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Member of EOTA
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European Technical Assessment

ETA 23/0312
of 30/01/2026

General Part

Technical Assessment Body issuing the European Technical Assessment: Technical and Test Institute for Construction Prague	
Trade name of the construction product	WB300 WB300 Desert WB300W WB300T WB300T Desert
Product family to which the construction product belongs	Metal injection anchors for use in masonry
Manufacturer	J. van Walraven Holding B.V. Industrieweg 5 3641 RK Mijdrecht The Netherlands
Manufacturing plant	Walraven Factory A1
This European Technical Assessment contains	22 pages including 19 Annexes which form an integral part of this assessment.
This European Technical Assessment is issued in accordance with Article 95(4) of Regulation (EU) 2024/3110, on the basis of	EAD 330076-01-0604 Metal injection anchors for use in masonry
This version replaces	ETA 23/0312 issued on 28/11/2024

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

Specific parts

1. Technical description of the product

The WB300, WB300 Desert, WB300W (faster curing time) and WB300T, WB300T Desert (extended curing time) for masonry is a bonded anchor consisting of a cartridge with injection mortar, a plastic sieve sleeve and an anchor rod with hexagon nut and washer or internal threaded socket. The steel elements are made of galvanized steel or stainless steel.

The sieve sleeve is pushed into a drilled hole and filled with injection mortar before the anchor rod or the socket with internal thread is placed in the sieve sleeve. The installation of the anchor rod in solid masonry can be also done without a sieve sleeve. The installation of the anchor rod in autoclaved aerated concrete shall be done without a sieve sleeve. The steel element is anchored via the bond between metal part, injection mortar and masonry.

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

2. Specification of the intended use in accordance with the applicable European Assessment Document (hereinafter EAD)

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

The provisions made in this European Technical Assessment are based on an assumed working life of the anchor of 50 years. The indications given on the working life cannot be interpreted as a guarantee given by the producer, but are to be regarded only as a means for choosing the products in relation to the expected economically reasonable working life of the works.

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

3.1 Mechanical resistance and stability (BWR 1)

Essential characteristic	Performance
Characteristic resistance for tension and shear loads	See Annex C 1 to C 5
Reduction factor for job site tests (β – factor)	See Annex C 1 to C 5
Edge distances and spacing	See Annex B 8, B 9
Displacement under shear and tension loads	See Annex C 1 to C 5
Durability	See Annex A 3

3.2 Safety in case of fire (BWR 2)

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

3.3 Hygiene, health and environment (BWR 3)

No performance determined.

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

According to the Decision 97/177/EC of the European Commission the system of assessment verification of constancy of performance (see Annex IX to Regulation (EU) 2024/3110) is system 1.

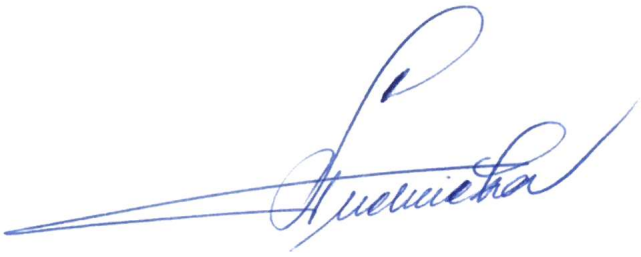
5. Technical details necessary for the implementation of the AVCP system, as provided in the applicable EAD

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

Issued in Prague on 30.01.2026

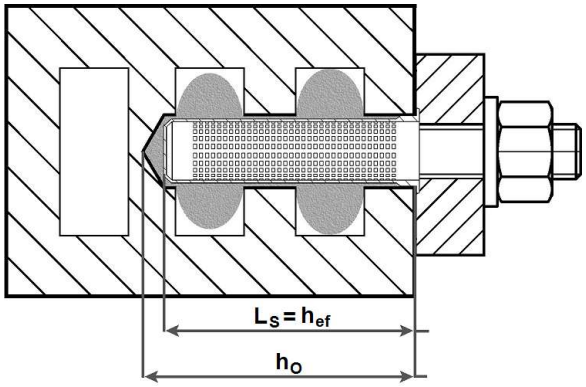
By

Ing. Jiří Studnička, Ph.D.
Head of the Technical Assessment Body

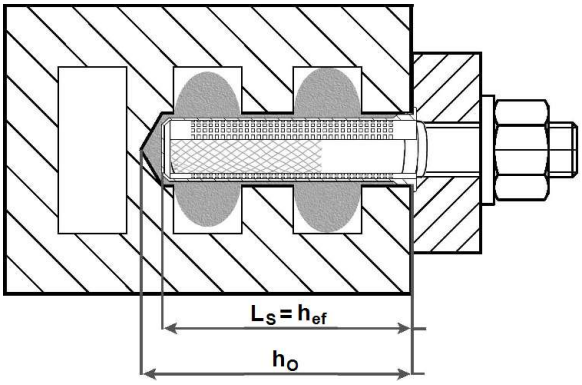


Installation in hollow or perforated brick masonry

Installation of anchor rod with sieve sleeve

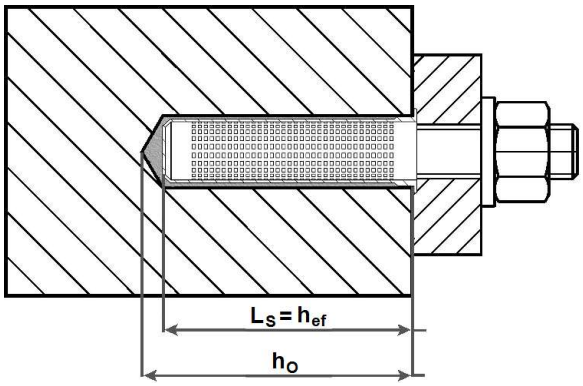


Installation of internal threaded socket with sieve sleeve

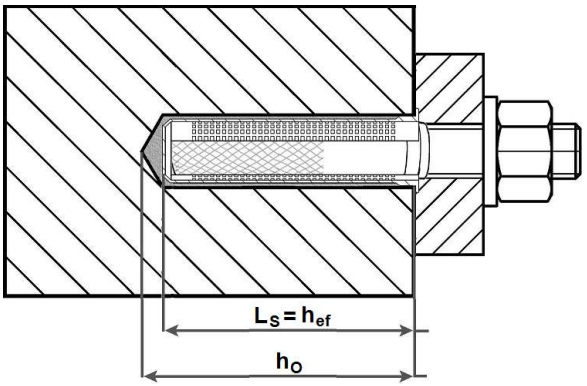


Installation in solid brick masonry

Installation of anchor rod with or without sieve sleeve

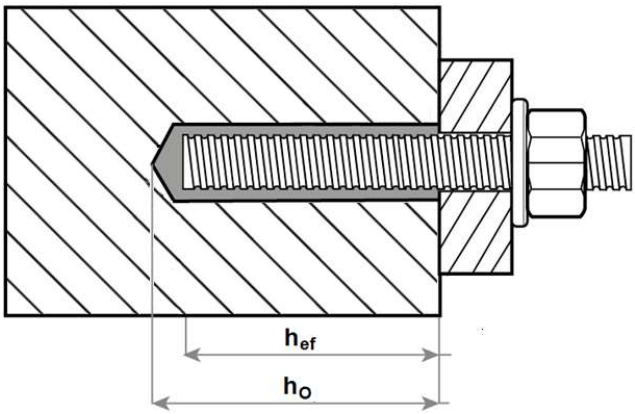


Installation of internal threaded socket with sieve sleeve

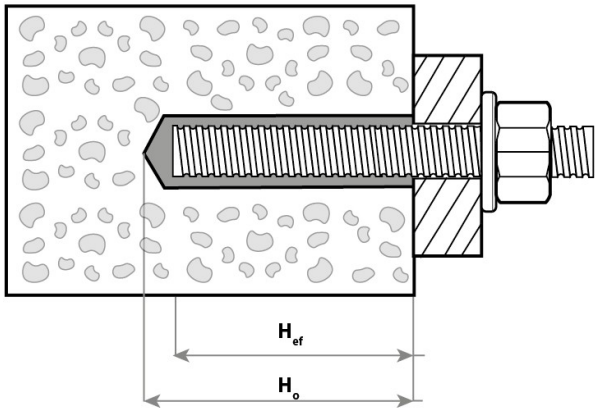


Installation in autoclaved aerated concrete

Installation of anchor rod without sieve sleeve



Installation of anchor rod without sieve sleeve



L_s = length of the sieve sleeve
h_{ef} = effective setting depth
h_0 = bore hole depth

