DECLARATION OF PERFORMANCE
NR. LE_0903450200_00_M_WIT-VM 250 (5)

LANGUAGE VERSIONS :

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EN	2
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DECLARATION OF PERFORMANCE

No. 0903450200_00_M_WIT-VM 250 (5)

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

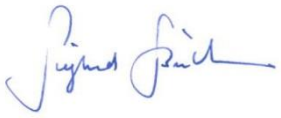
1. Unique identification code of the product type: Würth Injektionssystem WIT-VM 250 Pro
[Würth EIT-VM 250 Pro injection system]
Art. no.: 09034502*; 090345010*; 090546*; 090547*; 59160*; 5916108999; 5916110999; 5916112999; 5916116999; 5916208999; 5916210999; 5916212999; 5916216999; 5916408110; 5916410130; 5916412160; 5916416190; 59156*; 59157*; 090344 123; 090344 164; 090344 165; 090344 203; 090344 204; 090344 205; 090344 163
2. Intended use(s): Bonded anchor for anchoring in masonry
3. Manufactured by: Adolf Würth GmbH & Co. KG
Reinhold-Würth-Straße 12–17
D-74653 Künzelsau
4. System(s) of assessment and verification of constancy of performance: System 1
5. European Assessment Document: EAD 330076-00-0604, Edition 11/2017
European Technical Assessment: ETA-20/0854 – 11/18/2020
Technical Assessment Body: Deutsches Institut für Bautechnik (DIBT), Berlin
Notified Body or Bodies: 2873, Institut für Stahlbau und Werkstoffmechanik (IFSW), Darmstadt
6. Declared performance:

Essential characteristics	**Performance**	**Harmonized technical specification**
Mechanical resistance and stability (BWR 1)		ETA-20/0854 EAD 330076-00-0604
Characteristic resistance values	See Annex C1 to C48	
Displacements	See Annex C6 to C48	
Durability	See Annex B1	
Fire protection (BWR 2)		
Fire behavior	Class A1	
Hygiene, health and environment (BWR 3)		
Contents, emission and/or release of hazardous substances	Performance not rated	

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

Signed for and on behalf of the manufacturer by:

Frank Wolpert
Authorized Signatory, Head of Product Management



Dr.-Ing. Siegfried Beichter
(Head of Quality, Authorized Signatory)

Künzelsau, January 01, 2021

Deutsches Institut für Bautechnik

Member of EOTA
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Approval body for construction products and types of construction

Bautechnisches Prüfamt

An institution established by the Federal and Laender Governments

Designated according to Article 29 of Regulation (EU) No 305/2011 and member of EOTA (European Organisation for Technical Assessment)

European Technical Assessment

ETA-20/0854 of 18 November 2020

English translation prepared by DIBt - Original version in German language

General Part

Technical Assessment Body issuing the European Technical Assessment:	Deutsches Institut für Bautechnik
Trade name of the construction product	Injection System WIT-VM 250 Pro for masonry
Product family to which the construction product belongs	Metal Injection anchors for use in masonry
Manufacturer	Adolf Würth GmbH & Co. KG Reinhold-Würth-Straße 12-17 74653 Künzelsau DEUTSCHLAND
Manufacturing plant	Werk 3
This European Technical Assessment contains	66 pages including 3 annexes which form an integral part of this assessment
This European Technical Assessment is issued in accordance with Regulation (EU) No 305/2011, on the basis of	EAD 330076-00-0604, Edition 11/2017

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Specific Part

1 Technical description of the product

The "Injection System WIT-VM 250 Pro for masonry" is a bonded anchor (injection type) consisting of a mortar cartridge with injection mortar WIT-VM 250 or WIT-Nordic, a perforated sleeve and an anchor rod with hexagon nut and washer or an Internal threaded rod. The steel elements are made of zinc coated steel, stainless steel or high corrosion resistant steel.

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

The product description is given in Annex A.

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

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

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

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

3.1 Mechanical resistance and stability (BWR 1)

Essential characteristic	Performance
Characteristic values for resistance	See Annexes C 1 to C 48
Displacements	See Annex C 6 to C 48
Durability	See annex B 1

3.2 Safety in case of fire (BWR 2)

Essential characteristic	Performance
Reaction to fire	Class A1

3.3 Hygiene, health and the environment (BWR 3)

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

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

In accordance with the European Assessment Document EAD 330076-00-0604 the applicable European legal act is: [97/177/EC].

The system to be applied is: 1

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

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

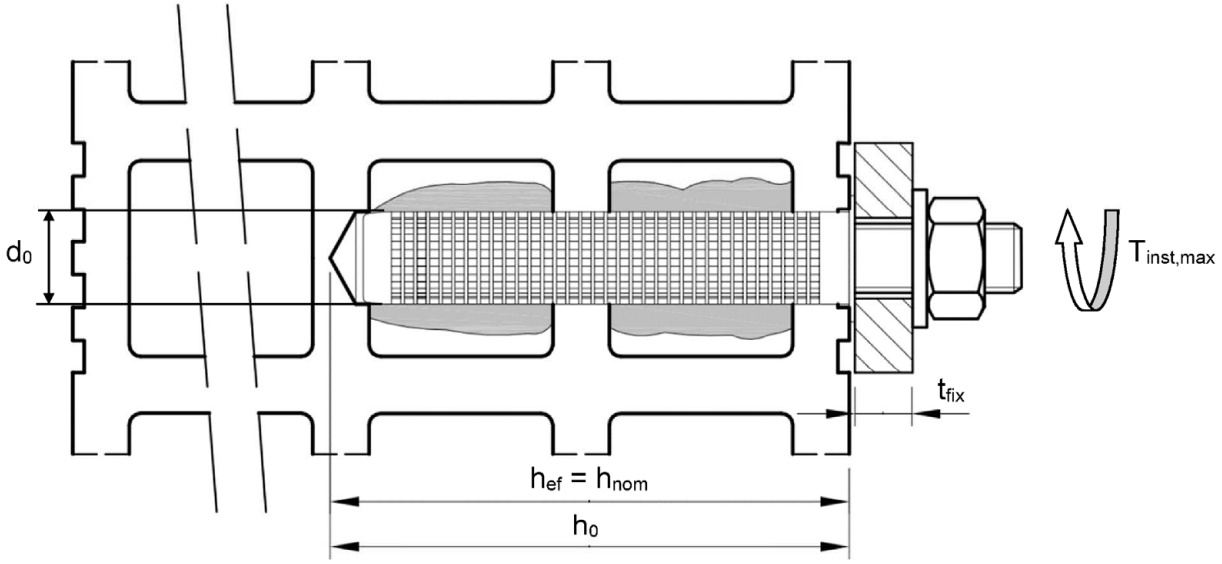
Issued in Berlin on 18 November 2020 by Deutsches Institut für Bautechnik

Dipl.-Ing. Beatrix Wittstock
Head of Section

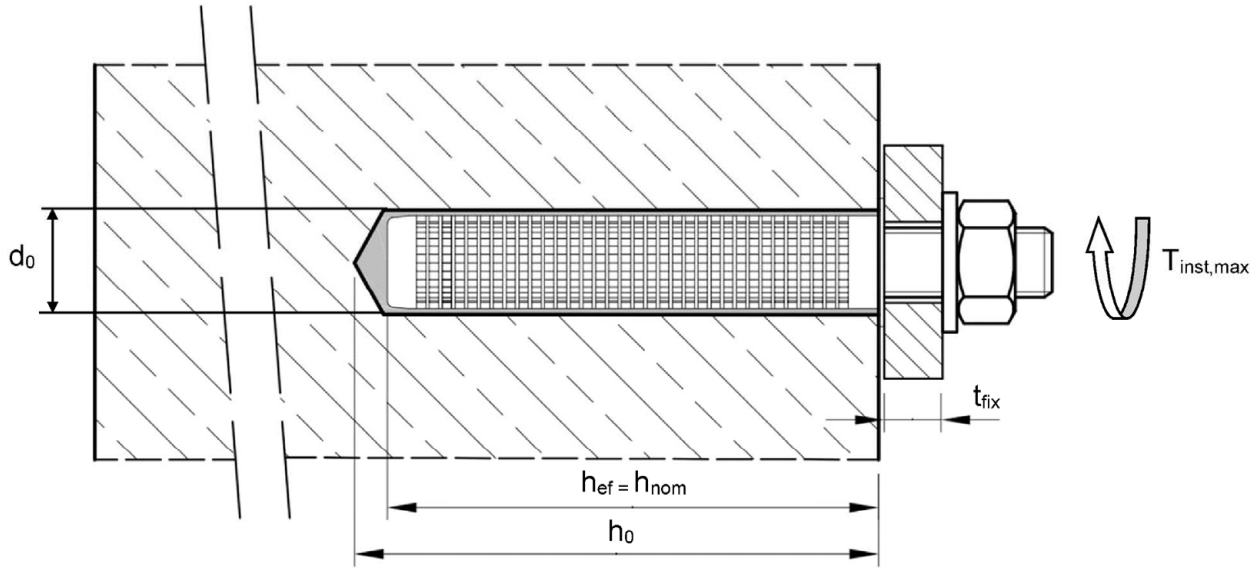
beglaubigt:
Baderschneider

Deutsches Institut für Bautechnik DIBt

Installation in hollow brick; threaded rod and Internal threaded rod with sleeve



Installation in solid brick; threaded rod and Internal threaded rod with or without sleeve



$h_{ef} = h_{nom}$	=	effective anchorage depth	d_0	=	nominal drill hole diameter
h_0	=	drill hole depth	$T_{inst,max}$	=	Max installation torque moment
t_{fix}	=	thickness of fixture			

Injection System WIT-VM 250 Pro for masonry	**Annex A 1**
Product description Installed condition	

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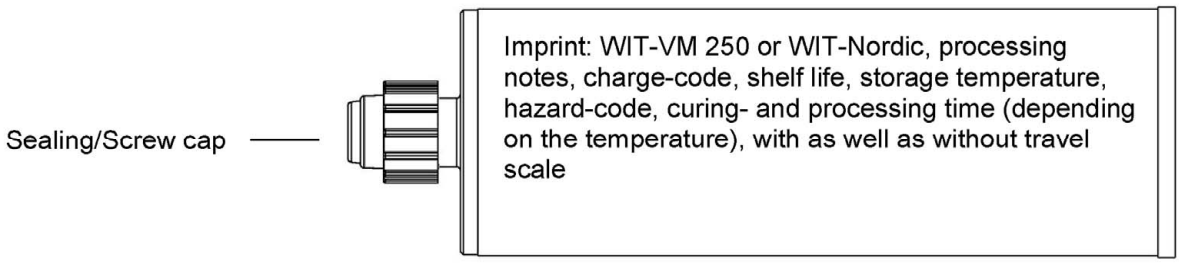
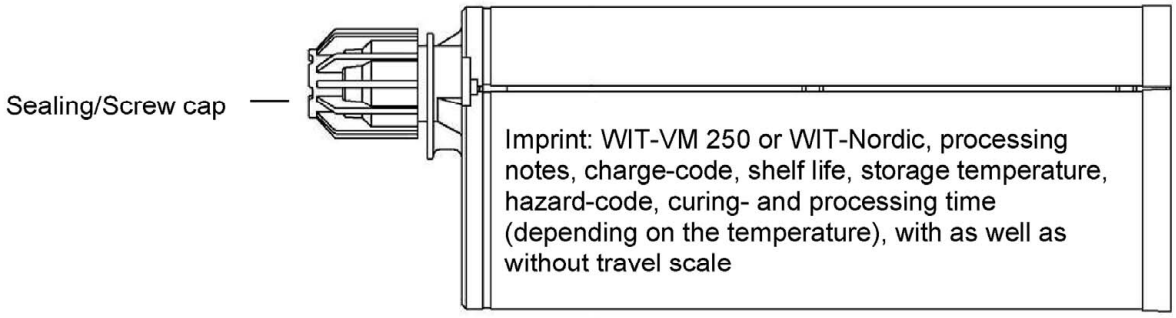
Cartridge: WIT-VM 250 or WIT-Nordic

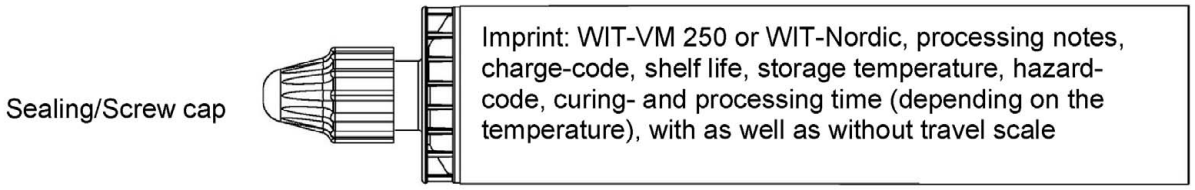
150 ml, 280 ml, 300 ml up to 333 ml and 380 ml up to 420 ml Cartridge: (Type: coaxial)



235 ml, 345 ml up to 360 ml and 825 ml Cartridge (Type: "side-by-side")

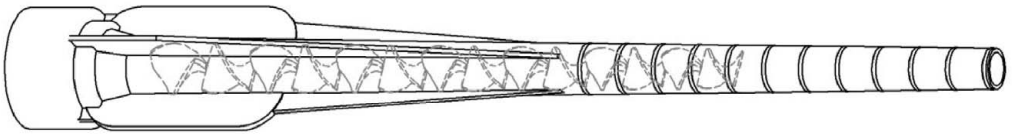


165 ml and 300 ml Cartridge (Type: "foil tube")



Static mixer

CRW 14W



Fill&Clean

Injection System WIT-VM 250 Pro for masonry	**Annex A 2**
Product description Injection system	

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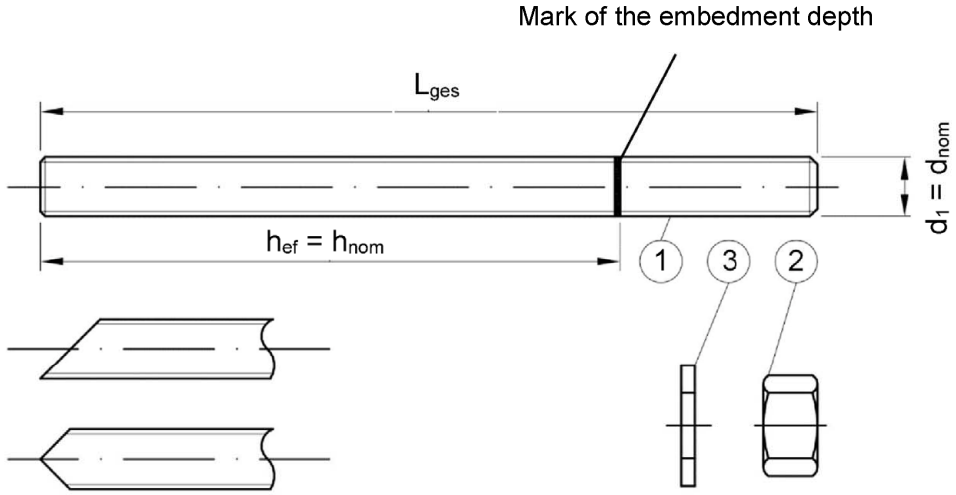
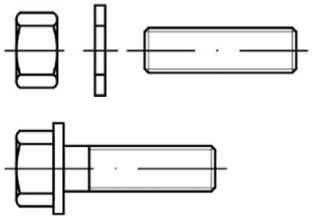
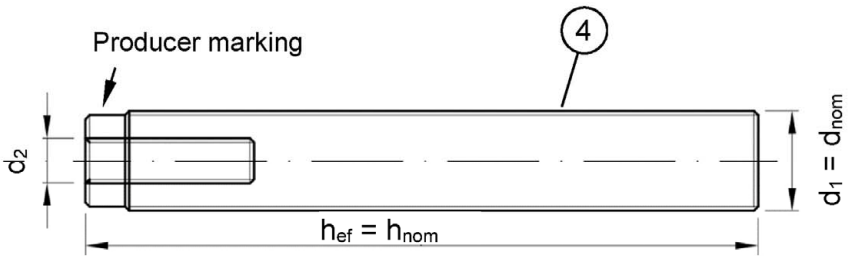
Threaded Rod M8, M10, M12, M16



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

Internal threaded rod IG-M6, IG-M8, IG-M10





Producer marking: e.g.  M8

Marking Internal thread

Mark

M8	Thread size (Internal thread)
A4	additional mark for stainless steel
HCR	additional mark for high-corrosion resistance steel

Injection System WIT-VM 250 Pro for masonry	**Annex A 3**
Product description Anchor rods	

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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 ≥ 45 µm acc. to EN ISO 17668:2016					
1	Threaded rod	Property class		Characteristic steel ultimate tensile strength	Characteristic steel yield strength
		acc. to EN ISO 898-1:2013	4.6	f_{uk} = 400 N/mm²	f_{yk} = 240 N/mm²
			4.8	f_{uk} = 400 N/mm²	f_{yk} = 320 N/mm²
			5.6	f_{uk} = 500 N/mm²	f_{yk} = 300 N/mm²
			5.8	f_{uk} = 500 N/mm²	f_{yk} = 400 N/mm²
			8.8	f_{uk} = 800 N/mm²	f_{yk} = 640 N/mm²
2	Hexagon nut	acc. to EN ISO 898-2:2012	4	for anchor rod class 4.6 or 4.8	
			5	for anchor rod class 5.6 or 5.8	
			8	for anchor rod class 8.8	
3	Washer	Steel, zinc plated, hot-dip galvanised or sherardized (e.g.: EN ISO 887:2006, EN ISO 7089:2000, EN ISO 7093:2000 or EN ISO 7094:2000)			
4	Internal threaded anchor rod	Property class		Characteristic steel ultimate tensile strength	Characteristic steel yield strength
		acc. to EN ISO 898-1:2013	5.8	f_{uk} = 500 N/mm²	f_{yk} = 400 N/mm²
			8.8	f_{uk} = 800 N/mm²	f_{yk} = 640 N/mm²
Stainless steel A2 (Material 1.4301 / 1.4307 / 1.4311 / 1.4567 or 1.4541, acc. to EN 10088-1:2014) **Stainless steel A4** (Material 1.4401 / 1.4404 / 1.4571 / 1.4362 or 1.4578, acc. to EN 10088-1:2014) **High corrosion resistance steel** (Material 1.4529 or 1.4565, acc. to EN 10088-1: 2014)					
1	Threaded rod [1)]	Property class		Characteristic steel ultimate tensile strength	Characteristic steel yield strength
		acc. to EN ISO 3506-1:2009	50	f_{uk} = 500 N/mm²	f_{yk} = 210 N/mm²
			70	f_{uk} = 700 N/mm²	f_{yk} = 450 N/mm²
			80	f_{uk} = 800 N/mm²	f_{yk} = 600 N/mm²
2	Hexagon nut [1)]	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	A2: Material 1.4301 / 1.4307 / 1.4311 / 1.4567 or 1.4541, acc. to EN 10088-1:2014 A4: Material 1.4401 / 1.4404 / 1.4571 / 1.4362 or 1.4578, acc. to EN 10088-1:2014 HCR: Material 1.4529 or 1.4565, acc. to EN 10088-1: 2014 (e.g.: EN ISO 887:2006, EN ISO 7089:2000, EN ISO 7093:2000 or EN ISO 7094:2000)			
4	Internal threaded anchor rod [1)]	Property class		Characteristic steel ultimate tensile strength	Characteristic steel yield strength
		acc. to EN ISO 3506-1:2009	50	f_{uk} = 500 N/mm²	f_{yk} = 210 N/mm²
			70	f_{uk} = 700 N/mm²	f_{yk} = 450 N/mm²
[1)] Property class 80 only for stainless steel A4 and HCR					
Plastic sleeve					
Perforated sleeve		Polypropylene (PP)			

Injection System WIT-VM 250 Pro for masonry

Product description
Materials

Annex A 4

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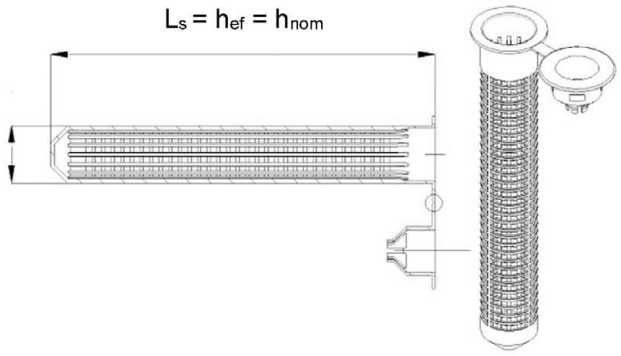
Table A2: perforated sleeve

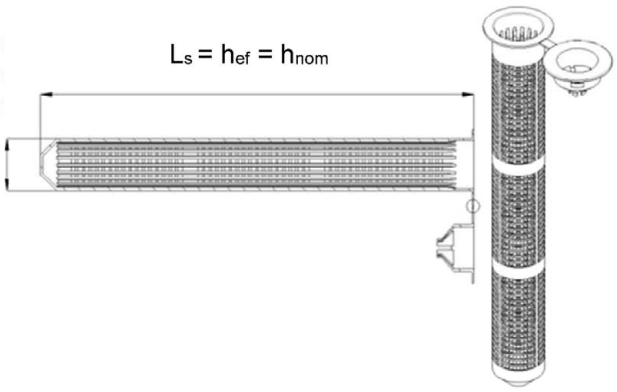
SH 12x80
SH 16x85
SH 20x85

$L_s = h_{ef} = h_{nom}$



SH 16x130
SH 20x130
SH 20x200

$L_s = h_{ef} = h_{nom}$



SH 16x130 / 330

for installation through insulation up to a thickness of 20 cm or push through installation

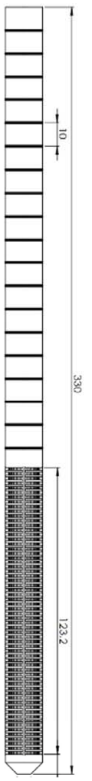


Table A3: sleeve dimensions

sleeve			
size	d_s	L_s	$h_{ef} = h_{nom}$
[mm]	[mm]	[mm]	[mm]
SH 12x80	12	80	80
SH 16x85	16	85	85
SH 16x130	16	130	130
SH 16x130 / 330 [1)]	16	330	130
SH 20x85	20	85	85
SH 20x130	20	130	130
SH 20x200	20	200	200

[1)] In annex C4 – C48 this sleeve is covered with the SH 16x130

Table A4: Steel parts

Anchor Rod			
Size	$d_1 = d_{nom}$	d_2	l_{ges}
[mm]	[mm]	[mm]	[mm]
IG-M6 [1)]	10	6	with sleeve: hef - 5mm without sleeve: hef
IG-M8 [1)]	12	8	
IG-M10 [1)]	16	10	
M8	8	-	hef + t_{fix} + 9,5
M10	10	-	hef + t_{fix} + 11,5
M12	12	-	hef + t_{fix} + 17,5
M16	16	-	hef + t_{fix} + 20,0

[1)] Internal threaded rod with metric external thread

Injection System WIT-VM 250 Pro for masonry

Product description
Sleeves

Annex A 5

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Specifications of intended use

Anchorages subject to:
- Static and quasi-static loads

Base materials:
- Autoclaved Aerated Concrete (Use condition d) according to Annex B2
- Solid brick masonry (Use condition b), according to Annex B2.
- Hollow brick masonry (Use condition c), according to Annex B2 and B3
- Mortar strength class of the masonry M2,5 at minimum according to EN 998-2:2010.
- For other bricks in solid masonry and in hollow masonry or in autoclaved aerated concrete, the characteristic resistance of the anchor may be determined by job site tests according to EOTA TR 053, Edition April 2016 under consideration of the β-factor according to Annex C1, Table C1.

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)
- T_c: - 40°C to +120°C (max. short term temperature +120°C and max. long term temperature +72°C)

Use conditions (Environmental conditions):
- Dry and wet structure (regarding injection mortar).
- Structures subject to dry internal conditions (zinc coated steel, stainless steel or high corrosion resistant steel).
- 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 or high corrosion resistant steel).
- 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:
- Condition d/d: Installation and use in dry masonry
- Condition w/w: Installation and use in dry or wet masonry (incl. w/d installation in wet masonry and use in dry masonry)

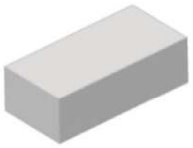
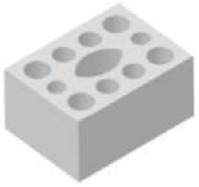
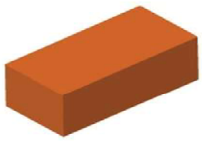
Design:
- Verifiable calculation notes and drawings are prepared taking account the relevant masonry in the region of the anchorage, the loads to be transwithted and their transmission to the supports of the structure. The position of the anchor is indicated on the design drawings.
- The anchorages are designed in accordance with the EOTA TR 054, Edition April 2016, Design method A under the responsibility of an engineer experienced in anchorages and masonry work.
- $N_{Rk,p} = N_{Rk,b}$ see Annex C4 to C48; $N_{Rk,s}$ see Annex C2; $N_{Rk,pb}$ see EOTA TR 054, Edition April 2016
- $V_{Rk,b}$ see Annex C4 to C48; $V_{Rk,s}$ see Annex C2; $V_{Rk,c}$ see Annex C3; $V_{Rk,pb}$ see EOTA TR 054, Edition April 2016
- For application with sleeve with drill bit size ≤ 15mm installd in joints not filled with mortar:
  - $N_{Rk,p,j} = 0{,}18 * N_{Rk,p}$ and $N_{Rk,b,j} = 0{,}18 * N_{Rk,b}$ ($N_{Rk,p} = N_{Rk,b}$ see Annex C4 to C48)
  - $V_{Rk,c,j} = 0{,}15 * V_{Rk,c}$ and $V_{Rk,b,j} = 0{,}15 * V_{Rk,b}$ ($V_{Rk,b}$ see Annex C4 to C48; and $V_{Rk,c}$ see Annex C3)
- Application without sleeve installd in joints not filled with mortar is not allowed.

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.
- Fastening screws or threaded rods (incl. nut and washer) must comply with the appropriate material and property class of the Internal threaded rod .

Injection System WIT-VM 250 Pro for masonry	**Annex B 1**
Intended use Specifications	

Deutsches Institut für Bautechnik DIBt

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

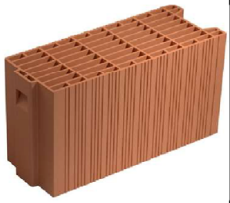
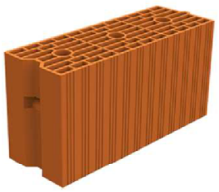
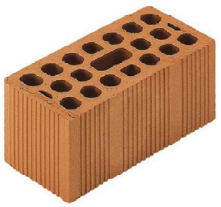
naming density [kg/dm³] dimensions LxBxH [mm]	picture	anchor rods	perforated sleeve	Annex	naming density [kg/dm³] dimensions LxBxH [mm]	picture	anchor rods	perforated sleeve	Annex
Autoclaved aerated concrete acc. to EN 771-4					**solid light weight concrete brick acc. to EN 771-3**				
AAC ρ = 0,35-0,60 ≥ 499x240x249		M8 - M16 IG-M6 - IG-M10	12x80 16x85 16x130 20x85 20x130 20x200	C4 – C6	VBL ρ ≥ 0,6 ≥240x300x113		M8 - M16 IG-M6 - IG-M10	12x80 16x85 16x130 20x85 20x130 20x200	C47 - C48
Hollow light weight concrete brick acc. to EN 771-3									
HBL 16DF ρ ≥ 1,0 500x250x240		M8 - M16 IG-M6 - IG-M10	16x85 16x130 20x85 20x130 20x200	C43 - C44	Bloc creux B40 ρ ≥ 0,8 495x195x190		M8 - M16 IG-M6 - IG-M10	16x130 20x130	C45 - C46
Calcium silica bricks acc. to EN 771-2									
KS ρ ≥ 2,0 ≥ 240x115x71		M8 – M16 IG-M6 - IG-M10	12x80 16x85 16x130 20x85 20x130 20x200	C7 – C8	KSL-3DF ρ ≥ 1,4 240x175x113		M8 - M16 IG-M6 - IG-M10	16x85 16x130 20x85 20x130	C9 - C10
KSL-8DF ρ ≥ 1,4 248x240x238		M8-M16 IG-M6 - IG-M10	16x130 20x130 20x200	C11 - C12	KSL-12DF ρ ≥ 1,4 498x175x238		M8 - M16 IG-M6 - IG-M10	16x130 20x130	C13 - C14
Solid clay bricks acc. to EN 771-1									
Mz-1DF ρ ≥ 2,0 ≥ 240x115x55		M8 - M16 IG-M6 - IG-M10	12x80 16x85 16x130 20x85 20x130 20x200	C15 - C16	Mz – 2 DF ρ ≥ 2,0 ≥ 240x115x113		M8 - M16 IG-M6 - IG-M10	12x80 16x85 16x130 20x85 20x130 20x200	C17 - C18

Injection System WIT-VM 250 Pro for masonry

Intended Use
Brick types and properties with corresponding fastening elements

Annex B 2

Deutsches Institut für Bautechnik DIBt

naming density [kg/dm³] dimensions LxBxH [mm]	picture	anchor rods	perforated sleeve	Annex	naming density [kg/dm³] dimensions LxBxH [mm]	picture	anchor rods	perforated sleeve	Annex
Hollow clay bricks acc. to EN 771-1									
Hlz-10DF ρ ≥ 1,25 300x240x249		M8 - M16 IG-M6 - IG-M10	12x80 16x85 16x130 20x85 20x130 20x200	C19 - C20	Porotherm Homebric ρ ≥ 0,7 500x200x299		M8 - M16 IG-M6 - IG-M10	12x80 16x85 16x130 20x85 20x130	C21 - C22
BGV Thermo ρ ≥ 0,6 500x200x314		M8 - M16 IG-M6 - IG-M10	12x80 16x85 16x130 20x85 20x130	C23 - C24	Brique creuse C40 ρ ≥ 0,7 500x200x200		M8 - M16 IG-M6 - IG-M10	12x80 16x85 16x130 20x85 20x130	C29 - C30
Calibric R+ ρ ≥ 0,6 500x200x314		M8 - M16 IG-M6 - IG-M10	12x80 16x85 16x130 20x85 20x130	C25 - C26	Blocchi Leggeri ρ ≥ 0,6 250x120x250		M8 - M16 IG-M6 - IG-M10	12x80 16x85 16x130 20x85 20x130	C31 - C32
Urbanbric ρ ≥ 0,7 560x200x274		M8 - M16 IG-M6 - IG-M10	12x80 16x85 16x130 20x85 20x130	C27 - C28	Doppio Uni ρ ≥ 0,9 250x120x120		M8 - M16 IG-M6 - IG-M10	12x80 16x85 16x130 20x85 20x130	C33 - C34
Hollow Clay brick withintegrated insulation acc. to EN 771-1									
Coriso WS07 ρ ≥ 0,55 248x365x249 rock wool		M8 - M16 IG-M6 - IG-M10	12x80 16x85 16x130 20x85 20x130 20x200	C35 - C36	T8P ρ ≥ 0,56 248x365x249 perlite		M8 - M16 IG-M6 - IG-M10	12x80 16x85 16x130 20x85 20x130 20x200	C39 - C40
T7MW ρ ≥ 0,59 248x365x249 rock wool		M8 - M16 IG-M6 - IG-M10	12x80 16x85 16x130 20x85 20x130 20x200	C37 - C38	MZ90-G ρ ≥ 0,68 248x365x249 rock wool		M8 - M16 IG-M6 - IG-M10	12x80 16x85 16x130 20x85 20x130 20x200	C41 - C42

Injection System WIT-VM 250 Pro for masonry

Intended Use
Brick types and properties with corresponding fastening elements

Annex B 3

Deutsches Institut für Bautechnik DIBt

Installation: steel brush WIT-RMB

Table B2: Installation parameters in autoaerated concrete AAC and solid masonry (without sleeve)

Anchor size			**M8**	**M10**	**IG-M6**	**M12**	**IG-M8**	**M16**	**IG-M10**
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}	[mm]	80	90		100		100	
minimum wall thickness	h_{min}	[mm]	h_{ef} + 30						
Diameter of clearance hole in the fixture	$d_f \leq$	[mm]	9	12	7	14	9	18	12
Brush	WIT-		RMB10	RMB12		RMB14		RMB18	
Diameter of steel brush	$d_b \geq$	[mm]	10,5	12,5		14,5		18,5	

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

Anchor size				**M8**	**M8 / M10 / IG-M6**			**M12 / M16 / IG-M8 / IG-M10**		
		sleeve SH		**12x80**	**16x85**	**16x130**	**16x130/330**	**20x85**	**20x130**	**20x200**
nominal drill hole diameter		d_0	[mm]	12	16	16	16	20	20	20
drill hole depth		h_0	[mm]	85	90	135	330	90	135	205
effective anchorage depth		h_{ef}	[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	prepositioned installation	$d_f \leq$	[mm]	9	7 (IG-M6) / 9 (M8) / 12 (M10)			9 (IG-M8) / 12 (IG-M10) / 14 (M12) / 18 (M16)		
	push through installation	$d_f \leq$	[mm]	14	18			22		
Brush		WIT-		RMB12	RMB16			RMB20		
Diameter of steel brush		d_b	[mm]	12,5	16,5			20,5		

Hand pump (Volume 750 ml)

Injection System WIT-VM 250 Pro for masonry

Intended Use
Installation parameters and cleaning brush

Annex B 4

Deutsches Institut für Bautechnik DIBt

Table B4: Maximum working time and minimum curing time WIT-VM 250

Temperature in the base material T	Temperature of cartridge	Gelling- / working time	Minimum curing time in dry base material [1)]
0°C bis + 4 °C	+5°C bis +40°C	45 min	7 h
+ 5 °C bis + 9 °C		25 min	2 h
+ 10 °C bis + 19 °C		15 min	80 min
+ 20 °C bis + 29 °C		6 min	45 min
+ 30 °C bis + 34 °C		4 min	25 min
+ 35 °C bis + 39 °C		2 min	20 min
+ 40°C		1,5 min	15 min

1) In wet base material the curing time **must** be doubled

Table B5: Maximum working time and minimum curing time WIT-Nordic

Temperature in the base material T	Temperature of cartridge	Gelling- / working time	Minimum curing time in dry base material [1)]
0 °C bis + 4 °C	-20°C bis +10°C	10 min	2,5 h
+ 5 °C bis + 9 °C		6 min	80 min
+ 10°C		6 min	60 min

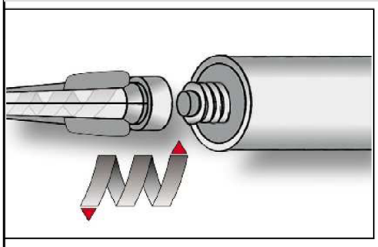
1) In wet base material the curing time **must** be doubled

Injection System WIT-VM 250 Pro for masonry	**Annex B 5**
Intended Use Gelling and curing times	

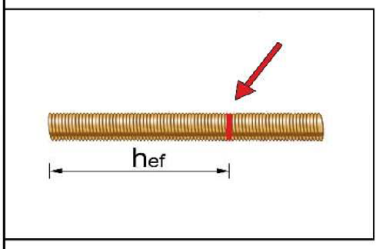
Deutsches Institut für Bautechnik DIBt

Installation Instructions

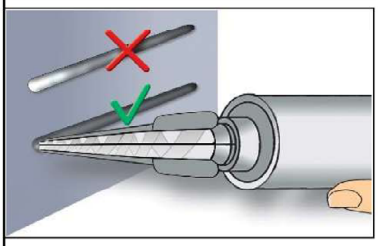
Preparation of cartridge



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 and B5) as well as for new cartridges, a new static-mixer shall be used.

