



Approval body for construction products and types of construction

#### **Bautechnisches Prüfamt**

An institution established by the Federal and Laender Governments



# European Technical Assessment

# ETA-08/0190 of 5 September 2017

English translation prepared by DIBt - Original version in German language

#### **General Part**

Technical Assessment Body issuing the European Technical Assessment:

Trade name of the construction product

Product family to which the construction product belongs

Manufacturer

Manufacturing plant

This European Technical Assessment contains

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

Würth Plastic Anchor W-UR

Plastic anchor for multiple use in concrete and masonry for non-structural applications

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

Werk 2

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

ETAG 020, edition March 2012, used as EAD according to Article 66 Paragraph 3 of Regulation (EU) No 305/2011.



#### European Technical Assessment ETA-08/0190 English translation prepared by DIBt

Page 2 of 88 | 5 September 2017

The European Technical Assessment is issued by the Technical Assessment Body in its official language. Translations of this European Technical Assessment in other languages shall fully correspond to the original issued document and shall be identified as such.

Communication of this European Technical Assessment, including transmission by electronic means, shall be in full. However, partial reproduction may only be made with the written consent of the issuing Technical Assessment Body. Any partial reproduction shall be identified as such.

This European Technical Assessment may be withdrawn by the issuing Technical Assessment Body, in particular pursuant to information by the Commission in accordance with Article 25(3) of Regulation (EU) No 305/2011.



Page 3 of 88 | 5 September 2017

# European Technical Assessment ETA-08/0190

#### English translation prepared by DIBt

## Specific Part

#### 1 Technical description of the product

The Würth plastic anchor in the range W-UR 8 and W-UR 10 is a plastic anchor consisting of a plastic sleeve made of polyamide and an accompanying specific screw of galvanised steel or of stainless steel.

The plastic sleeve is expanded by screwing in the specific screw which presses the sleeve against the wall of the drilled hole.

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 anchors 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)

The essential characteristics regarding mechanical resistance and stability are included under the Basic Works Requirement Safety in use.

#### 3.2 Safety in case of fire (BWR 2)

Essential characteristic	Performance
Reaction to fire	Anchorages satisfy requirements for Class A 1
Resistance to fire	See Annex C 2

#### 3.3 Safety and accessibility (BWR 4)

Essential characteristic	Performance
Characteristic resistance for tension and shear loads	See Annexes C 1, C 11 – C 74
Characteristic resistance for bending moments	See Annex C 1
Displacements under shear and tension loads	See Annex C 2
Anchor distances and dimensions of members	See Annex B 2, B 3

#### 3.4 General aspects

The verification of durability is part of testing the essential characteristics. Durability is only ensured if the specifications of intended use according to Annex B are taken into account.



# European Technical Assessment ETA-08/0190

Page 4 of 88 | 5 September 2017

English translation prepared by DIBt

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

In accordance with guideline for European technical approval ETAG 020, March 2012 used as European Assessment Document (EAD) according to Article 66 Paragraph 3 of Regulation (EU) No 305/2011 the applicable European legal act is: 97/463/EC.

The system to be applied is: 2+

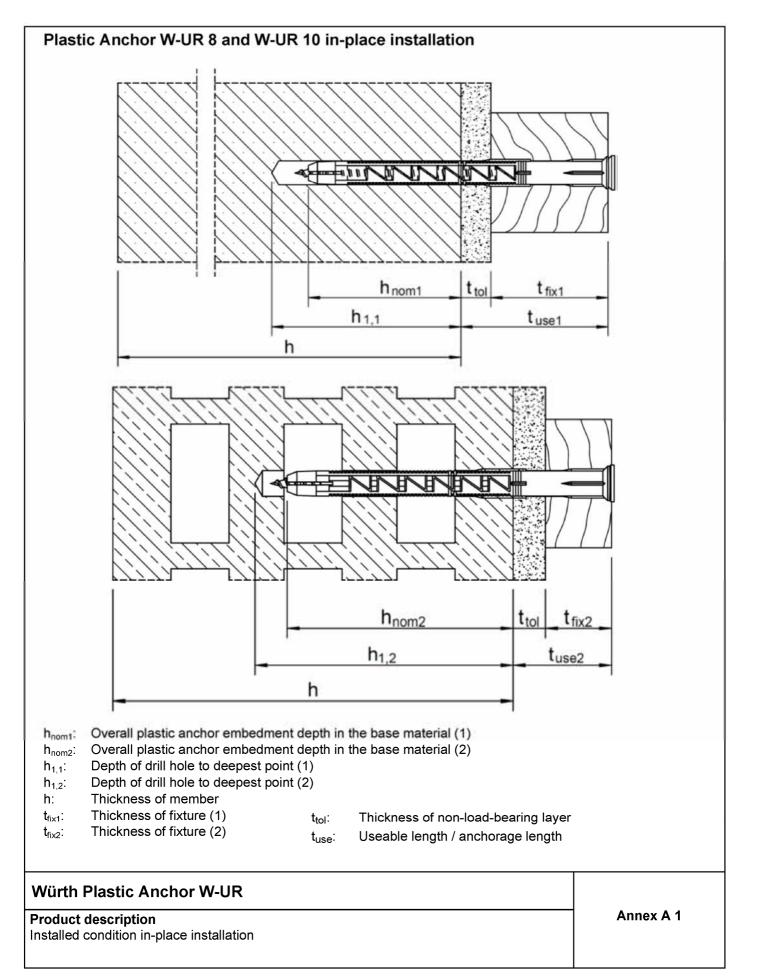
# 5 Technical details necessary for the implementation of the AVCP system, as provided for in the applicable European Assessment Document

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

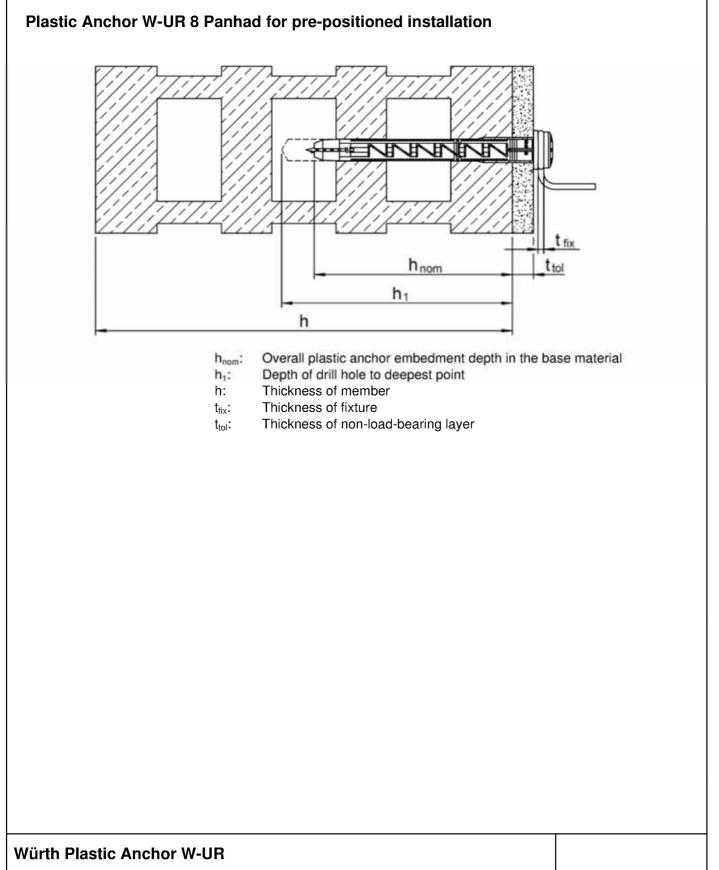
Issued in Berlin on 5 September 2017 by Deutsches Institut für Bautechnik

BD Dipl.-Ing. Andreas Kummerow Head of Department *beglaubigt:* Ziegler



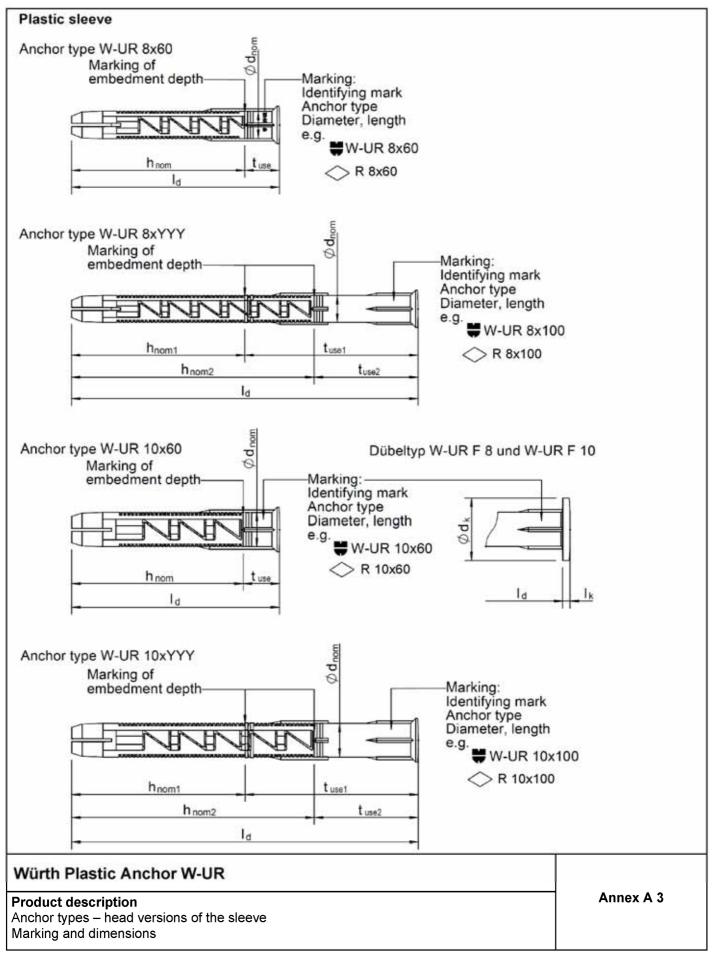




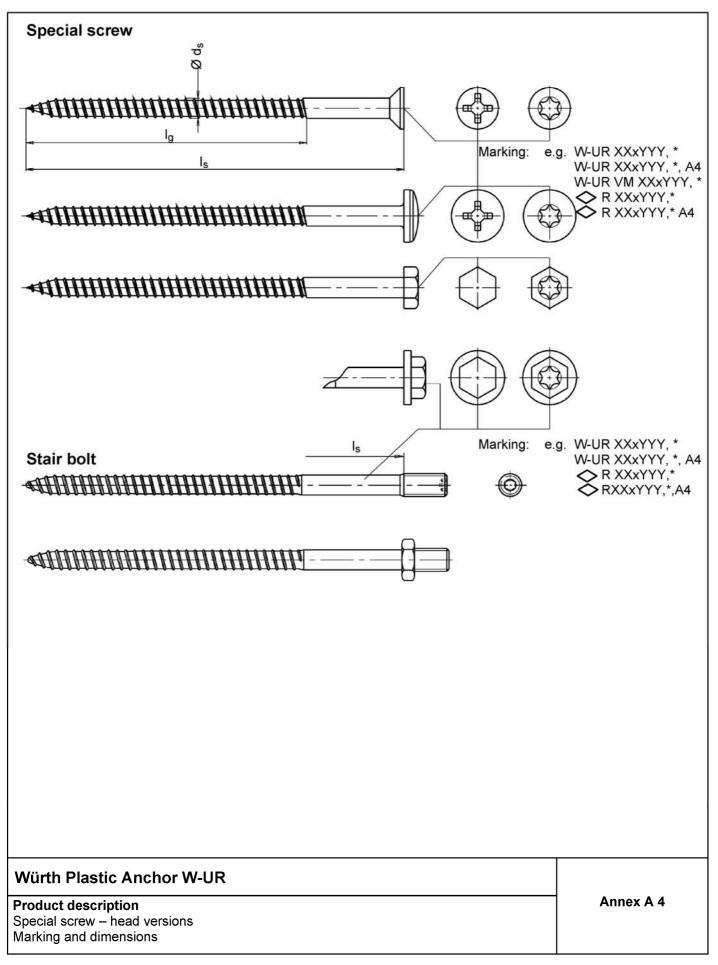


Product description Installed condition pre-positioned installation Annex A 2











Anchor type			W-U	JR 8	W-UR 10		
Overall plastic anchor embedment depth in the base material	h <sub>nom</sub> ≥	[mm]	50 (h <sub>nom1</sub> )	70 (h <sub>nom2</sub> )	50 (h <sub>nom1</sub> )	70 (h <sub>nom2</sub> )	
Plastic sleeve							
Plastic sleeve diameter	$\oslash d_{nom}$	[mm]	6	3	1	0	
Length of plastic sleeve	$I_{d} \ge$	[mm]	51	71	7	'1	
Flat collar diameter	Ø d <sub>k</sub>		14		18		
Thickness of flat collar	l <sub>k</sub> ≥	[mm]	1.6		2		
Thickness of fixture	$t_{use} \ge$	[mm]	1		1		
Thickness of fixture pre-positioned installation	$t_{fix} \ge$	[mm]	1		-		
Special screw							
Screw diameter	ds	[mm]		6	-	7	
Length of screw in-place installation	ا <sub>s</sub>	[mm]	l <sub>d</sub> + 5 mm		l <sub>d</sub> + 5 mm		
Length of screw pre-positioned installation	I <sub>s</sub> [mm] I <sub>d</sub> + t <sub>fix</sub> + 5 mm		+ 5 mm	-			
Length of thread in-place installation	١ <sub>g</sub>	[mm]	75		75		
Length of thread pre-positioned installation	اa ا	[mm]	85		-		

# **Table A2: Materials**

Designation	Material
Plastic sleeve	Polyamid, colour brown
Special screw	Steel, acc. to DIN EN ISO 4042:2001-01 galvanised Stainless steel, 1.4401, 1.4571 or 1.4578

# Würth Plastic Anchor W-UR

**Product description** Anchor dimensions and materials Annex A 5



## Specifications of intended use

## Anchorages subject to:

- Static or quasi-static loads
- Multiple fixing of non-structural applications

#### Base materials:

- Reinforced or unreinforced normal weight concrete with strength classes ≥ C12/15 (use category a), according to EN 206-1:2000, Precast or prestressed hollow core elements according to Annex C 71, C 72, C 73
- Solid brick masonry (use category b), according to Annex C 11, C 12, C 46, C 47, C 54 C 60, C 74 Note: The characteristic resistance is also valid for larger brick sizes and larger compressive strength of the masonry unit.
- Hollow brick masonry (use category c), according to Annex C 13 C 45, C 48 C 53, C 61 C 68.
- · Autoclaved aerated concrete (use category d), according to Annex C 69 C 70
- Mortar strength class of the masonry ≥ M2,5 at minimum according to EN 998-2:2010.
- For other base materials of the use categories a, b, c or d d the characteristic resistance of the anchor may be determined by job site tests according to ETAG 020, Annex B Edition March 2012.

#### **Temperature Range:**

•	Temperature Range b):	-40 °C to + 80 °C	(max. long term temperature +50 °C and
			max. short term temperature + 80 °C)
•	Temperature Range c):	-40 °C to + 50 °C	(max long term temperature +30 °C and
			max. short term temperature + 50 °C)

#### Use conditions (Environmental conditions):

- · Structures subject to dry internal conditions (zinc coated steel, stainless steel).
- The specific screw made of galvanized steel may also be used in structures subject to external atmospheric
  exposure, if the area of the head of the screw is protected against moisture and driving rain after mounting of the
  fixing unit in this way, that intrusion of moisture into the anchor shaft is prevented. Therefore there shall be an
  external cladding or a ventilated rainscreen mounted in front of the head of the screw and the head of the screw
  itself shall be coated with a soft plastic, permanently elastic bitumen-oil-combination coating (e. g. undercoating or
  body cavity protection for cars).
- 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).
- 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).

#### **Design:**

- The anchorages are designed in accordance with the ETAG 020, Annex C Edition March 2012 under the responsibility of an engineer experienced in anchorages and masonry work.
- Verifiable calculation notes and drawings shall be prepared taking account of the loads to be anchored, the nature and strength of the base materials and the dimensions of the anchorage members as well as of the relevant tolerances. The position of the anchor is indicated on the design drawings.
- Fasteners are only to be used for multiple use for non-structural application, according to ETAG 020 Edition March 2012.

#### Installation:

- Hole drilling by the drill modes according to Annex C 11 Annex C 74
- Anchor installation carried out by appropriately qualified personnel and under the supervision of the person responsible for technical matters of the site
- Installation temperature from W-UR 8: ≥ -40 °C; W-UR 10: ≥ -20 °C
- Exposure to UV due to solar radiation of the anchor not protected  $\leq$  6 weeks

## Würth Plastic Anchor W-UR

Intended use Specifications Annex B 1

Table B1: Installation parameters							
Anchor type			W-U	IR 8	W-UR 10		
Drill hole diameter	$d_0 =$	[mm]	8	3	10		
Cutting diameter of drill bit	d <sub>cut</sub> ≤	[mm]	8.45		10.45		
Depth of drill hole to deepest point <sup>1)</sup>	$h_1 \geq$	[mm]	60 (h <sub>1,1</sub> )	80 (h <sub>1,2</sub> )	60 (h <sub>1,1</sub> )	80 (h <sub>1,2</sub> )	
Overall plastic anchor embedment depth in the base material <sup>1), 2)</sup>	h <sub>nom</sub> ≥	[mm]	50 (h <sub>nom1</sub> )	70 (h <sub>nom2</sub> )	50 (h <sub>nom1</sub> )	70 (h <sub>nom2</sub> )	
Diameter of clearance hole in the fixture in-place installation	d <sub>f</sub> ≤	[mm]	8.5		10.5		
Diameter of clearance hole in the fixture pre-positioned installation	d <sub>f</sub> ≤	[mm]	7		7 -		

<sup>1)</sup> See Annex 1 and 2

<sup>2)</sup> For hollow and perforated masonry the influence of  $h_{nom} > 70 \text{ mm}$  (W-UR 8 and W-UR 10) has to be detected by job site tests according ETAG 020 Annex B

For anchorages in hollow and perforated masonry variable set in the range  $h_{nom1} = 50 \text{ mm} \le h_{nom} < 70 \text{ mm} = h_{nom2}$  the characteristic values  $F_{Rk}$  for  $h_{nom1} = 50 \text{ mm}$  may be taken without performing additional job site tests (compare Annex C 13, Annex C 48, Annex C 50, Annex C 51, Annex C 68)

For anchorages in hollow and perforated masonry with anchor type W-UR 8x60 and W-UR 10 ( $h_{nom}$  = 50 mm) the influence 50 <  $h_{nom} \le$  59 mm always has to be detected by job site tests.

		h <sub>nom</sub> [mm]	h <sub>min</sub> [mm]	c <sub>cr,N</sub> [mm]	c <sub>min</sub> [mm]	s <sub>min</sub> [mm]
	$Concrete \geq C16/20$	= 50	100	40	40	40
W-UR 8	Concrete C12/15	= 50	100	60	60	60
	$Concrete \geq C16/20$	> 50	100	50	50	50
	Concrete C12/15	> 50	100	70	70	70
Beton ≥ C16/20	Beton $\geq$ C16/20	= 50	80	50	50	60
	Beton C12/15	= 50	80	70	70	85
W-UR 10	$Concrete \geq C16/20$	> 50	100	100	70	50
	Concrete C12/15	> 50	100	140	100	70

## Table B2: Minimum thickness of member, edge distance and anchor spacing in concrete

**W-UR 8:** Fixing points with spacing  $a \le 100$  mm are considered as a group with a max. characteristic resistance N<sub>Rk,p</sub> acc. to Table C 2.1. For a > 100 mm, the anchors are considered as single anchors, each with a characteristic resistance N<sub>Rk,p</sub> acc. to Table C 2.1.

**W-UR 10:** Fixing points with spacing  $a \le 75$  mm are considered as a group with a max. characteristic resistance N<sub>Rk,p</sub> acc. to Table C 2.1. For a > 75 mm, the anchors are considered as single anchors, each with a characteristic resistance N<sub>Rk,p</sub> acc. to Table C 2.1.

# Würth Plastic Anchor W-UR

Installation parameters, edge distances and spacings for use in concrete

Annex B 2

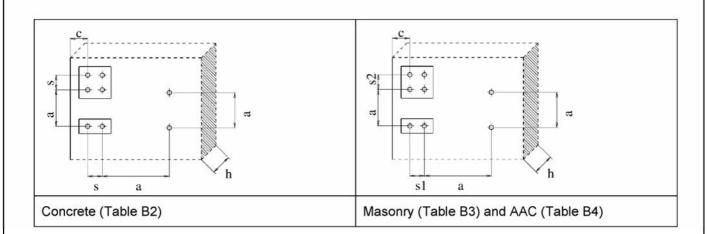


			Masonry				
			W-U	R 8	W-UR 10		
Overall plastic anchor embedment depth	h <sub>nom</sub>	[mm]	50	70	50	70	
Minimum thickness of member	h <sub>min</sub>	[mm]	100 <sup>1)</sup> 100 <sup>1)</sup>			0 <sup>1)</sup>	
Single anchor							
Minimum allowable spacing	a <sub>min</sub>	[mm]	25	0	250		
Minimum allowable edge distance	C <sub>min</sub>	[mm]	100	) <sup>1)</sup>	100 <sup>1)</sup>		
Anchor group							
Spacing perpendicular to free edge	S <sub>1,min</sub>	[mm]	10	0	250 <sup>2)</sup>	100	
Spacing parallel to free edge	S <sub>2,min</sub>	[mm]	100		250 <sup>2)</sup>	100	
Minimum edge distance	C <sub>min</sub>	[mm]	100	<b>)</b> <sup>1)</sup>	250 <sup>2)</sup>	100 <sup>1)</sup>	

h<sub>min</sub> and c<sub>min</sub> depend on the brick size and/or on the brick: See the following annexes Annex C 11 to Annex C 74
 other spacing possible see Annex C 46; C 51; C 54

#### Table B4: Minimum thickness of member, edge distance and anchor spacing in AAC

				ed aerated crete	(Prefabricated) Reinforced AAC
			<b>W-UR 8</b>	W-UR 10	W-UR 10
Minimum thickness of member	h <sub>min</sub>	[mm]	175	175	175
Single anchor					
Minimum allowable spacing	a <sub>min</sub>	[mm]	250	250	600
Minimum allowable edge distance	C <sub>min</sub>	[mm]	60	80	150
Anchor group					
Spacing perpendicular to free edge	S <sub>1,min</sub>	[mm]	80	100	100
Spacing parallel to free edge	<b>S</b> <sub>2,min</sub>	[mm]	80	100	100
Minimum edge distance	C <sub>min</sub>	[mm]	80	100	150



# Würth Plastic Anchor W-UR

#### Intended use

Installation parameters, edge distances and spacing for use in masonry and autoclaved aerated concrete

Annex B 3



Installation instructions in-place i	nstallation for concrete and solid masonry or hollo	ow masonry
	Drill the bore hole	
	Clean the drilled bore hole	
	Gently hammer the fastener into the hole	
	Insert the special screw into the sleeve	
	Tighten the screw until the head of the screw touche anchor is correct mounted, if there is no turn-throug sleeve in the drill hole and if slightly move on turning impossible after the complete turn-in of the screw.	h of the plastic
Würth Plastic Anchor W-UR		
Intended use Installation instructions in-place installa	ation	Annex B 4



Installation instruc	ctions pre-positior	ned installation for concrete and solid masonry of	or hollow masonry
		Drill the bore hole	
		Clean the drilled bore hole	
		Insert the fastener through the attachment into the using carefully a hammer	concrete/masonry
		Screw the special screw into the sleeve	
		Tighten the screw until the head of the screw and the sleeve. The anchor is correct mounted, if there the plastic sleeve in the drill hole and if slightly mo screw is impossible after the complete turn-in of the	e is no turn-through of ve on turning of the
Würth Plastic An	chor W-UR		A
Intended use Installation instruction	s pre-positioned ins	stallation	Annex B 5



Anabantina			Galvanised steel					Stain	less steel		
Anchor type		W-UR 8		<b>W</b> -U	W-UR 10		JR 8	W-UR 10			
Failure of expansion element (specia	I screw)										
Overall plastic anchor embedment depth	h <sub>nom</sub>	[mm]	50	70	50	70	50	70	50	70	
Characteristic tension resistance	$N_{Rk,s}$	[kN]	11.8		18.7		13.7		21.8		
Partial safety factor	γ <sub>Ms</sub> 1)	[-]	1	1.5		1.5		1.87		1.87	
Characteristic shear resistance	V <sub>Rk,s</sub>	[kN]	5	5.9		9.4		9.4 6.9		10.9	
Partial safety factor	γ <sub>Ms</sub> 1)	[-]	1.	25	1.25		1.25 1.56		1.56		
Characteristic bending resistance of	the specia	I screw									
Characteristic bending resistance	$M_{Rk,s}$	[Nm]	8.8		8.8 17.7		17.7 10.3		20	1.6	
Partial safety factor	γ <sub>Ms</sub> 1)	[mm]	1.:	25	1.25		1.25 1.56		1.5	56	

<sup>1)</sup> In absence of other national regulations

# Table C 2.1: Characteristic resistance for pullout failure for use in concrete (hammer drilling)

Anchor type			Galvanised steel			Stainless steel				
Pull-out failure (plastic sleeve)			<b>W</b> -U	JR 8	W-U	R 10	W-l	JR 8	W-U	IR 10
			50	70	50	70	50	70	50	70
Concrete ≥ C16/20										
	$30^{\circ}C^{2)}$ / $50^{\circ}C^{3)}$ N <sub>Rk,p</sub>	[kN]	4.0	6.0	3.0	4.0	4.0	6.0	3.0	4.0
Characteristic resistance	50°C <sup>2)</sup> / 80°C <sup>3)</sup> N <sub>Rk,p</sub>	[kN]	3.5	5.0	2.5	3.5	3.5	5.0	2.5	3.5
Partial safety factor	γ <sub>Mc</sub> <sup>1)</sup>	[-]	1.8	1.8	1.8	1.8	1.8	1.8	1,8	1.8
Concrete C12/15										
Characteristic resistance	$30^{\circ}C^{2)}$ / $50^{\circ}C^{3)}$ N <sub>Rk,p</sub>	[kN]	3.0	4.0	2.0	2.5	3.0	4.0	2.0	2.5
	50°C <sup>2)</sup> / 80°C <sup>3)</sup> N <sub>Rk,p</sub>	[kN]	2.5	3.5	2.0	2.5	2.5	3.5	2.0	2.5
Partial safety factor	γ <sub>Mc</sub> <sup>1)</sup>	[-]	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8

<sup>1)</sup> In absence of other national regulations

<sup>2)</sup> Maximum long term temperature

<sup>3)</sup> Maximum short term temperature

# Würth Plastic Anchor W-UR

Performances	
Characteristic resistance of the screw	
characteristic resistance for pullout failure for use in concrete	



Table C 3.1:Displacements <sup>1)</sup> under tension and shear loading in concrete, masonry and AAC										
Anchor type			Tension load			Shear load				
		h <sub>nom</sub> [mm]	F <sup>2)</sup> [kN]	$\delta_{N0}$ [mm]	$\delta_{N\infty}$ [mm]	F <sup>2)</sup> [kN]	$\delta_{V0}$ [mm]	$\delta_{V\infty}$ [mm]		
W-UR 8	$Concrete \geq C16/20$	50	1.8	0.26	0.52	1.8	0.96	1.44		
W-UR 8	$Concrete \geq C16/20$	70	2.4	0.35	0.7	2.4	0.93	1.86		
W-UR 10	$Concrete \geq C16/20$	50	1.19	0.48	0.96	1.19	0.51	0.77		
W-UR 10	$Concrete \geq C16/20$	70	1.8	0.16	0.32	1.8	1.18	1.76		

<sup>1)</sup> Valid for all ranges of temperatures

<sup>2)</sup> Intermediate values by linear interpolation

# Table C 4.1:Characteristic values under fire exposure in concrete C20/25 to C50/60 in any<br/>load direction, no permanent centric tension load and without lever arm, fastening<br/>of facade systems

Anchor type	Fire resistance class	F <sub>Rk</sub>
W-UR 10	R 90	0.8kN

# Würth Plastic Anchor W-UR

#### **Performances** Displacements under tension and shear for concrete, masonry and AAC Characteristic resistance under fire exposure in concrete

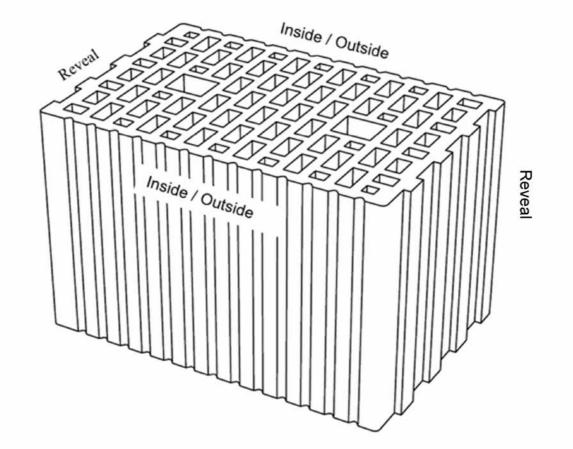
# Page 17 of European Technical Assessment ETA-08/0190 of 5 September 2017

English translation prepared by DIBt



# Footnotes for Annexes C 11 – C 74

- <sup>1)</sup> Characteristic resistance F<sub>Rk</sub> for tension, shear or combined tension and shear loading. The characteristic resistance is valid for single plastic anchor or for a group of two or four plastic anchors with spacing equal or larger than the minimum spacing s<sub>min</sub> according to Annex B 2 (concrete) and B 3 (masonry). The specific conditions for the design method have to be considered according to ETAG 020 Annex C.
- <sup>2)</sup> In absence of other national regulations
- <sup>3)</sup> Maximum long term temperature
- <sup>4)</sup> Maximum short term temperature
- <sup>5)</sup> The given values  $F_{Rk}$  in this column are valid for the embedment depth in the range 50 mm  $\leq$   $h_{nom}$  < 70 mm (see Annex B 2). For plastic anchors W-UR 8 and W-UR 10 set variable in this range no additional job site tests have necessarily to be performed.
- <sup>6)</sup> Installationside see picture (e.g Hollow brick HLz)



<sup>7)</sup> The characteristic resistance F<sub>Rk</sub> for load direction V only (only valid for a single anchor or for a group of two anchors with spacing s<sub>min</sub> ≥ 250mm for shear loads without lever arm in the reveal side)

## Würth Plastic Anchor W-UR

Performances Footnotes



Table C 5.1: Base material: Concrete, so	lid masoni	ŷ			
Base material	Format	<b>Measurement</b> [mm]	Minimum compressive strength [N/mm <sup>2</sup> ]	Bulk density class [kg/dm <sup>3</sup> ]	Annex
Concrete				-	
Concrete ≥ C12/15					Annex C 1
Solid masonry					-
<b>Solid brick Mz</b> acc. to DIN 105-100:2012-01, EN 771-1:2011	≥ NF ≥ 3DF	≥ 240x115x71 ≥ 240x175x113	10 20 28 36	≥ 1.8	Annex C 11 771-1-020 Annex C 12
Sand-lime solid brick KS acc. to DIN V 106:2005-10, EN 771-2:2011	≥ NF	≥ 240x115x71	10 20 28	≥ 2.0	771-1-041 Annex C 46 771-2-002
Sand-lime solid brick Silka XL Basic, Sand-lime solid brick Silka XL Plus, acc. to DIN V 106:2005-10, EN 771-2:2011, Z-17.1-997		≥ 248x175x498	10 20 28	≥ 2.0	Annex C 47 771-2-010
<b>Concrete solid block - Vbn</b> acc. to DIN 18153-100:2005-10, EN 771-3:2011	≥ NF	≥ 240x115x71	10 20 28	≥ 2.0	Annex C 54 771-3-004
Lightweight concrete solid brick e.g. Bisoclassic V acc. to DIN V 18152-100:2005:10, EN 771-3:2011 Bisotherm GmbH	≥ NF	≥ 240x115x71	2 4	≥ 0.9	Annex C 55 771-3-008
Lightweight concrete solid brick V und Vbl e.g. Bisophon acc. to DIN V 18152-100:2005-10 EN 771-3:2011 Bisotherm GmbH	≥ 3DF	≥ 240x175x113	10 20	≥ 2.0	Annex C 57 771-3-017
Lightweight concrete solid brick e.g. BisoBims V acc. to DIN V 18152-100:2005-10 EN 771-3:2011	≥NF	≥ 240x115x71	2 4	≥ 1.0	Annex C 56
Bisotherm GmbH Lightweight concrete solid block – VbI acc. to DIN V 18152-100:2005-10, e.g. Liapor Massive Wall Liapor GmbH & Co. KG	≥ 24DF	≥ 500x365x238	2	≥ 0.6	771-3-007 Annex C 58 LAC2
Lightweight concrete solid block – Vbl 2 acc. to DIN 18152-100:2005-10, Z-17.1-839 e.g. Liapor Compact Liapor GmbH & Co. KG Meier Betonwerke GmbH	≥ 16DF	≥ 498x240x239	2	≥ 0.65	Annex C 59 771-3-012
<b>Concrete solid block – Vbn</b> acc. to DIN 18153-100:2005-10, e.g. Liapor Element Wall Liapor GmbH & Co. KG	≥ 12DF	≥ 500x175x238	12	≥ 1.4	Annex C 60 LC16/18

# Würth Plastic Anchor W-UR

# Performances Anno Solid masonry (use category "b") Format, measurement, minimum compressive strength, bulk density class, Annex