WB300, WB300W, WB300T, WB300 Desert, WB300T Desert for masonry	**Annex A 1**
Product description Installed condition	

Coaxial cartridge

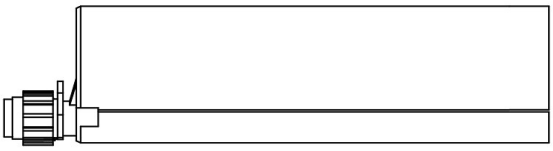
WB300, Desert, W, T, T Desert

150 ml
380 ml
400 ml
410 ml
420 ml

Side by side cartridge

WB300, Desert, W, T, T Desert

345 ml
825 ml



Two part foil in a single piston component cartridge

WB300, Desert, W, T, T Desert

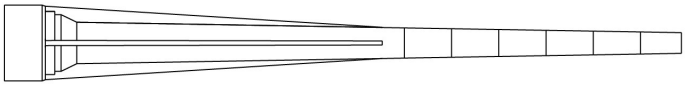
170 ml
300 ml
550 ml
850 ml

Marking of the mortar cartridges

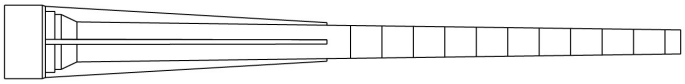
Identifying mark of the producer, Trade name, Charge code number, Storage life, Curing and processing time

Mixing nozzle

Standard Nozzle

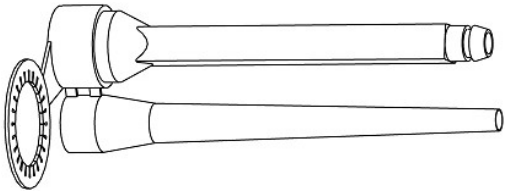


Wide-outlet Nozzle

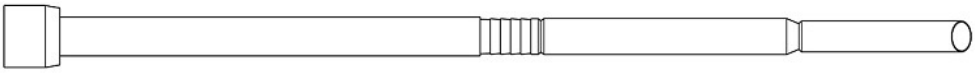


Mixer Nozzle EF

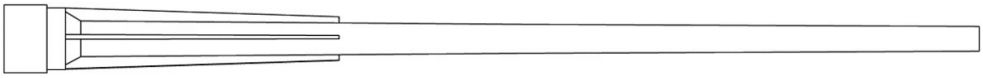
Short Nozzle



Long Nozzle

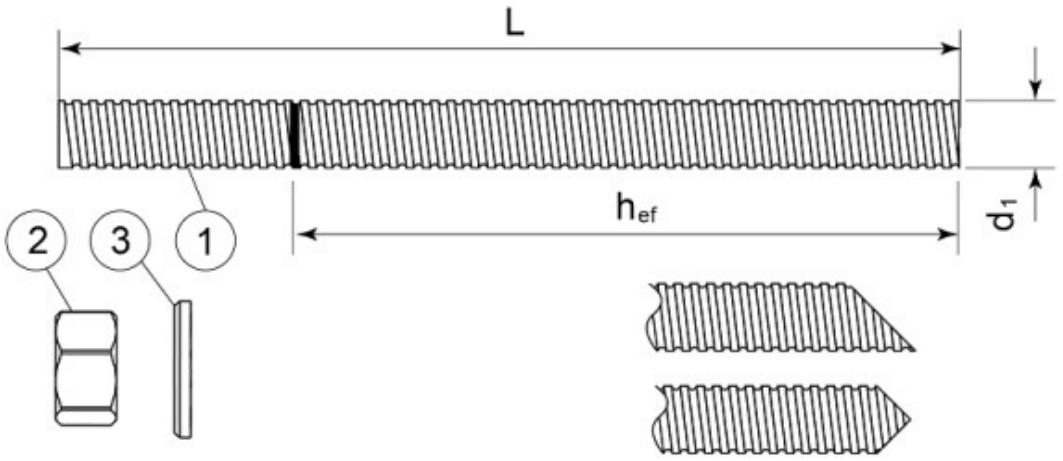


Nozzle 850



WB300, WB300W, WB300T, WB300 Desert, WB300T Desert for masonry	**Annex A 2**
Product description Injection system	

Threaded rod M6, M8, M10, M12, M16



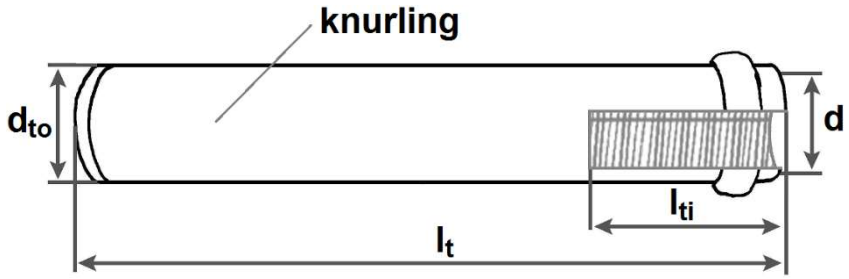
Standard commercial threaded rod with marked embedment depth

Part	Designation	Material
Steel, zinc plated ≥ 5 µm acc. to EN ISO 4042 or Steel, hot-dip galvanized ≥ 40 µm acc. to EN ISO 1461 and EN ISO 10684 or Steel, zinc diffusion coating ≥ 15 µm acc. to EN 13811		
1	Anchor rod	Steel, EN 10087 or EN 10263 Property class 4.6[1)], 5.8, 8.8, 10.9[2)] EN ISO 898-1
2	Hexagon nut EN ISO 4032	According to threaded rod, EN 20898-2
3	Washer EN ISO 887, EN ISO 7089, EN ISO 7093 or EN ISO 7094	According to threaded rod
Stainless steel		
1	Anchor rod	Material: A2-70, A4-70, A4-80, EN ISO 3506
2	Hexagon nut EN ISO 4032	According to threaded rod
3	Washer EN ISO 887, EN ISO 7089, EN ISO 7093 or EN ISO 7094	According to threaded rod
High corrosion resistant steel		
1	Anchor rod	Material: 1.4529, 1.4565, EN 10088-1
2	Hexagon nut EN ISO 4032	According to threaded rod
3	Washer EN ISO 887, EN ISO 7089, EN ISO 7093 or EN ISO 7094	According to threaded rod

[1)] Only for use in Autoclaved aerated concrete
[2)] Galvanized rod of high strength are sensitive to hydrogen induced brittle failure

WB300, WB300W, WB300T, WB300 Desert, WB300T Desert for masonry	**Annex A 3**
Product description Threaded rod and materials	

Internal threaded socket



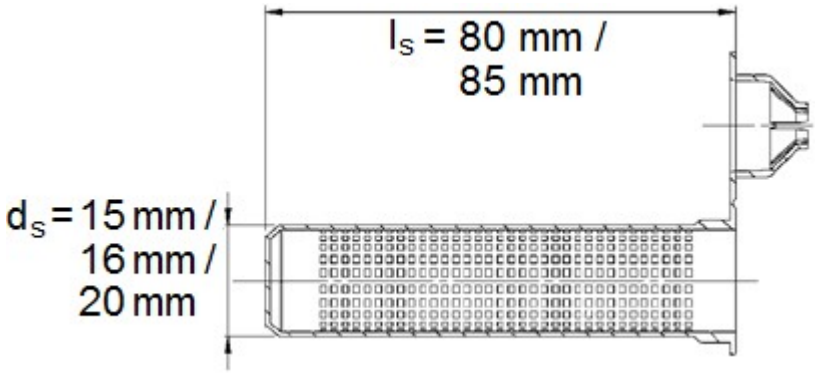
Marking:
Identifying mark of the producer “m”
Size of internal thread e.g. M8