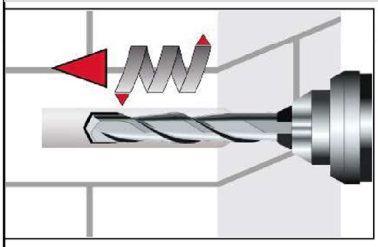


2. The position of the embedment depth shall be marked on the threaded rod.

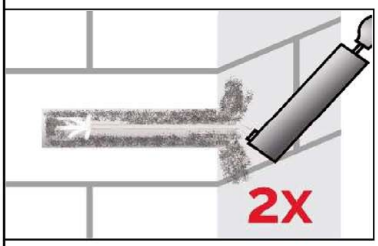


3. Initial adhesive is not suitable for fixing the anchor. Prior to dispensing into the anchor hole, squeeze out separately a minimum of three full strokes, for foil tube cartridges six full strokes and discard non-uniformly mixed adhesive components until the mortar shows a consistent grey colour.

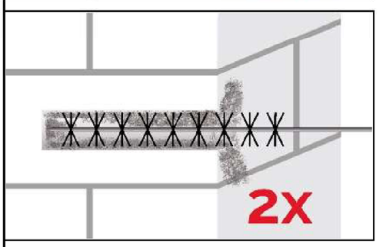
Installation in solid masonry (without sleeve)



4. 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 – C48, into the base material, with nominal drill hole diameter and bore hole depth according to the size and embedment depth required by the selected anchor.



5a. Starting from the bottom or back of the bore hole, blow the hole clean with handpump (Annex B4) a minimum of two times.



5b. Attach an appropriate sized wire brush > $d_{b,min}$ (Table B2) to a drill or a cordless screwdriver and brush the hole clean with a minimum of two times in a twisting motion. If the bore hole ground is not reached with the brush, a brush extension must be used.

Injection System WIT-VM 250 Pro for masonry	**Annex B 6**
Intended Use Installation instructions Solid masonry and Autoclaved Aerated Concrete	

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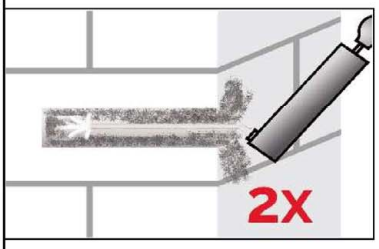
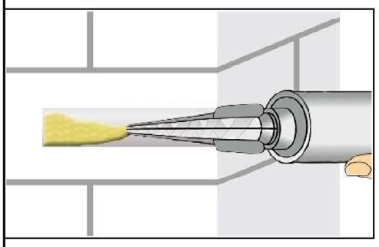
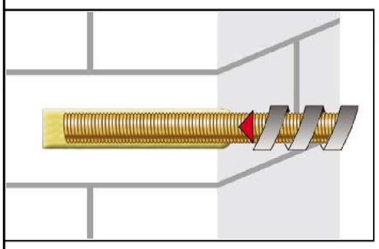
Installation instructions (continuation)



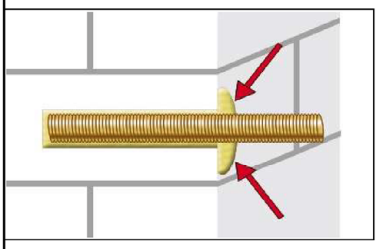
5c. Finally blow the hole clean again with handpump (Annex B4) a minimum of two times



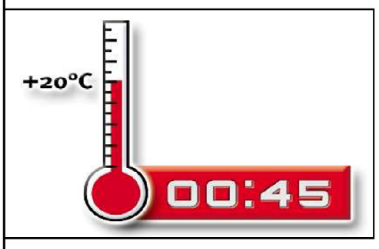
6. Starting from the bottom or back of the cleaned anchor hole, fill the hole up to approximately two-thirds with adhesive. Slowly withdraw the static mixing nozzle as the hole fills to avoid creating air pockets. If the bottom or back of the anchor hole is not reached, an appropriate extension nozzle must be used. Observe the gel-/ working times given in Table B4 + B5.



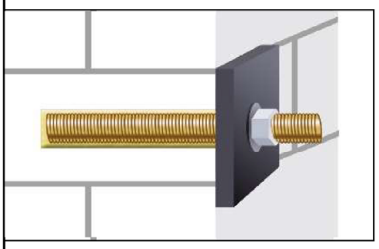
7. Push the threaded rod into the anchor hole while turning slightly to ensure positive distribution of the adhesive until the embedment depth is reached. The anchor shall be free of dirt, grease, oil or other foreign material.



8. Be sure that the anular gap is fully filled with mortar. For push through installation the hole in the fixture must also be fully filled with mortar. If no excess mortar is visible at the top of the hole, the application has to be renewed.



9. 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 + B5).



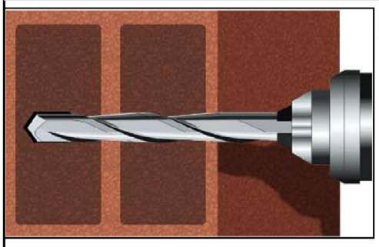
10. After full curing, the fixture can be installed with up to the max. installation torque (See parameters of brick Annex C4 to Annex C48) by using a calibrated torque wrench.

Injection System WIT-VM 250 Pro for masonry	**Annex B 7**
Intended Use Installation instructions Solid masonry and Autoclaved Aerated Concrete	

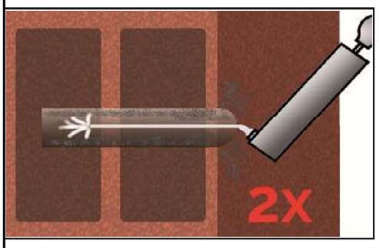
Deutsches Institut für Bautechnik DIBt

Installation instructions (continuation)

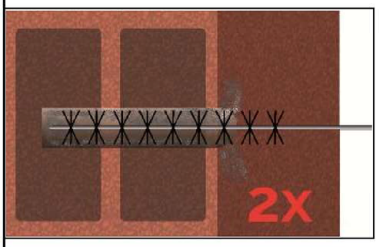
Installation in solid and hollow masonry (with sleeve)



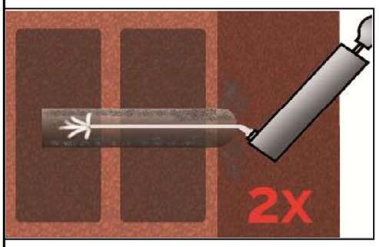
4. Holes to be drilled perpendicular to the surface of the base material by using a hard-metal tipped hammer drill bit. Drill a hole, with drill method according to Annex C4 – C48, into the base material, with nominal drill hole diameter and bore hole depth according to the size and embedment depth required by the selected anchor.



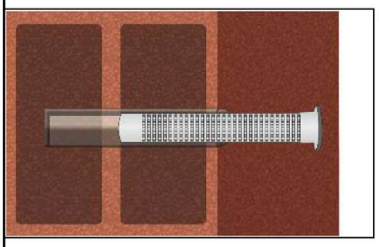
5a. Starting from the bottom or back of the bore hole, blow the hole clean with handpump (Annex B4) a minimum of two times.



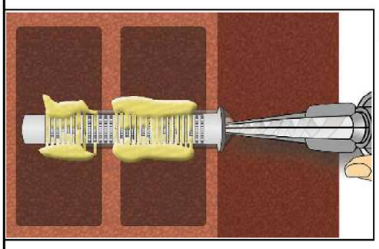
5b. Attach an appropriate sized wire brush > $d_{b,min}$ (Table B3) to a drill or a cordless screwdriver and brush the hole clean with a minimum of two times in a twisting motion. If the bore hole ground is not reached with the brush, a brush extension must be used.



5c. Finally blow the hole clean again with handpump (Annex B4) a minimum of two times



6. Insert the perforated sleeve flush with the surface of the masonry or plaster. Only use sleeves that have the right length. Never cut the sleeve. For installation through insulation the sleeve SH 16x130/330 shall be cutted at the top end according to the insulation thickness.



7. Starting from the bottom or back fill the sleeve with adhesive. For embedment depth equal to or larger than 130 mm an extension nozzle shall be used. For quantity of mortar attend cartridges label installation instructions. For push through installation the sleeve within the fixture must also be fully filled with mortar. Observe the gel-/ working times given in Table B4 + B5.

Injection System WIT-VM 250 Pro for masonry	**Annex B 8**
Intended Use Installation instructions hollow brick	

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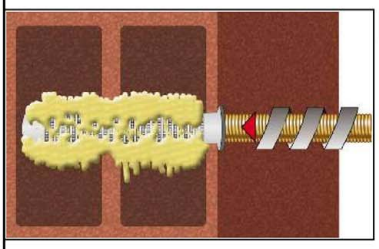
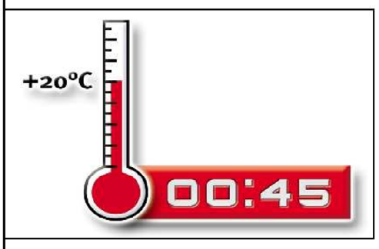
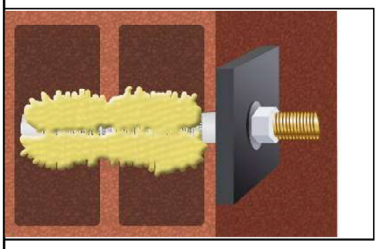
Installation instructions (continuation)



8. Push the threaded rod into the anchor 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.



9. 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 + B5).



10. After full curing, the fixture can be installed with up to the max. installation torque (See parameters of brick Annex C4 to Annex C48) by using a calibrated torque wrench.

Injection System WIT-VM 250 Pro for masonry	**Annex B 9**
Intended Use Installation instructions hollow brick	

Deutsches Institut für Bautechnik DIBt

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

base material	anchor size	β-Factor					
		T_a: 40°C / 24°C		T_b: 80°C / 50°C		T_c: 120°C / 72°C	
		d/d	w/d w/w	d/d	w/d w/w	d/d	w/d w/w
Autoclaved aerated concrete	all sizes	0,95	0,86	0,81	0,73	0,81	0,73
Calcium silica bricks	$d_0 \leq 14$ mm	0,93	0,80	0,87	0,74	0,65	0,56
	$d_0 \geq 16$ mm	0,93	0,93	0,87	0,87	0,65	0,65
Clay Bricks	all sizes	0,86	0,86	0,86	0,86	0,73	0,73
Concrete bricks	$d_0 \leq 12$ mm	0,93	0,80	0,87	0,74	0,65	0,56
	$d_0 \geq 16$ mm	0,93	0,93	0,87	0,87	0,65	0,65

Injection System WIT-VM 250 Pro for masonry

Performances
β-factors for job site testing under tension load

Annex C 1

Deutsches Institut für Bautechnik DIBt

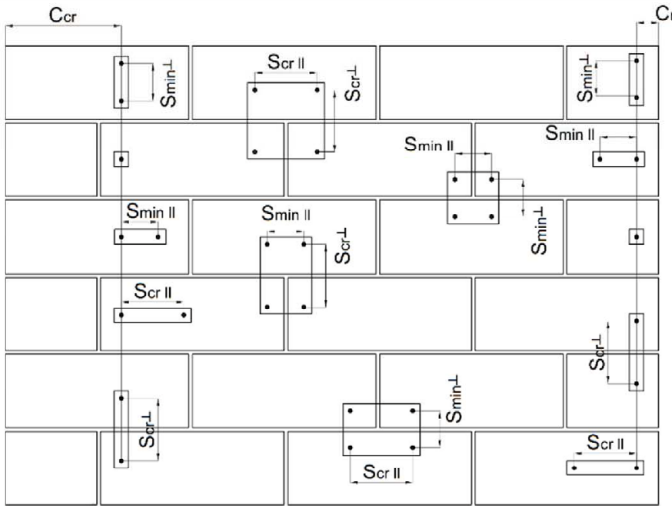
Table C2: Characteristic steel resistance									
Anchor size			**IG-M6**	**IG-M8**	**IG-M10**	**M8**	**M10**	**M12**	**M16**
Characteristic tension resistance									
steel, property class 4.6	$N_{Rk,s}$	[kN]	- [1]	- [1]	- [1]	15	23	34	63
	γ_{Ms}	[-]		- [1]			2,0		
steel, property class 4.8	$N_{Rk,s}$	[kN]	- [1]	- [1]	- [1]	15	23	34	63
	γ_{Ms}	[-]		- [1]			1,5		
steel, property class 5.6	$N_{Rk,s}$	[kN]	- [1]	- [1]	- [1]	18	29	42	79
	γ_{Ms}	[-]		- [1]			2,0		
steel, property class 5.8	$N_{Rk,s}$	[kN]	10	17	29	18	29	42	79
	γ_{Ms}	[-]		1,5			1,5		
steel, property class 8.8	$N_{Rk,s}$	[kN]	16	27	46	29	46	67	126
	γ_{Ms}	[-]		1,5			1,5		
Stainless steel A4 / HCR, property class 70	$N_{Rk,s}$	[kN]	14	26	41	26	41	59	110
	γ_{Ms}	[-]		1,87			1,87		
Stainless steel A4 / HCR, property class 80	$N_{Rk,s}$	[kN]	16	29	46	29	46	67	126
	γ_{Ms}	[-]		1,6			1,6		
Characteristic shear resistance									
steel, property class 4.6	$V_{Rk,s}$	[kN]	- [1]	- [1]	- [1]	7	12	17	31
	γ_{Ms}	[-]		- [1]			1,67		
steel, property class 4.8	$V_{Rk,s}$	[kN]	- [1]	- [1]	- [1]	7	12	17	31
	γ_{Ms}	[-]		- [1]			1,25		
steel, property class 5.6	$V_{Rk,s}$	[kN]	- [1]	- [1]	- [1]	9	15	21	39
	γ_{Ms}	[-]		- [1]			1,67		
steel, property class 5.8	$V_{Rk,s}$	[kN]	5	9	15	9	15	21	39
	γ_{Ms}	[-]		1,25			1,25		
steel, property class 8.8	$V_{Rk,s}$	[kN]	8	14	23	15	23	34	63
	γ_{Ms}	[-]		1,25			1,25		
Stainless steel A4 / HCR, property class 70	$V_{Rk,s}$	[kN]	7	13	20	13	20	30	55
	γ_{Ms}	[-]		1,56			1,56		
Stainless steel A4 / HCR, property class 80	$V_{Rk,s}$	[kN]	8	15	23	15	23	34	63
	γ_{Ms}	[-]		1,33			1,33		
Characteristic bending moment									
steel, property class 4.6	$M^0_{Rk,s}$	[Nm]	- [1]	- [1]	- [1]	15	30	52	133
	γ_{Ms}	[-]		- [1]			1,67		
steel, property class 4.8	$M^0_{Rk,s}$	[Nm]	- [1]	- [1]	- [1]	15	30	52	133
	γ_{Ms}	[-]		- [1]			1,25		
steel, property class 5.6	$M^0_{Rk,s}$	[Nm]	- [1]	- [1]	- [1]	19	37	66	167
	γ_{Ms}	[-]		- [1]			1,67		
steel, property class 5.8	$M^0_{Rk,s}$	[Nm]	8	19	37	19	37	66	167
	γ_{Ms}	[-]		1,25			1,25		
steel, property class 8.8	$M^0_{Rk,s}$	[Nm]	12	30	60	30	60	105	266
	γ_{Ms}	[-]		1,25			1,25		
Stainless steel A4 / HCR, property class 70	$M^0_{Rk,s}$	[Nm]	11	26	52	26	52	92	233
	γ_{Ms}	[-]		1,56			1,56		
Stainless steel A4 / HCR, property class 80	$M^0_{Rk,s}$	[Nm]	12	30	60	30	60	105	266
	γ_{Ms}	[-]		1,33			1,33		

[1] Not part of the ETA

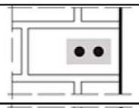
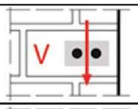
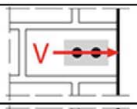
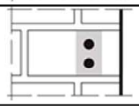
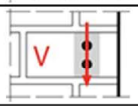
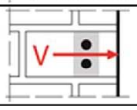
Injection System WIT-VM 250 Pro for masonry	**Annex C 2**
Performances Characteristic resistance under tension and shear load – steel failure	

Deutsches Institut für Bautechnik DIBt

Spacing and edge distances



c_{cr} = Char. Edge distance
c_{min} = Minimum Edge distance
$s_{cr,II}$; ($s_{min,II}$) = Characteristic (minimum) spacing for anchors placed parallel to horizontal joint
$s_{cr,\perp}$; ($s_{min,\perp}$) = Characteristic (minimum) spacing for anchors placed perpendicular to horizontal joint

Load direction / Anchor position	Tension load	Shear load parallel to free edge V_{II}		Shear load perpendicular to free edge $V_{\perp}$	
Anchors parallel to horizontal joint $s_{cr,II}$; ($s_{min,II}$)			$\alpha_{g\,II,V\,II}$		$\alpha_{g\,II,V\,\perp}$
Anchors vertical to horizontal joint $s_{cr,\perp}$; ($s_{min,\perp}$)			$\alpha_{g\,\perp,V\,II}$		$\alpha_{g\,\perp,V\,\perp}$

$\alpha_{edge,N}$ = Reduction factor for tension loads at the free edge (single anchor)
$\alpha_{edge,V\perp}$ = Reduction factor for shear loads perpendicular to the free edge (single anchor)
$\alpha_{edge,V\,II}$ = Reduction factor for shear loads parallel to the free edge (single anchor)
$\alpha_{g\,II,N}$ = Group factor for anchors parallel to horizontal joint under tension load
$\alpha_{g\,\perp,N}$ = Group factor for anchors perpendicular to horizontal joint under tension load
$\alpha_{g\,II,V\,II}$ = Group factor for anchors parallel to horizontal joint under shear load parallel to the free edge
$\alpha_{g\,\perp,V\,II}$ = Group factor for anchors perpendicular to horizontal joint under shear load parallel to the free edge
$\alpha_{g\,II,V\perp}$ = Group factor for anchors parallel to horizontal joint under shear load perpendicular to the free edge
$\alpha_{g\,\perp,V\perp}$ = Group factor for anchors perpendicular to hor. joint under shear load perpendicular to the free edge

Single anchor at the edge:
$N_{Rk,b} = \alpha_{edge,N} * N_{RK,b}$
$V_{Rk,c\,II} = \alpha_{edge,V\,II} * V_{Rk,b}$
$V_{Rk,c\perp} = \alpha_{edge,V\perp} * V_{Rk,b}$

Group of 2 anchors:
$N^{g}_{Rk} = \alpha_{g,N} * N_{RK,b}$
$V^{g}_{Rk} = \alpha_{g,V} * V_{Rk,b}$ (for $c \geq c_{cr}$)
$V^{g}_{Rk,c} = \alpha_{g,V} * V_{Rk,b}$ (for $c \geq c_{min}$)

Group of 4 anchors:
$N^{g}_{Rk} = \alpha_{g\,II,N} * \alpha_{g\,\perp,N} * N_{RK,b}$
$V^{g}_{Rk} = \alpha_{g\,II,V} * \alpha_{g\,\perp,V} * V_{Rk,b}$ (for $c \geq c_{cr}$)
$V^{g}_{Rk,c} = \alpha_{g\,II,V} * \alpha_{g\,\perp,V} * V_{Rk,b}$ (for $c \geq c_{min}$)

Equations depend on anchor position and load direction (see table above). Reduction factor, group factor and resistances see annex C4 - C48. Reduction for installation in joints see annex B1.

Injection System WIT-VM 250 Pro for masonry

Performances
Definition of the reduction- and group factors

Annex C 3

Deutsches Institut für Bautechnik DIBt

Brick type: Autoclaved aerated concrete – AAC

Table C3: Stone description

Brick type		Autoclaved aerated concrete AAC
Density	ρ [kg/dm³]	0,35 – 0,6
Compressive strength	f_b [N/mm²]	2, 4, 6
Code		EN 771-4
Producer (Country)		e.g. Porit (DE)
Brick dimensions	[mm]	≥ 499 x 240 x 249
Drilling method		Rotary drilling

Table C4: Installation parameter

Anchor size		[-]	M8	M10	M12	M16	IG-M6	IG-M8	IG-M10
Installation torque	T_{inst}	[Nm]	≤ 5	≤ 5	≤ 10	≤ 10	≤ 5	≤ 5	≤ 10
Char. Edge distance	c_{cr}	[mm]	150 (for shear loads perpendicular to the free edge: c_{cr} = 210)						
Minimum Edge Distance	c_{min}	[mm]	50						
Characteristic Spacing	$s_{cr,\,II}$	[mm]	300						
	$s_{cr,\,\perp}$	[mm]	250						
Minimum Spacing	s_{min}	[mm]	50						

Table C5: Reduction factors for single anchors at the edge

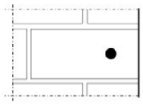
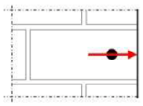
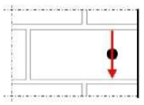
Tension load			Shear load					
			Perpendicular to the free edge			Parallel to the free edge		
	with c ≥	$\alpha_{edge,\,N}$		with c ≥	$\alpha_{edge,\,V\perp}$		with c ≥	$\alpha_{edge,\,V\,II}$
	50	0,85		50	0,12		50	0,70
				125	0,50		125	0,85
	150	1,00		210	1,00		150	1,00

Table C6: Factors for anchor groups under tension load

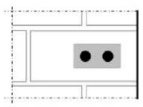
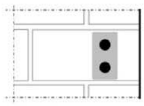
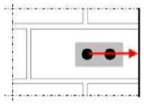
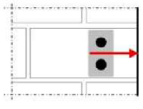
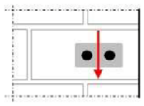
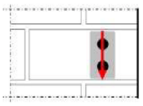
Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
	with c ≥	with s ≥	$\alpha_{g\,II,\,N}$		with c ≥	with s ≥	$\alpha_{g\,\perp,\,N}$
	50	50	1,10		50	50	0,75
	150	50	1,25		150	50	0,90
	150	300	2,00		150	250	2,00

Table C7: Factors for anchor groups under shear load

	Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
		with c ≥	with s ≥	$\alpha_{g\,II,V\perp}$		with c ≥	with s ≥	$\alpha_{g\,\perp,V\perp}$
Shear load perpendicular to the free edge		50	50	0,20		50	50	0,25
		210	50	1,60		210	50	1,80
		210	300	2,00		210	250	2,00
		with c ≥	with s ≥	$\alpha_{g\,II,V\,II}$		with c ≥	with s ≥	$\alpha_{g\,\perp,V\,II}$
Shear load parallel to the free edge		50	50	1,15		50	50	0,80
		150	50	1,60		150	50	1,10
		150	300	2,00		150	250	2,00

Injection System WIT-VM 250 Pro for masonry

Performances Autoclaved aerated concrete - AAC
Description of the stone, Installation parameters, Reduction- and Group factors

Annex C 4

Deutsches Institut für Bautechnik DIBt

Brick type: Autoclaved aerated concrete – AAC

Table C8: Characteristic values of tension and shear load resistances

Anchor size	Perforated sleeve	Effective Anchorage depth	Characteristic Resistances with c ≥ c_{cr} and s ≥ s_{cr}						
			Use condition						
			d/d			w/d w/w			d/d w/d w/w
			40°C/24°C	80°C/50°C	120°C/72°C	40°C/24°C	80°C/50°C	120°C/72°C	All Temperature ranges
		h_{ef}	$N_{Rk,b} = N_{Rk,p}$			$N_{Rk,b} = N_{Rk,p}$			$V_{Rk,b}$ [1]
		[mm]	[kN]						
Compressive strength f_b = 2 N/mm²; Density ρ ≥ 0,35 kg/dm³									
M8	-	≥ 80	1,2	0,9	0,9	0,9	0,9	0,9	1,5
M10 / IG-M6	-	≥ 90	1,2	0,9	0,9	0,9	0,9	0,9	2,5
M12 / IG-M8	-	≥ 100	2,0	1,5	1,5	1,5	1,5	1,5	2,5
M16 / IG-M10	-	≥ 100	2,0	1,5	1,5	1,5	1,5	1,5	2,5
M8	12x80	80	1,2	0,9	0,9	0,9	0,9	0,9	1,5
M8 / M10/ IG-M6	16x85	85	1,2	0,9	0,9	0,9	0,9	0,9	2,5
	16x130	130	1,2	0,9	0,9	0,9	0,9	0,9	2,5
M12 / M16 / IG-M8 / IG-M10	20x85	85	2,0	1,5	1,5	1,5	1,5	1,5	2,5
	20x130	130	2,0	1,5	1,5	1,5	1,5	1,5	2,5
	20x200	200	2,0	1,5	1,5	1,5	1,5	1,5	2,5

[1] $V_{Rk,c}$ according to Annex C3

Anchor size	Perforated sleeve	Effective Anchorage depth	Characteristic Resistances with c ≥ c_{cr} and s ≥ s_{cr}						
			Use condition						
			d/d			w/d w/w			d/d w/d w/w
			40°C/24°C	80°C/50°C	120°C/72°C	40°C/24°C	80°C/50°C	120°C/72°C	All Temperature ranges
		h_{ef}	$N_{Rk,b} = N_{Rk,p}$			$N_{Rk,b} = N_{Rk,p}$			$V_{Rk,b}$ [1]
		[mm]	[kN]						
Compressive strength f_b = 4 N/mm²; Density ρ ≥ 0,50 kg/dm³									
M8	-	≥ 80	3,0	2,5	2,0	2,5	2,0	2,0	4,5
M10 / IG-M6	-	≥ 90	3,0	2,5	2,0	2,5	2,0	2,0	7,5
M12 / IG-M8	-	≥ 100	5,0	4,5	4,0	4,5	4,0	4,0	7,5
M16 / IG-M10	-	≥ 100	5,0	4,5	4,0	4,5	4,0	4,0	7,5
M8	12x80	80	3,0	2,5	2,0	2,5	2,0	2,0	4,5
M8 / M10/ IG-M6	16x85	85	3,0	2,5	2,0	2,5	2,0	2,0	7,5
	16x130	130	3,0	2,5	2,0	2,5	2,0	2,0	7,5
M12 / M16 / IG-M8 / IG-M10	20x85	85	5,0	4,5	4,0	4,5	4,0	4,0	7,5
	20x130	130	5,0	4,5	4,0	4,5	4,0	4,0	7,5
	20x200	200	5,0	4,5	4,0	4,5	4,0	4,0	7,5

[1] $V_{Rk,c}$ according to Annex C3

Injection System WIT-VM 250 Pro for masonry

Performances Autoclaved aerated concrete - AAC
Characteristic Resistances and Displacements

Annex C 5

Deutsches Institut für Bautechnik DIBt

Brick type: Autoclaved aerated concrete – AAC

Anchor size	Perforated sleeve	Effective Anchorage depth	Characteristic Resistances with c ≥ c_{cr} and s ≥ s_{cr}						
			Use condition						
			d/d			w/d w/w			d/d w/d w/w
			40°C/24°C	80°C/50°C	120°C/72°C	40°C/24°C	80°C/50°C	120°C/72°C	All Temperature ranges
		h_{ef}	$N_{Rk,b} = N_{Rk,p}$			$N_{Rk,b} = N_{Rk,p}$			$V_{Rk,b}$ [1]
		[mm]	[kN]						
Compressive strength f_b = 6 N/mm²; Density ρ ≥ 0,65 kg/dm³									
M8	-	≥ 80	4,0	3,5	3,0	3,5	3,0	3,0	6,0
M10 / IG-M6	-	≥ 90	4,0	3,5	3,0	3,5	3,0	3,0	10,0
M12 / IG-M8	-	≥ 100	7,0	6,0	5,5	6,5	5,5	5,5	10,0
M16 / IG-M10	-	≥ 100	7,0	6,0	5,5	6,5	5,5	5,5	10,0
M8	12x80	80	4,0	3,5	3,0	3,5	3,0	3,0	6,0
M8 / M10/ IG-M6	16x85	85	4,0	3,5	3,0	3,5	3,0	3,0	10,0
	16x130	130	4,0	3,5	3,0	3,5	3,0	3,0	10,0
M12 / M16 / IG-M8 / IG-M10	20x85	85	7,0	6,0	5,5	6,5	5,5	5,5	10,0
	20x130	130	7,0	6,0	5,5	6,5	5,5	5,5	10,0
	20x200	200	7,0	6,0	5,5	6,5	5,5	5,5	10,0