Table C 6.1: Base material: Hollow or per	Table C 6.1: Base material: Hollow or perforated masonry						
Base material	Format	Measurement [mm]	Minimum compressive strength [N/mm <sup>2</sup> ]	Bulk density class [kg/dm <sup>3</sup> ]	Annex		
Hollow or perforated masonry							
Hollow brick HLz acc. to DIN 105-100:2012-01	≥ 2DF	≥ 240x115x113	8 12	≥ 1.2	Annex C 13		
EN 771-1:2011			20		771-1-021		
e.g. Wienerberger GmbH	≥ 12DF	≥ 373x240x238	6	≥ 1.2	Annex C		
e.g. Schlagmann Baustoffwerke GmbH & Co. KG			8		14		
			10		771-1-010		
			12		771-1-036		
Hollow brick POROTON Planziegel T14 acc. to	≥ 10DF	≥ 248x300x249	6	≥ 0.7	Annex C		
EN 771-1:2011, Z-17.1-625					15		
Schlagmann Baustoffwerke GmbH & Co. KG					771-1-019		
Hollow brick POROTON-T8-P	≥ 10DF	≥ 248x300x249	6	≥ 0.6	Annex C		
Hollow brick POROTON-T9-P acc. to					16		
T8: EN 771-1:2011; Z-17.1-982							
T9: EN 771-1:2011; Z-17.1-674							
Wienerberger GmbH							
Schlagmann Baustoffwerke GmbH & Co. KG					771-1-022		
Hollow brick POROTON-T8-MW acc. to	≥ 12DF	≥ 248x365x249	6	≥ 0.65	Annex C		
EN 771-1:2011; Z-17.1-1041			8		17		
Wienerberger GmbH							
Schlagmann Baustoffwerke GmbH & Co. KG	≥ 12DF		6	> 0.05	771-1-042		
Hollow brick POROTON Planziegel T8 acc. to EN 771-1:2011; Z-17.1-972	2 120F	≥ 248x365x249	6	≥ 0.65	Annex C 18		
Wienerberger GmbH					10		
Schlagmann Baustoffwerke GmbH & Co. KG					774 4 057		
Hollow brick POROTON Planziegel T10	≥ 10DF	≥ 248x300x249	6	≥ 0.65	771-1-057 Annex C		
acc. to EN 771-1:2011; Z-17.1-889	- 1001		, i i i i i i i i i i i i i i i i i i i	- 0.00	19		
Wienerberger GmbH							
Schlagmann Baustoffwerke GmbH & Co. KG					771-1-033		
	≥ 10DF	≥ 248x300x249	6	≥ 0.75	Annex C		
Hollow brick POROTON S10 acc. to EN 771-1:2011; Z-17.1-1017			8		20		
Wienerberger GmbH			10				
Schlagmann Baustoffwerke GmbH & Co. KG							
					771-1-032		
Hollow brick POROTON-S11-P 30,0 acc. to	≥ 10DF	≥ 248x300x249	8	≥ 0.9	Annex C		
EN 771-1:2011; Z-17.1-812					21		
Wienerberger GmbH							
Schlagmann Baustoffwerke GmbH & Co. KG					771 1 025		
Hollow brick POROTON-S11-P 36,5 acc. to	≥ 12DF	≥ 248x365x249	6	≥ 0.9	771-1-025 Annex C		
EN 771-1:2011; Z-17.1-812					22		
Wienerberger GmbH							
Schlagmann Baustoffwerke GmbH & Co. KG							
					771-1-009		
Hollow brick for ceiling DIN 4160-BN 0.8-530-		≥ 530x250x210	4	0.8	Annex C		
250-210 (system Filigran) acc. to					23		
DIN 4160:2000-4							
e.g. Wienerberger GmbH					771-1-031		

# Würth Plastic Anchor W-UR

PerformancesHollow or perforated masonry (use category "c")Format, measurement, minimum compressive strength, bulk density class, Annex



Base material	Format	<b>Measurement</b> [mm]	Minimum compressive strength [N/mm <sup>2</sup> ]	Bulk density class [kg/dm <sup>3</sup> ]	Annex
Hollow or perforated masonry					
Hollow brick POROTHERM 25-38 N+F acc. to EN 771-1:2011 Wienerberger Ziegelindustrie GmbH; Austria		≥ 375x250x238	6 8 10	≥ 0.8	Annex C 24
Hollow brick Blocchi Leggeri acc. to EN 771-1:2011 Wienerberger Brunori s.r.l.; Italy		≥ 250x120x330	6	≥ 0.6	Annex C 25 771-1-012
Hollow brick for ceiling Blocchi per solaio a travetti acc. to EN 771-1:2011 Wienerberger Tacconi s.r.l.; Italy		≥ 420x120x250	10 14	≥ 0.6	Annex C 26
Hollow brick MURBRIC T20 and R20 acc. to EN 771-1:2011 e.g. Wienerberger SAS; France		T20: ≥ 500x200x240 R20: ≥ 500x200x249	6 8 12	≥ 0.7	Annex C 27 771-1-018
Hollow brick POROTHERM T30 and R30 acc. to EN 771-1:2011 e.g. Wienerberger SAS; France		T30: ≥ 373x300x249 R30: ≥ 373x300x250	6 8	≥ 0.7	Annex C 28
Hollow brick UNIPOR WS11 CORISO acc. to EN 771-1:2011 Z-17.1-1011 UNIPOR Ziegel, Marketing GmbH	≥ 12DF	≥ 247x365x249	10	≥ 0.85	Annex C 29 771-1-02
Hollow brick UNIPOR WS14 Hollow brick UNIPOR WS12 CORISO acc. to EN 771-1:2011 Z-17.1-883	≥ 10DF	≥ 247x300x249	10 12	≥ 0.8	Annex C 30
UNIPOR Ziegel, Marketing GmbH Hollow brick UNIPOR W14 acc. to EN 771-1:2011 Z-17.1-679 Z-17.1-636	≥ 10DF	W14-Plan: ≥ 240x300x249 W14-Block: ≥ 240x300x238	6	≥ 0.7	771-1-010 Annex C 31
UNIPOR Ziegel, Marketing GmbH Hollow brick UNIPOR CORISO 6DF EWS 365 acc. to EN 771-1:2011 according to Z-17.1-1021 / 1066 UNIPOR Ziegel, Marketing GmbH	≥ 6DF	≥ 118x365x249	6	≥ 0.9	771-1-01: Annex C 32 771-1-07
Hollow brick UNIPOR CORISO 6DF EW 365 acc. to EN 771-1:2011 according to Z-17.1-935 UNIPOR Ziegel, Marketing GmbH	≥ 6DF	≥ 118x365x249	4	≥ 0.7	Annex C 33 771-1-074

# Würth Plastic Anchor W-UR

**Performances** Hollow or perforated masonry (use category "c") Format, measurement, minimum compressive strength, bulk density class, Annex



Table C 6.3 Base material: Hollow or perf	Table C 6.3 Base material: Hollow or perforated masonry							
Base material	Format	Measurement [mm]	Minimum compressive strength [N/mm <sup>2</sup> ]	Bulk density class [kg/dm <sup>3</sup> ]	Annex			
Hollow or perforated masonry								
Hollow brick ThermoPlan MZ7 acc. to EN 771-1:2011 Z-17.1-1016 Mein Ziegelhaus GmbH & Co. KG	≥ 10DF	≥ 248x300x249	4 6 8	≥ 0.6	Annex C 34 771-1-052			
Hollow brick ThermoPlan MZ8 acc. to EN 771-1:2011 Z-17.1-906 Mein Ziegelhaus GmbH & Co. KG	≥ 12DF	≥ 248x365x249	6 8	≥ 0.6	Annex C 35			
Hollow brick ThermoPlan MZ10 acc. to EN 771-1:2011 Z-17.1-1015	≥ 10DF	≥ 248x300x249	6 8	≥ 0.75	771-1-023 Annex C 36			
Mein Ziegelhaus GmbH & Co. KG Hollow brick ThermoPlan MZ Ergänzung acc. to EN 771-1:2011 according to Z-17.1-1087 Mein Ziegelhaus GmbH & Co. KG	≥ 6DF	≥ 118x365x249	6	≥ 0.8	771-1-034 Annex C 37 771-1-081			
Hollow brick ThermoPlan TS <sup>2</sup> acc. to EN 771-1:2011 Z-17.1-993 Mein Ziegelhaus GmbH & Co. KG	≥ 9DF	≥ 373x175x249	6 8 10 12 20	≥ 0,9	Annex C 38			
<b>Hollow brick ThermoPlan TS 13</b> acc. to EN 771-1:2011 Z-17.1-914 Mein Ziegelhaus GmbH & Co. KG	≥ 10DF	≥ 248x300x248	8 10	≥ 0.75	Annex C 39 771-1-035			
Hollow brick THERMOPOR ISO-PD Plus acc. To EN 771-1:2011 Z-17.1-840 Thermopor Ziegel-Kontor Ulm GmbH		≥ 307x240x249	6 8	≥ 0.7	Annex C 40 771-1-028			
Hollow brick THERMOPOR TV 7-Plan acc. to EN 771-1:2011 Z-17.1-1005 Thermopor Ziegel-Kontor Ulm GmbH	≥ 12DF	≥ 247x365x249	8	≥ 0.5	Annex C 41 771-1-030			
Hollow brick THERMOPOR TV 9-Plan acc. to EN 771-1:2011 Z-17.1-1006 Thermopor Ziegel-Kontor Ulm GmbH	≥ 10DF	≥ 247x300x249	4 6 8	≥ 0.65	Annex C 42			
Hollow brick Kellerer ZMK X6 acc. to EN 771-1:2011 Z-17.1-1067 Ziegelsysteme Michael Kellerer GmbH & Co. KG	≥ 10DF	≥ 247x300x249	6	≥ 0.65	771-1-029 Annex C 43 771-1-049			
Hochlochziegel Kellerer ZMK TX8 acc. to EN 771-1:2011 Z-17.1-1068 Ziegelsysteme Michael Kellerer GmbH & Co. KG	≥ 10DF	≥ 247x300x249	6	≥ 0.65	771-1-050			
Hollow brick Ladrillo P NV R150 acc. to EN 771-1:2011 Ceramica La Corona, S.A.; Spain		≥ 276x128x95	12 20 28 36	≥ 1.2	Annex C 45 771-1-017			

Würth Plastic Anchor W-UR	
<b>Performances</b> Hollow or perforated masonry (use category "c") Format, measurement, minimum compressive strength, bulk density class, Annex	Annex C 7

8.06.04-524/15



Table C 6.4: Base material: Hollow or per	forated m	asonry			
Base material	Format	<b>Measurement</b> [mm]	Minimum compressive strength [N/mm <sup>2</sup> ]	Bulk density class [kg/dm <sup>3</sup> ]	Annex
Hollow or perforated masonry					
Sand-lime perforated brick KS L acc. to DIN V 106:2005-10 EN 771-2:2011	≥ 2DF	≥ 240x115x113	6 8 10 12	≥ 1.6	Annex C 48
			12		771-2-003 771-2-004
<b>Sand-lime perforated brick KS L</b> acc. to DIN V 106:2005-10 EN 771-2:2011 e.g. Xella Deutschland GmbH	≥ 8DF	≥ 249x240x238	6 8 10 12 16	≥ 1.4	Annex C 49 771-2-013
Sand-lime perforated brick KS L acc. to DIN V 106:2005-10 EN 771-2:2011	≥ 12DF	≥ 373x240x238	6 8 10 12 16	≥ 1.4	771-2-005 Annex C 50, C 51 771-2-001
Sand-lime perforated brick KS L acc. to DIN V 106:2005-10 EN 771-2:2011 e.g. Xella Deutschland GmbH	≥ 9DF	≥ 373x175x249	6 8 10 12 20	≥ 1.4	Annex C 52 771-2-008
<b>Sand-lime perforated brick KS-NT</b> acc. to P-1109/884/07-MPA BS BMO KS-Vertrieb Bielefeld-Münster-Osnabrück GmbH & Co. KG	≥ 4DF	≥ 249x115x248	12 20	≥ 1.2	Annex C 53 771-2-009
Hollow brick lightweight concrete 1K Hbl acc. to DIN V 18151-100:2005-10 EN 771-3:2011 e.g. Stark Betonwerk GmbH & Co. KG	≥ 12DF	≥ 490x175x238	2 4	≥ 1.2	Annex C 61 771-3-002
Hollow brick lightweight concrete 3K Hbl acc. to DIN V 18151-100:2005-10 EN 771-3:2011 e.g. Heinzmann Baustoffe GmbH, Liapor GmbH & Co. KG	≥ 16DF	≥ 498x240x238	2 4 6	≥ 0.7	Annex C 62
Hollow brick lightweight concrete Liapor-Super-K acc. to EN 771-3:2011 Z-17.1-501 Liapor GmbH & Co. KG	≥ 16DF	≥ 495x240x238	2 4	≥ 0.8	Annex C 63 771-3-006
Concrete hollow brick 2K Hbn acc. to DIN V 18153-100:2005-10 e.g. Stark Betonwerk GmbH & Co. KG	≥ 12DF	≥ 375x240x238	2 4 6 8	≥ 1.2	Annex C 64 771-3-011
Hollow brick lightweight concrete Gisoton Wärme Dämm Block acc. to Z-17.1-873 Gisoton Wandsysteme, Baustoffwerke Gebhart & Söhne GmbH & Co.		≥ 375x300x248	4	≥ 0.8	Annex C 65 771-3-009

# Würth Plastic Anchor W-UR

Performances	

Hollow or perforated masonry (use category "c") Format, measurement, minimum compressive strength, bulk density class, Annex



Format	<b>Measurement</b> [mm]	Minimum compressive strength [N/mm <sup>2</sup> ]	Bulk density class [kg/dm <sup>3</sup> ]	Annex
	≥ 498x300x248	2	≥ 0.45	Annex C 66
≥ 20DF	≥ 497x300x249	1.6 2 4	≥ 0.4	Annex C 67 771-3-01
	≥ 500x200x200	6 4	≥ 0.9	Annex C 68 771-3-02
		Format       Image: mail [mm]         [mm]       ≥ 498x300x248         ≥ 20DF       ≥ 497x300x249	Format         Measurement [mm]         compressive strength [N/mm <sup>2</sup> ]           ≥         498x300x248         2           ≥         2498x300x248         2           ≥         2498x300x248         2           ≥         20DF         ≥ 497x300x249         1.6           ≥         2         4           ≥         500x200x200         6	FormatMeasurement [mm]compressive strength $[N/mm^2]$ Bulk density class $[kg/dm^3]$ $\sim$ $\geq$ 498x300x2482 $\geq$ $\geq$ 0.45 $\geq$ $\geq$ 497x300x2491.6 2 4 $\geq$ 0.4 $\geq$ $\geq$ 500x200x2006 $\geq$ 0.9

# Würth Plastic Anchor W-UR

**Performances** Hollow or perforated masonry (use category "c") Format, measurement, minimum compressive strength, bulk density class, Annex



Table C 7.1 Base material: Autoclaved ae	rated con	crete			
Base material	Format	<b>Measurement</b> [mm]	Minimum compressive strength [N/mm <sup>2</sup> ]	Bulk density class [kg/dm³]	Annex
Autoclaved aerated concrete acc. to EN 771-4:2011		≥ 499x175x249	2 4 6 7	≥ 0.3	Annex C 69
Reinforced components autoclaved aerated concrete acc. to EN 12602:2016-12			2 - 7	≥ 0.4	Annex C 70

# Table C 8.1:Base material: Precast or prestressed hollow core elements

Base material	Format	<b>Measurement</b> [mm]	Minimum compressive strength [N/mm <sup>2</sup> ]	Bulk density class [kg/dm³]	Annex
Precast prestressed hollow core elements VMM-L SCD 20 acc. to DIN EN 1168:2011-12, Z-15.10-276 e.g. Ketonia GmbH		≥ 1200x800x200	C45/55	≥ 2.4	Annex C 71
Precast prestressed hollow core elements VMM-L EPD 32 acc. to DIN EN 1168:2011-12, Z-15.10-276 e.g. Ketonia GmbH		≥ 1200x800x320	C45/55	≥ 2.4	Annex C 72
Precast prestressed hollow core elements VMM-L SCD 16 acc. to DIN EN 1168:2011-12, Z-15.10-276 e.g. Ketonia GmbH		≥ 1200x400x160	C45/55	≥ 2.4	Annex C 73

# Table C 9.1: Gypsum blocks: MultiGips R.max Schallschutzplatte

	Base material	Format	Measurement [mm]	Minimum compressive strength [N/mm <sup>2</sup> ]	Bulk density class [kg/dm³]	Annex
ſ	Gypsum blocks: MultiGips R.max		≥ 500x500x100	11.7	≥ 1.2	Annex C
	Schallschutzplatte acc. to					74
	DIN EN 12859:2011-05					

Würth Plastic Anchor W-UR	Annov C 10
<b>Performances</b> Autoclaved aerated concrete, precast or prestressed hollow core elements, gypsum blocks Format, measurement, minimum compressive strength, bulk density class, Annex	Annex C 10



Description of brick		771-1-020		N	/lz	
Type of brick				Solid k	orick Mz	
Bulk density	$\rho \ge$	[kg/dm³]			.8	
Standard, approval			DIN 10	5-100:2012	-01; EN 77	1-1:2011
Format (measurement)		[mm]			0x115x71)	
Minimum thickness of member	h <sub>min</sub> =	[mm]		1	15	
able C 10.1.2: Installation parameters Anchor size			W-L	JR 8	W-U	R 10
able C 10.1.2: Installation parameters						
Anchor size						
Anchor size Installationsside <sup>6)</sup>	d	- [mm]	Inside /	Outside	Inside /	Outside
Anchor size Installationsside <sup>6)</sup> Drill hole diameter	d <sub>0</sub>		Inside /	Outside 8	Inside / 1	Outside 0
Anchor size Installationsside <sup>6)</sup> Drill hole diameter Cutting diameter of drill bit	d <sub>cut</sub>	≤ [mm]	Inside /	Outside 8 45	Inside / 1 10	Outside 0 .45
Anchor size Installationsside <sup>6)</sup> Drill hole diameter Cutting diameter of drill bit Depth of drill hole to deepest point		≤ [mm] ≥ [mm]	Inside / 8. 60	Outside 8 45 80	Inside / 1 10 60	Outside 0 .45 80
Anchor size Installationsside <sup>6)</sup> Drill hole diameter Cutting diameter of drill bit	d <sub>cut</sub>	≤ [mm]	Inside / 8. 60	Outside 8 45	Inside / 1 10 60	Outside 0 .45
Anchor size Installationsside <sup>6)</sup> Drill hole diameter Cutting diameter of drill bit Depth of drill hole to deepest point	d <sub>cut</sub>	≤ [mm] ≥ [mm] [-]	Inside / 8. 60	Outside 8 45 80	Inside / 1 10 60	Outside 0 .45 80
Anchor size Installationsside <sup>6)</sup> Drill hole diameter Cutting diameter of drill bit Depth of drill hole to deepest point Drill method	d <sub>cut</sub> h <sub>1</sub>	≤ [mm] ≥ [mm] ≥ [] ≥ [mm]	Inside / 8. 60 Hamme 50	Outside 8 45 80 er drilling	Inside / 1 10 60 Hamme 50	Outside 0 .45 80 er drilling

Anchor size			W-U	JR 8	W-U	R 10
Installationsside <sup>6)</sup>			Inside /	Outside	Inside /	Outside
Overall plastic anchor embedment depth	$h_{nom} \ge$	[mm]	50	70	50	70
Solid brick Mz, f <sub>b</sub> ≥ 10 N/mm <sup>2</sup>	30°C <sup>3)</sup> / 50°C <sup>4)</sup>	[kN]	1.2	1.5	0.75	2.0
Characteristic resistance F <sub>Rk</sub>	50°C <sup>3)</sup> / 80°C <sup>4)</sup>	[kN]	1.2	1.5	0.60	1.5
Solid brick Mz, f <sub>b</sub> ≥ 20 N/mm <sup>2</sup>	30°C <sup>3)</sup> / 50°C <sup>4)</sup>		2.0	2.0	1.5	3.0
Characteristic resistance F <sub>Rk</sub>	50°C <sup>3)</sup> / 80°C <sup>4)</sup>		2.0	2.0	1.2	2.0
Solid brick Mz, f <sub>b</sub> ≥ 28 N/mm <sup>2</sup>	30°C <sup>3)</sup> / 50°C <sup>4)</sup>		2.5	3.0	1.5	4.0
Characteristic resistance F <sub>Rk</sub>	50°C <sup>3)</sup> / 80°C <sup>4)</sup>		2.5	3.0	1.2	3.0
Solid brick Mz, f <sub>b</sub> ≥ 36 N/mm <sup>2</sup>	30°C <sup>3)</sup> / 50°C <sup>4)</sup>		3.5	4.0	1.5	5.0
Characteristic resistance F <sub>Rk</sub>	50°C <sup>3)</sup> / 80°C <sup>4)</sup>	[kN]	3.5	4.0	1.2	4.0
Partial safety factor	2) γMm	[-]	2	.5	2	.5

Footnotes see Annex C 3

# Würth Plastic Anchor W-UR

Performances
Solid masonry: Solid brick Mz, NF
Brick data, installation parameters, characteristic resistance



ble C 10.2.1: Brick data			
Description of brick		771-1-041	Mz
Type of brick			Solid brick Mz
Bulk density	<i>ρ</i> ≥	[kg/dm³]	1.8
Standard, approval			DIN 105-100:2012-01; EN 771-1:201
Producer of brick			e.g. Wienerberger GmbH
Format (measurement)		[mm]	≥ 3DF (≥ 240x175x113)
Minimum thickness of member	h <sub>min</sub> =	[mm]	115
•			
Anchor size			W-UR 8
-			<b>W-UR 8</b> Inside / Outside / Reveal
Anchor size	d	<sub>0</sub> = [mm]	
Anchor size Installationsside <sup>6)</sup>			Inside / Outside / Reveal
Anchor size Installationsside <sup>6)</sup> Drill hole diameter	d <sub>ci</sub>	· · · · · · · · · · · · · · · · · · ·	Inside / Outside / Reveal 8
Installationsside <sup>6)</sup> Drill hole diameter Cutting diameter of drill bit	d <sub>ci</sub>	ut ≤ [mm]	Inside / Outside / Reveal 8 8.45
Anchor size Installationsside <sup>6)</sup> Drill hole diameter Cutting diameter of drill bit Depth of drill hole to deepest point	d <sub>ci</sub>	$\frac{1}{1} \ge [mm]$ $\frac{1}{1} \ge [mm]$	Inside / Outside / Reveal 8 8.45 80
Anchor size Installationsside <sup>6)</sup> Drill hole diameter Cutting diameter of drill bit Depth of drill hole to deepest point Drill method	d <sub>c</sub> , h	$\frac{1}{1} \ge [mm]$ $\frac{1}{1} \ge [mm]$	Inside / Outside / Reveal 8 8.45 80 Hammer drilling

## able C 10.2.3: Characteristic resistance F<sub>Rk</sub> ' in [kN] for single anchor

Anchor size			W-UR 8
Installationsside <sup>6)</sup>			Inside / Outside / Reveal
Overall plastic anchor embedment depth	$h_{nom} \ge$	[mm]	70
Solid brick Mz, f <sub>b</sub> ≥ 10 N/mm <sup>2</sup>	30°C <sup>3)</sup> / 50°C <sup>4)</sup>	[kN]	1.5
Characteristic resistance F <sub>Rk</sub>	50°C <sup>3)</sup> / 80°C <sup>4)</sup>	[kN]	1.5
Solid brick Mz, f <sub>b</sub> ≥ 20 N/mm <sup>2</sup>	30°C <sup>3)</sup> / 50°C <sup>4)</sup>	[kN]	2.0
Characteristic resistance F <sub>Rk</sub>	50°C <sup>3)</sup> / 80°C <sup>4)</sup>	[kN]	2.0
Solid brick Mz, f <sub>b</sub> ≥ 28 N/mm <sup>2</sup>	30°C <sup>3)</sup> / 50°C <sup>4)</sup>	[kN]	3.0
Characteristic resistance F <sub>Rk</sub>	50°C <sup>3)</sup> / 80°C <sup>4)</sup>	[kN]	3.0
Partial safety factor	2) γMm	[-]	2.5

Footnotes see Annex C 3

# Würth Plastic Anchor W-UR

Performances Solid masonry: Solid brick Mz, 3DF Brick data, installation parameters, characteristic resistance



Base material hollow masonry: Hollow brick HLz, 2DF					
Table C 10.3.1: Brick data					
Description of brick	771-1-021		Н	Lz	
Type of brick			Hollov	w brick	
Bulk density $\rho \ge$	[kg/dm³]			.2	
Standard, approval				-01; EN 771	
Producer of brick		e.g. Wienerberger GmbH			
Format (measurement)	[mm]	≥ 2DF (≥ 240x115x113)			
Minimum thickness of member h <sub>min</sub> =	[mm]		11	15	
		1214 8 30.5 12	115		
Table C 10.3.2: Installation parameters					
Anchor size	-		JR 8		R 10
Anchor size Installationsside <sup>6)</sup>		W-L	Inside /	Outside	
Anchor size Installationsside <sup>6)</sup>	l <sub>o</sub> = [mm]		Inside /		
Anchor size       Installationsside <sup>6)</sup> Drill hole diameter	l₀ = [mm] <sub>ut</sub> ≤ [mm]	W-L	Inside /	Outside	0
Anchor size         Installationsside <sup>6)</sup> Drill hole diameter         Cutting diameter of drill bit		W-L	Inside /	Outside 1	0
Anchor size         Installationsside <sup>6)</sup> Drill hole diameter         Cutting diameter of drill bit	ut ≤ [mm]	<b>W-L</b> 8. 60	Inside / 3 45	Outside 1 10. 60	0 45

# Table C 10.3.3: Characteristic resistance $F_{Rk}^{(1)}$ in [kN] for single anchor

Anchor size			W-UR 8 W-UR 10		R 10	
Installationsside <sup>6)</sup>				Inside /	Outside	
Overall plastic anchor embedment depth	h <sub>nom</sub>	[mm]	≥ <b>50</b> <sup>5)</sup>	= 70	≥ <b>50</b> <sup>5)</sup>	= 70
Hollow brick HLz, $f_b \ge 8 \text{ N/mm}^2$	30°C <sup>3)</sup> / 50°C <sup>4)</sup>	[kN]	0.6	0.9	-	0.9
Characteristic resistance F <sub>Rk</sub>	50°C <sup>3)</sup> / 80°C <sup>4)</sup>	[kN]	0.5	0.75	-	0.75
Hollow brick HLz, f <sub>b</sub> ≥ 12 N/mm <sup>2</sup>	30°C <sup>3)</sup> / 50°C <sup>4)</sup>	[kN]	0.9	1.5	0.5	1.5
Characteristic resistance F <sub>Rk</sub>	50°C <sup>3)</sup> / 80°C <sup>4)</sup>	[kN]	0.75	0.9	0.4	1.2
Hollow brick HLz, f <sub>b</sub> ≥ 20 N/mm <sup>2</sup>	30°C <sup>3)</sup> / 50°C <sup>4)</sup>	[kN]	1.5	2.5	0.75	2.5
Characteristic resistance F <sub>Rk</sub>	50°C <sup>3)</sup> / 80°C <sup>4)</sup>	[kN]	1.2	1.5	0.6	2.0
Partial safety factor	2) γMm	[-]	2	.5	2.	5

[mm]

[mm]

d<sub>f</sub> ≤

 $\boldsymbol{c}_{\mathsf{min}} \geq$ 

8.5

100

Footnotes see Annex C 3

# Würth Plastic Anchor W-UR

Diameter of clearance hole in the fixture

Minimum allowable edge distance

Performances Hollow brick: HLz, 2DF Brick data, installation parameters, characteristic resistance Annex C 13