Table A1: Dimensions of internal threaded socket

Internal threaded socket	Inner diameter d_{ti}	Outer diameter d_{to} [mm]	Length of the internal thread l_{ti} [mm]	Total length l_t [mm]
12 x 80	M8	12	30	80
14 x 80	M10	14	30	80
16 x 80	M12	16	30	80

Designation	Material
Internal threaded socket	strength class 5.8 EN ISO 898-1, galvanized ≥ 5 µm EN ISO 4042

Sieve sleeve



Types:
SH15/85
SH16/85
SH20/85

Designation	Material
Sieve sleeve	Polypropylene

WB300, WB300W, WB300T, WB300 Desert, WB300T Desert for masonry	
Product description Internal threaded socket and materials Sleeve	**Annex A 4**

Specifications of intended use

Anchorages subject to:
- Static and quasi-static loads

Base materials
- Solid brick masonry (Masonry group b), according to Annex B 2.
- Hollow brick masonry (Masonry group c), according to Annex B 2 to B 4.
- Autoclaved aerated concrete (Masonry group d), according to Annex B 5
- Mortar strength class of the masonry M2,5 at minimum according to EN 998-2:2010.
- For other bricks in solid masonry, hollow or perforated masonry or autoclaved aerated concrete the characteristic resistance of the anchorages may be determined by job site tests according to EOTA Technical Report TR 053 and under consideration of the β-factor to Annex C 1 to C 5.

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

Temperature range:
- **T**: -40°C to +80°C (max. short. term temperature +80°C and max. long term temperature +50°C)

Use conditions (Environmental conditions)
- (X1) Structures subject to dry, internal conditions
  (zinc coated steel, stainless steel, high corrosion resistance steel)
- (X2) Structures subject to external atmospheric exposure (including industrial and marine environment) or exposure in permanently damp internal condition, if no particular aggressive conditions exist
  (stainless steel A4, high corrosion resistant steel)
- (X3) Structures subject to external atmospheric exposure or exposure in permanently damp internal conditions or particularly aggressive conditions such as permanent or alternate immersion in seawater or the splash zone of seawater, chloride atmosphere of indoor swimming pools or atmosphere with extreme chemical pollution (e.g. in desulfurization plants or road tunnels, where de-icing materials are used
  (high corrosion resistant steel)

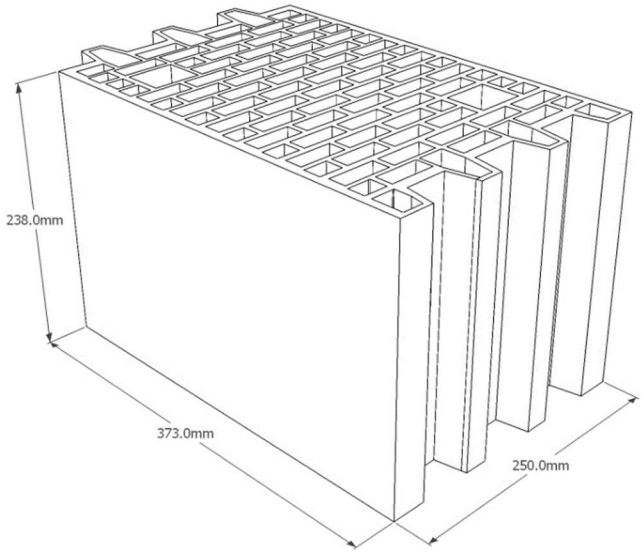
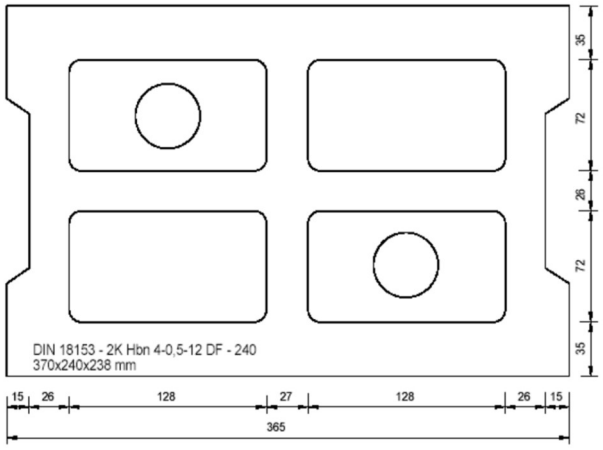
Use categories in respect of installation and use:
- Category d/d - Installation and use in structures subject to dry, internal conditions
- Category w/d - Installation in dry or wet substrate and use in structures subject to dry, internal conditions
- Category w/w - Installation and use in structures subject to dry or wet environmental conditions

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

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

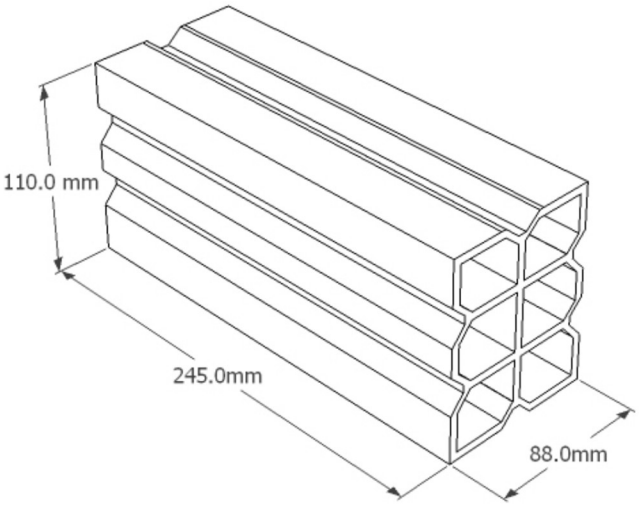
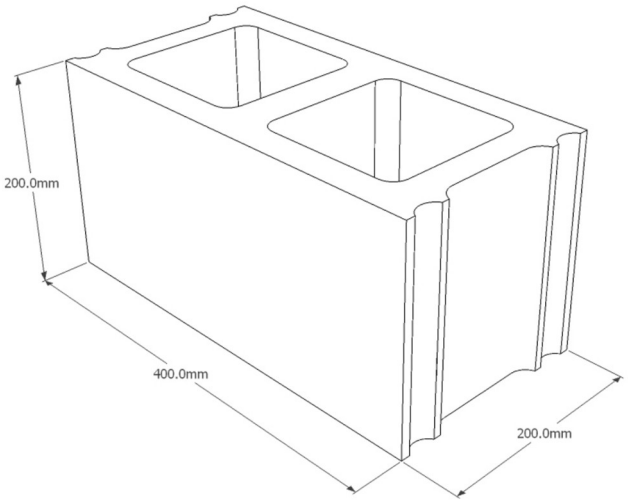
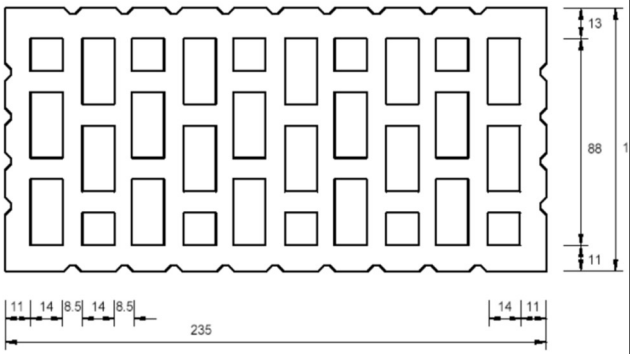
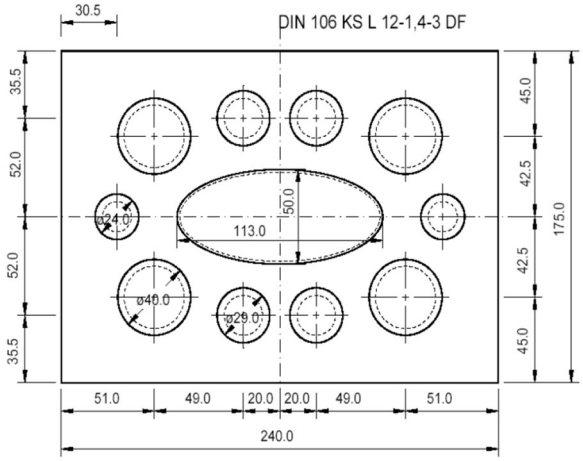
WB300, WB300W, WB300T, WB300 Desert, WB300T Desert for masonry	**Annex B 1**
Intended use Specifications	