[1] $V_{Rk,c}$ according to Annex C3

Table C9: Displacements

Anchor size	h_{ef}	δ_N / N	δ_{N0}	$\delta_{N\infty}$	δ_V / V	δ_{V0}	$\delta_{V\infty}$
	[mm]	[mm/kN]	[mm]	[mm]	[mm/kN]	[mm]	[mm]
M8 – M12, IG-M6 – M10	all	0,1	0,1*N_{Rk} / 3,5	2*δ_{N0}	0,3	0,3*V_{Rk} / 3,5	1,5*δ_{V0}
M16	all				0,1	0,1*V_{Rk} / 3,5	1,5*δ_{V0}

Injection System WIT-VM 250 Pro for masonry

Performances Autoclaved aerated concrete – AAC
Characteristic Resistances and Displacements

Annex C 6

Deutsches Institut für Bautechnik DIBt

Brick type: Solid calcium silica brick KS-NF

Table C10: Stone description

Brick type		Solid calcium silica brick KS-NF
Density	ρ [kg/dm³]	≥ 2,0
Compressive strength	f_b [N/mm²]	≥ 28
Conversion factor for lower compressive strengths		$(f_b / 28)^{0,5} \leq 1,0$
Code		EN 771-2
Producer (Country)		e.g. Wemding (DE)
Brick dimensions	[mm]	≥ 240 x 115 x 71
Drilling method		Hammer drilling

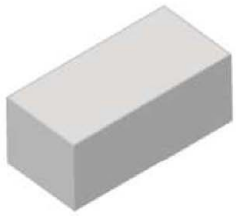


Table C11: Installation parameter

Anchor size		[-]	M8	M10	M12	M16	IG-M6	IG-M8	IG-M10
Installation torque	T_{inst}	[Nm]	≤ 10	≤ 10	≤ 15	≤ 15	≤ 10	≤ 10	≤ 10
Char. Edge distance	c_{cr}	[mm]	150 (for shear loads perpendicular to the free edge: c_{cr} = 240)						
Minimum Edge Distance	c_{min}	[mm]	60						
Characteristic Spacing	$s_{cr,\,II}$	[mm]	240						
	$s_{cr,\,\perp}$	[mm]	150						
Minimum Spacing	s_{min}	[mm]	75						

Table C12: Reduction factors for single anchors at the edge

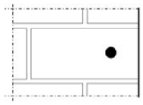
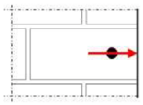
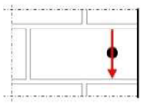
Tension load			Shear load					
			Perpendicular to the free edge			Parallel to the free edge		
	with c ≥	$\alpha_{edge,\,N}$		with c ≥	$\alpha_{edge,\,V\perp}$		with c ≥	$\alpha_{edge,\,V\,II}$
	60	0,50		60	0,30		60	0,60
	100	0,50		100	0,50		100	1,00
	150	1,00		240	1,00		150	1,00

Table C13: Factors for anchor groups under tension load

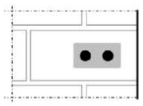
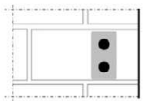
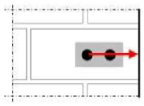
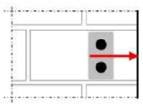
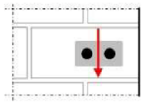
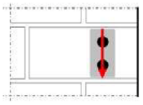
Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
	with c ≥	with s ≥	$\alpha_{g\,II,\,N}$		with c ≥	with s ≥	$\alpha_{g\,\perp,\,N}$
	60	75	0,70		60	75	1,15
	150	75	1,40		150	75	2,00
	150	240	2,00		150	150	2,00

Table C14: Factors for anchor groups under shear load

	Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
Shear load perpendicular to the free edge		with c ≥	with s ≥	$\alpha_{g\,II,V\perp}$		with c ≥	with s ≥	$\alpha_{g\,\perp,V\perp}$
		60	75	0,75		60	75	0,90
		150	75	2,00		150	75	2,00
		150	240	2,00		150	150	2,00
Shear load parallel to the free edge		with c ≥	with s ≥	$\alpha_{g\,II,V\,II}$		with c ≥	with s ≥	$\alpha_{g\,\perp,V\,II}$
		60	75	2,00		60	75	2,00
		150	75	2,00		150	75	2,00
		150	240	2,00		150	150	2,00

Injection System WIT-VM 250 Pro for masonry

Performances Solid calcium silica brick KS-NF
Description of the stone, Installation parameters, Reduction- and Group factors

Annex C 7

Deutsches Institut für Bautechnik DIBt

Brick type: Solid calcium silica brick KS-NF

Table C15: Characteristic values of tension and shear load resistances

Anchor size	Perforated sleeve	Effecitve Anchorage depth	Characteristic Resistances with c ≥ c_{cr} and s ≥ s_{cr}						
			Use condition						
			d/d			w/d w/w			d/d w/d w/w
			40°C/24°C	80°C/50°C	120°C/72°C	40°C/24°C	80°C/50°C	120°C/72°C	All Temperature ranges
		h_{ef}	$N_{Rk,b} = N_{Rk,p}$			$N_{Rk,b} = N_{Rk,p}$			$V_{Rk,b}$ [2]
		[mm]	[kN]						
Compressive strength $f_b \geq 28$ N/mm² [1]									
M8	-	≥ 80	7,0	6,5	5,0	6,0	5,5	4,0	7,0
M10 / IG-M6	-	≥ 90	7,0	6,5	5,0	6,0	5,5	4,0	
M12 / IG-M8	-	≥ 100	7,0	6,5	5,0	6,0	5,5	4,0	
M16 / IG-M10	-	≥ 100	7,0	6,5	5,0	7,0	6,5	5,0	
M8	12x80	80	7,0	6,5	5,0	6,0	5,5	4,0	
M8 / M10/ IG-M6	16x85	85	7,0	6,5	5,0	7,0	6,5	5,0	
	16x130	130	7,0	6,5	5,0	7,0	6,5	5,0	
M12 / M16 / IG-M8 / IG-M10	20x85	85	7,0	6,5	5,0	7,0	6,5	5,0	
	20x130	130	7,0	6,5	5,0	7,0	6,5	5,0	
	20x200	200	7,0	6,5	5,0	7,0	6,5	5,0	

[1] For lower compressive strengths resistances must be multiplied by the conversion factor according to Table C10. For stones with higher strengths, the shown values are valid without conversion.
[2] $V_{Rk,c}$ according to Annex C3

Table C16: Displacements

Anchor size	h_{ef}	δ_N / N	δ_{N0}	$\delta_{N\infty}$	δ_V / V	δ_{V0}	$\delta_{V\infty}$
	[mm]	[mm/kN]	[mm]	[mm]	[mm/kN]	[mm]	[mm]
M8 – M12, IG-M6 – M10	all	0,1	0,1*N_{Rk} / 3,5	2*δ_{N0}	0,3	0,3*V_{Rk} / 3,5	1,5*δ_{V0}
M16	all				0,1	0,1*V_{Rk} / 3,5	1,5*δ_{V0}

Injection System WIT-VM 250 Pro for masonry

Performances Solid calcium silica brick KS-NF
Characteristic Resistances and Displacements

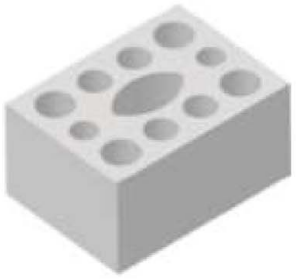
Annex C 8

Deutsches Institut für Bautechnik DIBt

Brick type: Hollow Calcium silica brick KSL-3DF

Table C17: Stone description

Brick type		Hollow calcium silica brick KSL-3DF
Density	ρ [kg/dm³]	≥ 1,4
Compressive strength	f_b [N/mm²]	≥ 14
Conversion factor for lower compressive strengths		$(f_b / 14)^{0,75} \leq 1,0$
Code		EN 771-2
Producer (Country)		e.g. KS-Wemding (DE)
Brick dimensions	[mm]	≥ 240 x 175 x 113
Drilling method		Rotary drilling



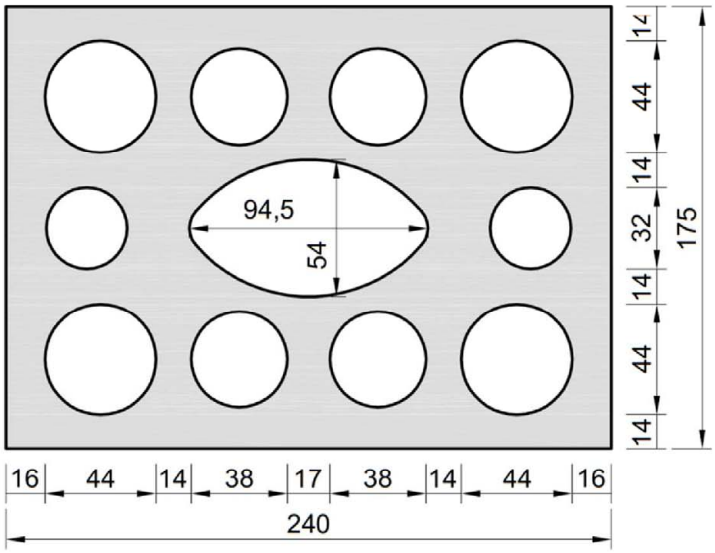


Table C18: Installation parameter

Anchor size		[-]	M8	M10	M12	M16	IG-M6	IG-M8	IG-M10
Installation torque	T_{inst}	[Nm]	≤ 5	≤ 5	≤ 8	≤ 8	≤ 5	≤ 8	≤ 8
Char. Edge distance	c_{cr}	[mm]	120 (for shear loads perpendicular to the free edge: c_{cr} = 240)						
Minimum Edge Distance	c_{min}	[mm]	60						
Characteristic Spacing	$s_{cr,\parallel}$	[mm]	240						
	$s_{cr,\perp}$	[mm]	120						
Minimum Spacing	s_{min}	[mm]	120						

Table C19: Reduction factors for single anchors at the edge

Tension load			Shear load					
			Perpendicular to the free edge			Parallel to the free edge		
	with c ≥	$\alpha_{edge,N}$		with c ≥	$\alpha_{edge,V\perp}$		with c ≥	$\alpha_{edge,V\parallel}$
	60	1,00		60	0,30		60	1,00
	120	1,00		240	1,00		120	1,00

Injection System WIT-VM 250 Pro for masonry

Performances Hollow Calcium silica brick KSL-3DF
Description of the stone, Installation parameters, Reductionfactors

Annex C 9

Deutsches Institut für Bautechnik DIBt

Brick type: Hollow Calcium silica brick KSL-3DF

Table C20: Factors for anchor groups under tension load

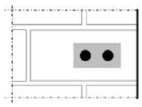
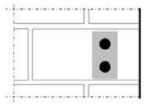
Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
	with c ≥	with s ≥	$\alpha_{g\ II,\ N}$		with c ≥	with s ≥	$\alpha_{g\ \perp,\ N}$
	60	120	1,50		60	120	1,00
	120	120	2,00				
	120	240	2,00		120	120	2,00

Table C21: Factors for anchor groups under shear load

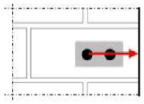
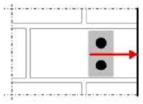
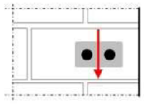
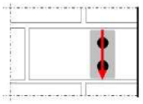
	Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
Shear load perpendicular to the free edge		with c ≥	with s ≥	$\alpha_{g\ II,V\perp}$		with c ≥	with s ≥	$\alpha_{g\ \perp,V\perp}$
		60	120	0,30		60	120	0,30
		120	120	1,00				
		120	240	2,00		240	120	2,00
Shear load parallel to the free edge		with c ≥	with s ≥	$\alpha_{g\ II,V\ II}$		with c ≥	with s ≥	$\alpha_{g\ \perp,V\ II}$
		60	120	1,00		60	120	1,00
		120	120	1,60				
		120	120	2,00		120	120	2,00

Table C22: Characteristic values of tension and shear load resistances

Anchor size	Perforated sleeve	Effecive Anchorage depth	Characteristic Resistances with c ≥ c_{cr} and s ≥ s_{cr}						
			Use condition						
			d/d			w/d w/w			d/d w/d w/w
			40°C/24°C	80°C/50°C	120°C/72°C	40°C/24°C	80°C/50°C	120°C/72°C	All Temperature ranges
		h_{ef}	$N_{Rk,b} = N_{Rk,p}$			$N_{Rk,b} = N_{Rk,p}$			$V_{Rk,b}$ 2)
		[mm]	[kN]						
Compressive strength $f_b \geq 14$ N/mm² 1)									
M8 / M10/ IG-M6	16x85	85	2,5	2,5	1,5	2,5	2,5	1,5	6,0
	16x130	130	2,5	2,5	2,0	2,5	2,5	2,0	6,0
M12 / M16 / IG-M8 / IG-M10	20x85	85	6,5	6,0	4,5	6,5	6,0	4,5	6,0
	20x130	130	6,5	6,0	4,5	6,5	6,0	4,5	6,0

1) For lower compressive strengths resistances must be multiplied by the conversion factor according to Table C17. For stones with higher strengths, the shown values are valid without conversion.

2) $V_{Rk,c}$ according to Annex C3

Table C23: Displacements

Anchor size	h_{ef}	δ_N / N	δ_{N0}	$\delta_{N\infty}$	δ_V / V	δ_{V0}	$\delta_{V\infty}$
	[mm]	[mm/kN]	[mm]	[mm]	[mm/kN]	[mm]	[mm]
M8 – M12, IG-M6 – M10	all	0,13	0,13*N_{Rk} / 3,5	2*δ_{N0}	0,55	0,55*V_{Rk} / 3,5	1,5*δ_{V0}
M16	all				0,31	0,31*V_{Rk} / 3,5	1,5*δ_{V0}

Injection System WIT-VM 250 Pro for masonry

Performances Hollow Calcium silica brick KSL-3DF
Group factors, characteristic Resistances and Displacements

Annex C 10

Deutsches Institut für Bautechnik DIBt

Brick type: Hollow Calcium silica brick KSL-8DF

Table C24: Stone description

Brick type		Hollow Calcium silica brick KSL-8DF
Density	ρ [kg/dm³]	≥ 1,4
Compressive strength	f_b [N/mm²]	≥ 12
Conversion factor for lower compressive strengths		$(f_b / 12)^{0,75} \leq 1,0$
Code		EN 771-2
Producer (Country)		e.g. KS-Wemding (DE)
Brick dimensions	[mm]	≥ 248 x 240 x 238
Drilling method		Rotary drilling

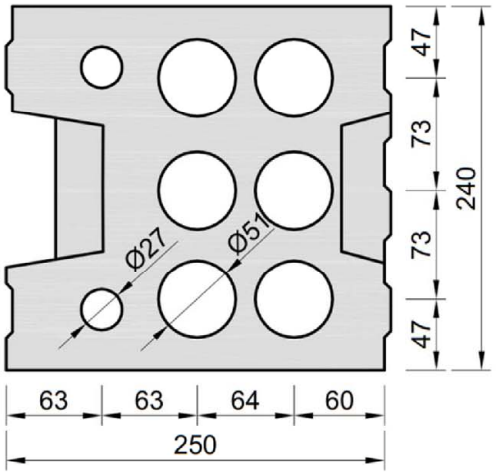


Table C25: Installation parameter

Anchor size		[-]	M8	M10	M12	M16	IG-M6	IG-M8	IG-M10
Installation torque	T_{inst}	[Nm]	≤ 5	≤ 5	≤ 8	≤ 8	≤ 5	≤ 8	≤ 8
Char. Edge distance	c_{cr}	[mm]	120 (for shear loads perpendicular to the free edge: c_{cr} = 240)						
Minimum Edge Distance	c_{min}	[mm]	50						
Characteristic Spacing	$s_{cr,\parallel}$	[mm]	250						
	$s_{cr,\perp}$	[mm]	120						
Minimum Spacing	s_{min}	[mm]	50						

Table C26: Reduction factors for single anchors at the edge

Tension load			Shear load					
			Perpendicular to the free edge			Parallel to the free edge		
	with c ≥	$\alpha_{edge,N}$		with c ≥	$\alpha_{edge,V\perp}$		with c ≥	$\alpha_{edge,V\parallel}$
	50	1,00		50	0,30		50	1,00
	120	1,00		250	1,00		120	1,00

Injection System WIT-VM 250 Pro for masonry

Performances Hollow Calcium silica brick KSL-8DF
Description of the stone, Installation parameters, Reductionfactors

Annex C 11

Deutsches Institut für Bautechnik DIBt

Brick type: Hollow Calcium silica brick KSL-8DF

Table C27: Factors for anchor groups under tension load

Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
	with c ≥	with s ≥	$\alpha_{g\,II,\,N}$		with c ≥	with s ≥	$\alpha_{g\,\perp,\,N}$
	50	50	1,00		50	50	1,00
	120	250	2,00		120	120	2,00

Table C28: Factors for anchor groups under shear load

	Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
Shear load perpendicular to the free edge		with c ≥	with s ≥	$\alpha_{g\,II,V\perp}$		with c ≥	with s ≥	$\alpha_{g\,\perp,V\perp}$
		50	50	0,45		50	50	0,45
		250	50	1,15		250	50	1,20
		250	250	2,00		250	250	2,00
Shear load parallel to the free edge		with c ≥	with s ≥	$\alpha_{g\,II,V\,II}$		with c ≥	with s ≥	$\alpha_{g\,\perp,V\,II}$
		50	50	1,30		50	50	1,00
		120	250	2,00		120	250	2,00

Table C29: Characteristic values of tension and shear load resistances

Anchor size	Perforated sleeve	Effective Anchorage depth	Characteristic Resistances with c ≥ c_{cr} and s ≥ s_{cr}						
			Use condition						
			d/d			w/d w/w			d/d w/d w/w
			40°C/24°C	80°C/50°C	120°C/72°C	40°C/24°C	80°C/50°C	120°C/72°C	All Temperature ranges
		h_{ef}	$N_{Rk,b} = N_{Rk,p}$			$N_{Rk,b} = N_{Rk,p}$			$V_{Rk,b}$ 2)
		[mm]	[kN]						
Compressive strength $f_b \geq 12$ N/mm² 1)									
M8 / M10/ IG-M6	16x130	130	5,0	4,5	3,5	5,0	4,5	3,5	3,5
M12 / M16 / IG-M8 / IG-M10	20x130	130	5,0	4,5	3,5	5,0	4,5	3,5	6,0
	20x200	200							

1) For lower compressive strengths resistances must be multiplied by the conversion factor according to Table C24. For stones with higher strengths, the shown values are valid without conversion.

2) $V_{Rk,c}$ according to Annex C3

Table C30: Displacements

Anchor size	h_{ef}	δ_N / N	δ_{N0}	$\delta_{N\infty}$	δ_V / V	δ_{V0}	$\delta_{V\infty}$
	[mm]	[mm/kN]	[mm]	[mm]	[mm/kN]	[mm]	[mm]
M8 – M12, IG-M6 – M10	all	0,13	0,13*N_{Rk} / 3,5	2*δ_{N0}	0,55	0,55*V_{Rk} / 3,5	1,5*δ_{V0}
M16	all				0,31	0,31*V_{Rk} / 3,5	1,5*δ_{V0}

Injection System WIT-VM 250 Pro for masonry

Performances Hollow Calcium silica brick KSL-8DF
Group factors, characteristic Resistances and Displacements

Annex C 12

Deutsches Institut für Bautechnik DIBt

Brick type: Hollow Calcium silica brick KSL-12DF

Table C31: Stone description

Brick type		Hollow Calcium silica brick KSL-12DF
Density	ρ [kg/dm³]	≥ 1,4
Compressive strength	f_b [N/mm²]	≥ 12
Conversion factor for lower compressive strengths		$(f_b / 12)^{0,75} \leq 1,0$
Code		EN 771-2
Producer (Country)		e.g. KS-Wemding (DE)
Brick dimensions	[mm]	≥ 498 x 175 x 238
Drilling method		Rotary drilling

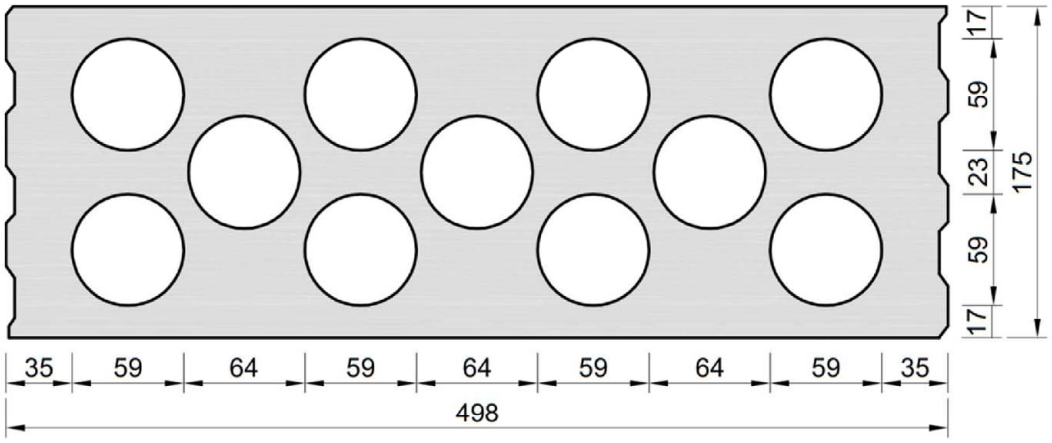


Table C32: Installation parameter

Anchor size		[-]	M8	M10	M12	M16	IG-M6	IG-M8	IG-M10
Installation torque	T_{inst}	[Nm]	≤ 4	≤ 4	≤ 5	≤ 5	≤ 4	≤ 5	≤ 5
Char. Edge distance	c_{cr}	[mm]	120 (for shear loads perpendicular to the free edge: c_{cr} = 500)						
Minimum Edge Distance	c_{min}	[mm]	50						
Characteristic Spacing	$s_{cr,\,||}$	[mm]	500						
	$s_{cr,\,\perp}$	[mm]	120						
Minimum Spacing	s_{min}	[mm]	50						

Table C33: Reduction factors for single anchors at the edge

Tension load			Shear load					
			Perpendicular to the free edge			Parallel to the free edge		
	with c ≥	$\alpha_{edge,\,N}$		with c ≥	$\alpha_{edge,\,V\perp}$		with c ≥	$\alpha_{edge,\,V||}$
	50	1,00		50	0,45		50	1,00
	120	1,00		500	1,00		120	1,00

Injection System WIT-VM 250 Pro for masonry

Performances Hollow Calcium silica brick KSL-12DF
Description of the stone, Installation parameters, Reductionfactors

Annex C 13

Deutsches Institut für Bautechnik DIBt

Brick type: Hollow Calcium silica brick KSL-12DF

Table C34: Factors for anchor groups under tension load

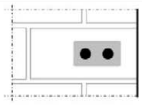
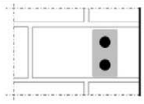
Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
	with c ≥	with s ≥	$\alpha_{g\,II,\,N}$		with c ≥	with s ≥	$\alpha_{g\,\perp,\,N}$
	50	50	1,50		50	50	1,00
	120	500	2,00		120	240	2,00

Table C35: Factors for anchor groups under shear load

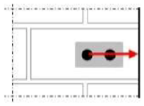
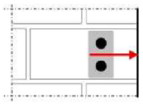
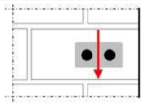
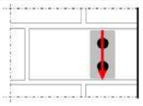
	Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
Shear load perpendicular to the free edge		with c ≥	with s ≥	$\alpha_{g\,II,V\perp}$		with c ≥	with s ≥	$\alpha_{g\,\perp,V\perp}$
		50	50	0,55		50	50	0,50
		500	50	1,00		500	50	1,00
		500	500	2,00		500	250	2,00
Shear load parallel to the free edge		with c ≥	with s ≥	$\alpha_{g\,II,V\,II}$		with c ≥	with s ≥	$\alpha_{g\,\perp,V\,II}$
		50	50	2,00		50	50	1,30
		120	500	2,00		120	250	2,00

Table C36: Characteristic values of tension and shear load resistances

Anchor size	Perforated sleeve	Effective Anchorage depth	Characteristic Resistances with c ≥ c_{cr} and s ≥ s_{cr}						
			Use condition						
			d/d			w/d w/w			d/d w/d w/w
			40°C/24°C	80°C/50°C	120°C/72°C	40°C/24°C	80°C/50°C	120°C/72°C	All Temperature ranges
		h_{ef}	$N_{Rk,b} = N_{Rk,p}$			$N_{Rk,b} = N_{Rk,p}$			$V_{Rk,b}$ 2)
		[mm]	[kN]						
Compressive strength $f_b \geq 12$ N/mm² 1)									
M8 / M10/ IG-M6	16x130	130	3,5	3,5	2,5	3,5	3,5	2,5	3,5
M12 / M16 / IG-M8 / IG-M10	20x130	130	3,5	3,5	2,5	3,5	3,5	2,5	7,0

1) For lower compressive strengths resistances must be multiplied by the conversion factor according to Table C31. For stones with higher strengths, the shown values are valid without conversion.

2) $V_{Rk,c}$ according to Annex C3

Table C37: Displacements

Anchor size	h_{ef}	δ_N / N	δ_{N0}	$\delta_{N\infty}$	δ_V / V	δ_{V0}	$\delta_{V\infty}$
	[mm]	[mm/kN]	[mm]	[mm]	[mm/kN]	[mm]	[mm]
M8 – M12, IG-M6 – M10	all	0,13	0,13*N_{Rk} / 3,5	2*δ_{N0}	0,55	0,55*V_{Rk} / 3,5	1,5*δ_{V0}
M16	all				0,31	0,31*V_{Rk} / 3,5	1,5*δ_{V0}

Injection System WIT-VM 250 Pro for masonry

Performances Hollow Calcium silica brick KSL-12DF
Group factors, characteristic Resistances and Displacements

Annex C 14

Deutsches Institut für Bautechnik DIBt

Brick type: Solid clay brick 1DF

Table C38: Stone description

Brick type		Solid clay brick Mz-1DF
Density	ρ [kg/dm³]	≥ 2,0
Compressive strength	f_b [N/mm²]	≥ 20
Conversion factor for lower compressive strengths		$(f_b / 20)^{0,5} \leq 1,0$
Code		EN 771-1
Producer (Country)		e.g. Wienerberger (DE)
Brick dimensions	[mm]	≥ 240 x 115 x 55
Drilling method		Hammer drilling

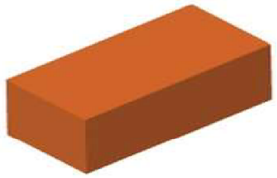


Table C39: Installation parameter

Anchor size		[-]	M8	M10	M12	M16	IG-M6	IG-M8	IG-M10
Installation torque	T_{inst}	[Nm]	≤ 10	≤ 10	≤ 10	≤ 10	≤ 10	≤ 10	≤ 10
Char. Edge distance	c_{cr}	[mm]	150 (for shear loads perpendicular to the free edge: c_{cr} = 240)						
Minimum Edge Distance	c_{min}	[mm]	60						
Characteristic Spacing	$s_{cr,\,II}$	[mm]	240						
	$s_{cr,\,\perp}$	[mm]	130						
Minimum Spacing	s_{min}	[mm]	65						

Table C40: Reduction factors for single anchors at the edge

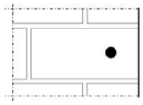
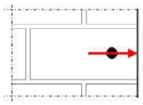
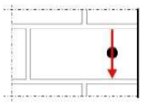
Tension load			Shear load					
			Perpendicular to the free edge			Parallel to the free edge		
	with c ≥	$\alpha_{edge,\,N}$		with c ≥	$\alpha_{edge,\,V\perp}$		with c ≥	$\alpha_{edge,\,V\,II}$
	60	0,75		60	0,10		60	0,30
				100	0,50		100	0,65
	150	1,00		240	1,00		150	1,00

Table C41: Factors for anchor groups under tension load

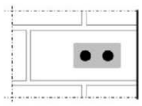
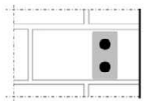
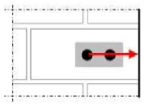
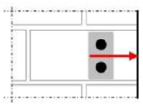
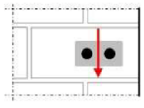
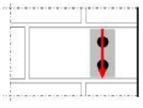
Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
	with c ≥	with s ≥	$\alpha_{g\,II,\,N}$		with c ≥	with s ≥	$\alpha_{g\,\perp,\,N}$
	60	65	0,85		60	65	1,00
	150	65	1,15		150	65	1,20
	150	240	2,00		150	130	2,00

Table C42: Factors for anchor groups under shear load

	Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
Shear load perpendicular to the free edge		with c ≥	with s ≥	$\alpha_{g\,II,V\perp}$		with c ≥	with s ≥	$\alpha_{g\,\perp,V\perp}$
		60	65	0,40		60	65	0,30
		240	65	2,00		240	65	2,00
		240	240	2,00		240	130	2,00
Shear load parallel to the free edge		with c ≥	with s ≥	$\alpha_{g\,II,V\,II}$		with c ≥	with s ≥	$\alpha_{g\,\perp,V\,II}$
		60	65	1,75		60	65	1,10
		150	65	2,00		150	65	2,00
		150	240	2,00		150	130	2,00

Injection System WIT-VM 250 Pro for masonry

Performances Solid clay brick 1DF
Description of the stone, Installation parameters, Reduction- and Group factors

Annex C 15

Deutsches Institut für Bautechnik DIBt

Brick type: Solid clay brick 1DF

Table C43: Characteristic values of tension and shear load resistances

Anchor size	Perforated sleeve	Effecitve Anchorage depth	Characteristic Resistances with c ≥ c_{cr} and s ≥ s_{cr}						
			Use condition						
			d/d			w/d w/w			d/d w/d w/w
			40°C/24°C	80°C/50°C	120°C/72°C	40°C/24°C	80°C/50°C	120°C/72°C	All Temperature ranges
		h_{ef}	$N_{Rk,b} = N_{Rk,p}$			$N_{Rk,b} = N_{Rk,p}$			$V_{Rk,b}$ 2)
		[mm]	[kN]						
Compressive strength $f_b \geq 20$ N/mm² 1)									
M8	-	≥ 80	7,0	6,0	6,0	7,0	6,0	6,0	8,0
M10 / IG-M6	-	≥ 90	7,0	6,0	6,0	7,0	6,0	6,0	8,0
M12 / IG-M8	-	≥ 100	7,0	6,0	6,0	7,0	6,0	6,0	8,0
M16 / IG-M10	-	≥ 100	8,0	6,5	6,5	8,0	6,5	6,5	12,0
M8	12x80	80	7,0	6,0	6,0	7,0	6,0	6,0	8,0
M8 / M10/ IG-M6	16x85	85	7,0	6,0	6,0	7,0	6,0	6,0	8,0
	16x130	130	7,0	6,0	6,0	7,0	6,0	6,0	8,0
M12 / IG-M8	20x85	85	7,0	6,0	6,0	7,0	6,0	6,0	8,0
	20x130	130	7,0	6,0	6,0	7,0	6,0	6,0	8,0
	20x200	200	7,0	6,0	6,0	7,0	6,0	6,0	8,0
M16 / IG-M10	20x85	85	8,0	6,5	6,5	8,0	6,5	6,5	12,0
	20x130	130	8,0	6,5	6,5	8,0	6,5	6,5	12,0
	20x200	200	8,0	6,5	6,5	8,0	6,5	6,5	12,0

1) For lower compressive strengths resistances must be multiplied by the conversion factor according to Table C38. For stones with higher strengths, the shown values are valid without conversion.