10.5

100

250

# Page 28 of European Technical Assessment ETA-08/0190 of 5 September 2017

English translation prepared by DIBt



Type of brick       Hollow brick         Bulk density $\rho \ge [kg/dm^3]$ 1.2         Standard, approval       DIN 105-100:2012-01; EN 771-1:2011         Producer of brick       e.g. Schlagmann Baustoffwerke GmbH & Co.         Format (measurement)       [mm] $\ge 12DF$ ( $\ge 373 \times 240 \times 238$ )         Minimum thickness of member $h_{min} = [mm]$ $\ge 40$ <b>able C 10.4.2: Installation parameters</b> $373$ $373$ <b>able C 10.4.2: Installation parameters</b> $115$ $111$ Anchor size <b>W-UR 8 W-UR 10</b> Installationsside <sup>6</sup> )       Inside / Outsid       Reveal       Inside / Outsid         Drill hole diameter $d_0 = [mm]$ $8.45$ 10.45         Depth of drill bit $d_{out} \le [mm]$ $80$ $80$ Drill method $[-]$ Rotary drilling       Rotary drilling         Overall plastic anchor embedment depth $h_{nom} = [mm]$ $70$ $70$ Diameter of clearance hole in the fixture $d_{ed} \le [mm]$ $8.5$ 10.5         Minimum allowable edge distance $c_{min} \ge [mm]$ $45$ $65$ 100	Description of brick	7	71-1-010;771-1-036			HLz	
Bulk density $p \ge [kg/dm^3]$ 1.2 Standard, approval $p \ge [kg/dm^3]$ DIN 105-100:2012-01; EN 771-1:2011 Producer of brick $e g$ . Schlagmann Baustoffwerke GmbH & Co. Format (measurement) [mm] $\ge 12DF (\ge 373\times240\times238)$ Minimum thickness of member $h_{min} = [mm]$ 240					Ho		rick
Standard, approval       DIN 105-100:2012-01; EN 771-1:2011         Producer of brick       e.g. Schlagmann Baustoffwerke GmbH & Co.         Format (measurement)       (mm) $\geq 12DF (\geq 373x240x238)$ Minimum thickness of member       hmm $\geq 240$ able C 10.4.2: Installation parameters       W-UR 8       W-UR 10         Inside f <sup>(6)</sup> W-UR 8       W-UR 10         Inside of fill bit       d.g. W-UR 10         Inside of drill bit       d.g. W-UR 10         Inside of drill bit       d.g. M-UR 10         Diameter of drill bit       d.g. M-UR 10         Diameter of clearance hole in the fixture       d.g. (mm)       4.5       10.5         Optical disticanchor embedment depth       hom       G.G. G. J. G. S.         M-UR 8       W-UR 10         Inside C 10.4.3: Characteristic		$\rho \geq$	[kg/dm³]				
Producer of brick       e.g. Schlagmann Baustoffwerke GmbH & Co.         Tormat (measurement)       [mm] $\geq 12DF$ ( $\geq 373x240x238$ )         Winimum thickness of member $h_{nin} = \begin{bmatrix} mm \end{bmatrix}$ $\geq 12DF$ ( $\geq 373x240x238$ )         Winimum thickness of member $h_{nin} = \begin{bmatrix} mm \end{bmatrix}$ $\geq 12DF$ ( $\geq 373x240x238$ )         Immit thickness of member $h_{nin} = \begin{bmatrix} mm \end{bmatrix}$ $\geq 12DF$ ( $\geq 373x240x238$ )         Immit thickness of member $h_{nin} = \begin{bmatrix} mm \end{bmatrix}$ $\geq 12DF$ ( $\geq 373x240x238$ )         Immit thickness of member $11$ $373$ Anchor size       W-UR 8       W-UR 10         Inside / Outside       Inside / Outside       Inside / Outside         Drill hole diameter $d_0 = [mm]$ 8       10         Cutting diameter of drill bit $d_{ast} \leq [mm]$ 8.45       10.45         Depth of drill hole to deepest point $h_{1,2} \geq [mm]$ 8       10         Overall plastic anchor embedment depth $h_{adm} = [mm]$ 70       70         Diameter of clearance hole in the fixture $d_{e} \leq [mm]$ 45       65       100         able C 10.4.3: Characteristic resistance $F_{Rk}^{-1}$ and $V_{Rk}^{7}$ in [kN] for single anchor       Anchor size       W-UR 10       Inside / Outside         Overall plastic anchor emb	•	I <sup></sup>		DIN 10	5-100:20	012-01;	EN 771-1:2011
$ \begin{array}{ c c c c c } \hline \label{eq:construction} \hline \begin{tabular}{ c c c c c c c c c c c c c c c c c c c$							
Winimum thickness of member $h_{min} = \begin{bmatrix} mm \end{bmatrix}$ 240         373         373         373         373         373         373         373         373         able C 10.4.2: Installation parameters         W-UR 8       W-UR 10         N-UR 8       W-UR 10         Inside / Outside         Drill hole diameter       d.         M-UR 8       W-UR 10         Drill hole diameter       d.         Drill hole diameter       d.         Drill method       Clarance hole in the fixture       d.         Or Colspan= 2       M-UR 8       W-UR 10         Inside / Outside       Reveal       Inside / Outside         Outside       Cmm 2       TO         Drill method       Clarance hole in the fixture       d.       M-UR 10         Inside / Outside       Inside / Outside			[mm]	<u> </u>			
$\begin{array}{c c c c c c c c c c c c c c c c c c c $		h . =		4			2408230)
$\begin{array}{c c c c c c c } \hline \hline & $						240	
able C 10.4.2: Installation parametersW-UR 8W-UR 8W-UR 10Installationsside <sup>5</sup> )Inside / OutsideRevealInside / OutsideInside /	10						
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$			-+  <del> -</del> -				W/ LIB 40
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	A MANANA SA MANANA NA SA MANANA N		1			5	
$\begin{array}{c c c c c c c c c c c c c c c c c c c $					2012/02/2019/9	eal	Inside / Outside
$\begin{array}{c c c c c c c c c c c c c c c c c c c $					-		
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	-						
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$		h <sub>1</sub> :					
$\begin{array}{c c c c c c c c c c c c c c c c c c c $					-		
$\begin{array}{c c c c c c c c c c c c c c c c c c c $							
able C 10.4.3: Characteristic resistance $F_{Rk}^{(1)}$ and $V_{Rk}^{(7)}$ in [kN] for single anchorAnchor sizeW-UR 8W-UR 10Installationsside <sup>6)</sup> Inside / OutsideRevealInside / OutsideOverall plastic anchor embedment depth anchor $h_{nom} = [mm]$ 7070Characteristic resistance for single anchor[kN] $F_{Rk}^{(1)}$ $F_{Rk}^{(1)}$ $F_{Rk}^{(1)}$ $F_{Rk}^{(1)}$ Hollow brick HLz, $f_b \ge 6$ N/mm² Characteristic resistance $F_{Rk}$ $30^{\circ}C^{3}/50^{\circ}C^{4}$ [kN]0.61.21.50.9Characteristic resistance $F_{Rk}$ $50^{\circ}C^{3}/80^{\circ}C^{4}$ [kN]0.92.02.01.2Characteristic resistance $F_{Rk}$ $50^{\circ}C^{3}/80^{\circ}C^{4}$ [kN]0.91.52.00.9Hollow brick HLz, $f_b \ge 10$ N/mm² Characteristic resistance $F_{Rk}$ $50^{\circ}C^{3}/80^{\circ}C^{4}$ [kN]1.21.50.9Hollow brick HLz, $f_b \ge 10$ N/mm² Characteristic resistance $F_{Rk}$ $50^{\circ}C^{3}/80^{\circ}C^{4}$ [kN]1.22.01.2Hollow brick HLz, $f_b \ge 10$ N/mm² Characteristic resistance $F_{Rk}$ $50^{\circ}C^{3}/80^{\circ}C^{4}$ [kN]1.22.02.01.2Hollow brick HLz, $f_b \ge 12$ N/mm² Characteristic resistance $F_{Rk}$ $50^{\circ}C^{3}/80^{\circ}C^{4}$ [kN]1.21.52.01.2Hollow brick HLz, $f_b \ge 12$ N/mm² Characteristic resistance $F_{Rk}$ $50^{\circ}C^{3}/80^{\circ}C^{4}$ [kN]1.21.52.01.5Partial safety factor $\gamma_{Mm}^{2}$ [-] <td< td=""><td></td><td></td><td></td><td></td><td></td><td>-</td><td></td></td<>						-	
$\begin{array}{c c c c c c c c c c c c c c c c c c c $		C <sub>min</sub>	≤l fuuuì	40	0:	)	100
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	able C 10.4.3: Characteristic resistance	$F_{Rk}^{(1)}$ and $V_{Rk}^{(7)}$	in [kN] foi	r single anc	hor		
$\begin{array}{c c c c c c c c c c c c c c c c c c c $			•••				W-UR 10
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $					Rev	eal	Inside / Outside
$\begin{array}{c c c c c c c c c c c c c c c c c c c $				Outside			70
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Installationsside <sup>6)</sup>	h <sub>nom</sub> :	= [mm]		70		
Hollow brick HLz, $f_b \ge 8 \text{ N/mm}^2$ $30^\circ \text{C}^{3/} / 50^\circ \text{C}^{4/}$ $[kN]$ $0.9$ $2.0$ $2.0$ $1.2$ Characteristic resistance $F_{Rk}$ $50^\circ \text{C}^{3/} / 80^\circ \text{C}^{4/}$ $[kN]$ $0.9$ $1.5$ $2.0$ $0.9$ Hollow brick HLz, $f_b \ge 10 \text{ N/mm}^2$ $30^\circ \text{C}^{3/} / 50^\circ \text{C}^{4/}$ $[kN]$ $1.2$ $2.0$ $2.0$ $1.5$ Characteristic resistance $F_{Rk}$ $30^\circ \text{C}^{3/} / 50^\circ \text{C}^{4/}$ $[kN]$ $1.2$ $2.0$ $1.5$ Hollow brick HLz, $f_b \ge 12 \text{ N/mm}^2$ $30^\circ \text{C}^{3/} / 80^\circ \text{C}^{4/}$ $[kN]$ $1.2$ $2.0$ $2.0$ $2.0$ Characteristic resistance $F_{Rk}$ $30^\circ \text{C}^{3/} / 80^\circ \text{C}^{4/}$ $[kN]$ $1.2$ $2.0$ $2.0$ $2.0$ Characteristic resistance $F_{Rk}$ $50^\circ \text{C}^{3/} / 80^\circ \text{C}^{4/}$ $[kN]$ $1.2$ $2.0$ $2.0$ $2.0$ Partial safety factor $\gamma_{Mm}^{2/}$ $[-]$ $2.5$ $2.5$ $2.5$	Installationsside <sup>6)</sup> Overall plastic anchor embedment depth <b>Characteristic resistance for single</b>	h <sub>nom</sub> :				F <sub>Rk</sub> <sup>7)</sup>	F <sub>Rk</sub> <sup>1)</sup>
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Installationsside <sup>6)</sup> Overall plastic anchor embedment depth Characteristic resistance for single anchor	30°C <sup>3)</sup> / 50°C'	[kN]	F <sub>Rk</sub> 1)	F <sub>Rk</sub> <sup>1)</sup>		
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Installationsside <sup>6)</sup> Overall plastic anchor embedment depth Characteristic resistance for single anchor Hollow brick HLz, $f_b \ge 6 \text{ N/mm}^2$	30°C <sup>3)</sup> / 50°C'	[kN]	<b>F</b> <sub>Rk</sub> <sup>1)</sup> 0.6	<b>F</b> <sub>Rk</sub> <sup>1)</sup> 1.2	1.5	0.9
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Installationsside <sup>6)</sup> Overall plastic anchor embedment depth Characteristic resistance for single anchor Hollow brick HLz, $f_b \ge 6 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$	30°C <sup>3)</sup> / 50°C 50°C <sup>3)</sup> / 80°C 30°C <sup>3)</sup> / 50°C	(kN) (kN) (kN) (kN) (kN)	<b>F</b> <sub>Rk</sub> <sup>1)</sup> 0.6 0.6	<b>F</b> <sub>Rk</sub> <sup>1)</sup> 1.2 1.2	1.5 1.5	0.9 0.75
Hollow brick HLz, $f_b \ge 12 \text{ N/mm}^2$ $30^\circ \text{C}^{3)} / 50^\circ \text{C}^{4)}$ $[kN]$ $1.2$ $2.0$ $2.0$ Characteristic resistance $F_{\text{Rk}}$ $50^\circ \text{C}^{3)} / 80^\circ \text{C}^{4)}$ $[kN]$ $1.2$ $1.5$ $2.0$ $1.5$ Partial safety factor $\gamma_{\text{Mm}}^{2)}$ $[-]$ $2.5$ $2.5$ $2.5$	Installationsside <sup>6)</sup> Overall plastic anchor embedment depth Characteristic resistance for single anchor Hollow brick HLz, $f_b \ge 6 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Hollow brick HLz, $f_b \ge 8 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$	30°C <sup>3)</sup> / 50°C 50°C <sup>3)</sup> / 80°C 30°C <sup>3)</sup> / 50°C 50°C <sup>3)</sup> / 80°C	<sup>4)</sup> [kN] <sup>4)</sup> [kN] <sup>4)</sup> [kN] <sup>4)</sup> [kN] <sup>4)</sup> [kN]	<b>F</b> <sub>Rk</sub> <sup>1)</sup> 0.6 0.6 0.9	<b>F</b> <sub>Rk</sub> <sup>1)</sup> 1.2 1.2 2.0	1.5 1.5 2.0	0.9 0.75 1.2
Characteristic resistance $F_{Rk}$ $50^{\circ}C^{3} / 80^{\circ}C^{4}$ [kN]1.21.52.01.5Partial safety factor $\gamma_{Mm}^{2}$ [-]2.52.5	Installationsside <sup>6)</sup> Overall plastic anchor embedment depth Characteristic resistance for single anchor Hollow brick HLz, $f_b \ge 6 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Hollow brick HLz, $f_b \ge 8 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$	30°C <sup>3)</sup> / 50°C 50°C <sup>3)</sup> / 80°C 30°C <sup>3)</sup> / 50°C 50°C <sup>3)</sup> / 80°C 30°C <sup>3)</sup> / 50°C	<sup>4)</sup> [kN] <sup>4)</sup> [kN] <sup>4)</sup> [kN] <sup>4)</sup> [kN] <sup>4)</sup> [kN] <sup>4)</sup> [kN]	<b>F</b> <sub>Rk</sub> <sup>1)</sup> 0.6 0.9 0.9	<b>F</b> <sub>Rk</sub> <sup>1)</sup> 1.2 1.2 2.0 1.5	1.5 1.5 2.0 2.0	0.9 0.75 1.2 0.9
Partial safety factor $\gamma_{Mm}^{(2)}$ [-]2.52.5	Installationsside <sup>6)</sup> Overall plastic anchor embedment depth Characteristic resistance for single anchor Hollow brick HLz, $f_b \ge 6 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Hollow brick HLz, $f_b \ge 8 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Hollow brick HLz, $f_b \ge 10 \text{ N/mm}^2$	30°C <sup>3)</sup> / 50°C 50°C <sup>3)</sup> / 80°C 30°C <sup>3)</sup> / 50°C 50°C <sup>3)</sup> / 80°C 30°C <sup>3)</sup> / 50°C 50°C <sup>3)</sup> / 80°C	<sup>4)</sup> [kN] <sup>4)</sup> [kN] <sup>4)</sup> [kN] <sup>4)</sup> [kN] <sup>4)</sup> [kN] <sup>4)</sup> [kN] <sup>4)</sup> [kN]	<b>F</b> <sub>Rk</sub> <sup>1)</sup> 0.6 0.6 0.9 0.9 1.2	<b>F</b> <sub>Rk</sub> <sup>1)</sup> 1.2 1.2 2.0 1.5 2.0	1.5 1.5 2.0 2.0 2.0	0.9 0.75 1.2 0.9 1.5
	Installationsside <sup>6)</sup> Overall plastic anchor embedment depth Characteristic resistance for single anchor Hollow brick HLz, $f_b \ge 6 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Hollow brick HLz, $f_b \ge 8 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Hollow brick HLz, $f_b \ge 10 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$	30°C <sup>3)</sup> / 50°C 50°C <sup>3)</sup> / 80°C 30°C <sup>3)</sup> / 50°C 50°C <sup>3)</sup> / 80°C 30°C <sup>3)</sup> / 50°C 50°C <sup>3)</sup> / 80°C 30°C <sup>3)</sup> / 80°C	(kN) (kN) (kN) (kN) (kN) (kN) (kN) (kN) (kN) (kN) (kN) (kN)	F <sub>Rk</sub> <sup>1)</sup> 0.6 0.6 0.9 0.9 1.2 1.2	<b>F</b> <sub>Rk</sub> <sup>1)</sup> 1.2 1.2 2.0 1.5 2.0 1.5	1.5 1.5 2.0 2.0 2.0 2.0	0.9 0.75 1.2 0.9 1.5 1.2
ootnotes see Annex C 3	Installationsside <sup>6)</sup> Overall plastic anchor embedment depth Characteristic resistance for single anchor Hollow brick HLz, $f_b \ge 6 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Hollow brick HLz, $f_b \ge 8 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Hollow brick HLz, $f_b \ge 10 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Hollow brick HLz, $f_b \ge 10 \text{ N/mm}^2$	30°C <sup>3)</sup> / 50°C 50°C <sup>3)</sup> / 80°C 30°C <sup>3)</sup> / 50°C 50°C <sup>3)</sup> / 80°C 30°C <sup>3)</sup> / 50°C 50°C <sup>3)</sup> / 80°C 30°C <sup>3)</sup> / 80°C	(kN) (kN) (kN) (kN) (kN) (kN) (kN) (kN) (kN) (kN) (kN)	F <sub>Rk</sub> <sup>1)</sup> 0.6 0.9 0.9 1.2 1.2 1.2 1.2 1.2	<b>F</b> <sub>Rk</sub> <sup>1)</sup> 1.2 2.0 1.5 2.0 1.5 2.0 1.5 2.0	1.5 1.5 2.0 2.0 2.0 2.0 2.0	0.9 0.75 1.2 0.9 1.5 1.2 2.0 1.5
	Installationsside <sup>6)</sup> Overall plastic anchor embedment depth Characteristic resistance for single anchor Hollow brick HLz, $f_b \ge 6 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Hollow brick HLz, $f_b \ge 8 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Hollow brick HLz, $f_b \ge 10 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Hollow brick HLz, $f_b \ge 12 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$	30°C <sup>3)</sup> / 50°C 50°C <sup>3)</sup> / 80°C 30°C <sup>3)</sup> / 50°C 50°C <sup>3)</sup> / 80°C 30°C <sup>3)</sup> / 50°C 50°C <sup>3)</sup> / 80°C 30°C <sup>3)</sup> / 50°C 50°C <sup>3)</sup> / 80°C	(kN) (kN) (kN) (kN) (kN) (kN) (kN) (kN) (kN) (kN) (kN) (kN) (kN)	F <sub>Rk</sub> <sup>1)</sup> 0.6 0.9 0.9 1.2 1.2 1.2 1.2 1.2	<b>F</b> <sub>Rk</sub> <sup>1)</sup> 1.2 2.0 1.5 2.0 1.5 2.0 1.5 2.0	1.5 1.5 2.0 2.0 2.0 2.0 2.0	0.9 0.75 1.2 0.9 1.5 1.2 2.0 1.5

Hollow brick: HLz, 12DF Brick data, installation parameters, characteristic resistance



escription of brick		771-1-0	<sup>19</sup> POROTON Planziegel T14
ype of brick			Hollow brick
ulk density	$\rho \geq$	[kg/dm³	0.7
tandard, approval			EN 771-1:2011; Z-17.1-625
roducer of brick			Schlagmann Baustoffwerke GmbH & Co. KG Ziegeleistraße 1 D-84367 Zeilarn
ormat (measurement)		[mm]	≥ 10DF (≥ 248x300x249)
linimum thickness of member	h <sub>min</sub> =	[mm]	300
ble C 10.5.2: Installation parameters			
Anchor size			W-UR 8
nstallationsside <sup>6)</sup>			Inside / Outside
Drill hole diameter	d	<sub>0</sub> = [mm	ı] 8
	h	<sub>ut</sub> ≤ [mm	8.45
Cutting diameter of drill bit	Sec.		
Depth of drill hole to deepest point		1 ≥ [mm	-
Depth of drill hole to deepest point Drill method	h	[-]	Rotary drilling
Depth of drill hole to deepest point Drill method Dverall plastic anchor embedment depth	h h <sub>nor</sub>	 = [mm	Rotary drilling ] 70
Depth of drill hole to deepest point Drill method Dverall plastic anchor embedment depth Diameter of clearance hole in the fixture	h h 	n = [mm] n = [mm] n ≤ [mm]	Rotary drilling           1]         70           8.5
Depth of drill hole to deepest point Drill method Dverall plastic anchor embedment depth Diameter of clearance hole in the fixture Minimum allowable edge distance	h h <sub>nor</sub> C <sub>m</sub>		Rotary drilling           []         70           []         8.5           []         100
Cutting diameter of drill bit Depth of drill hole to deepest point Drill method Dverall plastic anchor embedment depth Diameter of clearance hole in the fixture Minimum allowable edge distance ble C 10.5.3: Characteristic resistance I Anchor size	h h <sub>nor</sub> C <sub>m</sub>		Rotary drilling           []         70           []         8.5           []         100
Depth of drill hole to deepest point Drill method Dverall plastic anchor embedment depth Diameter of clearance hole in the fixture Minimum allowable edge distance	h h <sub>nor</sub> C <sub>m</sub>		Rotary drilling           []         70           []         8.5           []         100
Depth of drill hole to deepest point Drill method Dverall plastic anchor embedment depth Diameter of clearance hole in the fixture Minimum allowable edge distance <b>ble C 10.5.3: Characteristic resistance f</b> Anchor size Installationsside <sup>6)</sup>	h <u>h<sub>nor</sub> c C<sub>m</sub> =<sub>Rk</sub><sup>1)</sup> in [kN] for</u>	n = [mr l <sub>f</sub> ≤ [mr n ≥ [mr	Rotary drilling           1         70           1         8.5           1         100             Anchor         W-UR 8           Inside / Outside
Depth of drill hole to deepest point Drill method Dverall plastic anchor embedment depth Diameter of clearance hole in the fixture Minimum allowable edge distance ble C 10.5.3: Characteristic resistance I Anchor size	h 	$\frac{[-]}{m} = [mm]$ $\frac{d_{f} \leq [mm]}{m \geq [mm]}$ $r single a$ $\frac{m}{m} = [mm]$ $C^{4)} [kN]$	Rotary drilling         0]       70         0]       8.5         0]       100         anchor       W-UR 8         Inside / Outside         0]       70
Depth of drill hole to deepest point Drill method Dverall plastic anchor embedment depth Diameter of clearance hole in the fixture Aninimum allowable edge distance ble C 10.5.3: Characteristic resistance for Anchor size Installationsside <sup>6)</sup> Dverall plastic anchor embedment depth Hollow brick POROTON Planziegel	h n <sub>nor</sub> C Rk <sup>1)</sup> in [kN] for h <sub>nor</sub>	$\frac{[-]}{m} = [mm]$ $\frac{d_{f} \leq [mm]}{m \geq [mm]}$ $r single a$ $\frac{m}{m} = [mm]$ $C^{4)} [kN]$	Rotary drilling       1     70       1     70       1     8.5       1     100         Anchor       W-UR 8       Inside / Outside       1       70       1     0.4

# Würth Plastic Anchor W-UR

**Performances Hollow brick: POROTON Planziegel T14, 10DF** Brick data, installation parameters, characteristic resistance



Description of brick		771-1-022	POROTON-T8-30,0-P and	POROTON-T9-30,0-
Type of brick			Hollow brick PORO	
Bulk density	ρ≥∣	[kg/dm³]	0.6	6
Standard, approval			T8: EN 771-1:20 T9: EN 771-1:20	
Producer of brick			Wienerberg Oldenburge D-30659 H	r Allee 26
			Schlagmann Baustoffwe Ziegeleist D-84367	traße 1
Measurement		[mm]	≥ 10DF (≥ 248	3x300x249)
Minimum thickness of member	h <sub>min</sub> =	[mm]	300	)
	111	9		
	<u>-  - 111</u> .	9	WUD 0	
Anchor size	<u>.   . 111</u> .	9	W-UR 8	W-UR 10
Anchor size Installationsside <sup>6)</sup>	-  -	. = [mm]	Inside /	Outside
Anchor size Installationsside <sup>6)</sup> Drill hole diameter	d	0 = [mm] < [mm]	Inside / 8	Outside 10
Anchor size Installationsside <sup>6)</sup> Drill hole diameter Cutting diameter of drill bit	d dc	<sub>ut</sub> ≤ [mm]	Inside /	Outside
Anchor size Installationsside <sup>6)</sup> Drill hole diameter	d dc	$u_t \leq [mm]$ $1 \geq [mm]$	Inside / 8 8.45 80	Outside 10 10.45 80
Anchor size Installationsside <sup>6)</sup> Drill hole diameter Cutting diameter of drill bit Depth of drill hole to deepest point	d d <sub>e</sub>	$\begin{array}{c c} & \hline \\ t \leq & [mm] \\ \hline \\ 1 \geq & [mm] \\ \hline \\ & \hline \\ \hline \\$	Inside / 8 8.45	Outside 10 10.45
Anchor size Installationsside <sup>6)</sup> Drill hole diameter Cutting diameter of drill bit Depth of drill hole to deepest point Drill method	d d <sub>c</sub> h	$\begin{array}{c c} & & \\ t \leq & [mm] \\ 1 \geq & [mm] \\ \hline & & [-] \end{array}$	Inside / 8 8.45 80 Rotary drilling	Outside 10 10.45 80 Rotary drilling
Installationsside <sup>6)</sup> Drill hole diameter Cutting diameter of drill bit Depth of drill hole to deepest point Drill method Overall plastic anchor embedment depth	d d <sub>c</sub> h	$\begin{array}{c c} & \hline mm \\ times \\ times \\ \hline mm \\ times \\ \hline mm \\ times \\ \hline mm \\ \hline mm \\ times \\ \hline mm \\ times \\ \hline mm \\ \hline mm \\ times \\ tit$	Inside / 8 8.45 80 Rotary drilling 70	Outside 10 10.45 80 Rotary drilling 70
Anchor sizeInstallationsside60Drill hole diameterCutting diameter of drill bitDepth of drill hole to deepest pointDrill methodOverall plastic anchor embedment depthDiameter of clearance hole in the fixture	d d <sub>c</sub> h <u>h<sub>noi</sub> c</u>	$\begin{array}{c c} & mm \\ 1 \geq [mm] \\ 1 \geq [mm] \\ \hline n = [mm] \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ $	Inside / 8 8.45 80 Rotary drilling 70 8.5 100	Outside 10 10.45 80 Rotary drilling 70 10.5
Anchor size         Installationsside <sup>6)</sup> Drill hole diameter         Cutting diameter of drill bit         Depth of drill hole to deepest point         Drill method         Overall plastic anchor embedment depth         Diameter of clearance hole in the fixture         Minimum allowable edge distance         Table C 10.6.3: Characteristic resistance F <sub>Rk</sub> <sup>1)</sup> i         Anchor size	d d <sub>c</sub> h <u>h<sub>noi</sub> c</u>	$\begin{array}{c c} & mm \\ 1 \geq [mm] \\ 1 \geq [mm] \\ \hline n = [mm] \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ $	Inside / 8 8.45 80 Rotary drilling 70 8.5 100 chor W-UR 8	Outside 10 10.45 80 Rotary drilling 70 10.5 100 W-UR 10
Anchor size Installationsside <sup>6)</sup> Drill hole diameter Cutting diameter of drill bit Depth of drill hole to deepest point Drill method Overall plastic anchor embedment depth Diameter of clearance hole in the fixture Minimum allowable edge distance <b>Table C 10.6.3: Characteristic resistance F<sub>Rk</sub><sup>1)</sup> i</b> Anchor size Installationsside <sup>6)</sup>	- ال d d c h n c c m	r single and	Inside / 8 8.45 80 Rotary drilling 70 8.5 100 <b>chor</b> <b>W-UR 8</b> Inside /	Outside 10 10.45 80 Rotary drilling 70 10.5 100 <b>W-UR 10</b> Outside
Anchor size         Installationsside <sup>6)</sup> Drill hole diameter         Cutting diameter of drill bit         Depth of drill hole to deepest point         Drill method         Overall plastic anchor embedment depth         Diameter of clearance hole in the fixture         Minimum allowable edge distance         able C 10.6.3: Characteristic resistance $F_{Rk}^{1)}$ i         Anchor size         Installationsside <sup>6)</sup> Overall plastic anchor embedment depth	- II- d d <sub>c</sub> h n c c c m n [kN] for	$\begin{array}{c c} & & & \\ 1 \leq & [mm] \\ 1 \geq & [mm] \\ \hline \\ n = & [mm] \\ \hline \\ l_{f} \leq & [mm] \\ \hline \\ r \ single \ an \\ \hline \\ n = & [mm] \\ \hline \end{array}$	Inside / / 8 8.45 80 Rotary drilling 70 8.5 100 chor W-UR 8 Inside / / 70	Outside 10 10.45 80 Rotary drilling 70 10.5 100 <b>W-UR 10</b> Outside <b>70</b>
Anchor size         Installationsside <sup>6)</sup> Drill hole diameter         Cutting diameter of drill bit         Depth of drill hole to deepest point         Drill method         Overall plastic anchor embedment depth         Diameter of clearance hole in the fixture         Minimum allowable edge distance         able C 10.6.3: Characteristic resistance $F_{Rk}^{1)}$ i         Anchor size         Installationsside <sup>6)</sup> Overall plastic anchor embedment depth         90ROTON-T8-30,0-P and         POROTON-T9-30,0-P,	d d <sub>c</sub> h <u>h</u> c c n [kN] for h <sub>no</sub>	r single an $r = [mm]r = [mm]r single n$	Inside / 8 8.45 80 Rotary drilling 70 8.5 100 <b>chor</b> <b>W-UR 8</b> Inside /	Outside 10 10.45 80 Rotary drilling 70 10.5 100 <b>W-UR 10</b> Outside
Anchor sizeInstallationssideDrill hole diameterCutting diameter of drill bitDepth of drill hole to deepest pointDrill methodOverall plastic anchor embedment depthDiameter of clearance hole in the fixtureMinimum allowable edge distanceable C 10.6.3: Characteristic resistance $F_{Rk}^{1)}$ iAnchor sizeInstallationssideOverall plastic anchor embedment depthDiameter of clearance hole in the fixtureMinimum allowable edge distanceable C 10.6.3: Characteristic resistance $F_{Rk}^{1)}$ iAnchor sizeInstallationssideOverall plastic anchor embedment depthPOROTON-T8-30,0-P and POROTON-T9-30,0-P, f_b ≥ 6 N/mm² Characteristic resistance $F_{Rk}$	- II- d d <sub>c</sub> h n c c c m n [kN] for	$\begin{array}{c c} & & & & \\ \hline \hline & & & \\ \hline \\ \hline$	Inside / / 8 8.45 80 Rotary drilling 70 8.5 100 chor W-UR 8 Inside / / 70 0.9 0.9	Outside 10 10.45 80 Rotary drilling 70 10.5 100 W-UR 10 Outside 70 1.5 0.9
Anchor sizeInstallationssideInstallationssideDrill hole diameterCutting diameter of drill bitDepth of drill hole to deepest pointDrill methodOverall plastic anchor embedment depthDiameter of clearance hole in the fixtureMinimum allowable edge distanceTable C 10.6.3: Characteristic resistance $F_{Rk}^{1}$ iAnchor sizeInstallationssideOverall plastic anchor embedment depthØuerall plastic anchor embedment depthPOROTON-T8-30,0-P and POROTON-T9-30,0-P, f_b ≥ 6 N/mm²fb ≥ 6 N/mm² Characteristic resistance $F_{Rk}$ 9artial safety factor	d d <sub>c</sub> h <u>h</u> c c n [kN] for h <sub>no</sub>	$\begin{array}{c c} r & r \\ r & r \\ r \\ r \\ r \\ r \\ r \\ r \\$	Inside / / 8 8.45 80 Rotary drilling 70 8.5 100 chor W-UR 8 Inside / / 70 0.9	Outside 10 10.45 80 Rotary drilling 70 10.5 100 <b>W-UR 10</b> Outside <b>70</b> 1.5
Anchor sizeInstallationssideDrill hole diameterCutting diameter of drill bitDepth of drill hole to deepest pointDrill methodOverall plastic anchor embedment depthDiameter of clearance hole in the fixtureMinimum allowable edge distanceable C 10.6.3: Characteristic resistance $F_{Rk}^{1}$ iAnchor sizeInstallationssideOverall plastic anchor embedment depthDiameter of clearance hole in the fixtureMinimum allowable edge distanceable C 10.6.3: Characteristic resistance $F_{Rk}^{1}$ iAnchor sizeInstallationssideOverall plastic anchor embedment depthPOROTON-T8-30,0-P and POROTON-T9-30,0-P, Characteristic resistance $F_{Rk}$ 50Partial safety factor	d d <sub>c</sub> h <u>n</u> <u>n [kN] fo</u> <u>h<sub>noi</sub> )°C<sup>3)</sup> / 50°</u>	$\begin{array}{c c} r & r \\ r & r \\ r \\ r \\ r \\ r \\ r \\ r \\$	Inside / / 8 8.45 80 Rotary drilling 70 8.5 100 chor W-UR 8 Inside / / 70 0.9 0.9	Outside 10 10.45 80 Rotary drilling 70 10.5 100 W-UR 10 Outside 70 1.5 0.9
Anchor sizeInstallationssideDrill hole diameterCutting diameter of drill bitDepth of drill hole to deepest pointDrill methodOverall plastic anchor embedment depthDiameter of clearance hole in the fixtureMinimum allowable edge distanceTable C 10.6.3: Characteristic resistance $F_{Rk}^{1}$ iAnchor sizeInstallationssideOverall plastic anchor embedment depthDoverall plastic anchor embedment depth6Overall plastic anchor embedment depth90ROTON-T8-30,0-P andPOROTON-T9-30,0-P, $f_b \ge 6 N/mm^2$ Characteristic resistance $F_{Rk}$	d d <sub>c</sub> h <u>n</u> <u>n [kN] fo</u> <u>h<sub>noi</sub> )°C<sup>3)</sup> / 50°</u>	$\begin{array}{c c} r & r \\ r & r \\ r \\ r \\ r \\ r \\ r \\ r \\$	Inside / / 8 8.45 80 Rotary drilling 70 8.5 100 chor W-UR 8 Inside / / 70 0.9 0.9	Outside 10 10.45 80 Rotary drilling 70 10.5 100 W-UR 10 Outside 70 1.5 0.9