Table B1: Types and dimensions of block and bricks

Brick N° 1	**Brick N° 2**
Solid clay brick Mz 12-2,0-NF according to EN 771-1 length/width/height = 240 mm/116 mm/71 mm $f_b \geq 12$ N/mm^2 / $\rho \geq 2{,}0$ kg/dm^3	Solid sand lime brick KS 12-2,0-NF according to EN 771-2 length/width/height = 240 mm/115 mm/70 mm $f_b \geq 12$ N/mm^2 / $\rho \geq 2{,}0$ kg/dm^3
Brick N° 3  Hollow clay brick Porotherm 25 P+W KL15 according to EN 771-1 length/width/height = 373 mm/250 mm/238 mm $f_b \geq 12$ N/mm^2 / $\rho \geq 0{,}9$ kg/dm^3	**Brick N° 4**  Concrete masonry unit Hbn 4-12DF according to EN 771-3 length/width/height = 370 mm/240 mm/238 mm $f_b \geq 4$ N/mm^2 / $\rho \geq 1{,}2$ kg/dm^3

WB300, WB300W, WB300T, WB300 Desert, WB300T Desert for masonry	
Intended use Brick types and properties	**Annex B 2**

Table B2: Types and dimensions of block and bricks

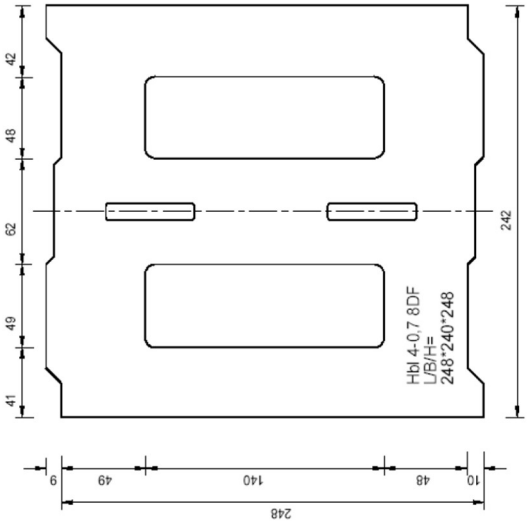
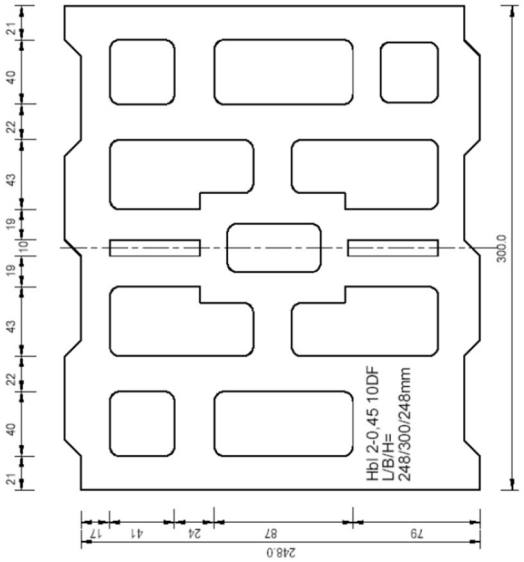
Brick N° 5  Hollow clay brick Hueco Doble according to EN 771-1 length/width/height = 245 mm/110 mm/88 mm $f_b \geq 2{,}5$ N/mm^2 / $\rho \geq 0{,}74$ kg/dm^3	**Brick N° 6**  Concrete hollow block Bloque Hormingon according to EN 771-3 length/width/height = 400 mm/200 mm/200 mm $f_b \geq 2{,}5$ N/mm^2 / $\rho \geq 1{,}7$ kg/dm^3
Brick N° 7  Hollow clay brick HLz 12-1,0-2DF according to EN 771-1 length/width/height = 235 mm/112 mm/115 mm $f_b \geq 12$ N/mm^2 / $\rho \geq 1{,}0$ kg/dm^3	**Brick N° 8**  Hollow sand lime brick KSL 12-1,4-3DF according to EN 771-2 length/width/height = 240 mm/175 mm/113 mm $f_b \geq 12$ N/mm^2 / $\rho \geq 1{,}4$ kg/dm^3

WB300, WB300W, WB300T, WB300 Desert, WB300T Desert for masonry

Intended use
Brick types and properties

Annex B 3

Table B3: Types and dimensions of block and bricks

Brick N° 9	**Brick N° 10**
	
Lightweight concrete hollow block Hbl 4-0,7-8DF according to EN 771-3 length/width/height = 250 mm/240 mm/248 mm $f_b \geq 4,0$ N/mm^2 / $\rho \geq 0,7$ kg/dm^3	Lightweight concrete hollow block Hbl 2-0,45-10DF according to EN 771-3 length/width/height = 250 mm/300 mm/248 mm $f_b \geq 2,0$ N/mm^2 / $\rho \geq 0,45$ kg/dm^3

WB300, WB300W, WB300T, WB300 Desert, WB300T Desert for masonry	
Intended use Brick types and properties	**Annex B 4**

Table B4: Types and dimensions of block and bricks

Brick No.	Strength class acc. to EN 771-4	L/W/H (mm)	f_b (N/mm^2)	ρ (kg/dm^3)
N° 11	Autoclaved aerated concrete AAC2	599/375/249	≥ 2,0	≥ 0,35
N° 12	Autoclaved aerated concrete AAC4	599/375/249	≥ 4,0	≥ 0,5
N° 13	Autoclaved aerated concrete AAC6	499/240/250	≥ 6,0	≥ 0,65

Applicator gun

A

B

C

D

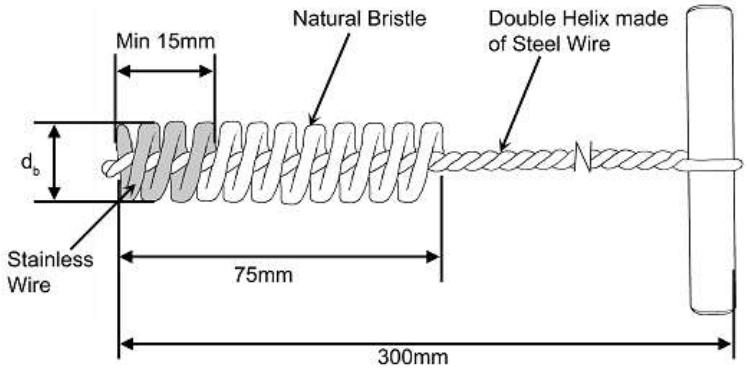
E

F

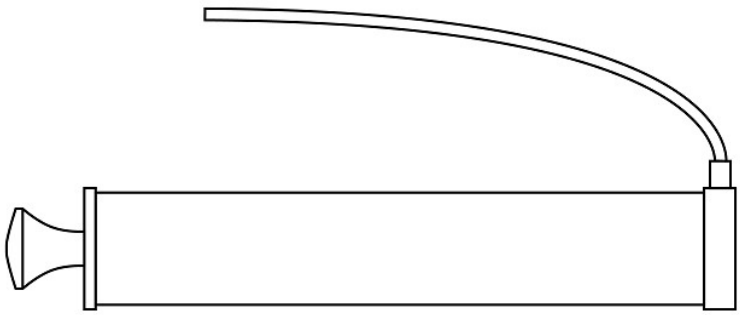
G

Applicator gun	A	B	C	D	E	F	G
Cartridge	Coaxial 380ml 400ml 410ml 420ml	Side by side 345ml	Foil capsule 170ml 300ml 550ml	Foil capsule 170ml 300ml	Coaxial 150ml	Side by side 825ml	Foil capsule 850ml

