⁾	Property class acc. to EN ISO 3506-1:2009	50	for anchor rod class 50
			70	for anchor rod class 70
			80	for anchor rod class 80
3	Washer, (e.g.: EN ISO 887:2006, EN ISO 7089:2000, EN ISO 7093:2000 oder EN ISO 7094:2000)	A2: Material 1.4301, 1.4303 / 1.4307 / 1.4567 or 1.4541, EN 10088-1:2014 A4: Material 1.4401, 1.4404 / 1.4571 / 1.4362 or 1.4578, EN 10088-1:2014		
High corrosion resistance steel (Material 1.4529 or 1.4565, acc. to EN 10088-1: 2014)				
1	Anchor rod	Property class acc. to EN ISO 3506-1:2009	50	f _{uk} =500 N/mm²; f _{yk} =210 N/mm²; A ₅ > 8% fracture elongation
			70	f _{uk} =700 N/mm²; f _{yk} =450 N/mm²; A ₅ > 8% fracture elongation
			80	f _{uk} =800 N/mm²; f _{yk} =600 N/mm²; A ₅ > 8% fracture elongation
2	Hexagon nut	Property class acc. to EN ISO 3506-1:2009	50	for anchor rod class 50
			70	for anchor rod class 70
			80	for anchor rod class 80
3	Washer, (e.g.: EN ISO 887:2006, EN ISO 7089:2000, EN ISO 7093:2000 oder EN ISO 7094:2000)	Material 1.4529 or 1.4565, acc. to EN 10088-1: 2014		

¹⁾ Strength class 80 only for stainless steel A4

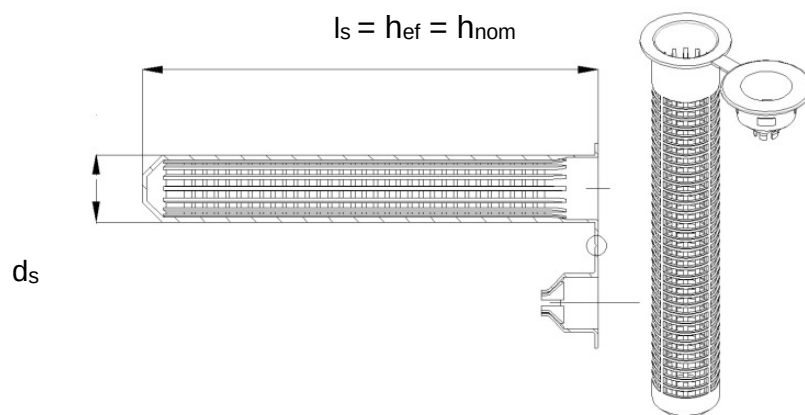
Würth Injection System for masonry
WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Express, WIT-VM 210 Tropical

Product description
 Materials

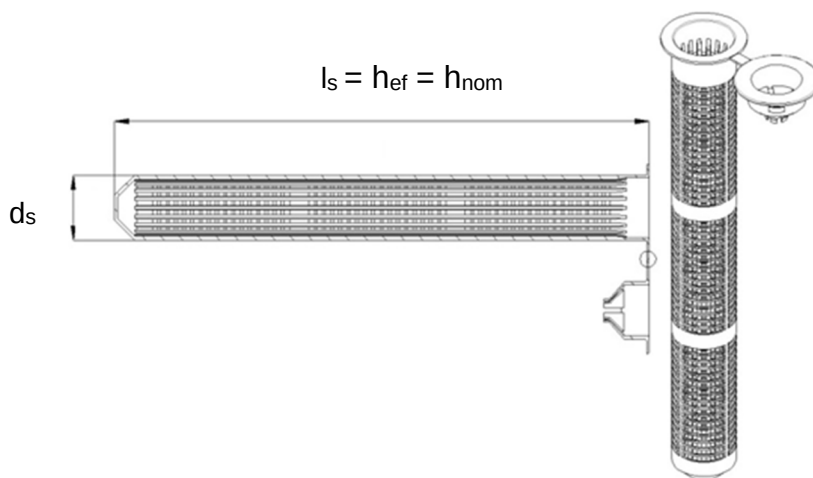
Annex A 4

Sleeve (Plastic)

SH 12x80
SH 16x85
SH 20x85



SH 16x130
SH 20x130
SH 20x200



SH 16x130/330

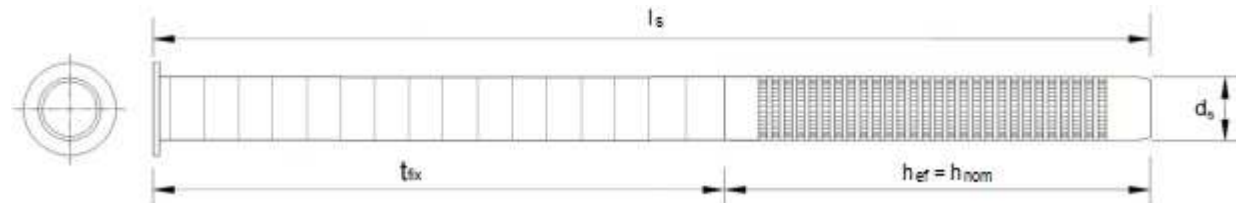


Table A2: Sleeve sizes (mm)

Sleeve			
Size	d_s	l_s	$h_{ef} = h_{nom}$
	[mm]	[mm]	[mm]
SH12x80	12	80	80
SH16x85	16	85	85
SH16x130	16	130	130
SH16x130/330	16	330	130
SH20x85	20	85	85
SH20x130	20	130	130
SH20x200	20	200	200

Würth Injection System for masonry
WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Express, WIT-VM 210 Tropical

Product description
Sleeves

Annex A 5

Specifications of intended use

Anchorage subject to:

- Static and quasi-static loads

Base materials

- Autoclaved Aerated Concrete (Masonry group d) to Annex B2.
- Solid brick masonry (Masonry group b), according to Annex B2 to B4.
- Hollow brick masonry (Masonry group c), according to Annex B2 to B4.
- Mortar strength class of the masonry M2,5 at minimum according to EN 998-2:2010.
- Joints of the masonry must be visible and filled with mortar.
- For other bricks in solid masonry and in hollow or perforated masonry, the characteristic resistance of the anchor may be determined by job site tests according to EOTA Technical Report TR 053 under consideration of the β -factor to Annex C1, Table C1.

Note: The characteristic resistances are also valid for larger brick sizes and larger compressive strength of the masonry unit.

Temperature range:

- T_a: -40°C to +40°C (max. short. term temperature +40°C and max. long term temperature +24°C)
- T_b: -40°C to +80°C (max. short. term temperature +80°C and max. long term temperature +50°C)

Use conditions (Environmental conditions)

- Dry and wet structures (regarding injection mortar).
(X1) Structures subject to dry internal conditions (zinc coated steel, stainless steel A2 resp. A4 or high corrosion resistant steel).
- (X2) Structures subject to external atmospheric exposure (including industrial and marine environment) and to permanently damp internal condition, if no particular aggressive conditions exist (stainless steel A4 or high corrosion resistant steel).
- (X3) Structures subject to external atmospheric exposure and to permanently damp internal condition, if other particular aggressive conditions exist (high corrosion resistant steel).

Note: Particular aggressive conditions are e.g. permanent, alternating immersion in seawater or the splash zone of seawater, chloride atmosphere of indoor swimming pools or atmosphere with extreme chemical pollution (e.g. in desulphurization plants or road tunnels where de-icing materials are used).

Use conditions in respect of installation and use:

- Category d/d: Installation and use in dry masonry
- Category w/w: Installation and use in wet masonry (incl. w/d installation in wet masonry and use in dry masonry)

Design:

- Verifiable calculation notes and drawings are prepared taking account the relevant masonry in the region of the anchorage, the loads to be transmitted and their transmission to the supports of the structure. The position of the anchor is indicated on the design drawings.
- The anchorage are designed in accordance with the EOTA Technical Report TR 054, Design method A under the responsibility of an engineer experienced in anchorages and masonry work.

Installation:

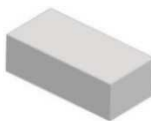
- Dry or wet structures
- Anchor Installation carried out by appropriately qualified personnel and under the supervision of the person responsible for technical matters of the site.

Würth Injection System for masonry
WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Express, WIT-VM 210 Tropical

Intended use
Specifications

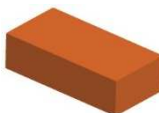
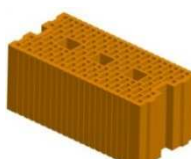
Annex B 1

Table B1: Overview brick types and properties with corresponding fastening elements (Anchors and Sleeves)

Brick-Nr.	Brick type	picture	Brick size Length x width x height	Compressive strength	Bulk density	Sleeve - Anchor type	Annex
			[mm]				
Autoclaved aerated concrete units according EN 771-4							
1	Autoclaved Aerated Concrete AAC2		599 x 375 x 249	2	0,35	M8 / M10 / M12 / M16	C4 / C5
2	Autoclaved Aerated Concrete AAC4		499 x 375 x 249	4	0,5	M8 / M10 / M12 / M16	C6 / C7
3	Autoclaved Aerated Concrete AAC6		499 x 240 x 249	6	0,6	M8 / M10 / M12 / M16	C8 / C9
Calcium silicate masonry units according EN 771-2							
4	Calcium silicate solid brick KS-NF		240 x 115 x 71	10 20 27	2,0	M8 / M10 / M12 / M16 SH 12x80 – M8 SH 16x85 – M8 / M10 SH 16x130 – M8 / M10 SH 16x130/330 - M8 / M10 SH 20x85 – M12 / M16 SH 20x130 – M12 / M16 SH 20x200 – M12 / M16	C10 / C11
5	Calcium silicate hollow brick KS L-3DF		240 x 175 x 113	8 12 14	1,4	SH 12x80 – M8 SH 16x85 – M8 / M10 SH 16x130 – M8 / M10 SH 16x130/330 - M8 / M10 SH 20x85 – M12 / M16 SH 20x130 – M12 / M16 SH 20x200 – M12 / M16	C12 / C13
6	Calcium silicate hollow brick KS L-12DF		498 x 175 x 238	10 12 16	1,4	SH 12x80 – M8 SH 16x85 – M8 / M10 SH 16x130 – M8 / M10 SH 16x130/330 - M8 / M10 SH 20x130 – M12 / M16	C14 / C15

Würth Injection System for masonry WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Express, WIT-VM 210 Tropical		Annex B 2
Intended use Brick types and properties with corresponding fastening elements		

Table B1: Overview brick types and properties with corresponding fastening elements (Anchors and Sleeves)

Brick-Nr.	Brick type	picture	Brick size Length x width x height	Compressive strength	Bulk density	Sleeve - Anchor type	Annex
			[mm]	[N/mm ²]	[kg/dm ³]		
Clay masonry units according EN 771-1							
7	Clay solid brick Mz – DF		240 x 115 x 55	10 20 28	1,64	M8 / M10 / M12 / M16 SH 12x80 – M8 SH 16x85 – M8 / M10 SH 16x130 – M8 / M10 SH 16x130/330 - M8 / M10 SH 20x85 – M12 / M16 SH 20x130 – M12 / M16 SH 20x200 – M12 / M16	C16 / C17
8	Clay hollow brick HLz-16DF		497 x 240 x 238	6 9 12 14	0,83	SH 12x80 – M8 SH 16x85 – M8 / M10 SH 16x130 – M8 / M10 SH 16x130/330 - M8 / M10 SH 20x85 – M12 / M16 SH 20x130 – M12 / M16 SH 20x200 – M12 / M16	C18 / C19
9	Clay hollow brick Porotherm Homebric		500 x 200 x 299	6 8 10	0,68	SH 12x80 – M8 SH 16x85 – M8 / M10 SH 16x130 – M8 / M10 SH 16x130/330 - M8 / M10 SH 20x85 – M12 / M16 SH 20x130 – M12 / M16	C20 / C21
10	Clay hollow brick BGV Thermo		500 x 200 x 314	4 6 10	0,62	SH 12x80 – M8 SH 16x85 – M8 / M10 SH 16x130 – M8 / M10 SH 16x130/330 - M8 / M10 SH 20x85 – M12 / M16 SH 20x130 – M12 / M16	C22 / C23
11	Clay hollow brick Calibric Th		500 x 200 x 314	6 9 12	0,62	SH 12x80 – M8 SH 16x85 – M8 / M10 SH 16x130 – M8 / M10 SH 16x130/330 - M8 / M10 SH 20x85 – M12 / M16 SH 20x130 – M12 / M16	C24 / C25
12	Clay hollow brick Urbanbric		560 x 200 x 274	6 9	0,74	SH 12x80 – M8 SH 16x85 – M8 / M10 SH 16x130 – M8 / M10 SH 16x130/330 - M8 / M10 SH 20x85 – M12 / M16 SH 20x130 – M12 / M16	C26 / C27

Würth Injection System for masonry
WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Express, WIT-VM 210 Tropical

Intended use
 Brick types and properties with corresponding fastening elements

Annex B 3

Table B1: Overview brick types and properties with corresponding fastening elements (Anchors and Sleeves)

Brick-Nr.	Brick type	picture	Brick size Length x width x height	Compressive strength	Bulk density	Sleeve - Anchor type	Annex
			[mm]	[N/mm²]	[kg/dm³]		
Clay masonry units according EN 771-1							
13	Clay hollow brick Blocchi Leggeri		250 x 120 x 250	4 6 8	0,55	SH 12x80 – M8 SH 16x85 – M8 / M10 SH 16x130 – M8 / M10 SH 16x130/330 - M8 / M10 SH 20x85 – M12 / M16 SH 20x130 – M12 / M16 SH 20x200 – M12 / M16	C28 / C29
14	Clay hollow brick Doppio Uni		250 x 120 x 120	10 16 20 28	0,92	SH 12x80 – M8 SH 16x85 – M8 / M10 SH 16x130 – M8 / M10 SH 16x130/330 - M8 / M10 SH 20x85 – M12 / M16 SH 20x130 – M12 / M16 SH 20x200 – M12 / M16	C30 / C31
Light weight concrete according EN 771-3							
15	Hollow light weight concrete Bloc creux B40		494 x 200 x 190	4	0,80	SH 12x80 – M8 SH 16x85 – M8 / M10 SH 16x130 – M8 / M10 SH 16x130/330 - M8 / M10 SH 20x85 – M12 / M16 SH 20x130 – M12 / M16	C32 / C33
16	Solid light weight concrete		300 x 123 x 248	2	0,63	M8 / M10 / M12 / M16	C34 / C35
17	Hollow light weight Leca Lex harkko RUH- 200		498 x 200 x 195	2,7	0,62	SH 12x80 – M8 SH 16x85 – M8 / M10 SH 16x130 – M8 / M10 SH 16x130/330 - M8 / M10 SH 20x85 – M12 / M16 SH 20x130 – M12 / M16	C36 / C37
18	Solid light weight Leca Lex RUH-200 Kulma		498 x 200 x 195	3	0,62	M8 / M10 / M12 / M16 SH 12x80 – M8 SH 16x85 – M8 / M10 SH 16x130 – M8 / M10 SH 16x130/330 - M8 / M10 SH 20x85 – M12 / M16 SH 20x130 – M12 / M16	C38 / C39
Würth Injection System for masonry WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Express, WIT-VM 210 Tropical						Annex B 4	
Intended use Brick types and properties with corresponding fastening elements							

Installation: Steel brush WIT-RMB



Table B2: Installation parameters in Autoclaved Aerated Concrete AAC and solid masonry (without sleeve)

Threaded rod			M8	M10	M12	M16
Nominal drill hole diameter	d_0	[mm]	10	12	14	18
Drill hole depth	h_0	[mm]	80	90	100	100
Effective anchorage depth	$h_{ef} = h_{nom}$	[mm]	80	90	100	100
Minimum wall thickness	h_{min}	[mm]	$h_{ef} + 30$			
Diameter of clearance hole in the fixture	$d_r \leq$	[mm]	9	12	14	18
Diameter of Steel brush	$d_b \geq$	[mm]	WIT-RMB10	WIT-RMB12	WIT-RMB14	WIT-RMB18
			12	14	16	20
Minimum diameter of steel brush	$d_{b,min}$	[mm]	10,5	12,5	14,5	18,5
Max torque moment	T_{inst}	[Nm]	See parameters of brick Annex C4 to Annex C39			

Table B3: Installation parameters in solid and hollow masonry (with sleeve)

Threaded rod			M8	M8 / M10			M12 / M16		
Sleeve		[mm]	SH12x80	SH16x85	SH16x130	SH16x130/ 330	SH20x85	SH20x130	SH20x200
Nominal drill hole diameter	d ₀	[mm]	12	16	16	16	20	20	20
Drill hole depth	h _o	[mm]	85	90	135	135 +t _{fix} ¹⁾	90	135	205
Effective anchorage depth	h _{ef} = h _{nom}	[mm]	80	85	130	130	85	130	200
Minimum wall thickness	h _{min}	[mm]	115	115	195	195	115	195	240
Diameter of clearance hole in the fixture	d _f ≤	[mm]	9	9 (M8) / 12 (M10)			14 (M12) / 18 (M16)		
Diameter of brush	d _b ≥	[mm]	WIT-RMB12	WIT-RMB16			WIT-RMB20		
			14	18			22		
Minimum diameter of brush	d _{b,min}	[mm]	12,5	16,5			20,5		
Max torque moment	T _{inst}	[Nm]	See parameters of brick Annex C4 to Annex C39						

¹⁾ $t_{fix} < 200$ mm

Würth Injection System for masonry
WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Express, WIT-VM 210 Tropical

Intended use
 Installation parameters and cleaning brush

Annex B 5

Table B4: Maximum working time and minimum curing time

Temperature in the base material	WIT-VM 210 Tropical		WIT-VM 210, WIT-VM 210 Blue¹⁾		WIT-VM 210 Express	
	Max. working time	Min. curing time	Max. working time	Min. curing time	Max. working time	Min. curing time
0°C to +4°C			45 min	3 h	25 min	80 min
+5°C to +9°C			25 min	2 h	10 min	45 min
+10°C to +14°C	30 min	5 h	20 min	100 min	4 min	25 min
+15°C to +19°C	20 min	210 min	15 min	80 min	3 min	20 min
+20°C to +29°C	15 min	145 min	6 min	45 min	2 min	15 min
+30°C to +34°C	10 min	80 min	4 min	25 min		
+35°C to +39°C	6 min	45 min	2 min	20 min		
+40°C to +44°C	4 min	25 min				
+45°C	2 min	20 min				
Cartridge temperature	+5°C to +45°C		+5°C to +40°C		-5°C to +30°C	

¹⁾ The WIT-VM 210 Blue injection mortar has a curing time proof by changing the color from blue to gray after curing minimum time. The curing time proof is only valid for the standard version of the mortar.

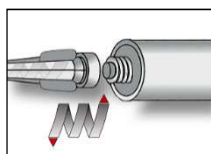
Würth Injection System for masonry
WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Express, WIT-VM 210 Tropical

Intended use
 Working and curing time

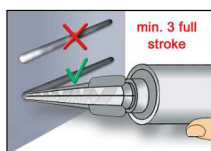
Annex B 6

Installation instructions

Preparation of cartridge

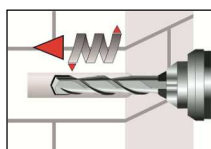


1. Remove the cap and attach the supplied static-mixing nozzle to the cartridge and load the cartridge into the correct dispensing tool. In case of a foil tube cartridge, cut off the clip before use. For every working interruption longer than the recommended working time (Table B4) as well as for new cartridges, a new static-mixer shall be used.

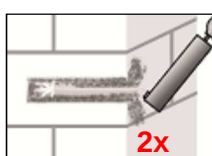
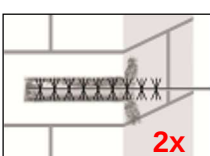
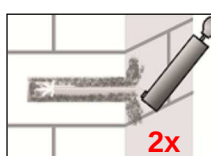


2. Prior to dispensing into the anchor hole, squeeze out separately a minimum of three full strokes, for foil tube cartridges six full strokes, and discard non-uniformly mixed adhesive components until the mortar shows a consistent grey or blue (WIT-VM 210 Blue) colour.

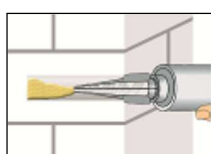
Installation in solid masonry (without sleeve)



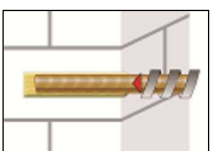
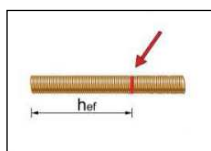
3. Holes to be drilled perpendicular to the surface of the base material by using a hard-metal tipped hammer drill bit. Drill a hole, with drill method according to Annex C4 – C39, into the base material, with nominal drill hole diameter and bore hole depth acc. to the size and embedment depth required by the selected anchor. In case of aborted drill hole the drill hole shall be filled with mortar.



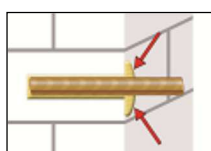
4. Blow out from the bottom of the drill hole two times. Attach the appropriate sized brush ($> d_{b,min}$ Table B2 or B3) to a drilling machine or a battery screwdriver, brush the hole clean two times, and finally blow out the hole again two times.



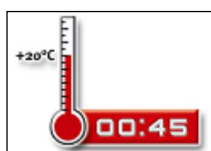
5. Starting from the bottom or back of the cleaned anchor hole fill the hole up to approximately two-thirds with adhesive. Slowly withdraw the static mixing nozzle as the hole fills to avoid creating air pockets. Observe the gel-/ working times given in Table B4.



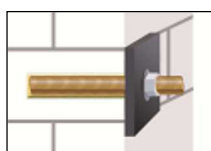
6. The position of the embedment depth shall be marked on the threaded rod. Push the threaded rod into the drill hole while turning slightly to ensure positive distribution of the adhesive until the embedment depth is reached. The anchor shall be free of dirt, grease, oil or other foreign material.