able C 10.7.1: Brick data Description of brick 771-1-	042	POPOTON	
Type of brick	042		<b>T8-36,5-MW</b> DTON-T8-36,5-MW
••	≥ [kg/dm³]		65
Standard, approval	$\geq$ [kg/dm <sup>3</sup> ]		1; Z-17.1-1041
			rger GmbH
Producer of brick			er Allee 26
			Hannover
Measurement	[mm]		48x365x249)
Minimum thickness of member h <sub>min</sub> =	_		65
able C 10.7.2: Installation parameters			
		W-UR 8	W-UR 10
Anchor size			W-UR 10 Outside
Anchor size nstallationsside <sup>6)</sup> Drill hole diameter	d <sub>o</sub> = [mm]		
Anchor size nstallationsside <sup>6)</sup> Drill hole diameter	d₀ = [mm] d <sub>cut</sub> ≤ [mm]	Inside /	Outside
Anchor size Installationsside <sup>6)</sup> Drill hole diameter Cutting diameter of drill bit		Inside / 8	Outside 10
Anchor size Installationsside <sup>6)</sup> Orill hole diameter Cutting diameter of drill bit Depth of drill hole to deepest point Orill method	d <sub>cut</sub> ≤ [mm]	Inside / 8 8.45	Outside 10 10.45
Anchor size Installationsside <sup>6)</sup> Drill hole diameter Cutting diameter of drill bit Depth of drill hole to deepest point Drill method Dverall plastic anchor embedment depth	$\begin{array}{c c} d_{cut} \leq & [mm] \\ h_1 \geq & [mm] \end{array}$	Inside / 8 8.45 80 Rotary drilling 70	Outside 10 10.45 80 Rotary drilling 70
Anchor size Installationsside <sup>6) Drill hole diameter Cutting diameter of drill bit Depth of drill hole to deepest point Drill method Dverall plastic anchor embedment depth Diameter of clearance hole in the fixture</sup>	$\begin{array}{c c} \hline d_{cut} \leq & [mm] \\ \hline h_1 \geq & [mm] \\ \hline & & [-] \\ \hline h_{nom} = & [mm] \\ \hline d_f \leq & [mm] \end{array}$	Inside / 8 8.45 80 Rotary drilling 70 8.5	Outside 10 10.45 80 Rotary drilling 70 10.5
Anchor size Installationsside <sup>6)</sup> Orill hole diameter Cutting diameter of drill bit Depth of drill hole to deepest point Orill method Dverall plastic anchor embedment depth Diameter of clearance hole in the fixture	$\begin{array}{c c} d_{cut} \leq & [mm] \\ h_1 \geq & [mm] \\ \hline & & [-] \\ \hline & & [mm] \end{array}$	Inside / 8 8.45 80 Rotary drilling 70	Outside 10 10.45 80 Rotary drilling 70
Anchor size Installationsside <sup>6) Drill hole diameter Cutting diameter of drill bit Depth of drill hole to deepest point Drill method Dverall plastic anchor embedment depth Diameter of clearance hole in the fixture Minimum allowable edge distance</sup>	$\begin{array}{c c} d_{cut} \leq & [mm] \\ \hline h_1 \geq & [mm] \\ \hline \\ h_{nom} = & [mm] \\ \hline d_f \leq & [mm] \\ \hline \\ c_{min} \geq & [mm] \end{array}$	Inside / 8 8.45 80 Rotary drilling 70 8.5 100 chor	Outside 10 10.45 80 Rotary drilling 70 10.5 100
Anchor size Installationsside <sup>6)</sup> Drill hole diameter Cutting diameter of drill bit Depth of drill hole to deepest point Drill method Dverall plastic anchor embedment depth Diameter of clearance hole in the fixture Annimum allowable edge distance Anchor size	$\begin{array}{c c} d_{cut} \leq & [mm] \\ \hline h_1 \geq & [mm] \\ \hline \\ h_{nom} = & [mm] \\ \hline d_f \leq & [mm] \\ \hline \\ c_{min} \geq & [mm] \end{array}$	Inside / 8 8.45 80 Rotary drilling 70 8.5 100 chor W-UR 8	Outside 10 10.45 80 Rotary drilling 70 10.5 100 W-UR 10
Anchor size Installationsside <sup>6)</sup> Drill hole diameter Cutting diameter of drill bit Depth of drill hole to deepest point Drill method Dverall plastic anchor embedment depth Diameter of clearance hole in the fixture Inimum allowable edge distance Alinimum allowable edge distance Bable C 10.7.3: Characteristic resistance F <sub>Rk</sub> <sup>1)</sup> in [kN] Anchor size Installationsside <sup>6)</sup>	$\begin{array}{c c} d_{cut} \leq & [mm] \\ h_1 \geq & [mm] \\ \hline \\ h_1 \geq & [mm] \\ \hline \\ h_{nom} = & [mm] \\ d_f \leq & [mm] \\ \hline \\ c_{min} \geq & [mm] \\ \end{array}$	Inside / 8 8.45 80 Rotary drilling 70 8.5 100 chor W-UR 8 Inside /	Outside 10 10.45 80 Rotary drilling 70 10.5 100 W-UR 10 Outside
Anchor size         Installationsside <sup>6)</sup> Drill hole diameter         Cutting diameter of drill bit         Depth of drill hole to deepest point         Drill method         Diameter of clearance hole in the fixture         Another size         Able C 10.7.3: Characteristic resistance F <sub>Rk</sub> <sup>1)</sup> in [kN]         Anchor size         Installationsside <sup>6)</sup> Overall plastic anchor embedment depth	$\begin{array}{c c} d_{cut} \leq & [mm] \\ h_1 \geq & [mm] \\ \hline \\ h_1 \geq & [mm] \\ \hline \\ h_{nom} = & [mm] \\ d_f \leq & [mm] \\ \hline \\ c_{min} \geq & [mm] \\ \hline \\ for single and \\ \hline \\ h_{nom} = & [mm] \\ \hline \end{array}$	Inside / 8 8.45 80 Rotary drilling 70 8.5 100 chor W-UR 8	Outside 10 10.45 80 Rotary drilling 70 10.5 100 W-UR 10
Anchor size         Installationsside <sup>6)</sup> Drill hole diameter         Cutting diameter of drill bit         Depth of drill hole to deepest point         Drill method         Diameter of clearance hole in the fixture         Anchor size         Able C 10.7.3: Characteristic resistance $F_{Rk}^{1)}$ in [kN]         Anchor size         Installationsside <sup>6)</sup> Diverall plastic anchor embedment depth         Anchor size         Distallationsside <sup>6)</sup> Diverall plastic anchor embedment depth         Anchor size         Anstallationsside <sup>6)</sup> Diverall plastic anchor embedment depth         Anchor size         Anstallationsside <sup>6)</sup> Diverall plastic anchor embedment depth         Anchor size         Anchor size         Distallationsside <sup>6)</sup> Diverall plastic anchor embedment depth         Anchor size         Anstallationsside <sup>6)</sup> Diverall plastic anchor embedment depth         Anstallations anchor embedment depth         Anstallations anchor embedment depth	$\begin{array}{c c} d_{cut} \leq & [mm] \\ h_1 \geq & [mm] \\ \hline \\ h_1 \geq & [mm] \\ \hline \\ h_{nom} = & [mm] \\ d_f \leq & [mm] \\ \hline \\ c_{min} \geq & [mm] \\ \hline \\ for single and \\ \hline \\ h_{nom} = & [mm] \\ \hline \end{array}$	Inside / 8 8.45 80 Rotary drilling 70 8.5 100 chor W-UR 8 Inside /	Outside 10 10.45 80 Rotary drilling 70 10.5 100 W-UR 10 Outside
Anchor size         Installationsside <sup>6)</sup> Drill hole diameter         Cutting diameter of drill bit         Depth of drill hole to deepest point         Drill method         Diameter of clearance hole in the fixture         Anchor size         Able C 10.7.3: Characteristic resistance $F_{Rk}^{1)}$ in [kN]         Anchor size         Installationsside <sup>6)</sup> Overall plastic anchor embedment depth         Anchor size         Installationsside <sup>6)</sup> Overall plastic anchor embedment depth         POROTON-T8-36,5-MW, $30^{\circ}C^{3}/5$	$\begin{array}{c c} d_{cut} \leq & [mm] \\ h_1 \geq & [mm] \\ \hline \\ h_1 \geq & [mm] \\ \hline \\ h_{nom} = & [mm] \\ \hline \\ d_f \leq & [mm] \\ \hline \\ c_{min} \geq & [mm] \\ \hline \\ for single and \\ \hline \\ h_{nom} = & [mm] \\ \hline \\ 0^{\circ}C^{4)} & [kN] \\ \hline \end{array}$	Inside / 8 8.45 80 Rotary drilling 70 8.5 100 chor W-UR 8 Inside / 70	Outside           10           10.45           80           Rotary drilling           70           10.5           100
Anchor size         Installationsside <sup>6)</sup> Drill hole diameter         Cutting diameter of drill bit         Depth of drill hole to deepest point         Drill method         Diameter of clearance hole in the fixture         Anchor size         Installationsside <sup>6)</sup> Deverall plastic anchor embedment depth         Inimum allowable edge distance         Anchor size         Installationsside <sup>6)</sup> Deverall plastic anchor embedment depth         Privation of the size         Installationsside <sup>6)</sup> Deverall plastic anchor embedment depth         Privation of the size         Installationsside <sup>6)</sup> Deverall plastic anchor embedment depth         Privation of the size         Installationsside <sup>6)</sup> Deverall plastic anchor embedment depth         Privation of the size         Installationsside <sup>6)</sup> Deverall plastic anchor embedment depth         Privation of the size         Installations of the size         Deverall plastic anchor embedment depth         Privation of the size         Deverall plastic resistance F <sub>Rk</sub> 30°C <sup>3)</sup> / 5         50°C <sup>3)</sup> / 8	$\begin{array}{c c} d_{cut} \leq & [mm] \\ h_1 \geq & [mm] \\ \hline h_1 \geq & [mm] \\ \hline \\ h_{nom} = & [mm] \\ \hline \\ d_f \leq & [mm] \\ \hline \\ c_{min} \geq & [mm] \\ \hline \\ for single and \\ \hline \\ h_{nom} = & [mm] \\ \hline \\ 0^{\circ}C^{4)} & [kN] \\ \hline \\ 0^{\circ}C^{4)} & [kN] \\ \hline \end{array}$	Inside / 8 8.45 80 Rotary drilling 70 8.5 100 chor W-UR 8 Inside / 70 1.2 0.9	Outside           10           10.45           80           Rotary drilling           70           10.5           100             W-UR 10           Outside           70           0.9
Anchor size         Installationsside <sup>6)</sup> Drill hole diameter         Cutting diameter of drill bit         Depth of drill hole to deepest point         Drill method         Diameter of clearance hole in the fixture         Minimum allowable edge distance         able C 10.7.3: Characteristic resistance $F_{Rk}^{1)}$ in [kN]         Anchor size         Installationsside <sup>6)</sup> Dverall plastic anchor embedment depth         Anchor size         Installationsside <sup>6)</sup> Dverall plastic anchor embedment depth         POROTON-T8-36,5-MW, $a_b \ge 6 N/mm^2$ Characteristic resistance $F_{Rk}$ POROTON-T8-36,5-MW, $a_0^\circ C^{3)} / 5$ $50^\circ C^{3} / 8$ $30^\circ C^{3} / 5$ $50^\circ C^{3} / 5$	$\begin{array}{c c} d_{cut} \leq & [mm] \\ h_1 \geq & [mm] \\ \hline h_1 \geq & [mm] \\ \hline \\ h_{nom} = & [mm] \\ \hline \\ d_f \leq & [mm] \\ \hline \\ c_{min} \geq & [mm] \\ \hline \\ c_{min} = & [mm] \\ \hline \\ 0^{\circ}C^{4)} & [kN] \\ \hline \\ 0^{\circ}C^{4)} & [kN] \\ \hline \\ \end{array}$	Inside / 8 8.45 80 Rotary drilling 70 8.5 100 chor W-UR 8 Inside / 70 1.2 0.9 1.5	Outside         10           10.45         80           Rotary drilling         70           10.5         100           W-UR 10         Outside           0.9         0.9           1.2         1.2
Depth of drill hole to deepest point         Drill method         Overall plastic anchor embedment depth       h         Diameter of clearance hole in the fixture         Minimum allowable edge distance         Cable C 10.7.3: Characteristic resistance $F_{Rk}^{(1)}$ in [kN]         Anchor size         Installationsside <sup>6)</sup> Overall plastic anchor embedment depth         POROTON-T8-36,5-MW, $f_b \ge 6$ N/mm <sup>2</sup> Characteristic resistance $F_{Rk}$	$\begin{array}{c c} d_{cut} \leq & [mm] \\ h_1 \geq & [mm] \\ \hline h_1 \geq & [mm] \\ \hline \\ h_{nom} = & [mm] \\ \hline \\ d_f \leq & [mm] \\ \hline \\ c_{min} \geq & [mm] \\ \hline \\ c_{mom} = & [mm] \\ \hline \\ 0^{\circ}C^{4)} & [kN] \\ \hline \\ 0^{\circ}C^{4)} & [kN] \\ \hline \end{array}$	Inside / 8 8.45 80 Rotary drilling 70 8.5 100 chor W-UR 8 Inside / 70 1.2 0.9	Outside           10           10.45           80           Rotary drilling           70           10.5           100             W-UR 10           Outside           70           0.9

Footnotes see Annex C 3

# Würth Plastic Anchor W-UR

Performances Hollow brick: POROTON-T8-36,5-MW Brick data, installation parameters, characteristic resistance



Description of brick 771-1-05	7	POROTON Planziegel T8
ype of blick		Hollow brick POROTON Planziegel T&
Bulk density $\rho \ge$	≥ [kg/dm³]	0.60
Standard, approval		Z-17.1-972
		Wienerberger GmbH
		Oldenburger Allee 26
		D-30659 Hannover
Producer of brick		
		Schlagmann Baustoffwerke GmbH & Co. ł Ziegeleistraße 1
		D-84367 Zeilarn
Measurement	[mm]	≥ 12DF (≥ 248x365x249)
Ainimum thickness of member h <sub>min</sub> =	[mm]	365
248		
	Hernelizuerizueri	
able C 10.8.2: Installation parameters Anchor size		W-UR 8
nstallationsside <sup>6)</sup>		Inside / Outside
	$d_0 = [mm]$	8
	$_{\rm cut} \leq [\rm mm]$	8.45
Depth of drill hole to deepest point	$h_1 \ge [mm]$	80
Depth of drill hole to deepest point Drill method	h <sub>1</sub> ≥ [mm] [-]	80 Rotary drilling
Depth of drill hole to deepest point Drill method Dverall plastic anchor embedment depth h <sub>nd</sub>	$\begin{array}{c c} h_1 \geq & [mm] \\ & & [-] \\ m_m = & [mm] \end{array}$	80 Rotary drilling 70
Depth of drill hole to deepest point Drill method Dverall plastic anchor embedment depth h <sub>n</sub> Diameter of clearance hole in the fixture	$\begin{array}{c c} h_1 \geq & [mm] \\ & & [-] \\ \\ p_m = & [mm] \\ d_f \leq & [mm] \end{array}$	80 Rotary drilling 70 8.5
Depth of drill hole to deepest point Drill method Dverall plastic anchor embedment depth h <sub>n</sub> Diameter of clearance hole in the fixture	$\begin{array}{c c} h_1 \geq & [mm] \\ & & [-] \\ m_m = & [mm] \end{array}$	80 Rotary drilling 70
Depth of drill hole to deepest point Drill method Dverall plastic anchor embedment depth h <sub>nd</sub> Diameter of clearance hole in the fixture Ainimum allowable edge distance c <sub>r</sub> able C 10.8.3: Charakteristische Tragfähigkeit F <sub>Rk</sub> <sup>1)</sup> in	$\begin{array}{c c} h_1 \geq & [mm] \\ \hline & [-] \\ \hline \\ mm = & [mm] \\ d_f \leq & [mm] \\ \hline \\ min \geq & [mm] \end{array}$	80 Rotary drilling 70 8.5 125 nzeldübel
Depth of drill hole to deepest point Drill method Dverall plastic anchor embedment depth h <sub>nd</sub> Diameter of clearance hole in the fixture Ainimum allowable edge distance c <sub>r</sub> able C 10.8.3: Charakteristische Tragfähigkeit F <sub>Rk</sub> <sup>1)</sup> in Dübelgröße	$\begin{array}{c c} h_1 \geq & [mm] \\ \hline & [-] \\ \hline \\ mm = & [mm] \\ d_f \leq & [mm] \\ \hline \\ min \geq & [mm] \end{array}$	80 Rotary drilling 70 8.5 125 nzeldübel W-UR 8
Depth of drill hole to deepest point Drill method Dverall plastic anchor embedment depth h <sub>nd</sub> Diameter of clearance hole in the fixture Alinimum allowable edge distance c <sub>r</sub> able C 10.8.3: Charakteristische Tragfähigkeit F <sub>Rk</sub> <sup>1)</sup> in Dübelgröße Installationsside <sup>6)</sup>	$\begin{array}{c c} h_1 \geq & [mm] \\ & & [-] \\ p_m = & [mm] \\ d_f \leq & [mm] \\ m_{ini} \geq & [mm] \end{array}$	80 Rotary drilling 70 8.5 125 <b>zeldübel</b> W-UR 8 Inside / Outside
Depth of drill hole to deepest point Drill method Dverall plastic anchor embedment depth Diameter of clearance hole in the fixture Aninimum allowable edge distance cr able C 10.8.3: Charakteristische Tragfähigkeit F <sub>Rk</sub> <sup>1)</sup> in Dibelgröße Installationsside <sup>6)</sup> Dverall plastic anchor embedment depth h <sub>nd</sub>	$\begin{array}{c c} h_1 \geq & [mm] \\ & [-] \\ \hline \\ m = & [mm] \\ d_f \leq & [mm] \\ \hline \\ m_{nin} \geq & [mm] \\ \hline \\ \hline \\ \hline \\ m = & [mm] \\ \hline \end{array}$	80 Rotary drilling 70 8.5 125 nzeldübel W-UR 8 Inside / Outside 70
Depth of drill hole to deepest point       Image: constraint of drill hole to deepest point         Drill method       Depth of drill hole to deepest point         Diverall plastic anchor embedment depth $h_{nc}$ Diameter of clearance hole in the fixture       Image: constraint of clearance hole in the fixture         Alinimum allowable edge distance $c_{r}$ able C 10.8.3: Charakteristische Tragfähigkeit $F_{Rk}^{(1)}$ in Dübelgröße         nstallationsside <sup>6)</sup> Dverall plastic anchor embedment depth         POROTON Planziegel T8, $30^{\circ}C^{3}$ / $50^{\circ}$	$\begin{array}{c c} h_1 \geq & [mm] \\ \hline & [-] \\ p_m = & [mm] \\ d_f \leq & [mm] \\ \hline m_m \geq & [mm] \\ \hline \\ $	80 Rotary drilling 70 8.5 125 <b>zeldübel</b> W-UR 8 Inside / Outside
Depth of drill hole to deepest point       Image: constraint of the second state is constraint.         Depth of drill hole to deepest point       hole to	$\begin{array}{c c} h_1 \geq & [mm] \\ \hline & [-] \\ p_m = & [mm] \\ d_f \leq & [mm] \\ \hline m_m \geq & [mm] \\ \hline \\ $	80 Rotary drilling 70 8.5 125 nzeldübel W-UR 8 Inside / Outside 70
Depth of drill hole to deepest point       Image: constraint of the second secon	$\begin{array}{c c} h_1 \geq & [mm] \\ \hline & [-] \\ \hline \\ mm = & [mm] \\ \hline \\ d_f \leq & [mm] \\ \hline \\ d_f \leq & [mm] \\ \hline \\ mm = & [mm] \\ \hline \\ mm = & [mm] \\ \hline \\ mm \\ mm \\ mm \\ mm \\ mm \\ mm \\ $	80 Rotary drilling 70 8.5 125 <b>nzeldübel</b> W-UR 8 Inside / Outside 70 0.4
Depth of drill hole to deepest point       Image: constraint of the second secon	$\begin{array}{c c} h_1 \geq & [mm] \\ \hline & [-] \\ \hline \\ mm = & [mm] \\ \hline \\ d_f \leq & [mm] \\ \hline \\ mm \geq & [mm] \\ \hline \\ \hline \\ \hline \\ mm = & [mm] \\ \hline \\ mm = & [mm] \\ \hline \\ mm = & [kN] \end{array}$	80 Rotary drilling 70 8.5 125 nzeldübel W-UR 8 Inside / Outside 70 0.4 0.3



Description of brick	771-1-033		POROTON Planziegel T10
Type of brick			Hollow brick POROTON Planziegel T10
Bulk density	$\rho \ge$	[kg/dm³]	0.65
Standard, approval	·		T10: EN 771-1:2011; Z-17.1-889
Producer of brick			Wienerberger GmbH Oldenburger Allee 26 D-30659 Hannover
			Schlagmann Baustoffwerke GmbH & Co. KG Ziegeleistraße 1 D-84367 Zeilarn
Measurement		[mm]	≥ 10DF (≥ 248x300x249)
Minimum thickness of member	h <sub>min</sub> =	[mm]	300
able C 10.9.2: Installation parameters			W-UR 8
Anchor size			<b>W-UR 8</b> Inside / Outside
-	{	= [mm]	W-UR 8 Inside / Outside 8
Anchor size	-	= [mm] ≤ [mm]	Inside / Outside
Anchor size Installationsside <sup>6)</sup> Drill hole diameter Cutting diameter of drill bit	d <sub>cut</sub>	= [mm] ≤ [mm] ≥ [mm]	Inside / Outside 8
Anchor size Installationsside <sup>6)</sup> Drill hole diameter	d <sub>cut</sub>	≤ [mm]	Inside / Outside 8 8.45
Anchor size Installationsside <sup>6)</sup> Drill hole diameter Cutting diameter of drill bit Depth of drill hole to deepest point	d <sub>cut</sub>	≤ [mm] ≥ [mm] [-]	Inside / Outside 8 8.45 80
Anchor size Installationsside <sup>6)</sup> Drill hole diameter Cutting diameter of drill bit Depth of drill hole to deepest point Drill method Overall plastic anchor embedment depth Diameter of clearance hole in the fixture	d <sub>cut</sub> h <sub>1</sub>	≤ [mm] ≥ [mm] [-] = [mm]	Inside / Outside 8 8.45 80 Rotary drilling
Anchor size Installationsside <sup>6)</sup> Drill hole diameter Cutting diameter of drill bit Depth of drill hole to deepest point Drill method Overall plastic anchor embedment depth	d <sub>cut</sub> h <sub>1</sub> h <sub>nom</sub>	<pre>≤ [mm] ≥ [mm] = [mm] ≤ [mm] </pre>	Inside / Outside 8 8.45 80 Rotary drilling 70
Anchor size Installationsside <sup>6)</sup> Drill hole diameter Cutting diameter of drill bit Depth of drill hole to deepest point Drill method Overall plastic anchor embedment depth Diameter of clearance hole in the fixture Minimum allowable edge distance	d <sub>cut</sub> h <sub>1</sub> h <sub>nom</sub> d <sub>f</sub> C <sub>min</sub>	<pre>≤ [mm] ≥ [mm] = [mm] ≤ [mm] ≤ [mm] ≥ [mm]</pre>	Inside / Outside 8 8.45 80 Rotary drilling 70 8.5 100 chor
Anchor size Installationsside <sup>6)</sup> Drill hole diameter Cutting diameter of drill bit Depth of drill hole to deepest point Drill method Overall plastic anchor embedment depth Diameter of clearance hole in the fixture Minimum allowable edge distance Table C 10.9.3: Characteristic resistance Anchor size	d <sub>cut</sub> h <sub>1</sub> h <sub>nom</sub> d <sub>f</sub> C <sub>min</sub>	<pre>≤ [mm] ≥ [mm] = [mm] ≤ [mm] ≤ [mm] ≥ [mm]</pre>	Inside / Outside           8           8.45           80           Rotary drilling           70           8.5           100           Chor           W-UR 8
Anchor size Installationsside <sup>6)</sup> Drill hole diameter Cutting diameter of drill bit Depth of drill hole to deepest point Drill method Overall plastic anchor embedment depth Diameter of clearance hole in the fixture Minimum allowable edge distance Table C 10.9.3: Characteristic resistance Anchor size Installationsside <sup>6)</sup>	d <sub>cut</sub> h <sub>1</sub> d <sub>f</sub> C <sub>min</sub> F <sub>Rk</sub> <sup>1)</sup> in [kN] for	≤ [mm] ≥ [mm] = [mm] ≤ [mm] ≤ [mm] ≥ [mm] single and	Inside / Outside           8           8.45           80           Rotary drilling           70           8.5           100           Chor           W-UR 8           Inside / Outside
Anchor size Installationsside <sup>6)</sup> Drill hole diameter Cutting diameter of drill bit Depth of drill hole to deepest point Drill method Overall plastic anchor embedment depth Diameter of clearance hole in the fixture Minimum allowable edge distance Cable C 10.9.3: Characteristic resistance Anchor size Installationsside <sup>6)</sup> Overall plastic anchor embedment depth POROTON Planziegel T10-30,	d <sub>cut</sub> h <sub>1</sub> h <sub>nom</sub> d <sub>f</sub> C <sub>min</sub>	≤ [mm] ≥ [mm] [-] = [mm] ≤ [mm] ≥ [mm] single and = [mm]	Inside / Outside           8           8.45           80           Rotary drilling           70           8.5           100           Chor           W-UR 8
Anchor sizeInstallationssideInstallationssideDrill hole diameterCutting diameter of drill bitDepth of drill hole to deepest pointDrill methodOverall plastic anchor embedment depthDiameter of clearance hole in the fixtureMinimum allowable edge distanceable C 10.9.3: Characteristic resistanceAnchor sizeInstallationssideOverall plastic anchor embedment depthPOROTON Planziegel T10-30, $f_b \ge 6 N/mm^2$	d <sub>cut</sub> h <sub>1</sub> h <sub>nom</sub> d <sub>f</sub> C <sub>min</sub> F <sub>Rk</sub> <sup>1)</sup> in [kN] for h <sub>nom</sub> 30°C <sup>3)</sup> / 50°C	≤ [mm] ≥ [mm] = [mm] ≤ [mm] ≤ [mm] ≥ [mm] single and = [mm]	Inside / Outside           8           8.45           80           Rotary drilling           70           8.5           100           Chor           W-UR 8           Inside / Outside           70           0.5
Anchor sizeInstallationssideInstallationssideDrill hole diameterCutting diameter of drill bitDepth of drill hole to deepest pointDrill methodOverall plastic anchor embedment depthDiameter of clearance hole in the fixtureMinimum allowable edge distanceable C 10.9.3: Characteristic resistanceAnchor sizeInstallationssideOverall plastic anchor embedment depthDorerall plastic anchor embedment depthCharacteristic resistanceAnchor sizeInstallationssideCharacteristic resistancePOROTON Planziegel T10-30, $f_b \ge 6 N/mm^2$ Characteristic resistance $F_{Rk}$	d <sub>cut</sub> h <sub>1</sub> h <sub>nom</sub> d <sub>f</sub> C <sub>min</sub> F <sub>Rk</sub> <sup>1)</sup> in [kN] for h <sub>nom</sub> 30°C <sup>3)</sup> / 50°C 50°C <sup>3)</sup> / 80°C	≤ [mm] ≥ [mm] = [mm] ≤ [mm] ≤ [mm] ≥ [mm] single and = [mm] <sup>4)</sup> [kN] 2 [kN]	Inside / Outside           8           8.45           80           Rotary drilling           70           8.5           100           Chor           W-UR 8           Inside / Outside           70           0.5           0.5
Anchor sizeInstallationssideInstallationssideDrill hole diameterCutting diameter of drill bitDepth of drill hole to deepest pointDrill methodOverall plastic anchor embedment depthDiameter of clearance hole in the fixtureMinimum allowable edge distanceable C 10.9.3: Characteristic resistanceAnchor sizeInstallationssideOverall plastic anchor embedment depthPOROTON Planziegel T10-30, $f_b \ge 6 N/mm^2$	d <sub>cut</sub> h <sub>1</sub> h <sub>nom</sub> d <sub>f</sub> C <sub>min</sub> F <sub>Rk</sub> <sup>1)</sup> in [kN] for h <sub>nom</sub> 30°C <sup>3)</sup> / 50°C	≤ [mm] ≥ [mm] = [mm] ≤ [mm] ≤ [mm] ≥ [mm] single and = [mm] <sup>4)</sup> [kN] 2 [kN]	Inside / Outside           8           8.45           80           Rotary drilling           70           8.5           100           Chor           W-UR 8           Inside / Outside           70           0.5



Description of brick	771-1-032		POROT	ON S10
Type of brick				OROTON S10
Bulk density	$\rho \geq$	[kg/dm <sup>3</sup> ]	0.	75
Standard, approval	1		S10: EN 771-1:2	011; Z-17.1-1017
Producer of brick			Oldenburg D-30659 Schlagmann Baustoffv Ziegelei	rger GmbH er Allee 26 Hannover werke GmbH & Co. K0 straße 1 7 Zeilarn
Measurement		[mm]	> 10DF (> 2	48x300x249)
Minimum thickness of member	h <sub>min</sub> =	[mm]		00
able C 10.10.2: Installation parameters Anchor size		î	W-I	JR 8
Installationsside <sup>6)</sup>				Outside
Drill hole diameter	d	) = [mm]		8
Cutting diameter of drill bit		, <sub>it</sub> ≤ [mm]	8.	45
Depth of drill hole to deepest point		$1 \geq [mm]$		30
Drill method			Rotary	drilling
Overall plastic anchor embedment depth	h <sub>non</sub>			'0
Diameter of clearance hole in the fixture		l <sub>f</sub> ≤ [mm]	8	.5
	_	<sub>n</sub> ≥ [mm]	50	100
	C <sub>mi</sub>	n — I II I		
Minimum allowable edge distance			nchor	
Minimum allowable edge distance Table C 10.10.3: Characteristic resistanc Anchor size			W-l	JR 8
Minimum allowable edge distance <b>able C 10.10.3: Characteristic resistanc</b> Anchor size Installationsside <sup>6)</sup>	e F <sub>Rk</sub> <sup>1)</sup> in [kN] fo	or single a	<b>W-l</b> Inside /	Outside
Minimum allowable edge distance <b>Table C 10.10.3: Characteristic resistanc</b> <b>Anchor size</b> Installationsside <sup>6)</sup> Overall plastic anchor embedment depth	e F <sub>Rk</sub> <sup>1)</sup> in [kN] fo h <sub>non</sub>	pr single an	W-l Inside / 7	Outside 0
Minimum allowable edge distance <b>able C 10.10.3: Characteristic resistanc</b> <b>Anchor size</b> Installationsside <sup>6)</sup> Overall plastic anchor embedment depth <b>POROTON S10-30,</b> $f_b \ge 6$ N/mm <sup>2</sup>	e F <sub>Rk</sub> <sup>1)</sup> in [kN] fo h <sub>non</sub> 30°C <sup>3)</sup> / 50°0	n = [mm] C <sup>4)</sup> [kN]	<b>W-l</b> Inside / 7 0.6	Outside <b>0</b> 0.6
Minimum allowable edge distance <b>able C 10.10.3: Characteristic resistanc</b> <b>Anchor size</b> Installationsside <sup>6)</sup> Overall plastic anchor embedment depth <b>POROTON S10-30, f<sub>b</sub> <math>\geq</math> 6 N/mm<sup>2</sup> Characteristic resistance F<sub>Rk</sub></b>	e F <sub>Rk</sub> <sup>1)</sup> in [kN] fo h <sub>non</sub> <u>30°C<sup>3)</sup> / 50°C</u> 50°C <sup>3)</sup> / 80°C	n = [mm] $C^{4)} [kN]$	W-I Inside / 7 0.6 0.6	Outside 0 0.6 0.6
Minimum allowable edge distance <b>able C 10.10.3: Characteristic resistanc</b> <b>Anchor size</b> Installationsside <sup>6)</sup> Overall plastic anchor embedment depth <b>POROTON S10-30,</b> $f_b \ge 6 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ <b>POROTON S10-30,</b> $f_b \ge 8 \text{ N/mm}^2$	e F <sub>Rk</sub> <sup>1)</sup> in [kN] fo h <sub>non</sub> <u>30°C<sup>3)</sup> / 50°C 50°C<sup>3)</sup> / 80°C 30°C<sup>3)</sup> / 50°C</u>	n = [mm] $C^{4)} [kN]$ $C^{4)} [kN]$ $C^{4)} [kN]$	W-l Inside / 7 0.6 0.6 0.75	Outside 0 0.6 0.6 0.75
Minimum allowable edge distance Table C 10.10.3: Characteristic resistanc Anchor size Installationsside <sup>6)</sup> Overall plastic anchor embedment depth POROTON S10-30, $f_b \ge 6 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ POROTON S10-30, $f_b \ge 8 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$	e F <sub>Rk</sub> <sup>1)</sup> in [kN] fo h <sub>non</sub> 30°C <sup>3)</sup> / 50°C 50°C <sup>3)</sup> / 80°C 30°C <sup>3)</sup> / 50°C 50°C <sup>3)</sup> / 80°C	$m^{n} = [mm]$ $C^{4)} [kN]$ $C^{4)} [kN]$ $C^{4)} [kN]$ $C^{4)} [kN]$	W-l Inside / 7 0.6 0.6 0.75 0.75	Outside 0 0.6 0.75 0.75
Minimum allowable edge distance Table C 10.10.3: Characteristic resistanc Anchor size Installationsside <sup>6)</sup> Overall plastic anchor embedment depth POROTON S10-30, $f_b \ge 6 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ POROTON S10-30, $f_b \ge 8 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ POROTON S10-30, $f_b \ge 10 \text{ N/mm}^2$	e $F_{Rk}^{(1)}$ in [kN] for h_{non} $30^{\circ}C^{(3)} / 50^{\circ}C^{(3)} / 50^{\circ}C^{(3)} / 80^{\circ}C^{(3)} / 50^{\circ}C^{(3)} / 50^{\circ}C^{(3)} / 80^{\circ}C^{(3)} / 50^{\circ}C^{(3)} / 50^{\circ$	$m = [mm]$ $C^{4)} [kN]$ $C^{4)} [kN]$ $C^{4)} [kN]$ $C^{4)} [kN]$ $C^{4)} [kN]$ $C^{4)} [kN]$	W-l Inside / 0.6 0.6 0.75 0.75 0.9	Outside 0 0.6 0.6 0.75 0.75 1.5
Minimum allowable edge distance <b>able C 10.10.3: Characteristic resistanc</b> <b>Anchor size</b> Installationsside <sup>6)</sup> Overall plastic anchor embedment depth <b>POROTON S10-30, f<sub>b</sub> <math>\geq</math> 6 N/mm<sup>2</sup> Characteristic resistance F<sub>Rk</sub> <b>POROTON S10-30, f<sub>b</sub> <math>\geq</math> 8 N/mm<sup>2</sup> Characteristic resistance F<sub>Rk</sub> <b>POROTON S10-30, f<sub>b</sub> <math>\geq</math> 10 N/mm<sup>2</sup> Characteristic resistance F<sub>Rk</sub></b></b></b>	e F <sub>Rk</sub> <sup>1)</sup> in [kN] fo h <sub>non</sub> 30°C <sup>3)</sup> / 50°C 50°C <sup>3)</sup> / 80°C 30°C <sup>3)</sup> / 80°C 30°C <sup>3)</sup> / 80°C 30°C <sup>3)</sup> / 80°C	$n = [mm]$ $C^{4)} [kN]$	W-l Inside / 0.6 0.75 0.75 0.9 0.9	Outside 0 0.6 0.75 0.75 1.5 1.5
Minimum allowable edge distance Table C 10.10.3: Characteristic resistanc Anchor size Installationsside <sup>6)</sup> Overall plastic anchor embedment depth POROTON S10-30, $f_b \ge 6 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ POROTON S10-30, $f_b \ge 8 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$	e $F_{Rk}^{(1)}$ in [kN] for h_{non} $30^{\circ}C^{(3)} / 50^{\circ}C^{(3)} / 50^{\circ}C^{(3)} / 80^{\circ}C^{(3)} / 50^{\circ}C^{(3)} / 50^{\circ}C^{(3)} / 80^{\circ}C^{(3)} / 50^{\circ}C^{(3)} / 50^{\circ$	$n = [mm]$ $C^{4)} [kN]$	W-l Inside / 0.6 0.75 0.75 0.9 0.9	Outside 0 0.6 0.6 0.75 0.75 1.5



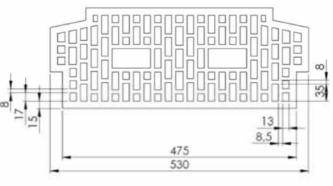
able C 10.11.1: Brick data Description of brick	771-1-025		Hollow brick POR	OTON-S11-30,0-P
Type of brick				S11-30,0-P
Bulk density	$\rho \geq$	[kg/dm³]		.9
Standard, approval	<u> </u>	[	-	1; Z-17.1-812
				ger GmbH
				er Allee 26
			D-30659	Hannover
Producer of brick				
			Schlagmann Baustoffv	
			Ziegelei	straise 1 7 Zeilarn
Measurement		[mm]		48x300x249)
Minimum thickness of member	h <sub>min</sub> =	[mm]		00
Minimum thechess of member		լոոսյ	5	50
ŀ	248	- e		
r		D T		
)				
[				
}				
L. L		Ξ(		
۲ ۲		<u> </u>		
	8 6	8 14		
able C 10.11.2: Installation parameters		-1 /-		
Anchor size			W-UR 8	W-UR 10
Installationsside <sup>6)</sup>				Outside
Drill hole diameter	d	) = [mm]	8	10
Cutting diameter of drill bit		,t ≤ [mm]	8.45	10.45
Depth of drill hole to deepest point		<u>1 ≥ [mm]</u>	80	80
Drill method		[-]	Rotary drilling	Rotary drilling
Overall plastic anchor embedment depth	h <sub>nor</sub>		70	70
Diameter of clearance hole in the fixture		f ≤ [mm]	8.5	10.5
Minimum allowable edge distance	C <sub>mi</sub>		100	100
able C 10.11.3: Characteristic resistance	F <sub>Rk</sub> <sup>1)</sup> in [kN] fo	or single a	nchor	
Anchor size			W-UR 8	W-UR 10
Installationsside <sup>6)</sup>				Outside
Overall plastic anchor embedment depth	h <sub>nor</sub>	n = [mm]	70	70
	30°C <sup>3)</sup> / 50°		2.0	1.5
POROTON-S11-30,0-P f <sub>b</sub> ≥ 8 N/mm <sup>2</sup>	E0°C <sup>3)</sup> ( 00°	C <sup>4)</sup> [kN]	2.0	1.5
	50°C <sup>3)</sup> / 80°	2)	2.5	2.5
Characteristic resistance F <sub>Rk</sub>		m <sup>2)</sup> [-]		
POROTON-S11-30,0-P $f_b \ge 8 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Partial safety factor Footnotes see Annex C 3	50°C 7780 Υ γ <sub>Μ</sub>	m <sup>2)</sup> [-]		
Characteristic resistance F <sub>Rk</sub> Partial safety factor ootnotes see Annex C 3		m <sup>2)</sup>   [-]		
Characteristic resistance F <sub>Rk</sub> Partial safety factor		m <sup>2</sup> ) [-]		Annex C 21