Cleaning brush

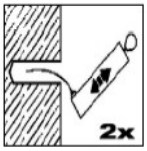
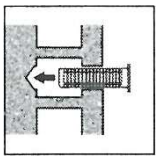
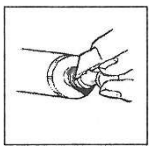
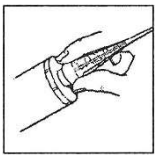
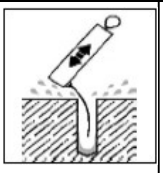
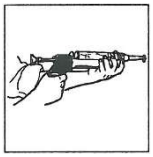
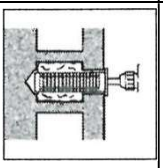
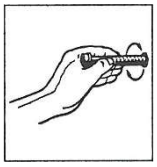
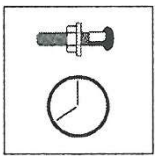
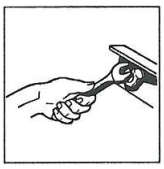


Cleaning pump



WB300, WB300W, WB300T, WB300 Desert, WB300T Desert for masonry	
Intended use Applicator guns Cleaning brush, Cleaning pump	**Annex B 6**

Installation instructions

	**1.** Drill the hole to the correct diameter and depth using a rotary percussive machine.		**2.** Use the Cleaning pump to clean the hole.
	**3.** Use the Cleaning brush to clean the hole. Diameter of Cleaning brush according to Tables B5, B7, B9.		**4.** Use the Cleaning pump to clean the hole.
	**5.** Use the Cleaning brush to clean the hole. Diameter of Cleaning brush according to Tables B5, B7, B9.		**6.** Use the Cleaning pump to clean the hole.
	**7.** If used in hollow or perforated brick masonry: Plug the centering cap and insert the correct perforated sleeve flush with the surface of the base material.		**8.** Once the hole is prepared, remove the screw cap from the cartridge.
	**9**. Attach the mixer nozzle and place the cartridge in the applicator gun.		**10.** Dispense the first part to waste, until an even colour is achieved.
	**11.** Remove any remaining water from the hole.		**12.** Insert the nozzle to the far end of the hole (using extension tubing if necessary) and inject the resin, withdrawing the nozzle/tube as the hole fills.
	**13.** If used in hollow or perforated brick masonry: Insert mixer nozzle to the end of the perforated sleeve and completely fill the sleeve with resin. Withdraw the mixer nozzle as the sleeve fills.		**14.** Immediately insert the fixing (steel element) slowly and with a slight twisting motion. Remove excess resin from around the mouth of the hole.
	**15.** Leave the fixing undisturbed until the cure time (see Table B11) has elapsed.		**16.** Attach the fixture and tighten the nut. Maximum installation torque moment according to Tables B5, B7, B9.

WB300, WB300W, WB300T, WB300 Desert, WB300T Desert for masonry	**Annex B 7**
Intended use Installation instructions	

Table B5: Installation parameters in solid and hollow masonry

Base material			Brick No. 1 - 10						
Anchor type			Anchor rod with sleeve				Internal threaded socket with sleeve		
Size			M8	M10	M12	M16	M8	M10	M12
Internal threaded socket	d_{to}xl_t	[mm]	-	-	-	-	12x80	14x80	16x80
Sieve sleeve	l_s	[mm]	85	85	85	85	85	85	85
	d_s	[mm]	15/16	15/16	15/16	20	15/16	20	20
Nominal drill hole diameter	d_0	[mm]	15/16	15/16	15/16	20	15/16	20	20
Diameter of cleaning brush	d_b	[mm]	$20^{\pm1}$	$20^{\pm1}$	$20^{\pm1}$	$22^{\pm1}$	$20^{\pm1}$	$22^{\pm1}$	$22^{\pm1}$
Depth of the drill hole	h_0	[mm]	90				90		
Effective anchorage depth	h_{ef}	[mm]	85				80		
Diameter of clearance hole in the fixture	$d_f \leq$	[mm]	9	12	14	18	9	12	14
Torque moment	$T_{inst} \leq$	[Nm]	2						

Table B6: Edge distances and spacing in solid and hollow masonry

Anchor rod									
Base material [1)]	**M8**			**M10, M12**			**M16**		
	$c_{cr} = c_{min}$	$s_{cr\,II} = s_{min\,II}$	$s_{cr\perp} = s_{min\perp}$	$c_{cr} = c_{min}$	$s_{cr\,II} = s_{min\,II}$	$s_{cr\perp} = s_{min\perp}$	$c_{cr} = c_{min}$	$s_{cr\,II} = s_{min\,II}$	$s_{cr\perp} = s_{min\perp}$
	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
Brick N° 1	128	255	255	128	255	255	128	255	255
Brick N° 2	128	255	255	128	255	255	128	255	255
Brick N° 3	100	373	238	100	373	238	120	373	238
Brick N° 4	100	370	238	100	370	238	120	370	238
Brick N° 5	100	245	110	100	245	110	120	245	110
Brick N° 6	100	400	200	-	-	-	120	400	200
Brick N° 7	100	235	115	100	235	115	120	235	115
Brick N° 8	100	240	113	100	240	113	120	240	113
Brick N° 9	100	250	248	100	250	248	120	250	248
Brick N° 10	100	250	248	100	250	248	-	-	-
Internal threaded socket									
Base material [1)]	**M8**			**M10**			**M12**		
	$c_{cr} = c_{min}$	$s_{cr\,II} = s_{min\,II}$	$s_{cr\perp} = s_{min\perp}$	$c_{cr} = c_{min}$	$s_{cr\,II} = s_{min\,II}$	$s_{cr\perp} = s_{min\perp}$	$c_{cr} = c_{min}$	$s_{cr\,II} = s_{min\,II}$	$s_{cr\perp} = s_{min\perp}$
	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
Brick N° 1	128	255	255	128	255	255	128	255	255
Brick N° 2	128	255	255	128	255	255	128	255	255
Brick N° 4	100	370	238	120	370	238	120	370	238
Brick N° 7	100	235	115	120	235	115	120	235	115
Brick N° 8	100	240	113	120	240	113	120	240	113
Brick N° 9	-	-	-	120	250	248	120	250	248
Brick N° 10	100	250	248	120	250	248	120	250	248

[1)] Brick N° according to Annex B 2 to B 4

WB300, WB300W, WB300T, WB300 Desert, WB300T Desert for masonry

Intended use
Installation parameters

Annex B 8

Table B7: Installation parameters in solid masonry without sleeve

Base material			Brick No. 1 - 2				
Anchor type			Anchor rod without sleeve				
Size			M6	M8	M10	M12	M16
Nominal drill hole diameter	d_0	[mm]	8	10	12	14	18
Diameter of cleaning brush	d_b	[mm]	$9^{\pm1}$	$14^{\pm1}$	$14^{\pm1}$	$14^{\pm1}$	$20^{\pm1}$
Depth of the drill hole	h_0	[mm]	80	90			
Effective anchorage depth	h_{ef}	[mm]	80	90			
Diameter of clearance hole in the fixture	$d_f \leq$	[mm]	7	9	12	14	18
Torque moment	$T_{inst} \leq$	[Nm]	2				

Table B8: Edge distances and spacing in solid masonry without sleeve

Anchor rod						
Base material [1)]	**M6**			**M8, M10, M12, M16**		
	$c_{cr} = c_{min}$	$s_{cr\,\parallel} = s_{min\,\parallel}$	$s_{cr\perp} = s_{min\perp}$	$c_{cr} = c_{min}$	$s_{cr\,\parallel} = s_{min\,\parallel}$	$s_{cr\perp} = s_{min\perp}$
	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
Brick N° 1	120	240	240	135	270	270
Brick N° 2	120	240	240	135	270	270