2) $V_{Rk,c}$ according to Annex C3

Table C44: Displacements

Anchor size	h_{ef}	δ_N / N	δ_{N0}	$\delta_{N\infty}$	δ_V / V	δ_{V0}	$\delta_{V\infty}$
	[mm]	[mm/kN]	[mm]	[mm]	[mm/kN]	[mm]	[mm]
M8 – M12, IG-M6 – M10	all	0,1	$0,1*N_{Rk}$ / 3,5	$2*\delta_{N0}$	0,3	$0,3*V_{Rk}$ / 3,5	$1,5*\delta_{V0}$
M16	all				0,1	$0,1*V_{Rk}$ / 3,5	$1,5*\delta_{V0}$

Deutsches Institut für Bautechnik DIBt

Brick type: Solid clay brick 2DF

Table C45: Stone description

Brick type		Solid clay brick Mz- 2DF
Density	ρ [kg/dm³]	≥ 2,0
Compressive strength	f_b [N/mm²]	≥ 28
Conversion factor for lower compressive strengths		$(f_b / 28)^{0,5} \leq 1,0$
Code		EN 771-1
Producer (Country)		e.g. Wienerberger (DE)
Brick dimensions	[mm]	≥ 240 x 115 x 113
Drilling method		Hammer drilling

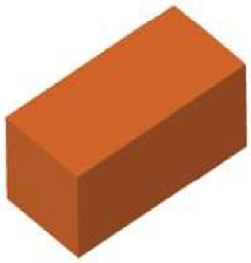


Table C46: Installation parameter

Anchor size		[-]	M8	M10	M12	M16	IG-M6	IG-M8	IG-M10
Installation torque	T_{inst}	[Nm]	≤ 10	≤ 10	≤ 10	≤ 10	≤ 10	≤ 10	≤ 10
Char. Edge distance	c_{cr}	[mm]	150 (for shear loads perpendicular to the free edge: c_{cr} = 240)						
Minimum Edge Distance	c_{min}	[mm]	50						
Characteristic Spacing	$s_{cr,\,II}$	[mm]	240						
	$s_{cr,\,\perp}$	[mm]	240						
Minimum Spacing	s_{min}	[mm]	50						

Table C47: Reduction factors for single anchors at the edge

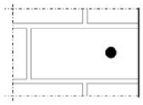
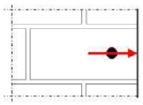
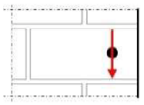
Tension load			Shear load					
			Perpendicular to the free edge			Parallel to the free edge		
	with c ≥	$\alpha_{edge,\,N}$		with c ≥	$\alpha_{edge,\,V\perp}$		with c ≥	$\alpha_{edge,\,V\,II}$
	50	1,00		50	0,20		50	1,00
				125	0,50			
	150	1,00		240	1,00		150	1,00

Table C48: Factors for anchor groups under tension load

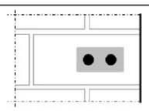
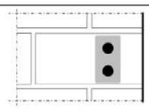
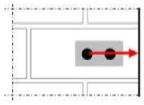
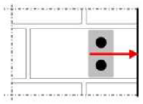
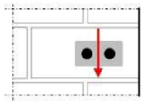
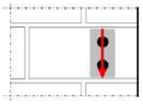
Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
	with c ≥	with s ≥	$\alpha_{g\,II,\,N}$		with c ≥	with s ≥	$\alpha_{g\,\perp,\,N}$
	50	50	1,50		50	50	0,80
	150	240	2,00		150	240	2,00

Table C49: Factors for anchor groups under shear load

	Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
		with c ≥	with s ≥	$\alpha_{g\,II,V\perp}$		with c ≥	with s ≥	$\alpha_{g\,\perp,V\perp}$
Shear load perpendicular to the free edge		50	50	0,40		50	50	0,20
		240	50	1,20		240	50	0,60
		240	240	2,00		240	125	1,00
						240	240	2,00
Shear load parallel to the free edge		with c ≥	with s ≥	$\alpha_{g\,II,V\,II}$		with c ≥	with s ≥	$\alpha_{g\,\perp,V\,II}$
		50	50	1,20		50	50	1,00
		150	240	2,00		50	125	1,00
						150	240	2,00

Injection System WIT-VM 250 Pro for masonry

Performances Solid clay brick 2DF
Description of the stone, Installation parameters, Reduction- and Group factors

Annex C 17

Deutsches Institut für Bautechnik DIBt

Brick type: Solid clay brick 2DF

Table C50: Characteristic values of tension and shear load resistances

Anchor size	Perforated sleeve	Effecitve Anchorage depth	Characteristic Resistances with c ≥ c_{cr} and s ≥ s_{cr}						
			Use condition						
			d/d			w/d w/w			d/d w/d w/w
			40°C/24°C	80°C/50°C	120°C/72°C	40°C/24°C	80°C/50°C	120°C/72°C	All Temperature ranges
		h_{ef}	$N_{Rk,b} = N_{Rk,p}$			$N_{Rk,b} = N_{Rk,p}$			$V_{Rk,b}$ 2)
		[mm]	[kN]						
Compressive strength $f_b \geq 28$ N/mm² 1)									
M8	-	≥ 80	9,0	9,0	7,5	9,0	9,0	7,5	9,5
M10 / IG-M6	-	≥ 90	9,0	9,0	7,5	9,0	9,0	7,5	9,5
M12 / IG-M8	-	≥ 100	9,0	9,0	7,5	9,0	9,0	7,5	12
M16 / IG-M10	-	≥ 100	9,0	9,0	7,5	9,0	9,0	7,5	12 3)
M8	12x80	80	9,0	9,0	7,5	9,0	9,0	7,5	9,5
M8 / M10/ IG-M6	16x85	85	9,0	9,0	7,5	9,0	9,0	7,5	9,5
	16x130	130	9,0	9,0	7,5	9,0	9,0	7,5	9,5
M12 / IG-M8	20x85	85	9,0	9,0	7,5	9,0	9,0	7,5	12
	20x130	130	9,0	9,0	7,5	9,0	9,0	7,5	12
	20x200	200	9,0	9,0	7,5	9,0	9,0	7,5	12
M16 / IG-M10	20x85	85	9,0	9,0	7,5	9,0	9,0	7,5	12 3)
	20x130	130	9,0	9,0	7,5	9,0	9,0	7,5	12 3)
	20x200	200	9,0	9,0	7,5	9,0	9,0	7,5	12 3)

1) For lower compressive strengths resistances must be multiplied by the conversion factor according to Table C45. For stones with higher strengths, the shown values are valid without conversion.
2) $V_{Rk,c}$ according to Annex C3
3) Valid for all stone strengths with min. 10 N/mm²

Table C51: Displacements

Anchor size	h_{ef}	δ_N / N	δ_{N0}	$\delta_{N\infty}$	δ_V / V	δ_{V0}	$\delta_{V\infty}$
	[mm]	[mm/kN]	[mm]	[mm]	[mm/kN]	[mm]	[mm]
M8 – M12, IG-M6 – M10	all	0,1	0,1*N_{Rk} / 3,5	2*δ_{N0}	0,3	0,3*V_{Rk} / 3,5	1,5*δ_{V0}
M16	all				0,1	0,1*V_{Rk} / 3,5	1,5*δ_{V0}

Injection System WIT-VM 250 Pro for masonry

Performances Solid clay brick 2DF
Characteristic Resistances and Displacements

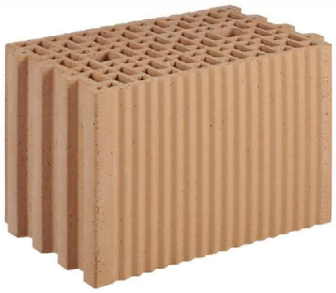
Annex C 18

Deutsches Institut für Bautechnik DIBt

Brick type: Hollow clay brick 10 DF

Table C52: Stone description

Brick type		Hollow clay brick HLZ-10DF
Density	ρ [kg/dm³]	≥ 1,25
Compressive strength	f_b [N/mm²]	≥ 20
Conversion factor for lower compressive strengths		$(f_b / 20)^{0,5} \leq 1,0$
Code		EN 771-1
Producer (Country)		e.g. Wienerberger (DE)
Brick dimensions	[mm]	300 x 240 x 249
Drilling method		Rotary drilling



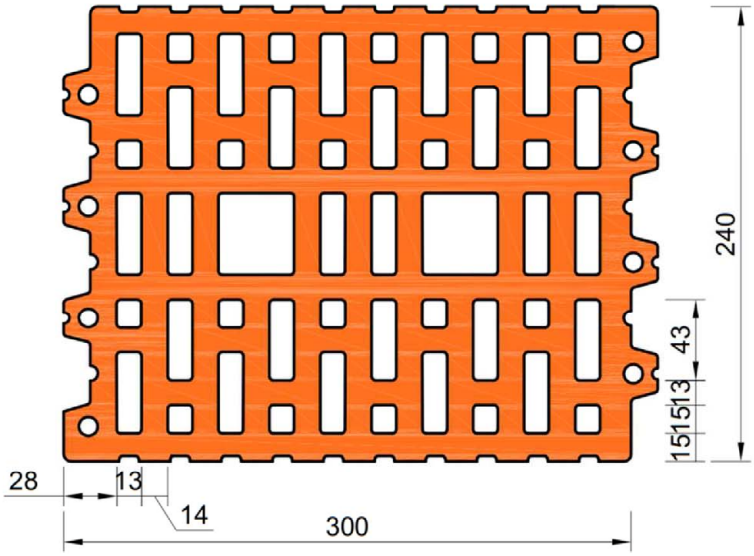


Table C53: Installation parameter

Anchor size		[-]	M8	M10	M12	M16	IG-M6	IG-M8	IG-M10
Installation torque	T_{inst}	[Nm]	≤ 5	≤ 10	≤ 10	≤ 10	≤ 5	≤ 5	≤ 10
Char. Edge distance	c_{cr}	[mm]	120 (for shear loads perpendicular to the free edge: c_{cr} = 300)						
Minimum Edge Distance	c_{min}	[mm]	50						
Characteristic Spacing	$s_{cr,\,II}$	[mm]	300						
	$s_{cr,\,\perp}$	[mm]	250						
Minimum Spacing	s_{min}	[mm]	50						

Table C54: Reduction factors for single anchors at the edge

Tension load			Shear load					
			Perpendicular to the free edge			Parallel to the free edge		
	with c ≥	$\alpha_{edge,\,N}$		with c ≥	$\alpha_{edge,\,V\perp}$		with c ≥	$\alpha_{edge,\,V\,II}$
	50	1,00		50	0,20		50	1,00
	120	1,00		300	1,00		120	1,00

Injection System WIT-VM 250 Pro for masonry

Performances Hollow clay brick HLZ 10DF
Description of the stone, Installation parameters, Reductionfactors

Annex C 19

Deutsches Institut für Bautechnik DIBt

Brick type: Hollow clay brick 10 DF

Table C55: Factors for anchor groups under tension load

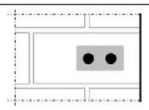
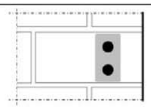
Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
	with c ≥	with s ≥	$\alpha_{g\,II,\,N}$		with c ≥	with s ≥	$\alpha_{g\,\perp,\,N}$
	50	50	1,55		50	50	1,00
	120	300	2,00		120	250	2,00

Table C56: Factors for anchor groups under shear load

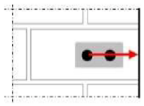
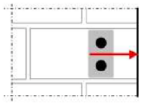
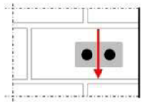
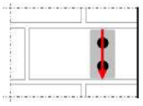
	Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
Shear load perpendicular to the free edge		with c ≥	with s ≥	$\alpha_{g\,II,V\perp}$		with c ≥	with s ≥	$\alpha_{g\,\perp,V\perp}$
		50	50	0,30		50	50	0,20
		300	50	1,40		300	50	1,00
		300	300	2,00		300	250	2,00
Shear load parallel to the free edge		with c ≥	with s ≥	$\alpha_{g\,II,V\,II}$		with c ≥	with s ≥	$\alpha_{g\,\perp,V\,II}$
		50	50	1,85		50	50	1,00
		120	300	2,00		120	250	2,00

Table C57: Characteristic values of tension and shear load resistances

Anchor size	Perforated sleeve	Effective Anchorage depth	Characteristic Resistances with c ≥ c_{cr} and s ≥ s_{cr}						
			Use condition						
			d/d			w/d w/w			d/d w/d w/w
			40°C/24°C	80°C/50°C	120°C/72°C	40°C/24°C	80°C/50°C	120°C/72°C	All Temperature ranges
		h_{ef}	$N_{Rk,b} = N_{Rk,p}$			$N_{Rk,b} = N_{Rk,p}$			$V_{Rk,b}$ [2]
		[mm]	[kN]						
Compressive strength $f_b \geq 20$ N/mm² [1]									
M8	12x80	80	2,5	2,5	2,0	2,5	2,5	2,0	8,0
M8 / M10/ IG-M6	16x85	85	2,5	2,5	2,0	2,5	2,5	2,0	8,0
	16x130	130	2,5	2,5	2,0	2,5	2,5	2,0	8,0
M12 / IG-M8	20x85	85	5,0	5,0	4,5	5,0	5,0	4,5	8,0
	20x130	130	5,0	5,0	4,5	5,0	5,0	4,5	8,0
	20x200	200	5,0	5,0	4,5	5,0	5,0	4,5	8,0
M16 / IG-M10	20x85	85	5,0	5,0	4,5	5,0	5,0	4,5	11,5
	20x130	130	5,0	5,0	4,5	5,0	5,0	4,5	11,5
	20x200	200	5,0	5,0	4,5	5,0	5,0	4,5	11,5

[1] For lower compressive strengths resistances must be multiplied by the conversion factor according to Table C52. For stones with higher strengths, the shown values are valid without conversion.

[2] $V_{Rk,c}$ according to Annex C3

Table C58: Displacements

Anchor size	h_{ef}	δ_N / N	δ_{N0}	$\delta_{N\infty}$	δ_V / V	δ_{V0}	$\delta_{V\infty}$
	[mm]	[mm/kN]	[mm]	[mm]	[mm/kN]	[mm]	[mm]
M8 – M12, IG-M6 – M10	all	0,13	0,13*N_{Rk} / 3,5	2*δ_{N0}	0,55	0,55*V_{Rk} / 3,5	1,5*δ_{V0}
M16	all				0,31	0,31*V_{Rk} / 3,5	1,5*δ_{V0}

Injection System WIT-VM 250 Pro for masonry

Performances Hollow clay brick HLZ 10DF
Group factors, characteristic Resistances and Displacements

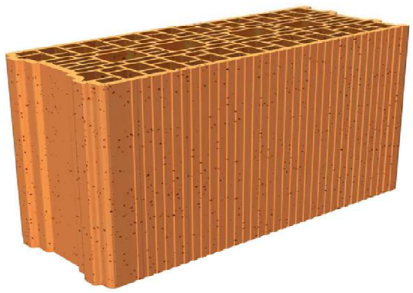
Annex C 20

Deutsches Institut für Bautechnik DIBt

Brick type: Hollow Clay brick Porotherm Homebric

Table C59: Stone description

Brick type		Hollow clay brick Porotherm Homebric
Density	ρ [kg/dm³]	≥ 0,70
Compressive strength	f_b [N/mm²]	≥ 10
Conversion factor for lower compressive strengths		$(f_b / 10)^{0,5} \leq 1,0$
Code		EN 771-1
Producer (Country)		e.g. Wienerberger (FR)
Brick dimensions	[mm]	500 x 200 x 300
Drilling method		Rotary drilling



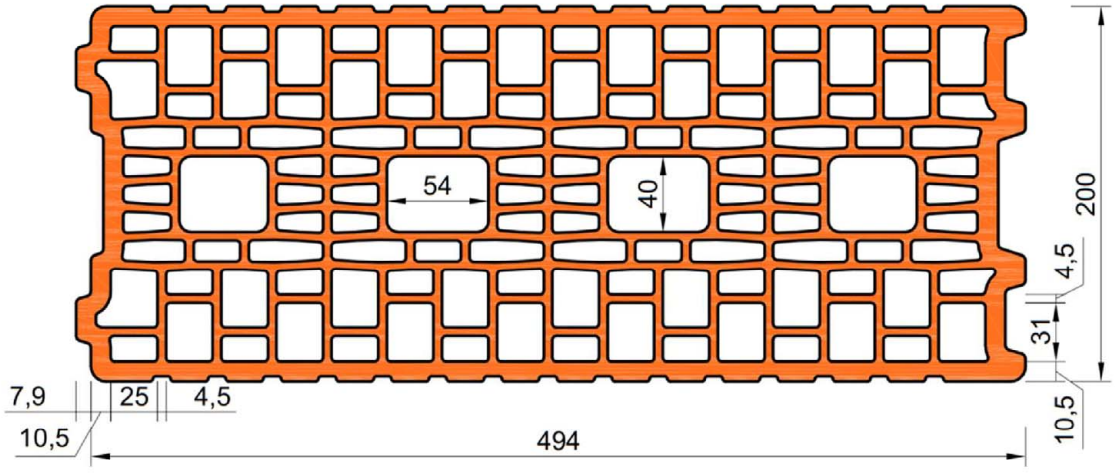
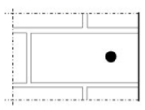
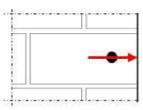
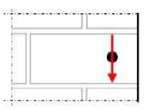


Table C60: Installation parameter

Anchor size		[-]	M8	M10	M12	M16	IG-M6	IG-M8	IG-M10
Installation torque	T_{inst}	[Nm]	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2
Char. Edge distance	c_{cr}	[mm]	120 (for shear loads perpendicular to the free edge: c_{cr} = 500)						
Minimum Edge Distance	c_{min}	[mm]	120						
Characteristic Spacing	$s_{cr,\,II}$	[mm]	500						
	$s_{cr,\,\perp}$	[mm]	300						
Minimum Spacing	s_{min}	[mm]	120						

Table C61: Reduction factors for single anchors at the edge

Tension load			Shear load					
			Perpendicular to the free edge			Parallel to the free edge		
	with c ≥	$\alpha_{edge,\,N}$		with c ≥	$\alpha_{edge,\,V\perp}$		with c ≥	$\alpha_{edge,\,V\,II}$
	120	1,00		120	0,30		120	0,60
				250	0,60			
	120	1,00		500	1,00		200	1,00

Injection System WIT-VM 250 Pro for masonry

Performances Hollow clay brick Porotherm Homebric
Description of the stone, Installation parameters, Reductionfactors

Annex C 21

Deutsches Institut für Bautechnik DIBt

Brick type: Hollow Clay brick Porotherm Homebric

Table C62: Factors for anchor groups under tension load

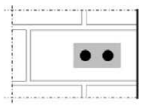
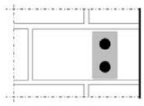
Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
	with c ≥	with s ≥	$\alpha_{g\,II,\,N}$		with c ≥	with s ≥	$\alpha_{g\,\perp,\,N}$
	120	100	1,00		120	100	1,00
	200	100	2,00		200	100	1,20
	120	500	2,00		120	300	2,00

Table C63: Factors for anchor groups under shear load

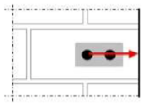
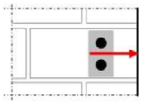
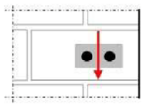
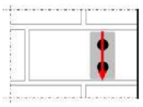
	Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
Shear load perpendicular to the free edge		with c ≥	with s ≥	$\alpha_{g\,II,V\,\perp}$		with c ≥	with s ≥	$\alpha_{g\,\perp,V\,\perp}$
		120	100	0,30		120	100	0,30
		250	100	0,60		250	100	0,60
		500	100	1,00		120	300	2,00
		120	500	2,00				
Shear load parallel to the free edge		with c ≥	with s ≥	$\alpha_{g\,II,V\,II}$		with c ≥	with s ≥	$\alpha_{g\,\perp,V\,II}$
		120	100	1,00		120	100	1,00
		120	500	2,00		120	300	2,00

Table C64: Characteristic values of tension and shear load resistances

Anchor size	Perforated sleeve	Effective Anchorage depth	Characteristic Resistances with c ≥ c_{cr} and s ≥ s_{cr}						
			Use condition						
			d/d			w/d w/w			d/d w/d w/w
			40°C/24°C	80°C/50°C	120°C/72°C	40°C/24°C	80°C/50°C	120°C/72°C	All Temperature ranges
		h_{ef}	$N_{Rk,b} = N_{Rk,p}$			$N_{Rk,b} = N_{Rk,p}$			$V_{Rk,b}$ 2)
		[mm]	[kN]						
Compressive strength $f_b \geq 10$ N/mm² 1)									
M8	12x80	80	1,2						3,0
M8 / M10/ IG-M6	16x85	85	1,2						3,0
	16x130	130	1,5						3,5
M12 / M16/ IG-M8 / IG-M10	20x85	85	1,2						4,0
	20x130	130	1,5						4,0
	20x200	200	1,5						4,0

1) For lower compressive strengths resistances must be multiplied by the conversion factor according to Table C59. For stones with higher strengths, the shown values are valid without conversion.

2) $V_{Rk,c}$ according to Annex C3

Table C65: Displacements

Anchor size	h_{ef}	δ_N / N	δ_{N0}	$\delta_{N\infty}$	δ_V / V	δ_{V0}	$\delta_{V\infty}$
	[mm]	[mm/kN]	[mm]	[mm]	[mm/kN]	[mm]	[mm]
M8 – M12, IG-M6 – M10	all	0,13	0,13*N_{Rk} / 3,5	2*δ_{N0}	0,55	0,55*V_{Rk} / 3,5	1,5*δ_{V0}
M16	all				0,31	0,31*V_{Rk} / 3,5	1,5*δ_{V0}

Injection System WIT-VM 250 Pro for masonry

Performances Hollow clay brick Porotherm Homebric
Group factors, characteristic Resistances and Displacements

Annex C 22

Deutsches Institut für Bautechnik DIBt

Brick type: Hollow Clay brick BGV Thermo

Table C66: Stone description

Brick type		Hollow clay brick BGV Thermo
Density	ρ [kg/dm³]	≥ 0,60
Compressive strength	f_b [N/mm²]	≥ 10
Conversion factor for lower compressive strengths		$(f_b / 10)^{0,5} \leq 1,0$
Code		EN 771-1
Producer (Country)		e.g. Leroux (FR)
Brick dimensions	[mm]	500 x 200 x 314
Drilling method		Rotary drilling

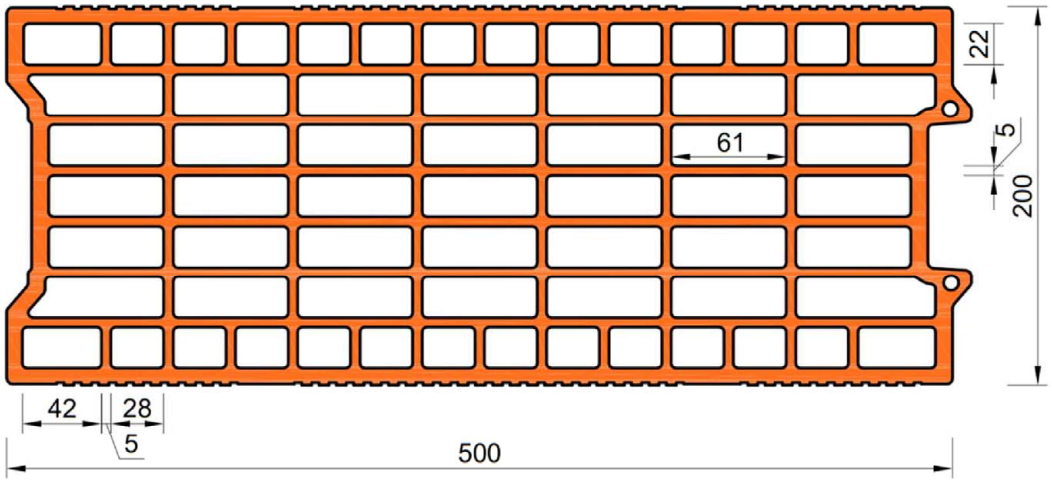
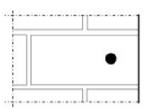
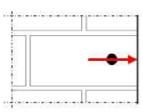
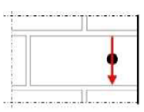


Table C67: Installation parameter

Anchor size		[-]	M8	M10	M12	M16	IG-M6	IG-M8	IG-M10
Installation torque	T_{inst}	[Nm]	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2
Char. Edge distance	c_{cr}	[mm]	120 (for shear loads perpendicular to the free edge: c_{cr} = 500)						
Minimum Edge Distance	c_{min}	[mm]	120						
Characteristic Spacing	$s_{cr,\,II}$	[mm]	500						
	$s_{cr,\,\perp}$	[mm]	315						
Minimum Spacing	s_{min}	[mm]	120						

Table C68: Reduction factors for single anchors at the edge

Tension load			Shear load					
			Perpendicular to the free edge			Parallel to the free edge		
	with c ≥	$\alpha_{edge,\,N}$		with c ≥	$\alpha_{edge,\,V\perp}$		with c ≥	$\alpha_{edge,\,V\,II}$
	120	1,00		120	0,30		120	0,60
				250	0,60			
	120	1,00		500	1,00		250	1,00

Injection System WIT-VM 250 Pro for masonry

Performances Hollow clay brick BGV Thermo
Description of the stone, Installation parameters, Reductionfactors

Annex C 23

Deutsches Institut für Bautechnik DIBt

Brick type: Hollow Clay brick BGV Thermo

Table C69: Factors for anchor groups under tension load

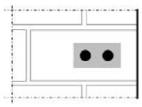
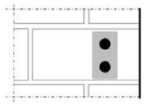
Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
	with c ≥	with s ≥	$\alpha_{g\,II,\,N}$		with c ≥	with s ≥	$\alpha_{g\,\perp,\,N}$
	120	100	1,00		120	100	1,00
	200	100	1,70		200	100	1,10
	120	500	2,00		120	315	2,00

Table C70: Factors for anchor groups under shear load

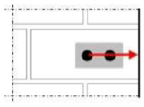
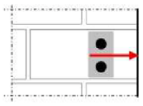
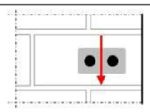
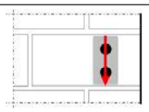
	Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
Shear load perpendicular to the free edge		with c ≥	with s ≥	$\alpha_{g\,II,V\,\perp}$		with c ≥	with s ≥	$\alpha_{g\,\perp,V\,\perp}$
		120	100	1,00		120	100	1,00
		120	500	2,00		120	315	2,00
Shear load parallel to the free edge		with c ≥	with s ≥	$\alpha_{g\,II,V\,II}$		with c ≥	with s ≥	$\alpha_{g\,\perp,V\,II}$
		120	100	1,00		120	100	1,00
		120	500	2,00		120	315	2,00

Table C71: Characteristic values of tension and shear load resistances

Anchor size	Perforated sleeve	Effecitve Anchorage depth	Characteristic Resistances with c ≥ c_{cr} and s ≥ s_{cr}						
			Use condition						
			d/d			w/d w/w			d/d w/d w/w
			40°C/24°C	80°C/50°C	120°C/72°C	40°C/24°C	80°C/50°C	120°C/72°C	All Temperature ranges
		h_{ef}	$N_{Rk,b} = N_{Rk,p}$			$N_{Rk,b} = N_{Rk,p}$			$V_{Rk,b}$ [2]
		[mm]	[kN]						
Compressive strength $f_b \geq 10$ N/mm² [1]									
M8	12x80	80	0,9						3,5
M8 / M10/ IG-M6	16x85	85	0,9						3,5
	16x130	130	2,0		1,5	2,0		1,5	4,0
M12 / IG-M8	20x85	85	0,9						4,0
	20x130	130	2,0		1,5	2,0		1,5	4,0
	20x200	200	2,0		1,5	2,0		1,5	4,0
M16 / IG-M10	20x85	85	0,9						4,0
	20x130	130	2,0		1,5	2,0		1,5	4,0
	20x200	200	2,0		1,5	2,0		1,5	4,0

1) For lower compressive strengths resistances must be multiplied by the conversion factor according to Table C66. For stones with higher strengths, the shown values are valid without conversion.