Description of brick	771-1-009		Hollow brick PC	ROTON-S11-36,5-P
Type of brick				ck S11-36,5-P
Bulk density	$\rho \geq$	[kg/dm³		0.9
Standard, approval	F —_	. 0	-	011; Z-17.1-812
				erger GmbH
				rger Allee 26
Producer of brick			D-3065	9 Hannover
			Schlagmann Bausto	ffwerke GmbH & Co. KG
			Ziegel	eistraße 1
<ul> <li>Orientele 1701 Valender de</li> </ul>				67 Zeilarn
Measurement	1	[mm]		248x365x249)
Minimum thickness of member	h <sub>min</sub> =	[mm]		365
Table C 10.12.2: Installation parameters         Anchor size         Installationsside <sup>6)</sup> Drill hole diameter         Cutting diameter of drill bit         Depth of drill hole to deepest point	d <sub>cı</sub>	0 = [mm 1 ≥ [mm	8 ] 8.45	W-UR 10 / Outside 10 10.45 80
Depth of drill hole to deepest point	n			
Overall plastic anchor embedment depth	h <sub>nor</sub>	[-] = [mm	Rotary drilling	Rotary drilling 70
Diameter of clearance hole in the fixture		<u>n − [</u> iiiii I <sub>f</sub> ≤ [mm	-	10.5
Minimum allowable edge distance		n ≥ [mm		100
able C 10.12.3: Characteristic resistance F Anchor size Installationsside <sup>6)</sup>			W-UR 8	W-UR 10
Overall plastic anchor embedment depth	h <sub>nor</sub>	= [mm		7 Outside 70
<b>POROTON-S11-36,5-P</b> $f_b \ge 6$ N/mm <sup>2</sup>	30°C <sup>3)</sup> / 50°		-	2.0
Characteristic resistance $F_{Rk}$	50°C <sup>3)</sup> / 80°		•	1.5
Partial safety factor	<u>γ</u> Μ	2)	2.5	2.5
ootnotes see Annex C 3	111			
Vürth Plastic Anchor W-UR				



able C 10.13.1: Brick data					
Description of brick	771-1-031		Brick for ceiling (system Filigran)		
Type of brick			Brick for ceiling		
Bulk density	$\rho \ge$	[kg/dm³]	0.8		
Standard, approval			DIN 4160:2000-4		
Producer of brick			Wienerberger GmbH Oldenburger Allee 26 D-30659 Hannover		
Measurement		[mm]	530x250x210		
Minimum thickness of member	h <sub>min</sub> =	[mm]	210		



### Table C 10.13.2: Installation parameters

Anchor size			W-UR 8
Installationsside			bottom view
Drill hole diameter	d <sub>0</sub> =	[mm]	8
Cutting diameter of drill bit	$d_{cut} \leq$	[mm]	8.45
Depth of drill hole to deepest point	$h_1 \geq$	[mm]	80
Drill method		[-]	Rotary drilling
Overall plastic anchor embedment depth	h <sub>nom</sub> =	[mm]	70
Diameter of clearance hole in the fixture	$d_{\rm f}$ $\leq$	[mm]	8.5
Minimum allowable edge distance	c <sub>min</sub> ≥	[mm]	100

### Table C 10.13.3: Characteristic resistance $F_{Rk}^{(1)}$ in [kN] for single anchor

Anchor size			W-UR 8
Installationsside			bottom view
Overall plastic anchor embedment depth	h <sub>nom</sub> =	[mm]	70
Brick for ceiling (system Filigran),	30°C <sup>3)</sup> / 50°C <sup>4)</sup>	[kN]	0.9
$f_b \ge 4 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$	50°C <sup>3)</sup> / 80°C <sup>4)</sup>	[kN]	0.9
Partial safety factor	2) γ <sub>Mm</sub>	[-]	2.5

Footnotes see Annex C 3

### Würth Plastic Anchor W-UR

**Performances Hollow brick: Brick for ceiling (system Filigran)** Brick data, installation parameters, characteristic resistance



Brick data	771-1-005			POROTHER	M 25-38 N+F
Type of brick				Hollow brick PORC	THERM 25-38 N+F
Bulk density	$\rho \ge$	[kg/c	lm³]	0	.8
Standard, approval				EN 771	-1:2011
				Wienerberger Zie	gelindustrie GmbH
Producer of brick					straße
					ersdorf, Austria
Measurement		[mi	-		250x238
Minimum thickness of member	h <sub>min</sub> =	[mi	m]	2	50
soble C 10 14 2: Installation parameters			40 10	250	
able C 10.14.2: Installation parameters Anchor size				W-UR 8	W-UR 10
Installationsside <sup>6)</sup>					Outside
Drill hole diameter	d	<sub>0</sub> = [r	mm]	8	10
Cutting diameter of drill bit	d <sub>cu</sub>	<sub>µt</sub> ≤ [r	mm]	8.45	10.45
Depth of drill hole to deepest point	h	1 ≥ [r	mm]	80	80
Drill method			[-]	Rotary drilling	Rotary drilling
Overall plastic anchor embedment depth	h <sub>non</sub>	<sub>n</sub> = [r	mm]	70	70
Diameter of clearance hole in the fixture	d	l <sub>f</sub> ≤ [r	mm]	8.5	10.5
Minimum allowable edge distance	C <sub>mi</sub>	n ≥ <b>[</b> r	mm]	100	100
able C 10.14.3: Characteristic resistance	$\mathbf{F_{Rk}}^{(1)}$ in [kN] for	or sin	gle a	nchor	
Anchor size				W-UR 8	W-UR 10
Installationsside <sup>6)</sup>					Outside
Overall plastic anchor embedment depth	h <sub>non</sub>		mm]	70	70
Hollow brick POROTHERM 25-38 N+F, f <sub>b</sub> ≥ 6 N/mm <sup>2</sup>	30°C <sup>3)</sup> / 50°0	C⁴) [	kN]	0.75	0.9
Characteristic resistance $F_{Rk}$	50°C <sup>3)</sup> / 80°0	C <sup>4)</sup> [	[kN]	0.6	0.6
	30°C <sup>3)</sup> / 50°0	С4) Г	[kN]	0.9	1.2
25-38 N+F, f <sub>b</sub> ≥ 8 N/mm <sup>2</sup>			-		
Characteristic resistance F <sub>Rk</sub>	50°C <sup>3)</sup> / 80°0		kN]	0.9	0.9
Hollow brick POROTHERM 25-38 N+F, f <sub>b</sub> ≥ 10 N/mm²	30°C <sup>3)</sup> / 50°0	C <sup>4)</sup> [	[kN]	1.2	1.5
Characteristic resistance $F_{Rk}$	50°C <sup>3)</sup> / 80°C	C <sup>4)</sup> [	kN]	0.9	1.2
Partial safety factor	γм	2)	[-]	2.5	2.5
ootnotes see Annex C 3	111				
Vürth Plastic Anchor W-UR					



Hollo /dm³] ( EN 77 Wienerberge Via Rir I-40020 Mordano (E	<b>ii Leggeri</b> bw brick 0.6 1-1:2011 er Brunori s.r.l. nghiera 1 Bologna) fraz. Bubano taly (120x330
EN 77 Wienerberge Via Rir I-40020 Mordano (E	1-1:2011 er Brunori s.r.l. nghiera 1 Bologna) fraz. Bubano taly (120x330
Wienerberge Via Rir I-40020 Mordano (E li nm] ≥ 250x	er Brunori s.r.l. nghiera 1 3ologna) fraz. Buban taly (120x330
Via Rir I-40020 Mordano (E Inm] ≥ 250x	nghiera 1 3ologna) fraz. Buban taly <120x330
I-40020 Mordano (E Inm] ≥ 250x	Bologna) fraz. Buban taly (120x330
nm] ≥ 250x	taly (120x330
nm] ≥ 250x	(120x330
•	
	120
Ĩ	
L L	
W-LIR 8	W-UR 10
	/ Outside
	10
	10.45
	80
	Rotary drilling
	70
[mm] 8.5	10.5
[mm] 100	100
	W-UR 10
	/ Outside
[mm] 70	70
[kN] 0.9	0.3
	1
	0.3
[KN] 0.6 [-] 2.5	0.3
	8           [mm]         8.45           [mm]         80           [-]         Rotary drilling           [mm]         70           [mm]         70           [mm]         100   ngle anchor           W-UR 8           Inside

# Page 40 of European Technical Assessment ETA-08/0190 of 5 September 2017

English translation prepared by DIBt

#### Deutsches Institut für Bautechnik

Description of brick $T^{1/101}$ Biocchi per solato a travetti Type of brick $T^{1/101}$ Hollow brick for celling Buk density $p \ge [kg/dm^2]$ 0.6 Standard, approval $EN 771-12011$ Wienerberger Tacconi s.r.f. Via Ringhiera 1 I-40020 Mordano (Bologna) fraz. Bubanu Italy, Werk Termi Reasurement $T_{h_{rels}} = [mm]$ 120 $T_{h_{rels}} = [mm]$ 8 $T_{h_{rels}} = [mm]$ 70 $T_{$	771-1-011		Blocchi per s	olaio a travetti		
Bulk density $\rho \ge [kg/dm^2]$ 0.6         Standard, approval       EN 771-1:2011         Via Ringhiera 1       I-40020 Mordano (Bologna) fraz. Bubanu Italy, Werk Ternio Italy, Terni Italy, Ternio Italy, Terni Italy, Ternio			=			
Standard, approval       EN 771-1:2011         Producer of brick       Wienerberger Tracconis.r.I. Via Ringhiera 1         Heasurement       [mm]         Measurement       [mm]         Minimum thickness of member $h_{mm}$ Main and the second s	$\rho \geq$	[kg/dm³]				
Producer of brickVia Ringhiera 1 1-40020 Mordano (Bologna) fraz. Bubane Italy, Werk TerniMeasurement[mm] $\geq 420 \times 120 \times 250$ Winimum thickness of member $h_{min} = [mm]$ 120420 <td cols<="" td=""><td>,</td><td></td><td>EN 771</td><td>-1:2011</td></td>	<td>,</td> <td></td> <td>EN 771</td> <td>-1:2011</td>	,		EN 771	-1:2011	
Producer of Drick       I-40020 Mordano (Biogna) fraz. Bubane Italy, Werk Terni Italy, Werk Italy, Merk Italy, Merk Italy, Werk Italy, Merk Italy, Merk Italy, Merk Italy, Werk Italy, Werk Italy, Werk Italy, Werk Italy, Werk Italy, Merk Italy, I			Wienerberge	r Tacconi s.r.l.		
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$						
Measurement       [mm]       ≥ 420x120x250         Winimum thickness of member $h_{min} = [mm]$ 120         420         0          0				• /		
Minimum thickness of member $h_{min}$ [mm]       120         420         420         420         420         420         420         420         420         420         420         420         420         420         420         420         420         420         420         375         11         375         Multic log colspan="2">10         Multic log colspan="2">Anchor size         W-UR 8       W-UR 10         Internet for dial batic anchor embedment depth $h_{nom} \in [mm]$ 8.5       10.5         Diameter of clearance hole in the fixture $d_r \leq [mm]$ 8.5       10.5         Multing diatic anchor embedment depth $h_{nom} = [mm]$ 70       70         Notary drilling         N-UR 8       W-UR 10 <td c<="" td=""><td></td><td>[]</td><td></td><td></td></td>	<td></td> <td>[]</td> <td></td> <td></td>		[]			
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	b –					
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	II <sub>min</sub> —		I.	20		
able C 10.16.2: Installation parametersAnchor sizeM-UR 8W-UR 10Installationssidebottom viewDrill hole diameter $d_0 = [mm]$ 8Cutting diameter of drill bit $d_{out} \leq [mm]$ 8.45Depth of drill hole to deepest point $h_1 \geq [mm]$ 8.0Drill method[.]Rotary drillingRotary drillingOverall plastic anchor embedment depth $h_{aom} = [mm]$ 7070Diameter of clearance hole in the fixture $d_r \leq [mm]$ 8.510.5Minimum allowable edge distance $c_{min} \geq [mm]$ 100100able C 10.16.3: Characteristic resistance $F_{Rk}^{1/3}$ in [kN] for single anchorAnchor sizeW-UR 8W-UR 10Installationssidebottom viewbottom viewOverall plastic anchor embedment depth $h_{nom} = [mm]$ 70Anchor size $\overline{00^{\circ}C^{3}/50^{\circ}C^{4}}$ [kN]1.20.9Characteristic resistance $F_{Rk}$ $50^{\circ}C^{3}/80^{\circ}C^{4}$ [kN]0.90.6Hollow brick for ceiling Blocchi per solaio a travetti, $f_h \geq 14$ N/mm² $50^{\circ}C^{3}/80^{\circ}C^{4}$ [kN]1.20.9Characteristic resistance $F_{Rk}$ $50^{\circ}C^{3}/80^{\circ}C^{4}$ [kN]1.20.9Patial asfety factor $\gamma_{Mm}^{2}$ $50^{\circ}C^{3}/80^{\circ}C^{4}$ [kN]1.20.9Characteristic resistance $F_{Rk}$ $50^{\circ}C^{3}/80^{\circ}C^{4}$ [kN]1.20.9Characteristic resistance $F_{Rk}$ $50^{\circ}C^{3}/80^{\circ}C^{4}$ </td <td></td> <td></td> <td></td> <td></td>						
The set of the		<del>0</del> -  - 8	7			
The set of the			\	T		
able C 10.16.2: Installation parametersAnchor sizeW-UR 8W-UR 10Installationssidebottom viewbottom viewbottom viewDrill hole diameterdo =[mm]810Cutting diameter of drill bitdcut ≤[mm]8.4510.45Depth of drill hole to deepest point $h_1 \ge$ [mm]8080Drill method[-]Rotary drillingRotary drillingOverall plastic anchor embedment depth $h_{nom} =$ [mm]7070Diameter of clearance hole in the fixture $d_r \le$ [mm]100100'able C 10.16.3: Characteristic resistance $F_{Rk}^{11}$ in [kN] for single anchorAnchor sizeW-UR 8W-UR 10Installationssidebottom viewbottom view0verall plastic anchor embedment depth $h_{nom} =$ [mm]7070Hollow brick for ceiling Blocchi per solaio a travetti, $f_b \ge$ 10 N/mm² $30^\circ C^{-3} / 50^\circ C^{-1}$ [kN]1.20.9Characteristic resistance $F_{Rk}$ $30^\circ C^{-3} / 50^\circ C^{-1}$ [kN]1.20.9Partial safety factor $\gamma_{Mm}^{22}$ [-]2.52.5'cortotes see Annex C 3Yurth Plastic Anchor W-URAnnex C 26	_			• ·		
arbie C 10.16.2: Installation parameters         Anchor size       W-UR 8       W-UR 10         Installationsside       bottom view       bottom view         Drill hole diameter $d_0 = [mm]$ 8       10         Cutting diameter of drill bit $d_{out} \le [mm]$ 8.45       10.45         Depth of drill hole to deepest point $h_1 \ge [mm]$ 80       80         Drill method       [-]       Rotary drilling       Rotary drilling         Overall plastic anchor embedment depth $h_{nom} = [mm]$ 70       70         Dlameter of clearance hole in the fixture $d_r \le [mm]$ 8.5       10.5         Minimum allowable edge distance $c_{min} \ge [mm]$ 100       100         value C 10.16.3: Characteristic resistance $F_{Rk}^{11}$ in [kN] for single anchor         Anchor size       W-UR 8       W-UR 10         Installationsside       bottom view       bottom view       bottom view         Overall plastic anchor embedment depth $h_{nom} = [mm]$ 70       70         Hollow brick for ceiling Blocchi per solaio a travetti, $f_b \ge 10$ N/mm² $30^\circ C^3 / 50^\circ C^4$ [kN]       1.2       0.9         Characteristic resistance $F_{Rk}$ $30^\circ C^3 / 50^\circ C^4$ <t< td=""><td></td><td></td><td>9</td><td>120</td></t<>			9	120		
arbie C 10.16.2: Installation parameters         Anchor size       W-UR 8       W-UR 10         Installationsside       bottom view       bottom view         Drill hole diameter $d_0 = [mm]$ 8       10         Cutting diameter of drill bit $d_{out} \le [mm]$ 8.45       10.45         Depth of drill hole to deepest point $h_1 \ge [mm]$ 80       80         Drill method       [-]       Rotary drilling       Rotary drilling         Overall plastic anchor embedment depth $h_{nom} = [mm]$ 70       70         Dlameter of clearance hole in the fixture $d_r \le [mm]$ 8.5       10.5         Minimum allowable edge distance $c_{min} \ge [mm]$ 100       100         value C 10.16.3: Characteristic resistance $F_{Rk}^{11}$ in [kN] for single anchor         Anchor size       W-UR 8       W-UR 10         Installationsside       bottom view       bottom view       bottom view         Overall plastic anchor embedment depth $h_{nom} = [mm]$ 70       70         Hollow brick for ceiling Blocchi per solaio a travetti, $f_b \ge 10$ N/mm² $30^\circ C^3 / 50^\circ C^4$ [kN]       1.2       0.9         Characteristic resistance $F_{Rk}$ $30^\circ C^3 / 50^\circ C^4$ <t< td=""><td></td><td></td><td></td><td>2</td></t<>				2		
375				1		
able C 10.16.2: Installation parameters         Anchor size       W-UR 8       W-UR 10         Installationsside       bottom view       bottom view         Drill hole diameter       d <sub>0</sub> = [mm]       8       10         Cutting diameter of drill bit       d <sub>out</sub> $\leq$ [mm]       8.45       10.45         Depth of drill hole to deepest point       h <sub>1</sub> $\geq$ [mm]       80       80         Drill method       [-]       Rotary drilling       Rotary drilling         Overall plastic anchor embedment depth       h <sub>nom</sub> = [mm]       70       70         Diameter of clearance hole in the fixture       dr $\leq$ [mm]       8.5       10.5         Minimum allowable edge distance       cmm $\geq$ [mm]       100       100         'able C 10.16.3: Characteristic resistance $F_{Rk}^{(1)}$ in [kN] for single anchor       Anchor size       W-UR 10         Installationsside       bottom view       bottom view       bottom view         Overall plastic anchor embedment depth       h <sub>nom</sub> = [mm]       70       70         Hollow brick for ceiling Blocchi per solaio a travetti, f <sub>b</sub> $\geq$ 10 N/mm <sup>2</sup> $30^{\circ}$ C <sup>3</sup> / 50^{\circ}C <sup>4</sup> / [kN]       1.2       0.9         Solaio a travetti, f <sub>b</sub> $\geq$ 14 N/mm <sup>2</sup> $50^{\circ}$ C <sup>3</sup> / 50^{\circ}C <sup>4</sup> / [kN]       1.2       0.9         Partial saf		375	<u>11</u>			
Anchor sizeW-UR 8W-UR 10Installationssidebottom viewbottom viewbottom viewDrill hole diameter $d_0 = [mm]$ 810Cutting diameter of drill bit $d_{out} \le [mm]$ 8.4510.45Depth of drill hole to deepest point $h_1 \ge [mm]$ 8.080Drill method[-]Rotary drillingRotary drillingOverall plastic anchor embedment depth $h_{nom} = [mm]$ 7070Diameter of clearance hole in the fixture $d_r \le [mm]$ 8.510.5Minimum allowable edge distance $c_{min} \ge [mm]$ 100100rable C 10.16.3: Characteristic resistance $F_{Rk}^{1/1}$ in [kN] for single anchorAnchor sizeW-UR 8W-UR 10Installationssidebottom viewbottom viewOverall plastic anchor embedment depth $h_{nom} = [mm]$ 7070Hollow brick for ceiling Blocchi per solaio a travetti, $f_h \ge 10$ N/mm² $30^{\circ}C^{3} / 50^{\circ}C^{4/1}$ [kN]1.20.9Characteristic resistance $F_{Rk}$ $50^{\circ}C^{3} / 80^{\circ}C^{4/1}$ [kN]1.20.9Partial safety factor $\gamma_{Mm}^{2/2}$ [-]2.52.52.5footnotes see Annex C 3Ymm²[-]2.52.5Vürth Plastic Anchor W-UR		315				
Installationssidebottom viewbottom viewDrill hole diameter $d_0 = [mm]$ 810Cutting diameter of drill bit $d_{out} \le [mm]$ 8.4510.45Depth of drill hole to deepest point $h_1 \ge [mm]$ 8080Drill method[-]Rotary drillingRotary drillingOverall plastic anchor embedment depth $h_{nom} = [mm]$ 7070Diameter of clearance hole in the fixture $d_r \le [mm]$ 8.510.5Minimum allowable edge distance $c_{min} \ge [mm]$ 100100Table C 10.16.3: Characteristic resistance $F_{Rk}^{11}$ in [kN] for single anchorW-UR 8W-UR 10Anchor sizeW-UR 8W-UR 10Installationssidebottom viewbottom viewOverall plastic anchor embedment depth $h_{nom} = [mm]$ 7070Hollow brick for ceiling Blocchi per solaio a travetti, $f_b \ge 10$ N/mm² $30^{\circ}C^{3} / 50^{\circ}C^{41}$ [kN]1.20.9Characteristic resistance $F_{Rk}$ $50^{\circ}C^{3} / 80^{\circ}C^{41}$ [kN]1.20.9Partial safety factor $\gamma_{Mm}^{21}$ [-]2.52.5otonotes see Annex C 3 $\gamma_{Mm}^{21}$ [-]2.52.5Vürth Plastic Anchor W-UR $\gamma_{Mm}^{21}$ [-]2.52.5						
Drill hole diameter $d_0 =$ [mm]810Cutting diameter of drill bit $d_{cut} \leq$ [mm]8.4510.45Depth of drill hole to deepest point $h_1 \geq$ [mm]8080Drill method[-]Rotary drillingRotary drillingOverall plastic anchor embedment depth $h_{nom} =$ [mm]7070Diameter of clearance hole in the fixture $d_f \leq$ [mm]8.510.5Minimum allowable edge distance $c_{min} \geq$ [mm]100100 <b>able C 10.16.3: Characteristic resistance F</b> <sub>Rk</sub> <sup>1)</sup> <b>in [kN] for single anchorM-UR 8W-UR 10</b> InstallationssideOverall plastic anchor embedment depth $h_{nom} =$ [mm]7070 <b>Output</b> Overall plastic anchor embedment depth $h_{nom} =$ [mm]7070 <b>M-UR 8W-UR 10</b> Installationssidebottom viewbottom viewOverall plastic anchor embedment depth $h_{nom} =$ [mm]7070Hollow brick for ceiling Blocchi per solaio a travetti, $f_b \geq 14$ N/mm² $30^\circ C^{(3)} / 50^\circ C^{(4)}$ [kN]0.90.6Hollow brick for ceiling Blocchi per solaio a travetti, $f_b \geq 14$ N/mm² $30^\circ C^{(3)} / 80^\circ C^{(4)}$ [kN]1.20.9Partial safety factor $\gamma_{Mm}^{(2)}$ [-]2.52.52.5ootnotes see Annex C 3Soor C <sup>3</sup> / 80^\circ C^{(4)}[kN]1.20.9 <th <="" colspan="2" td=""><td></td><td>-</td><td></td><td></td></th>	<td></td> <td>-</td> <td></td> <td></td>			-		
Cutting diameter of drill bit $d_{out} \leq [mm]$ 8.45       10.45         Depth of drill hole to deepest point $h_1 \geq [mm]$ 80       80         Drill method       [-]       Rotary drilling       Rotary drilling         Overall plastic anchor embedment depth $h_{nom} = [mm]$ 70       70         Diameter of clearance hole in the fixture $d_f \leq [mm]$ 8.5       10.5         Minimum allowable edge distance $c_{min} \geq [mm]$ 100       100         Table C 10.16.3: Characteristic resistance $F_{Rk}^{10}$ in [kN] for single anchor         Anchor size       W-UR 8       W-UR 10         Installationsside       bottom view       bottom view       bottom view         Overall plastic anchor embedment depth $h_{nom} = [mm]$ 70       70         Hollow brick for ceiling Blocchi per solaio a travetti, $f_b \ge 10$ N/mm² $30^{\circ}$ C <sup>3</sup> / 50^{\circ}C <sup>4</sup> [kN]       1.2       0.9         Characteristic resistance $F_{Rk}$ $50^{\circ}$ C <sup>3</sup> / 50^{\circ}C <sup>4</sup> [kN]       1.2       0.9         Partial safety factor $\gamma_{Mm}^{2}$ [-]       2.5       2.5         foorc 3 / 80°C <sup>4</sup> [kN]       1.2       0.9         Partial safety factor $\gamma_{Mm}^{2}$	d	- [mm]				
Depth of drill hole to deepest point $h_1 \ge [mm]$ 8080Drill method[-]Rotary drillingRotary drillingOverall plastic anchor embedment depth $h_{nom} = [mm]$ 7070Diameter of clearance hole in the fixture $d_f \le [mm]$ 8.510.5Minimum allowable edge distance $c_{min} \ge [mm]$ 100100Table C 10.16.3: Characteristic resistance $F_{Rk}^{1/}$ in [kN] for single anchorW-UR 8W-UR 10Anchor sizeW-UR 8W-UR 10Installationssidebottom viewbottom viewOverall plastic anchor embedment depth $h_{nom} = [mm]$ 7070Hollow brick for ceiling Blocchi per solaio a travetti, $f_b \ge 10$ N/mm² $30^{\circ}C^{3} / 50^{\circ}C^{4}$ [kN]1.20.9Characteristic resistance $F_{Rk}$ $50^{\circ}C^{3} / 50^{\circ}C^{4}$ [kN]1.51.2Solaio a travetti, $f_b \ge 14$ N/mm² $30^{\circ}C^{3} / 50^{\circ}C^{4}$ [kN]1.20.9Partial safety factor $\gamma_{Mm}^{2}$ [-]2.52.5footnotes see Annex C 3Ymm2.52.52.5Vürth Plastic Anchor W-UR						
Drill method[-]Rotary drillingRotary drillingOverall plastic anchor embedment depth $h_{nom} = [mm]$ 7070Diameter of clearance hole in the fixture $d_r \leq [mm]$ 8.510.5Minimum allowable edge distance $c_{min} \geq [mm]$ 100100Table C 10.16.3: Characteristic resistance $F_{Rk}^{11}$ in [kN] for single anchorAnchor sizeW-UR 8W-UR 10Installationssidebottom viewbottom viewOverall plastic anchor embedment depth $h_{nom} = [mm]$ 7070Hollow brick for ceiling Blocchi per solaio a travetti, $f_b \geq 10$ N/mm² Characteristic resistance $F_{Rk}$ $30^{\circ}C^{3} / 50^{\circ}C^{4}$ [kN]1.20.9Bolaio a travetti, $f_b \geq 14$ N/mm² Characteristic resistance $F_{Rk}$ $30^{\circ}C^{3} / 50^{\circ}C^{4}$ [kN]1.20.9Partial safety factor $\gamma_{Mm}^{22}$ [-]2.52.52.5Tootnotes see Annex C 3Surver C 26		· · · · · ·				
Overall plastic anchor embedment depth $h_{nom} = [mm]$ 7070Diameter of clearance hole in the fixture $d_f \leq [mm]$ 8.510.5Minimum allowable edge distance $c_{min} \geq [mm]$ 100100Table C 10.16.3: Characteristic resistance $F_{Rk}^{11}$ in [kN] for single anchorAnchor sizeW-UR 8W-UR 10Installationssidebottom viewbottom viewOverall plastic anchor embedment depth $h_{nom} = [mm]$ 7070Hollow brick for ceiling Blocchi per solaio a travetti, $f_b \geq 10$ N/mm² $30^\circ C^3 / 50^\circ C^4$ [kN]1.20.9Characteristic resistance $F_{Rk}$ $50^\circ C^3 / 80^\circ C^4$ [kN]1.51.2Solaio a travetti, $f_b \geq 14$ N/mm² $30^\circ C^3 / 50^\circ C^4$ [kN]1.51.2Characteristic resistance $F_{Rk}$ $50^\circ C^3 / 80^\circ C^4$ [kN]1.20.9Partial safety factor $\gamma_{Mm}^{22}$ [-]2.52.5Tootnotes see Annex C 3Yurth Plastic Anchor W-URAnnex C 26	117					
Diameter of clearance hole in the fixture $d_f \leq [mm]$ 8.510.5Minimum allowable edge distance $c_{min} \geq [mm]$ 100100Table C 10.16.3: Characteristic resistance $F_{Rk}^{11}$ in [kN] for single anchorAnchor sizeW-UR 8W-UR 10Installationssidebottom viewbottom viewOverall plastic anchor embedment depth $h_{nom} = [mm]$ 7070Hollow brick for ceiling Blocchi per solaio a travetti, $f_b \geq 10$ N/mm² Characteristic resistance $F_{Rk}$ $30^{\circ}C^{3} / 50^{\circ}C^{4}$ [kN]1.20.9Hollow brick for ceiling Blocchi per solaio a travetti, $f_b \geq 14$ N/mm² Characteristic resistance $F_{Rk}$ $30^{\circ}C^{3} / 50^{\circ}C^{4}$ [kN]1.51.2Solaio a travetti, $f_b \geq 14$ N/mm² Characteristic resistance $F_{Rk}$ $30^{\circ}C^{3} / 50^{\circ}C^{4}$ [kN]1.20.9Partial safety factor Footnotes see Annex C 3 $\gamma_{Mm}^{21}$ [-]2.52.5Würth Plastic Anchor W-URAnnex C 26	h <sub>non</sub>					
Minimum allowable edge distance $c_{min} \ge [mm]$ 100100Table C 10.16.3: Characteristic resistance $F_{Rk}^{(1)}$ in [kN] for single anchorAnchor sizeW-UR 8W-UR 10Installationssidebottom viewbottom viewOverall plastic anchor embedment depth $h_{nom} = [mm]$ 7070Hollow brick for ceiling Blocchi per solaio a travetti, $f_b \ge 10$ N/mm² $30^{\circ}C^{3} / 50^{\circ}C^{4}$ [kN]1.20.9Characteristic resistance $F_{Rk}$ $50^{\circ}C^{3} / 80^{\circ}C^{4}$ [kN]1.51.2Hollow brick for ceiling Blocchi per solaio a travetti, $f_b \ge 14$ N/mm² $30^{\circ}C^{3} / 50^{\circ}C^{4}$ [kN]1.51.2Characteristic resistance $F_{Rk}$ $50^{\circ}C^{3} / 80^{\circ}C^{4}$ [kN]1.20.9Partial safety factor $\gamma_{Mm}^{2}$ [-]2.52.5Tootnotes see Annex C 3SSSS			8.5			
Table C 10.16.3: Characteristic resistance $F_{Rk}^{1}$ in [kN] for single anchor         Anchor size       W-UR 8       W-UR 10         Installationsside       bottom view       bottom view         Overall plastic anchor embedment depth $h_{nom} = [mm]$ 70       70         Hollow brick for ceiling Blocchi per solaio a travetti, $f_b \ge 10$ N/mm² $30^{\circ}C^{3} / 50^{\circ}C^{4}$ [kN]       1.2       0.9         Characteristic resistance $F_{Rk}$ $50^{\circ}C^{3} / 80^{\circ}C^{4}$ [kN]       0.9       0.6         Hollow brick for ceiling Blocchi per solaio a travetti, $f_b \ge 14$ N/mm² $30^{\circ}C^{3} / 50^{\circ}C^{4}$ [kN]       1.5       1.2         Solaio a travetti, $f_b \ge 14$ N/mm² $50^{\circ}C^{3} / 80^{\circ}C^{4}$ [kN]       1.2       0.9         Partial safety factor $\gamma_{Mm}^{2}$ [-]       2.5       2.5         Cootnotes see Annex C 3       Numer C 26			100	100		
Anchor sizeW-UR 8W-UR 10Installationssidebottom viewbottom viewOverall plastic anchor embedment depth $h_{nom} = [mm]$ 7070Hollow brick for ceiling Blocchi per solaio a travetti, $f_b \ge 10$ N/mm² Characteristic resistance $F_{Rk}$ $30^{\circ}C^{3} / 50^{\circ}C^{4}$ $[kN]$ 1.20.9Hollow brick for ceiling Blocchi per solaio a travetti, $f_b \ge 14$ N/mm² Characteristic resistance $F_{Rk}$ $30^{\circ}C^{3} / 80^{\circ}C^{4}$ $[kN]$ 1.51.2Hollow brick for ceiling Blocchi per solaio a travetti, $f_b \ge 14$ N/mm² Characteristic resistance $F_{Rk}$ $30^{\circ}C^{3} / 80^{\circ}C^{4}$ $[kN]$ 1.20.9Partial safety factor $\gamma_{Mm}^{22}$ $[-]$ 2.52.5Tootnotes see Annex C 3Yürth Plastic Anchor W-URAnnex C 26						
Installationssidebottom viewbottom viewOverall plastic anchor embedment depth $h_{nom} = [mm]$ <b>7070</b> Hollow brick for ceiling Blocchi per solaio a travetti, $f_b \ge 10 \text{ N/mm}^2$ $30^{\circ}C^{3} / 50^{\circ}C^{4}$ $[kN]$ $1.2$ $0.9$ Characteristic resistance $F_{Rk}$ $50^{\circ}C^{3} / 80^{\circ}C^{4}$ $[kN]$ $0.9$ $0.6$ Hollow brick for ceiling Blocchi per solaio a travetti, $f_b \ge 14 \text{ N/mm}^2$ $30^{\circ}C^{3} / 50^{\circ}C^{4}$ $[kN]$ $1.5$ $1.2$ Characteristic resistance $F_{Rk}$ $50^{\circ}C^{3} / 80^{\circ}C^{4}$ $[kN]$ $1.2$ $0.9$ Partial safety factor $\gamma_{Mm}^{22}$ $[-]$ $2.5$ $2.5$ Cootnotes see Annex C 3Vürth Plastic Anchor W-URAnnex C 26	F <sub>Rk</sub> <sup>1)</sup> in [kN] fc	or single a				
Overall plastic anchor embedment depth $h_{nom} = [mm]$ 7070Hollow brick for ceiling Blocchi per solaio a travetti, $f_b \ge 10 \text{ N/mm}^2$ $30^\circ \text{C}^3 / 50^\circ \text{C}^4$ $[kN]$ 1.20.9Characteristic resistance $F_{Rk}$ $50^\circ \text{C}^3 / 80^\circ \text{C}^4$ $[kN]$ 0.90.6Hollow brick for ceiling Blocchi per solaio a travetti, $f_b \ge 14 \text{ N/mm}^2$ $30^\circ \text{C}^3 / 50^\circ \text{C}^{4}$ $[kN]$ 1.51.2Characteristic resistance $F_{Rk}$ $30^\circ \text{C}^3 / 50^\circ \text{C}^{4}$ $[kN]$ 1.20.9Partial safety factor $70^\circ \text{C}^3 / 80^\circ \text{C}^4$ $[kN]$ 1.20.9Partial safety factor $\gamma_{Mm}^{22}$ $[-]$ 2.52.5Tootnotes see Annex C 3 $\gamma_{Mm}^{21}$ $[-]$ 2.52.5						
NormNormNormHollow brick for ceiling Blocchi per solaio a travetti, $f_b \ge 10$ N/mm² $30^{\circ}C^{3} / 50^{\circ}C^{4}$ [kN]1.20.9Characteristic resistance $F_{Rk}$ $50^{\circ}C^{3} / 80^{\circ}C^{4}$ [kN]0.9Blocchi per solaio a travetti, $f_b \ge 14$ N/mm² $30^{\circ}C^{3} / 50^{\circ}C^{4}$ [kN]1.51.2Characteristic resistance $F_{Rk}$ $30^{\circ}C^{3} / 50^{\circ}C^{4}$ [kN]1.51.2Operation a travetti, $f_b \ge 14$ N/mm² $50^{\circ}C^{3} / 80^{\circ}C^{4}$ [kN]1.20.9Partial safety factor $\gamma_{Mm}^{2}$ [-]2.52.5Cootnotes see Annex C 3Vürth Plastic Anchor W-URAnnex C 26						
solaio a travetti, $f_b \ge 10 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ i i i i i i i i i i i i i i i i i i i			70	70		
Characteristic resistance $F_{Rk}$ $50^{\circ}C^{3} / 80^{\circ}C^{4}$ [kN] $0.9$ $0.6$ Hollow brick for ceiling Blocchi per solaio a travetti, $f_b \ge 14$ N/mm² $30^{\circ}C^{3} / 50^{\circ}C^{4}$ [kN] $1.5$ $1.2$ Characteristic resistance $F_{Rk}$ $50^{\circ}C^{3} / 80^{\circ}C^{4}$ [kN] $1.2$ $0.9$ Partial safety factor $\gamma_{Mm}^{2}$ [-] $2.5$ $2.5$ Footnotes see Annex C 3Vürth Plastic Anchor W-URAnnex C 26	30°C <sup>3)</sup> / 50°0	C <sup>4)</sup> [kN]	1.2	0.9		
Hollow brick for ceiling Blocchi per solaio a travetti, $f_b \ge 14 \text{ N/mm}^2$ 30°C <sup>3</sup> / 50°C <sup>4</sup> [kN]1.51.2Characteristic resistance $F_{Rk}$ $50°C^3$ / $80°C^4$ [kN]1.20.9Partial safety factor $\gamma_{Mm}^{22}$ [-]2.52.5Footnotes see Annex C 3SSSS	50°C <sup>3)</sup> / 80°0	C <sup>4)</sup> [kN1	0.9	0.6		
solaio a travetti, $f_b \ge 14 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ $50^{\circ}C^{3} / 80^{\circ}C^{4}$ [kN] $1.2$ $0.9$ Partial safety factor $\gamma_{Mm}^{2}$ [-] $2.5$ $2.5$ Footnotes see Annex C 3 $\gamma_{Mm}$ $\gamma_{Mm}^{2}$ $\gamma_{Mm}^{2}$ $\gamma_{Mm}^{2}$ Vürth Plastic Anchor W-UR $\gamma_{Mm}$ $\gamma_{Mm}^{2}$ $\gamma_{Mm}^{2}$ $\gamma_{Mm}^{2}$						
Characteristic resistance $F_{Rk}$ $50^{\circ}C^{3} / 80^{\circ}C^{4}$ [kN]       1.2       0.9         Partial safety factor $\gamma_{Mm}^{2}$ [-]       2.5       2.5         Footnotes see Annex C 3       Vürth Plastic Anchor W-UR       Annex C 26	30°C°′ / 50°(	[kN] "ز	1.5	1.2		
Partial safety factor     γ <sub>Mm</sub> <sup>2</sup> [-]     2.5     2.5       Tootnotes see Annex C 3     Vürth Plastic Anchor W-UR     Annex C 26			1.2	0.9		
Vürth Plastic Anchor W-UR	50°C <sup>3)</sup> / 80°0					
Vürth Plastic Anchor W-UR		2)	2.5	2.5		
Annex C 26		2)	2.5	2.5		
Annex C 26		2)	2.5	2.5		
erformances		2)	2.5	2.5		
ollow brick for ceiling Blocchi per solaio a travetti		2)	2.5			
solaio a travetti, f <sub>b</sub> ≥ 14 N/mm²         Characteristic resistance F <sub>Rk</sub> Partial safety factor         ootnotes see Annex C 3         Vürth Plastic Anchor W-UR		$\rho \geq  $ $h_{min} =  $ $h_{mi}$	$\rho \geq [kg/dm^3]$ $\rho \geq [kg/dm^3]$ $(mm)$ $h_{min} = [mm]$ $420$ $60 + 8$ $420$ $60 + 8$ $7$ $7$ $60 + 8$ $7$ $7$ $7$ $60 + 8$ $7$ $7$ $7$ $7$ $7$ $7$ $7$ $7$ $7$ $7$	$\begin{array}{c c c c c c c c c c c c c c c c c c c $		