[1)] Brick N° according to Annex B 2

Table B9: Installation parameters in autoclaved aerated concrete

Base material			Brick No. 11 - 13			
Anchor type			Anchor rod without sleeve			
Size			M8	M10	M12	M16
Nominal drill hole diameter	d_0	[mm]	10	12	14	18
Diameter of cleaning brush	d_b	[mm]	$14^{\pm1}$	$14^{\pm1}$	$20^{\pm1}$	$20^{\pm1}$
Depth of the drill hole	h_0	[mm]	80		95	105
Effective anchorage depth	h_{ef}	[mm]	75		90	100
Diameter of clearance hole in the fixture	$d_f \leq$	[mm]	9	12	14	18
Torque moment	$T_{inst} \leq$	[Nm]	2			

Table B10: Edge distances and spacing autoclaved aerated concrete

Anchor rod									
Base material [1)]	**M8, M10**			**M12**			**M16**		
	$c_{cr} = c_{min}$	$s_{cr\,\parallel} = s_{min\,\parallel}$	$s_{cr\perp} = s_{min\perp}$	$c_{cr} = c_{min}$	$s_{cr\,\parallel} = s_{min\,\parallel}$	$s_{cr\perp} = s_{min\perp}$	$c_{cr} = c_{min}$	$s_{cr\,\parallel} = s_{min\,\parallel}$	$s_{cr\perp} = s_{min\perp}$
	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
Brick N° 11	113	225	225	135	270	270	150	300	300
Brick N° 12	113	225	225	135	270	270	150	300	300
Brick N° 13	113	225	225	135	270	270	150	300	300

[1)] Brick N° according to Annex B 5

WB300, WB300W, WB300T, WB300 Desert, WB300T Desert for masonry

Intended use
Installation parameters

Annex B 9

Table B11: Minimum curing time

WB300			
Resin cartridge temperature [°C]	**T Work [mins]**	**Base material Temperature [°C]**	**T Load [mins]**
min +5	18	min +5	145
+5 to +10	10	+5 to +10	
+10 to +20	6	+10 to +20	85
+20 to +25	5	+20 to +25	50
+25 to +30	4	+25 to +30	40
+30		+30	35

WB300 Desert			
Resin cartridge temperature [°C]	**T Work [mins]**	**Base material Temperature [°C]**	**T Load [mins]**
+20 to +25	5	+20 to +25	50
+25 to +30	4	+25 to +30	40
+30		+30	35

WB300W			
Resin cartridge temperature [°C]	**T Work [mins]**	**Base material Temperature [°C]**	**T Load [mins]**
+20	90	-20[1)]	110 hours
+20	35	-15[1)]	55 hours
min +5	10	-10	30 hours
min +5	3,5	-5	9 hours
min +5	2	0	3 hours
min +5	5	0 to +5	125
+5 to +10	3,5	+5 to +10	60
+10 to +20	2	+10 to +20	40
+20 to +25	1,5	+20 to +25	20
+25 to +30	1	+25 to +30	15
+30		+30	10

[1)] characteristic values of resistance see Annex C 3 and C 5

WB300T			
Resin cartridge temperature [°C]	**T Work [mins]**	**Base material Temperature [°C]**	**T Load [mins]**
min +10	30	min +10	5 hours
+10 to +20	15	+10 to +20	
+20 to +25	10	+20 to +25	145
+25 to +30	7,5	+25 to +30	85
+30 to +35	5	+30 to +35	50
+35 to +40	3,5	+35 to +40	40
+40 to +45	2,5	+40 to +45	35
+45		+45	12

WB300T Desert			
Resin cartridge temperature [°C]	**T Work [mins]**	**Base material Temperature [°C]**	**T Load [mins]**
+20 to +25	10	+20 to +25	145
+25 to +30	7,5	+25 to +30	85
+30 to +35	5	+30 to +35	50
+35 to +40	3,5	+35 to +40	40
+40 to +45	2,5	+40 to +45	35
+45		+45	12

T work is typical gel time at highest temperature T load is set at the lowest temperature

Table C1: Characteristic resistance under tension and shear loading with sleeve

Base material	Anchor rods $N_{Rk} = V_{Rk}$ [kN] 1)								Internal threaded sockets $N_{Rk} = V_{Rk}$ [kN] 1)					
	Use conditions d/d, w/d				Use conditions w/w				Use conditions d/d, w/d			Use conditions w/w		
	M8	M10	M12	M16	M8	M10	M12	M16	M8	M10	M12	M8	M10	M12
Sleeve	16/85	16/85	16/85	20/85	16/85	16/85	16/85	20/85	16/85	20/85	20/85	16/85	20/85	20/85
Brick N° 1	1,5	1,5	1,5	2,0	1,5	1,5	1,5	2,0	1,5	2,5	3,5	1,5	2,5	3,5
Brick N° 2	0,6	0,75	0,75	1,5	0,6	0,75	0,75	1,2	1,5	1,2	0,9	1,5	1,2	0,9
Brick N° 3	1,2	1,5	1,5	1,5	1,2	1,2	1,2	1,5	-	-	-	-	-	-
Brick N° 4	2,0	1,5	1,5	2,0	2,0	1,5	1,5	2,0	0,5	0,9	0,9	0,5	0,9	0,9
Brick N° 5	0,6	0,5	0,5	0,6	0,6	0,5	0,6	0,6	-	-	-	-	-	-
Brick N° 6	0,6	-	-	0,6	0,5	-	-	0,5	-	-	-	-	-	-
Brick N° 7	2,0	1,5	1,5	1,5	1,5	1,2	1,2	1,2	1,5	2,0	2,0	1,2	1,5	2,0
Brick N° 8	0,5	0,9	0,9	0,5	0,5	0,75	0,75	0,5	-	0,75	0,4	-	0,6	0,6
Brick N° 9	0,6	1,2	1,2	1,2	0,5	0,9	0,9	0,9	-	0,3	0,5	-	0,3	0,5
Brick N° 10	0,5	0,3	0,3	-	0,5	0,3	0,3	-	0,5	0,3	0,6	0,5	0,3	0,6

1) For design according TR 054: $N_{Rk} = N_{Rk,p} = N_{Rk,b} = N_{Rk,s}$; $N_{Rk,pb}$ according to TR 054
For $V_{Rk,s}$ see Annex C1, Table C2; Calculation of $V_{Rk,pb}$ and $V_{Rk,c}$ according to TR 054

Table C2: Characteristic resistance under shear loading – steel failure

Size			M8	M10	M12	M16	Partial safety factor γ_{Ms}
Characteristic shear resistance							
Steel grade **5.8**	$V_{Rk,s}$	[kN]	9	15	21	39	1,25
Steel grade **8.8**	$V_{Rk,s}$	[kN]	15	23	34	63	1,25
Steel grade **10.9**	$V_{Rk,s}$	[kN]	18	29	42	79	1,5
Stainless steel grade **A2-70**, **A4-70**	$V_{Rk,s}$	[kN]	13	20	30	55	1,56
Stainless steel grade **A4-80**	$V_{Rk,s}$	[kN]	15	23	34	63	1,33
Stainless steel grade **1.4529** strength class **70**	$V_{Rk,s}$	[kN]	13	20	30	55	1,25
Stainless steel grade **1.4565** strength class **70**	$V_{Rk,s}$	[kN]	13	20	30	55	1,56
Characteristic bending moment							
Steel grade **5.8**	$M_{Rk,s}$	[N.m]	19	37	66	166	1,25
Steel grade **8.8**	$M_{Rk,s}$	[N.m]	30	60	105	266	1,25
Steel grade **10.9**	$M_{Rk,s}$	[N.m]	37	75	131	333	1,5
Stainless steel grade **A2-70**, **A4-70**	$M_{Rk,s}$	[N.m]	26	52	92	233	1,56
Stainless steel grade **A4-80**	$M_{Rk,s}$	[N.m]	30	60	105	266	1,33
Stainless steel grade **1.4529** strength class **70**	$M_{Rk,s}$	[N.m]	26	52	92	233	1,25
Stainless steel grade **1.4565** strength class **70**	$M_{Rk,s}$	[N.m]	26	52	92	233	1,56