7. Be sure that the annular gap is fully filled with mortar. If no excess mortar is visible at the top of the hole, the application has to be renewed.



8. Allow the adhesive to cure to the specified time prior to applying any load or torque. Do not move or load the anchor until it is fully cured (attend Table B4).



9. After full curing, the fixture can be installed with up to the max. torque (see parameters of brick Annex C5 to Annex C39) by using a calibrated torque wrench.

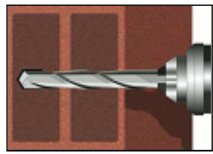
Würth Injection System for masonry
WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Express, WIT-VM 210 Tropical

Intended use
Installation instruction Solid masonry and Autoclaved Aerated Concrete

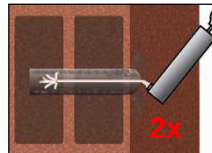
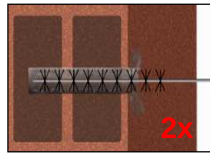
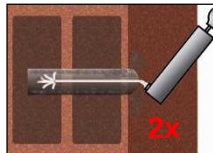
Annex B 7

Installation instructions (continuation)

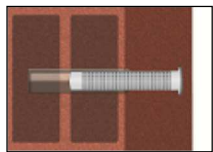
Installation in solid and hollow masonry (with sleeve)



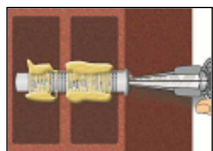
3. Holes to be drilled perpendicular to the surface of the base material by using a hard-metal tipped hammer drill bit. Drill a hole, with drill method according to Annex C4 – C39, into the base material, with nominal drill hole diameter and drill hole depth acc. to the size and embedment depth required by the selected anchor. In case of aborted drill hole the drill hole shall be filled with mortar.



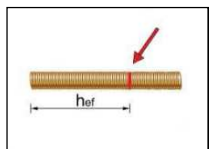
4. Blow out from the bottom of the drill hole two times. Attach the appropriate sized brush ($> d_{b,min}$ Table B2 or B3) to a drilling machine or a battery screwdriver, brush the hole clean two times, and finally blow out the hole again two times.



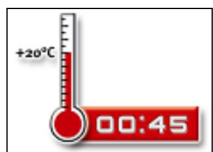
5. Insert the sleeve flush with the surface of the masonry. Only use sleeves that have the right length. Never cut the sleeve except the sleeve 16x130/330. For installing the sleeve 16x130/330 measure the required length of sleeve, cut the sleeve from the top and set the cap on it before pushing it through the fixing element.



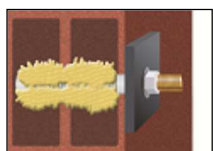
6. Starting from the bottom or back fill the sleeve with adhesive. For quantity of mortar attend cartridges label or installation instructions. Observe the gel-/ working times given in Table B4.



7. The position of the embedment depth shall be marked on the threaded rod. Push the threaded rod into the drill hole while turning slightly to ensure positive distribution of the adhesive until the embedment depth is reached. The anchor shall be free of dirt, grease, oil or other foreign material.



8. Allow the adhesive to cure to the specified curing time prior to applying any load or torque. Do not move or load the anchor until it is fully cured (attend Table B4).



9. After full curing, the fixture can be installed with up to the max. torque (see parameters of brick Annex C5 to Annex C39) by using a calibrated torque wrench.

Würth Injection System for masonry
WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Express, WIT-VM 210 Tropical

Intended use
Installation instructions (hollow brick) and Solid lightweight Concrete

Annex B 8

Table C1: β -factors for job-site testing under tension loading

Brick-Nr.	Installation & Use conditions	Anchor size	β -factor	
			T _a : 24°C / 40°C	T _b : 50°C / 80°C
1-3	d/d	M8	0,82	0,70
		M10		
		M12	0,70	0,60
		M16		
	w/w	M8	0,82	0,70
		M10	0,63	0,54
		M12	0,48	0,41
		M16		
4-18	d/d w/d w/w	For all anchor	0,72	0,50

Würth Injection System for masonry
WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Express, WIT-VM 210 Tropical

Performances
 β -factors for job site testing under tension load

Annex C 1

Table C2: Characteristic tension, shear resistance and bending moment of threaded rod

Size			M8	M10	M12	M16
Characteristic tension resistance						
steel, property class 4.6 ²⁾	N _{Rk,s}	[kN]	15 (13)	23 (21)	34	63
	γ _{Ms} ¹⁾	[-]	2,0			
steel, property class 4.8 ²⁾	N _{Rk,s}	[kN]	15 (13)	23 (21)	34	63
	γ _{Ms} ¹⁾	[-]	1,5			
steel, property class 5.6 ²⁾	N _{Rk,s}	[kN]	18 (17)	29 (27)	42	79
	γ _{Ms} ¹⁾	[-]	2,0			
steel, property class 5.8 ²⁾	N _{Rk,s}	[kN]	18 (17)	29 (27)	42	79
	γ _{Ms} ¹⁾	[-]	1,5			
steel, property class 8.8 ²⁾	N _{Rk,s}	[kN]	29 (27)	46 (43)	67	126
	γ _{Ms} ¹⁾	[-]	1,5			
Stainless steel A2 / A4 / HCR, property class 70	N _{Rk,s}	[kN]	26	41	59	110
	γ _{Ms} ¹⁾	[-]	1,87			
Stainless steel A4 / HCR, property class 80	N _{Rk,s}	[kN]	29	46	67	126
	γ _{Ms} ¹⁾	[-]	1,6			
Characteristic shear resistance						
steel, property class 4.6 ²⁾	V _{Rk,s}	[kN]	7 (7)	12 (11)	17	31
	γ _{Ms} ¹⁾	[-]	1,67			
steel, property class 4.8 ²⁾	V _{Rk,s}	[kN]	7 (7)	12 (11)	17	31
	γ _{Ms} ¹⁾	[-]	1,25			
steel, property class 5.6 ²⁾	V _{Rk,s}	[kN]	9 (8)	15 (13)	21	39
	γ _{Ms} ¹⁾	[-]	1,67			
steel, property class 5.8 ²⁾	V _{Rk,s}	[kN]	9 (8)	15 (13)	21	39
	γ _{Ms} ¹⁾	[-]	1,25			
steel, property class 8.8 ²⁾	V _{Rk,s}	[kN]	15 (13)	23 (21)	34	63
	γ _{Ms} ¹⁾	[-]	1,25			
Stainless steel A2 / A4 / HCR, property class 70	V _{Rk,s}	[kN]	13	20	30	55
	γ _{Ms} ¹⁾	[-]	1,56			
Stainless steel A4 / HCR, property class 80	V _{Rk,s}	[kN]	15	23	34	63
	γ _{Ms} ¹⁾	[-]	1,33			
Characteristic bending moment						
steel, property class 4.6 ²⁾	M _{Rk,s}	[Nm]	15 (13)	30 (27)	52	133
	γ _{Ms} ¹⁾	[-]	1,67			
steel, property class 4.8 ²⁾	M _{Rk,s}	[Nm]	15 (13)	30 (27)	52	133
	γ _{Ms} ¹⁾	[-]	1,25			
steel, property class 5.6 ²⁾	M _{Rk,s}	[Nm]	19 (16)	37 (33)	65	166
	γ _{Ms} ¹⁾	[-]	1,67			
steel, property class 5.8 ²⁾	M _{Rk,s}	[Nm]	19 (16)	37 (33)	65	166
	γ _{Ms} ¹⁾	[-]	1,25			
steel, property class 8.8 ²⁾	M _{Rk,s}	[Nm]	30 (26)	60 (53)	105	266
	γ _{Ms} ¹⁾	[-]	1,25			
Stainless steel A2 / A4 / HCR, property class 70	M _{Rk,s}	[Nm]	26	52	92	232
	γ _{Ms} ¹⁾	[-]	1,56			
Stainless steel A4 / HCR, property class 80	M _{Rk,s}	[Nm]	30	60	105	266
	γ _{Ms} ¹⁾	[-]	1,33			

¹⁾ In absence of national regulations

²⁾ Values in brackets valid for hot dipped galvanized undersized threaded rods with smaller stress area A_s according to EN ISO 10684:2004+AC:2009

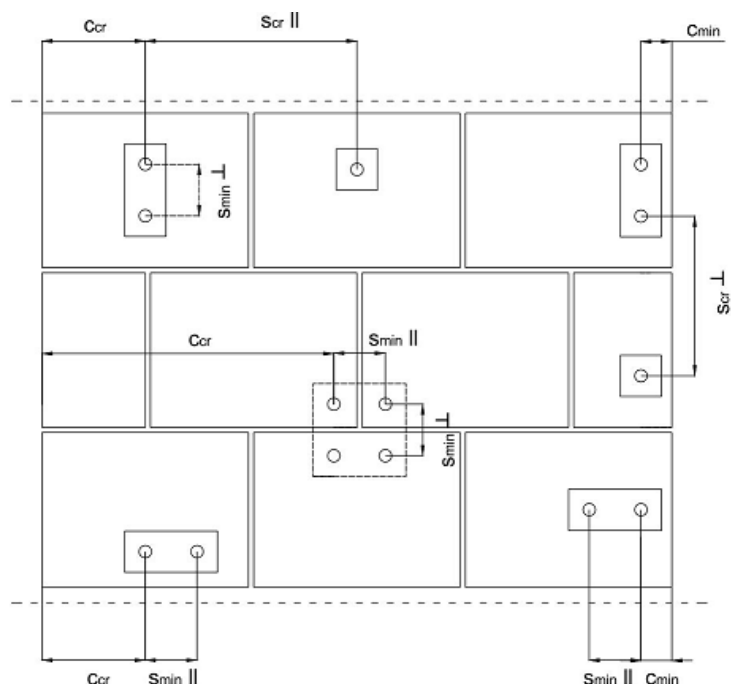
Würth Injection System for masonry
WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Express, WIT-VM 210 Tropical

Performances

Characteristic tension, shear resistance and bending moment of threaded rod

Annex C 2

Spacing and edge distances



- C_{cr} = Characteristic edge distance
 C_{min} = Minimum edge distance
 S_{cr} = Characteristic spacing
 S_{min} = Minimum spacing
 $S_{cr II}$; ($S_{min II}$) = Characteristic (minimum) spacing for anchors placed parallel to bed joint
 $S_{cr \perp}$; ($S_{min \perp}$) = Characteristic (minimum) spacing for anchors placed perpendicular to bed joint

Anchor position \ Load direction	Tension load	Shear load parallel to free edge	Shear load perpendicular to free edge
Anchors places parallel to bed joint $S_{cr II}$; ($S_{min II}$)			
Anchors places perpendicular to bed joint $S_{cr \perp}$; ($S_{min \perp}$)			

- $\alpha_{g,N,II}$ = Group factor in case of tension load for anchors placed parallel to the bed joint
 $\alpha_{g,V,II}$ = Group factor in case of shear load for anchors placed parallel to the bed joint
 $\alpha_{g,N,\perp}$ = Group factor in case of tension load for anchors placed perpendicular to the bed joint
 $\alpha_{g,V,\perp}$ = Group factor in case of shear load for anchors placed perpendicular to the bed joint

Group of two anchors: $N_{Rk} = \alpha_{g,N} * N_{Rk}$

and $V_{Rk} = \alpha_{g,V} * V_{Rk}$

Group of four anchors: $N_{Rk} = \alpha_{g,N,II} * \alpha_{g,N,\perp} * N_{Rk}$

and $V_{Rk} = \alpha_{g,V,II} * \alpha_{g,V,\perp} * V_{Rk}$

(N_{Rk} : $N_{Rk,b}$ or $N_{Rk,b,j}$ for C_{cr})

(V_{Rk} : $V_{Rk,c}$; $V_{Rk,c,j}$; $V_{Rk,b}$ or $V_{Rk,b,j}$ for C_{cr})

(with the relevant α_g)

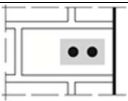
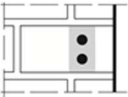
Würth Injection System for masonry
WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Express, WIT-VM 210 Tropical

Performances
 Edge distance and anchor spacing

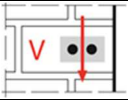
Annex C 3

Group factor, valid for all brick types

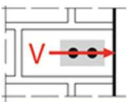
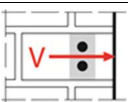
Group factor for anchor group in case of tension loading

Configuration		with $c \geq$	with $s \geq$			
II: anchors placed parallel to horizontal joint		C_{cr}	S_{cr}	$\alpha_{g,N,II}$	[-]	2,0
I: anchors placed perpendicular to horizontal joint		C_{cr}	S_{cr}	$\alpha_{g,N,I}$		2,0

Group factor for anchor group in case of shear loading parallel to free edge

Configuration		with $c \geq$	with $s \geq$			
II: anchors placed parallel to horizontal joint		C_{cr}	S_{cr}	$\alpha_{g,V,II}$	[-]	2,0
I: anchors placed perpendicular to horizontal joint		C_{cr}	S_{cr}	$\alpha_{g,V,I}$		2,0

Group factor for anchor group in case of shear loading perpendicular to free edge

Configuration		with $c \geq$	with $s \geq$			
II: anchors placed parallel to horizontal joint		C_{cr}	S_{cr}	$\alpha_{g,V,II}$	[-]	2,0
I: anchors placed perpendicular to horizontal joint		C_{cr}	S_{cr}	$\alpha_{g,V,I}$		2,0

Würth Injection System for masonry
WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Express, WIT-VM 210 Tropical

Performances
Group factor

Annex C 4

Brick type: Autoclaved Aerated Concrete – AAC2

Table C3: Description

Brick type	Autoclaved Aerated Concrete AAC2	
Bulk density [kg/dm ³]	0,35	
Compressive strength [N/mm ²]	2	
Code	EN 771-4	
Producer (country code)	e.g. Ytong (CZ)	
Brick dimensions [mm]	599 x 375 x 249	
Drilling method	Rotary drilling	

Table C4: Installation parameter (Edge and spacing distances)

Anchor size	Effective anchorage depth	Edge distance	Spacing	Maximum installation torque
	h_{ef}	$c_{min} = c_{cr}$	$s_{cr} = s_{min \parallel} = s_{min \perp}$	$T_{inst,max}$
	[mm]			[Nm]
M8	80	120	240	2
M10	90	135	270	
M12	100	150	300	
M16	100	150	300	

Table C5: Displacement

Effective anchorage depth h_{ef}	N	δ_{N0}	$\delta_{N\infty}$	V	δ_{V0}	$\delta_{V\infty}$
[mm]	[kN]	[mm]	[mm]	[kN]	[mm]	[mm]
80	$\frac{N_{Rk}}{1,4 \cdot \gamma_M}$	0,29	0,58	$\frac{V_{Rk}}{1,4 \cdot \gamma_M}$	1,23	1,84
90		0,23	0,46		0,87	1,31
100		0,39	0,79		1,29	1,94

Würth Injection System for masonry
WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Express, WIT-VM 210 Tropical

Performance Autoclaved Aerated Concrete – AAC2

Brick description, drawing,
 Installation parameters, Displacements

Annex C 5

Brick type: Autoclaved Aerated Concrete AAC2

Table C6: Characteristic values of resistance under tension and shear loads

Anchor size	Effective anchorage depth	Characteristic resistance				
		Use conditions				
		d/d		w/d w/w		d/d w/d w/w
		40°C / 24°C	80°C / 50°C	40°C / 24°C	80°C / 50°C	For all temperature range
	h _{ef}	N _{Rk} ¹⁾	N _{Rk} ¹⁾	N _{Rk} ¹⁾	N _{Rk} ¹⁾	V _{Rk,b} ²⁾
	[mm]	[kN]				
Compressive strength f _b ≥ 2 N/mm ²						
M8	80	0,9	0,9	0,9	0,9	1,5
M10	90	0,9	0,9	0,9	0,75	2,0
M12	100	1,5	1,5	1,2	0,9	2,5
M16	100	1,5	1,5	1,2	0,9	3,5

¹⁾ For design according TR 054: $N_{Rk} = N_{Rk,p} = N_{Rk,b}$; $N_{Rk,s}$ according to Table C2 Annex C2; Calculation $N_{Rk,pb}$ see TR 054

²⁾ For $V_{Rk,s}$ see Annex C 2, Table C2; Calculation of $V_{Rk,pb}$ and $V_{Rk,c}$ see TR 054

Würth Injection System for masonry
WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Express, WIT-VM 210 Tropical

Performance Autoclaved Aerated Concrete – AAC2
 Characteristic values of resistance under tension and shear load

Annex C 6

Brick type: Autoclaved Aerated Concrete AAC4

Table C7: Description

Brick type	Autoclaved Aerated Concrete AAC4	
Bulk density [kg/dm ³]	0,50	
Compressive strength [N/mm ²]	4	
Code	EN 771-4	
Producer (country code)	e.g. Ytong (CZ)	
Brick dimensions [mm]	499 x 375 x 249	
Drilling method	Rotary drilling	

Table C8: Installation parameter (Edge and spacing distances)

Anchor size	Effective anchorage depth	Edge distance	Spacing	Maximum installation torque
	h_{ef}	$c_{min} = c_{cr}$	$s_{cr} = s_{min \parallel} = s_{min \perp}$	$T_{inst,max}$
		[mm]		[Nm]
M8	80	120	240	2
M10	90	135	270	
M12	100	150	300	
M16	100	150	300	

Table C9: Displacement

Effective anchorage depth h_{ef}	N	δ_{N0}	$\delta_{N\infty}$	V	δ_{V0}	$\delta_{V\infty}$
[mm]	[kN]	[mm]	[mm]	[kN]	[mm]	[mm]
80	$\frac{N_{Rk}}{1,4 \cdot \gamma_M}$	0,23	0,47	$\frac{V_{Rk}}{1,4 \cdot \gamma_M}$	1,23	1,84
90		0,58	1,17		0,87	1,31
100		0,10	0,21		1,29	1,94

Würth Injection System for masonry
WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Express, WIT-VM 210 Tropical

Performance Autoclaved Aerated Concrete – AAC4
 Brick description, drawing,
 Installation parameters, Displacement

Annex C 7

Brick type: Autoclaved Aerated Concrete AAC4

Table C10: Characteristic values of resistance under tension and shear loads

Anchor size	Effective anchorage depth	Characteristic resistance				
		Use conditions				
		d/d		w/d w/w		d/d w/d w/w
		40°C / 24°C	80°C / 50°C	40°C / 24°C	80°C / 50°C	For all temperature range
	h _{ef}	N _{Rk} ¹⁾	N _{Rk} ¹⁾	N _{Rk} ¹⁾	N _{Rk} ¹⁾	V _{Rk,b} ²⁾
	[mm]	[kN]				
Compressive strength f _b ≥ 4 N/mm ²						
M8	80	0,9	0,9	0,9	0,9	1,5
M10	90	2,5	2,0	1,5	1,5	2,0
M12	100	2,5	2,0	2,0	1,5	2,5
M16	100	3,5	3,0	2,0	2,0	3,5

¹⁾ For design according TR 054: $N_{Rk} = N_{Rk,p} = N_{Rk,b}$; $N_{Rk,s}$ according to Table C2 Annex C2; Calculation $N_{Rk,pb}$ see TR 054

²⁾ For $V_{Rk,s}$ see Annex C 2, Table C2; Calculation of $V_{Rk,pb}$ and $V_{Rk,c}$ see TR 054

Würth Injection System for masonry
WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Express, WIT-VM 210 Tropical

Performance Autoclaved Aerated Concrete – AAC4
 Characteristic values of resistance under tension and shear load

Annex C 8

Brick type: Autoclaved Aerated Concrete AAC6

Table C11: Description

Brick type	Autoclaved Aerated Concrete AAC6	
Bulk density [kg/dm ³]	0,60	
Compressive strength [N/mm ²]	6	
Code	EN 771-4	
Producer (country code)	e.g. Porit (DE)	
Brick dimensions [mm]	499 x 240 x 249	
Drilling method	Rotary drilling	

Table C12: Installation parameter (Edge and spacing distances)

Anchor size	Effective anchorage depth	Edge distance	Spacing	Maximum installation torque
	h_{ef}	$c_{min} = c_{cr}$	$s_{cr} = s_{min \parallel} = s_{min \perp}$	$T_{inst,max}$
	[mm]			[Nm]
M8	80	120	240	2
M10	90	135	270	
M12	100	150	300	
M16	100	150	300	

Table C13: Displacement

Effective anchorage depth h_{ef}	N	δ_{N0}	$\delta_{N\infty}$	V	δ_{V0}	$\delta_{V\infty}$
[mm]	[kN]	[mm]	[mm]	[kN]	[mm]	[mm]
80	$\frac{N_{Rk}}{1,4 \cdot \gamma_M}$	0,54	1,09	$\frac{V_{Rk}}{1,4 \cdot \gamma_M}$	0,32	0,48
90		0,85	1,69		1,49	2,23
100		0,10	0,19		1,67	2,50

Würth Injection System for masonry
WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Express, WIT-VM 210 Tropical

Performance Autoclaved Aerated Concrete – AAC6

Brick description, drawing,
 Installation parameters, Displacements

Annex C 9

Brick type: Autoclaved Aerated Concrete AAC6

Table C14: Characteristic values of resistance under tension and shear loads

Anchor size	Effective anchorage depth	Characteristic resistance				
		Use conditions				
		d/d		w/d w/w		d/d w/d w/w
		40°C / 24°C	80°C / 50°C	40°C / 24°C	80°C / 50°C	For all temperature range
	h _{ef}	N _{Rk} ¹⁾	N _{Rk} ¹⁾	N _{Rk} ¹⁾	N _{Rk} ¹⁾	V _{Rk,b} ²⁾
	[mm]	[kN]				
Compressive strength f _b ≥ 6 N/mm ²						
M8	80	2,0	2,0	2,0	2,0	5,5
M10	90	3,0	2,5	2,5	2,0	9,0
M12	100	4,5	3,5	3,0	2,5	9,0
M16	100	5,5	4,5	3,5	3,0	11,0