Brick data	771-1-018		POROTHERM MURBRIC T20 and R20
Type of brick			Hollow brick
Bulk density	<i>ρ</i> ≥	[kg/dm³]	0.7
Standard, approval	, ,		EN 771-1:2011
Producer of brick			e.g. Wienerberger SAS 8, Rue du Canal - Achenheim 67087 Strasbourg, France
Measurement		[mm]	T20: 500x200x240 R20: 500x200x249
Minimum thickness of member	h <sub>min</sub> =	[mm]	200
able C 10.17.2: Installation parameters Anchor size			W-UR 8
Installationsside <sup>6)</sup>			Inside / Outside
Drill hole diameter	d <sub>0</sub> =	= [mm]	8
Cutting diameter of drill bit	d <sub>cut</sub> s	≤ [mm]	8.45
Depth of drill hole to deepest point	h <sub>1</sub> 2	≥ [mm]	80
Drill method		[-]	Rotary drilling
Overall plastic anchor embedment depth	h <sub>nom</sub> =		70
	h <sub>nom</sub> = d <sub>f</sub> ≤	= [mm]	
Overall plastic anchor embedment depth Diameter of clearance hole in the fixture Minimum allowable edge distance		= [mm] ≤ [mm]	70
Diameter of clearance hole in the fixture Minimum allowable edge distance	d <sub>f</sub> ≤ C <sub>min</sub> ≥	= [mm] ≤ [mm] ≥ [mm]	70 8.5
Diameter of clearance hole in the fixture Minimum allowable edge distance Table C 10.17.3: Characteristic resistance Fi	d <sub>f</sub> ≤ C <sub>min</sub> ≥	= [mm] ≤ [mm] ≥ [mm]	70 8.5
Diameter of clearance hole in the fixture Minimum allowable edge distance Table C 10.17.3: Characteristic resistance Fi Anchor size	d <sub>f</sub> ≤ C <sub>min</sub> ≥	= [mm] ≤ [mm] ≥ [mm]	70 8.5 100
Diameter of clearance hole in the fixture	d <sub>f</sub> ≤ C <sub>min</sub> ≥	= [mm] ≤ [mm] ≥ [mm] anchor	70 8.5 100 W-UR 8
Diameter of clearance hole in the fixture Minimum allowable edge distance Table C 10.17.3: Characteristic resistance Fi Anchor size Installationsside <sup>6)</sup> Overall plastic anchor embedment depth Hollow brick POROTHERM MURBRIC T20 and R20,	d <sub>f</sub> ⊴ C <sub>min</sub> ≧ <sub>Rk</sub> <sup>1)</sup> in [kN] for single	= [mm] ≤ [mm] ≥ [mm] anchor = [mm]	70 8.5 100 W-UR 8 Inside / Outside
Diameter of clearance hole in the fixture Minimum allowable edge distance Table C 10.17.3: Characteristic resistance $F_{f}$ Anchor size Installationsside <sup>6)</sup> Overall plastic anchor embedment depth Hollow brick POROTHERM MURBRIC T20 and R20, $f_{b} \ge 6 N/mm^{2}$ Characteristic resistance $F_{Rk}$	d <sub>f</sub> <u>-</u> C <sub>min</sub> ک Rk <sup>1)</sup> in [kN] for single h <sub>nom</sub> =	= [mm] ≤ [mm] ≥ [mm] anchor = [mm]	70 8.5 100 W-UR 8 Inside / Outside 70
Diameter of clearance hole in the fixture Minimum allowable edge distance <b>Fable C 10.17.3: Characteristic resistance Fr</b> <b>Anchor size</b> Installationsside <sup>6)</sup> Overall plastic anchor embedment depth <b>Hollow brick</b> <b>POROTHERM MURBRIC T20 and R20,</b> $f_b \ge 6 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ <b>Hollow brick</b> <b>POROTHERM MURBRIC T20 and R20,</b>	d <sub>f</sub> ≤ C <sub>min</sub> ≥ R <sub>k</sub> <sup>1)</sup> in [kN] for single h <sub>nom</sub> = 30°C <sup>3)</sup> / 50°C <sup>4</sup> 50°C <sup>3)</sup> / 80°C <sup>4</sup> 30°C <sup>3)</sup> / 50°C <sup>4</sup>	= [mm] ≤ [mm] ≥ [mm] anchor = [mm] ) [kN] ) [kN]	70 8.5 100 W-UR 8 Inside / Outside 70 0.3
Diameter of clearance hole in the fixture Minimum allowable edge distance Table C 10.17.3: Characteristic resistance $F_{f}$ Anchor size Installationsside <sup>6)</sup> Overall plastic anchor embedment depth Hollow brick POROTHERM MURBRIC T20 and R20, $f_{b} \ge 6 \text{ N/mm}^{2}$ Characteristic resistance $F_{Rk}$ Hollow brick POROTHERM MURBRIC T20 and R20, $f_{b} \ge 8 \text{ N/mm}^{2}$ Characteristic resistance $F_{Rk}$	d <sub>f</sub> ≤ C <sub>min</sub> ≧ Rk <sup>1)</sup> in [kN] for single h <sub>nom</sub> = 30°C <sup>3)</sup> / 50°C <sup>4</sup> 50°C <sup>3)</sup> / 80°C <sup>4</sup>	= [mm] ≤ [mm] ≥ [mm] anchor = [mm] ) [kN] ) [kN]	70 8.5 100 W-UR 8 Inside / Outside 70 0.3 0.3
Diameter of clearance hole in the fixture Minimum allowable edge distance Table C 10.17.3: Characteristic resistance $F_{f}$ Anchor size Installationsside <sup>6)</sup> Overall plastic anchor embedment depth Hollow brick POROTHERM MURBRIC T20 and R20, $f_{b} \ge 6 \text{ N/mm}^{2}$ Characteristic resistance $F_{Rk}$ Hollow brick POROTHERM MURBRIC T20 and R20, $f_{b} \ge 8 \text{ N/mm}^{2}$ Characteristic resistance $F_{Rk}$ Hollow brick POROTHERM MURBRIC T20 and R20, $f_{b} \ge 8 \text{ N/mm}^{2}$	d <sub>f</sub> ≤ C <sub>min</sub> ≥ Rk <sup>1)</sup> in [kN] for single h <sub>nom</sub> = 30°C <sup>3)</sup> / 50°C <sup>4</sup> 50°C <sup>3)</sup> / 80°C <sup>4</sup> 50°C <sup>3)</sup> / 80°C <sup>4</sup> 50°C <sup>3)</sup> / 80°C <sup>4</sup> 50°C <sup>3)</sup> / 80°C <sup>4</sup>	[mm] [mm] [mm] anchor anchor [mm] (kN] [kN] [kN] [kN] [kN] (kN] [kN]	70 8.5 100 W-UR 8 Inside / Outside 70 0.3 0.3 0.4
Diameter of clearance hole in the fixture Minimum allowable edge distance Table C 10.17.3: Characteristic resistance $F_{f}$ Anchor size Installationsside <sup>6)</sup> Overall plastic anchor embedment depth Hollow brick POROTHERM MURBRIC T20 and R20, $f_{b} \ge 6 \text{ N/mm}^{2}$ Characteristic resistance $F_{Rk}$ Hollow brick POROTHERM MURBRIC T20 and R20, $f_{b} \ge 8 \text{ N/mm}^{2}$ Characteristic resistance $F_{Rk}$ Hollow brick POROTHERM MURBRIC T20 and R20, $f_{b} \ge 12 \text{ N/mm}^{2}$ Characteristic resistance $F_{Rk}$	d <sub>f</sub> ≤ C <sub>min</sub> ≥ Rk <sup>1)</sup> in [kN] for single h <sub>nom</sub> = 30°C <sup>3)</sup> / 50°C <sup>4</sup> 50°C <sup>3)</sup> / 80°C <sup>4</sup> 50°C <sup>3)</sup> / 80°C <sup>4</sup> 30°C <sup>3)</sup> / 50°C <sup>4</sup> 50°C <sup>3)</sup> / 80°C <sup>4</sup> 50°C <sup>3)</sup> / 80°C <sup>4</sup>	[mm] [mm] [mm] anchor anchor [mm] [kN]	70         8.5         100         W-UR 8         Inside / Outside         70         0.3         0.3         0.4         0.4         0.6         0.6
Diameter of clearance hole in the fixture Minimum allowable edge distance Table C 10.17.3: Characteristic resistance $F_{f}$ Anchor size Installationsside <sup>6)</sup> Overall plastic anchor embedment depth Hollow brick POROTHERM MURBRIC T20 and R20, $f_{b} \ge 6 \text{ N/mm}^{2}$ Characteristic resistance $F_{Rk}$ Hollow brick POROTHERM MURBRIC T20 and R20, $f_{b} \ge 8 \text{ N/mm}^{2}$ Characteristic resistance $F_{Rk}$ Hollow brick POROTHERM MURBRIC T20 and R20, $f_{b} \ge 8 \text{ N/mm}^{2}$	d <sub>f</sub> ≤ C <sub>min</sub> ≥ Rk <sup>1)</sup> in [kN] for single h <sub>nom</sub> = 30°C <sup>3)</sup> / 50°C <sup>4</sup> 50°C <sup>3)</sup> / 80°C <sup>4</sup> 50°C <sup>3)</sup> / 80°C <sup>4</sup> 50°C <sup>3)</sup> / 80°C <sup>4</sup> 50°C <sup>3)</sup> / 80°C <sup>4</sup>	[mm] [mm] [mm] anchor anchor [mm] [kN]	70         8.5         100         W-UR 8         Inside / Outside         70         0.3         0.3         0.4         0.4         0.6

Brick data, installation parameters, characteristic resistance



Brick data       771-1-014         Type of brick $\rho \geq$ Bulk density $\rho \geq$ Standard, approval $\rho \geq$ Producer of brick       Measurement         Minimum thickness of member $h_{min} =$	[kg/dm³]	POROTHERM T30 and R30 Hollow brick 0.7 EN 771-1:2011 Wienerberger SAS 8, Rue du Canal - Achenheim 67087 Strasbourg France T30: 373x300x249 R30: 373x300x250 300
$\label{eq:relation} \begin{array}{l} \rho \geq \\ \hline \\$	[mm]	0.7 EN 771-1:2011 Wienerberger SAS 8, Rue du Canal - Achenheim 67087 Strasbourg France T30: 373x300x249 R30: 373x300x250
Standard, approval Producer of brick Measurement Minimum thickness of member h <sub>min</sub> =	[mm]	Wienerberger SAS 8, Rue du Canal - Achenheim 67087 Strasbourg France T30: 373x300x249 R30: 373x300x250
Producer of brick Measurement Minimum thickness of member h <sub>min</sub> =		Wienerberger SAS 8, Rue du Canal - Achenheim 67087 Strasbourg France T30: 373x300x249 R30: 373x300x250
Measurement Minimum thickness of member h <sub>min</sub> =		8, Rue du Canal - Achenheim 67087 Strasbourg France T30: 373x300x249 R30: 373x300x250
Measurement Minimum thickness of member h <sub>min</sub> =		France T30: 373x300x249 R30: 373x300x250
Ainimum thickness of member h <sub>min</sub> =		T30: 373x300x249 R30: 373x300x250
Ainimum thickness of member h <sub>min</sub> =		R30: 373x300x250
Ainimum thickness of member h <sub>min</sub> =		
		300
	24	
able C 10.18.2: Installation parameters		
Anchor size		W-UR 8
nstallationsside <sup>6)</sup>		Inside / Outside
	$I_0 = [mm]$	8
	<sub>sut</sub> ≤ [mm]	8.45
	$n_1 \ge [mm]$	80 Deter deilling
Drill method	[-]	Rotary drilling 70
	m = [mm]	8.5
	$d_f \leq [mm]$	100
/linimum allowable edge distance c <sub>m</sub>	$_{nin} \geq [mm]$	100
able C 10.18.3: Characteristic resistance F <sub>Rk</sub> <sup>1)</sup> in [kN] f	or single anch	or
Anchor size		W-UR 8
nstallationsside <sup>6)</sup>		Inside / Outside
	<sub>m</sub> = [mm]	70
Hollow brick POROTHERM R30, Hollow brick POROTHERM T30, $\sim 2 \text{ N}/\text{rsm}^2$	<sup>2</sup> C <sup>4)</sup> [kN]	0.4
$F_b \ge 6 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ 50°C <sup>3)</sup> / 80°	°C <sup>4)</sup> [kN]	0.3
	°C <sup>4)</sup> [kN]	0.5
lollow brick POROTHERM R30, 30°C <sup>3</sup> / 50°		
Iollow brick POROTHERM R30, Iollow brick POROTHERM T30, $30^{\circ}C^{3} / 50^{\circ}$		<u> </u>
Iollow brick POROTHERM R30, Iollow brick POROTHERM T30, $_{3} \ge 8 \text{ N/mm}^2$ $30^{\circ}\text{C}^{3} / 50^{\circ}$ $50^{\circ}\text{C}^{3} / 80^{\circ}$		0.4
Hollow brick POROTHERM R30, Hollow brick POROTHERM T30, $b \ge 8 \text{ N/mm}^2$ $30^{\circ}\text{C}^{3)} / 50^{\circ}$ Characteristic resistance $F_{Rk}$ $50^{\circ}\text{C}^{3)} / 80^{\circ}$		0.4



Brick data	771-1-026		UNIPOR WS11 CORISO
Type of brick			Hollow brick
Bulk density	$\rho \ge$	[kg/dm <sup>3</sup> ]	0.85
Standard, approval	,		EN 771-1:2011, Z-17.1-1011
			UNIPOR Ziegel
Producer of brick			Marketing GmbH
Producer of blick			Landsberger Straße 392
			D-81241 München
Measurement		[mm]	12DF (≥ 247x365x249)
Minimum thickness of member	h <sub>min</sub> =	[mm]	365
		365	
able C 10.19.2: Installation parameters		r	W-UR 8
able C 10.19.2: Installation parameters Anchor size Installationsside <sup>6)</sup>			W-UR 8 Inside / Outside
Anchor size	d <sub>o</sub>	= [mm]	
Anchor size Installationsside <sup>6)</sup>	d <sub>0</sub> d <sub>cut</sub>		Inside / Outside
<b>Anchor size</b> Installationsside <sup>6)</sup> Drill hole diameter	d <sub>cut</sub>		Inside / Outside 8
<b>Anchor size</b> Installationsside <sup>6)</sup> Drill hole diameter Cutting diameter of drill bit	d <sub>cut</sub>	≤ [mm]	Inside / Outside 8 8.45
<b>Anchor size</b> Installationsside <sup>6)</sup> Drill hole diameter Cutting diameter of drill bit Depth of drill hole to deepest point	d <sub>cut</sub>	≤ [mm] ≥ [mm] [-]	Inside / Outside 8 8.45 80
Anchor size Installationsside <sup>6)</sup> Drill hole diameter Cutting diameter of drill bit Depth of drill hole to deepest point Drill method	d <sub>cut</sub> h <sub>1</sub>	≤ [mm] ≥ [mm] [-] = [mm]	Inside / Outside 8 8.45 80 Rotary drilling
Anchor size Installationsside <sup>6)</sup> Drill hole diameter Cutting diameter of drill bit Depth of drill hole to deepest point Drill method Overall plastic anchor embedment depth	d <sub>cut</sub> h <sub>1</sub>	≤ [mm] ≥ [mm] [-] = [mm] ≤ [mm]	Inside / Outside 8 8.45 80 Rotary drilling 70
Anchor size Installationsside <sup>6)</sup> Drill hole diameter Cutting diameter of drill bit Depth of drill hole to deepest point Drill method Overall plastic anchor embedment depth Diameter of clearance hole in the fixture	d <sub>cut</sub> h <sub>1</sub> h <sub>nom</sub> d <sub>f</sub> C <sub>min</sub>	<pre>≤ [mm] ≥ [mm] = [-] = [mm] ≤ [mm] ≤ [mm] ≥ [mm]</pre>	Inside / Outside 8 8.45 80 Rotary drilling 70 8.5 100
Anchor size Installationsside <sup>6)</sup> Drill hole diameter Cutting diameter of drill bit Depth of drill hole to deepest point Drill method Overall plastic anchor embedment depth Diameter of clearance hole in the fixture Minimum allowable edge distance Table C 10.19.3: Characteristic resistance F <sub>RH</sub> Anchor size	d <sub>cut</sub> h <sub>1</sub> h <sub>nom</sub> d <sub>f</sub> C <sub>min</sub>	<pre>≤ [mm] ≥ [mm] = [-] = [mm] ≤ [mm] ≤ [mm] ≥ [mm]</pre>	Inside / Outside 8 8.45 80 Rotary drilling 70 8.5 100 chor W-UR 8
Anchor size Installationsside <sup>6)</sup> Drill hole diameter Cutting diameter of drill bit Depth of drill hole to deepest point Drill method Overall plastic anchor embedment depth Diameter of clearance hole in the fixture Minimum allowable edge distance <b>Table C 10.19.3: Characteristic resistance F</b> <sub>RH</sub> Anchor size Installationsside <sup>6)</sup>	d <sub>cut</sub> h <sub>1</sub> d <sub>f</sub> C <sub>min</sub>	<pre></pre>	Inside / Outside           8           8.45           80           Rotary drilling           70           8.5           100           chor           W-UR 8           Inside / Outside
Anchor size Installationsside <sup>6)</sup> Drill hole diameter Cutting diameter of drill bit Depth of drill hole to deepest point Drill method Overall plastic anchor embedment depth Diameter of clearance hole in the fixture Minimum allowable edge distance Table C 10.19.3: Characteristic resistance F <sub>RK</sub> Anchor size Installationsside <sup>6)</sup> Overall plastic anchor embedment depth	d <sub>cut</sub> h <sub>1</sub> <sup>1)</sup> in [kN] fo h <sub>nom</sub>	<pre></pre>	Inside / Outside 8 8.45 80 Rotary drilling 70 8.5 100 chor W-UR 8
Anchor size Installationsside <sup>6)</sup> Drill hole diameter Cutting diameter of drill bit Depth of drill hole to deepest point Drill method Overall plastic anchor embedment depth Diameter of clearance hole in the fixture Minimum allowable edge distance Cable C 10.19.3: Characteristic resistance F <sub>RK</sub> Anchor size Installationsside <sup>6)</sup> Overall plastic anchor embedment depth Hollow brick	d <sub>cut</sub> h <sub>1</sub> d <sub>f</sub> C <sub>min</sub>	<pre></pre>	Inside / Outside           8           8.45           80           Rotary drilling           70           8.5           100           chor           W-UR 8           Inside / Outside
Anchor size         Installationsside <sup>6)</sup> Drill hole diameter         Cutting diameter of drill bit         Depth of drill hole to deepest point         Drill method         Overall plastic anchor embedment depth         Diameter of clearance hole in the fixture         Minimum allowable edge distance         Table C 10.19.3: Characteristic resistance $F_{RH}$ Anchor size         Installationsside <sup>6)</sup> Overall plastic anchor embedment depth         Hollow brick         UNIPOR WS11 CORISO, $f_b \ge 10 \text{ N/mm}^2$	d <sub>cut</sub> h <sub>1</sub> d <sub>f</sub> C <sub>min</sub> <sup>1)</sup> in [kN] fo h <sub>nom</sub> 0°C <sup>3)</sup> / 50°C	$\begin{array}{c c} \leq & [mm] \\ \geq & [mm] \\ \hline & [-] \\ = & [mm] \\ \hline \leq & [mm] \\ \hline \geq & [mm] \\ \hline \end{array}$	Inside / Outside           8           8.45           80           Rotary drilling           70           8.5           100           Chor           W-UR 8           Inside / Outside           70
Anchor size         Installationsside <sup>6)</sup> Drill hole diameter         Cutting diameter of drill bit         Depth of drill hole to deepest point         Drill method         Overall plastic anchor embedment depth         Diameter of clearance hole in the fixture         Minimum allowable edge distance         Table C 10.19.3: Characteristic resistance $F_{RH}$ Anchor size         Installationsside <sup>6)</sup> Overall plastic anchor embedment depth         Hollow brick         UNIPOR WS11 CORISO. $f_h \ge 10 \text{ N/mm}^2$	d <sub>cut</sub> h <sub>1</sub> <sup>1)</sup> in [kN] fo h <sub>nom</sub>	$ \frac{1}{2} = [mm] $ $ \frac{1}{2} = [kN] $ $ \frac{1}{2} = [kN] $	Inside / Outside           8           8.45           80           Rotary drilling           70           8.5           100           chor           W-UR 8           Inside / Outside           70           0.9



Brick data	771-1-016		UNIPOR WS14 and UNIPOR WS12 CORISC
Type of brick			Hollow brick
Bulk density	$\rho \ge$	[kg/dm³]	0.8
Standard, approval			EN 771-1:2011, Z-17.1-883
			UNIPOR Ziegel
Producer of brick			Marketing GmbH
			Landsberger Straße 392 D-81241 München
Measurement		[mm]	10DF (≥ 247x300x249)
Minimum thickness of member	h <sub>min</sub> =	[mm]	300
4			
Table C 10.20.2: Installation parameters         Anchor size			W-UR 8
Installationsside <sup>6)</sup>			Inside / Outside
Drill hole diameter	do	= [mm]	8
Cutting diameter of drill bit	d <sub>cut</sub>	_≤ [mm]	8.45
Depth of drill hole to deepest point	h <sub>1</sub>		80
Drill method		[-]	Rotary drilling
Overall plastic anchor embedment depth	h <sub>nom</sub>	= [mm]	70
Diameter of clearance hole in the fixture	d <sub>f</sub>	≤ [mm]	8.5
Minimum allowable edge distance	C <sub>min</sub>	≥ [mm]	100
Fable C 10.20.3: Characteristic resistance	F <sub>Rk</sub> <sup>1)</sup> in [kN] fo	r single a	
Anchor sizo			W-UR 8
			Inside / Outside <b>70</b>
Anchor size Installationsside <sup>6)</sup> Overall plactic analysis embedment depth	<u>ل</u>	- [mm]	/ 0
Installationsside <sup>6)</sup> Overall plastic anchor embedment depth	h <sub>nom</sub>	4	
Installationsside <sup>6)</sup> Overall plastic anchor embedment depth Hollow brick UNIPOR WS14 and UNIPOR WS12 CORISO,	30°C <sup>3)</sup> / 50°C	2 <sup>4)</sup> [kN]	0.6
Installationsside <sup>6)</sup> Overall plastic anchor embedment depth Hollow brick UNIPOR WS14 and UNIPOR WS12 CORISO, $f_b \ge 10 \text{ N/mm}^2$		2 <sup>4)</sup> [kN]	0.6
InstallationssideOverall plastic anchor embedment depthHollow brick UNIPOR WS14 and UNIPORWS12 CORISO, $f_b \ge 10 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$	30°C <sup>3)</sup> / 50°C 50°C <sup>3)</sup> / 80°C	2 <sup>4)</sup> [kN] 2 <sup>4)</sup> [kN]	0.6
InstallationssideOverall plastic anchor embedment depthHollow brick UNIPOR WS14 and UNIPORWS12 CORISO, $f_b \ge 10 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Hollow brick UNIPOR WS14 and UNIPOR	30°C <sup>3)</sup> / 50°C	2 <sup>4)</sup> [kN]	
InstallationssideOverall plastic anchor embedment depthHollow brick UNIPOR WS14 and UNIPORWS12 CORISO, $f_b \ge 10 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Hollow brick UNIPOR WS14 and UNIPORWS12 CORISO,	30°C <sup>3)</sup> / 50°C 50°C <sup>3)</sup> / 80°C 30°C <sup>3)</sup> / 50°C	C <sup>4)</sup> [kN]           C <sup>4)</sup> [kN]           C <sup>4)</sup> [kN]	0.6 0.75
InstallationssideOverall plastic anchor embedment depthHollow brick UNIPOR WS14 and UNIPORWS12 CORISO, $f_b \ge 10 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Hollow brick UNIPOR WS14 and UNIPORWS12 CORISO, $f_b \ge 12 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$	30°C <sup>3)</sup> / 50°C 50°C <sup>3)</sup> / 80°C 30°C <sup>3)</sup> / 50°C 50°C <sup>3)</sup> / 80°C	2 <sup>4</sup> [kN]           2 <sup>4</sup> [kN]           2 <sup>4</sup> [kN]           2 <sup>4</sup> [kN]           2 <sup>4</sup> [kN]	0.6 0.75 0.75
InstallationssideOverall plastic anchor embedment depthHollow brick UNIPOR WS14 and UNIPORWS12 CORISO, $f_b \ge 10 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Hollow brick UNIPOR WS14 and UNIPORWS12 CORISO, $f_b \ge 12 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$	30°C <sup>3)</sup> / 50°C 50°C <sup>3)</sup> / 80°C 30°C <sup>3)</sup> / 50°C	2 <sup>4</sup> [kN]           2 <sup>4</sup> [kN]           2 <sup>4</sup> [kN]           2 <sup>4</sup> [kN]           2 <sup>4</sup> [kN]	0.6 0.75
Installationsside <sup>6)</sup> Overall plastic anchor embedment depth Hollow brick UNIPOR WS14 and UNIPOR WS12 CORISO, $f_b \ge 10 \text{ N/mm}^2$	30°C <sup>3)</sup> / 50°C 50°C <sup>3)</sup> / 80°C 30°C <sup>3)</sup> / 50°C 50°C <sup>3)</sup> / 80°C	2 <sup>4</sup> [kN]           2 <sup>4</sup> [kN]           2 <sup>4</sup> [kN]           2 <sup>4</sup> [kN]           2 <sup>4</sup> [kN]	0.6 0.75 0.75