Table C3: Displacements under tension and shear load

Base material	F [kN]	δ_{N0} [mm]	$\delta_{N\infty}$ [mm]	δ_{V0} [mm]	$\delta_{V\infty}$ [mm]
Solid bricks	$N_{Rk} / (\gamma_F \cdot \gamma_M)$	0,6	1,2	1,0 1)	1,5 1)
Perforated and hollow bricks		0,14	0,28	1,0 1)	1,5 1)

1) the hole gap between bolt and fixture shall be considered additionally

Table C4: β - factors for job site tests according to TR 053 with sleeve

Brick N°	N° 1	N° 2	N° 3	N° 4	N° 5	N° 6	N° 7	N° 8	N° 9	N° 10
β - factor – **d/d**, **w/d**	0,65	0,26	0,65	0,6	0,65	0,59	0,62	0,22	0,36	0,42
β - factor – **w/w**	0,58	0,22	0,58	0,53	0,58	0,53	0,55	0,18	0,31	0,37

WB300, WB300W, WB300T, WB300 Desert, WB300T Desert for masonry

Performances
Characteristic resistance, displacement
β-factors for job site testing under tension load

Annex C 1

Table C5: Characteristic resistance under tension and shear loading without sleeve

Base material	Anchor rods $N_{Rk} = V_{Rk}$ [kN] 1)									
	Use conditions d/d, w/d					Use conditions w/w				
	M6	M8	M10	M12	M16	M6	M8	M10	M12	M16
Brick N° 1	2,0	2,0	2,0	2,0	2,5	2,0	2,0	2,0	1,5	2,0
Brick N° 2	1,2	0,9	1,5	0,9	1,2		0,9	1,2	0,75	1,2

1) For design according TR 054: $N_{Rk} = N_{Rk,p} = N_{Rk,b} = N_{Rk,s}$; $N_{Rk,pb}$ according to TR 054
For $V_{Rk,s}$ see Annex C1, Table C2; Calculation of $V_{Rk,pb}$ and $V_{Rk,c}$ according to TR 054

Table C6: Characteristic resistance under shear loading – steel failure

Size			M6	M8	M10	M12	M16	Partial safety factor γ_{Ms}
Characteristic shear resistance								
Steel grade **5.8**	$V_{Rk,s}$	[kN]	5	9	15	21	39	1,25
Steel grade **8.8**	$V_{Rk,s}$	[kN]	8	15	23	34	63	1,25
Steel grade **10.9**	$V_{Rk,s}$	[kN]	10	18	29	42	79	1,5
Stainless steel grade **A2-70**, **A4-70**	$V_{Rk,s}$	[kN]	7	13	20	30	55	1,56
Stainless steel grade **A4-80**	$V_{Rk,s}$	[kN]	8	15	23	34	63	1,33
Stainless steel grade **1.4529** strength class **70**	$V_{Rk,s}$	[kN]	7	13	20	30	55	1,25
Stainless steel grade **1.4565** strength class **70**	$V_{Rk,s}$	[kN]	7	13	20	30	55	1,56
Characteristic bending moment								
Steel grade **5.8**	$M_{Rk,s}$	[N.m]	8	19	37	66	166	1,25
Steel grade **8.8**	$M_{Rk,s}$	[N.m]	12	30	60	105	266	1,25
Steel grade **10.9**	$M_{Rk,s}$	[N.m]	15	37	75	131	333	1,5
Stainless steel grade **A2-70**, **A4-70**	$M_{Rk,s}$	[N.m]	11	26	52	92	233	1,56
Stainless steel grade **A4-80**	$M_{Rk,s}$	[N.m]	12	30	60	105	266	1,33
Stainless steel grade **1.4529** strength class **70**	$M_{Rk,s}$	[N.m]	11	26	52	92	233	1,25
Stainless steel grade **1.4565** strength class **70**	$M_{Rk,s}$	[N.m]	11	26	52	92	233	1,56

Table C7: Displacements under tension and shear load

Base material	F [kN]	δ_{N0} [mm]	$\delta_{N\infty}$ [mm]	δ_{V0} [mm]	$\delta_{V\infty}$ [mm]
Brick N° 1	$N_{Rk} / (\gamma_F \cdot \gamma_M)$	0,1	0,2	0,5 1)	0,7 1)
Brick N° 2		0,1	0,2	0,1 1)	0,2 1)

1) the hole gap between bolt and fixture shall be considered additionally

Table C8: β - factors for job site tests according to TR 053 without sleeve

Brick N°	N° 1	N° 2
β - factor – **d/d**, **w/d**	0,65	0,25
β - factor – **w/w**	0,58	0,22

WB300, WB300W, WB300T, WB300 Desert, WB300T Desert for masonry

Performances
Characteristic resistance, displacement
β-factors for job site testing under tension load

Annex C 2

Table C9: Characteristic resistance under tension and shear loading with sleeve WB300W with installation temperature < -10°C

Base material	Anchor rods $N_{Rk} = V_{Rk}$ [kN] 1)								Internal threaded sockets $N_{Rk} = V_{Rk}$ [kN] 1)					
	Use conditions d/d, w/d				Use conditions w/w				Use conditions d/d, w/d			Use conditions w/w		
	M8	M10	M12	M16	M8	M10	M12	M16	M8	M10	M12	M8	M10	M12
Sleeve	16/85	16/85	16/85	20/85	16/85	16/85	16/85	20/85	16/85	20/85	20/85	16/85	20/85	20/85
Brick N° 1	1,2	1,2	1,2	1,5	1,2	1,2	1,2	1,5	1,2	2,0	3,0	1,2	2,0	3,0
Brick N° 2	0,5	0,6	0,6	1,2	0,5	0,6	0,6	0,9	1,2	0,9	0,75	1,2	0,9	0,75
Brick N° 3	0,9	1,2	1,2	1,2	0,9	0,9	0,9	1,2	-	-	-	-	-	-
Brick N° 4	1,5	1,2	1,2	1,5	1,5	1,2	1,2	1,5	0,4	0,75	0,75	0,4	0,75	0,75
Brick N° 5	0,5	0,4	0,4	0,5	0,5	0,4	0,5	0,5	-	-	-	-	-	-
Brick N° 6	0,5	-	-	0,5	0,4	-	-	0,4	-	-	-	-	-	-
Brick N° 7	1,5	1,2	1,2	1,2	1,2	0,9	0,9	0,9	1,2	1,5	1,5	0,9	1,2	1,5
Brick N° 8	0,4	0,75	0,75	0,4	0,4	0,6	0,6	0,4	-	0,6	0,3	-	0,5	0,5
Brick N° 9	0,5	0,9	0,9	0,9	0,4	0,75	0,75	0,75	-	-	0,4	-	-	0,4
Brick N° 10	0,4	-	-	-	0,4	-	-	-	0,4	-	0,5	0,4	-	0,5

1) For design according TR 054: $N_{Rk} = N_{Rk,p} = N_{Rk,b} = N_{Rk,s}$; $N_{Rk,pb}$ according to TR 054
For $V_{Rk,s}$ see Annex C1, Table C2; Calculation of $V_{Rk,pb}$ and $V_{Rk,c}$ according to TR 054

Table C10: Characteristic resistance under tension and shear loading without sleeve WB300W with installation temperature < -10°C

Base material	Anchor rods $N_{Rk} = V_{Rk}$ [kN] 1)									
	Use conditions d/d, w/d					Use conditions w/w				
	M6	M8	M10	M12	M16	M6	M8	M10	M12	M16
Brick N° 1	1,5	1,5	1,5	1,5	2,0	1,2	1,5	1,5	1,2	1,5
Brick N° 2	0,9	0,75	1,2	0,75	0,9		0,75	0,9	0,6	0,9

1) For design according TR 054: $N_{Rk} = N_{Rk,p} = N_{Rk,b} = N_{Rk,s}$; $N_{Rk,pb}$ according to TR 054
For $V_{Rk,s}$ see Annex C1, Table C2; Calculation of $V_{Rk,pb}$ and $V_{Rk,c}$ according to TR 054