2) $V_{Rk,c}$ according to Annex C3

Table C72: Displacements

Anchor size	h_{ef}	δ_N / N	δ_{N0}	$\delta_{N\infty}$	δ_V / V	δ_{V0}	$\delta_{V\infty}$
	[mm]	[mm/kN]	[mm]	[mm]	[mm/kN]	[mm]	[mm]
M8 – M12, IG-M6 – M10	all	0,13	0,13*N_{Rk} / 3,5	2*δ_{N0}	0,55	0,55*V_{Rk} / 3,5	1,5*δ_{V0}
M16	all				0,31	0,31*V_{Rk} / 3,5	1,5*δ_{V0}

Injection System WIT-VM 250 Pro for masonry

Performances Hollow clay brick BGV Thermo
Group factors, characteristic Resistances and Displacements

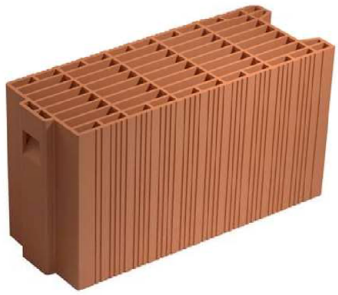
Annex C 24

Deutsches Institut für Bautechnik DIBt

Brick type: Hollow Clay brick Calibric R+

Table C73: Stone description

Brick type		Hollow clay brick Calibric R+
Density	ρ [kg/dm³]	≥ 0,60
Compressive strength	f_b [N/mm²]	≥ 12
Conversion factor for lower compressive strengths		$(f_b / 12)^{0,5} \leq 1,0$
Code		EN 771-1
Producer (Country)		e.g. Leroux (FR)
Brick dimensions	[mm]	500 x 200 x 314
Drilling method		Rotary drilling



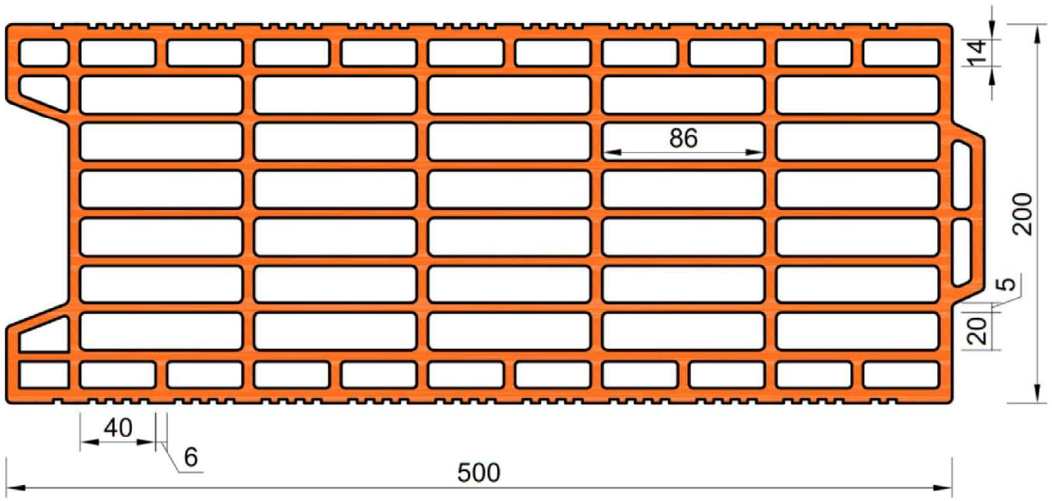
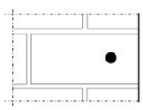
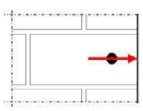
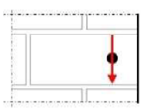


Table C74: Installation parameter

Anchor size		[-]	M8	M10	M12	M16	IG-M6	IG-M8	IG-M10
Installation torque	T_{inst}	[Nm]	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2
Char. Edge distance	c_{cr}	[mm]	120 (for shear loads perpendicular to the free edge: c_{cr} = 500)						
Minimum Edge Distance	c_{min}	[mm]	120						
Characteristic Spacing	$s_{cr,\,II}$	[mm]	500						
	$s_{cr,\,\perp}$	[mm]	315						
Minimum Spacing	s_{min}	[mm]	120						

Table C75: Reduction factors for single anchors at the edge

Tension load			Shear load					
			Perpendicular to the free edge			Parallel to the free edge		
	with c ≥	$\alpha_{edge,\,N}$		with c ≥	$\alpha_{edge,\,V\perp}$		with c ≥	$\alpha_{edge,\,V\,II}$
	120	1,00		120	0,15		120	0,30
				250	0,30			
	120	1,00		500	1,00		250	1,00

Injection System WIT-VM 250 Pro for masonry

Performances Hollow clay brick Calibric R+
Description of the stone, Installation parameters, Reductionfactors

Annex C 25

Deutsches Institut für Bautechnik DIBt

Brick type: Hollow Clay brick Calibric R+

Table C76: Factors for anchor groups under tension load

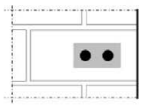
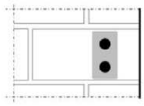
Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
	with c ≥	with s ≥	$\alpha_{g\,II,\,N}$		with c ≥	with s ≥	$\alpha_{g\,\perp,\,N}$
	120	100	1,00		120	100	1,00
	175	100	1,70		175	100	1,10
	120	500	2,00		120	315	2,00

Table C77: Factors for anchor groups under shear load

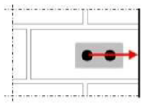
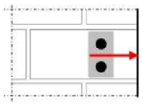
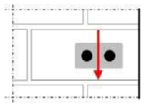
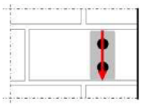
	Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
Shear load perpendicular to the free edge		with c ≥	with s ≥	$\alpha_{g\,II,V\,\perp}$		with c ≥	with s ≥	$\alpha_{g\,\perp,V\,\perp}$
		120	100	1,00		120	100	1,00
		120	500	2,00		120	315	2,00
Shear load parallel to the free edge		with c ≥	with s ≥	$\alpha_{g\,II,V\,II}$		with c ≥	with s ≥	$\alpha_{g\,\perp,V\,II}$
		120	100	1,00		120	100	1,00
		120	500	2,00		120	315	2,00

Table C78: Characteristic values of tension and shear load resistances

Anchor size	Perforated sleeve	Effective Anchorage depth	Characteristic Resistances with c ≥ c_{cr} and s ≥ s_{cr}						
			Use condition						
			d/d			w/d w/w			d/d w/d w/w
			40°C/24°C	80°C/50°C	120°C/72°C	40°C/24°C	80°C/50°C	120°C/72°C	All Temperature ranges
		h_{ef}	$N_{Rk,b} = N_{Rk,p}$			$N_{Rk,b} = N_{Rk,p}$			$V_{Rk,b}$ 2)
		[mm]	[kN]						
Compressive strength $f_b \geq 12$ N/mm² 1)									
M8	12x80	80	1,2	1,2	0,9	1,2	1,2	0,9	4,0
M8 / M10/ IG-M6	16x85	85	1,2	1,2	0,9	1,2	1,2	0,9	5,5
	16x130	130	1,5	1,5	1,2	1,5	1,5	1,2	5,5
M12 / IG-M8	20x85	85	1,2	1,2	0,9	1,2	1,2	0,9	8,5
	20x130	130	1,5	1,5	1,2	1,5	1,5	1,2	8,5
M16 / IG-M10	20x85	85	1,2	1,2	0,9	1,2	1,2	0,9	8,5
	20x130	130	1,5	1,5	1,2	1,5	1,5	1,2	8,5

1) For lower compressive strengths resistances must be multiplied by the conversion factor according to Table C73. For stones with higher strengths, the shown values are valid without conversion.

2) $V_{Rk,c}$ according to Annex C3

Table C79: Displacements

Anchor size	h_{ef}	δ_N / N	δ_{N0}	$\delta_{N\infty}$	δ_V / V	δ_{V0}	$\delta_{V\infty}$
	[mm]	[mm/kN]	[mm]	[mm]	[mm/kN]	[mm]	[mm]
M8 – M12, IG-M6 – M10	all	0,13	0,13*N_{Rk} / 3,5	2*δ_{N0}	0,55	0,55*V_{Rk} / 3,5	1,5*δ_{V0}
M16	all				0,31	0,31*V_{Rk} / 3,5	1,5*δ_{V0}

Injection System WIT-VM 250 Pro for masonry

Performances Hollow Clay brick Calibric R+
Group factors, characteristic Resistances and Displacements

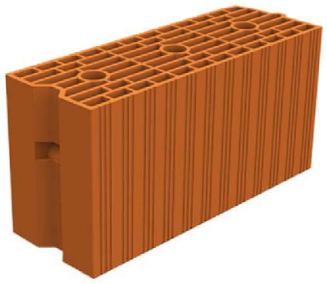
Annex C 26

Deutsches Institut für Bautechnik DIBt

Brick type: Hollow Clay brick Urbanbric

Table C80: Stone description

Brick type		Hollow clay brick Urbanbric
Density	ρ [kg/dm³]	≥ 0,70
Compressive strength	f_b [N/mm²]	≥ 12
Conversion factor for lower compressive strengths		$(f_b / 12)^{0,5} \leq 1,0$
Code		EN 771-1
Producer (Country)		e.g. Imerys (FR)
Brick dimensions	[mm]	560 x 200 x 274
Drilling method		Rotary drilling



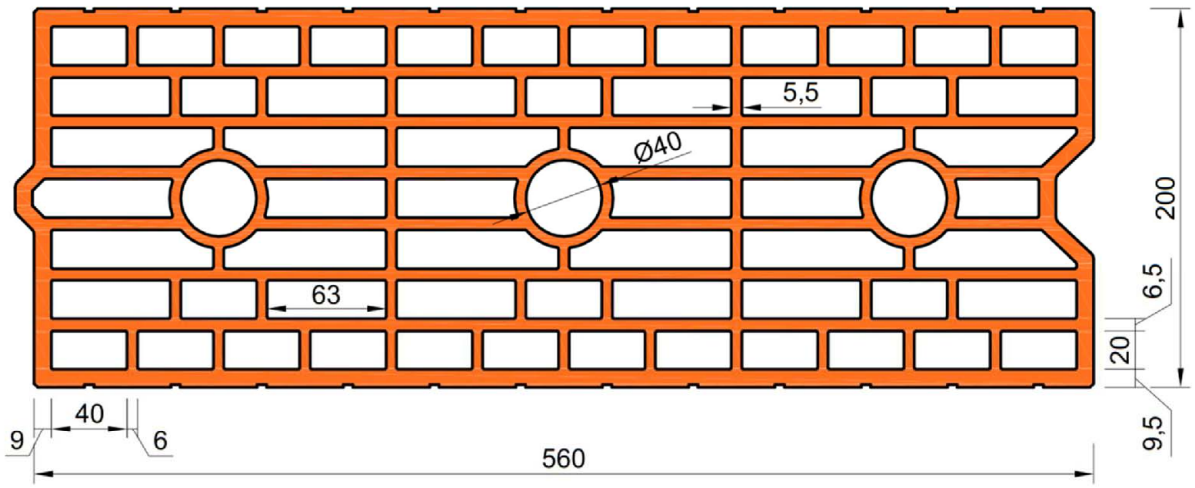
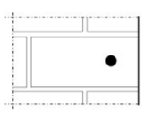
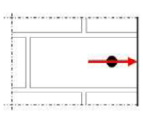
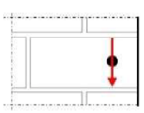


Table C81: Installation parameter

Anchor size		[-]	M8	M10	M12	M16	IG-M6	IG-M8	IG-M10
Installation torque	T_{inst}	[Nm]	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2
Char. Edge distance	c_{cr}	[mm]	120 (for shear loads perpendicular to the free edge: c_{cr} = 500)						
Minimum Edge Distance	c_{min}	[mm]	120						
Characteristic Spacing	$s_{cr,\,II}$	[mm]	560						
	$s_{cr,\,\perp}$	[mm]	275						
Minimum Spacing	s_{min}	[mm]	100						

Table C82: Reduction factors for single anchors at the edge

Tension load			Shear load					
			Perpendicular to the free edge			Parallel to the free edge		
	with c ≥	$\alpha_{edge,\,N}$		with c ≥	$\alpha_{edge,\,V\perp}$		with c ≥	$\alpha_{edge,\,V\,II}$
	120	1,00		120	0,25		120	0,50
				250	0,50			
	120	1,00		500	1,00		250	1,00

Injection System WIT-VM 250 Pro for masonry

Performances Hollow clay brick Urbanbric
Description of the stone, Installation parameters, Reductionfactors

Annex C 27

Deutsches Institut für Bautechnik DIBt

Brick type: Hollow Clay brick Urbanbric

Table C83: Factors for anchor groups under tension load

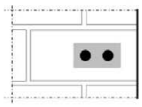
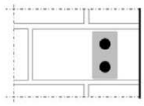
Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
	with c ≥	with s ≥	$\alpha_{g\,II,\,N}$		with c ≥	with s ≥	$\alpha_{g\,\perp,\,N}$
	120	100	1,00		120	100	1,00
	185	100	1,90		185	100	1,10
	120	560	2,00		120	275	2,00

Table C84: Factors for anchor groups under shear load

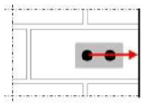
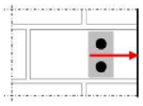
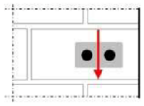
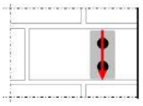
	Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
Shear load perpendicular to the free edge		with c ≥	with s ≥	$\alpha_{g\,II,V\perp}$		with c ≥	with s ≥	$\alpha_{g\,\perp,V\perp}$
		120	100	1,00		120	100	1,00
		120	560	2,00		120	275	2,00
Shear load parallel to the free edge		with c ≥	with s ≥	$\alpha_{g\,II,V\,II}$		with c ≥	with s ≥	$\alpha_{g\,\perp,V\,II}$
		120	100	1,00		120	100	1,00
		120	560	2,00		120	275	2,00

Table C85: Characteristic values of tension and shear load resistances

Anchor size	Perforated sleeve	Effective Anchorage depth	Characteristic Resistances with c ≥ c_{cr} and s ≥ s_{cr}						
			Use condition						
			d/d			w/d w/w			d/d w/d w/w
			40°C/24°C	80°C/50°C	120°C/72°C	40°C/24°C	80°C/50°C	120°C/72°C	All Temperature ranges
		h_{ef}	$N_{Rk,b} = N_{Rk,p}$			$N_{Rk,b} = N_{Rk,p}$			$V_{Rk,b}$ 2)
		[mm]	[kN]						
Compressive strength $f_b \geq 12$ N/mm² 1)									
M8	12x80	80	1,2	1,2	0,9	1,2	1,2	0,9	4,5
M8 / M10/ IG-M6	16x85	85	1,2	1,2	0,9	1,2	1,2	0,9	4,5
	16x130	130	3,0	3,0	2,5	3,0	3,0	2,5	4,5
M12 / IG-M8	20x85	85	1,2	1,2	0,9	1,2	1,2	0,9	5,0
	20x130	130	3,0	3,0	2,5	3,0	3,0	2,5	5,0
M16 / IG-M10	20x85	85	1,2	1,2	0,9	1,2	1,2	0,9	5,0
	20x130	130	3,0	3,0	2,5	3,0	3,0	2,5	5,0

1) For lower compressive strengths resistances must be multiplied by the conversion factor according to Table C80. For stones with higher strengths, the shown values are valid without conversion.

2) $V_{Rk,c}$ according to Annex C3

Table C86: Displacements

Anchor size	h_{ef}	δ_N / N	δ_{N0}	$\delta_{N\infty}$	δ_V / V	δ_{V0}	$\delta_{V\infty}$
	[mm]	[mm/kN]	[mm]	[mm]	[mm/kN]	[mm]	[mm]
M8 – M12, IG-M6 – M10	all	0,13	0,13*N_{Rk} / 3,5	2*δ_{N0}	0,55	0,55*V_{Rk} / 3,5	1,5*δ_{V0}
M16	all				0,31	0,31*V_{Rk} / 3,5	1,5*δ_{V0}

Injection System WIT-VM 250 Pro for masonry

Performances Hollow Clay brick Urbanbric
Group factors, characteristic Resistances and Displacements

Annex C 28

Deutsches Institut für Bautechnik DIBt

Brick type: Hollow Clay brick Brique creuse C40

Table C87: Stone description

Brick type		Hollow clay brick Brique creuse C40
Density	ρ [kg/dm³]	≥ 0,70
Compressive strength	f_b [N/mm²]	≥ 12
Conversion factor for lower compressive strengths		$(f_b / 12)^{0,5} \leq 1,0$
Code		EN 771-1
Producer (Country)		e.g. Terreal (FR)
Brick dimensions	[mm]	500 x 200 x 200
Drilling method		Rotary drilling

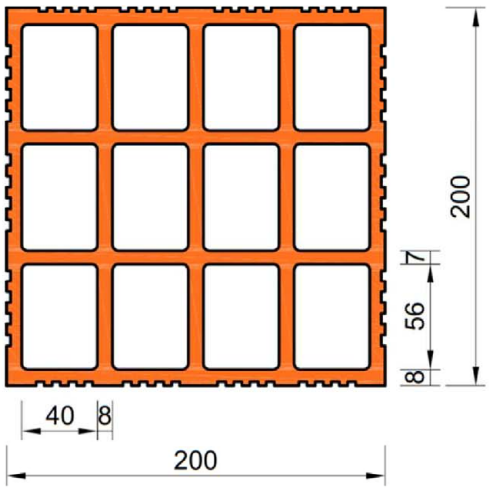


Table C88: Installation parameter

Anchor size		[-]	M8	M10	M12	M16	IG-M6	IG-M8	IG-M10
Installation torque	T_{inst}	[Nm]	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2
Char. Edge distance	c_{cr}	[mm]	120 (for shear loads perpendicular to the free edge: c_{cr} = 500)						
Minimum Edge Distance	c_{min}	[mm]	120						
Characteristic Spacing	$s_{cr,\parallel}$	[mm]	500						
	$s_{cr,\perp}$	[mm]	200						
Minimum Spacing	s_{min}	[mm]	200						

Table C89: Reduction factors for single anchors at the edge

Tension load			Shear load					
			Perpendicular to the free edge			Parallel to the free edge		
	with c ≥	$\alpha_{edge,N}$		with c ≥	$\alpha_{edge,V\perp}$		with c ≥	$\alpha_{edge,V\parallel}$
	120	1,00		120	0,83		120	1,00
	120	1,00		500	1,00		250	1,00

Injection System WIT-VM 250 Pro for masonry

Performances Hollow clay brick Brique Creuse C40
Description of the stone, Installation parameters, Reductionfactors

Annex C 29

Deutsches Institut für Bautechnik DIBt

Brick type: Hollow Clay brick Brique creuse C40

Table C90: Factors for anchor groups under tension load

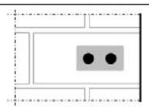
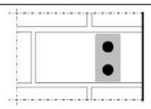
Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
	with c ≥	with s ≥	$\alpha_{g\,II,\,N}$		with c ≥	with s ≥	$\alpha_{g\,\perp,\,N}$
	120	500	2,00		120	200	2,00

Table C91: Factors for anchor groups under shear load

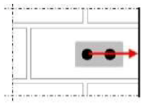
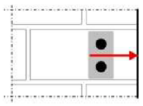
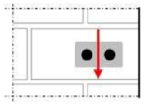
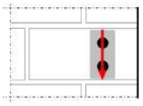
	Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
Shear load perpendicular to the free edge		with c ≥	with s ≥	$\alpha_{g\,II,V\,\perp}$		with c ≥	with s ≥	$\alpha_{g\,\perp,V\,\perp}$
		120	500	2,00		120	200	2,00
Shear load parallel to the free edge		with c ≥	with s ≥	$\alpha_{g\,II,V\,II}$		with c ≥	with s ≥	$\alpha_{g\,\perp,V\,II}$
		120	500	2,00		120	200	2,00

Table C92: Characteristic values of tension and shear load resistances

Anchor size	Perforated sleeve	Effective Anchorage depth	Characteristic Resistances with c ≥ c_{cr} and s ≥ s_{cr}						
			Use condition						
			d/d			w/d w/w			d/d w/d w/w
			40°C/24°C	80°C/50°C	120°C/72°C	40°C/24°C	80°C/50°C	120°C/72°C	All Temperature ranges
		h_{ef}	$N_{Rk,b} = N_{Rk,p}$			$N_{Rk,b} = N_{Rk,p}$			$V_{Rk,b}$ 2)
		[mm]	[kN]						
Compressive strength $f_b \geq 12$ N/mm² 1)									
M8	12x80	80	1,2	1,2	0,9	1,2	1,2	0,9	1,5
M8 / M10/ IG-M6	16x85	85							
	16x130	130							
M12 / IG-M8	20x85	85							
	20x130	130							
M16 / IG-M10	20x85	85							
	20x130	130							

1) For lower compressive strengths resistances must be multiplied by the conversion factor according to Table C87. For stones with higher strengths, the shown values are valid without conversion.

2) $V_{Rk,c}$ according to Annex C3

Table C93: Displacements

Anchor size	h_{ef}	δ_N / N	δ_{N0}	$\delta_{N\infty}$	δ_V / V	δ_{V0}	$\delta_{V\infty}$
	[mm]	[mm/kN]	[mm]	[mm]	[mm/kN]	[mm]	[mm]
M8 – M12, IG-M6 – M10	all	0,13	0,13*N_{Rk} / 3,5	2*δ_{N0}	0,55	0,55*V_{Rk} / 3,5	1,5*δ_{V0}
M16	all				0,31	0,31*V_{Rk} / 3,5	1,5*δ_{V0}

Injection System WIT-VM 250 Pro for masonry

Performances Hollow Clay brick Brique Creuse C40
Group factors, characteristic Resistances and Displacements

Annex C 30

Deutsches Institut für Bautechnik DIBt

Brick type: Hollow Clay brick Blocchi Leggeri

Table C94: Stone description

Brick type		Hollow clay brick Blocchi Leggeri
Density	ρ [kg/dm³]	≥ 0,60
Compressive strength	f_b [N/mm²]	≥ 12
Conversion factor for lower compressive strengths		$(f_b / 12)^{0,5} \leq 1,0$
Code		EN 771-1
Producer (Country)		e.g. Wienerberger (IT)
Brick dimensions	[mm]	250 x 120 x 250
Drilling method		Rotary drilling

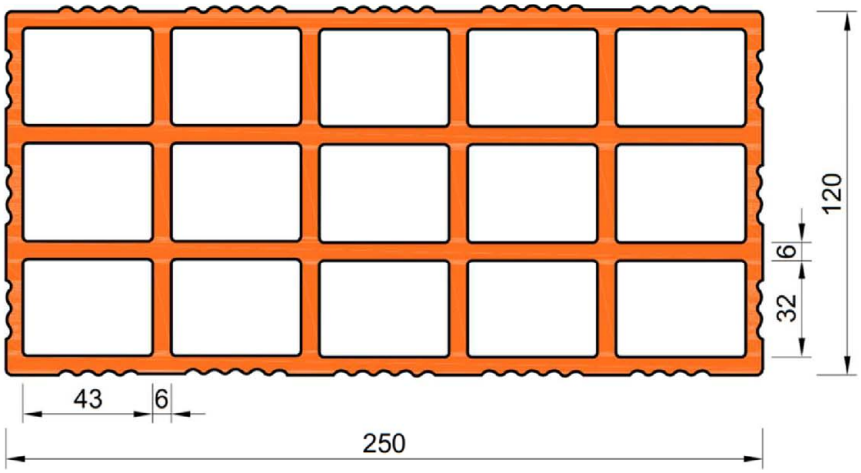


Table C95: Installation parameter

Anchor size		[-]	M8	M10	M12	M16	IG-M6	IG-M8	IG-M10
Installation torque	T_{inst}	[Nm]	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2
Char. Edge distance	c_{cr}	[mm]	120 (for shear loads perpendicular to the free edge: c_{cr} = 250)						
Minimum Edge Distance	c_{min}	[mm]	60						
Characteristic Spacing	$s_{cr,\,||}$	[mm]	250						
	$s_{cr,\,\perp}$	[mm]	250						
Minimum Spacing	s_{min}	[mm]	100						

Table C96: Reduction factors for single anchors at the edge

Tension load			Shear load					
			Perpendicular to the free edge			Parallel to the free edge		
	with c ≥	$\alpha_{edge,\,N}$		with c ≥	$\alpha_{edge,\,V\perp}$		with c ≥	$\alpha_{edge,\,V||}$
	60	1,00		60	0,40		60	0,40
	120	1,00		250	1,00		120	1,00

Injection System WIT-VM 250 Pro for masonry

Performances Hollow clay brick Blocchi Leggeri
Description of the stone, Installation parameters, Reductionfactors

Annex C 31

Deutsches Institut für Bautechnik DIBt

Brick type: Hollow Clay brick Blocchi Leggeri

Table C97: Factors for anchor groups under tension load

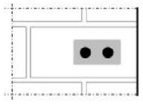
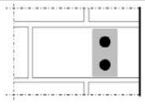
Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
	with c ≥	with s ≥	$\alpha_{g\ II,\ N}$		with c ≥	with s ≥	$\alpha_{g\ \perp,\ N}$
	60	100	1,00		60	100	2,00
	120	250	2,00		120	250	2,00

Table C98: Factors for anchor groups under shear load

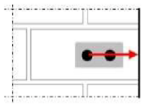
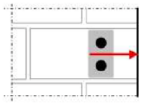
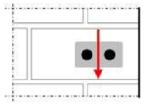
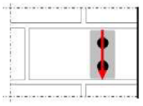
	Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
Shear load perpendicular to the free edge		with c ≥	with s ≥	$\alpha_{g\ II,V\ \perp}$		with c ≥	with s ≥	$\alpha_{g\ \perp,V\ \perp}$
		60	100	0,40		60	100	0,40
		250	100	1,00		250	100	1,00
		250	250	2,00		250	250	2,00
Shear load parallel to the free edge		with c ≥	with s ≥	$\alpha_{g\ II,V\ II}$		with c ≥	with s ≥	$\alpha_{g\ \perp,V\ II}$
		60	100	0,40		60	100	0,40
		120	100	1,00		120	100	1,00
		120	250	2,00		120	250	2,00

Table C99: Characteristic values of tension and shear load resistances

Anchor size	Perforated sleeve	Effecitve Anchorage depth	Characteristic Resistances with c ≥ c_{cr} and s ≥ s_{cr}						
			Use condition						
			d/d			w/d w/w			d/d w/d w/w
			40°C/24°C	80°C/50°C	120°C/72°C	40°C/24°C	80°C/50°C	120°C/72°C	All Temperature ranges
		h_{ef}	$N_{Rk,b} = N_{Rk,p}$			$N_{Rk,b} = N_{Rk,p}$			$V_{Rk,b}$ 2)
		[mm]	[kN]						
Compressive strength $f_b \geq 12$ N/mm² 1)									
M8	12x80	80	0,6	0,6	0,6	0,6	0,6	0,6	3,5
M8 / M10/ IG-M6	16x85	85							
	16x130	130							
M12 / IG-M8	20x85	85							
	20x130	130							
	20x200	200							
M16 / IG-M10	20x85	85							
	20x130	130							
	20x200	200							

1) For lower compressive strengths resistances must be multiplied by the conversion factor according to Table C94. For stones with higher strengths, the shown values are valid without conversion.
2) $V_{Rk,c}$ according to Annex C3

Table C100: Displacements

Anchor size	h_{ef}	δ_N / N	δ_{N0}	$\delta_{N\infty}$	δ_V / V	δ_{V0}	$\delta_{V\infty}$
	[mm]	[mm/kN]	[mm]	[mm]	[mm/kN]	[mm]	[mm]
M8 – M12, IG-M6 – M10	all	0,13	0,13*N_{Rk} / 3,5	2*δ_{N0}	0,55	0,55*V_{Rk} / 3,5	1,5*δ_{V0}
M16	all				0,31	0,31*V_{Rk} / 3,5	1,5*δ_{V0}

Injection System WIT-VM 250 Pro for masonry

Performances Hollow Clay brick Blocchi Leggeri
Group factors, characteristic Resistances and Displacements

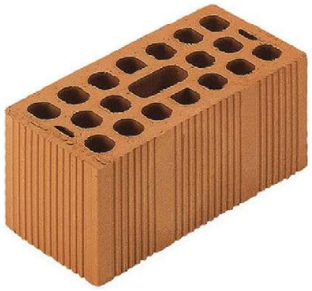
Annex C 32

Deutsches Institut für Bautechnik DIBt

Brick type: Hollow Clay brick Doppio Uni

Table C101: Stone description

Brick type		Hollow clay brick Doppio Uni
Density	ρ [kg/dm³]	≥ 0,90
Compressive strength	f_b [N/mm²]	≥ 28
Conversion factor for lower compressive strengths		$(f_b / 28)^{0,5} \leq 1,0$
Code		EN 771-1
Producer (Country)		e.g. Wienerberger (IT)
Brick dimensions	[mm]	250 x 120 x 120
Drilling method		Rotary drilling



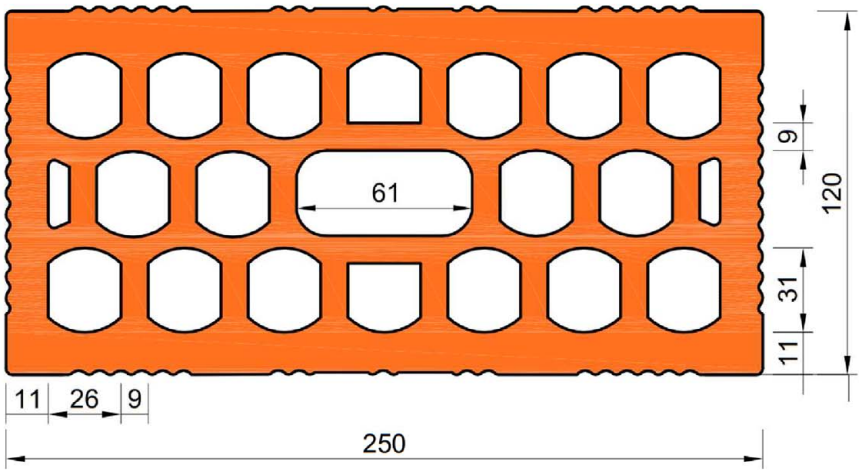


Table C102: Installation parameter

Anchor size		[-]	M8	M10	M12	M16	IG-M6	IG-M8	IG-M10
Installation torque	T_{inst}	[Nm]	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2
Char. Edge distance	c_{cr}	[mm]	120 (for shear loads perpendicular to the free edge: c_{cr} = 250)						
Minimum Edge Distance	c_{min}	[mm]	100						
Characteristic Spacing	$s_{cr,\,||}$	[mm]	250						
	$s_{cr,\,\perp}$	[mm]	120						
Minimum Spacing	s_{min}	[mm]	100						

Table C103: Reduction factors for single anchors at the edge

Tension load			Shear load					
			Perpendicular to the free edge			Parallel to the free edge		
	with c ≥	$\alpha_{edge,\,N}$		with c ≥	$\alpha_{edge,\,V\perp}$		with c ≥	$\alpha_{edge,\,V||}$
	100	1,00		100	0,50		100	1,00
	120	1,00		250	1,00		120	1,00

Injection System WIT-VM 250 Pro for masonry

Performances Hollow clay brick Doppio Uni
Description of the stone, Installation parameters, Reductionfactors

Annex C 33

Deutsches Institut für Bautechnik DIBt

Brick type: Hollow Clay brick Doppio Uni

Table C104: Factors for anchor groups under tension load

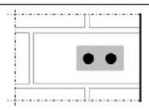
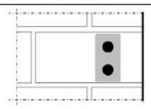
Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
	with c ≥	with s ≥	$\alpha_{g\ II,\ N}$		with c ≥	with s ≥	$\alpha_{g\ \perp,\ N}$
	100	100	1,00		100	120	2,00
	120	250	2,00		120	120	2,00

Table C105: Factors for anchor groups under shear load

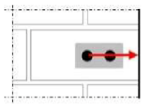
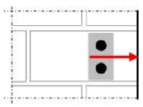
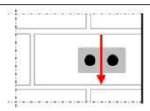
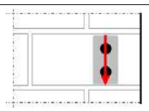
	Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
Shear load perpendicular to the free edge		with c ≥	with s ≥	$\alpha_{g\ II,V\ \perp}$		with c ≥	with s ≥	$\alpha_{g\ \perp,V\ \perp}$
		100	100	1,00		100	100	1,00
		250	250	2,00		250	120	2,00
Shear load parallel to the free edge		with c ≥	with s ≥	$\alpha_{g\ II,V\ II}$		with c ≥	with s ≥	$\alpha_{g\ \perp,V\ II}$
		100	100	1,00		100	100	1,00
		120	250	2,00		120	120	2,00

Table C106: Characteristic values of tension and shear load resistances

Anchor size	Perforated sleeve	Effective Anchorage depth	Characteristic Resistances with c ≥ c_{cr} and s ≥ s_{cr}						
			Use condition						
			d/d			w/d w/w			d/d w/d w/w
			40°C/24°C	80°C/50°C	120°C/72°C	40°C/24°C	80°C/50°C	120°C/72°C	All Temperature ranges
		h_{ef}	$N_{Rk,b} = N_{Rk,p}$			$N_{Rk,b} = N_{Rk,p}$			$V_{Rk,b}$ [2]
		[mm]	[kN]						
Compressive strength $f_b \geq 28$ N/mm² [1]									
M8	12x80	80	1,2	1,2	0,9	1,2	1,2	0,9	2,5
M8 / M10/ IG-M6	16x85	85							
	16x130	130							
M12 / IG-M8	20x85	85							
	20x130	130							
	20x200	200							
M16 / IG-M10	20x85	85							
	20x130	130							
	20x200	200							

[1] For lower compressive strengths resistances must be multiplied by the conversion factor according to Table C101. For stones with higher strengths, the shown values are valid without conversion.