¹⁾ For design according TR 054: $N_{Rk} = N_{Rk,p} = N_{Rk,b}$; $N_{Rk,s}$ according to Table C2 Annex C2; Calculation $N_{Rk,pb}$ see TR 054

²⁾ For $V_{Rk,s}$ see Annex C 2, Table C2; Calculation of $V_{Rk,pb}$ and $V_{Rk,c}$ see TR 054

Würth Injection System for masonry
WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Express, WIT-VM 210 Tropical

Performance Autoclaved Aerated Concrete – AAC6
 Characteristic values of resistance under tension and shear load

Annex C 10

Brick type: Calcium silicate solid brick KS-NF

Table C15: Description

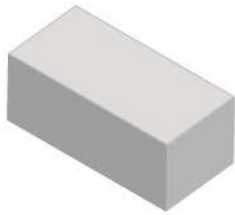
Brick type	Calcium silicate solid brick KS-NF	
Bulk density [kg/dm³]	2,0	
Compressive strength [N/mm²]	10, 20 or 27	
Code	EN 771-2	
Producer (country code)	e.g. Wemding (DE)	
Brick dimensions [mm]	240 x 115 x 71	
Drilling method	Hammer drilling	

Table C16: Installation parameter (Edge and spacing distances)

Anchor size	Sleeve	Embedment depth	Edge distance	Spacing	Maximum installation torque
		h_{ef}	$C_{min} = C_{cr}$	$S_{cr} = S_{min II} = S_{min \perp}$	$T_{inst,max}$
		[mm]			[Nm]
M8	-	80	120	240	10
M10	-	90	135	270	20
M12 / M16	-	100	150	300	
M8	SH 12x80	80	120	240	10
	SH 16x85	85	127	255	
M10	SH 16x85	85	127	255	20
M8 / M10	SH 16x130	130	195	390	
	SH 16x130/330	130	195	390	
M12 / M16	SH 20x85	85	127	255	
	SH 20x130	130	195	390	
	SH 20x200	200	300	600	

Table C17: Displacement

Effective anchorage depth h_{ef}	N	δ_{N0}	$\delta_{N\infty}$	V	δ_{V0}	$\delta_{V\infty}$
[mm]	[kN]	[mm]	[mm]	[kN]	[mm]	[mm]
80	$\frac{N_{Rk}}{1,4 \cdot \gamma_M}$	0,08	0,16	$\frac{V_{Rk}}{1,4 \cdot \gamma_M}$	3,07	4,61
85		0,26	0,52		1,46	2,19
90		0,09	0,18		1,50	2,25
100		0,10	0,20		1,03	1,53
130 ; 200		0,22	0,44		1,16	1,74

Würth Injection System for masonry
WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Express, WIT-VM 210 Tropical

Performance Calcium solid brick KS-NF
 Brick description, drawing,
 Installation parameters, Displacements

Annex C 11

Brick type: Calcium silicate solid brick KS-NF

Table C18: Characteristic values of resistance under tension and shear loads

Anchor size	Sleeve	Effective anchorage depth	Characteristic resistance		
			Use conditions d/d; w/d; w/w		
			40°C / 24°C	80°C / 50°C	For all temperature range
		h _{ef}	N _{Rk} ¹⁾	N _{Rk} ¹⁾	V _{Rk,b} ²⁾
		[mm]	[kN]		
Compressive strength f _b ≥ 10 N/mm ²					
M8	-	80	3,0	2,0	3,0
M10	-	90	3,0	2,0	3,0
M12	-	100	4,0	2,5	3,5
M16	-	100	3,0	2,0	3,5
M8	SH 12x80	80	2,5	2,0	2,5
	SH 16x85	85	2,5	2,0	3,0
	SH16x130 / SH16x130/330	130	4,0	2,5	4,0
M10	SH 16x85	85	2,5	2,0	3,0
	SH16x130/330	130	4,5	3,0	4,0
M12 / M16	SH 20x85	85	2,5	2,0	3,0
	SH 20x130 / SH 20x200	130 / 200	4,5	2,5	4,0
Compressive strength f _b ≥ 20 N/mm ²					
M8	-	80	4,5	3,0	4,5
M10	-	90	4,5	3,0	4,5
M12	-	100	5,5	3,5	5,0
M16	-	100	4,5	3,0	5,0
M8	SH 12x80	80	4,0	2,5	4,0
	SH 16x85	85	4,0	2,5	4,5
	SH16x130 / SH16x130/330	130	6,0	3,5	5,5
M10	SH 16x85	85	4,0	2,5	4,5
	SH 16x130/330	130	6,0	4,0	5,5
M12 / M16	SH 20x85	85	4,0	2,5	5,0
	SH 20x130 / SH 20x200	130 / 200	6,0	4,0	5,5
Compressive strength f _b ≥ 27 N/mm ²					
M8	-	80	5,5	3,5	5,0
M10	-	90	5,5	3,5	5,5
M12	-	100	6,5	4,5	6,0
M16	-	100	5,5	3,5	6,0
M8	SH 12x80	80	4,5	3,0	4,5
	SH 16x85	85	4,5	3,0	5,5
	SH16x130 / SH16x130/330	130	6,5	4,5	6,5
M10	SH 16x85	85	4,5	3,0	5,5
	SH 16x130/330	130	6,5	4,5	6,5
M12 / M16	SH 20x85	85	4,5	3,0	5,5
	SH 20x130 / SH 20x200	130 / 200	6,5	4,5	6,5

¹⁾ For design according TR 054: $N_{Rk} = N_{Rk,p} = N_{Rk,b}$; $N_{Rk,s}$ according to Table C2 Annex C2; Calculation $N_{Rk,pb}$ see TR 054

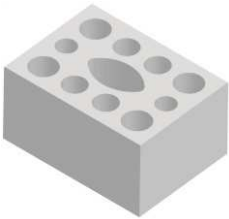
²⁾ For $V_{Rk,s}$ see Annex C 2, Table C2; Calculation of $V_{Rk,pb}$ and $V_{Rk,c}$ see TR 054

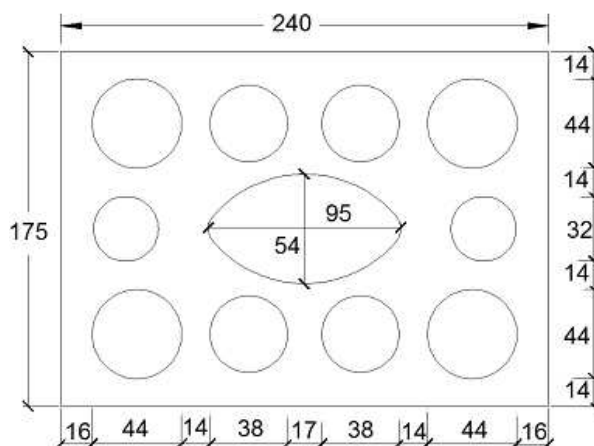
Würth Injection System for masonry
WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Express, WIT-VM 210 Tropical

Performance Calcium solid brick KS-NF
 Characteristic values of resistance under tension and shear load

Annex C 12

Brick type: Calcium silicate hollow brick KS L-3DF
Table C19: Description

Brick type	Calcium silicate hollow brick KS L-3DF	
Bulk density [kg/dm³]	1,4	
Compressive strength [N/mm²]	8, 12 or 14	
Code	EN 771-2	
Producer (country code)	e.g. Wemding (DE)	
Brick dimensions [mm]	240 x 175 x 113	
Drilling method	Rotary drilling	


Table C20: Installation parameter (Edge and spacing distances)

Anchor size	Sleeve	Embedment depth	Edge distance	Spacing		Maximum installation torque
		h_{ef}	$C_{min} = C_{cr}$	$S_{cr} = S_{min \parallel}$	$S_{min \perp}$	$T_{inst,max}$
			[mm]			[Nm]
M8	SH 12x80	80	100	240	113	8
M8 / M10	SH 16x85	85				
	SH 16x130	130				
	SH 16x130/330	130				
M12 / M16	SH 20x85	85	120	240	113	8
	SH 20x130	130				
	SH 20x200	200				

Table C21: Displacement

Effective anchorage depth h_{ef}	N	δ_{N0}	$\delta_{N\infty}$	V	δ_{V0}	$\delta_{V\infty}$
[mm]	[kN]	[mm]	[mm]	[kN]	[mm]	[mm]
80	$\frac{N_{Rk}}{1,4 \cdot \gamma_M}$	0,36	0,73	$\frac{V_{Rk}}{1,4 \cdot \gamma_M}$	0,82	1,23
85		1,62	3,24		1,83	2,75
130 ; 200		1,70	3,40		1,98	2,98

Würth Injection System for masonry
WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Express, WIT-VM 210 Tropical

Performance Calcium hollow brick KS L-3DF
 Brick description, drawing,
 Installation parameters, Displacements

Annex C 13

Brick type: Calcium silicate hollow brick KS L-3DF
Table C22: Characteristic values of resistance under tension and shear loads

Anchor size	Sleeve	Effective anchorage depth	Characteristic resistance		
			Use conditions		
			d/d w/d w/w		
			40°C / 24°C	80°C / 50°C	For all temperature range
		h _{ef}	N _{Rk} ¹⁾	N _{Rk} ¹⁾	V _{Rk,b} ²⁾
		[mm]	[kN]		
Compressive strength f _b ≥ 8 N/mm ²					
M8	SH 12x80	80	1,5	0,9	2,0
	SH 16x85	85	1,5	0,9	2,5
	SH 16x130	130	2,5	1,5	3,0
	SH 16x130/330	130	2,5	1,5	3,0
M10	SH 16x85	85	1,5	0,9	2,5
	SH 16x130	130	2,5	1,5	3,0
	SH 16x130/330	130	2,5	1,5	3,0
M12	SH 20x85	85	1,5	0,9	3,0
	SH 20x130 / SH 20x200	130 / 200	2,5	1,5	3,0
M16	SH 20x85	85	1,5	0,9	3,0
	SH 20x130 / SH 20x200	130 / 200	2,5	1,5	4,0
Compressive strength f _b ≥ 12 N/mm ²					
M8	SH 12x80	80	2,0	1,2	2,5
	SH 16x85	85	2,0	1,2	3,5
	SH 16x130	130	3,5	2,0	4,5
	SH 16x130/330	130	3,5	2,0	4,5
M10	SH 16x85	85	2,0	1,2	3,5
	SH 16x130	130	3,5	2,0	4,5
	SH 16x130/330	130	3,5	2,0	4,5
M12	SH 20x85	85	2,0	1,2	3,5
	SH 20x130 / SH 20x200	130 / 200	3,5	2,0	4,5
M16	SH 20x85	85	2,0	1,2	3,5
	SH 20x130 / SH 20x200	130 / 200	3,5	2,0	5,0
Compressive strength f _b ≥ 14 N/mm ²					
M8	SH 12x80	80	2,5	1,5	3,0
	SH 16x85	85	2,5	1,5	4,0
	SH 16x130	130	4,0	3,0	5,0
	SH 16x130/330	130	4,0	3,0	5,0
M10	SH 16x85	85	2,5	1,5	4,0
	SH 16x130	130	4,0	3,0	5,0
	SH 16x130/330	130	4,0	3,0	5,0
M12	SH 20x85	85	2,5	1,5	4,5
	SH 20x130 / SH 20x200	130 / 200	4,0	3,0	5,0
M16	SH 20x85	85	2,5	1,5	4,5
	SH 20x130 / SH 20x200	130 / 200	4,0	3,0	6,0

¹⁾ For design according TR 054: $N_{Rk} = N_{Rk,p} = N_{Rk,b}$; $N_{Rk,s}$ according to Table C2 Annex C2; Calculation $N_{Rk,pb}$ see TR 054

²⁾ For $V_{Rk,s}$ see Annex C 2, Table C2; Calculation of $V_{Rk,pb}$ and $V_{Rk,c}$ see TR 054

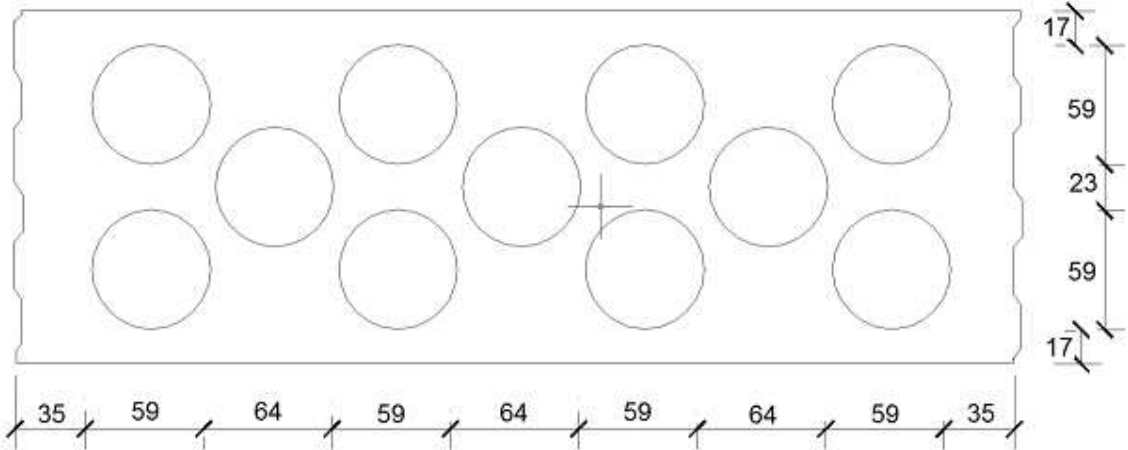
Würth Injection System for masonry
WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Express, WIT-VM 210 Tropical

Performance Calcium hollow brick KS L-3DF
 Characteristic values of resistance under tension and shear load

Annex C 14

Brick type: Calcium silicate hollow brick KS L-12DF
Table C23: Description

Brick type	Calcium silicate hollow brick KS L-12DF	
Bulk density [kg/dm³]	1,40	
Compressive strength [N/mm²]	10, 12 or 16	
Code	EN 771-2	
Producer (country code)	e.g. Wemding (DE)	
Brick dimensions [mm]	498 x 175 x 238	
Drilling method	Rotary drilling	


Table C24: Installation parameter (Edge and spacing distances)

Anchor size	Sleeve	Embedment depth	Edge distance	Spacing		Maximum installation torque
		h _{ef}	C _{min} = C _{Cr}	S _{Cr} = S _{min II}	S _{min} ⊥	T _{inst,max}
		[mm]				[Nm]
M8	SH 12x80	80	100	498	238	2
M8 / M10	SH 16x85	85				4
	SH 16x130	130				
	SH 16x130/330	130				
M12 / M16	SH 20x85	85	120	498	238	4
	SH 20x130	130				

Table C25: Displacement

Effective anchorage depth h_{ef}	N	δ_{N0}	$\delta_{N\infty}$	V	δ_{V0}	$\delta_{V\infty}$
[mm]	[kN]	[mm]	[mm]	[kN]	[mm]	[mm]
80	$\frac{N_{Rk}}{1,4 \cdot \gamma_M}$	0,21	0,42	$\frac{V_{Rk}}{1,4 \cdot \gamma_M}$	1,77	2,66
85		0,13	0,26		3,89	5,83
130		0,22	0,44		4,35	6,52

Würth Injection System for masonry
WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Express, WIT-VM 210 Tropical

Performance Calcium hollow brick KS L-12DF
 Brick description, drawing,
 Installation parameters, Displacement

Annex C 15

Brick type: Calcium silicate hollow brick KS L-12DF

Table C26: Characteristic values of resistance under tension and shear loads

Anchor size	Sleeve	Effective anchorage depth	Characteristic resistance		
			Use conditions		
			d/d	w/d	w/w
		40°C / 24°C	80°C / 50°C	For all temperature range	
		h_{ef}	$N_{Rk}^{1)}$	$N_{Rk}^{1)}$	$V_{Rk,b}^{2)}$
[mm]	[kN]				
Compressive strength $f_b \geq 10 \text{ N/mm}^2$					
M8	SH 12x80	80	0,4	0,3	3,0
	SH 16x85	85	1,2	0,9	6,0
	SH 16x130	130	3,5	2,5	7,0
	SH 16x130/330	130	3,5	2,5	7,0
M10	SH 16x85	85	1,2	0,9	6,0
	SH 16x130	130	3,5	2,5	7,0
	SH 16x130/330	130	3,5	2,5	7,0
M12 / M16	SH 20x85	85	1,2	0,9	6,0
	SH 20x130 / SH 20x200	130 / 200	3,5	2,5	7,0
Compressive strength $f_b \geq 12 \text{ N/mm}^2$					
M8	SH 12x80	80	0,4	0,3	3,5
	SH 16x85	85	1,5	0,9	7,0
	SH 16x130	130	4,5	3,0	8,0
	SH 16x130/330	130	4,5	3,0	8,0
M10	SH 16x85	85	1,5	0,9	7,0
	SH 16x130	130	4,5	3,0	8,0
	SH 16x130/330	130	4,5	3,0	8,0
M12 / M16	SH 20x85	85	1,5	0,9	7,0
	SH 20x130 / SH 20x200	130 / 200	4,5	3,0	8,0
Compressive strength $f_b \geq 16 \text{ N/mm}^2$					
M8	SH 12x80	80	0,5	0,4	4,0
	SH 16x85	85	2,0	1,2	9,0
	SH 16x130	130	5,5	3,5	10,0
	SH 16x130/330	130	5,5	3,5	10,0
M10	SH 16x85	85	2,0	1,2	9,0
	SH 16x130	130	5,5	3,5	10,0
	SH 16x130/330	130	5,5	3,5	10,0
M12 / M16	SH 20x85	85	2,0	1,2	8,5
	SH 20x130 / SH 20x200	130 / 200	5,5	3,5	10,0

¹⁾ For design according TR 054: $N_{Rk} = N_{Rk,p} = N_{Rk,b}$; $N_{Rk,s}$ according to Table C2 Annex C2; Calculation $N_{Rk,pt}$ see TR 054

²⁾ For $V_{Rk,s}$ see Annex C 2, Table C2; Calculation of $V_{Rk,pt}$ and $V_{Rk,c}$ see TR 054

Würth Injection System for masonry
WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Express, WIT-VM 210 Tropical

Performance Calcium hollow brick KS L-12DF
 Characteristic values of resistance under tension and shear load

Annex C 16

Brick type: Clay solid brick Mz-DF

Table C27: Description

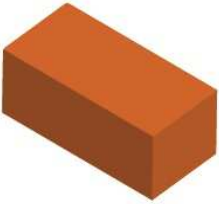
Brick type	Clay solid brick Mz-DF	
Bulk density [kg/dm³]	1,64	
Compressive strength [N/mm²]	10, 20 or 28	
Code	EN 771-1	
Producer (country code)	e.g. Unipor (DE)	
Brick dimensions [mm]	240 x 115 x 55	
Drilling method	Hammer drilling	

Table C28: Installation parameter (Edge and spacing distances)

Anchor size	Sleeve	Embedment depth	Edge distance	Spacing	Maximum installation torque
		h_{ef}	$C_{min} = C_{cr}$	$S_{cr} = S_{min \parallel} = S_{min \perp}$	$T_{inst,max}$
		[mm]			[Nm]
M8	-	80	120	240	6
	SH 12x80	80	120	240	
	SH 16x85	85	127	255	
M10	-	90	135	270	10
M12 / M16	-	100	150	300	
M10	SH 16x85	85	127	255	8
	SH 16x130	130	195	390	
	SH 16x130/330	130	195	390	
M12 / M16	SH 20x85	85	127	255	
	SH 20x130	130	195	390	
	SH 20x200	200	300	600	

Table C29: Displacement

Effective anchorage depth h_{ef}	N	δ_{N0}	$\delta_{N\infty}$	V	δ_{V0}	$\delta_{V\infty}$
[mm]	[kN]	[mm]	[mm]	[kN]	[mm]	[mm]
80	$\frac{N_{Rk}}{1,4 \cdot \gamma_M}$	0,12	0,24	$\frac{V_{Rk}}{1,4 \cdot \gamma_M}$	2,27	3,41
85		0,13	0,26		1,22	1,83
90		0,06	0,13		0,71	1,06
100		0,18	0,35		0,43	0,64
130 ; 200		0,42	0,85		1,22	1,83

Würth Injection System for masonry
WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Express, WIT-VM 210 Tropical

Performance Clay solid brick Mz-DF
 Brick description, drawing,
 Installation parameters, Displacements