Table C11: Characteristic resistance under shear loading – steel failure

Size	M6	M8	M10	M12	M16	Partial safety factor γ_{Ms}
See Annex C 1 or C 2						

Table C12: Displacements under tension and shear load

Base material	F [kN]	δ_{N0} [mm]	$\delta_{N\infty}$ [mm]	δ_{V0} [mm]	$\delta_{V\infty}$ [mm]
See Annex C 1 or C 2					

Table C13: β - factors for job site tests according to TR 053 with sleeve WB300W with installation temperature < -10°C

Brick N°	N° 1	N° 2	N° 3	N° 4	N° 5	N° 6	N° 7	N° 8	N° 9	N° 10
β - factor – **d/d**, **w/d**	0,62	0,24	0,62	0,57	0,62	0,57	0,6	0,20	0,34	0,40
β - factor – **w/w**	0,55	0,21	0,55	0,51	0,55	0,51	0,53	0,18	0,30	0,36

Table C14: β - factors for job site tests according to TR 053 without sleeve WB300W with installation temperature < -10°C

Brick N°	N° 1	N° 2
β - factor – **d/d**, **w/d**	0,62	0,24
β - factor – **w/w**	0,55	0,21

WB300W
for masonry

Performances
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Annex C 3

Table C15: Characteristic resistance under tension and shear loading

Base material	Anchor rods $N_{Rk} = V_{Rk}$ [kN] [1]											
	Use conditions d/d				Use conditions w/d				Use conditions w/w			
	M8	M10	M12	M16	M8	M10	M12	M16	M8	M10	M12	M16
Brick N° 11	0,75	0,75	0,9	1,5	0,6	0,75	0,75	1,2	0,6	0,75	0,75	1,2
Brick N° 12	1,2	1,5	2,0	3,5	0,9	1,2	1,5	2,5	0,9	1,2	1,5	2,5
Brick N° 13	3,0	3,0	4,0	5,0	2,5	2,5	3,5	4,0	2,0	2,0	3,0	3,5

[1] For design according TR 054: $N_{Rk} = N_{Rk,p} = N_{Rk,b} = N_{Rk,s}$; $N_{Rk,pb}$ according to TR 054
For $V_{Rk,s}$ see Annex C1, Table C2; Calculation of $V_{Rk,pb}$ and $V_{Rk,c}$ according to TR 054

Table C16: Characteristic resistance under shear loading – steel failure

Size			M8	M10	M12	M16	Partial safety factor γ_{Ms}
Characteristic shear resistance							
Steel grade **4.6**	$V_{Rk,s}$	[kN]	7	11	17	31	1,67
Steel grade **5.8**	$V_{Rk,s}$	[kN]	9	15	21	39	1,25
Steel grade **8.8**	$V_{Rk,s}$	[kN]	15	23	34	63	1,25
Steel grade **10.9**	$V_{Rk,s}$	[kN]	18	29	42	79	1,5
Stainless steel grade **A2-70**, **A4-70**	$V_{Rk,s}$	[kN]	13	20	30	55	1,56
Stainless steel grade **A4-80**	$V_{Rk,s}$	[kN]	15	23	34	63	1,33
Stainless steel grade **1.4529** strength class **70**	$V_{Rk,s}$	[kN]	13	20	30	55	1,25
Stainless steel grade **1.4565** strength class **70**	$V_{Rk,s}$	[kN]	13	20	30	55	1,56
Characteristic bending moment							
Steel grade **4.6**	$M_{Rk,s}$	[N.m]	15	30	52	133	1,67
Steel grade **5.8**	$M_{Rk,s}$	[N.m]	19	37	66	166	1,25
Steel grade **8.8**	$M_{Rk,s}$	[N.m]	30	60	105	266	1,25
Steel grade **10.9**	$M_{Rk,s}$	[N.m]	37	75	131	333	1,5
Stainless steel grade **A2-70**, **A4-70**	$M_{Rk,s}$	[N.m]	26	52	92	233	1,56
Stainless steel grade **A4-80**	$M_{Rk,s}$	[N.m]	30	60	105	266	1,33
Stainless steel grade **1.4529** strength class **70**	$M_{Rk,s}$	[N.m]	26	52	92	233	1,25
Stainless steel grade **1.4565** strength class **70**	$M_{Rk,s}$	[N.m]	26	52	92	233	1,56

Table C17: Displacements under tension and shear load

Size			M8	M10	M12	M16
Load	F	[kN]	$N_{Rk} / (\gamma_F \cdot \gamma_M)$			
AAC2	δ_{N0}	[mm]	0,36	0,34	0,35	0,77
	$\delta_{N\infty}$	[mm]	0,73	0,68	0,70	1,54
	δ_{V0}	[mm]	0,34	0,10	0,11	0,31
	$\delta_{V\infty}$	[mm]	0,5	0,15	0,16	0,45
AAC4	δ_{N0}	[mm]	0,36	0,34	0,35	0,77
	$\delta_{N\infty}$	[mm]	0,73	0,68	0,70	1,54
	δ_{V0}	[mm]	0,73	0,54	0,29	0,33
	$\delta_{V\infty}$	[mm]	1,09	0,81	0,44	0,5
AAC6	δ_{N0}	[mm]	0,07	0,04	0,05	0,07
	$\delta_{N\infty}$	[mm]	0,14	0,07	0,10	0,14
	δ_{V0}	[mm]	0,73	0,54	0,29	0,33
	$\delta_{V\infty}$	[mm]	1,09	0,81	0,44	0,5

[1] the hole gap between bolt and fixture shall be considered additionally

Table C18: β - factors for job site tests according to TR 053

Brick N°	N° 11	N° 12	N° 13
β - factor - Use conditions **d/d**	0,97	0,97	0,97
β - factor - Use conditions **w/d**	0,81	0,81	0,81
β - factor - Use conditions **w/w**	0,72	0,72	0,72

WB300, WB300W, WB300T, WB300 Desert, WB300T Desert for masonry

Performances
Characteristic resistance, displacement
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Annex C 4

Table C19: Characteristic resistance under tension and shear loading
WB300W with installation temperature < -10°C

Base material	Anchor rods $N_{Rk} = V_{Rk}$ [kN] [1]											
	Use conditions d/d				Use conditions w/d				Use conditions w/w			
	M8	M10	M12	M16	M8	M10	M12	M16	M8	M10	M12	M16
Brick N° 11	0,6	0,6	0,75	1,2	0,5	0,6	0,6	0,9	0,5	0,6	0,6	0,9
Brick N° 12	0,9	1,2	1,5	3,0	0,75	0,9	1,2	2,0	0,75	0,9	1,2	2,0
Brick N° 13	2,5	2,5	3,5	4,5	2,0	2,0	3,0	3,5	1,5	1,5	2,5	3,0

[1] For design according TR 054: $N_{Rk} = N_{Rk,p} = N_{Rk,b} = N_{Rk,s}$; $N_{Rk,pb}$ according to TR 054
For $V_{Rk,s}$ see Annex C1, Table C2; Calculation of $V_{Rk,pb}$ and $V_{Rk,c}$ according to TR 054

Table C20: Characteristic resistance under shear loading – steel failure

Size	M6	M8	M10	M12	M16	Partial safety factor γ_{Ms}
See Annex C 4						

Table C21: Displacements under tension and shear load

Size	M6	M8	M10	M12	M16
See Annex C 4					

[1] the hole gap between bolt and fixture shall be considered additionally

Table C22: β - factors for job site tests according to TR 053
WB300W with installation temperature < -10°C

Brick N°	N° 11	N° 12	N° 13
β - factor - Use conditions **d/d**	0,92	0,92	0,92
β - factor - Use conditions **w/d**	0,77	0,77	0,77
β - factor - Use conditions **w/w**	0,69	0,69	0,69

WB300W
for masonry

Performances
Characteristic resistance, displacement
β-factors for job site testing under tension load

Annex C 5