[2] $V_{Rk,c}$ according to Annex C3

Table C107: Displacements

Anchor size	h_{ef}	δ_N / N	δ_{N0}	$\delta_{N\infty}$	δ_V / V	δ_{V0}	$\delta_{V\infty}$
	[mm]	[mm/kN]	[mm]	[mm]	[mm/kN]	[mm]	[mm]
M8 – M12, IG-M6 – M10	all	0,13	0,13*N_{Rk} / 3,5	2*δ_{N0}	0,55	0,55*V_{Rk} / 3,5	1,5*δ_{V0}
M16	all				0,31	0,31*V_{Rk} / 3,5	1,5*δ_{V0}

Injection System WIT-VM 250 Pro for masonry

Performances Hollow Clay brick Doppio Uni
Group factors, characteristic Resistances and Displacements

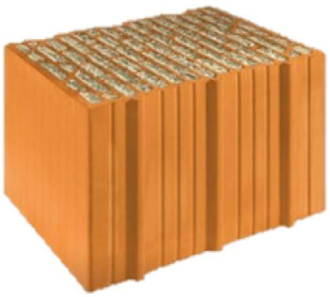
Annex C 34

Deutsches Institut für Bautechnik DIBt

Brick type: Hollow clay brick Coriso WS07 with insulation

Table C108: Stone description

Brick type		Hollow clay brick Coriso WS07
Insulationmaterial		Rock wool
Density	ρ [kg/dm³]	≥ 0,55
Compressive strength	f_b [N/mm²]	≥ 6
Conversion factor for lower compressive strengths		$(f_b / 6)^{0,5} \leq 1,0$
Code		EN 771-1
Producer (Country)		e.g. Unipor (DE)
Brick dimensions	[mm]	248 x 365 x 249
Drilling method		Rotary drilling



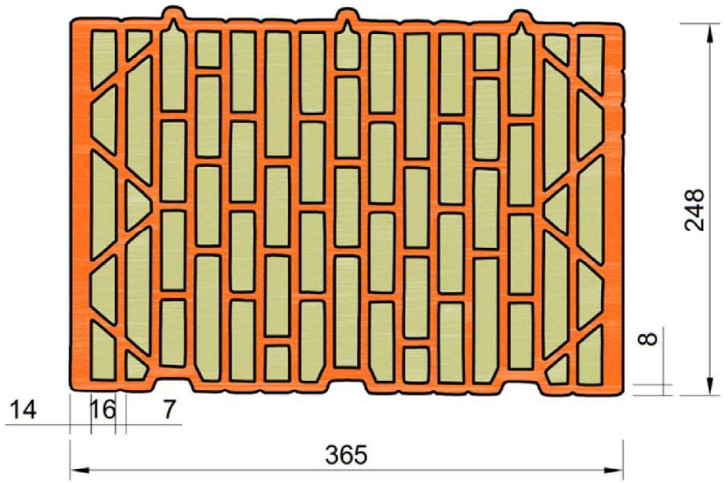


Table C109: Installation parameter

Anchor size		[-]	M8	M10	M12	M16	IG-M6	IG-M8	IG-M10
Installation torque	T_{inst}	[Nm]	≤ 5	≤ 5	≤ 10	≤ 10	≤ 5	≤ 5	≤ 5
Char. Edge distance	c_{cr}	[mm]	120 (for shear loads perpendicular to the free edge: c_{cr} = 250)						
Minimum Edge Distance	c_{min}	[mm]	50						
Characteristic Spacing	$s_{cr,\parallel}$	[mm]	250						
	$s_{cr,\perp}$	[mm]	250						
Minimum Spacing	s_{min}	[mm]	50						

Table C110: Reduction factors for single anchors at the edge

Tension load			Shear load					
			Perpendicular to the free edge			Parallel to the free edge		
	with c ≥	$\alpha_{edge,N}$		with c ≥	$\alpha_{edge,V\perp}$		with c ≥	$\alpha_{edge,V\parallel}$
	50	1,00		50	0,30		50	1,00
	120	1,00		250	1,00		120	1,00

Injection System WIT-VM 250 Pro for masonry

Performances Hollow clay brick Coriso WS07 with insulation
Description of the stone, Installation parameters, Reductionfactors

Annex C 35

Deutsches Institut für Bautechnik DIBt

Brick type: Hollow clay brick Coriso WS07 with insulation

Table C111: Factors for anchor groups under tension load

Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
	with c ≥	with s ≥	$\alpha_{g\,II,\,N}$		with c ≥	with s ≥	$\alpha_{g\,\perp,\,N}$
	50	50	1,50		50	50	1,00
	120	250	2,00		120	250	2,00

Table C112: Factors for anchor groups under shear load

	Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
Shear load perpendicular to the free edge		with c ≥	with s ≥	$\alpha_{g\,II,V\,\perp}$		with c ≥	with s ≥	$\alpha_{g\,\perp,V\,\perp}$
		50	50	0,40		50	50	0,40
		250	50	1,00		250	50	1,20
		250	250	2,00		250	250	2,00
Shear load parallel to the free edge		with c ≥	with s ≥	$\alpha_{g\,II,V\,II}$		with c ≥	with s ≥	$\alpha_{g\,\perp,V\,II}$
		50	50	1,65		50	50	1,00
		120	250	2,00		120	250	2,00

Table C113: Characteristic values of tension and shear load resistances

Anchor size	Perforated sleeve	Effective Anchorage depth	Characteristic Resistances with c ≥ c_{cr} and s ≥ s_{cr}						
			Use condition						
			d/d			w/d w/w			d/d w/d w/w
			40°C/24°C	80°C/50°C	120°C/72°C	40°C/24°C	80°C/50°C	120°C/72°C	All Temperature ranges
		h_{ef}	$N_{Rk,b} = N_{Rk,p}$			$N_{Rk,b} = N_{Rk,p}$			$V_{Rk,b}$ [2]
		[mm]	[kN]						
Compressive strength $f_b \geq 6$ N/mm² [1]									
M8	12x80	80	1,5	1,5	1,5	1,5	1,5	1,5	5,0
M8 / M10/ IG-M6	16x85	85							
	16x130	130							
M12 / IG-M8	20x85	85							
	20x130	130							
	20x200	200							
M16 / IG-M10	20x85	85							
	20x130	130							
	20x200	200							

[1] For lower compressive strengths resistances must be multiplied by the conversion factor according to Table C108. For stones with higher strengths, the shown values are valid without conversion.

[2] $V_{Rk,c}$ according to Annex C3

Table C114: Displacements

Anchor size	h_{ef}	δ_N / N	δ_{N0}	$\delta_{N\infty}$	δ_V / V	δ_{V0}	$\delta_{V\infty}$
	[mm]	[mm/kN]	[mm]	[mm]	[mm/kN]	[mm]	[mm]
M8 – M12, IG-M6 – M10	all	0,13	0,13*N_{Rk} / 3,5	2*δ_{N0}	0,55	0,55*V_{Rk} / 3,5	1,5*δ_{V0}
M16	all				0,31	0,31*V_{Rk} / 3,5	1,5*δ_{V0}

Injection System WIT-VM 250 Pro for masonry

Performances Hollow Clay brick Coriso WS07 with insulation
Group factors, characteristic Resistances and Displacements

Annex C 36

Deutsches Institut für Bautechnik DIBt

Brick type: Hollow clay brick T7 MW with insulation

Table C115: Stone description

Brick type		Hollow clay brick T7 MW
Insulation material		Rock wool
Density	ρ [kg/dm³]	≥ 0,59
Compressive strength	f_b [N/mm²]	≥ 8
Conversion factor for lower compressive strengths		$(f_b / 8)^{0,5} \leq 1,0$
Code		EN 771-1
Producer (Country)		e.g. Wienerberger (DE)
Brick dimensions	[mm]	248 x 365 x 249
Drilling method		Rotary drilling

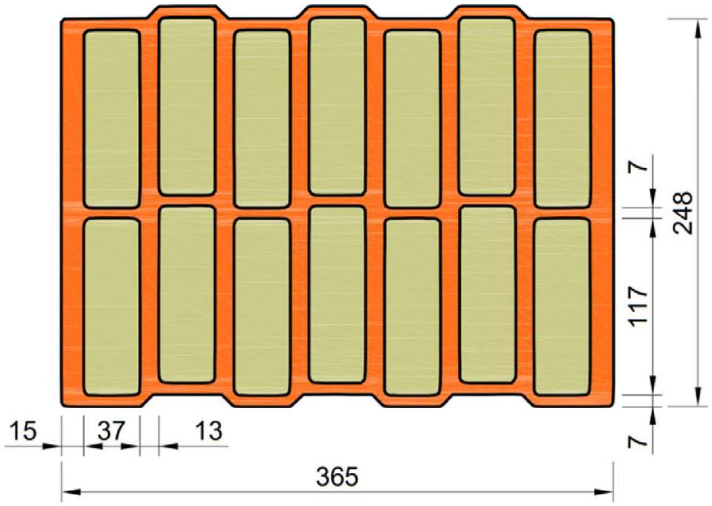


Table C116: Installation parameter

Anchor size		[-]	M8	M10	M12	M16	IG-M6	IG-M8	IG-M10
Installation torque	T_{inst}	[Nm]	≤ 5	≤ 5	≤ 10	≤ 10	≤ 5	≤ 5	≤ 5
Char. Edge distance	c_{cr}	[mm]	120 (for shear loads perpendicular to the free edge: c_{cr} = 250)						
Minimum Edge Distance	c_{min}	[mm]	50						
Characteristic Spacing	$s_{cr,\parallel}$	[mm]	250						
	$s_{cr,\perp}$	[mm]	250						
Minimum Spacing	s_{min}	[mm]	50						

Table C117: Reduction factors for single anchors at the edge

Tension load			Shear load					
			Perpendicular to the free edge			Parallel to the free edge		
	with c ≥	$\alpha_{edge,N}$		with c ≥	$\alpha_{edge,V\perp}$		with c ≥	$\alpha_{edge,V\parallel}$
	50	1,00		50	0,35		50	1,00
	120	1,00		250	1,00		120	1,00

Injection System WIT-VM 250 Pro for masonry

Performances Hollow clay brick T7 MW with insulation
Description of the stone, Installation parameters, Reductionfactors

Annex C 37

Deutsches Institut für Bautechnik DIBt

Brick type: Hollow clay brick T7 MW with insulation

Table C118: Factors for anchor groups under tension load

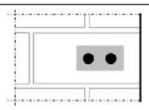
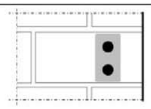
Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
	with c ≥	with s ≥	$\alpha_{g\,II,\,N}$		with c ≥	with s ≥	$\alpha_{g\,\perp,\,N}$
	50	50	1,40		50	50	1,15
	120	250	2,00		120	250	2,00

Table C119: Factors for anchor groups under shear load

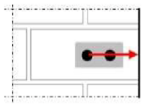
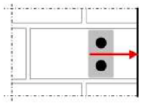
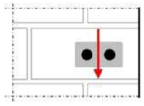
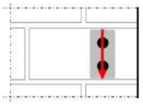
	Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
Shear load perpendicular to the free edge		with c ≥	with s ≥	$\alpha_{g\,II,V\perp}$		with c ≥	with s ≥	$\alpha_{g\,\perp,V\perp}$
		50	50	0,60		50	50	0,40
		250	50	1,55		250	50	1,00
		250	250	2,00		250	250	2,00
Shear load parallel to the free edge		with c ≥	with s ≥	$\alpha_{g\,II,V\,II}$		with c ≥	with s ≥	$\alpha_{g\,\perp,V\,II}$
		50	50	2,00		50	50	1,20
		120	250	2,00		120	250	2,00

Table C120: Characteristic values of tension and shear load resistances

Anchor size	Perforated sleeve	Effective Anchorage depth	Characteristic Resistances with c ≥ c_{cr} and s ≥ s_{cr}						
			Use condition						
			d/d			w/d w/w			d/d w/d w/w
			40°C/24°C	80°C/50°C	120°C/72°C	40°C/24°C	80°C/50°C	120°C/72°C	All Temperature ranges
		h_{ef}	$N_{Rk,b} = N_{Rk,p}$			$N_{Rk,b} = N_{Rk,p}$			$V_{Rk,b}$ 2)
		[mm]	[kN]						
Compressive strength $f_b \geq 8$ N/mm² 1)									
M8	12x80	80	2,0	2,0	1,5	2,0	2,0	1,5	3,0
M8 / M10/ IG-M6	16x85	85							
	16x130	130							
M12 / IG-M8	20x85	85							
	20x130	130							
	20x200	200							
M16 / IG-M10	20x85	85							4,5
	20x130	130							
	20x200	200							

1) For lower compressive strengths resistances must be multiplied by the conversion factor according to Table C115. For stones with higher strengths, the shown values are valid without conversion.

2) $V_{Rk,c}$ according to Annex C3

Table C121: Displacements

Anchor size	h_{ef}	δ_N / N	δ_{N0}	$\delta_{N\infty}$	δ_V / V	δ_{V0}	$\delta_{V\infty}$
	[mm]	[mm/kN]	[mm]	[mm]	[mm/kN]	[mm]	[mm]
M8 – M12, IG-M6 – M10	all	0,13	0,13*N_{Rk} / 3,5	2*δ_{N0}	0,55	0,55*V_{Rk} / 3,5	1,5*δ_{V0}
M16	all				0,31	0,31*V_{Rk} / 3,5	1,5*δ_{V0}

Injection System WIT-VM 250 Pro for masonry

Performances Hollow Clay brick T7 MW with insulation
Group factors, characteristic Resistances and Displacements

Annex C 38

Deutsches Institut für Bautechnik DIBt

Brick type: Hollow clay brick T8 P with insulation

Table C122: Stone description

Brick type		Hollow clay brick T8 P
Insulation material		Perlite
Density	ρ [kg/dm³]	≥ 0,56
Compressive strength	f_b [N/mm²]	≥ 6
Conversion factor for lower compressive strengths		$(f_b / 6)^{0,5} \leq 1,0$
Code		EN 771-1
Producer (Country)		e.g. Wienerberger (DE)
Brick dimensions	[mm]	248 x 365 x 249
Drilling method		Rotary drilling

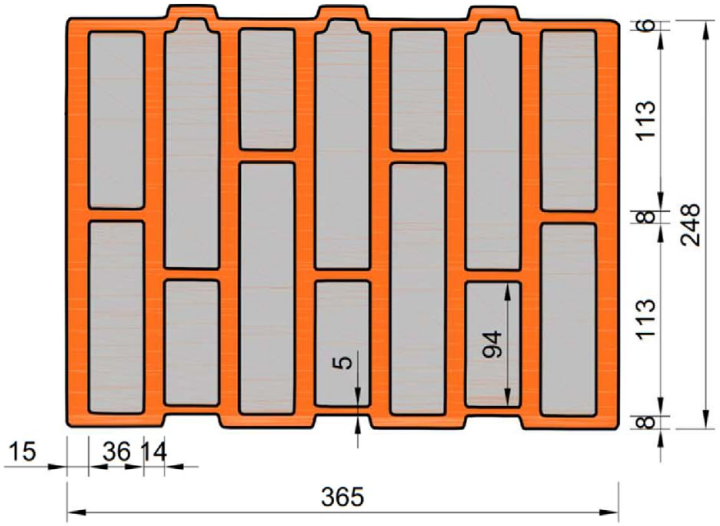


Table C123: Installation parameter

Anchor size		[-]	M8	M10	M12	M16	IG-M6	IG-M8	IG-M10
Installation torque	T_{inst}	[Nm]	≤ 4	≤ 4	≤ 10	≤ 10	≤ 4	≤ 4	≤ 4
Char. Edge distance	c_{cr}	[mm]	120 (for shear loads perpendicular to the free edge: c_{cr} = 250)						
Minimum Edge Distance	c_{min}	[mm]	50						
Characteristic Spacing	$s_{cr,\,II}$	[mm]	250						
	$s_{cr,\,\perp}$	[mm]	250						
Minimum Spacing	s_{min}	[mm]	50						

Table C124: Reduction factors for single anchors at the edge

Tension load			Shear load					
			Perpendicular to the free edge			Parallel to the free edge		
	with c ≥	$\alpha_{edge,\,N}$		with c ≥	$\alpha_{edge,\,V\perp}$		with c ≥	$\alpha_{edge,\,V\,II}$
	50	1,00		50	0,25		50	1,00
	120	1,00		250	1,00		120	1,00

Injection System WIT-VM 250 Pro for masonry

Performances Hollow clay brick T8 P with insulation
Description of the stone, Installation parameters, Reductionfactors

Annex C 39

Deutsches Institut für Bautechnik DIBt

Brick type: Hollow clay brick T8 P with insulation

Table C125: Factors for anchor groups under tension load

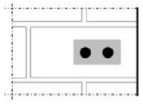
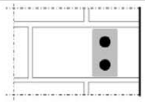
Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
	with c ≥	with s ≥	$\alpha_{g\,II,\,N}$		with c ≥	with s ≥	$\alpha_{g\,\perp,\,N}$
	50	50	1,30		50	50	1,10
	120	250	2,00		120	250	2,00

Table C126: Factors for anchor groups under shear load

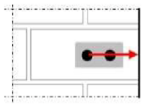
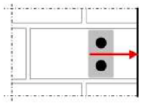
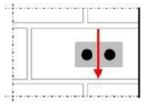
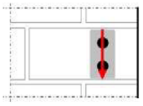
	Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
Shear load perpendicular to the free edge		with c ≥	with s ≥	$\alpha_{g\,II,V\perp}$		with c ≥	with s ≥	$\alpha_{g\,\perp,V\perp}$
		50	50	0,40		50	50	0,30
		250	50	1,35		250	50	1,20
		250	250	2,00		250	250	2,00
Shear load parallel to the free edge		with c ≥	with s ≥	$\alpha_{g\,II,V\,II}$		with c ≥	with s ≥	$\alpha_{g\,\perp,V\,II}$
		50	50	1,70		50	50	1,00
		120	250	2,00		120	250	2,00

Table C127: Characteristic values of tension and shear load resistances

Anchor size	Perforated sleeve	Effective Anchorage depth	Characteristic Resistances with c ≥ c_{cr} and s ≥ s_{cr}						
			Use condition						
			d/d			w/d w/w			d/d w/d w/w
			40°C/24°C	80°C/50°C	120°C/72°C	40°C/24°C	80°C/50°C	120°C/72°C	All Temperature ranges
		h_{ef}	$N_{Rk,b} = N_{Rk,p}$			$N_{Rk,b} = N_{Rk,p}$			$V_{Rk,b}$ [2]
		[mm]	[kN]						
Compressive strength $f_b \geq 6$ N/mm² [1]									
M8	12x80	80	1,5	1,5	1,5	1,5	1,5	1,5	4,5
M8 / M10/ IG-M6	16x85	85							
	16x130	130							
M12 / IG-M8	20x85	85							
	20x130	130							
	20x200	200							
M16 / IG-M10	20x85	85	2,5	2,5	2,0	2,5	2,5	2,0	7,0
	20x130	130							
	20x200	200							

[1] For lower compressive strengths resistances must be multiplied by the conversion factor according to Table C122. For stones with higher strengths, the shown values are valid without conversion.

[2] $V_{Rk,c}$ according to Annex C3

Table C128: Displacements

Anchor size	h_{ef}	δ_N / N	δ_{N0}	$\delta_{N\infty}$	δ_V / V	δ_{V0}	$\delta_{V\infty}$
	[mm]	[mm/kN]	[mm]	[mm]	[mm/kN]	[mm]	[mm]
M8 – M12, IG-M6 – M10	all	0,13	0,13*N_{Rk} / 3,5	2*δ_{N0}	0,55	0,55*V_{Rk} / 3,5	1,5*δ_{V0}
M16	all				0,31	0,31*V_{Rk} / 3,5	1,5*δ_{V0}

Injection System WIT-VM 250 Pro for masonry

Performances Hollow Clay brick T8 P with insulation
Group factors, characteristic Resistances and Displacements

Annex C 40

Deutsches Institut für Bautechnik DIBt

Brick type: Hollow clay brick Thermoplan MZ90-G with insulation

Table C129: Stone description

Brick type		Hollow clay brick Thermoplan MZ90-G
Insulation material		Rock wool
Density	ρ [kg/dm³]	≥ 0,68
Compressive strength	f_b [N/mm²]	≥ 12
Conversion factor for lower compressive strengths		$(f_b / 12)^{0,5} \leq 1,0$
Code		EN 771-1
Producer (Country)		e.g. Mein Ziegelhaus (DE)
Brick dimensions	[mm]	248 x 365 x 249
Drilling method		Rotary drilling

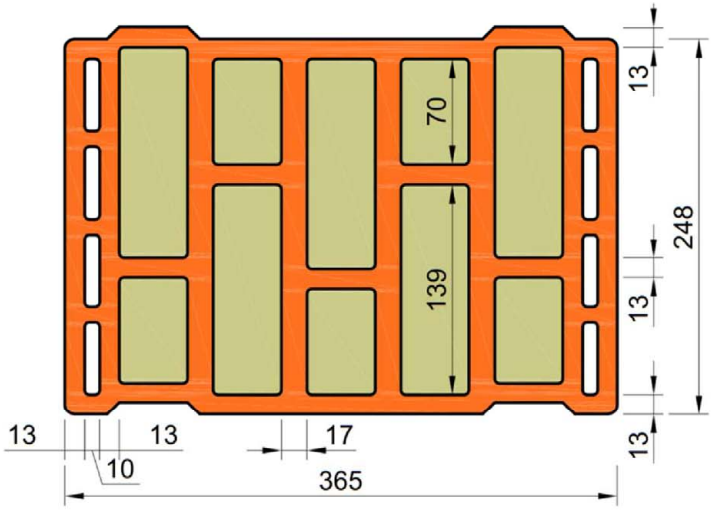


Table C130: Installation parameter

Anchor size		[-]	M8	M10	M12	M16	IG-M6	IG-M8	IG-M10
Installation torque	T_{inst}	[Nm]	≤ 4	≤ 4	≤ 10	≤ 10	≤ 4	≤ 4	≤ 4
Char. Edge distance	c_{cr}	[mm]	120 (for shear loads perpendicular to the free edge: c_{cr} = 250)						
Minimum Edge Distance	c_{min}	[mm]	50						
Characteristic Spacing	$s_{cr,\,II}$	[mm]	250						
	$s_{cr,\,\perp}$	[mm]	250						
Minimum Spacing	s_{min}	[mm]	50						

Table C131: Reduction factors for single anchors at the edge

Tension load			Shear load					
			Perpendicular to the free edge			Parallel to the free edge		
	with c ≥	$\alpha_{edge,\,N}$		with c ≥	$\alpha_{edge,\,V\perp}$		with c ≥	$\alpha_{edge,\,V\,II}$
	50	1,00		50	0,25		50	1,00
	120	1,00		250	1,00		120	1,00

Injection System WIT-VM 250 Pro for masonry

Performances Hollow clay brick Thermoplan MZ90-G with insulation
Description of the stone, Installation parameters, Reductionfactors

Annex C 41

Deutsches Institut für Bautechnik DIBt

Brick type: Hollow clay brick Thermoplan MZ90-G with insulation

Table C132: Factors for anchor groups under tension load

Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
	with c ≥	with s ≥	$\alpha_{g\ II,\ N}$		with c ≥	with s ≥	$\alpha_{g\ \perp,\ N}$
	50	50	1,00		50	50	1,00
	120	250	2,00		120	250	2,00

Table C133: Factors for anchor groups under shear load

	Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
Shear load perpendicular to the free edge		with c ≥	with s ≥	$\alpha_{g\ II,V\perp}$		with c ≥	with s ≥	$\alpha_{g\ \perp,V\perp}$
		50	50	0,75		50	50	0,50
		250	50	2,00		250	50	1,70
		250	250	2,00		250	250	2,00
Shear load parallel to the free edge		with c ≥	with s ≥	$\alpha_{g\ II,V\ II}$		with c ≥	with s ≥	$\alpha_{g\ \perp,V\ II}$
		50	50	1,65		50	50	1,15
		120	250	2,00		120	250	2,00

Table C134: Characteristic values of tension and shear load resistances

Anchor size	Perforated sleeve	Effective Anchorage depth	Characteristic Resistances with c ≥ c_{cr} and s ≥ s_{cr}						
			Use condition						
			d/d			w/d w/w			d/d w/d w/w
			40°C/24°C	80°C/50°C	120°C/72°C	40°C/24°C	80°C/50°C	120°C/72°C	All Temperature ranges
		h_{ef}	$N_{Rk,b} = N_{Rk,p}$			$N_{Rk,b} = N_{Rk,p}$			$V_{Rk,b}$ [2]
		[mm]	[kN]						
Compressive strength $f_b \geq 12$ N/mm² [1]									
M8	12x80	80	3,0	3,0	2,5	3,0	3,0	2,5	4,0
M8 / M10/ IG-M6	16x85	85							
	16x130	130							
M12 / IG-M8	20x85	85							
	20x130	130							
	20x200	200							
M16 / IG-M10	20x85	85	3,5	3,5	3,0	3,5	3,5	3,0	7,5
	20x130	130							
	20x200	200							

[1] For lower compressive strengths resistances must be multiplied by the conversion factor according to Table C129. For stones with higher strengths, the shown values are valid without conversion.

[2] $V_{Rk,c}$ according to Annex C3

Table C135: Displacements

Anchor size	h_{ef}	δ_N / N	δ_{N0}	$\delta_{N\infty}$	δ_V / V	δ_{V0}	$\delta_{V\infty}$
	[mm]	[mm/kN]	[mm]	[mm]	[mm/kN]	[mm]	[mm]
M8 – M12, IG-M6 – M10	all	0,13	0,13*N_{Rk} / 3,5	2*δ_{N0}	0,55	0,55*V_{Rk} / 3,5	1,5*δ_{V0}
M16	all				0,31	0,31*V_{Rk} / 3,5	1,5*δ_{V0}

Injection System WIT-VM 250 Pro for masonry

Performances Hollow Clay brick MZ90-G with insulation
Group factors, characteristic Resistances and Displacements

Annex C 42

Deutsches Institut für Bautechnik DIBt

Brick type: Hollow light weight concrete brick HBL 16DF

Table C136: Stone description

Brick type		Hollow light weight concrete brick HBL 16DF
Density	ρ [kg/dm³]	≥ 1,0
Compressive strength	f_b [N/mm²]	≥ 3,1
Conversion factor for lower compressive strengths		$(f_b/3{,}1)^{0,5} \leq 1{,}0$
Code		EN 771-3
Producer (Country)		e.g. KLB Klimaleichtblock (DE)
Brick dimensions	[mm]	500 x 250 x 240
Drilling method		Rotary drilling

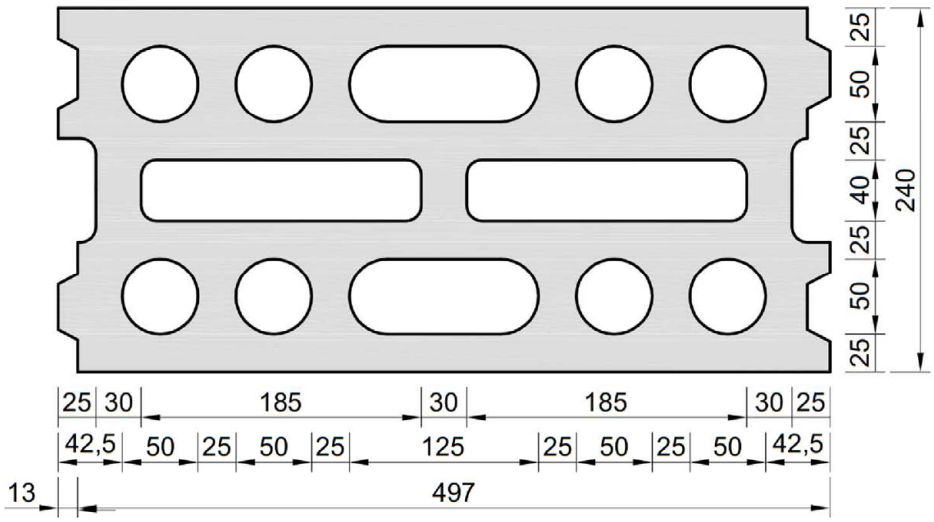


Table C137: Installation parameter

Anchor size		[-]	M8	M10	M12	M16	IG-M6	IG-M8	IG-M10
Installation torque	T_{inst}	[Nm]	≤ 2	≤ 2	≤ 5	≤ 5	≤ 2	≤ 5	≤ 5
Char. Edge distance	c_{cr}	[mm]	120 (for shear loads perpendicular to the free edge: c_{cr} = 250)						
Minimum Edge Distance	c_{min}	[mm]	50						
Characteristic Spacing	$s_{cr,\parallel}$	[mm]	500						
	$s_{cr,\perp}$	[mm]	250						
Minimum Spacing	s_{min}	[mm]	50						

Table C138: Reduction factors for single anchors at the edge

Tension load			Shear load					
			Perpendicular to the free edge			Parallel to the free edge		
	with c ≥	$\alpha_{edge,N}$		with c ≥	$\alpha_{edge,V\perp}$		with c ≥	$\alpha_{edge,V\parallel}$
	50	1,00		50	0,30		50	1,00
	120	1,00		250	1,00		120	1,00

Injection System WIT-VM 250 Pro for masonry

Performances Hollow light weight concrete brick HBL 16DF
Description of the stone, Installation parameters, Reductionfactors

Annex C 43

Deutsches Institut für Bautechnik DIBt

Brick type: Hollow light weight concrete brick HBL 16DF

Table C139: Factors for anchor groups under tension load

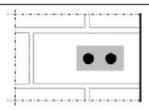
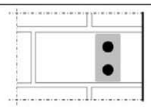
Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
	with c ≥	with s ≥	$\alpha_{g\,II,\,N}$		with c ≥	with s ≥	$\alpha_{g\,\perp,\,N}$
	50	50	2,00		50	50	1,55
	120	500	2,00		120	250	2,00

Table C140: Factors for anchor groups under shear load

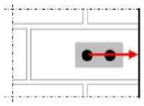
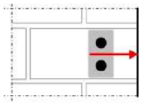
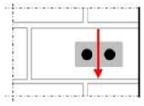
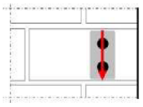
	Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
Shear load perpendicular to the free edge		with c ≥	with s ≥	$\alpha_{g\,II,V\perp}$		with c ≥	with s ≥	$\alpha_{g\,\perp,V\perp}$
		50	50	0,60		50	50	0,35
		120	50	2,00		120	50	1,15
		120	500	2,00		120	250	2,00
Shear load parallel to the free edge		with c ≥	with s ≥	$\alpha_{g\,II,V\,II}$		with c ≥	with s ≥	$\alpha_{g\,\perp,V\,II}$
		50	50	1,30		50	50	1,00
		120	250	2,00				
		120	500	2,00		120	250	2,00

Table C141: Characteristic values of tension and shear load resistances

Anchor size	Perforated sleeve	Effecitve Anchorage depth	Characteristic Resistances with c ≥ c_{cr} and s ≥ s_{cr}							
			Use condition							
			d/d			w/d w/w			d/d w/d w/w	
			40°C/24°C	80°C/50°C	120°C/72°C	40°C/24°C	80°C/50°C	120°C/72°C	All Temperature ranges	
		h_{ef}	$N_{Rk,b} = N_{Rk,p}$			$N_{Rk,b} = N_{Rk,p}$			$V_{Rk,b}$ 2)	
		[mm]	[kN]							
Compressive strength $f_b \geq 3{,}1$ N/mm² 1)										
M8 / M10/ IG-M6	16x85	85	1,2	1,2	0,9	1,2	1,2	0,9	2,0	
	16x130	130								
M12 / IG-M8	20x85	85	1,5	1,5	1,2	1,5	1,5	1,2	3,0	
	20x130	130								
	20x200	200								
M16 / IG-M10	20x85	85							5,0	
	20x130	130								
	20x200	200								

1) For lower compressive strengths resistances must be multiplied by the conversion factor according to Table C136. For stones with higher strengths, the shown values are valid without conversion.