Annex C 17

Brick type: Clay solid brick Mz-DF

Table C30: Characteristic values of resistance under tension and shear loads

Anchor size	Sleeve	Effective anchorage depth	Characteristic resistance		
			Use conditions d/d; w/d; w/w		
			40°C / 24°C	80°C / 50°C	For all temperature range
		h _{ef}	N _{rk} ¹⁾	N _{rk} ¹⁾	V _{rk,b} ²⁾
		[mm]	[kN]		
Compressive strength f _b ≥ 10 N/mm ²					
M8	-	80	1,5	1,2	3,0
M10	-	90	1,5	1,2	3,5
M12	-	100	1,5	0,9	5,0
M16	-	100	2,5	1,5	5,0
M8	SH 12x80	80	2,0	1,5	3,0
	SH 16x85	85	2,0	1,5	3,0
	SH 16x130 / SH 16x130/330	130	3,0	2,0	3,0
M10	SH 16x85	85	2,0	1,5	3,5
	SH 16x130 / SH 16x130/330	130	3,0	2,0	3,5
M12 / M16	SH 20x85	85	2,0	1,5	3,5
	SH 20x130 / SH 20x200	130 / 200	3,0	2,0	3,5
Compressive strength f _b ≥ 20 N/mm ²					
M8	-	80	2,5	1,5	4,5
M10	-	90	2,5	1,5	5,5
M12	-	100	2,0	1,5	7,5
M16	-	100	3,5	2,5	7,5
M8	SH 12x80	80	3,0	2,0	4,0
	SH 16x85	85	3,0	2,0	4,5
	SH 16x130 / SH 16x130/330	130	4,0	2,5	4,5
M10	SH 16x85	85	3,0	2,0	5,0
	SH 16x130 / SH 16x130/330	130	4,5	3,0	5,0
M12 / M16	SH 20x85	85	3,0	2,0	5,0
	SH 20x130 / SH 20x200	130 / 200	4,5	3,0	5,0
Compressive strength f _b ≥ 28 N/mm ²					
M8	-	80	3,0	2,0	5,5
M10	-	90	3,0	2,0	6,5
M12	-	100	2,5	1,5	9,0
M16	-	100	4,5	3,0	9,0
M8	SH 12x80	80	3,5	2,5	5,0
	SH 16x85	85	3,5	2,5	5,0
	SH 16x130 / SH 16x130/330	130	5,0	3,5	5,0
M10	SH 16x85	85	3,5	2,5	6,0
	SH 16x130 / SH 16x130/330	130	5,0	3,5	6,0
M12 / M16	SH 20x85	85	3,5	2,5	6,0
	SH 20x130 / SH 20x200	130 / 200	5,0	3,5	6,0

¹⁾ For design according TR 054: $N_{Rk} = N_{Rk,p} = N_{Rk,b}$; $N_{Rk,s}$ according to Table C2 Annex C2; Calculation $N_{Rk,pb}$ see TR 054

²⁾ For $V_{Rk,s}$ see Annex C 2, Table C2; Calculation of $V_{Rk,pb}$ and $V_{Rk,c}$ see TR 054

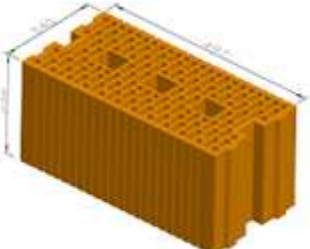
Würth Injection System for masonry
WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Express, WIT-VM 210 Tropical

Performance Clay solid brick Mz-DF
Characteristic values of resistance under tension and shear load

Annex C 18

Brick type: Clay hollow brick HLz-16DF

Table C31: Description

Brick type	Clay hollow brick HLz-16DF	
Bulk density [kg/dm³]	0,83	
Compressive strength [N/mm²]	6, 9, 12 or 14	
Code	EN 771-1	
Producer (country code)	e.g. Unipor (DE)	
Brick dimensions [mm]	497 x 238 x 240	
Drilling method	Rotary drilling	

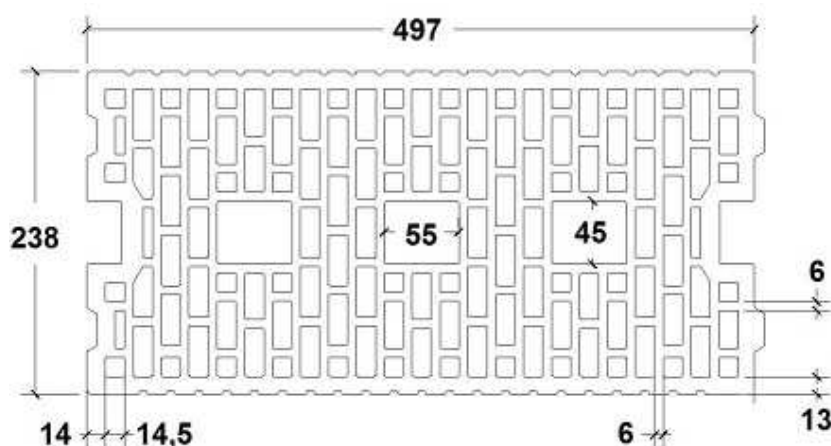


Table C32: Installation parameter (Edge and spacing distances)

Anchor size	Sleeve	Embedment depth	Edge distance	Spacing		Maximum installation torque
		h_{ef}	$C_{min} = C_{Cr}$	$S_{Cr} = S_{min \parallel}$	$S_{min \perp}$	$T_{inst,max}$
		[mm]				[Nm]
M8	SH 12x80	80	100	497	238	6
M8 / M10	SH 16x85	85				
	SH 16x130	130				
	SH 16x130/330	130				
M12 / M16	SH 20x85	85	120			
	SH 20x130	130				
	SH 20x200	200				

Table C33: Displacement

Effective anchorage depth h_{ef}	N	δ_{N0}	$\delta_{N\infty}$	V	δ_{V0}	$\delta_{V\infty}$
[mm]	[kN]	[mm]	[mm]	[kN]	[mm]	[mm]
80	N_{Rk} $1,4 \cdot \gamma_M$	0,27	0,55	V_{Rk} $1,4 \cdot \gamma_M$	1,02	1,53
85		0,55	1,10		2,14	3,22
130 ; 200		0,19	0,38		2,26	3,39

Würth Injection System for masonry
WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Express, WIT-VM 210 Tropical

Performance Clay hollow brick HLz-16DF
 Brick description, drawing,
 Installation parameters, Displacements

Annex C 19

Brick type: Clay hollow brick HLz-16DF
Table C34: Characteristic values of resistance under tension and shear loads

Anchor size	Sleeve	Effective anchorage depth	Characteristic resistance		
			Use conditions d/d; w/d; w/w		
			40°C / 24°C	80°C / 50°C	For all temperature range
		h_{ef}	$N_{Rk}^{1)}$	$N_{Rk}^{1)}$	$V_{Rk,b}^{2)}$
		[mm]	[kN]		
Compressive strength $f_b \geq 6 \text{ N/mm}^2$					
M8	SH 12x80	80	1,2	0,75	2,5
	SH 16x85	85	1,5	1,2	4,0
	SH 16x130	130	2,5	1,5	4,0
	SH 16x130/330	130	2,5	1,5	4,0
M10	SH 16x85	85	1,5	1,2	4,0
	SH 16x130	130	2,5	1,5	6,0
	SH 16x130/330	130	2,5	1,5	6,0
M12 / M16	SH 20x85	85	2,0	1,5	4,0
	SH 20x130 / SH 20x200	130/ 200	2,5	1,5	6,0
Compressive strength $f_b \geq 9 \text{ N/mm}^2$					
M8	SH 12x80	80	1,2	0,9	3,0
	SH 16x85	85	2,0	1,5	4,5
	SH 16x130	130	3,0	2,0	5,0
	SH 16x130/330	130	3,0	2,0	5,0
M10	SH 16x85	85	2,0	1,5	5,0
	SH 16x130	130	3,0	2,0	7,0
	SH 16x130/330	130	3,0	2,0	7,0
M12 / M16	SH 20x85	85	2,5	2,0	5,0
	SH 20x130 / SH 20x200	130/ 200	3,0	2,0	7,0
Compressive strength $f_b \geq 12 \text{ N/mm}^2$					
M8	SH 12x80	80	1,5	1,2	3,5
	SH 16x85	85	2,5	1,5	5,5
	SH 16x130	130	3,5	2,5	6,0
	SH 16x130/330	130	3,5	2,5	6,0
M10	SH 16x85	85	2,5	1,5	6,0
	SH 16x130	130	3,5	2,5	8,0
	SH 16x130/330	130	3,5	2,5	8,0
M12 / M16	SH 20x85	85	3,5	2,0	6,0
	SH 20x130 / SH 20x200	130/ 200	3,5	2,5	8,0
Compressive strength $f_b \geq 14 \text{ N/mm}^2$					
M8	SH 12x80	80	1,5	1,2	4,0
	SH 16x85	85	2,5	2,0	6,0
	SH 16x130	130	3,5	2,5	6,5
	SH 16x130/330	130	3,5	2,5	6,5
M10	SH 16x85	85	2,5	2,0	6,0
	SH 16x130	130	3,5	2,5	9,0
	SH 16x130/330	130	3,5	2,5	9,0
M12 / M16	SH 20x85	85	3,5	2,0	6,0
	SH 20x130 / SH 20x200	130/ 200	3,5	2,5	9,0

¹⁾ For design according TR 054: $N_{Rk} = N_{Rk,p} = N_{Rk,b}$; $N_{Rk,s}$ according to Table C2 Annex C2; Calculation $N_{Rk,pb}$ see TR 054

²⁾ For $V_{Rk,s}$ see Annex C 2, Table C2; Calculation of $V_{Rk,pb}$ and $V_{Rk,c}$ see TR 054

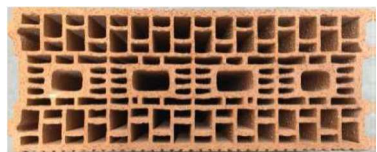
Würth Injection System for masonry
WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Express, WIT-VM 210 Tropical

Performance Clay hollow brick HLz-16DF
 Characteristic values of resistance under tension and shear load

Annex C 20

Brick type: Clay hollow brick Porotherm Homebric

Table C35: Description

Brick type	Clay hollow brick Porotherm Homebric	
Bulk density [kg/dm³]	0,68	
Compressive strength [N/mm²]	6, 8 or 10	
Code	EN 771-1	
Producer (country code)	e.g. Wienerberger (FR)	
Brick dimensions [mm]	500 x 200 x 299	
Drilling method	Rotary drilling	

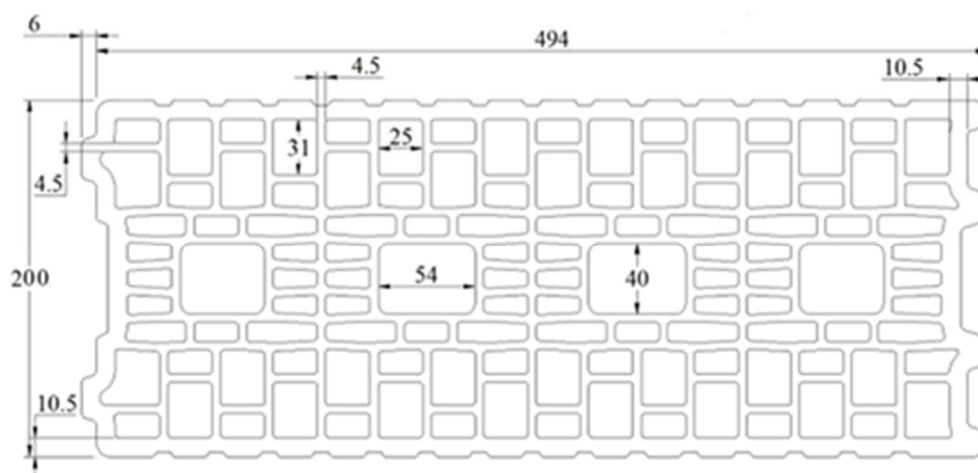


Table C36: Installation parameter (Edge and spacing distances)

Anchor size	Sleeve	Embedment depth	Edge distance	Spacing		Maximum installation torque
				$S_{cr} = S_{min II}$	$S_{min \perp}$	
		h_{ef}	$C_{min} = C_{cr}$	[mm]		$T_{inst,max}$ [Nm]
M8	SH 12x80	80	100	500	299	2
M8 / M10	SH 16x85	85				6
	SH 16x130	130				
	SH 16x130/330	130				
M12 / M16	SH 20x85	85	120	500	299	6
	SH 20x130	130				

Table C37: Displacement

Effective anchorage depth h_{ef}	N	δ_{N0}	$\delta_{N\infty}$	V	δ_{V0}	$\delta_{V\infty}$
[mm]	[kN]	[mm]	[mm]	[kN]	[mm]	[mm]
80	$\frac{N_{Rk}}{1,4 \cdot \gamma_M}$	0,65	1,29	$\frac{V_{Rk}}{1,4 \cdot \gamma_M}$	1,26	1,89
85		0,52	1,04		1,89	2,84
130		0,45	0,90		1,48	2,23

Würth Injection System for masonry
WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Express, WIT-VM 210 Tropical

Performance Clay hollow brick Porotherm Homebric
 Brick description, drawing,
 Installation parameters, Displacements

Annex C 21

Brick type: Clay hollow brick Porotherm Homebric

Table C38: Characteristic values of resistance under tension and shear loads

Anchor size	Sleeve	Effective anchorage depth	Characteristic resistance		
			Use conditions		
			d/d w/d w/w		
		40°C / 24°C	80°C / 50°C	For all temperature range	
		h_{ef}	$N_{Rk}^{1)}$	$N_{Rk}^{1)}$	$V_{Rk,b}^{2)}$
[mm]	[kN]				
Compressive strength $f_b \geq 6 \text{ N/mm}^2$					
M8	SH 12x80	80	0,9	0,75	2,0
	SH 16x85	85	1,2	0,75	2,0
	SH 16x130	130	1,5	0,9	2,5
	SH 16x130/330	130	1,5	0,9	2,5
M10	SH 16x85	85	1,2	0,75	2,0
	SH 16x130	130	1,5	0,9	2,5
	SH 16x130/330	130	1,5	0,9	2,5
M12	SH 20x85	85	1,2	0,75	3,0
	SH 20x130	130	1,5	0,9	3,0
M16	SH 20x85	85	1,2	0,75	3,0
	SH 20x130	130	1,5	0,9	3,0
Compressive strength $f_b \geq 8 \text{ N/mm}^2$					
M8	SH 12x80	80	1,2	0,9	2,5
	SH 16x85	85	1,2	0,9	2,5
	SH 16x130	130	1,5	1,2	3,0
	SH 16x130/330	130	1,5	1,2	3,0
M10	SH 16x85	85	1,2	0,9	2,5
	SH 16x130	130	1,5	1,2	3,0
	SH 16x130/330	130	1,5	1,2	3,0
M12	SH 20x85	85	1,2	0,9	3,5
	SH 20x130	130	1,5	1,2	3,5
M16	SH 20x85	85	1,2	0,9	3,5
	SH 20x130	130	1,5	1,2	3,5
Compressive strength $f_b \geq 10 \text{ N/mm}^2$					
M8	SH 12x80	80	1,2	0,9	3,0
	SH 16x85	85	1,5	0,9	3,0
	SH 16x130	130	2,0	1,2	3,5
	SH 16x130/330	130	2,0	1,2	3,5
M10	SH 16x85	85	1,5	0,9	3,0
	SH 16x130	130	2,0	1,2	3,5
	SH 16x130/330	130	2,0	1,2	3,5
M12	SH 20x85	85	1,5	0,9	4,0
	SH 20x130	130	2,0	1,2	4,0
M16	SH 20x85	85	1,5	0,9	4,0
	SH 20x130	130	2,0	1,2	4,0

¹⁾ For design according TR 054: $N_{Rk} = N_{Rk,p} = N_{Rk,b}$; $N_{Rk,s}$ according to Table C2 Annex C2; Calculation $N_{Rk,pb}$ see TR 054

²⁾ For $V_{Rk,s}$ see Annex C 2, Table C2; Calculation of $V_{Rk,pb}$ and $V_{Rk,c}$ see TR 054

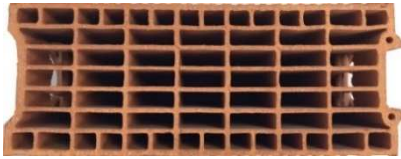
Würth Injection System for masonry
WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Express, WIT-VM 210 Tropical

Performance Clay hollow brick Porotherm Homebric
 Characteristic values of resistance under tension and shear load

Annex C 22

Brick type: Clay hollow brick BGV Thermo

Table C39: Description

Brick type	Clay hollow brick BGV Thermo	
Bulk density [kg/dm³]	0,62	
Compressive strength [N/mm²]	4, 6 or 10	
Code	EN 771-1	
Producer (country code)	e.g. Leroux (FR)	
Brick dimensions [mm]	500 x 200 x 314	
Drilling method	Rotary drilling	

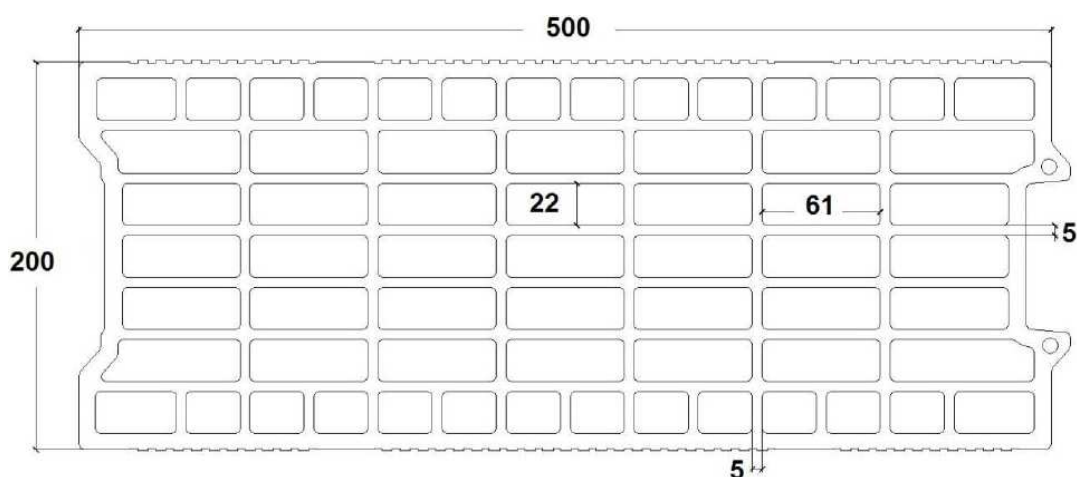


Table C40: Installation parameter (Edge and spacing distances)

Anchor size	Sleeve	Embedment depth	Edge distance	Spacing		Maximum installation torque
		h_{ef}	$C_{min} = C_{cr}$	$S_{cr} = S_{min \parallel}$	$S_{min \perp}$	$T_{inst,max}$
				[mm]		[Nm]
M8	SH 12x80	80	100	500	314	2
M8 / M10	SH 16x85	85				4
	SH 16x130	130				
	SH 16x130/330	130				
M12 / M16	SH 20x85	85	120	500	314	4
	SH 20x130	130				

Table C41: Displacement

Effective anchorage depth h_{ef}	N	δ_{N0}	$\delta_{N\infty}$	V	δ_{V0}	$\delta_{V\infty}$
[mm]	[kN]	[mm]	[mm]	[kN]	[mm]	[mm]
80	$\frac{N_{Rk}}{1,4 \cdot \gamma_M}$	0,27	0,54	$\frac{V_{Rk}}{1,4 \cdot \gamma_M}$	1,21	1,81
85		0,39	0,77		2,00	3,01
130		0,16	0,32		1,60	2,39

Würth Injection System for masonry
WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Express, WIT-VM 210 Tropical

Performance Clay hollow brick BGV Thermo
 Brick description, drawing,
 Installation parameters, Displacements

Annex C 23

Brick type: Clay hollow brick BGV Thermo
Table C42: Characteristic values of resistance under tension and shear loads

Anchor size	Sleeve	Effective anchorage depth	Characteristic resistance		
			Use conditions		
			d/d	w/d	w/w
		40°C / 24°C	80°C / 50°C	For all temperature range	
		h_{ef}	$N_{Rk}^{1)}$	$N_{Rk}^{1)}$	$V_{Rk,b}^{2)}$
[mm]	[kN]				
Compressive strength $f_b \geq 4 \text{ N/mm}^2$					
M8	SH 12x80	80	0,5	0,4	2,0
	SH 16x85	85	0,75	0,5	2,0
	SH 16x130	130	0,9	0,75	2,5
	SH 16x130/330	130	0,9	0,75	2,5
M10	SH 16x85	85	0,75	0,5	2,0
	SH 16x130	130	1,2	0,75	2,5
	SH 16x130/330	130	1,2	0,75	2,5
M12	SH 20x85	85	0,75	0,5	2,0
	SH 20x130	130	1,2	0,75	2,5
M16	SH 20x85	85	0,9	0,6	2,0
	SH 20x130	130	1,2	0,75	2,5
Compressive strength $f_b \geq 6 \text{ N/mm}^2$					
M8	SH 12x80	80	0,6	0,5	2,0
	SH 16x85	85	0,9	0,6	2,5
	SH 16x130	130	1,2	0,9	3,0
	SH 16x130/330	130	1,2	0,9	3,0
M10	SH 16x85	85	0,9	0,6	2,5
	SH 16x130	130	1,5	0,9	3,0
	SH 16x130/330	130	1,5	0,9	3,0
M12	SH 20x85	85	0,9	0,6	3,0
	SH 20x130	130	1,5	0,9	3,0
M16	SH 20x85	85	1,2	0,75	3,0
	SH 20x130	130	1,5	0,9	3,0
Compressive strength $f_b \geq 10 \text{ N/mm}^2$					
M8	SH 12x80	80	0,9	0,6	3,0
	SH 16x85	85	1,2	0,9	3,5
	SH 16x130	130	1,5	1,2	4,0
	SH 16x130/330	130	1,5	1,2	4,0
M10	SH 16x85	85	1,2	0,9	3,5
	SH 16x130	130	1,5	1,2	4,0
	SH 16x130/330	130	1,5	1,2	4,0
M12	SH 20x85	85	1,2	0,75	3,5
	SH 20x130	130	1,5	1,2	4,0
M16	SH 20x85	85	1,5	0,9	3,5
	SH 20x130	130	1,5	1,2	4,0

¹⁾ For design according TR 054: $N_{Rk} = N_{Rk,p} = N_{Rk,b}$; $N_{Rk,s}$ according to Table C2 Annex C2; Calculation $N_{Rk,pb}$ see TR 054

²⁾ For $V_{Rk,s}$ see Annex C 2, Table C2; Calculation of $V_{Rk,pb}$ and $V_{Rk,c}$ see TR 054