#### Deutsches Institut für Bautechnik

able C 10.21.1: Brick data Brick data 7	771-1-015		UNIPOR W14
Type of brick			Hollow brick
Bulk density	$\rho \geq [kg$	g/dm³]	0.7
Standard, approval			W14-Plan: EN 771-1:2011, Z-17.1-679, W14-Block: EN 771-1:2011, Z-17.1-636,
Producer of brick			UNIPOR Ziegel Marketing GmbH Landsberger Straße 392 D-81241 München
Measurement	[	mm]	W14-Plan: ≥ 10DF (≥ 240x300x249) W14-Block: 10DF (≥ 240x300x238)
Minimum thickness of member h	n <sub>min</sub> = [	mm]	300
able C 10.21.2: Installation parameters		300	
Anchor size			W-UR 8
Installationsside <sup>6)</sup>			Inside / Outside
Drill hole diameter	d <sub>0</sub> =	[mm]	8
Cutting diameter of drill bit	d <sub>cut</sub> ≤	[mm]	8.45
-	001		
Depth of drill hole to deepest point	$h_1 \ge$	[mm]	80
Depth of drill hole to deepest point Drill method	$h_1 \ge$	[-]	Rotary drilling
Depth of drill hole to deepest point Drill method Overall plastic anchor embedment depth	h <sub>1</sub> ≥ h <sub>nom</sub> =	[-] [mm]	Rotary drilling 70
Depth of drill hole to deepest point Drill method Overall plastic anchor embedment depth Diameter of clearance hole in the fixture	$h_1 \ge$ $h_{nom} =$ $d_f \le$	[-] [mm] [mm]	Rotary drilling 70 8.5
Depth of drill hole to deepest point Drill method Overall plastic anchor embedment depth Diameter of clearance hole in the fixture Minimum allowable edge distance	$\begin{array}{c} h_{1} \geq \\ \\ \hline \\ h_{nom} = \\ \\ d_{f} \leq \\ \\ c_{min} \geq \end{array}$	[-] [mm] [mm] [mm]	Rotary drilling 70 8.5 100
Depth of drill hole to deepest point Drill method Overall plastic anchor embedment depth Diameter of clearance hole in the fixture Minimum allowable edge distance Fable C 10.21.3: Characteristic resistance F <sub>Rk</sub> <sup>1)</sup> in [	$\begin{array}{c} h_{1} \geq \\ \\ \hline \\ h_{nom} = \\ \\ d_{f} \leq \\ \\ c_{min} \geq \end{array}$	[-] [mm] [mm] [mm]	Rotary drilling 70 8.5 100 chor
Depth of drill hole to deepest point Drill method Overall plastic anchor embedment depth Diameter of clearance hole in the fixture Minimum allowable edge distance Table C 10.21.3: Characteristic resistance F <sub>Rk</sub> <sup>1)</sup> in [ Anchor size	$\begin{array}{c} h_{1} \geq \\ \\ \hline \\ h_{nom} = \\ \\ d_{f} \leq \\ \\ c_{min} \geq \end{array}$	[-] [mm] [mm] [mm]	Rotary drilling 70 8.5 100 chor W-UR 8
Depth of drill hole to deepest point Drill method Overall plastic anchor embedment depth Diameter of clearance hole in the fixture Minimum allowable edge distance <b>Table C 10.21.3: Characteristic resistance F<sub>Rk</sub><sup>1)</sup> in [</b> <b>Anchor size</b> Installationsside <sup>6)</sup>	h <sub>1</sub> ≥ h <sub>nom</sub> = d <sub>f</sub> ≤ c <sub>min</sub> ≥ [kN] for s	[-] [mm] [mm] [mm]	Rotary drilling 70 8.5 100 chor
Depth of drill hole to deepest point Drill method Overall plastic anchor embedment depth Diameter of clearance hole in the fixture Minimum allowable edge distance Table C 10.21.3: Characteristic resistance $F_{Rk}^{1)}$ in [ Anchor size Installationsside <sup>6)</sup> Overall plastic anchor embedment depth Hollow brick UNIPOR W14, $f_b \ge 6 N/mm^2$	$h_{1} \ge$ $h_{nom} =$ $d_{f} \le$ $c_{min} \ge$ $[kN] for s$ $h_{nom} =$ $h_{nom} =$	[-] [mm] [mm] [mm]	Rotary drilling 70 8.5 100 chor W-UR 8 Inside / Outside
Depth of drill hole to deepest pointDrill methodOverall plastic anchor embedment depthDiameter of clearance hole in the fixtureMinimum allowable edge distanceTable C 10.21.3: Characteristic resistance $F_{Rk}^{1)}$ in [Anchor sizeInstallationsside <sup>6)</sup> Overall plastic anchor embedment depthHollow brick UNIPOR W14, $30^{\circ}C^{3)}$ $f_b \ge 6 N/mm^2$	$h_1 \ge$ $h_{nom} =$ $d_f \le$ $c_{min} \ge$ [kN] for s $h_{nom} =$	[-] [mm] [mm] ingle an	Rotary drilling           70           8.5           100           chor           W-UR 8           Inside / Outside           70
Depth of drill hole to deepest pointDrill methodOverall plastic anchor embedment depthDiameter of clearance hole in the fixtureMinimum allowable edge distanceTable C 10.21.3: Characteristic resistance $F_{Rk}^{1)}$ in [Anchor sizeInstallationsside <sup>6)</sup> Overall plastic anchor embedment depthHollow brick UNIPOR W14, $f_b \ge 6 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$	$h_{1} \ge$ $h_{nom} =$ $d_{f} \le$ $c_{min} \ge$ $[kN] \text{ for s}$ $h_{nom} =$	[-] [mm] [mm] [mm] ingle an [mm] [kN] [kN]	W-UR 8           100
Depth of drill hole to deepest pointDrill methodOverall plastic anchor embedment depthDiameter of clearance hole in the fixtureMinimum allowable edge distanceTable C 10.21.3: Characteristic resistance $F_{Rk}^{1)}$ in [Anchor sizeInstallationsside <sup>6)</sup> Overall plastic anchor embedment depthHollow brick UNIPOR W14, $30^{\circ}C^{3}$	$h_{1} \ge$ $h_{nom} =$ $d_{f} \le$ $c_{min} \ge$ $[kN] for s$ $h_{nom} =$ $h_{nom} =$	[-] [mm] [mm] [mm] ingle an [mm] [mm]	Rotary drilling           70           8.5           100           chor           W-UR 8           Inside / Outside           70           0.4           0.4
Depth of drill hole to deepest pointDrill methodOverall plastic anchor embedment depthDiameter of clearance hole in the fixtureMinimum allowable edge distanceTable C 10.21.3: Characteristic resistance $F_{Rk}^{1)}$ in [Anchor sizeInstallationsside <sup>6)</sup> Overall plastic anchor embedment depthHollow brick UNIPOR W14, $f_b \ge 6 N/mm^2$ Characteristic resistance $F_{Rk}$ Partial safety factor	$h_{1} \ge$ $h_{nom} =$ $d_{f} \le$ $c_{min} \ge$ $[kN] \text{ for s}$ $h_{nom} =$	[-] [mm] [mm] [mm] ingle an [mm] [kN] [kN]	Rotary drilling           70           8.5           100           chor           W-UR 8           Inside / Outside           70           0.4



able C 10.22.1: Brick data Brick data		771-1-077	UNIPOR 6DF EWS 365
Type of brick			Hollow brick
	≥ [kg/	′dm³]	0.9
Standard, approval			EN 771-1:2011, Z-17.1-1021 / 1066
			UNIPOR Ziegel
Producer of brick			Marketing GmbH
			Landsberger Straße 392
			D-81241 München
Measurement		חm]	6DF (≥ 118x365x249)
Minimum thickness of member h <sub>min</sub>	= [n	nm]	300
Depth of drill hole to deepest point Drill method	$d_{cut} \le h_1 \ge 0$	[mm] [mm] [mm] [mm]	<b>W-UR 8</b> Reveal 8 8.45 80 Rotary drilling 70
Diverall plastic anchor embedment deptn r			8.5
	· ·	[mm] [mm]	6.5
able C 10.22.3: Characteristic resistance F <sub>Rk</sub> <sup>1)</sup> in [kN Anchor size	] for si	ngle ar	W-UR 8
Installationsside <sup>6)</sup>			Reveal
		[mm]	70
UNIPOR 6DF EWS 365, $f_b \ge 6 \text{ N/mm}^2$ $30^{\circ}\text{C}^{3)}/5$		[kN]	0.4
Characteristic resistance $F_{Rk}$ 50°C <sup>3)</sup> / 8		[kN]	0.3
UNIPOR 6DF EWS 365, $f_b \ge 8 \text{ N/mm}^2$ 30°C <sup>3)</sup> / 5 Characteristic resistance $F_{Rk}$ 50°C <sup>3)</sup> / 8		[kN]	0.6
UNIPOR 6DF EWS 365, $f_b \ge 10 \text{ N/mm}^2$ 30°C <sup>3)</sup> / 5		[kN] [kN]	0.4
Characteristic resistance $F_{Rk}$ $50^{\circ}C^{3}/8$		[kN]	0.75
UNIPOR 6DF EWS 365, $f_b \ge 12 \text{ N/mm}^2$ 30°C <sup>3)</sup> / 5		[kN]	0.9
Characteristic resistance $F_{Rk}$ 50°C <sup>3)</sup> / 8		[kN]	0.6
Partial safety factor	2)	[-]	2.5
ootnotes see Annex C 3	γ̂Mm <sup>-</sup> ′	Γ.]	۷.۷
Vürth Plastic Anchor W-UR			Annex C 32



Brick data	771-1-074		<b>UNIPOR 6DF EW 365</b>
Type of brick			Hollow brick
Bulk density	$\rho \ge$	[kg/dm³]	0.70
Standard, approval			EN 771-1:2011, Z-17.1-935
Producer of brick			UNIPOR Ziegel Marketing GmbH Landsberger Straße 392 D-81241 München
Measurement		[mm]	6DF (≥ 118x365x249)
Minimum thickness of member	h <sub>min</sub> =	[mm]	365

### Table C 10.23.2: Installation parameters

Anchor size			W-UR 8
Installationsside <sup>6)</sup>			Reveal
Drill hole diameter	d <sub>0</sub> =	[mm]	8
Cutting diameter of drill bit	$d_{cut} \le$	[mm]	8.45
Depth of drill hole to deepest point	$h_1 \geq$	[mm]	80
Drill method		[-]	Rotary drilling
Overall plastic anchor embedment depth	h <sub>nom</sub> =	[mm]	70
Diameter of clearance hole in the fixture	$d_{\rm f}$ $\leq$	[mm]	8.5
Minimum allowable edge distance	c <sub>min</sub> ≥	[mm]	65

365

### Table C 10.23.3: Characteristic resistance $F_{Rk}^{(1)}$ in [kN] for single anchor

Anchor size			W-UR 8
Installationsside <sup>6)</sup>			Reveal
Overall plastic anchor embedment depth	h <sub>nom</sub> =	[mm]	70
UNIPOR 6DF EW 365, $f_b \ge 4 \text{ N/mm}^2$	30°C <sup>3)</sup> / 50°C <sup>4)</sup>	[kN]	0.3
Characteristic resistance F <sub>Rk</sub>	50°C <sup>3)</sup> / 80°C <sup>4)</sup>	[kN]	0.3
UNIPOR 6DF EW 365, $f_b \ge 6 \text{ N/mm}^2$	30°C <sup>3)</sup> / 50°C <sup>4)</sup>	[kN]	0.5
Characteristic resistance F <sub>Rk</sub>	50°C <sup>3)</sup> / 80°C <sup>4)</sup>	[kN]	0.4
UNIPOR 6DF EW 365, $f_b \ge 8 \text{ N/mm}^2$	30°C <sup>3)</sup> / 50°C <sup>4)</sup>	[kN]	0.6
Characteristic resistance F <sub>Rk</sub>	50°C <sup>3)</sup> / 80°C <sup>4)</sup>	[kN]	0.5
Partial safety factor	2) γ <sub>Mm</sub>	[-]	2.5

Footnotes see Annex C 3

### Würth Plastic Anchor W-UR

Performances
Hollow brick: UNIPOR 6DF EW 365
Brick data, installation parameters, characteristic resistance



Type of brick       Hollow brick         Buik density $\rho \ge [kg/dm^3]$ 0.6         Standard, approval       EN 771-1:2011, Z-17.1-1016       Mein Ziegelhaus GmbH & Co. KG Märkerstaße 44         Producer of brick       Immit and the state of the		771-1-052	1		ThermoPlan MZ7
Bulk density       p ≥       [kg/dm <sup>n</sup> ]       0.6         Standard, approval       EN 771-1:2011, Z-17.1-1016       Mein Ziegelhaus GmbH & Co. KG         Producer of brick       Meinz Ziegelhaus GmbH & Co. KG       Markerstraße 44         D-63755Alzenau       D-63755Alzenau         Measurement       [mm]       ≥10DF (≥ 248×300×249)         Minimum thickness of member       h <sub>min</sub> =       [mm]         Standard       W-UR 8         Installationsside <sup>50</sup> Inside / Outside         Dill hole diameter       d <sub>ot</sub> =       [mm]         Built densite       d <sub>ot</sub> ≤       [mm]         8       Cutting diameter of drill bit       d <sub>ot</sub> ≤         Drill metod       [-]       Rotary drilling         Overall plastic anchor embedment depth       h <sub>nem</sub> =       [mm]         Ninimum allowable edge distance       c <sub>min</sub> ≥       [mm]       8.5         Minimum allowable edge distance       c <sub>min</sub> ≥       [mm]       70         Diameter of clearance hole in the fixture       d, ≤       [mm]       8.5         Minimum allowable edge distance       c <sub>min</sub> ≥       [mm]       70         Diameter of clearance hole in the fixture       d, ≤       [mm]       70         Diameter of clearance hole in the					
Standard, approval       EN 771-1:2011, Z-17.1-1016         Producer of brick       Mein Ziegelhaus CmbH & Co. KG         Measurement       [mm] $\geq$ 10DF ( $\geq$ 248x300x249)         Minimum thickness of member       hmm =       [mm] $\geq$ 10DF ( $\geq$ 248x300x249)         Minimum thickness of member       hmm =       [mm] $\geq$ 10DF ( $\geq$ 248x300x249)         Minimum thickness of member       hmm =       [mm] $\geq$ 300         Image: Standard Stan	••	$\rho \geq$	[kg/dm³]		0.6
Producer of brick       Märkerstraße 44 D-63755 Alzenau         Measurement       [mm]       ≥ 10DF (≥ 24823002249)         Minimum thickness of member       hmin =       [mm]       300         Image: State of the stat	•	,		EN 7	71-1:2011, Z-17.1-1016
Measurement       [mm] $\geq 10DF (\geq 248 \times 300 \times 249)$ Minimum thickness of member       Imm]       300         Imma       [mm]       8         Contraste       M-UR 8         Installationsside <sup>10</sup> Inside / Outside         Drill hole diameter       do =       [mm]       8.45         Depth of drill hole to deepest point       h_1 $\geq [mm]$ 80       Diameter         Orieral plastic anchor embedment depth       haon =       [mm]       70         Diameter of clearance hole in the fixture       dq <<       [mm]       100       100         Table C 10.24.3: Characteristic resistance $F_{Rk}$ $50^{\circ}C_{0}^{\circ}/50^{\circ}C_{0}^{\circ}$ [kN]       0.75         <	Producer of brick			Mein Zi	Märkerstraße 44
Minimum thickness of member $h_{min} = [mm]$ 300         Minimum thickness of member <b>a</b> (mm]       300 <b>a</b> (mm]       300 <b>a</b> (mm] <th< td=""><td></td><td></td><td></td><td></td><td>D-63755 Alzenau</td></th<>					D-63755 Alzenau
Implication provide the provided in theprovided in the provided in the provided in			[mm]	≥1	0DF (≥ 248x300x249)
Table C 10.24.2: Installation parametersAnchor sizeW-UR 8Installationsside <sup>51</sup> Inside / OutsideDrill hole diameterdo =[mm]8Cutting diameter of drill bitdout ≤[mm]8.45Depth of drill hole to deepest pointh, ≥[mm]70Diameter of clearance hole in the fixturedr ≤[mm]70Overall plastic anchor embedment depthh_nom =[mm]100Fable C 10.24.3: Characteristic resistance $F_{Rk}$ 1 [kN] for single anchorAnchor sizeW-UR 8Inside / OutsideOverall anchor embedment depthh_nom =[mm]70Hollow brick ThermoPlan MZ7, fs ≥ 4 N/mm² $30^{\circ}C^{37} / 50^{\circ}C^{47}$ [kN]0.75Hollow brick ThermoPlan MZ7, fs ≥ 6 N/mm² $30^{\circ}C^{37} / 50^{\circ}C^{47}$ [kN]0.75Hollow brick ThermoPlan MZ7, fs ≥ 8 N/mm² $30^{\circ}C^{37} / 50^{\circ}C^{47}$ [kN]0.75Hollow brick ThermoPlan MZ7, 	Minimum thickness of member	h <sub>min</sub> =	[mm]		300
Anchor sizeW-UR 8Installationsside <sup>5</sup> Inside / OutsideDrill hole diameter $d_0 = [mm]$ 8Cutting diameter of drill bit $d_{cut} \leq [mm]$ 8.45Depth of drill hole to deepest point $h_1 \geq [mm]$ 80Drill method[-]Rotary drillingOverall plastic anchor embedment depth $h_{nom} = [mm]$ 70Diameter of clearance hole in the fixture $d_r \leq [mm]$ 8.5Minimum allowable edge distance $c_{min} \geq [mm]$ 100Fable C 10.24.3: Characteristic resistance $F_{Rk}^{(1)}$ in [kN] for single anchorAnchor sizeW-UR 8Installationsside <sup>6</sup> Inside / OutsideOverall anchor embedment depth $h_{nom} = [mm]$ 70Hollow brick ThermoPlan MZ7, $f_b \geq 4 N/mm^2$ $30^\circ C^{3} / 50^\circ C^{4}$ [kN]Hollow brick ThermoPlan MZ7, $f_b \geq 8 N/mm^2$ $30^\circ C^{3} / 50^\circ C^{3} / 80^\circ C^{4}$ [kN]0.75Hollow brick ThermoPlan MZ7, $f_b \geq 8 N/mm^2$ $30^\circ C^{3} / 50^\circ C^{3} / 80^\circ C^{4}$ [kN]0.75Hollow brick ThermoPlan MZ7, $f_b \geq 8 N/mm^2$ $30^\circ C^{3} / 50^\circ C^{3} / 80^\circ C^{4}$ [kN]1.5Partial safety factor $\gamma_{Mm}^{2}$ [-]2.550° C^{3} / 80^\circ C^{4}[kN]1.2Partial safety factor $\gamma_{Mm}^{2}$ [-]2.550° C^{3} / 80^\circ C^{4}[kN]1.2For the see Annex C 3 $\gamma_{Mm}^{2}$ [-]2.550° C^{3} / 80^\circ C^{4}[kN]1.2					
Installationsside <sup>6</sup> Inside / Outside         Drill hole diameter $d_0 = [mm]$ 8         Cutting diameter of drill bit $d_{out} \le [mm]$ 8.45         Depth of drill hole to deepest point $h_1 \ge [mm]$ 80         Drill method       [-]       Rotary drilling         Overall plastic anchor embedment depth $h_{nom} = [mm]$ 70         Diameter of clearance hole in the fixture $d_r \le [mm]$ 8.5         Minimum allowable edge distance $c_{min} \ge [mm]$ 100         Fable C 10.24.3: Characteristic resistance $F_{Rk}^{1}$ in [kN] for single anchor       M-UR 8         Installationsside <sup>6</sup> Inside / Outside       0.75         Overall anchor embedment depth $h_{nom} = [mm]$ 70         Voerall anchor embedment depth $h_{nom} = [mm]$ 70         Hollow brick ThermoPlan MZ7, $f_b \ge 4 N/mm^2$ $30^{\circ}C^{3} / 50^{\circ}C^{4}$ [kN]       0.75         Hollow brick ThermoPlan MZ7, $f_b \ge 8 N/mm^2$ $50^{\circ}C^{3} / 80^{\circ}C^{4}$ [kN]       0.75         Hollow brick ThermoPlan MZ7, $f_b \ge 8 N/mm^2$ $30^{\circ}C^{3} / 50^{\circ}C^{4}$ [kN]       0.75         Hollow brick ThermoPlan MZ7, $f_b \ge 8 N/mm^2$ $50^{\circ}C^{3} / 80^{\circ}C^{4}$ [kN]       1.5					W-UR 8
Cutting diameter of drill bit $d_{cut} \leq [mm]$ 8.45Depth of drill hole to deepest point $h_1 \geq [mm]$ 80Drill method[-]Rotary drillingOverall plastic anchor embedment depth $h_{nom} = [mm]$ 70Diameter of clearance hole in the fixture $d_f \leq [mm]$ 8.5Minimum allowable edge distance $c_{min} \geq [mm]$ 100Table C 10.24.3: Characteristic resistance $F_{Rk}^{1}$ in [kN] for single anchorAnchor sizeW-UR 8Installationsside <sup>61</sup> Inside / OutsideOverall anchor embedment depth $h_{nom} = [mm]$ 70Hollow brick ThermoPlan MZ7, $f_b \geq 6$ N/mm² $30^{\circ}C^{3}/50^{\circ}C^{4}$ [kN]0.75Hollow brick ThermoPlan MZ7, $f_b \geq 6$ N/mm² $30^{\circ}C^{3}/50^{\circ}C^{4}$ [kN]0.9Hollow brick ThermoPlan MZ7, $f_b \geq 8$ N/mm² $30^{\circ}C^{3}/50^{\circ}C^{4}$ [kN]0.75Hollow brick ThermoPlan MZ7, $f_b \geq 8$ N/mm² $30^{\circ}C^{3}/50^{\circ}C^{4}$ [kN]0.75Hollow brick ThermoPlan MZ7, $f_b \geq 8$ N/mm² $30^{\circ}C^{3}/50^{\circ}C^{4}$ [kN]1.5Partial safety factor $\gamma_{Mm}^{2}$ [-]2.5Footnotes see Annex C 3 $\gamma_{Mm}^{2}$ [-]2.5	Installationsside <sup>6)</sup>				Inside / Outside
Depth of drill hole to deepest point $h_1 \ge [mm]$ 80Drill method[-]Rotary drillingOverall plastic anchor embedment depth $h_{nom} = [mm]$ 70Diameter of clearance hole in the fixture $d_f \le [mm]$ 8.5Minimum allowable edge distance $c_{min} \ge [mm]$ 100Fable C 10.24.3: Characteristic resistance $F_{Rk}^{1/}$ in [kN] for single anchorW-UR 8Anchor sizeInside / OutsideOverall anchor embedment depth $h_{nom} = [mm]$ 70Hollow brick ThermoPlan MZ7, $f_b \ge 4 N/mm^2$ $30^{\circ}C^{3/} / 50^{\circ}C^{4/}$ [kN]Gharacteristic resistance $F_{Rk}$ $30^{\circ}C^{3/} / 50^{\circ}C^{4/}$ [kN]Hollow brick ThermoPlan MZ7, $f_b \ge 6 N/mm^2$ $30^{\circ}C^{3/} / 50^{\circ}C^{4/}$ [kN]Hollow brick ThermoPlan MZ7, $f_b \ge 8 N/mm^2$ $30^{\circ}C^{3/} / 50^{\circ}C^{4/}$ [kN]Hollow brick ThermoPlan MZ7, $f_b \ge 8 N/mm^2$ $30^{\circ}C^{3/} / 50^{\circ}C^{4/}$ [kN]Partial safety factor $\gamma_{Mm}^{2/2}$ [-]2.5Footnotes see Annex C 3 $20^{\circ}C^{3/}$ $20^{\circ}C^{3/}$ $20^{\circ}C^{3/}$	Drill hole diameter	d <sub>0</sub> =	= [mm]		8
Drill method[-]Rotary drillingOverall plastic anchor embedment depth $h_{nom} = [mm]$ 70Diameter of clearance hole in the fixture $d_f \leq [mm]$ 8.5Minimum allowable edge distance $c_{min} \geq [mm]$ 100Table C 10.24.3: Characteristic resistance $F_{Rk}^{1}$ in [kN] for single anchor100Table C 10.24.3: Characteristic resistance $F_{Rk}^{1}$ in [kN] for single anchorW-UR 8Installationsside <sup>6</sup> Inside / OutsideOverall anchor embedment depth $h_{nom} = [mm]$ 70Hollow brick ThermoPlan MZ7, $f_b \geq 4$ N/mm² $30^{\circ}C^{3} / 50^{\circ}C^{4}$ [kN]0.75Hollow brick ThermoPlan MZ7, $f_b \geq 6$ N/mm² $30^{\circ}C^{3} / 50^{\circ}C^{4}$ [kN]0.9 $f_b \geq 8$ N/mm²Characteristic resistance $F_{Rk}$ $50^{\circ}C^{3} / 50^{\circ}C^{4}$ [kN]0.75Hollow brick ThermoPlan MZ7, $f_b \geq 8$ N/mm² $30^{\circ}C^{3} / 50^{\circ}C^{4}$ [kN]1.5f_b $\geq 8$ N/mm²Characteristic resistance $F_{Rk}$ $50^{\circ}C^{3} / 80^{\circ}C^{4}$ [kN]1.2Partial safety factor $\gamma_{Mm}^{2}$ [-]2.55000000000000000000000000000000000000	Cutting diameter of drill bit	d <sub>cut</sub> :	≤ [mm]		8.45
Overall plastic anchor embedment depth $h_{nom} = [mm]$ 70Diameter of clearance hole in the fixture $d_f \leq [mm]$ 8.5Minimum allowable edge distance $c_{min} \geq [mm]$ 100Fable C 10.24.3: Characteristic resistance $F_{Rk}^{(1)}$ in [kN] for single anchorAnchor sizeW-UR 8Installationsside <sup>61</sup> Inside / OutsideOverall anchor embedment depth $h_{nom} = [mm]$ 70Hollow brick ThermoPlan MZ7, $f_b \geq 4$ N/mm²Characteristic resistance $F_{Rk}$ $50^{\circ}C^{3} / 50^{\circ}C^{4}$ [kN]0.75Hollow brick ThermoPlan MZ7, $f_b \geq 6$ N/mm²Characteristic resistance $F_{Rk}$ $50^{\circ}C^{3} / 80^{\circ}C^{4}$ [kN]0.9f_b $\geq 6$ N/mm²Characteristic resistance $F_{Rk}$ $50^{\circ}C^{3} / 80^{\circ}C^{4}$ [kN]0.75Hollow brick ThermoPlan MZ7, $f_b \geq 8$ N/mm² $30^{\circ}C^{3} / 50^{\circ}C^{4}$ [kN]1.5f_b $\geq 8$ N/mm²Characteristic resistance $F_{Rk}$ $50^{\circ}C^{3} / 80^{\circ}C^{4}$ [kN]1.2Partial safety factor $\gamma_{Mm}^{22}$ [-]2.550Footnotes see Annex C 350 $\gamma_{Mm}^{21}$ 1.2		h <sub>1</sub> 2	≥ [mm]		-
Diameter of clearance hole in the fixture $d_f \leq [mm]$ 8.5Minimum allowable edge distance $c_{min} \geq [mm]$ 100Fable C 10.24.3: Characteristic resistance $F_{Rk}^{1}$ in [kN] for single anchor100Fable C 10.24.3: Characteristic resistance $F_{Rk}^{1}$ in [kN] for single anchorW-UR 8Installationsside <sup>6</sup> Inside / OutsideOverall anchor embedment depth $h_{nom} = [mm]$ 70Hollow brick ThermoPlan MZ7, $f_b \geq 4$ N/mm² $30^{\circ}C^{3} / 50^{\circ}C^{4}$ [kN]0.75Hollow brick ThermoPlan MZ7, $f_b \geq 6$ N/mm² $30^{\circ}C^{3} / 50^{\circ}C^{4}$ [kN]0.9Hollow brick ThermoPlan MZ7, $f_b \geq 8$ N/mm² $30^{\circ}C^{3} / 50^{\circ}C^{4}$ [kN]0.75Hollow brick ThermoPlan MZ7, $f_b \geq 8$ N/mm² $30^{\circ}C^{3} / 50^{\circ}C^{4}$ [kN]1.5Partial safety factor $\gamma_{Mm}^{2}$ [-]2.5500 cot 3 / 80^{\circ}C^{4}[kN]1.2Partial safety factor $\gamma_{Mm}^{2}$ [-]2.5500 cot 3 / 90 c			[-]		
Minimum allowable edge distance $C_{min} \ge [mm]$ 100Fable C 10.24.3: Characteristic resistance $F_{Rk}^{(1)}$ in [kN] for single anchorAnchor sizeW-UR 8Installationsside <sup>6)</sup> Inside / OutsideOverall anchor embedment depth $h_{nom} = [mm]$ 70Hollow brick ThermoPlan MZ7, $f_b \ge 4 N/mm^2$ $30^{\circ}C^{3} / 50^{\circ}C^{4}$ [kN] $0.75$ Hollow brick ThermoPlan MZ7, $f_b \ge 6 N/mm^2$ $30^{\circ}C^{3} / 50^{\circ}C^{4}$ [kN] $0.9$ Hollow brick ThermoPlan MZ7, $f_b \ge 8 N/mm^2$ $30^{\circ}C^{3} / 50^{\circ}C^{4}$ [kN] $0.75$ Hollow brick ThermoPlan MZ7, $f_b \ge 8 N/mm^2$ $30^{\circ}C^{3} / 50^{\circ}C^{4}$ [kN] $0.75$ Hollow brick ThermoPlan MZ7, $f_b \ge 8 N/mm^2$ $30^{\circ}C^{3} / 50^{\circ}C^{4}$ [kN] $1.5$ Partial safety factor $\gamma_{Mm}^{2}$ $[-]$ $2.5$ Footnotes see Annex C 3 $\gamma_{Mm}^{2}$ $[-]$ $2.5$					
Fable C 10.24.3: Characteristic resistance $F_{Rk}^{(1)}$ in [kN] for single anchorAnchor sizeW-UR 8Installationsside <sup>6)</sup> Inside / OutsideOverall anchor embedment depth $h_{nom} = [mm]$ 70Hollow brick ThermoPlan MZ7, $f_b \ge 4 N/mm^2$ Characteristic resistance $F_{Rk}$ $30^{\circ}C^{3} / 50^{\circ}C^{4}$ [kN] $0.75$ Hollow brick ThermoPlan MZ7, $f_b \ge 6 N/mm^2$ Characteristic resistance $F_{Rk}$ $30^{\circ}C^{3} / 50^{\circ}C^{4}$ [kN] $0.9$ Hollow brick ThermoPlan MZ7, $f_b \ge 6 N/mm^2$ Characteristic resistance $F_{Rk}$ $30^{\circ}C^{3} / 80^{\circ}C^{4}$ [kN] $0.75$ Hollow brick ThermoPlan MZ7, $f_b \ge 8 N/mm^2$ Characteristic resistance $F_{Rk}$ $30^{\circ}C^{3} / 80^{\circ}C^{4}$ [kN] $1.5$ Hollow brick ThermoPlan MZ7, $f_b \ge 8 N/mm^2$ Characteristic resistance $F_{Rk}$ $50^{\circ}C^{3} / 80^{\circ}C^{4}$ [kN] $1.2$ Partial safety factor $\gamma_{Mm}^{(2)}$ $[-]$ $2.5$ Footnotes see Annex C 3 $50^{\circ}C^{3} / 80^{\circ}C^{4}$ $50^{\circ}C^{3} / 80^{\circ}C^{4}$ $50^{\circ}C^{3} / 80^{\circ}C^{4}$		d <sub>f</sub> :			
Anchor sizeW-UR 8InstallationssideInside / OutsideOverall anchor embedment depth $h_{nom} = [mm]$ 70Hollow brick ThermoPlan MZ7, $f_b \ge 4 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ $30^\circ \text{C}^3 / 50^\circ \text{C}^4$ $[kN]$ $0.75$ Hollow brick ThermoPlan MZ7, $f_b \ge 6 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ $30^\circ \text{C}^{33} / 50^\circ \text{C}^{4}$ $[kN]$ $0.9$ Hollow brick ThermoPlan MZ7, $f_b \ge 6 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ $30^\circ \text{C}^{33} / 50^\circ \text{C}^{4}$ $[kN]$ $0.75$ Hollow brick ThermoPlan MZ7, $f_b \ge 8 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ $30^\circ \text{C}^{33} / 50^\circ \text{C}^{4}$ $[kN]$ $1.5$ Partial safety factor $\gamma_{Mm}^{23}$ $[-]$ $2.5$ Footnotes see Annex C 3 $\gamma_{Mm}^{21}$ $[-]$ $2.5$	Minimum allowable edge distance	C <sub>min</sub> 2	≥  [mm]		100
Installationsside <sup>6)</sup> Inside / OutsideOverall anchor embedment depth $h_{nom} = [mm]$ <b>70</b> Hollow brick ThermoPlan MZ7, $f_b \ge 4 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ $30^{\circ}C^{3} / 50^{\circ}C^{4}$ $[kN]$ $0.75$ Hollow brick ThermoPlan MZ7, $f_b \ge 6 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ $30^{\circ}C^{3} / 50^{\circ}C^{4}$ $[kN]$ $0.9$ Hollow brick ThermoPlan MZ7, $f_b \ge 6 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ $50^{\circ}C^{3} / 80^{\circ}C^{4}$ $[kN]$ $0.75$ Hollow brick ThermoPlan MZ7, $f_b \ge 8 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ $30^{\circ}C^{3} / 50^{\circ}C^{4}$ $[kN]$ $1.5$ Hollow brick ThermoPlan MZ7, $f_b \ge 8 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ $50^{\circ}C^{3} / 80^{\circ}C^{4}$ $[kN]$ $1.2$		n [kN] f	or single a	nchor	
Overall anchor embedment depth $h_{nom} =$ [mm]70Hollow brick ThermoPlan MZ7, $f_b \ge 4 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ $30^\circ \text{C}^3 / 50^\circ \text{C}^4$ [kN] $0.75$ Hollow brick ThermoPlan MZ7, $f_b \ge 6 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ $30^\circ \text{C}^3 / 50^\circ \text{C}^4$ [kN] $0.9$ Hollow brick ThermoPlan MZ7, $f_b \ge 6 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ $30^\circ \text{C}^3 / 50^\circ \text{C}^4$ [kN] $0.75$ Hollow brick ThermoPlan MZ7, $f_b \ge 8 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ $30^\circ \text{C}^3 / 50^\circ \text{C}^4$ [kN] $1.5$ Hollow brick ThermoPlan MZ7, $f_b \ge 8 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ $30^\circ \text{C}^3 / 50^\circ \text{C}^4$ [kN] $1.5$ Partial safety factor $\gamma_{Mm}^{23}$ [-] $2.5$ $2.5$ Footnotes see Annex C 3				1	
Hollow brick ThermoPlan MZ7, $f_b \ge 4 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ $30^\circ \text{C}^{3)} / 50^\circ \text{C}^{4)}$ $[kN]$ $0.75$ Hollow brick ThermoPlan MZ7, $f_b \ge 6 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ $30^\circ \text{C}^{3)} / 80^\circ \text{C}^{4)}$ $[kN]$ $0.9$ Hollow brick ThermoPlan MZ7, $f_b \ge 6 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ $50^\circ \text{C}^{3)} / 80^\circ \text{C}^{4)}$ $[kN]$ $0.75$ Hollow brick ThermoPlan MZ7, $f_b \ge 8 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ $30^\circ \text{C}^{3)} / 50^\circ \text{C}^{4)}$ $[kN]$ $1.5$ Partial safety factor $\gamma_{Mm}^{2}$ $[-]$ $2.5$ Footnotes see Annex C 3			h <sub>nom</sub> =	[mm]	
In the function of the million of the	· · · · · · · · · · · · · · · · · · ·	.30°			
Hollow brick ThermoPlan MZ7, $f_b \ge 6 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ $30^\circ C^{3)} / 50^\circ C^{4)}$ $[kN]$ $0.9$ Hollow brick ThermoPlan MZ7, $f_b \ge 8 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ $30^\circ C^{3)} / 50^\circ C^{4)}$ $[kN]$ $0.75$ Hollow brick ThermoPlan MZ7, $f_b \ge 8 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ $30^\circ C^{3)} / 50^\circ C^{4)}$ $[kN]$ $1.5$ Partial safety factor $\gamma_{Mm}^{2)}$ $[-]$ $2.5$ Footnotes see Annex C 3					
Hollow brick ThermoPlan MZ7, $f_b \ge 8 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ $50^\circ C^{3)} / 80^\circ C^{4)}$ $[kN]$ $0.75$ Hollow brick ThermoPlan MZ7, $f_b \ge 8 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ $30^\circ C^{3)} / 50^\circ C^{4)}$ $[kN]$ $1.5$ Partial safety factor $\gamma_{Mm}^{2)}$ $[-]$ $2.5$ Footnotes see Annex C 3 $\gamma_{Mm}^{2}$ $[-]$ $2.5$	······································				
Hollow brick ThermoPlan MZ7, $f_b \ge 8 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ $30^\circ C^{3)} / 50^\circ C^{4)}$ [kN]1.5Partial safety factor $\gamma_{Mm}^{2)}$ [-]2.5Footnotes see Annex C 3 $\gamma_{Mm}^{2)}$ [-]2.5				[kN]	
It is a set of the intermediate matrix in the intermediate matrix is a set of the int	$f_b \ge 6 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$	50°	<sup>o</sup> C <sup>3)</sup> / 80°C <sup>4)</sup>	[kN]	0.75
$f_b \ge 8 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ $50^\circ C^{3)} / 80^\circ C^{4)}$ [kN]1.2Partial safety factor $\gamma_{Mm}^{2)}$ [-]2.5Footnotes see Annex C 3	Hollow brick ThermoPlan MZ7.	30°C <sup>3)</sup> / 50°C <sup>4)</sup>		[kN]	1.5
Footnotes see Annex C 3		50°C <sup>3)</sup> / 80°C <sup>4</sup>		[kN]	1.2
Footnotes see Annex C 3	Partial safety factor		2) γ <sub>Mm</sub>	[-]	2.5
Nürth Plastic Anchor W-UR	ootnotes see Annex C 3				
	Vürth Plastic Anchor W-UR				