2) $V_{Rk,c}$ according to Annex C3

Table C142: Displacements

Anchor size	h_{ef}	δ_N / N	δ_{N0}	$\delta_{N\infty}$	δ_V / V	δ_{V0}	$\delta_{V\infty}$
	[mm]	[mm/kN]	[mm]	[mm]	[mm/kN]	[mm]	[mm]
M8 – M12, IG-M6 – M10	all	0,13	0,13*N_{Rk} / 3,5	2*δ_{N0}	0,55	0,55*V_{Rk} / 3,5	1,5*δ_{V0}
M16	all				0,31	0,31*V_{Rk} / 3,5	1,5*δ_{V0}

Injection System WIT-VM 250 Pro for masonry

Performances Hollow light weight concrete brick HBL 16DF
Group factors, characteristic Resistances and Displacements

Annex C 44

Deutsches Institut für Bautechnik DIBt

Brick type: Hollow concrete brick Bloc Creux B40

Table C143: Stone description

Brick type		Hollow concrete brick Bloc Creux B40
Density	ρ [kg/dm³]	≥ 0,8
Compressive strength	f_b [N/mm²]	≥ 5,2
Conversion factor for lower compressive strengths		$(f_b / 5,2)^{0,5} \leq 1,0$
Code		EN 772-1
Producer (Country)		e.g. Leroux (FR)
Brick dimensions	[mm]	500 x 200 x 200
Drilling method		Rotary drilling

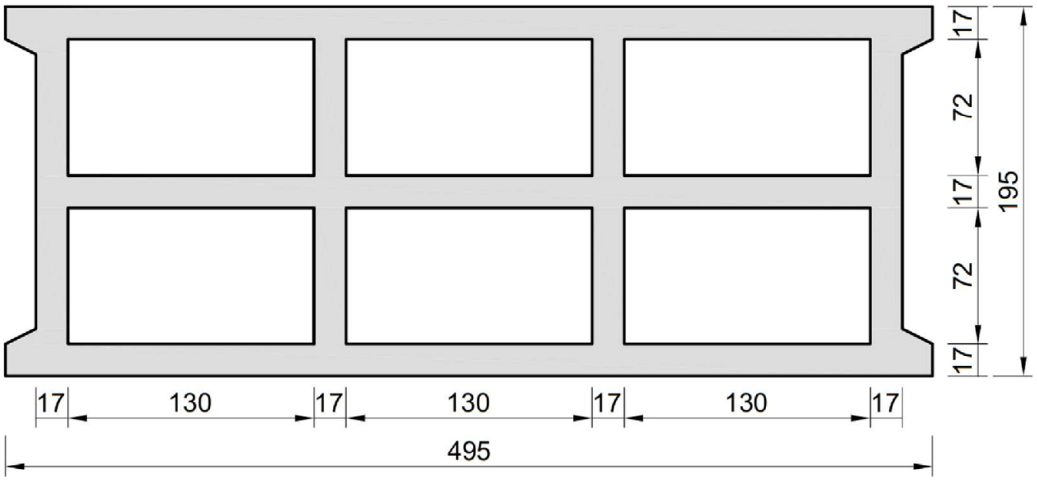


Table C144: Installation parameter

Anchor size		[-]	M8	M10	M12	M16	IG-M6	IG-M8	IG-M10
Installation torque	T_{inst}	[Nm]	≤ 4	≤ 4	≤ 4	≤ 4	≤ 4	≤ 4	≤ 4
Char. Edge distance	c_{cr}	[mm]	120 (for shear loads perpendicular to the free edge: c_{cr} = 170)						
Minimum Edge Distance	c_{min}	[mm]	50						
Characteristic Spacing	$s_{cr,\parallel}$	[mm]	170						
	$s_{cr,\perp}$	[mm]	200						
Minimum Spacing	s_{min}	[mm]	50						

Table C145: Reduction factors for single anchors at the edge

Tension load			Shear load					
			Perpendicular to the free edge			Parallel to the free edge		
	with c ≥	$\alpha_{edge,N}$		with c ≥	$\alpha_{edge,V\perp}$		with c ≥	$\alpha_{edge,V\parallel}$
	50	1,00		50	0,35		50	1,00
	120	1,00		170	1,00		120	1,00

Injection System WIT-VM 250 Pro for masonry

Performances Hollow concrete brick Bloc Creux B40
Description of the stone, Installation parameters, Reductionfactors

Annex C 45

Deutsches Institut für Bautechnik DIBt

Brick type: Hollow concrete brick Bloc Creux B40

Table C146: Factors for anchor groups under tension load

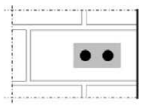
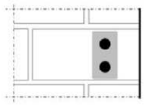
Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
	with c ≥	with s ≥	$\alpha_{g\,II,\,N}$		with c ≥	with s ≥	$\alpha_{g\,\perp,\,N}$
	50	50	1,50		50	50	1,40
	50	170	2,00		50	200	2,00
	120	170	2,00		120	200	2,00

Table C147: Factors for anchor groups under shear load

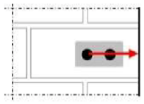
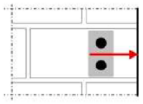
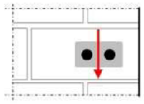
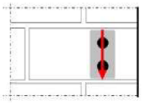
	Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
Shear load perpendicular to the free edge		with c ≥	with s ≥	$\alpha_{g\,II,V\perp}$		with c ≥	with s ≥	$\alpha_{g\,\perp,V\perp}$
		50	50	0,55		50	50	0,35
		120	50	1,30		120	50	0,85
		120	170	2,00		120	200	2,00
Shear load parallel to the free edge		with c ≥	with s ≥	$\alpha_{g\,II,V\,II}$		with c ≥	with s ≥	$\alpha_{g\,\perp,V\,II}$
		50	50	1,10		50	50	1,00
		120	170	2,00		50	200	2,00
						120	200	2,00

Table C148: Characteristic values of tension and shear load resistances

Anchor size	Perforated sleeve	Effective Anchorage depth	Characteristic Resistances with c ≥ c_{cr} and s ≥ s_{cr}						
			Use condition						
			d/d			w/d w/w			d/d w/d w/w
			40°C/24°C	80°C/50°C	120°C/72°C	40°C/24°C	80°C/50°C	120°C/72°C	All Temperature ranges
		h_{ef}	$N_{Rk,b} = N_{Rk,p}$			$N_{Rk,b} = N_{Rk,p}$			$V_{Rk,b}$ 2)
		[mm]	[kN]						
Compressive strength $f_b \geq 5{,}2$ N/mm² 1)									
M8 / M10/ IG-M6	16x130	130	2,0	1,5	1,2	2,0	1,5	1,2	6,0
M12 / IG-M8	20x130	130							
M16 / IG-M10	20x130	130							

1) For lower compressive strengths resistances must be multiplied by the conversion factor according to Table C143. For stones with higher strengths, the shown values are valid without conversion.
2) $V_{Rk,c}$ according to Annex C3

Table C149: Displacements

Anchor size	h_{ef}	δ_N / N	δ_{N0}	$\delta_{N\infty}$	δ_V / V	δ_{V0}	$\delta_{V\infty}$
	[mm]	[mm/kN]	[mm]	[mm]	[mm/kN]	[mm]	[mm]
M8 – M12, IG-M6 – M10	all	0,13	0,13*N_{Rk} / 3,5	2*δ_{N0}	0,55	0,55*V_{Rk} / 3,5	1,5*δ_{V0}
M16	all				0,31	0,31*V_{Rk} / 3,5	1,5*δ_{V0}

Injection System WIT-VM 250 Pro for masonry

Performances hollow concrete brick Bloc Creux B40
Group factors, characteristic Resistances and Displacements

Annex C 46

Deutsches Institut für Bautechnik DIBt

Brick type: Solid light weight concrete brick

Table C150: Stone description

Brick type		Solid light weight concrete brick
Density	ρ [kg/dm³]	≥ 0,6
Compressive strength	f_b [N/mm²]	≥ 2
Conversion factor for lower compressive strengths		$(f_b / 2)^{0,5} \leq 1,0$
Code		EN 771-3
Producer (Country)		e.g. Bisotherm (DE)
Brick dimensions	[mm]	≥ 240 x 300 x 113
Drilling method		Rotary drilling

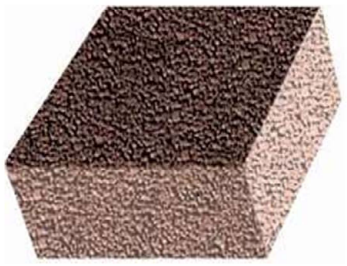


Table C151: Installation parameter

Anchor size		[-]	M8	M10	M12	M16	IG-M6	IG-M8	IG-M10
Installation torque	T_{inst}	[Nm]	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2
Char. Edge distance	c_{cr}	[mm]	150						
Minimum Edge Distance	c_{min}	[mm]	60						
Characteristic Spacing	$s_{cr,\,II}$	[mm]	300						
	$s_{cr,\,\perp}$	[mm]	300						
Minimum Spacing	s_{min}	[mm]	120						

Table C152: Reduction factors for single anchors at the edge

Tension load			Shear load					
			Perpendicular to the free edge			Parallel to the free edge		
	with c ≥	$\alpha_{edge,\,N}$		with c ≥	$\alpha_{edge,\,V\perp}$		with c ≥	$\alpha_{edge,\,V\,II}$
	60	1,00		60	0,25		60	0,40
	150	1,00		150	1,00		100	1,00

Table C153: Factors for anchor groups under tension load

Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
	with c ≥	with s ≥	$\alpha_{g\,II,\,N}$		with c ≥	with s ≥	$\alpha_{g\,\perp,\,N}$
	60	120	1,00		60	120	1,00
	150	300	2,00		150	300	2,00

Table C154: Factors for anchor groups under shear load

	Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
Shear load perpendicular to the free edge		with c ≥	with s ≥	$\alpha_{g\,II,V\perp}$		with c ≥	with s ≥	$\alpha_{g\,\perp,V\perp}$
		60	120	0,25		60	120	0,25
		150	120	1,00		150	120	1,00
		150	300	2,00		150	300	2,00
Shear load parallel to the free edge		with c ≥	with s ≥	$\alpha_{g\,II,V\,II}$		with c ≥	with s ≥	$\alpha_{g\,\perp,V\,II}$
		60	120	0,40		60	120	0,40
		100	120	1,00		100	120	1,00
		150	300	2,00		150	300	2,00

Injection System WIT-VM 250 Pro for masonry

Performances Solid light weight concrete brick
Description of the stone, Installation parameters, Reduction- and Group factors

Annex C 47

Deutsches Institut für Bautechnik DIBt

Brick type: Solid light weight concrete brick

Table C155: Characteristic values of tension and shear load resistances

Anchor size	Perforated sleeve	Effecitve Anchorage depth	Characteristic Resistances with c ≥ c_{cr} and s ≥ s_{cr}						
			Use condition						
			d/d			w/d w/w			d/d w/d w/w
			40°C/24°C	80°C/50°C	120°C/72°C	40°C/24°C	80°C/50°C	120°C/72°C	All Temperature ranges
		h_{ef}	$N_{Rk,b} = N_{Rk,p}$			$N_{Rk,b} = N_{Rk,p}$			$V_{Rk,b}$ 2)
		[mm]	[kN]						
Compressive strength $f_b \geq 2$ N/mm² 1)									
M8	-	80	3,0	2,5	2,0	2,5	2,0	1,5	3,0
M10 / IG-M6	-	90							
M12 / IG-M8	-	100							
M16 / IG-M10	-	100							
M8	12x80	80	2,5	2,5	2,0	2,5	2,0	1,5	
M8 / M10/ IG-M6	16x85	85							
	16x130	130							
M12 / IG-M8	20x85	85							
	20x130	130							
	20x200	200							
M16 / IG-M10	20x85	85							
	20x130	130							
	20x200	200							

1) For lower compressive strengths resistances must be multiplied by the conversion factor according to Table C150. For stones with higher strengths, the shown values are valid without conversion.

2) $V_{Rk,c}$ according to Annex C3

Table C156: Displacements

Anchor size	h_{ef}	δ_N / N	δ_{N0}	$\delta_{N\infty}$	δ_V / V	δ_{V0}	$\delta_{V\infty}$
	[mm]	[mm/kN]	[mm]	[mm]	[mm/kN]	[mm]	[mm]
M8 – M12, IG-M6 – M10	all	0,1	0,1*N_{Rk} / 3,5	2*δ_{N0}	0,3	0,3*V_{Rk} / 3,5	1,5*δ_{V0}
M16	all				0,1	0,1*V_{Rk} / 3,5	1,5*δ_{V0}

ДЕКЛАРАЦИЯ ЗА ЕКСПЛОАТАЦИОННИ ПОКАЗАТЕЛИ

№ 0903450200_00_M_WIT-VM 250 (5)

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 250 Pro (Würth инжекционна система WIT-VM 250 Pro)
Арт. №: 09034502*; 090345010*; 090546*; 090547*; 59160*; 5916108999; 5916110999; 5916112999; 5916116999; 5916208999; 5916210999; 5916212999; 5916216999; 5916408110; 5916410130; 5916412160; 5916416190; 59156*; 59157*; 090344 123; 090344 164; 090344 165; 090344 203; 090344 204; 090344 205; 090344 163

2. Предвидена употреба/употреби: Verbunddübel zur Verankerung im Beton (Свързващ дюбел за закотвяне в зидария)

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 330076–00-0604, издание 11/2017
Европейска техническа оценка: ETA-20/0854 - 18.11.2020 г.
Орган за техническа оценка: Deutsches Institut für Bautechnik (DIBt), Berlin
Нотифициран(и) орган(и): 2873, Institut für Stahlbau und Werkstoffmechanik (IFSW), Darmstadt

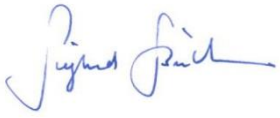
6. Деклариран(и) експлоатационен(и) показател(и):

Основни характеристики	**Експлоатационни показатели**	**Хармонизирана техническа спецификация**
Механична якост и устойчивост (BWR 1)		ETA-20/0854 EAD 330076-00-0604
Характерни стойности за съпротивление	Вижте приложение C1 до C48	
Изместванията	Вижте приложение C6 до C48	
Устойчивост	Вижте приложение B1	
Противопожарна защита (BWR 2)		
Реакция на огън	Клас A1	
Хигиена, здравеопазване и опазване на околната среда (BWR 3)		
Съдържание, емисия и/или освобождаване на опасни вещества	Експлоатационният показател не е оценяван	

Експлоатационните показатели на продукта, посочен по-горе, са в съответствие с декларираните експлоатационни показатели. Отговорност за издаването на декларацията за експлоатационни показатели носи изцяло 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. 0903450200_00_M_WIT-VM 250 (5)

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

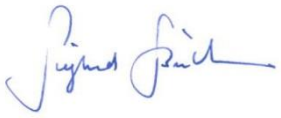
1. Jednoznačný identifikační kód typu výrobku: Injekční systém Würth WIT-VM 250 Pro
   Č. výr.: 09034502*; 090345010*; 090546*; 090547*; 59160*; 5916108999; 5916110999; 5916112999; 5916116999; 5916208999; 5916210999; 5916212999; 5916216999; 5916408110; 5916410130; 5916412160; 5916416190; 59156*; 59157*; 090344 123; 090344 164; 090344 165; 090344 203; 090344 204; 090344 205; 090344 163
2. Zamýšlené/zamýšlená použití: Spojovací hmoždinka pro ukotvení do zdiva
3. Výrobce: Adolf Würth GmbH & Co. KG
   Reinhold-Würth-Straße 12 – 17
   D – 74653 Künzelsau
4. Systém(y) pro hodnocení a kontrolu stálosti vlastností: Systém 1
5. Evropský dokument pro posuzování: EAD 330076-00-0604, vydání 11/2017
   Evropské technické schválení: ETA-20/0854 – 18. 11. 2020
   Pracoviště pro technické posuzování: Deutsches Institut für Bautechnik, Berlin (DIBt, Německý institut pro stavební techniku v Berlíně)
   Oznámený subjekt/oznámené subjekty: 2873, Institut für Stahlbau und Werkstoffmechanik (IFSW), Darmstadt
6. Deklarovaná vlastnost/deklarované vlastnosti:

Podstatné charakteristické vlastnosti	**Vlastnost**	**Harmonizovaná technická specifikace**
Mechanická pevnost a stálost (BWR 1)		ETA-20/0854 EAD 330076-00-0604
Charakteristické hodnoty pro odpor	Viz přílohu C1 až C48	
Posuny	Viz přílohu C6 až C48	
Trvanlivost	Viz přílohu B1	
Požární ochrana (BWR 2)		
Reakce na oheň	Třída A1	
Hygiena, zdraví a ochrana životního prostředí (BWR 3)		
Obsah, emise a/nebo uvolňování nebezpečných látek	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. 0903450200_00_M_WIT-VM 250 (5)

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

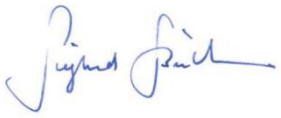
1. Produkttypens entydige identifikationskode: Würth injektionssystem WIT-VM 250 Pro
   Art.-nr.: 09034502*; 090345010*; 090546*; 090547*; 59160*; 5916108999; 5916110999; 5916112999; 5916116999; 5916208999; 5916210999; 5916212999; 5916216999; 5916408110; 5916410130; 5916412160; 5916416190; 59156*; 59157*; 090344 123; 090344 164; 090344 165; 090344 203; 090344 204; 090344 205; 090344 163
2. Anvendelsesformål: Skruedyvel til forankring i murværk
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 330076-00-0604, Edition 11/2017
   Europæisk teknisk bedømmelse: ETA-20/0854 – 18-11-2020
   Teknisk evalueringsmyndighed: Deutsches Institut für Bautechnik (DIBt), Berlin
   Notificeret myndighed/notificerede myndigheder: 2873, Institut für Stahlbau und Werkstoffmechanik (IFSW), Darmstadt
6. Deklareret ydeevne/deklarerede ydeevner:

Væsentlige egenskaber	**Ydelse**	**Harmoniseret teknisk specifikation**
Mekanisk modstandsdygtighed og stabilitet (BWR 1)		ETA-20/0854 EAD 330076-00-0604
Karakteristiske værdier for modstand	Se bilag C1 til C48	
Forskydninger	Se bilag C6 til C48	
Holdbarhed	Se bilag B1	
Brandsikkerhed (BWR 2)		
Brandreaktion	Klasse A1	
Hygiejne, sundhed og miljøbeskyttelse (BWR 3)		
Indhold, emission og/eller frigivelse af farlige stoffer	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. 0903450200_00_M_WIT-VM 250 (5)

1. Eindeutiger Kenncode des Produkttyps: Würth Injektionssystem WIT-VM 250 Pro
   Art.-Nr.: 09034502*; 090345010*; 090546*; 090547*; 59160*; 5916108999; 5916110999; 5916112999; 5916116999; 5916208999; 5916210999; 5916212999; 5916216999; 5916408110; 5916410130; 5916412160; 5916416190; 59156*; 59157*; 090344 123; 090344 164; 090344 165; 090344 203; 090344 204; 090344 205; 090344 163
2. Verwendungszweck(e): Verbunddübel zur Verankerung im Mauerwerk
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 330076-00-0604, Edition 11/2017
   Europäische Technische Bewertung: ETA-20/0854 - 18.11.2020
   Technische Bewertungsstelle: Deutsches Institut für Bautechnik (DIBt), Berlin
   Notifizierte Stelle(n): 2873, Institut für Stahlbau und Werkstoffmechanik (IFSW), Darmstadt
6. Erklärte Leistung(en):

Wesentliche Merkmale	**Leistung**	**Harmonisierte technische Spezifikation**
Mechanische Festigkeit und Standsicherheit (BWR 1)		ETA-20/0854 EAD 330076-00-0604
Charakteristische Werte für Widerstand	Siehe Anhang C1 bis C48	
Verschiebungen	Siehe Anhang C6 bis C48	
Dauerhaftigkeit	Siehe Anhang B1	
Brandschutz (BWR 2)		
Brandverhalten	Klasse A1	
Hygiene, Gesundheit und Umweltschutz (BWR 3)		
Inhalt, Emission und/oder Freisetzung von gefährlichen Stoffen	Leistung nicht bewertet	

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

Unterzeichnet für den Hersteller und im Namen des Herstellers von:

Frank Wolpert
(Prokurist - Leiter Produktmanagement)

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

Künzelsau, den 01.01.2021

DECLARACIÓN DE PRESTACIONES

N.º 0903450200_00_M_WIT-VM 250 (5)

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

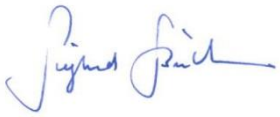
1. Código de identificación única del producto tipo: Würth Injektionssystem WIT-VM 250 Pro (sistema de inyección Würth) N.° de art.: 09034502*; 090345010*; 090546*; 090547*; 59160*; 5916108999; 5916110999; 5916112999; 5916116999; 5916208999; 5916210999; 5916212999; 5916216999; 5916408110; 5916410130; 5916412160; 5916416190; 59156*; 59157*; 090344 123; 090344 164; 090344 165; 090344 203; 090344 204; 090344 205; 090344 163
2. Uso(s) previsto(s): Taco químico para anclaje en mampostería
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 330076-00-0604, edición 11/2017
   Evaluación Técnica Europea: ETA-20/0854 – del 18/11/2020
   Organismo de Evaluación Técnica: Deutsches Institut für Bautechnik (DIBt), Berlín
   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-20/0854 EAD 330076-00-0604
Valores característicos de resistencia	Véanse los anexos C1 hasta C48	
Desplazamientos	Véanse los anexos C6 hasta C48	
Durabilidad	Véase el anexo B1	
Protección contra incendios (BWR 2)		
Reacción al fuego	Clase A1	
Higiene, salud y protección medioambiental (BWR 3)		
Contenido, emisión y liberación de sustancias peligrosas	Prestación no evaluada	

Las prestaciones del producto identificado anteriormente son conformes con el conjunto de prestaciones declaradas. La presente declaración de prestaciones se emite de conformidad con el Reglamento (UE) n.° 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)



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

Künzelsau, el 01/01/2021

TOIMIVUSDEKLARATSIOON

Nr. 0903450200_00_M_WIT-VM 250 (5)

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

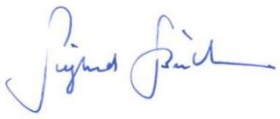
1. Tootetüübi kordumatu identifitseerimiskood: Würthi ankurdussüsteem WIT-VM 250 Pro
   Art-nr: 09034502*; 090345010*; 090546*; 090547*; 59160*; 5916108999; 5916110999; 5916112999; 5916116999; 5916208999; 5916210999; 5916212999; 5916216999; 5916408110; 5916410130; 5916412160; 5916416190; 59156*; 59157*; 090344 123; 090344 164; 090344 165; 090344 203; 090344 204; 090344 205; 090344 163
2. Ettenähtud kasutusotstarve või -otstarbed: Sidumisankur kinnitamiseks müüri
3. Tootja: Adolf Würth GmbH & Co. KG
   Reinhold-Würth-Straße 12 – 17
   D – 74653 Künzelsau
4. Toimivuse püsivuse hindamise ja kontrolli süsteem(id): Süsteem 1
5. Euroopa hindamisdokument: EAD 330076-00-0604, 11/2017
   Euroopa tehniline hinnang: ETA-20/0854 – 18.11.2020
   Tehnilise hindamise asutus: Deutsches Institut für Bautechnik (DIBt), Berliin
   Teavitatud asutus(ed): 2873, Institut für Stahlbau und Werkstoffmechanik (IFSW), Darmstadt
6. Deklareeritud toimivus(ed):

Põhiomadused	**Toimivus**	**Ühtlustatud tehniline kirjeldus**
Mehaaniline tugevus ja vastupidavus (BWR 1)		ETA-20/0854 EAD 330076-00-0604
Iseloomulikud näitajad vastupanu puhul	Vt lisa C1 kuni C48	
Nihked	Vt lisa C6 kuni C48	
Vastupidavus	Vt lisa B1	
Tulekaitse (BWR 2)		
Tuletundlikkus	Klass A1	
Hügieen, tervishoid ja keskkonnakaitse (BWR 3)		
Ohtlike ainete sisaldus, eraldumine ja/või vabanemine	Toimivus hindamata	

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

Tootja poolt ja nimel allkirjastanud:

Frank Wolpert
(Prokurist-tootejuht)



Dr. ins. Siegfried Beichter
(Prokurist-kvaliteedijuht)

Künzelsau, 01.01.2021

SUORITUSTASOILMOITUS

Nro 0903450200_00_M_WIT-VM 250 (5)

Tämä on käännös saksankielisestä.
Epäilyksissä pätee saksankielinen alkuperäisilmoitus.

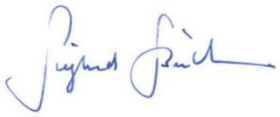
1. Tuotetyypin yksilöllinen tunniste: Würth injektiojärjestelmä WIT-VM 250 Pro
   Tuote-nro: 09034502*; 090345010*; 090546*; 090547*; 59160*; 5916108999; 5916110999; 5916112999; 5916116999; 5916208999; 5916210999; 5916212999; 5916216999; 5916408110; 5916410130; 5916412160; 5916416190; 59156*; 59157*; 090344 123; 090344 164; 090344 165; 090344 203; 090344 204; 090344 205; 090344 163
2. Aiottu käyttötarkoitus (aiotut käyttötarkoitukset): Vaarnaruuvi tiilivuoraukseen ankkuroimiseksi
3. Valmistaja: Adolf Würth GmbH & Co. KG
   Reinhold-Würth-Straße 12 - 17
   D – 74653 Künzelsau, Saksa
4. Suoritustason arvioinnin ja tarkistamisen järjestelmä(t): Järjestelmä 1
5. Eurooppalainen arviointidokumentti: EAD 330076-00-0604, julkaisu 11/2017
   Eurooppalainen tekninen arviointi: ETA-20/0854 – 18.11.2020
   Teknisestä arvioinnista vastaava laitos: Deutsches Institut für Bautechnik (DIBt; Saksan rakennustekninen instituutti), Berliini
   Ilmoitettu laitos / ilmoitetut laitokset: 2873, Institut für Stahlbau und Werkstoffmechanik (IFSW; teräsrakenneteollisuuden ja materiaalimekaniikan instituutti), Darmstadt
6. Ilmoitettu suoritustaso/ilmoitetut suoritustasot:

Perusominaisuudet	**Suoritustaso**	**Yhdenmukaistetut tekniset eritelmät**
Mekaaninen lujuus ja vakaus (BWR 1)		ETA-20/0854 EAD 330076-00-0604
Ominaisarvot vastukselle	Katso liitteet C1 - C48	
Siirtymät	Katso liitteet C6 - C48	
Kestävyys	Katso liite B1	
Palosuoja (BWR 2)		
Palokäyttäytyminen	Luokka A1	
Hygienia, terveys ja ympäristönsuojelu (BWR 3)		
Vaarallisten aineiden sisältö, päästöt ja/tai vapautuminen	Suoritustasoa ei arvioitu	

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

Valmistajan puolesta allekirjoittanut:

Frank Wolpert
(Prokuristi - tuotehallinnon johtaja)



TkT Siegfried Beichter
(Prokuristi - laadunjohtaja)

Künzelsau, 01.01.2021

DÉCLARATION DE PERFORMANCES

N° 0903450200_00_M_WIT-VM 250 (5)

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 250 Pro
   N° de réf. : 09034502*; 090345010*; 090546*; 090547*; 59160*; 5916108999; 5916110999; 5916112999; 5916116999; 5916208999; 5916210999; 5916212999; 5916216999; 5916408110; 5916410130; 5916412160; 5916416190; 59156*; 59157*; 090344 123; 090344 164; 090344 165; 090344 203; 090344 204; 090344 205; 090344 163
2. Usage(s) prévu(s) : Cheville composite d'ancrage dans la maçonnerie
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 330076-00-0604, édition 11/2017
   Évaluation technique européenne : ETA-20/0854 – 18/11/2020
   Organisme d'évaluation technique : Deutsches Institut für Bautechnik (DIBt), Berlin
   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-20/0854 EAD 330076-00-0604
Valeurs caractéristiques pour la résistance	Voir les annexes C1 à C48	
Déplacements	Voir les annexes C6 à C48	
Durabilité	Voir annexe B1	
Protection incendie (BWR 2)		
Réaction au feu	Classe A1	
Hygiène, santé et environnement (BWR 3)		
Contenu, rejet et/ou dégagement de substances dangereuses	Performance non évaluée	

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

Signée pour le fabricant et en son nom par :

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. 0903450200_00_M_WIT-VM 250 (5)

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 250 Pro
Uimh.earra: 09034502*; 090345010*; 090546*; 090547*; 59160*; 5916108999; 5916110999; 5916112999; 5916116999; 5916208999; 5916210999; 5916212999; 5916216999; 5916408110; 5916410130; 5916412160; 5916416190; 59156*; 59157*; 090344 123; 090344 164; 090344 165; 090344 203; 090344 204; 090344 205; 090344 163
2. Úsáid(í) b(h)eartaithe: Ancaire nasctha le haghaidh daingnithe i gcoincréit
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 330076-00-0604, Eagrán 11/2017
Measúnú Teicniúil Eorpach: ETA-20/0854 – 18/11/2020
Ionad Measúnaithe Teicniúil: Deutsches Institut für Bautechnik, DIBt (Ionad Teicníocht Tógála na Gearmáine), Beirlín
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-20/0854 EAD 330076-00-0604
Luachanna tréitheacha le haghaidh friotaíochta	Féach Iarscríbhinn C1 go C48	
Aistrithe	Féach Iarscríbhinní C6 go C48	
Marthanacht	Féach iarscríbhinn B1	
Cosaint dóiteáin (BWR 2)		
Iompar i gcás dóiteáin	Aicme A1	
Sláintíocht, Sláinte agus Cosaint Comhshaoil (BWR 3)		
Ábhar, Astaíocht agus / nó scaoileadh substaintí guaiseacha	Níor measadh an fheidhmíocht	

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

Sínithe ar son agus thar ceann an déantúsóra ag:

Frank Wolpert
(Oifigeach Údaraithe - Stiúrthóir um Bainistíocht Táirgí)

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

Künzelsau, 01/01/2021

ΔΗΛΩΣΗ ΕΠΙΔΟΣΕΩΝ

Αρ. 0903450200_00_M_WIT-VM 250 (5)

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

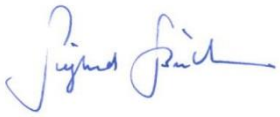
1. Μοναδικός κωδικός αναγνώρισης του τύπου του προϊόντος: Σύστημα έγχυσης Würth WIT-VM 250 Pro
   Αρ. είδ.: 09034502*, 090345010*, 090546*, 090547*, 59160*, 5916108999, 5916110999, 5916112999, 5916116999, 5916208999, 5916210999, 5916212999, 5916216999, 5916408110, 5916410130, 5916412160, 5916416190, 59156*, 59157*, 090344 123, 090344 164, 090344 165, 090344 203, 090344 204, 090344 205, 090344 163
2. Σκοπός (-οί) χρήσης: Χημικό αγκύριο για αγκύρωση σε τοιχοποιία
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 330076-00-0604, έκδοση 11/2017
   Ευρωπαϊκή τεχνική αξιολόγηση: ETA-20/0854 – 18.11.2020
   Οργανισμός τεχνικής αξιολόγησης: Deutsches Institut für Bautechnik (DIBt), Βερολίνο
   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-20/0854 EAD 330076-00-0604
Χαρακτηριστικές τιμές για αντίσταση	Βλέπε παράρτημα C1 έως C48	
Μετατοπίσεις	Βλέπε παράρτημα C6 έως C48	
Ανθεκτικότητα	Βλέπε παράρτημα B1	
Πυροπροστασία (BWR 2)		
Συμπεριφορά σε πυρκαγιά	Κατηγορία A1	
Υγιεινή, υγεία και προστασία περιβάλλοντος (BWR 3)		
Περιεχόμενο, εκπομπές και/ή απελευθέρωση επικίνδυνων ουσιών	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. 0903450200_00_M_WIT-VM 250 (5)

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

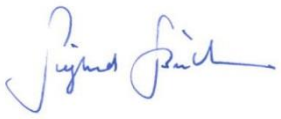
1. Jedinstvena identifikacijska oznaka tipa proizvoda: Würth injekcijski sustav WIT-VM 250 Pro
   Br. art.: 09034502*; 090345010*; 090546*; 090547*; 59160*; 5916108999; 5916110999; 5916112999; 5916116999; 5916208999; 5916210999; 5916212999; 5916216999; 5916408110; 5916410130; 5916412160; 5916416190; 59156*; 59157*; 090344 123; 090344 164; 090344 165; 090344 203; 090344 204; 090344 205; 090344 163
2. Namjena(e): Spojni zatici za kotvljenje u zidove
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 330076-00-0604, izdanje 11./2017.
   Europska tehnička ocjena: ETA-20/0854 – 18.11.2020.
   Tijelo za tehničku ocjenu: Njemački institut građevinarstva (DIBt), Berlin
   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-20/0854 EAD 330076-00-0604
Karakteristične vrijednosti za otpor	Vidi prilog C1 do C48	
Pomicanja	Vidi prilog C6 do C48	
Trajnost	Vidi prilog B1	
Zaštita od požara (BWR 2)		
Ponašanje u slučaju požara	Klasa A1	
Higijena, zdravlje i zaštita okoliša (BWR 3)		
Sadržaj, emisije i/ili oslobađanje opasnih tvari	Svojstvo nije ocijenjeno	

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

Potpisano za i u ime proizvođača od strane:

Frank Wolpert
(Prokurist – voditelj upravljanja proizvodima)



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

Künzelsau, 1.1.2021.