Würth Injection System for masonry
WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Express, WIT-VM 210 Tropical

Performance Clay hollow brick BGV Thermo
 Characteristic values of resistance under tension and shear load

Annex C 24

Brick type: Clay hollow brick Calibric Th

Table C43: Description

Brick type	Clay hollow brick Calibric Th	
Bulk density [kg/dm³]	0,62	
Compressive strength [N/mm²]	6, 9 or 12	
Code	EN 771-1	
Producer (country code)	e.g. Terreal (FR)	
Brick dimensions [mm]	500 x 200 x 314	
Drilling method	Rotary drilling	

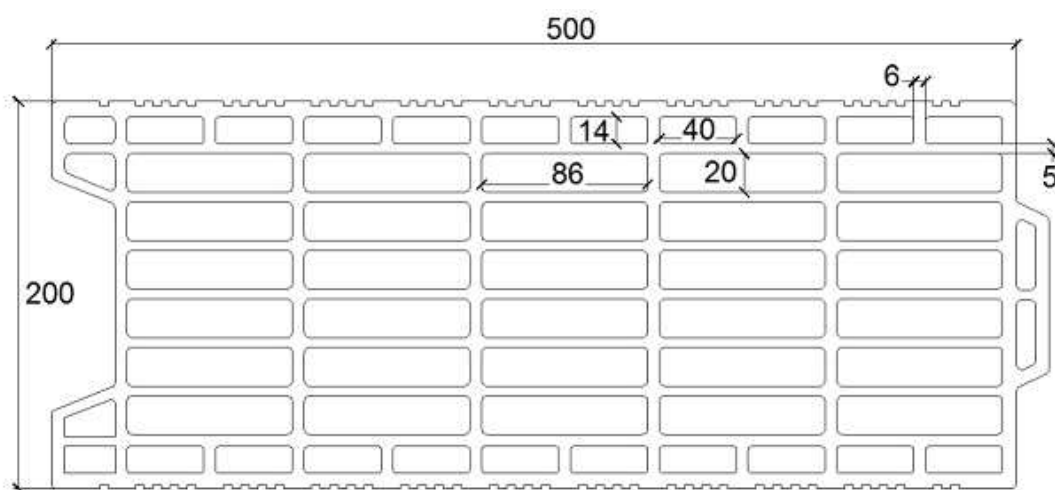


Table C44: Installation parameter (Edge and spacing distances)

Anchor size	Sleeve	Embedment depth	Edge distance	Spacing		Maximum installation torque
		h_{ef}	$C_{min} = C_{cr}$	$S_{cr} = S_{min II}$	$S_{min \perp}$	$T_{inst,max}$
		[mm]				[Nm]
M8	SH 12x80	80	100	500	314	2
M8 / M10	SH 16x85	85				
	SH 16x130	130				
	SH 16x130/330	130				
M12 / M16	SH 20x85	85	120	500	314	2
	SH 20x130	130				

Table C45: Displacement

Effective anchorage depth h_{ef}	N	δ_{N0}	$\delta_{N\infty}$	V	δ_{V0}	$\delta_{V\infty}$
[mm]	[kN]	[mm]	[mm]	[kN]	[mm]	[mm]
80	$\frac{N_{Rk}}{1,4 \cdot \gamma_M}$	0,48	0,96	$\frac{V_{Rk}}{1,4 \cdot \gamma_M}$	1,18	1,78
85		0,49	0,98		2,20	3,30
130		0,37	0,74		2,31	3,46

Würth Injection System for masonry
WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Express, WIT-VM 210 Tropical

Performance Clay hollow brick Calibric Th
 Brick description, drawing,
 Installation parameters, Displacements

Annex C 25

Brick type: Clay hollow brick Calibric Th

Table C46: Characteristic values of resistance under tension and shear loads

Anchor size	Sleeve	Effective anchorage depth	Characteristic resistance		
			Use conditions		
			d/d w/d w/w		
		40°C / 24°C	80°C / 50°C	For all temperature range	
		h _{ef}	N _{Rk} ¹⁾	N _{Rk} ¹⁾	V _{Rk,b} ²⁾
[mm]	[kN]				
Compressive strength f _b ≥ 6 N/mm ²					
M8	SH 12x80	80	0,75	0,5	2,5
	SH 16x85	85	0,75	0,5	3,5
	SH 16x130	130	0,9	0,6	3,5
	SH 16x130/330	130	0,9	0,6	3,5
M10	SH 16x85	85	0,75	0,5	3,5
	SH 16x130	130	0,9	0,6	3,5
	SH 16x130/330	130	0,9	0,6	3,5
M12	SH 20x85	85	0,75	0,5	6,0
	SH 20x130	130	0,9	0,6	6,0
M16	SH 20x85	85	1,2	0,75	6,0
	SH 20x130	130	1,2	0,75	6,0
Compressive strength f _b ≥ 9 N/mm ²					
M8	SH 12x80	80	0,9	0,6	3,5
	SH 16x85	85	0,9	0,6	4,5
	SH 16x130	130	1,2	0,75	4,5
	SH 16x130/330	130	1,2	0,75	4,5
M10	SH 16x85	85	0,9	0,6	4,5
	SH 16x130	130	1,2	0,9	4,5
	SH 16x130/330	130	1,2	0,9	4,5
M12	SH 20x85	85	0,9	0,6	7,5
	SH 20x130	130	1,2	0,9	7,5
M16	SH 20x85	85	1,5	0,9	7,5
	SH 20x130	130	1,5	0,9	7,5
Compressive strength f _b ≥ 12 N/mm ²					
M8	SH 12x80	80	0,9	0,75	4,0
	SH 16x85	85	0,9	0,75	5,5
	SH 16x130	130	1,2	0,9	5,5
	SH 16x130/330	130	1,2	0,9	5,5
M10	SH 16x85	85	0,9	0,75	5,5
	SH 16x130	130	1,5	0,9	5,5
	SH 16x130/330	130	1,5	0,9	5,5
M12	SH 20x85	85	0,9	0,75	8,5
	SH 20x130	130	1,5	0,9	8,5
M16	SH 20x85	85	1,5	1,2	8,5
	SH 20x130	130	1,5	1,2	8,5

¹⁾ For design according TR 054: $N_{Rk} = N_{Rk,p} = N_{Rk,b}$; $N_{Rk,s}$ according to Table C2 Annex C2; Calculation $N_{Rk,pb}$ see TR 054

²⁾ For $V_{Rk,s}$ see Annex C 2, Table C2; Calculation of $V_{Rk,pb}$ and $V_{Rk,c}$ see TR 054

Würth Injection System for masonry
WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Express, WIT-VM 210 Tropical

Performance Clay hollow brick Calibric Th
 Characteristic values of resistance under tension and shear load

Annex C 26

Brick type: Clay hollow brick Urbanbric

Table C47: Description

Brick type	Clay hollow brick Urbanbric	
Bulk density [kg/dm³]	0,74	
Compressive strength [N/mm²]	6 or 9	
Code	EN 771-1	
Producer (country code)	e.g. Imerys (FR)	
Brick dimensions [mm]	560 x 200 x 274	
Drilling method	Rotary drilling	

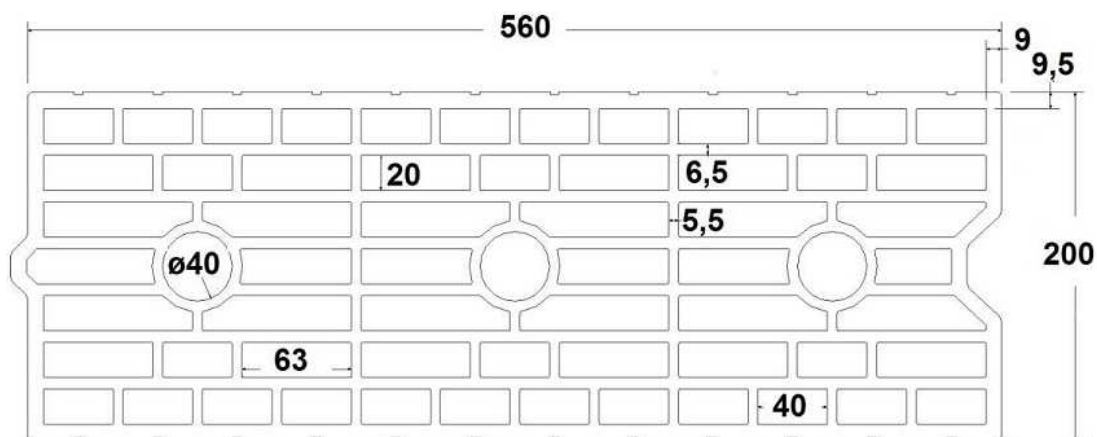


Table C48: Installation parameter (Edge and spacing distances)

Anchor size	Sleeve	Embedment depth	Edge distance	Spacing		Maximum installation torque
		h_{ef}	$C_{min} = C_{Cr}$	$S_{Cr} = S_{min \parallel}$	$S_{min \perp}$	$T_{inst,max}$
		[mm]				[Nm]
M8	SH 12x80	80	100	560	274	2
M8 / M10	SH 16x85	85				
	SH 16x130	130				
	SH 16x130/330	130				
M12 / M16	SH 20x85	85	120	560	274	2
	SH 20x130	130				

Table C49: Displacement

Effective anchorage depth h_{ef}	N	δ_{N0}	$\delta_{N\infty}$	V	δ_{V0}	$\delta_{V\infty}$
[mm]	[kN]	[mm]	[mm]	[kN]	[mm]	[mm]
80	$\frac{N_{Rk}}{1,4 \cdot \gamma_M}$	0,34	0,67	$\frac{V_{Rk}}{1,4 \cdot \gamma_M}$	0,71	1,06
85		0,52	1,04		1,37	2,06
130		0,62	1,24		1,62	2,44

Würth Injection System for masonry
WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Express, WIT-VM 210 Tropical

Performance Clay hollow brick Urbanbric
 Brick description, drawing,
 Installation parameters, Displacements

Annex C 27

Brick type: Clay hollow brick Urbanbric

Table C50: Characteristic values of resistance under tension and shear loads

Anchor size	Sleeve	Effective anchorage depth	Characteristic resistance		
			Use conditions		
			d/d w/d w/w		
		40°C / 24°C	80°C / 50°C	For all temperature range	
		h_{ef}	$N_{Rk}^{1)}$	$N_{Rk}^{1)}$	$V_{Rk,b}^{2)}$
[mm]	[kN]				
Compressive strength $f_b \geq 6 \text{ N/mm}^2$					
M8	SH 12x80	80	0,9	0,75	3,0
M8 / M10	SH 16x85	85	1,2	0,75	3,5
	SH 16x130	130	1,5	1,2	3,5
	SH 16x130/330	130	1,5	1,2	3,5
M12 / M16	SH 20x85	85	1,2	0,75	4,0
	SH 20x130	130	1,5	1,2	4,0
Compressive strength $f_b \geq 9 \text{ N/mm}^2$					
M8	SH 12x80	80	1,2	0,9	3,5
M8 / M10	SH 16x85	85	1,5	0,9	4,0
	SH 16x130	130	2,0	1,5	4,5
	SH 16x130/330	130	2,0	1,5	4,5
M12 / M16	SH 20x85	85	1,5	0,9	5,0
	SH 20x130	130	2,0	1,5	5,0

¹⁾ For design according TR 054: $N_{Rk} = N_{Rk,p} = N_{Rk,b}$; $N_{Rk,s}$ according to Table C2 Annex C2; Calculation $N_{Rk,pb}$ see TR 054

²⁾ For $V_{Rk,s}$ see Annex C 2, Table C2; Calculation of $V_{Rk,pb}$ and $V_{Rk,c}$ see TR 054

Würth Injection System for masonry
WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Express, WIT-VM 210 Tropical

Performance Clay hollow brick Urbanbric
 Characteristic values of resistance under tension and shear load

Annex C 28

Brick type: Clay hollow brick Blocchi Leggeri

Table C51: Description

Brick type	Clay hollow brick Blocchi Leggeri	
Bulk density [kg/dm³]	0,55	
Compressive strength [N/mm²]	4, 6 or 8	
Code	EN 771-1	
Producer (country code)	e.g. Wienerberger (IT)	
Brick dimensions [mm]	250 x 120 x 250	
Drilling method	Rotary drilling	

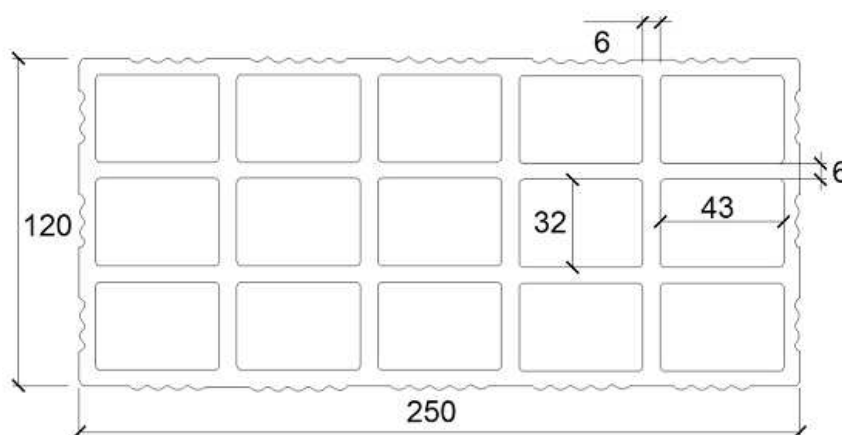


Table C52: Installation parameter (Edge and spacing distances)

Anchor size	Sleeve	Embedment depth	Edge distance	Spacing		Maximum installation torque
		h_{ef}	$C_{min} = C_{cr}$	$S_{cr} = S_{min \parallel}$	$S_{min \perp}$	$T_{inst,max}$
		[mm]				[Nm]
M8	SH 12x80	80	100	250	250	4
M8 / M10	SH 16x85	85				
	SH 16x130	130				
	SH 16x130/330	130				
M12 / M16	SH 20x85	85	120	250	250	4
	SH 20x130	130				
	SH 20x200	200				

Table C53: Displacement

Effective anchorage depth h_{ef}	N	δ_{N0}	$\delta_{N\infty}$	V	δ_{V0}	$\delta_{V\infty}$
[mm]	[kN]	[mm]	[mm]	[kN]	[mm]	[mm]
80	$\frac{N_{Rk}}{1,4 \cdot \gamma_M}$	0,32	0,64	$\frac{V_{Rk}}{1,4 \cdot \gamma_M}$	1,16	1,74
85		0,26	0,53		2,52	3,78
130 ; 200		0,32	0,64		2,52	3,78

Würth Injection System for masonry
WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Express, WIT-VM 210 Tropical

Performance Clay hollow brick Blocchi Leggeri

Brick description, drawing,
 Installation parameters, Displacements

Annex C 29

Brick type: Clay hollow brick Blocchi Leggeri

Table C54: Characteristic values of resistance under tension and shear loads

Anchor size	Sleeve	Effective anchorage depth	Characteristic resistance		
			Use conditions		
			d/d	w/d	w/w
		40°C / 24°C	80°C / 50°C	For all temperature range	
		h_{ef}	$N_{RK}^{1)}$	$N_{RK}^{1)}$	$V_{RK,b}^{2)}$
[mm]	[kN]				
Compressive strength $f_b \geq 4 \text{ N/mm}^2$					
M8	SH 12x80	80	0,4	0,3	2,0
M8 / M10	SH 16x85	85	0,4	0,3	2,0
	SH 16x130	130	0,5	0,3	2,0
	SH 16x130/330	130	0,5	0,3	2,0
M12 / M16	SH 20x85	85	0,4	0,3	2,0
	SH 20x130	130	0,5	0,3	2,0
	SH 20x200	200	0,5	0,3	2,0
Compressive strength $f_b \geq 6 \text{ N/mm}^2$					
M8	SH 12x80	80	0,5	0,3	2,0
M8 / M10	SH 16x85	85	0,5	0,3	2,0
	SH 16x130	130	0,6	0,4	2,0
	SH 16x130/330	130	0,6	0,4	2,0
M12 / M16	SH 20x85	85	0,5	0,3	2,5
	SH 20x130	130	0,6	0,4	2,5
	SH 20x200	200	0,6	0,4	2,5
Compressive strength $f_b \geq 8 \text{ N/mm}^2$					
M8	SH 12x80	80	0,6	0,4	2,5
M8 / M10	SH 16x85	85	0,6	0,4	2,5
	SH 16x130	130	0,6	0,5	2,5
	SH 16x130/330	130	0,6	0,5	2,5
M12 / M16	SH 20x85	85	0,6	0,4	3,0
	SH 20x130	130	0,6	0,5	3,0
	SH 20x200	200	0,6	0,5	3,0

¹⁾ For design according TR 054: $N_{Rk} = N_{Rk,p} = N_{Rk,b}$; $N_{Rk,s}$ according to Table C2 Annex C2; Calculation $N_{Rk,pt}$ see TR 054

²⁾ For $V_{Rk,s}$ see Annex C 2, Table C2; Calculation of $V_{Rk,pt}$ and $V_{Rk,c}$ see TR 054

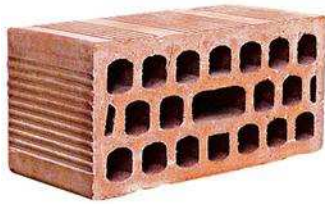
Würth Injection System for masonry
WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Express, WIT-VM 210 Tropical

Performance Clay hollow brick Blocchi Leggeri
 Characteristic values of resistance under tension and shear load

Annex C 30

Brick type: Clay hollow brick Doppio Uni

Table C55: Description

Brick type	Clay hollow brick Doppio Uni	
Bulk density [kg/dm³]	0,92	
Compressive strength [N/mm²]	10, 16, 20 or 28	
Code	EN 771-1	
Producer (country code)	e.g. Wienerberger (IT)	
Brick dimensions [mm]	250 x 120 x 120	
Drilling method	Rotary drilling	

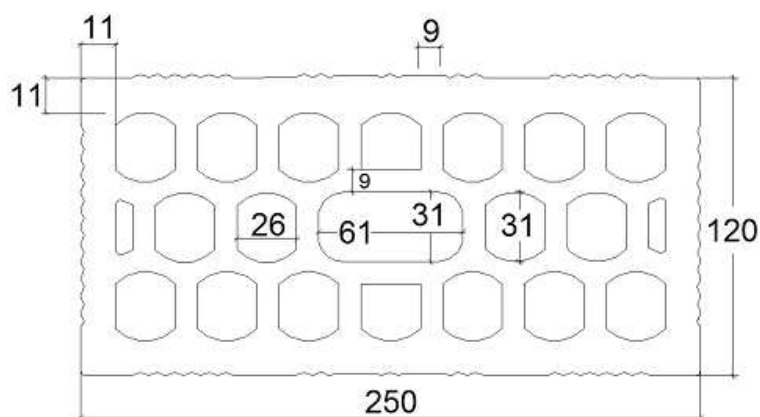


Table C56: Installation parameter (Edge and spacing distances)

Anchor size	Sleeve	Embedment depth	Edge distance	Spacing		Maximum installation torque
		h_{ef}	$C_{min} = C_{cr}$	$S_{cr} = S_{min \parallel}$	$S_{min \perp}$	$T_{inst,max}$
		[mm]				[Nm]
M8	SH 12x80	80	100	250	120	4
M8 / M10	SH 16x85	85				
	SH 16x130	130				
	SH 16x130/330	130				
M12 / M16	SH 20x85	85	120	250	120	4
	SH 20x130	130				
	SH 20x200	200				

Table C57: Displacement

Effective anchorage depth h_{ef}	N	δ_{N0}	$\delta_{N\infty}$	V	δ_{V0}	$\delta_{V\infty}$
[mm]	[kN]	[mm]	[mm]	[kN]	[mm]	[mm]
80	$\frac{N_{Rk}}{1,4 \cdot \gamma_M}$	0,54	1,08	$\frac{V_{Rk}}{1,4 \cdot \gamma_M}$	1,63	2,45
85		0,17	0,34		1,75	2,63
130 ; 200		0,54	1,08		1,75	2,63

Würth Injection System for masonry
WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Express, WIT-VM 210 Tropical

Performance Clay hollow brick Doppio Uni
 Brick description, drawing,
 Installation parameters, Displacements

Annex C 31

Brick type: Clay hollow brick Doppio Uni

Table C58: Characteristic values of resistance under tension and shear loads

Anchor size	Sleeve	Effective anchorage depth	Characteristic resistance		
			Use conditions		
			d/d w/d w/w		
		40°C / 24°C	80°C / 50°C	For all temperature range	
		h_{ef}	$N_{Rk}^{1)}$	$N_{Rk}^{1)}$	$V_{Rk,b}^{2)}$
[mm]	[kN]				
Compressive strength $f_b \geq 10 \text{ N/mm}^2$					
M8	SH 12x80	80	0,9	0,6	2,0
M8 / M10	SH 16x85	85	0,9	0,6	2,0
	SH 16x130	130	0,9	0,6	2,0
	SH 16x130/330	130	0,9	0,6	2,0
M12 / M16	SH 20x85	85	1,2	0,75	2,0
	SH 20x130	130	1,2	0,75	2,0
	SH 20x200	200	1,2	0,75	2,0
Compressive strength $f_b \geq 16 \text{ N/mm}^2$					
M8	SH 12x80	80	0,9	0,75	2,5
M8 / M10	SH 16x85	85	1,2	0,9	2,5
	SH 16x130	130	1,2	0,9	2,5
	SH 16x130/330	130	1,2	0,9	2,5
M12 / M16	SH 20x85	85	1,5	0,9	2,5
	SH 20x130	130	1,5	0,9	2,5
	SH 20x200	200	1,5	0,9	2,5
Compressive strength $f_b \geq 20 \text{ N/mm}^2$					
M8	SH 12x80	80	1,2	0,75	3,0
M8 / M10	SH 16x85	85	1,2	0,9	3,0
	SH 16x130	130	1,5	0,9	3,0
	SH 16x130/330	130	1,5	0,9	3,0
M12 / M16	SH 20x85	85	1,5	0,9	3,0
	SH 20x130	130	1,5	0,9	3,0
	SH 20x200	200	1,5	0,9	3,0
Compressive strength $f_b \geq 28 \text{ N/mm}^2$					
M8	SH 12x80	80	1,5	0,9	3,5
M8 / M10	SH 16x85	85	1,5	1,2	3,5
	SH 16x130	130	1,5	1,2	3,5
	SH 16x130/330	130	1,5	1,2	3,5
M12 / M16	SH 20x85	85	2,0	1,2	3,5
	SH 20x130	130	2,0	1,2	3,5
	SH 20x200	200	2,0	1,2	3,5

¹⁾ For design according TR 054: $N_{Rk} = N_{Rk,p} = N_{Rk,b}$; $N_{Rk,s}$ according to Table C2 Annex C2; Calculation $N_{Rk,pb}$ see TR 054

²⁾ For $V_{Rk,s}$ see Annex C 2, Table C2; Calculation of $V_{Rk,pb}$ and $V_{Rk,c}$ see TR 054

Würth Injection System for masonry
WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Express, WIT-VM 210 Tropical

Performance Clay hollow brick Doppio Uni
 Characteristic values of resistance under tension and shear load

Annex C 32

Brick type: Hollow Light weight concrete Bloc creux B40

Table C59: Description

Brick type	Hollow light weight concrete Bloc creux B40	
Bulk density [kg/dm³]	0,8	
Compressive strength [N/mm²]	4	
Code	EN 771-3	
Producer (country code)	e.g. Sepa (FR)	
Brick dimensions [mm]	494 x 200 x 190	
Drilling method	Rotary drilling	

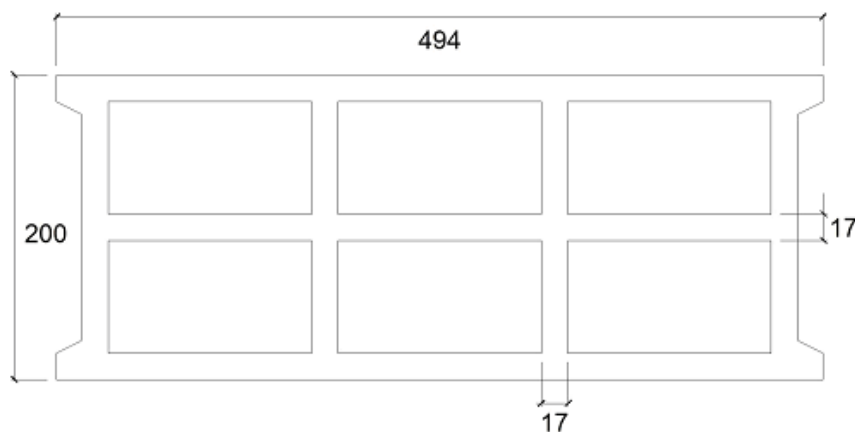


Table C60: Installation parameter (Edge and spacing distances)

Anchor size	Sleeve	Embedment depth	Edge distance	Spacing		Maximum installation torque
		h_{ef}	$C_{min} = C_{cr}$	$S_{cr} = S_{min \parallel}$	$S_{min \perp}$	$T_{inst,max}$
		[mm]				[Nm]
M8	SH 12x80	80	100	494	190	2
M8 / M10	SH 16x85	85				
	SH 16x130	130				
	SH 16x130/330	130				
M12 / M16	SH 20x85	85	120	494	190	2
	SH 20x130	130				

Table C61: Displacement

Effective anchorage depth h_{ef}	N	δ_{N0}	$\delta_{N\infty}$	V	δ_{V0}	$\delta_{V\infty}$
[mm]	[kN]	[mm]	[mm]	[kN]	[mm]	[mm]
80	$\frac{N_{Rk}}{1,4 \cdot \gamma_M}$	0,14	0,29	$\frac{V_{Rk}}{1,4 \cdot \gamma_M}$	0,25	0,37
85		0,45	0,90		0,98	1,47
130		0,61	1,22		1,10	1,65

Würth Injection System for masonry
WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Express, WIT-VM 210 Tropical

Performance hollow light weight concrete Bloc creux B40
 Brick description, drawing,
 Installation parameters, Displacements

Annex C 33

Brick type: Hollow Light weight concrete Bloc creux B40

Table C62: Characteristic values of resistance under tension and shear loads

Anchor size	Sleeve	Effective anchorage depth	Characteristic resistance		
			Use conditions		
			d/d w/d w/w		
		40°C / 24°C	80°C / 50°C	For all temperature range	
		h _{ef}	N _{RK} ¹⁾	N _{RK} ¹⁾	V _{RK,b} ²⁾
[mm]	[kN]				
Compressive strength f _b ≥ 4 N/mm ²					
M8	SH 12x80	80	0,4	0,3	1,2
	SH 16x85	85	0,6	0,5	3,0
	SH 16x130	130	2,0	1,5	3,5
	SH 16x130/330	130	2,0	1,5	3,5
M10	SH 16x85	85	0,6	0,5	3,0
	SH 16x130	130	2,0	1,5	3,5
	SH 16x130/330	130	2,0	1,5	3,5
M12	SH 20x85	85	0,9	0,6	3,0
	SH 20x130	130	2,0	1,5	3,5
M16	SH 20x85	85	0,9	0,6	3,0
	SH 20x130	130	2,0	1,5	3,5

¹⁾ For design according TR 054: $N_{Rk} = N_{Rk,p} = N_{Rk,b}$; $N_{Rk,s}$ according to Table C2 Annex C2; Calculation $N_{Rk,pb}$ see TR 054

²⁾ For $V_{Rk,s}$ see Annex C 2, Table C2; Calculation of $V_{Rk,pb}$ and $V_{Rk,c}$ see TR 054

Würth Injection System for masonry
WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Express, WIT-VM 210 Tropical

Performance hollow light weight concrete Bloc creux B40
 Characteristic values of resistance under tension and shear load

Annex C 34

Brick type: Solid light weight concrete brick

Table C63: Description

Brick type	Solid light weight concrete brick	
Bulk density [kg/dm³]	0,63	
Compressive strength [N/mm²]	2	
Code	EN 771-3	
Producer (country code)	e.g. Bisotherm (DE)	
Brick dimensions [mm]	300 x 123 x 248	
Drilling method	Rotary drilling	

Table C64: Installation parameter (Edge and spacing distances)

Anchor size	Sleeve	Embedment depth	Edge distance	Spacing	Maximum installation torque
		h_{ef}	$C_{min} = C_{cr}$	$S_{cr} = S_{min \parallel} = S_{min \perp}$	$T_{inst,max}$
		[mm]			[Nm]
M8	-	80	120	240	6
M10	-	90	135	270	
M12	-	100	150	300	10
M16	-	100	150	300	14

Table C65: Displacement

Effective anchorage depth h_{ef}	N	δ_{N0}	$\delta_{N\infty}$	V	δ_{V0}	$\delta_{V\infty}$
[mm]	[kN]	[mm]	[mm]	[kN]	[mm]	[mm]
80	$\frac{N_{Rk}}{1,4 \cdot \gamma_M}$	0,64	1,28	$\frac{V_{Rk}}{1,4 \cdot \gamma_M}$	0,50	0,75
90		0,70	1,41		0,68	1,03
100		0,21	0,42		0,54	0,81

Würth Injection System for masonry
WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Express, WIT-VM 210 Tropical

Performance Solid light weight concrete LAC
 Brick description, drawing,
 Installation parameters, Displacements

Annex C 35

Brick type: Solid light weight concrete brick

Table C66: Characteristic values of resistance under tension and shear loads

Anchor size	Sleeve	Effective anchorage depth	Characteristic resistance		
			Use conditions		
			d/d w/d w/w		
		40°C / 24°C	80°C / 50°C	For all temperature range	
		h_{ef}	$N_{RK}^{1)}$	$N_{RK}^{1)}$	$V_{RK,b}^{2)}$
[mm]	[kN]				
Compressive strength $f_b \geq 2 \text{ N/mm}^2$					
M8	-	80	2,0	1,5	3,0
M10	-	90	2,0	1,5	3,5
M12	-	100	2,0	1,5	4,0
M16	-	100	2,0	1,5	4,0

¹⁾ For design according TR 054: $N_{Rk} = N_{Rk,p} = N_{Rk,b}$; $N_{Rk,s}$ according to Table C2 Annex C2; Calculation $N_{Rk,pb}$ see TR 054

²⁾ For $V_{Rk,s}$ see Annex C 2, Table C2; Calculation of $V_{Rk,pb}$ and $V_{Rk,c}$ see TR 054

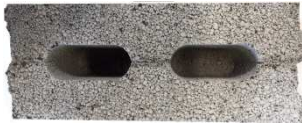
Würth Injection System for masonry
WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Express, WIT-VM 210 Tropical

Performance Solid light weight concrete LAC
 Characteristic values of resistance under tension and shear load

Annex C 36

Brick type: Hollow light weight concrete brick – Leca Lex harkko RUH-200

Table C67: Description

Brick type	Hollow light weight concrete Leca Lex harkko RUH-200	
Bulk density [kg/dm³]	0,7	
Compressive strength [N/mm²]	2,7	
Code	EN 771-3	
Producer (country code)	e.g. Saint-Gobain Weber (Fin)	
Brick dimensions [mm]	498 x 200 x 195	
Drilling method	Rotary drilling	

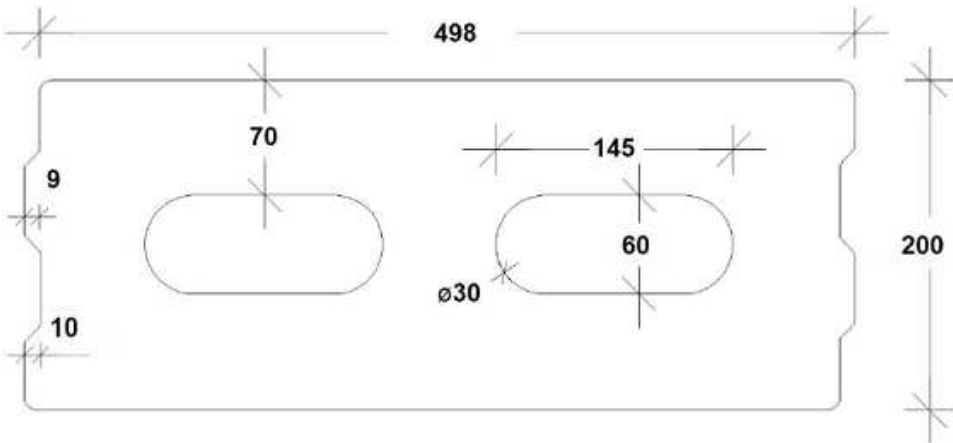


Table C68: Installation parameter (Edge and spacing distances)

Anchor size	Sleeve	Embedment depth	Edge distance	Spacing		Maximum installation torque
		h_{ef}	$C_{min} = C_{cr}$	$S_{cr} = S_{min \parallel}$	$S_{min \perp}$	$T_{inst,max}$
		[mm]				[Nm]
M8	SH 12x80	80	120	498	195	8
M8 / M10	SH 16x85	85	127			
	SH 16x130	130	195			
	SH 16x130/330	130	195			
M12 / M16	SH 20x85	85	127	498	195	8
	SH 20x130	130	195			

Table C69: Displacement

Effective anchorage depth h_{ef}	N	δ_{N0}	$\delta_{N\infty}$	V	δ_{V0}	$\delta_{V\infty}$
[mm]	[kN]	[mm]	[mm]	[kN]	[mm]	[mm]
80	$\frac{N_{Rk}}{1,4 \cdot \gamma_M}$	0,11	0,22	$\frac{V_{Rk}}{1,4 \cdot \gamma_M}$	0,47	0,70
85		0,11	0,23		0,38	0,57
130		0,10	0,20		0,56	0,85

Würth Injection System for masonry WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Express, WIT-VM 210 Tropical Performance LECA LEX harkko RUH-200 Hollow Brick description, drawing, Installation parameters, Displacements	Annex C 37
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Brick type: Hollow light weight concrete brick – Leca Lex harkko RUH-200

Table C70: Characteristic values of resistance under tension and shear loads

Anchor size	Sleeve	Effective anchorage depth	Characteristic resistance		
			Use conditions		
			d/d	w/d	w/w
		40°C / 24°C	80°C / 50°C	For all temperature range	
		h_{ef}	$N_{RK}^{1)}$	$N_{RK}^{1)}$	$V_{RK,b}^{2)}$
[mm]	[kN]				
Compressive strength $f_b \geq 2,7 \text{ N/mm}^2$					
M8	SH 12x80	80	2,0	1,2	2,5
	SH 16x85	85	2,0	1,2	3,5
	SH 16x130	130	2,5	1,5	3,5
	SH 16x130/330	130	2,5	1,5	3,5
M10	SH 16x85	85	2,0	1,5	3,5
	SH 16x130	130	2,5	1,5	3,5
	SH 16x130/330	130	2,5	1,5	3,5
M12	SH 20x85	85	2,5	1,5	3,5
	SH 20x130	130	2,5	1,5	3,5
M16	SH 20x85	85	2,5	1,5	3,5
	SH 20x130	130	2,5	1,5	3,5

¹⁾ For design according TR 054: $N_{Rk} = N_{Rk,p} = N_{Rk,b}$; $N_{Rk,s}$ according to Table C2 Annex C2; Calculation $N_{Rk,pb}$ see TR 054

²⁾ For $V_{Rk,s}$ see Annex C 2, Table C2; Calculation of $V_{Rk,pb}$ and $V_{Rk,c}$ see TR 054

Würth Injection System for masonry
WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Express, WIT-VM 210 Tropical

Performance LECA LEX harkko RUH-200 Hollow
 Characteristic values of resistance under tension and shear load
 Displacement

Annex C 38

Brick type: Solid light weight concrete brick – Leca Lex harkko RUH-200 kulma

Table C71: Description

Brick type	Solid light weight concrete Leca Lex harkko RUH-200 kulma	
Bulk density [kg/dm³]	0,78	
Compressive strength [N/mm²]	3	
Code	EN 771-3	
Producer (country code)	e.g. Saint-Gobain Weber (Fin)	
Brick dimensions [mm]	498 x 200 x 195	
Drilling method	Rotary drilling	

Table C72: Installation parameter (Edge and spacing distances)

Anchor size	Sleeve	Embedment depth	Edge distance	Spacing	Maximum installation torque
		h_{ef}	$C_{min} = C_{cr}$	$S_{cr} = S_{min II} = S_{min \perp}$	$T_{inst,max}$
		[mm]			[Nm]
M8	-	80	120	240	6
M10	-	90	135	270	12
M12	-	100	150	300	14
M16	-	100	150	300	16
M8	SH 12x80	80	120	240	8
M8 / M10	SH 16x85	85	127	255	
	SH 16x130	130	195	390	
	SH 16x130/330	130	195	390	
M12 / M16	SH 20x85	85	127	255	12
	SH 20x130	130	195	390	16

Table C73: Displacement

Effective anchorage depth h_{ef}	N	δ_{N0}	$\delta_{N\infty}$	V	δ_{V0}	$\delta_{V\infty}$
[mm]	[kN]	[mm]	[mm]	[kN]	[mm]	[mm]
80	$\frac{N_{Rk}}{1,4 \cdot \gamma_M}$	0,09	0,18	$\frac{V_{Rk}}{1,4 \cdot \gamma_M}$	0,48	0,72
85		0,07	0,15		0,77	1,15
90		0,13	0,26		0,26	0,39
100		0,13	0,23		0,36	0,54
130		0,10	0,21		0,68	1,01

Würth Injection System for masonry
WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Express, WIT-VM 210 Tropical

Performance LECA LEX harkko RUH-200 Kulma Solid
 Brick description, drawing,
 Installation parameters, Displacements

Annex C 39

Brick type: Solid light weight concrete brick – Leca Lex harkko RUH-200 kulma

Table C74: Characteristic values of resistance under tension and shear loads

Anchor size	Sleeve	Effective anchorage depth	Characteristic resistance		
			Use conditions		
			d/d w/d w/w		
		40°C / 24°C	80°C / 50°C	For all temperature range	
		h_{ef}	$N_{RK}^{1)}$	$N_{RK}^{1)}$	$V_{RK,b}^{2)}$
[mm]	[kN]				
Compressive strength $f_b \geq 3,0 \text{ N/mm}^2$					
M8	-	80	2,0	1,2	3,0
M10	-	90	3,0	2,0	4,0
M12	-	100	3,0	2,0	4,0
M16	-	100	3,0	2,0	4,0
M8	SH 12x80	80	2,0	1,2	3,0
	SH 16x85	85	2,0	1,5	3,5
	SH 16x130	130	3,0	2,0	4,0
	SH 16x130/330	130	3,0	2,0	4,0
M10	SH 16x85	85	2,0	1,5	3,5
	SH 16x130	130	3,0	2,0	4,0
	SH 16x130/330	130	3,0	2,0	4,0
M12 / M16	SH 20x85	85	2,0	1,5	4,5
	SH 20x130	130	3,0	2,0	4,5

¹⁾ For design according TR 054: $N_{Rk} = N_{Rk,p} = N_{Rk,b}$; $N_{Rk,s}$ according to Table C2 Annex C2; Calculation $N_{Rk,pb}$ see TR 054

²⁾ For $V_{Rk,s}$ see Annex C 2, Table C2; Calculation of $V_{Rk,pb}$ and $V_{Rk,c}$ see TR 054

Würth Injection System for masonry
WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Express, WIT-VM 210 Tropical

Performance LECA LEX harkko RUH-200 Kulma Solid
 Characteristic values of resistance under tension and shear load

Annex C 40

ДЕКЛАРАЦИЯ ЗА ЕКСПЛОАТАЦИОННИ ПОКАЗАТЕЛИ

№ 5918420330_00_M_WIT-VM 210(2)

Настоящият текст е превод от немски на български.

В случай на съмнение важи оригиналът на немски

1. Уникален идентификационен код на типа на продукта: Würth Injektionssystem WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Tropical, WIT-VM 210 Express (Würth инжекционна система WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Tropical, WIT-VM 210 Express)
Арт. №: 591842*; 591843*; 591844*; 591845*
2. Предвидена употреба/употреби: Системи за допълнително замонолитени връзки за арматура
3. Производител: Adolf Würth GmbH & Co. KG
Reinhold-Würth-Straße 12 - 17
D - 74653 Künzelsau
4. Система (и) за оценка и проверка на постоянството на експлоатационните показатели: Система 1
5. Европейски документ за оценяване: EAD 330087-00-0601, май 2018
Европейска техническа оценка: ETA-20/0646 - 17.9.2020 г.
Орган за техническа оценка: Technical and Test Institute for Construction Prague (TZUS)
Нотифициран(и) орган(и): 2873, Institut für Stahlbau und Werkstoffmechanik (IFSW), Darmstadt
6. Деклариран(и) експлоатационен(и) показател(и):

Основни характеристики	Експлоатационни показатели	Хармонизирана техническа спецификация
Механична якост и устойчивост (BWR 1)		ETA-20/0646 EAD 330087-00-0601
Напрежение на стоманобетона	Вижте приложение C1	
Коефициент на редукция	Вижте приложение C1	
Коефициент на увеличаване за минимална дължина на заковвяне	Вижте приложение C1	
Противопожарна защита (BWR 2)		
Реакция на огън	от клас A1 съгласно EN 13501-1	
Огнеустойчивост	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 производителят в съответствие с Регламент на (ЕС) № 305/2011.

Подписана за производителя и от името на производителя от:



Франк Волперт

Прокурист мениджър Продуктов
мениджмънт



Др. инж. Зигфрид Байхтер

(Прокурист мениджър Качество)

Кюнцелзау, 01.1.2021 г.

PROHLÁŠENÍ O VLASTNOSTECH

Č. 5918420330_00_M_WIT-VM 210(2)

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

- Jednoznačný identifikační kód typu výrobku:** Injekční systém Würth WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Tropical, WIT-VM 210 Express
Č. vyr.: 591842*; 591843*; 591844*; 591845*
- Zamýšlené/zamýšlená použití:** Systémy pro připojení výztuže pro dodatečnou instalaci
- Výrobce:** Adolf Würth GmbH & Co. KG
Reinhold-Würth-Straße 12 - 17
D - 74653 Künzelsau
- Systém(y) pro hodnocení a kontrolu stálosti vlastností:** Systém 1
- Evropský dokument pro posuzování:** EAD 330087-00-0601, květen 2018
Evropské technické schválení: ETA-20/0646 - 17. 09. 2020
Pracoviště pro technické posuzování: Technical and Test Institute for Construction Prague (TZUS)
Oznámený subjekt/oznámené subjekty: 2873, Institut für Stahlbau und Werkstoffmechanik (IFSW), Darmstadt
- Deklarovaná vlastnost/deklarované vlastnosti:**

Podstatné charakteristické vlastnosti	Vlastnost	Harmonizovaná technická specifikace
Mechanická pevnost a stálost (BWR 1)		ETA-20/0646 EAD 330087-00-0601
Napětí v soudržnosti	Viz přílohu C1	
Redukční faktor	Viz přílohu C1	
Součinitel zvýšení pro minimální délku ukotvení	Viz přílohu C1	
Požární ochrana (BWR 2)		
Reakce na oheň	třídy A1 podle EN 13501-1	
Požární odolnost	Nehodnocené vlastnosti	

Vlastnosti výše uvedeného výrobku jsou ve shodě se souborem deklarovaných vlastností. Za vyhotovení prohlášení o vlastnostech v souladu s nařízením (EU) č. 305/2011 je odpovědný výhradně výše uvedený výrobce.