TELJESÍTMÉNYNYILATKOZAT

0903450200_00_M_WIT-VM 250 (5) sz.

Ez a német nyelvről lefordított változat.
Kétség esetén a német nyelvű eredeti az érvényes.

1. A terméktípus egyedi azonosító kódja: Würth WIT-VM 250 injekciós rendszer
   Cikkszámok: 09034502*; 090345010*; 090546*; 090547*; 59160*; 5916108999; 5916110999; 5916112999; 5916116999; 5916208999; 5916210999; 5916212999; 5916216999; 5916408110; 5916410130; 5916412160; 5916416190; 59156*; 59157*; 090344 123; 090344 164; 090344 165; 090344 203; 090344 204; 090344 205; 090344 163
2. Felhasználási cél(ok): Kötőanyaggal rögzített horgony falazatban való horgonyzáshoz
3. Gyártó: Adolf Würth GmbH & Co. KG
   Reinhold-Würth-Straße 12 – 17
   D – 74653 Künzelsau
4. A teljesítményállandóság értékelésére és ellenőrzésére szolgáló rendszer(ek): 1-es rendszer
5. Európai értékelési dokumentum: EAD 330076-00-0604, 2017/11-es kiadás
   Európai Műszaki Értékelés: ETA-20/0854 – 2020.11.18.
   Műszaki értékelő szervezet: Deutsches Institut für Bautechnik (DIBt), Berlin
   Bejelentett szerv(ek): 2873, Institut für Stahlbau und Werkstoffmechanik (IFSW), Darmstadt
6. Nyilatkozatban szereplő teljesítmény(ek):

Lényeges jellemzők	**Teljesítmény**	**Harmonizált műszaki specifikáció**
Mechanikai szilárdság és állékonyság (BWR 1)		ETA-20/0854 EAD 330076-00-0604
Jellemző ellenállósági értékek	Lásd a C1 – C48 mellékleteket	
Elmozdulások	Lásd a C6 – C48 mellékleteket	
Tartósság	Lásd a B1 mellékletet	
Tűzvédelem (BWR 2)		
Tűzzel szembeni viselkedés	A1 osztály	
Higiénia, egészség és környezetvédelem (BWR 3)		
Veszélyesanyag-tartalom, -emisszió és/vagy veszélyes anyagok felszabadulása	A teljesítmény nincs értékelve	

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

A gyártó képviseletében és nevében aláírta:

Frank Wolpert
(cégvezető – termékmenedzsment vezető)

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

Künzelsau, 2021.01.01.

DICHIARAZIONE DI PRESTAZIONE

N. 0903450200_00_M_WIT-VM 250 (5)

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

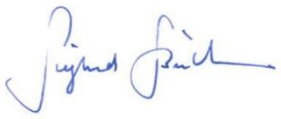
1. Codice di identificazione unico del prodotto-tipo: Würth Injektionssystem WIT-VM 250 Pro (Ancorante chimico - sistema a iniezione Würth WIT-VM 250 Pro)
   Art. n.: 09034502*; 090345010*; 090546*; 090547*; 59160*; 5916108999; 5916110999; 5916112999; 5916116999; 5916208999; 5916210999; 5916212999; 5916216999; 5916408110; 5916410130; 5916412160; 5916416190; 59156*; 59157*; 090344 123; 090344 164; 090344 165; 090344 203; 090344 204; 090344 205; 090344 163
2. Utilizzo/i previsto/i: Ancorante chimico per l'ancoraggio in muratura
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 330076-00-0604, edizione 11/2017
   Valutazione tecnica europea: ETA-20/0854 – 18.11.2020
   Organismo di valutazione tecnica: Deutsches Institut für Bautechnik (DIBt), Berlino
   Organismo/i notificato/i: 2873, Institut für Stahlbau und Werkstoffmechanik (IFSW), Darmstadt
6. Prestazione/i dichiarata/e:

Caratteristiche essenziali	**Prestazione**	**Norma tecnica armonizzata**
Resistenza meccanica e stabilità (BWR 1)		ETA-20/0854 EAD 330076-00-0604
Valori caratteristici di resistenza	Si vedano allegati da C1 a C48	
Variazioni	Si vedano allegati da C6 a C48	
Durabilità	Si veda Allegato B1	
Sicurezza in caso di incendio (BWR 2)		
Reazione al fuoco	Classe A1	
Igiene, salute e ambiente (BWR 3)		
Contenuto, emissioni e/o rilascio di sostanze pericolose	Prestazione non valutata	

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

Firmato a nome e per conto del fabbricante da:

Frank Wolpert
(Procuratore - Responsabile gestione prodotto)



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

Künzelsau, 01.01.2021

EKSPLOATACINIŲ SAVYBIŲ DEKLARACIJA

Nr. 0903450200_00_M_WIT-VM 250 (5)

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

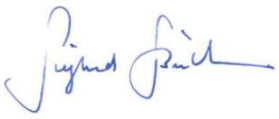
1. Produkto tipo unikalus atpažinimo kodas: „Würth" injekcinė sistema WIT-VM 250 Pro
Prekės Nr.: 09034502*; 090345010*; 090546*; 090547*; 59160*; 5916108999; 5916110999; 5916112999; 5916116999; 5916208999; 5916210999; 5916212999; 5916216999; 5916408110; 5916410130; 5916412160; 5916416190; 59156*; 59157*; 090344 123; 090344 164; 090344 165; 090344 203; 090344 204; 090344 205; 090344 163
2. Naudojimo paskirtis (-ys): sujungimo kaištis tvirtinimui į mūrą
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 330076-00-0604, 2017 m. lapkričio mėn. leidimas
Europos techninis įvertinimas: ETA-20/0854, atliktas 2020-11-18
Techninio vertinimo įstaiga: „Deutsches Institut für Bautechnik (DIBt)", Berlynas
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-20/0854 EAD 330076-00-0604
Būdingas atsparumas	Žr. priedą nuo C1 iki C48	
Pokyčiai	Žr. priedą nuo C6 iki C48	
Ilgaamžiškumas	Žr. B1 priedą.	
Priešgaisrinė apsauga (BWR 2)		
Degumas	A1 klasė	
Higiena, sveikata ir aplinkosauga (BWR 3)		
Pavojingų medžiagų turinys, emisija ir (arba) išskyrimas	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

EKSPLUATĀCIJAS ĪPAŠĪBU DEKLARĀCIJA

Nr. 0903450200_00_M_WIT-VM 250 (5)

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

1. Nepārprotams produkta tipa identifikācijas kods: Würth injekciju sistēma WIT-VM 250 Pro
Preces Nr.: 09034502*; 090345010*; 090546*; 090547*; 59160*; 5916108999; 5916110999; 5916112999; 5916116999; 5916208999; 5916210999; 5916212999; 5916216999; 5916408110; 5916410130; 5916412160; 5916416190; 59156*; 59157*; 090344 123; 090344 164; 090344 165; 090344 203; 090344 204; 090344 205; 090344 163
2. Lietojuma mērķis(-i): savienošanas dībelis enkurošanai mūrī
3. Ražotājs: Adolf Würth GmbH & Co. KG
Reinhold-Würth-Straße 12 – 17
D – 74653 Künzelsau (Kincelzava)
4. Eksplu atācijas īpašību noturības novērtējuma un pārbaudes sistēma(-as): Sistēma 1
5. Eiropas novērtējuma dokuments: EAD 330076-00-0604, 2017. g. novembra izdevums
Eiropas Tehniskais novērtējums: ETA-20/0854 – 18.11.2020
Tehniskā novērtējuma iestāde: Deutsches Institut für Bautechnik (DIBt), Berlin (Berlīne)
Paziņotā(-ās) iestāde(-es): 2873, Institut für Stahlbau und Werkstoffmechanik (IFSW), Darmstadt (Darmštate)
6. Deklarētā(-ās) ekspluatācijas īpašība(-as):

Būtiskie raksturlielumi	**Ekspluatācijas īpašības**	**Saskaņotā tehniskā specifikācija**
Mehāniskā izturība un stiprība *(BWR 1)*		ETA-20/0854 EAD 330076-00-0604
Raksturīgie pretestības parametri	skatīt C1 līdz C48 pielikumu	
Novirzes	skatīt C6 līdz C48 pielikumu	
Ilgizturība	Skatīt B1 pielikumu	
Ugunsdrošība *(BWR 2)*		
Degšanas īpašības	A1 klase	
Higiēna, veselība un vides aizsardzība *(BWR 3)*		
Bīstamu vielu saturs, emisija un/vai izdalīšana	Īpašība nav vērtēta	

Šā produkta ekspluatācijas īpašības atbilst deklarētajai(-ām) ekspluatācijas īpašībai(-ām). Par ekspluatācijas 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 – Leiter Produktmanagement* (prokūrists – produktu nodaļas vadītājs))

Dr. –Ing. Siegfried Beichter (Dr. ing. Zigfrīds Beihters)
(*Prokurist – Leiter Qualität* (prokūrists – kvalitātes sistēmas vadītājs))

Künzelsau (Kincelzava), 01.01.2021.

DIKJARAZZJONI TA' PRESTAZZJONI

Nru 0903450200_00_M_WIT-VM 250 (5)

Din hija l-verżjoni tradotta mill-Ġermaniż.
F'każ ta' dubju jgħodd id-dokument oriġinali bil-lingwa Ġermaniża

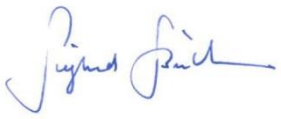
1. Kodiċi uniku ta' identifikazzjoni tat-tip tal-prodott: Würth Sistema b'Injezzjoni WIT-VM 250 Pro
Nru tal-oġġett: 09034502*; 090345010*; 090546*; 090547*; 59160*; 5916108999; 5916110999; 5916112999; 5916116999; 5916208999; 5916210999; 5916212999; 5916216999; 5916408110; 5916410130; 5916412160; 5916416190; 59156*; 59157*; 090344 123; 090344 164; 090344 165; 090344 203; 090344 204; 090344 205; 090344 163
2. Użu/i intenzjonat/i: Kavilja għat-twaħħil, għall-ankraġġ fil-ħitan tal-ġebel
3. Manifattur: Adolf Würth GmbH & Co. KG
Reinhold-Würth-Str. 12 – 17
D – 74653 Künzelsau
4. Sistema jew sistemi ta' valutazzjoni u verifika tal-kostanza ta' prestazzjoni: Sistema 1
5. Dokument Ewropew ta' valutazzjoni: EAD 330076-00-0604, edizzjoni 11/2017
Valutazzjoni Teknika Ewropea: ETA-20/0854 – 18/11/2020
Korp tal-valutazzjoni teknika: Deutsches Institut für Bautechnik (DIBt), Berlin
Korp/i nnotifikat/i: 2873, Institut für Stahlbau und Werkstoffmechanik (IFSW), Darmstadt, Germany
6. Prestazzjoni/jiet ddikjarata/i:

Karatteristiċi essenzjali	**Prestazzjoni**	**Speċifikazzjoni teknika armonizzata**
Stabbiltà u ebusija mekkanika (BWR 1)		ETA-20/0854 EAD 330076-00-0604
Valuri karatteristiċi għar-reżistenza	Ara l-Annessi C1 sa C48	
Spostamenti	Ara l-Annessi C6 sa C48	
Durabbiltà	Ara l-Anness B1	
Protezzjoni kontra n-nar (BWR 2)		
Reazzjoni għan-nar	Klassi A1	
Iġjene, saħħa u protezzjoni tal-ambjent (BWR 3)		
Kontenut, emissjoni u/jew rilaxx ta' sustanzi perikoluż	Prestazzjoni mhux stabbilita	

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

Iffirmat għal u f'isem il-manifattur minn:

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



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

Künzelsau, 01/01/2021

PRESTATIEVERKLARING

Nr. 0903450200_00_M_WIT-VM 250 (5)

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

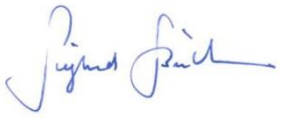
1. Eenduidige identificatiecode van het producttype: Würth injectiesysteem WIT-VM 250 Pro
   Art.nr.: 09034502*; 090345010*; 090546*; 090547*; 59160*; 5916108999; 5916110999; 5916112999; 5916116999; 5916208999; 5916210999; 5916212999; 5916216999; 5916408110; 5916410130; 5916412160; 5916416190; 59156*; 59157*; 090344 123; 090344 164; 090344 165; 090344 203; 090344 204; 090344 205; 090344 163
2. Gebruiksdoel(en): compoundanker voor verankering in metselwerk
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 330076-00-0604, editie 11/2017
   Europese technische beoordeling: ETA-20/0854 – 18/11/2020
   Technische beoordelingsinstantie: Deutsches Institut für Bautechnik (DIBt), Berlijn
   Aangemelde instantie(s): 2873, Institut für Stahlbau und Werkstoffmechanik (IFSW), Darmstadt
6. Vastgestelde prestatie(s):

Belangrijkste eigenschappen	**Prestatie**	**Geharmoniseerde technische specificatie**
Mechanische sterkte en stabiliteit (BWR 1)		ETA-20/0854 EAD 330076-00-0604
Karakteristieke waarden voor weerstand	Zie bijlage C1 t/m C48	
Verschuivingen	Zie bijlage C6 t/m C48	
Duurzaamheid	Zie bijlage B1	
Brandveiligheid (BWR 2)		
Brandgedrag	Klasse A1	
Hygiëne, gezondheid en milieubescherming (BWR 3)		
Inhoud, emissie en / of vrijkomen van gevaarlijke stoffen	prestatie niet beoordeeld	

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

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

Frank Wolpert
(Procuratiehouder - Hoofd Productmanagement)



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

Künzelsau, 01/01/2021

YTELSESERKLÆRING

Nr. 0903450200_00_M_WIT-VM 250 (5)

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

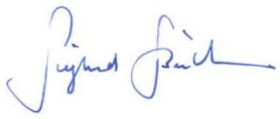
1. Entydig kode for produkttypen: Würth injeksjonssystem WIT-VM 250 Pro
   Art.-nr.: 09034502*; 090345010*; 090546*; 090547*; 59160*; 5916108999; 5916110999; 5916112999; 5916116999; 5916208999; 5916210999; 5916212999; 5916216999; 5916408110; 5916410130; 5916412160; 5916416190; 59156*; 59157*; 090344 123; 090344 164; 090344 165; 090344 203; 090344 204; 090344 205; 090344 163
2. Bruksområde: Kompositttplugg til forankring i mur
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 330076-00-0604, Edition 11/2017
   Europeisk teknisk godkjenning: ETA-20/0854 – 18.11.2020
   Teknisk godkjenningsorgan: Deutsches Institut für Bautechnik, Berlin
   Teknisk(e) kontrollorgan(er): 2873, Institut für Stahlbau und Werkstoffmechanik (IFSW), Darmstadt, Tyskland
6. Erklært(e) ytelse(r):

Vesentlige egenskaper	**Ytelse**	**Harmonisert teknisk spesifikasjon**
Mekanisk fasthet og stabilitet (BWR 1)		ETA-20/0854 EAD 330076-00-0604
Karakteristiske verdier for motstand	Se vedlegg C1 til C48	
Forskyvninger	Se vedlegg C6 til C48	
Holdbarhet	Se vedlegg B1	
Brannvern (BWR 2)		
Egenskaper ved brann	Klasse A1	
Hygiene, helse og miljøvern (BWR 3)		
Innhold, emisjon og/eller utslipp av farlige stoffer	Ytelse ikke vurdert	

Ytelsen til dette produktet tilsvarer 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 0903450200_00_M_WIT-VM 250 (5)

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 250 Pro
Nr artykułu: 09034502*; 090345010*; 090546*; 090547*; 59160*; 5916108999; 5916110999; 5916112999; 5916116999; 5916208999; 5916210999; 5916212999; 5916216999; 5916408110; 5916410130; 5916412160; 5916416190; 59156*; 59157*; 090344 123; 090344 164; 090344 165; 090344 203; 090344 204; 090344 205; 090344 163
2. Przeznaczenie: kołek rozporowy do kotwienia w murze
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 330076-00-0604, edycja 11/2017
Europejska Ocena Techniczna: ETA-20/0854 – 18.11.2020
Placówka sporządzająca ocenę techniczną: Deutsches Institut für Bautechnik (DIBt), Berlin
Jednostka/-i notyfikowana/-e: 2873, Institut für Stahlbau und Werkstoffmechanik (Instytut konstrukcji stalowych i mechaniki tworzyw), Darmstadt
6. Deklarowane właściwości użytkowe:

Istotne cechy	**Właściwości użytkowe**	**Zharmonizowana specyfikacja techniczna**
Wytrzymałość mechaniczna i stateczność (BWR 1)		ETA-20/0854 EAD 330076-00-0604
Wartości charakterystyczne dla oporu	Patrz załącznik C1 do C48	
Przesunięcia	Patrz załącznik C6 do C48	
Trwałość	Patrz załącznik B1	
Ochrona przeciwpożarowa (BWR 2)		
Klasyfikacja ogniowa	Klasa A1	
Higiena, zdrowie i ochrona środowiska (BWR 3)		
Zawartość, emisja i / lub uwalnianie substancji niebezpiecznych	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 0903450200_00_M_WIT-VM 250 (5)

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 250 Pro Würth
N.° art.: 09034502*; 090345010*; 090546*; 090547*; 59160*; 5916108999; 5916110999; 5916112999; 5916116999; 5916208999; 5916210999; 5916212999; 5916216999; 5916408110; 5916410130; 5916412160; 5916416190; 59156*; 59157*; 090344 123; 090344 164; 090344 165; 090344 203; 090344 204; 090344 205; 090344 163

2. Fim/fins de utilização: Cavilha de fixação por aderência para ancoragem em parede de alvenaria

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 330076-00-0604, edição 11/2017
Avaliação Técnica Europeia: ETA-20/0854 – 18.11.2020
Organismo de Avaliação Técnica: Deutsches Institut für Bautechnik (DIBt), Berlim
Organismo(s) notificado(s): 2873, Institut für Stahlbau und Werkstoffmechanik (IFSW), Darmstadt

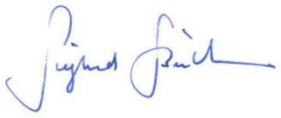
6. Desempenho(s) declarado(s):

Características essenciais	**Desempenho**	**Especificação Técnica Harmonizada**
Resistência mecânica e estabilidade (BWR 1)		ETA-20/0854 EAD 330076-00-0604
Valores característicos para resistência	Ver anexo C1 a C48	
Deslocamentos	Ver anexo C6 a C48	
Durabilidade	Veja Anexo B1	
Proteção contra o fogo (BWR 2)		
Comportamento em caso de incêndio	Classe 1	
Higiene, saúde e proteção do ambiente (BWR 3)		
Teor, emissão e/ou libertação de substâncias perigosas	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.° 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. LE_0903450200_00_M_WIT-VM 250 (5)

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

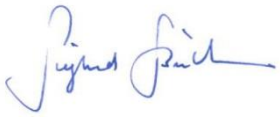
1. Cod unic de identificare al tipului de produs: Sistem de injecție Würth WIT-VM 250 Pro
   Nr. articol: 09034502*; 090345010*; 090546*; 090547*; 59160*; 5916108999; 5916110999; 5916112999; 5916116999; 5916208999; 5916210999; 5916212999; 5916216999; 5916408110; 5916410130; 5916412160; 5916416190; 59156*; 59157*; 090344 123; 090344 164; 090344 165; 090344 203; 090344 204; 090344 205; 090344 163
2. Scopul sau scopurile de utilizare: Diblu de îmbinare pentru ancorare în zidărie
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 330076-00-0604, Ediție 11/2017
   Evaluare tehnică europeană: ETA-20/0854 – 18.11.2020
   Organism de evaluare tehnică: Deutsches Institut für Bautechnik (DIBt), Berlin
   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-20/0854 EAD 330076-00-0604
Valori caracteristice pentru rezistență	A se vedea anexa C1 până la C48	
Deplasări	A se vedea anexa C6 până la C48	
Durabilitate	A se vedea anexa B1	
Protecție contra incendiilor (BWR 2)		
Comportament la incendiu	Clasa A1	
Igienă, sănătate și protecția mediului înconjurător (BWR 3)		
Conținut, emisie și/sau degajarea de substanțe periculoase	Performanța nu este evaluată	

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

Semnată pentru și în numele producătorului, de către:

Frank Wolpert
(Reprezentant legal - director pentru producție)



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

Künzelsau, 01.01.2021

ДЕКЛАРАЦИЯ ХАРАКТЕРИСТИК

№ 0903450200_00_M_WIT-VM 250 (5)

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 250 Pro
Арт. №: 09034502*; 090345010*; 090546*; 090547*; 59160*; 5916108999; 5916110999; 5916112999; 5916116999; 5916208999; 5916210999; 5916212999; 5916216999; 5916408110; 5916410130; 5916412160; 5916416190; 59156*; 59157*; 090344 123; 090344 164; 090344 165; 090344 203; 090344 204; 090344 205; 090344 163

2. Цель(и) применения: Комбинированный дюбель для анкеровки в каменной кладке

3. Изготовитель: Adolf Würth GmbH & Co. KG
Reinhold-Würth-Straße12 – 17
D – 74653 Künzelsau

4. Система(ы) для оценки и проверки стабильности характеристик: Система 1

5. Европейский оценочный документ: EAD 330076-00-0604, редакция 11/2017
Европейская техническая оценка: ETA-20/0854 – 18.11.2020
Орган технической оценки Уполномоченный(е) орган(ы): Германский институт строительных технологий (DIBt), Берлин
2873, Институт строительных конструкций и механики материалов (IFSW), Дармштадт

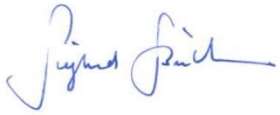
6. Заявленная(-ые) характеристика(-и):

Важные признаки	**Характеристика**	**Гармонизированная техническая спецификация**
Механическая прочность и устойчивость (BWR 1)		ETA-20/0854 EAD 330076-00-0604
Типичные значения сопротивления	См. Приложение с C1 по C48	
Перемещения	См. Приложение с C6 по C48	
Выносливость	См. Приложение B1	
Противопожарная защита (BWR 2)		
Огнестойкость	Класс A1	
Гигиена, здоровье и охрана окружающей среды (BWR 3)		
Состав, эмиссия и/или выделение опасных веществ	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
(Прокурист -
Нач.производств.отдела)



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

Кюнцельзау, 01.01.2021

PRESTANDADEKLARATION

Nr. 0903450200_00_M_WIT-VM 250 (5)

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

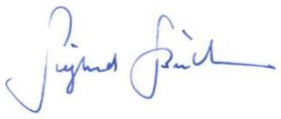
1. Produkttypens unika identifikationskod: Würth injekteringssystem WIT-VM 250 Pro
   Art.-nr.: 09034502*; 090345010*; 090546*; 090547*; 59160*; 5916108999; 5916110999; 5916112999; 5916116999; 5916208999; 5916210999; 5916212999; 5916216999; 5916408110; 5916410130; 5916412160; 5916416190; 59156*; 59157*; 090344 123; 090344 164; 090344 165; 090344 203; 090344 204; 090344 205; 090344 163
2. Användningsändamål: Ankarplugg för förankring i murverk
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 330076-00-0604, Edition 11/2017
   Europeisk teknisk bedömning: ETA-20/0854 – 2020-11-18
   Tekniskt bedömningsorgan: Deutsches Institut für Bautechnik (DIBt), Berlin
   Notificerade organ: 2873, Institut für Stahlbau und Werkstoffmechanik (IFSW), Darmstadt
6. Deklarerad prestanda:

Väsentliga egenskaper	**Prestanda**	**Harmoniserad teknisk specifikation**
Mekanisk hållfasthet och stabilitet (BWR 1)		ETA-20/0854 EAD 330076-00-0604
Karakteristiska värden för motstånd	Se Bilaga C1 till C48	
Förskjutningar	Se Bilaga C6 till C48	
Varaktighet	Se Bilaga B1	
Brandskydd (BWR 2)		
Branduppförande	Klass A1	
Hygien, hälsa och miljöskydd (BWR 3)		
Innehåll, emission och/eller frisättning av farliga ämnen	Prestanda ej bedömd	

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

Undertecknad för tillverkaren och på tillverkarens vägnar av:

Frank Wolpert
(Prokurist - Chef Produkthantering)



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

Künzelsau, 2021-01-01

VYHLÁSENIE O VLASTNOSTIACH

Č. 0903450200_00_M_WIT-VM 250 (5)

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

1. Jednoznačný identifikačný kód typu výrobku: Würth Injekčný systém WIT-VM 250 Pro
   Výr. č.: 09034502*; 090345010*; 090546*; 090547*; 59160*; 5916108999; 5916110999; 5916112999; 5916116999; 5916208999; 5916210999; 5916212999; 5916216999; 5916408110; 5916410130; 5916412160; 5916416190; 59156*; 59157*; 090344 123; 090344 164; 090344 165; 090344 203; 090344 204; 090344 205; 090344 163
2. Účel(y) použitia: Spojovacie hmoždinky na ukotvenie do muriva
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 330076-00-0604, edícia 11/2017
   Európske technické vyhodnotenie: ETA-20/0854 - 18.11.2020
   Pracovisko pre technické vyhodnotenie: Deutsches Institut für Bautechnik (Nemecký inštitút pre stavebnú techniku) (DIBt), Berlín
   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-20/0854 EAD 330076-00-0604
Charakteristické hodnoty pre odpor	Pozri dodatok C1 až C48	
Posuvy	Pozri dodatok C1 až C48	
Odolnosť	Pozri dodatok B1	
Protipožiarna ochrana (BWR 2)		
Reakcia látky pri požiari	Trieda A1	
Hygiena, ochrana zdravia a životného prostredia (BWR 3)		
Obsah, emisie a/alebo uvoľňovanie nebezpečných látok	Vlastnosť nie je hodnotená	

Vlastnosť vyššie uvedeného produktu zodpovedá vyhlásenej vlastnosti / vyhláseným vlastnostiam. 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. 0903450200_00_M_WIT-VM 250 (5)

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

1. Enotna identifikacijska oznaka tipa izdelka: Vbrizgalni sistem Würth WIT-VM 250 Pro
   Št. art.: 09034502*; 090345010*; 090546*; 090547*; 59160*; 5916108999; 5916110999; 5916112999; 5916116999; 5916208999; 5916210999; 5916212999; 5916216999; 5916408110; 5916410130; 5916412160; 5916416190; 59156*; 59157*; 090344 123; 090344 164; 090344 165; 090344 203; 090344 204; 090344 205; 090344 163
2. Nameni uporabe: Kombinirano sidro za sidranje v zidovih
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 330076-00-0604, izdaja 11/2017
   Evropsko tehnično vrednotenje: ETA-20/0854 – 18.11.2020
   Organ, ki je opravil tehnično vrednotenje: Deutsches Institut für Bautechnik (DIBt), Berlin
   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-20/0854 EAD 330076-00-0604
Značilne vrednosti upora	Glejte Priloge od C1 do C48	
Premiki	Glejte Priloge od C6 do C48	
Trajnost	Glejte Prilogo B1	
Protipožarna zaščita (BWR 2)		
Požarne lastnosti	Razred A1	
Higiena, zdravje in varovanje okolja (BWR 3)		
Vsebnost, izpusti in/ali sproščanje nevarnih snovi	Lastnost ni ocenjena	

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

Podpis za proizvajalca in v njegovem imenu:

Frank Wolpert
(prokurist – vodja izdelkov)

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

Künzelsau, 1. 1. 2021

PERFORMANS BEYANI

No. 0903450200_00_M_WIT-VM 250 (5)

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

1. Ürün tipinin açık kodu: Würth Enjeksiyon sistemi WIT-VM 250 Pro
Ürün No.: 09034502*; 090345010*; 090546*; 090547*; 59160*; 5916108999; 5916110999; 5916112999; 5916116999; 5916208999; 5916210999; 5916212999; 5916216999; 5916408110; 5916410130; 5916412160; 5916416190; 59156*; 59157*; 090344 123; 090344 164; 090344 165; 090344 203; 090344 204; 090344 205; 090344 163

2. Kullanma amacı (amaçları): Duvara ankraj için kimyasal dübel

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 330076-00-0604, Baskı 11/2017
Avrupa Teknik Değerlendirmesi: ETA-20/0854 – 18.11.2020
Teknik Değerlendirme Kuruluşu: Deutsches Institut für Bautechnik (DIBt), Berlin
Akredite kuruluş(lar): 2873, Institut für Stahlbau und Werkstoffmechanik (IFSW), Darmstadt

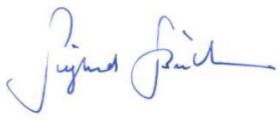
6. Beyan edilen performans(lar):

Önemli özellikler	**Performans**	**Uyumlandırılmış teknik nitelik**
Mekanik dayanıklılık ve kararlılık (BWR 1)		ETA-20/0854 EAD 330076-00-0604
Direnç için karakteristik değerler	Bkz. Ek C1 ila C48	
Kaydırmalar	Bkz. Ek C6 ila C48	
Dayanıklılık	Bkz. Ek B1	
Yangından koruma (BWR 2)		
Yangındaki tutum	Sınıf A1	
Hijyen, sağlık ve çevre koruma (BWR 3)		
İçerik, Tehlikeli maddelerin emisyonu ve / veya açığa çıkması	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