Podepsal za výrobce a jeho jménem:



Frank Wolpert
(zmocněnec - ředitel produktového
managementu)



Dr.-Ing. Siegfried Beichter
(zmocněnec - ředitel oddělení jakosti)

Künzelsau, 01. 01. 2021

YDEEVNEDEKLARATION

Nr. 5918420330_00_M_WIT-VM 210(2)

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

1. **Produkttypens entydige identifikationskode:** Würth injektionssystem WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Tropical, WIT-VM 210 Express
Art.-nr.: 591842*; 591843*; 591844*; 591845*
2. **Anvendelsesformål:** Systemer til efterfølgende mørtlede armeringstilslutninger
3. **Producent:** Adolf Würth GmbH & Co. KG
Reinhold-Würth-Straße 12 - 17
D - 74653 Künzelsau
4. **System(er) til bedømmelse og kontrol af ydelsesbestandigheden:** System 1
5. **Europæisk vurderingsdokument:** EAD 330087-00-0601, maj 2018
Europæisk teknisk bedømmelse: ETA-20/0646 - 17-09-2020
Teknisk evalueringsmyndighed: Technical and Test Institute for Construction Prague (TZUS)
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-20/0646 EAD 330087-00-0601
Adhæsionsspændinger	Se bilag C1	
Reduktionsfaktor	Se bilag C1	
Forstærkningsfaktor til minimal forankringslængde	Se bilag C1	
Brandsikkerhed (BWR 2)		
Brandreaktion	I klasse A1 iht. EN 13501-1	
Brandmodstand	Ydelse ikke evalueret	

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

Underskrevet for og på vegne af producenten af:



Frank Wolpert
(Prokurist - leder produktmanagement)



Dr.-ing. Siegfried Beichter
(Prokurist - leder af kvalitetsafdelingen)

Künzelsau, den 01.01.2021

LEISTUNGSERKLÄRUNG

Nr. 5918420330_00_M_WIT-VM 210(2)

1. Eindeutiger Kenncode des Produkttyps: Würth Injektionssystem WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Tropical, WIT-VM 210 Express
Art.-Nr.: 591842*; 591843*; 591844*; 591845*
2. Verwendungszweck(e): Systeme für nachträglich eingemörtelte Bewehrungsanschlüsse
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 330087-00-0601, Mai 2018
Europäische Technische Bewertung: ETA-20/0646 - 17.09.2020
Technische Bewertungsstelle: Technical and Test Institute for Construction Prague (TZUS)
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-20/0646 EAD 330087-00-0601
Verbundspannungen	Siehe Anhang C1	
Reduktionsfaktor	Siehe Anhang C1	
Erhöhungsfaktor für Minimale Verankerungslänge	Siehe Anhang C1	
Brandschutz (BWR 2)		
Brandverhalten	der Klasse A1 gemäß EN 13501-1	
Feuerwiderstand	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:



Frank Wolpert
(Prokurist - Leiter Produktmanagement)



Dr. -Ing. Siegfried Beichter
(Prokurist - Leiter Qualität)

Künzelsau, den 01.01.2021

DECLARACIÓN DE PRESTACIONES

N.º 5918420330_00_M_WIT-VM 210(2)

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

1. Código de identificación única del producto tipo: Würth Injektionssystem WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Tropical, WIT-VM 210 Express (sistema de inyección Würth)
N.º de art.: 591842*; 591843*; 591844*; 591845*
2. Uso(s) previsto(s): Sistemas para uniones de armadura con rejuntado posterior
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 330087-00-0601, mayo de 2018
Evaluación Técnica Europea: ETA-20/0646 - del 17/09/2020
Organismo de Evaluación Técnica: Technical and Test Institute for Construction Prague (TZUS)
Organismo(s) notificado(s): 2873, Institut für Stahlbau und Werkstoffmechanik (IFSW), Darmstadt
6. Prestaciones declaradas:

Características esenciales	Prestación	Especificaciones técnicas armonizadas
Resistencia mecánica y estabilidad (BWR 1)		ETA-20/0646 EAD 330087-00-0601
Tensiones de adherencia	Véase el anexo C1	
Factor de reducción	Véase el anexo C1	
Factor de aumento para longitud de anclaje mínima	Véase el anexo C1	
Protección contra incendios (BWR 2)		
Reacción al fuego	de la clase A1 según EN 13501-1	
Resistencia al fuego	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:



Frank Wolpert
(Apoderado - Director de Product Management)
Künzelsau, el 01/01/2021



Dr. -Ing. Siegfried Beichter
(Apoderado - Director de Calidad)

TOIMIVUSDEKLARATSIOON

Nr. 5918420330_00_M_WIT-VM 210(2)

**Tegemist on saksa keelest tõlgitud versiooniga.
Kahtluste korral kehtib saksa keelne originaaltekst**

- Tootetüübi kordumatu identifitseerimiskood:** Würthi ankurdussüsteem WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Tropical, WIT-VM 210 Express
Art-nr: 591842*; 591843*; 591844*; 591845*
- Ettenähtud kasutusotstarve või -otstarbed:** Tagantjärele sissemõrditavate sarrusühenduste süsteemid
- Tootja:** Adolf Würth GmbH & Co. KG
Reinhold-Würth-Straße 12 - 17
D - 74653 Künzelsau
- Toimivuse püsivuse hindamise ja kontrolli süsteem(id):** Süsteem 1
- Euroopa hindamisdokument:** EAD 330087-00-0601, mai 2018
Euroopa tehniline hinnang: ETA-20/0646 - 17.09.2020
Tehnilise hindamise asutus: Technical and Test Institute for Construction Prague (TZUS)
Teavitatud asutus(ed): 2873, Institut für Stahlbau und Werkstoffmechanik (IFSW), Darmstadt
- Deklareeritud toimivus(ed):**

Põhiomadused	Toimivus	Ühtlustatud tehniline kirjeldus
Mehaaniline tugevus ja vastupidavus (BWR 1)		ETA-20/0646 EAD 330087-00-0601
Liitetugevused	Vt lisa C1	
Vähendusfaktor	Vt lisa C1	
Suurendusfaktor minimaalse kinnituspikkuse puhul	Vt lisa C1	
Tulekaitse (BWR 2)		
Tuletundlikkus	Klass A1 vastavalt EN 13501-1	
Tuletakistus	Toimivus hindamata	

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

Tootja poolt ja nimel allkirjastanud:



Frank Wolpert
(Prokurist-tootejuht)
Künzelsau, 01.01.2021



Dr. ins. Siegfried Beichter
(Prokurist-kvaliteedijuht)

SUORITUSTASOILMOITUS

Nro 5918420330_00_M_WIT-VM 210(2)

**Tämä on käännös saksankielisestä.
Epäilyksissä pätee saksankielinen alkuperäisilmoitus.**

1. Tuotetyypin yksilöllinen tunnistus: Würth injektiojärjestelmä WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Tropical, WIT- VM 210 Express
Tuote-nro: 591842*; 591843*; 591844*; 591845*
2. Aiottu käyttötarkoitus (aiotut käyttötarkoitukset): Järjestelmät jälkeensä sisään laastoitettujen betonirudoitusten liitoskohdille
3. Valmistaja: Adolf Würth GmbH & Co. KG
Reinhold-Würth-Straße 12 - 17
D - 74653 Künzelsau, Saksa
4. Suoritusarvioinnin ja tarkistamisen järjestelmä(t): Järjestelmä 1
5. Eurooppalainen arviointidokumentti: EAD 330087-00-0601, Mai 2018 (EAD 330087-00-0601, toukokuu 2018)
Eurooppalainen tekninen arviointi: ETA-20/0646 - 17.09.2020
Teknisestä arvioinnista vastaava laitos: Technical and Test Institute for Construction (TZUS; rakennusalan tekninen- ja testi-instituutti), Praha
Ilmoitettu laitos / ilmoitetut laitokset: 2873, Institut für Stahlbau und Werkstoffmechanik (IFSW; teräsrakenneteollisuuden ja materiaalimekaniikan instituutti), Darmstadt
6. Ilmoitettu suoritusarvio/ilmoitetut suoritusarvot:

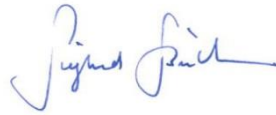
Perusominaisuudet	Suoritusarvio	Yhdenmukaistetut tekniset eritelmit
Mekaaninen lujuus ja vakaus (BWR 1)		ETA-20/0646 EAD 330087-00-0601
Yhteisjännitys	Katso liite C1	
Vähennyskerroin	Katso liite C1	
Korotuskerroin ankkuroinnin minimipituuksille	Katso liite C1	
Palosuoja (BWR 2)		
Palokäyttäytyminen	Luokka A1 standardin EN 13501-1 (SFS-EN 13501-1:2019) mukaan	
Palonkestävyys	Suoritusarvio ei määritetty	

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

Valmistajan puolesta allekirjoittanut:



Frank Wolpert
(Prokuristi - tuotehallinnon johtaja)



TkT Siegfried Beichter
(Prokuristi - laadunjohtaja)

Künzelsau, 01.01.2021

DÉCLARATION DE PERFORMANCES

N° 5918420330_00_M_WIT-VM 210(2)

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

1. **Code d'identification unique du produit type :** Système à injecter Würth WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Tropical, WIT-VM 210 Express
N° de réf. : 591842*; 591843*; 591844*; 591845*
2. **Usage(s) prévu(s) :** Systèmes pour raccords d'armature noyés après coup dans le mortier
3. **Fabricant :** Adolf Würth GmbH & Co. KG
Reinhold-Würth-Strasse 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 330087-00-0601, mai 2018
Évaluation technique européenne : ETA-20/0646 - 17/09/2020
Organisme d'évaluation technique : Technical and Test Institute for Construction Prague TZUS
Organisme(s) notifié(s) : 2873, Institut für Stahlbau und Werkstoffmechanik (IFSW), Darmstadt
6. **Performance(s) déclarée(s) :**

Caractéristiques essentielles	Performance	Spécification technique harmonisée
Résistance mécanique et stabilité verticale (BWR 1)		ETA-20/0646 EAD 330087-00-0601
Tensions composites	Voir annexe C1	
Facteur de réduction	Voir annexe C1	
Facteur d'augmentation pour longueur d'ancrage minimale	Voir annexe C1	
Protection incendie (BWR 2)		
Réaction au feu	de classe A1 conformément à EN 13501-1	
Résistance au feu	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 :



Frank Wolpert
(Fondé de pouvoir – Directeur Gestion
Produits)



Dr. -Ing. Siegfried Beichter
(Fondé de pouvoir – Directeur Qualité)

Künzelsau, le 01/01/2021

DEARBHÚ FEIDHMÍOCHTA

Uimh. 5918420330_00_M_WIT-VM 210(2)

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: Würth Injektionssystem WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Tropical, WIT-VM 210 Express
Uimh.earra: 591842 *; 591843 *; 591844 *; 591845 *
2. Úsáid(i) b(h)eartaithe: Córais le haghaidh naisc athneartaithe a leabaíodh i moirtéal níos déanaí
3. Déantúsóir: Adolf Würth GmbH & Co. KG
Reinhold- Würth-Str. 12 - 17
D - 74653 Künzelsau
4. Córa(i)s chun seasmhacht feidhmíochta a mheas agus a scrúdú: Córas 1
5. Doiciméad Measúnaithe Eorpach: EAD 330087-00-0601, Bealtaine 2018
Measúnú Teicniúil Eorpach: ETA-20/0646 - 17/09/2020
Ionad Measúnaithe Teicniúil: Technical and Test Institute for Construction Prague (TZUS)
Iona(i)d dá dtugtar fógra: 2873, Institut für Stahlbau und Werkstoffmechanik (IFSW), Darmstadt (Institiúid um Fhoirgníocht Chruach agus Meicníocht Ábhair (IFSW), Darmstadt)
6. Feidhmíocht(aí) d(h)earbhaithe:

Príomhthréithe	Feidhmíocht	Sonraíocht theicniúil chomhchuibhithe
Friotaíocht agus Cobhsaíocht Mheicniúil (BWR 1)		ETA-20/0646 EAD 330087-00-0601
Strus ar bhannaí	Féach iarscríbhinn C1	
Fachtóir laghdaithe	Féach iarscríbhinn C1	
Fachtóir méadaithe don íosfhad ancaireachta	Féach iarscríbhinn C1	
Cosaint dóiteáin (BWR 2)		
Iompar i gcás dóiteáin	d'aicme A1 de réir EN 13501-1	
Friotaíocht i gcoinne tine	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.

Sínihe ar son agus thar ceann an déantúsóra ag:



Frank Wolpert
(Oifigeach Údaraithe - Stiúrthóir um
Bainistíocht Táirgí)

Künzelsau, 01/01/2021



Dr. -Ing. Siegfried Beichter
(Oifigeach Údaraithe - Stiúrthóir
Cáilíochta)

ΔΗΛΩΣΗ ΕΠΙΔΟΣΕΩΝ

Αρ. 5918420330_00_M_WIT-VM 210(2)

**Πρόκειται για την έκδοση μεταφρασμένη από τα γερμανικά.
Σε περίπτωση αμφιβολιών, ισχύει το γερμανικό πρωτότυπο**

1. Μοναδικός κωδικός αναγνώρισης του τύπου του προϊόντος: Σύστημα έγχυσης Würth WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Tropical, WIT-VM 210 Express
Αρ. είδ.: 591842*, 591843*, 591844*, 591845*
2. Σκοπός (-οί) χρήσης: Συστήματα για συνδέσεις οπλισμού εκ των υστέρων πακτωμένες σε κόνιαμα
3. Κατασκευαστής: Adolf Würth GmbH & Co. KG
Reinhold-Würth-Straße 12 - 17
D - 74653 Künzelsau
4. Σύστημα (-τα) για την αξιολόγηση και τον έλεγχο της διατήρησης της επίδοσης: Σύστημα 1
5. Ευρωπαϊκό έντυπο αξιολόγησης: EAD 330087-00-0601, Μάιος 2018
Ευρωπαϊκή τεχνική αξιολόγηση: ETA-20/0646 - 17.09.2020
Οργανισμός τεχνικής αξιολόγησης: Technical and Test Institute for Construction Prague (TZUS)
Κοινοποιημένος οργανισμός (-οί): 2873, Institut für Stahlbau und Werkstoffmechanik (IFSW), Darmstadt
6. Δηλωμένη επίδοση (-εις):

Σημαντικά χαρακτηριστικά	Επίδοση	Εναρμονισμένες τεχνικές προδιαγραφές
Μηχανική αντοχή και αντίσταση (BWR 1)		ETA-20/0646 EAD 330087-00-0601
Δυνάμεις συνοχής	Βλέπε παράρτημα C1	
Συντελεστής ελάττωσης	Βλέπε παράρτημα C1	
Συντελεστής μεγιστοποίησης για ελάχιστο μήκος αγκύρωσης	Βλέπε παράρτημα C1	
Πυροπροστασία (BWR 2)		
Συμπεριφορά σε πυρκαγιά	της κατηγορίας A1 κατά EN 13501-1	
Αντοχή σε πυρκαγιά	Η επίδοση δεν έχει αξιολογηθεί	

Η επίδοση του προαναφερόμενου προϊόντος αντιστοιχεί στη δηλωμένη επίδοση/στις δηλωμένες επιδόσεις. 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 εν ονόματι του κατασκευαστή από:



Frank Wolpert

(Γενικός εμπορικός πληρεξούσιος -
Διευθυντής διαχείρισης παραγωγής)



Dr. -Ing. Siegfried Beichter

(Γενικός εμπορικός πληρεξούσιος -
Διευθυντής ποιότητας)

Künzelsau, την 01.01.2021

IZJAVA O SVOJSTVIMA

Br. 5918420330_00_M_WIT-VM 210(2)

**Ova je verzija teksta prevedena s njemačkog.
U slučaju dvojbe original na njemačkom ima prednost**

1. Jedinstvena identifikacijska oznaka tipa proizvoda: Würth injekcijski sustav WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Tropical, WIT-VM 210 Express
Br. art.: 591842*; 591843*; 591844*; 591845*
2. Namjena(e): Sustavi za naknadno u mort ugrađene armaturne priključke
3. Proizvođač: Adolf Würth GmbH & Co. KG
Reinhold- Würth-Str. 12 - 17
D - 74653 Künzelsau
4. Sustav/i za ocjenjivanje i provjeru postojanosti svojstava: Sustav 1
5. Europski dokument za ocjenjivanje: EAD 330087-00-0601, svibanj 2018.
Europska tehnička ocjena: ETA-20/0646 - 17.9.2020.
Tijelo za tehničku ocjenu: Technical and Test Institute for Construction Prague (TZUS)
Prijavljeno/a tijelo/a: 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-20/0646 EAD 330087-00-0601
Zatezanja sveza	Vidi prilog C1	
Faktor redukcije	Vidi prilog C1	
Faktor pojačanja za minimalnu duljinu kotvljenja	Vidi prilog C1	
Zaštita od požara (BWR 2)		
Ponašanje u slučaju požara	razreda A1 u prema EN 13501-1	
Otpornost na požar	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:



Frank Wolpert
(Prokurist – voditelj upravljanja
proizvodima)



Dr. - Ing. Siegfried Beichter
(Prokurist – voditelj za kvalitetu)

Künzelsau, 1.1.2021.

TELJESÍTMÉNYNYILATKOZAT**5918420330_00_M_WIT-VM 210(2) sz.****Ez a német nyelvről lefordított változat.****Kétség esetén a német nyelvű eredeti az érvényes.**

1. A terméktípus egyedi azonosító kódja: Würth WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Tropical, WIT-VM 210 Express injekciós rendszer
Cikkszámok: 591842*; 591843*; 591844*; 591845*
2. Felhasználási cél(ok): Rendszerek utólag behabarcolt vasalási csatlakozásokhoz
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-es rendszer
5. Európai értékelési dokumentum: EAD 330087-00-0601, 2018. május
Európai Műszaki Értékelés: ETA-20/0646 - 2020.09.17.
Műszaki értékelő szervezet: Technical and Test Institute for Construction Prague (TZUS)
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-20/0646 EAD 330087-00-0601
Kapcsolódási feszültségek	Lásd a C1 mellékletet	
Redukciós tényező	Lásd a C1 mellékletet	
Növelési tényező minimális horgonyzási hosszhoz	Lásd a C1 mellékletet	
Tűzvédelem (BWR 2)		
Tűzzel szembeni viselkedés	A1 osztály, az EN 13501-1 szerint	
Tűzállóság	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:



Frank Wolpert
(cégvezető – termékmenedzsment
vezető)



Dr. -Ing. Siegfried Beichter
(cégvezető – minőségügyi vezető)

Künzelsau, 2021.01.01.

DICHIARAZIONE DI PRESTAZIONE

N. 5918420330_00_M_WIT-VM 210(2)

**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-VM 210, WIT-VM 210 Blue, WIT-VM 210 Tropical, WIT-VM 210 Express (Ancorante chimico - sistema ad iniezione WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Tropical, WIT-VM 210 Express)
Art. n.: 591842*; 591843*; 591844*; 591845* |
| 2. Utilizzo/i previsto/i: | Sistemi per riprese di getto per ferri di armatura |
| 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 330087-00-0601, maggio 2018 |
| Valutazione tecnica europea: | ETA-20/0646 - 17.09.2020 |
| Organismo di valutazione tecnica: | Technical and Test Institute for Construction Prague (TZUS) |
| 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-20/0646 EAD 330087-00-0601
Tensioni di aderenza	Si veda l'allegato C1	
Coefficiente di riduzione	Si veda l'allegato C1	
Fattore di incremento per lunghezza di ancoraggio minima	Si veda Allegato C1	
Sicurezza in caso di incendio (BWR 2)		
Reazione al fuoco	Della classe A1 in conformità a EN 13501-1	
Resistenza al fuoco	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:



Frank Wolpert
(Procuratore - Responsabile gestione
prodotto)



Dr. -Ing. Siegfried Beichter
(Procuratore - Responsabile Qualità)

Künzelsau, 01.01.2021

EKSPLOATACINIŲ SAVYBIŲ DEKLARACIJA

Nr. 5918420330_00_M_WIT-VM 210(2)

**Tai yra vertimas iš vokiečių kalbos.
Kilus abejonų, vadovautis originalu vokiečių kalba.**

1. Produkto tipo unikalus atpažinimo kodas: „Würth“ injekcinė sistema WIT-VM 210, WIT-VM 210 „Blue“, WIT-VM 210 „Tropical“, WIT-VM 210 „Express“
Prekės Nr.: 591842 *; 591843 *; 591844 *; 591845 *
2. Naudojimo paskirtis (-ys): Papildomai sutvirtintos armavimo jungtys
3. Gamintojas: „Adolf Würth GmbH & Co. KG“
Reinhold-Würth g. 12-17
D - 74653 Kiuncelsau
4. Eksploatacinių savybių atsparumo įvertinimo ir patikrinimo sistema (-os): 1 sistema
5. Europos įvertinimo dokumentas: EAD 330087-00-0601, 2018 gegužės mėn.
Europos techninis įvertinimas: ETA-20/0646, atliktas 2020-09-17
Techninio vertinimo įstaiga: Prahos statybos technikos ir bandymų institutas (TZUS)
Notifikuotoji (-osios) įstaiga (-os): 2873, „Institut für Stahlbau und Werkstoffmechanik“ (IFSW), Darmštatas
6. Deklaruojama (-os) eksploatacinė (-s) savybė (-s):

Pagrindinės charakteristikos	Eksploatacinės savybės	Darnusis techninis standartas
Mechaninis stiprumas ir stabilumas (BWR 1)		ETA-20/0646 EAD 330087-00-0601
Sukibimo įtampa	Žr. C1 priedą.	
Redukcijos koeficientas	Žr. C1 priedą.	
Minimalaus tvirtinimo ilgio plėtimosi koeficientas	Žr. C1 priedą.	
Priešgaisrinė apsauga (BWR 2)		
Degumas	A1 klasė pagal EN 13501-1	
Atsparumas ugniai	Neįvertinta eksploatacinė savybė	

Turimos 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:



Frank Wolpert
(Įgaliotasis produkto vadovas)



Dr. inž. Siegfried Beichter
(Įgaliotasis kokybės vadovas)

Kiuncelsau, 2021-01-01

EKSPLOATĀCIJAS ĪPAŠĪBU DEKLARĀCIJA

Nr. 5918420330_00_M_WIT-VM 210(2)

**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-VM 210, WIT-VM 210 Blue, WIT-VM 210 Tropical, WIT-VM 210 Express
Preces Nr.: 591842*; 591843*; 591844*; 591845* |
| 2. Lietojuma mērķis(-i): | Sistēmas papildus iebetonētiem armatūras savienojumiem |
| 3. Ražotājs: | Adolf Würth GmbH & Co. KG
<i>Reinhold-Würth-Straße</i> 12 - 17
D - 74653 Künzelsau (Kincelzava) |
| 4. Eksploataācijas īpašību noturības novērtējuma un pārbaudes sistēma(-as): | Sistēma 1 |
| 5. Eiropas novērtējuma dokuments:
Eiropas Tehniskais novērtējums:
Tehniskā novērtējuma iestāde:
Paziņotā(-ās) iestāde(-es): | EAD 330087-00-0601, 2018. gada maijs
ETA-20/0646 - 17.09.2020
Technical and Test Institute for Construction Prague TZUS (Prāga)
2873, Institut für Stahlbau und Werkstoffmechanik (IFSW), Darmstadt (Darmštate) |
| 6. Deklarētā(-ās) eksploataācijas īpašība(-as): | |

Būtiskie raksturlielumi	Eksploatācijas īpašības	Saskaņotā tehniskā specifikācija
Mehāniskā izturība un stiprība (BWR 1)		ETA-20/0646 EAD 330087-00-0601
Saķeres spriegumi	Skatīt C1 pielikumu	
Samazinājuma koeficients	Skatīt C1 pielikumu	
Paaugstināšanas koeficients minimālajam noenkurojuma garumam	Skatīt C1 pielikumu	
Ugunsdrošība (BWR 2)		
Degšanas īpašības	A1 klase atbilstoši EN 13501-1	
Ugunsizturība	Īpašība nav vērtēta	

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

Ražotāja un ražotāja pārstāvja paraksts:



Frank Wolpert (Franks Volperts)

*(Prokurist – Leīter Produktmanagement
(prokūrists – produktu nodaļas
vadītājs))*

Künzelsau (Kincelzava), 01.01.2021.



Dr. -Ing. Siegfried Beichter (Dr. ing.
Zigfrīds Beihlers)

*(Prokurist – Leīter Qualität (prokūrists –
kvalitātes sistēmas vadītājs))*

DIKJARAZZJONI TA' PRESTAZZJONI

Nru 5918420330_00_M_WIT-VM 210(2)

Din hija l-verżjoni tradotta mill-Ġermaniż.

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

- Kodiċi uniku ta' identifikazzjoni tat-tip tal-prodott:** Würth Sistema b'Injezzjoni WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Tropical, WIT-VM 210 Express
Nru tal-oġġett: 591842*; 591843*; 591844*; 591845*
- Użu/i intenzjonat/i:** Sistemi għal konnessjonijiet rebar post-installati
- 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 330087-00-0601, Mejju 2018
Valutazzjoni Teknika Ewropea: ETA-20/0646 - 17/09/2020
Korp tal-valutazzjoni teknika: Technical and Test Institute for Construction Prague (TZUS)
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-20/0646 EAD 330087-00-0601
Stress tat-tqabbid	Ara l-Anness C1	
Fattur ta' tnaqqis	Ara l-Anness C1	
Fattur ta' zieda għat-tul minimu ta' ankraġġ	Ara l-Anness C1	
Protezzjoni kontra n-nar (BWR 2)		
Reazzjoni għan-nar	tal-Klassi A1 skont EN 13501-1	
Reżistenza kontra n-nar	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 taht ir-responsabbiltà unika tal-manifattur identifikat hawn fuq.

Iffirmat għal u fisem il-manifattur minn:



Frank Wolpert
(Rapp. Awtorizzat - Kap, Ġestjoni tal-Prodott)



Dr. -Ing. Siegfried Beichter
(Rapp. Awtorizzat - Kap, Ġestjoni tal-Kwalità)

Künzelsau, 01/01/2021

PRESTATIEVERKLARING

Nr. 5918420330_00_M_WIT-VM 210(2)

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

1. Eenduidige identificatiecode van het producttype: Würth injectiesysteem WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Tropical, WIT-VM 210 Express
Art.nr.: 591842*; 591843*; 591844*; 591845*
2. Gebruiksdoel(en): Systemen voor achteraf ingemetselde wapeningsaansluitingen
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 330087-00-0601, mei 2018
Europese technische beoordeling: ETA-20/0646 - 17/09/2020
Technische beoordelingsinstantie: Technical and Test Institute for Construction Prague (TZUS)
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-20/0646 EAD 330087-00-0601
Verbindingsspanningen	Zie bijlage C1	
Reductiefactor	Zie bijlage C1	
Verhogingsfactor voor minimale verankeringslengte	Zie bijlage C1	
Brandveiligheid (BWR 2)		
Brandgedrag	van klasse A1 volgens EN 13501-1	
Brandweerstand	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:



Frank Wolpert
(Procuratiehouder - Hoofd
Productmanagement)



dr.-ing. Siegfried Beichter
(Procuratiehouder - Hoofd Kwaliteit)

Künzelsau, 01/01/2021

YTELSESERKLÆRING

Nr. 5918420330_00_M_WIT-VM 210(2)

**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-VM 210, WIT-VM 210 Blue, WIT-VM 210 Tropical, WIT-VM 210 Express
Art.-nr.: 591842*; 591843*; 591844*; 591845*
2. Bruksområde: Systemer for armeringstilkoblinger som er innmurt i ettertid
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 330087-00-0601, mai 2018
Europeisk teknisk godkjenning: ETA-20/0646 – 17.09.2020
Teknisk godkjenningsorgan: Technical and Test Institute for Construction Prague (TZUS)
Teknisk(e) kontrollorgan(er): 2873, Institut für Stahlbau und Werkstoffmechanik (IFS), Darmstadt, Tyskland
6. Erklært(e) ytelse(r):

Vesentlige egenskaper	Ytelse	Harmonisert teknisk spesifikasjon
Mekanisk fasthet og stabilitet (BWR 1)		ETA-20/0646 EAD 330087-00-0601
Forbindelsesspenninger	Se vedlegg C1	
Reduksjonsfaktor	Se vedlegg C1	
Økningsfaktor for minimal forankringslengde	Se vedlegg C1	
Brannvern (BWR 2)		
Egenskaper ved brann	klasse A1 i henhold til NS-EN 13501-1	
Brannmotstand	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:




Frank Wolpert
(prokurist - leder produktstyring)

Dr. ing. Siegfried Beichter
(prokurist - leder kvalitet)

Künzelsau, den 01.01.2021

DEKLARACJA WŁAŚCIWOŚCI UŻYTKOWYCH

Nr 5918420330_00_M_WIT-VM 210(2)

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

1. **Niepowtarzalny kod identyfikacyjny typu produktu:** Würth system do zastrzyków WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Tropical, WIT-VM 210 Express
Nr artykułu: 591842*; 591843*; 591844*; 591845*
2. **Przeznaczenie:** systemy dla łącznika zbrojenia do późniejszego montażu w zaprawie
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 330087-00-0601, maj 2018
Europejska Ocena Techniczna: ETA-20/0646 - 17.09.2020
Placówka sporządzająca ocenę techniczną: Technical and Test Institute for Construction Prague (TZUS)
Jednostka/-i notyfikowana/-e: 2873, Institut für Stahlbau und Werkstoffmechanik (Instytut konstrukcji stalowych i mechaniki tworzyw), Darmstadt
6. **Deklarowane właściwości użytkowe:**

Istotne cechy	Właściwości użytkowe	Zharmonizowana specyfikacja techniczna
Wytrzymałość mechaniczna i stateczność (BWR 1)		ETA-20/0646 EAD 330087-00-0601
Napężenia przyczepności	Patrz załącznik C1	
Współczynnik redukcji	Patrz załącznik C1	
Współczynnik dla minimalnej długości kotwienia	Patrz załącznik C1	
Ochrona przeciwpożarowa (BWR 2)		
Klasyfikacja ogniowa	klasy A1 zgodnie z EN 13501-1	
Odporność ogniowa	Nie oceniano właściwości	

Właściwości użytkowe powyższego produktu pokrywają się z deklarowanymi właściwościami użytkowymi. Za sporządzenie deklaracji właściwości użytkowych zgodnie z rozporządzeniem (UE) nr 305/2011 odpowiedzialny jest wyłącznie wyżej wymieniony producent.

Podpisano za producenta i w jego imieniu:



Frank Wolpert
(Prokurent - Kierownik działu
zarządzania produktami)



Dr inż. Siegfried Beichter
(Prokurent - Kierownik działu jakości)

Künzelsau, dnia 01.01.2021 r.

DECLARAÇÃO DE DESEMPENHO**N.º 5918420330_00_M_WIT-VM 210(2)****Versão traduzida da versão alemã.****Em caso de dúvida, é válido o original em alemão**

1. **Código de identificação inequívoco do tipo de produto:** Sistema de injeção WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Tropical, WIT-VM 210 Express Würth
N.º art.: 591842*; 591843*; 591844*; 591845*
2. **Fim/fins de utilização:** Sistemas para amarrações de varões nervurados instalados à posteriori em estruturas de betão armado
3. **Fabricante:** Adolf Würth GmbH & Co. KG
Reinhold-Würth-Straße 12 - 17
D - 74653 Künzelsau
4. **Sistema(s) para avaliação e verificação da constância do desempenho:** Sistema 1
5. **Documento de avaliação europeu:** EAD 330087-00-0601, maio de 2018
Avaliação Técnica Europeia: ETA-20/0646 - 17.09.2020
Organismo de Avaliação Técnica: Technical and Test Institute for Construction Prague (TZUS)
Organismo(s) notificado(s): 2873, Institut für Stahlbau und Werkstoffmechanik (IFSW), Darmstadt
6. **Desempenho(s) declarado(s):**

Características essenciais	Desempenho	Especificação técnica harmonizada
Resistência mecânica e estabilidade (BWR 1)		ETA-20/0646 EAD 330087-00-0601
Tensões de adesão	Veja anexo C1	
Fator de redução	Veja anexo C1	
Fator de aumento para comprimento mínimo de ancoragem	Veja anexo C1	
Proteção contra incêndio (BWR 2)		
Reação ao fogo	da classe A1 conforme EN 13501-1	
Resistência ao fogo	Desempenho não avaliado	

O desempenho do presente 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 (UE) n.º 305/2011.

Assinado pelo fabricante e em nome do fabricante por:



Frank Wolpert
(Procurador - Diretor de gestão de
produtos)



Dr. Eng.° Siegfried Beichter
(Procurador - Diretor de qualidade)

Künzelsau, a 01.01.2021

DECLARAȚIE DE PERFORMANȚĂ

Nr. 5918420330_00_M_WIT-VM 210(2)

**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 Würth WIT-VM 210, WIT-VM 210 blue, WIT-VM 210 tropical, WIT- VM 210 expres
Nr. articol: 591842*; 591843*; 591844*; 591845*
2. **Scopul sau scopurile de utilizare:** Sisteme pentru legături de continuizare a armăturii, acoperite ulterior cu mortar
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 330087-00-0601, Mai 2018
Evaluare tehnică europeană: ETA-20/0646 - 17.09.2020
Organism de evaluare tehnică: Technical and Test Institute for Construction Prague (TZUS)
Organism(e) notificat(e): 2873, Institut für Stahlbau und Werkstoffmechanik (IFSW), Darmstadt (Institutul pentru construcții metalice și mecanica materialelor)
6. **Performanța(e) declarată(e):**

Caracteristici esențiale	Performanță	Specificație tehnică armonizată
Rezistență mecanică și stabilitate (BWR 1)		ETA-20/0646 EAD 330087-00-0601
Tensiuni de aderență	A se vedea anexa C1	
Coeficient de reducere	A se vedea anexa C1	
Coeficient de multiplicare pentru lungimea minimă de ancorare	A se vedea anexa C1	
Protecție contra incendiilor (BWR 2)		
Comportament la incendiu	al clasei A1, conform EN 13501-1	
Rezistență la foc	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:



Frank Wolpert
(Reprezentant legal - director pentru
producție)



Dr.-Ing. Siegfried Beichter
(Reprezentant legal - director dep.
calitate)

Künzelsau, 01.01.2021

ДЕКЛАРАЦИЯ ХАРАКТЕРИСТИК

№ 5918420330_00_M_WIT-VM 210(2)

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

- | | |
|--|--|
| 1. Однозначная маркировка типа продукта: | Система инъекции Würth WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Tropical, WIT-VM 210 Express
Арт. №: 591842*; 591843*; 591844*; 591845* |
| 2. Цель(и) применения: | Системы для дополнительно заделанных арматурных сопряжений |
| 3. Изготовитель: | Adolf Würth GmbH & Co. KG
Reinhold-Würth-Straße 12 - 17
D - 74653 Künzelsau |
| 4. Система(ы) для оценки и проверки стабильности характеристик: | Система 1 |
| 5. Европейский оценочный документ:
Европейская техническая оценка:
Орган технической оценки
Уполномоченный(е) орган(ы): | EAD 330087-00-0601, май 2018
ETA-20/0646 - 17.09.2020
Technical and Test Institute for Construction Prague (TZUS)
2873, Institut für Stahlbau und Werkstoffmechanik (IFSW), Darmstadt |
| 6. Заявленная(-ые) характеристика(-и): | |

Важные признаки	Характеристика	Гармонизированная техническая спецификация
Механическая прочность и устойчивость (BWR 1)		ETA-20/0646 EAD 330087-00-0601
Напряжения железобетона	См. Приложение C1	
Редукционный коэффициент	См. Приложение C1	
Коэффициент усиления для минимальной длины анкеровки	См. Приложение C1	
Противопожарная защита (BWR 2)		
Огнестойкость	класса A1 согласно EN 13501-1	
Огнестойкость	Характеристика не определена	

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

Подписано за изготовителя и от имени изготовителя:



Франк Вольперт
(Прокуриснт -
Нач.производств.отдела)



Д-р-инж. Зигфрид Байхтер
(Прокуриснт - Нач. ОТК)

Кюнцельзау, 01.01.2021

PRESTANDEKLARATION

Nr. 5918420330_00_M_WIT-VM 210(2)

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

1. **Produkttypens unika identifikationskod:** Würth injekteringssystem WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Tropical, WIT-VM 210 Express
Art.-nr.: 591842*; 591843*; 591844*; 591845*
2. **Användningsändamål:** System för armeringsanslutningar inmurade i efterhand
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 330087-00-0601, maj 2018
Europeisk teknisk bedömning: ETA-20/0646 - 2020-09-17
Tekniskt bedömningsorgan: Technical and Test Institute for Construction Prague (TZUS)
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-20/0646 EAD 330087-00-0601
Fogspänningar	Se Bilaga C1	
Reduktionsfaktor	Se Bilaga C1	
Ökningsfaktor för minimal förankringslängd	Se Bilaga C1	
Brandskydd (BWR 2)		
Branduppförande	i Klass A1 enligt EN 13501-1	
Brandmotstånd	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:



Frank Wolpert
(Prokurist - Chef Produkthantering)



Dr.-ing. Siegfried Beichter
(Prokurist - Chef Kvalitet)

Künzelsau, 2021-01-01

VYHLÁSENIE O VLASTNOSTIACH**Č. 5918420330_00_M_WIT-VM 210(2)**

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

1. Jednoznačný identifikačný kód typu výrobku: Würth Injekčný systém WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Tropical, WIT-VM 210 Express
Výr. č.: 591842; 591843; 591844; 591845*
2. Účel(y) použitia: Systémy pre dodatočne zamaltované armovacie pripojenia
3. Výrobca: Adolf Würth GmbH & Co. KG
Reinhold-Würth-Straße 12 - 17
D - 74653 Künzelsau
4. Systém (systémy) na posudzovanie a overovanie odolnosti parametrov: Systém 1
5. Európsky vyhodnocovací dokument: EAD 330087-00-0601, máj 2018
Európske technické posúdenie: ETA-20/0646 - 17. 09. 2020
Pracovisko pre technické vyhodnotenie: Technický a skúšobný ústav stavebný Praha (TZUS)
Notifikovaný orgán(y): 2873, Ústav pre oceľové konštrukcie a mechaniku materiálov (IFSW), Darmstadt
6. Vlastnosť(i) uvedené vo vyhlásení:

Podstatné znaky	Vlastnosť	Harmonizovaná technická špecifikácia
Mechanická pevnosť a stabilita (BWR 1)		ETA-20/0646 EAD 330087-00-0601
Napätie v súdržnosti	Pozri dodatok C1	
Redukčný činiteľ	Pozri dodatok C1	
Činiteľ zväčšenia pre minimálnu dĺžku ukotvenia	Pozri dodatok C1	
Protipožiarna ochrana (BWR 2)		
Reakcia látky pri požiari	triedy A1 podľa EN 13501-1	
Požiarna odolnosť	Vlastnosť nie je hodnotená	

Vlastnosť vyššie uvedeného produktu zodpovedá vyhlásenej vlastnosti / vyhláseným vlastnostiam. Na vyhotovenie vyhlásenia o parametroch v súlade s nariadením (EÚ) č. 305/2011 je zodpovedný sám vyššie uvedený výrobca.

Podpísané pre výrobcu a v mene výrobcu:



Frank Wolpert
(Prokurista - vedúci výrobného
manažmentu)



Dr. -Ing. Siegfried Beichter
(Prokurista - vedúci kvality)

Künzelsau, dňa 01. 01. 2021

IZJAVA O LASTNOSTIH

Št. 5918420330_00_M_WIT-VM 210(2)

**To besedilo je prevod iz nemščine.
V primeru dvoma velja nemški izvirnik**

1. Enotna identifikacijska oznaka tipa izdelka: Vbrizgalni sistem Würth WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Tropical, WIT-VM 210 Express
Št. art.: 591842*; 591843*; 591844*; 591845*
2. Nameni uporabe: Sistemi za naknadno vzdane priključke za armaturo
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: EAD 330087-00-0601, maj 2018
Evropsko tehnično vrednotenje: ETA-20/0646 - 17.09.2020
Organ, ki je opravil tehnično vrednotenje: Technical and Test Institute for Construction Prague (TZUS)
Obveščeni organ: 2873, Institut für Stahlbau und Werkstoffmechanik (IFSW), Darmstadt
6. Navedene lastnosti:

Bistvene značilnosti	Lastnost	Harmonizirana tehnična specifikacija
Mehanska trdnost in stabilnost (BWR 1)		ETA-20/0646 EAD 330087-00-0601
Napetosti v sklopu	Glejte Prilogo C1	
Faktor zmanjšanja	Glejte Prilogo C1	
Faktor povečanja za minimalno dolžino sidranja	Glejte Prilogo C1	
Protipožarna zaščita (BWR 2)		
Požarne lastnosti	Razred A1 po standardu EN 13501-1	
Požarna odpornost	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:



Frank Wolpert
(prokurist - vodja izdelkov)



Dr. -Ing. Siegfried Beichter
(prokurist - vodja za kakovost)

Künzelsau, 1. 1. 2021

PERFORMANS BEYANI**No. 5918420330_00_M_WIT-VM 210(2)**

**Bu metin, Almanca dilinden yapılmış bir çeviridir.
Şüpheli durumlarda Almanca orijinal metin geçerli olacaktır**

1. Ürün tipinin açık kodu: Würth Enjeksiyon sistemi WIT-VM 210, WIT-VM 210 Blue, WIT-VM 210 Tropical, WIT-VM 210 Express
Ürün No.: 591842*; 591843*; 591844*; 591845*
2. Kullanma amacı (amaçları): Sonradan harçlanmış donatı bağlantıları için sistemler
3. Üretici: Adolf Würth GmbH & Co. KG
Reinhold-Würth-Straße 12 - 17
D - 74653 Künzelsau
4. Performansın sürdürülebilirliğinin değerlendirilmesi ve kontrolü için sistem(ler): Sistem 1
5. Avrupa Değerlendirme Belgesi: EAD 330087-00-0601, Mayıs 2018
Avrupa Teknik Değerlendirmesi: ETA-20/0646 - 17.09.2020
Teknik Değerlendirme Kuruluşu: Technical and Test Institute for Construction Prague (TZUS)
Akredite kuruluş(lar): 2873, Institut für Stahlbau und Werkstoffmechanik (IFSW), Darmstadt
6. Beyan edilen performans(lar):

Önemli özellikler	Performans	Uyumlandırılmış teknik nitelik
Mekanik dayanıklılık ve kararlılık (BWR 1)		ETA-20/0646 EAD 330087-00-0601
Bağlantı gerilimleri	Bkz. Ek C1	
Redüksiyon faktörü	Bkz. Ek C1	
Minimum ankraj uzunluğu için yükseltme faktörü	Bkz. Ek C1	
Yangından koruma (BWR 2)		
Yangındaki tutum	Sınıf A1'in EN 13501-1'e göre	
Yangına dayanıklılık	Performans değerlendirilmemiştir	

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

Üretici için ve üretici adına imzalayan:



Frank Wolpert

(İmzaya yetkili ürün yönetim bölümü
yöneticisi)



Dr. Müh. Siegfried Beichter

(İmzaya Yetkili Kalite Yöneticisi)

Künzelsau, 01.01.2021