Brick data 771-1-023		ThermoPlan MZ8
Type of brick		Hollow brick
Bulk density $\rho \ge$	[kg/dm <sup>3</sup> ]	0.6
Standard, approval		EN 771-1:2011, Z-17.1-906
		Mein Ziegelhaus GmbH & Co. KG
Producer of brick		Märkerstraße 44
		D-63755 Alzenau
Measurement	[mm]	≥ 12DF (≥ 248x365x249)
Minimum thickness of member h <sub>min</sub> =	[mm]	365
	365	
Cable C 10.25.2: Installation parameters         Anchor size         Installationsside <sup>6)</sup>		W-UR 8 Inside / Outside
	= [mm]	8
Cutting diameter of drill bit d <sub>cu</sub>		8.45
	[mm]	80
Drill method	[-]	Rotary drilling
Overall plastic anchor embedment depth h <sub>nom</sub>		70
	<sub>f</sub> ≤ [mm]	8.5
	, ≥ [mm]	100
Fable C 10.25.3: Characteristic resistance F <sub>Rk</sub> <sup>1)</sup> in [kN] for         Anchor size	or single and	hor W-UR 8
Installationsside <sup>6)</sup>		Inside / Outside
Overall plastic anchor embedment depth h <sub>nor</sub>		70
Hollow brick ThermoPlan MZ8, $30^{\circ}C^{3} / 50^{\circ}C^{3}$	C <sup>4)</sup> [kN]	0.9
$f_b \ge 6 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ $50^{\circ}C^{3}$ / $80^{\circ}C$	C <sup>4)</sup> [kN]	0.75
Hollow brick ThermoPlan MZ8, 30°C <sup>3)</sup> / 50°C		1.2
$f_b \ge 8 \text{ N/mm}^2$	_ · · ·	0.9
	2)	2.5
Partial safety factor $\gamma_{MI}$	m <sup>2)</sup> [-]	2.5
Footnotes see Annex C 3		
Würth Plastic Anchor W-UR		



Brick data	771-1-034		ThermoPlan MZ10
Type of brick			Hollow brick
Bulk density	$\rho \geq$	[kg/dm³]	0.75
Standard, approval	р <u>–</u>	[	EN 771-1:2011, Z-17.1-1015
• ····································			Mein Ziegelhaus GmbH & Co. KG
Producer of brick			Märkerstraße 44
			D-63755 Alzenau
Measurement		[mm]	≥ 10DF (≥ 248x300x249)
Minimum thickness of member	h <sub>min</sub> =	[mm]	300
		300	
Cable C 10.26.2: Installation parameters         Anchor size         Installationsside <sup>6)</sup>			W-UR 8 Inside / Outside
	d <sub>0</sub> =		8
Cutting diameter of drill bit	d <sub>cut</sub> :	≤ [mm]	8 8.45
Cutting diameter of drill bit Depth of drill hole to deepest point		≤ [mm] ≥ [mm]	8 8.45 80
Cutting diameter of drill bit Depth of drill hole to deepest point Drill method	d <sub>cut</sub> : h <sub>1</sub> 2	≤ [mm] ≥ [mm] [-]	8 8.45 80 Rotary drilling
Drill hole diameter Cutting diameter of drill bit Depth of drill hole to deepest point Drill method Overall plastic anchor embedment depth Diameter of clearance hole in the fixture	d <sub>cut</sub> : h <sub>1</sub> : h <sub>nom</sub> :	≤ [mm] ≥ [mm] [-] = [mm]	8 8.45 80 Rotary drilling 70
Cutting diameter of drill bit Depth of drill hole to deepest point Drill method Overall plastic anchor embedment depth Diameter of clearance hole in the fixture	d <sub>cut</sub> : h <sub>1</sub> 2 h <sub>nom</sub> = d <sub>f</sub> :	≤ [mm] ≥ [mm] = [mm] ≤ [mm]	8 8.45 80 Rotary drilling 70 8.5
Cutting diameter of drill bit Depth of drill hole to deepest point Drill method Overall plastic anchor embedment depth Diameter of clearance hole in the fixture	d <sub>cut</sub> : h <sub>1</sub> : h <sub>nom</sub> :	≤ [mm] ≥ [mm] = [mm] ≤ [mm]	8 8.45 80 Rotary drilling 70
Cutting diameter of drill bit Depth of drill hole to deepest point Drill method Overall plastic anchor embedment depth Diameter of clearance hole in the fixture Minimum allowable edge distance	d <sub>cut</sub> : h <sub>1</sub> : h <sub>nom</sub> = d <sub>f</sub> : C <sub>min</sub> :	≤ [mm] ≥ [mm] = [-] = [mm] ≤ [mm] ≥ [mm]	8 8.45 80 Rotary drilling 70 8.5 100
Cutting diameter of drill bit Depth of drill hole to deepest point Drill method Overall plastic anchor embedment depth Diameter of clearance hole in the fixture Minimum allowable edge distance Table C 10.26.3: Characteristic resistanc Anchor size	d <sub>cut</sub> : h <sub>1</sub> : h <sub>nom</sub> = d <sub>f</sub> : C <sub>min</sub> :	≤ [mm] ≥ [mm] = [-] = [mm] ≤ [mm] ≥ [mm]	8 8.45 80 Rotary drilling 70 8.5 100 nchor W-UR 8
Cutting diameter of drill bit Depth of drill hole to deepest point Drill method Overall plastic anchor embedment depth Diameter of clearance hole in the fixture Minimum allowable edge distance <b>Fable C 10.26.3: Characteristic resistanc</b> <b>Anchor size</b> Installationsside <sup>6)</sup>	<u>d<sub>cut</sub> s h<sub>1</sub> 2 م<sub>nom</sub> = d<sub>f</sub> s c<sub>min</sub> 2 e F<sub>Rk</sub><sup>1)</sup> in [kN] fc</u>	<pre>≤ [mm] ≥ [mm] ≤ [mm] ≤ [mm] ≤ [mm] ≥ [mm]</pre>	8 8.45 80 Rotary drilling 70 8.5 100 nchor W-UR 8 Inside / Outside
Cutting diameter of drill bit Depth of drill hole to deepest point Drill method Overall plastic anchor embedment depth Diameter of clearance hole in the fixture Minimum allowable edge distance <b>Table C 10.26.3: Characteristic resistanc</b> <b>Anchor size</b> Installationsside <sup>6)</sup> Overall plastic anchor embedment depth	d <sub>cut</sub> : h <sub>1</sub> : h <sub>nom</sub> = d <sub>f</sub> : C <sub>min</sub> : <b>e</b> F <sub>Rk</sub> <sup>1)</sup> in [kN] fo h <sub>nom</sub> =	≤ [mm] ≥ [mm] = [mm] ≤ [mm] ≤ [mm] ≥ [mm] or single ar = [mm]	8 8.45 80 Rotary drilling 70 8.5 100 nchor W-UR 8 Inside / Outside 70
Cutting diameter of drill bit Depth of drill hole to deepest point Drill method Overall plastic anchor embedment depth Diameter of clearance hole in the fixture Minimum allowable edge distance <b>Table C 10.26.3: Characteristic resistanc</b> <b>Anchor size</b> Installationsside <sup>6)</sup> Overall plastic anchor embedment depth <b>Hollow brick ThermoPlan MZ10,</b>	d <sub>cut</sub> : h <sub>1</sub> : h <sub>nom</sub> = d <sub>f</sub> : c <sub>min</sub> : c <sub>min</sub> : e F <sub>Rk</sub> <sup>1)</sup> in [kN] fo h <sub>nom</sub> = 30°C <sup>3)</sup> / 50°C <sup>4</sup>	≤ [mm] ≥ [mm] = [mm] ≤ [mm] ≥ [mm] ≥ [mm] pr single ar = [mm]	8 8.45 80 Rotary drilling 70 8.5 100 nchor W-UR 8 Inside / Outside
Cutting diameter of drill bit Depth of drill hole to deepest point Drill method Overall plastic anchor embedment depth Diameter of clearance hole in the fixture Minimum allowable edge distance <b>Table C 10.26.3: Characteristic resistanc</b> <b>Anchor size</b> Installationsside <sup>6)</sup> Overall plastic anchor embedment depth <b>Hollow brick ThermoPlan MZ10,</b>	d <sub>cut</sub> : h <sub>1</sub> : h <sub>nom</sub> = d <sub>f</sub> : C <sub>min</sub> : <b>e</b> F <sub>Rk</sub> <sup>1)</sup> in [kN] fo h <sub>nom</sub> =	≤ [mm] ≥ [mm] = [mm] ≤ [mm] ≤ [mm] ≥ [mm] pr single ar = [mm] = [mm]	8 8.45 80 Rotary drilling 70 8.5 100 nchor W-UR 8 Inside / Outside 70
Cutting diameter of drill bit Depth of drill hole to deepest point Drill method Overall plastic anchor embedment depth Diameter of clearance hole in the fixture Minimum allowable edge distance <b>Table C 10.26.3: Characteristic resistanc</b> <b>Anchor size</b> Installationsside <sup>6)</sup> Overall plastic anchor embedment depth <b>Hollow brick ThermoPlan MZ10,</b> $f_b \ge 8 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$	d <sub>cut</sub> : h <sub>1</sub> : h <sub>nom</sub> = d <sub>f</sub> : c <sub>min</sub> : e F <sub>Rk</sub> <sup>1)</sup> in [kN] fc h <sub>nom</sub> = 30°C <sup>3)</sup> / 50°C <sup>4</sup> 50°C <sup>3)</sup> / 80°C <sup>4</sup>	≤ [mm] ≥ [mm] [-] = [mm] ≤ [mm] ≥ [mm] ≥ [mm] ≥ [mm] • single ar • single ar • [mm] • [kN]	8 8.45 80 Rotary drilling 70 8.5 100 nchor W-UR 8 Inside / Outside 70 2,0
Cutting diameter of drill bit Depth of drill hole to deepest point Drill method Overall plastic anchor embedment depth Diameter of clearance hole in the fixture Minimum allowable edge distance <b>Fable C 10.26.3: Characteristic resistanc</b> <b>Anchor size</b> Installationsside <sup>6)</sup> Overall plastic anchor embedment depth Hollow brick ThermoPlan MZ10, $f_b \ge 8 N/mm^2$	d <sub>cut</sub> : h <sub>1</sub> : h <sub>nom</sub> = d <sub>f</sub> : c <sub>min</sub> : c <sub>min</sub> : e F <sub>Rk</sub> <sup>1)</sup> in [kN] fo h <sub>nom</sub> = 30°C <sup>3)</sup> / 50°C <sup>4</sup>	≤ [mm] ≥ [mm] [-] = [mm] ≤ [mm] ≥ [mm] ≥ [mm] ≥ [mm] • single ar • single ar • [mm] • [kN]	8 8.45 80 Rotary drilling 70 8.5 100 <b>nchor</b> W-UR 8 Inside / Outside 70 2,0 1.5
Cutting diameter of drill bit Depth of drill hole to deepest point Drill method Overall plastic anchor embedment depth Diameter of clearance hole in the fixture Minimum allowable edge distance <b>Table C 10.26.3: Characteristic resistanc</b> <b>Anchor size</b> Installationsside <sup>6)</sup> Overall plastic anchor embedment depth Hollow brick ThermoPlan MZ10, $f_b \ge 8 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Partial safety factor Tootnotes see Annex C 3	d <sub>cut</sub> : h <sub>1</sub> : h <sub>nom</sub> = d <sub>f</sub> : c <sub>min</sub> : e F <sub>Rk</sub> <sup>1)</sup> in [kN] fc h <sub>nom</sub> = 30°C <sup>3)</sup> / 50°C <sup>4</sup> 50°C <sup>3)</sup> / 80°C <sup>4</sup>	≤ [mm] ≥ [mm] [-] = [mm] ≤ [mm] ≥ [mm] ≥ [mm] ≥ [mm] • single ar • single ar • [mm] • [kN]	8 8.45 80 Rotary drilling 70 8.5 100 <b>nchor</b> W-UR 8 Inside / Outside 70 2,0 1.5
Cutting diameter of drill bit Depth of drill hole to deepest point Drill method Overall plastic anchor embedment depth Diameter of clearance hole in the fixture Minimum allowable edge distance <b>Table C 10.26.3: Characteristic resistanc</b> <b>Anchor size</b> Installationsside <sup>6)</sup> Overall plastic anchor embedment depth Hollow brick ThermoPlan MZ10, $f_b \ge 8 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Partial safety factor Tootnotes see Annex C 3 <b>Nürth Plastic Anchor W-UR</b>	d <sub>cut</sub> : h <sub>1</sub> : h <sub>nom</sub> = d <sub>f</sub> : c <sub>min</sub> : e F <sub>Rk</sub> <sup>1)</sup> in [kN] fc h <sub>nom</sub> = 30°C <sup>3)</sup> / 50°C <sup>4</sup> 50°C <sup>3)</sup> / 80°C <sup>4</sup>	≤ [mm] ≥ [mm] [-] = [mm] ≤ [mm] ≥ [mm] ≥ [mm] ≥ [mm] • single ar • single ar • [mm] • [kN]	8           8.45           80           Rotary drilling           70           8.5           100   nchor           W-UR 8           Inside / Outside           70           2,0           1.5           2.5
Cutting diameter of drill bit Depth of drill hole to deepest point Drill method Overall plastic anchor embedment depth Diameter of clearance hole in the fixture Minimum allowable edge distance <b>Table C 10.26.3: Characteristic resistanc</b> <b>Anchor size</b> Installationsside <sup>6)</sup> Overall plastic anchor embedment depth Hollow brick ThermoPlan MZ10, $f_b \ge 8 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Partial safety factor Tootnotes see Annex C 3	d <sub>cut</sub> : h <sub>1</sub> : h <sub>nom</sub> = d <sub>f</sub> : c <sub>min</sub> : e F <sub>Rk</sub> <sup>1)</sup> in [kN] fc h <sub>nom</sub> = 30°C <sup>3)</sup> / 50°C <sup>4</sup> 50°C <sup>3)</sup> / 80°C <sup>4</sup>	≤ [mm] ≥ [mm] [-] = [mm] ≤ [mm] ≥ [mm] ≥ [mm] ≥ [mm] • single ar • single ar • [mm] • [kN]	8 8.45 80 Rotary drilling 70 8.5 100 <b>nchor</b> <b>W-UR 8</b> Inside / Outside 70 2,0 1.5



Brick data 771-1-08		ThermoPlan MZ Ergänzur	ng
Type of brick		Hollow brick	
Bulk density $\rho \ge$	[kg/dm³]	0.80	
Standard, approval		EN 771-1:2011, in dependence on Z-17.101	15
Producer of brick		Mein Ziegelhaus GmbH & Co. Märkerstraße 44 D-63755 Alzenau	. KG
Measurement	[mm]	≥ 6DF (≥ 118x365x249)	
Minimum thickness of member h <sub>min</sub> =	: [mm]	365	
Table C 10.27.2: Installation parameters Anchor size		W-UR 8	
Installationsside <sup>6)</sup>		Reveal	
	) = [mm]	8	
Cutting diameter of drill bit d <sub>ct</sub>		8.45	
	$1 \ge [mm]$	80	
Drill method	[-]	Rotary drilling	
Overall plastic anchor embedment depth h <sub>non</sub>	, = [mm]	70	
Diameter of clearance hole in the fixture d		8.5	
	<sub>f</sub> ≤ [mm]	55	
Minimum allowable edge distance c <sub>mi</sub>	· · · · · · · · · · · · · · · · · · ·		
Minimum allowable edge distance c <sub>mi</sub>	_ ≥ [mm]	anchor	
Minimum allowable edge distance c <sub>mi</sub>	_ ≥ [mm]	anchor W-UR 8	
Minimum allowable edge distance c <sub>mi</sub> Fable C 10.27.3: Characteristic resistance F <sub>Rk</sub> <sup>1)7)</sup> in [kN	_ ≥ [mm]		
Minimum allowable edge distance c <sub>mi</sub> Table C 10.27.3: Characteristic resistance F <sub>Rk</sub> <sup>1)7)</sup> in [kN Anchor size	] for single	W-UR 8	
Minimum allowable edge distance c <sub>mi</sub> <b>Fable C 10.27.3: Characteristic resistance F<sub>Rk</sub><sup>1)7)</sup> in [kN</b> <b>Anchor size</b> Installationsside <sup>6)</sup>	] for single	W-UR 8 Reveal	7)
Minimum allowable edge distance       Cmi         Fable C 10.27.3: Characteristic resistance F <sub>Rk</sub> <sup>1)7)</sup> in [kN         Anchor size         Installationsside <sup>6)</sup> Overall plastic anchor embedment depth         Characteristic resistance for single anchor         Hollow brick ThermoPlan Ergänzung,       30°C <sup>3)</sup> / 50°C	] for single	W-UR 8 Reveal 70	
Minimum allowable edge distance $c_{mi}$ Table C 10.27.3: Characteristic resistance $F_{Rk}^{1/7}$ in [kNAnchor sizeInstallationsside <sup>6)</sup> Overall plastic anchor embedment depthCharacteristic resistance for single anchorHollow brick ThermoPlan Ergänzung, $30^{\circ}C^{3} / 50^{\circ}C$ $f_b \ge 4 N/mm^2$	] for single a ] for single a [m= [mm] [kN] C <sup>4)</sup> [kN]	W-UR 8           Reveal           70           F <sub>Rk</sub> <sup>1)</sup> F <sub>Rk</sub> 0.6         0.9	)
Minimum allowable edge distance $c_{min}$ Table C 10.27.3: Characteristic resistance $F_{Rk}^{1/7}$ in [kNAnchor sizeInstallationsside <sup>6)</sup> Overall plastic anchor embedment depthCharacteristic resistance for single anchorHollow brick ThermoPlan Ergänzung, $f_b \ge 4$ N/mm² $30^{\circ}C^{3}$ / $50^{\circ}C^{3}$ Characteristic resistance $F_{Rk}$	] for single ] for single [mm] [mm] [kN] C <sup>4)</sup> [kN] C <sup>4)</sup> [kN]	W-UR 8           Reveal           70           F <sub>Rk</sub> <sup>1)</sup> F <sub>Rk</sub> 0.6         0.9           0.6         0.9	)
Minimum allowable edge distance $C_{min}$ Table C 10.27.3: Characteristic resistance $F_{Rk}^{1/7}$ in [kNAnchor sizeInstallationsside <sup>6)</sup> Overall plastic anchor embedment depthCharacteristic resistance for single anchorHollow brick ThermoPlan Ergänzung, $f_b \ge 4$ N/mm² $30^{\circ}C^{3}$ / $50^{\circ}C$ Characteristic resistance $F_{Rk}$ Hollow brick ThermoPlan Ergänzung, $50^{\circ}C^{3}$ / $80^{\circ}C$ Hollow brick ThermoPlan Ergänzung, $50^{\circ}C^{3}$ / $50^{\circ}C$	] for single ] for single [mm] ] for single [mm] [kN] C <sup>4)</sup> [kN] C <sup>4)</sup> [kN] C <sup>4)</sup> [kN]	W-UR 8           Reveal           70           F <sub>Rk</sub> <sup>1)</sup> F <sub>Rk</sub> 0.6         0.9	)
Minimum allowable edge distance $c_{min}$ Table C 10.27.3: Characteristic resistance $F_{Rk}^{1/7}$ in [kNAnchor sizeInstallationsside <sup>6)</sup> Overall plastic anchor embedment depthCharacteristic resistance for single anchorHollow brick ThermoPlan Ergänzung, $f_b \ge 4$ N/mm² $30^{\circ}C^{3}$ / $50^{\circ}C^{3}$ Characteristic resistance $F_{Rk}$	] for single ] for single [mm] ] for single [mm] [kN] C <sup>4)</sup> [kN] C <sup>4)</sup> [kN] C <sup>4)</sup> [kN]	W-UR 8           Reveal           70           F <sub>Rk</sub> <sup>1)</sup> F <sub>Rk</sub> 0.6         0.9           0.6         0.9	) ) 

2) γ<sub>Mm</sub> [-]

Partial safety factor

Footnotes see Annex C 3

### Würth Plastic Anchor W-UR

Performances Hollow brick: ThermoPlan MZ Ergänzung

Brick data, installation parameters, characteristic resistance

Annex C 37

2.5



Brick data	771-1-024			ThermoPlan TS <sup>2</sup>
Type of brick				Hollow brick
Bulk density	$\rho \geq$	[kg/dm³]		0.9
Standard, approval				71-1:2011, Z-17.1-993
			Mein Zie	egelhaus GmbH & Co. KG
Producer of brick				Märkerstraße 44 D-63755 Alzenau
Measurement		[mm]		DF (≥ 373x175x249)
Minimum thickness of member	h <sub>min</sub> =	[mm]	< 3	175
			175	
able C 10.28.2: Installation parameters			<u> </u>	W-UR 8
Installationsside <sup>6)</sup>				Inside / Outside
Drill hole diameter	d <sub>o</sub> =	[mm]		8
Cutting diameter of drill bit	d <sub>cut</sub> ≤	[mm]	8.45	
Depth of drill hole to deepest point	h₁ ≥	[mm]	80	
Drill method		[-]	Rotary drilling 70	
Overall plastic anchor embedment depth Diameter of clearance hole in the fixture	h <sub>nom</sub> = d <sub>f</sub> ≤	[mm] [mm]	8.5	
Minimum allowable edge distance	C <sub>min</sub> ≥	[mm]		100
able C 10.28.3: Characteristic resistance F <sub>Rk</sub> <sup>1)</sup> in	[kN] for sing	le anchor	r	
Anchor size				W-UR 8
Overall plastic anchor embedment depth		h <sub>nom</sub> =	[mm]	Inside / Outside <b>70</b>
	200	$C^{3)} / 50^{\circ}C^{4)}$	[kN]	0.6
Hollow brick ThermoPlan TS <sup>2</sup> , $f_b \ge 6 N/mm^2$ Characteristic resistance $F_{Rk}$				
Characteristic resistance FRk		C <sup>3)</sup> / 80°C <sup>4)</sup>	[kN]	0.4
Hollow brick ThermoPlan $TS^2$ , $f_b \ge 8 N/mm^2$	30°	C <sup>3)</sup> / 50°C <sup>4)</sup>	[kN]	0.75
Characteristic resistance F <sub>Rk</sub>	50°	C <sup>3)</sup> / 80°C <sup>4)</sup>	[kN]	0.6
Hollow brick ThermoPlan $TS^2$ , $f_b \ge 10 \text{ N/mm}^2$	30°	C <sup>3)</sup> / 50°C <sup>4)</sup>	[kN]	0.9
Characteristic resistance $F_{Rk}$	50°	C <sup>3)</sup> / 80°C <sup>4)</sup>	[kN]	0.75
$-\frac{1}{2}$		C <sup>3)</sup> / 50°C <sup>4)</sup>	[kN]	1.2
Hollow brick ThermoPlan TS <sup>2</sup> , $f_b \ge 12 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$				
Characteristic resistance rek		C <sup>3)</sup> / 80°C <sup>4)</sup>	[kN]	0.9
Hollow brick ThermoPlan TS <sup>2</sup> , $f_b \ge 20 \text{ N/mm}^2$	30°	C <sup>3)</sup> / 50°C <sup>4)</sup>	[kN]	2.0
- Characteristic resistance F <sub>Rk</sub>	50°	C <sup>3)</sup> / 80°C <sup>4)</sup>	[kN]	1.5
Partial safety factor		2) γMm	[-]	2.5
ootnotes see Annex C 3				

### Performances Hollow brick: ThermoPlan TS<sup>2</sup>

Brick data, installation parameters, characteristic resistance



Brick data 771-1-0	)35	ThermoPlan TS 13		
Type of brick		Hollow brick		
Bulk density p	$\geq$ [kg/dm <sup>3</sup> ]	0.75		
Standard, approval		EN 771-1:2011, Z-17.1-914		
Producer of brick		Mein Ziegelhaus GmbH & Co. KG Märkerstraße 44 D-63755 Alzenau		
Measurement	[mm]	≥ 10DF (≥ 248x300x248)		
Minimum thickness of member h <sub>min</sub>	= [mm]	300		
Table C 10.29.2: Installation parameters				
Anchor size		W-UR 8		
Installationsside <sup>6)</sup>		Inside / Outside		
	$d_0 = [mm]$	8		
Cutting diameter of drill bit d	<sub>cut</sub> ≤ [mm]	8.45		
•	$h_1 \ge [mm]$	80		
Depth of drill hole to deepest point		Rotary drilling		
Depth of drill hole to deepest point	[-]			
Depth of drill hole to deepest point I Drill method Overall plastic anchor embedment depth h <sub>no</sub>	[-] <sub>om</sub> = [mm]	70		
Depth of drill hole to deepest point       I         Drill method       I         Overall plastic anchor embedment depth       hnc         Diameter of clearance hole in the fixture       I	$\begin{array}{c c} & & & \\ & & & \\ \hline \\ \hline \\ \hline \\ \\ \\ \\ \\ \\ \\$	8.5		
Depth of drill hole to deepest point       I         Drill method       I         Overall plastic anchor embedment depth       hnc         Diameter of clearance hole in the fixture       I	[-] <sub>om</sub> = [mm]			
Depth of drill hole to deepest point       I         Drill method       I         Overall plastic anchor embedment depth       hnd         Diameter of clearance hole in the fixture       I         Minimum allowable edge distance       cn	$\begin{array}{c c} & & & \\ \hline & & \\ \hline & \\ \hline & \\ min \end{array} = & \begin{bmatrix} mm \end{bmatrix}$	8.5		
Depth of drill hole to deepest point       I         Drill method       I         Overall plastic anchor embedment depth       hnc         Diameter of clearance hole in the fixture       I	$\begin{array}{c c} & & & \\ \hline & & \\ \hline & \\ \hline & \\ min \end{array} = & \begin{bmatrix} mm \end{bmatrix}$	8.5		

Installationsside <sup>6)</sup>			Inside / Outside
Overall plastic anchor embedment depth	h <sub>nom</sub> =	[mm]	70
Hollow brick ThermoPlan TS 13,	30°C <sup>3)</sup> / 50°C <sup>4)</sup>	[kN]	0.6
f <sub>b</sub> ≥ 8 N/mm² Characteristic resistance F <sub>Rk</sub>	50°C <sup>3)</sup> / 80°C <sup>4)</sup>	[kN]	0.6
Hollow brick ThermoPlan TS 13, f <sub>b</sub> ≥ 10 N/mm <sup>2</sup>	30°C <sup>3)</sup> / 50°C <sup>4)</sup>	[kN]	0.75
$\Gamma_b \ge 10$ N/mm Characteristic resistance $F_{Rk}$	50°C <sup>3)</sup> / 80°C <sup>4)</sup>	[kN]	0.75
Partial safety factor	2) γMm	[-]	2.5
Footnotes see Annex C 3			

Footnotes see Annex C 3

# Würth Plastic Anchor W-UR

Performances
Hollow brick: ThermoPlan TS 13
Brick data, installation parameters, characteristic resistance



240

Type of brickBulk density $\rho \ge$		I fallan dadala
Bulk density $\rho \geq$		Hollow brick
• F = 1	[kg/dm³]	0.7
Standard, approval		EN 771-1:2011, Z-17.1-840
Producer of brick		Thermopor Ziegel-Kontor UIm GmbH Olgastraße 94 D-89073 UIm
Measurement	[mm]	≥ 307x240x249
Minimum thickness of member h <sub>min</sub> =	[mm]	240

Table C 10.30	.2: Installation	parameters

Anchor size			W-UR 8
Installationsside <sup>6)</sup>			Inside / Outside
Drill hole diameter	<b>d</b> <sub>0</sub> =	[mm]	8
Cutting diameter of drill bit	$d_{cut} \leq$	[mm]	8.45
Depth of drill hole to deepest point	$h_1 \geq$	[mm]	80
Drill method		[-]	Rotary drilling
Overall plastic anchor embedment depth	h <sub>nom</sub> =	[mm]	70
Diameter of clearance hole in the fixture	$d_{\rm f}$ $\leq$	[mm]	8.5
Minimum allowable edge distance	$c_{min} \geq$	[mm]	100

וכ -

-

## Table C 10.30.3: Characteristic resistance $F_{Rk}^{(1)}$ in [kN] for single anchor

Anchor size			W-UR 8
Installationsside <sup>6)</sup>			Inside / Outside
Overall plastic anchor embedment depth	h <sub>nom</sub> =	[mm]	70
THERMOPOR ISO-PD Plus	30°C <sup>3)</sup> / 50°C <sup>4)</sup>	[kN]	0.5
<b>Objektziegel,</b> $f_b \ge 6 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$	50°C <sup>3)</sup> / 80°C <sup>4)</sup>	[kN]	0.4
THERMOPOR ISO-PD Plus	30°C <sup>3)</sup> / 50°C <sup>4)</sup>	[kN]	0.6
<b>Objektziegel,</b> $f_b \ge 8 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$	50°C <sup>3)</sup> / 80°C <sup>4)</sup>	[kN]	0.6
Partial safety factor	2) γMm	[-]	2.5
Footnotes see Annex C 3			
Würth Plastic Anchor W-UR			Annex C 40

Performances
Hollow brick: THERMOPOR ISO-PD Plus
Brick data, installation parameters, characteristic resistance



THERMOPOR TV 7-Plan           Hollow brick           g/dm³]         0.5           EN 771-1:2011, Z-17.1-1005           Thermopor Ziegel-Kontor UIm Gmb           Olgastraße 94           D-89073 UIm           [mm]           ≥ 12 DF (≥247x365x249)           [mm]           365           Immi           W-UR 8           Inside / Outside           [mm]         8           [mm]         8.45           [mm]         80           [-]         Rotary drilling           [mm]         70           [mm]         8.5
g/dm³]       0.5         EN 771-1:2011, Z-17.1-1005         Thermopor Ziegel-Kontor UIm Gmb         Olgastraße 94         D-89073 UIm         [mm]         ≥ 12 DF (≥247x365x249)         [mm]         365         Imm]         ≥ 12 DF (≥247x365x249)         [mm]         365         Imm]         365         Imm]         365         Imm]         365         Imm]         8         [mm]         8.45         [mm]         80         [-]         Rotary drilling         [mm]         70         [mm]         8.5
EN 771-1:2011, Z-17.1-1005         Thermopor Ziegel-Kontor UIm Gmb         Olgastraße 94       D-89073 UIm         [mm]       ≥ 12 DF (≥247x365x249)         [mm]       365         W-UR 8         [mm]       8         [mm]       8.45         [mm]       80         [-]       Rotary drilling         [mm]       70         [mm]       8.5
W-UR 8         [mm]       8         W-UR 8         [mm]       8         [mm]       8.45         [mm]       80         [-]       Rotary drilling         [mm]       70         [mm]       8.5
Olgastraße 94 D-89073 Ulm           [mm]         ≥ 12 DF (≥247x365x249)           [mm]         365           Immi         8           Immi         8           Immi         8.45           Immi         80           [-]         Rotary drilling           Immi         70           Immi         8.5
Imm]       ≥ 12 DF (≥247x365x249)         [mm]       365         Immi       365         Immi       1000000000000000000000000000000000000
W-UR 8         W-UR 8         Inside / Outside         [mm]       8.45         [mm]       80         [-]       Rotary drilling         [mm]       70         [mm]       8.5
W-UR 8           Inside / Outside           [mm]         8           [mm]         8.45           [mm]         80           [-]         Rotary drilling           [mm]         70           [mm]         8.5
Inside / Outside           [mm]         8           [mm]         8.45           [mm]         80           [-]         Rotary drilling           [mm]         70           [mm]         8.5
[mm]         8.45           [mm]         80           [-]         Rotary drilling           [mm]         70           [mm]         8.5
[mm]         80           [-]         Rotary drilling           [mm]         70           [mm]         8.5
[-]Rotary drilling[mm]70[mm]8.5
[mm] 70 [mm] 8.5
[mm] 8.5
[mm] 100
ingle anchor
W-UR 8
Inside / Outside
[mm] 70
[kN] 0.9
[kN] 0.9
[-] 2.5
[]



able C 10.32.1: Brick data Brick data	771-1-029		THERMOPOR TV 9-Plan
Type of brick			Hollow brick
Bulk density	ρ≥ [ <b>!</b>	(g/dm³]	0.65
Standard, approval	p – t.	.9	EN 771-1:2011, Z-17.1-1006
			Thermopor Ziegel-Kontor Ulm GmbH
Producer of brick			Olgastraße 94 D-89073 Ulm
Measurement		[mm]	≥ 10 DF (≥247x300x249)
Minimum thickness of member	h <sub>min</sub> =	[mm]	300
		300 18	
able C 10.32.2: Installation parameters Anchor size			W-UR 8
Installationsside <sup>6)</sup>			Inside / Outside
Drill hole diameter	$d_0 =$	[mm]	8
Cutting diameter of drill bit	d <sub>cut</sub> ≤	[mm]	8.45
	Scut -	[]	0.45
Depth of drill hole to deepest point	h <sub>1</sub> ≥	[mm]	80
Depth of drill hole to deepest point Drill method	h₁ ≥	[mm] [-]	80 Rotary drilling
Depth of drill hole to deepest point Drill method Overall plastic anchor embedment depth		[mm] [-] [mm]	80 Rotary drilling 70
Depth of drill hole to deepest point Drill method Overall plastic anchor embedment depth Diameter of clearance hole in the fixture	h₁ ≥	[mm] [-] [mm] [mm]	80 Rotary drilling 70 8.5
Depth of drill hole to deepest point Drill method Overall plastic anchor embedment depth	h <sub>1</sub> ≥ h <sub>nom</sub> =	[mm] [-] [mm] [mm]	80 Rotary drilling 70
Depth of drill hole to deepest point Drill method Overall plastic anchor embedment depth Diameter of clearance hole in the fixture Minimum allowable edge distance	h <sub>1</sub> ≥ h_nom = d <sub>f</sub> ≤ c <sub>min</sub> ≥	[mm] [-] [mm] [mm] [mm]	80 Rotary drilling 70 8.5 100 chor
Depth of drill hole to deepest point Drill method Overall plastic anchor embedment depth Diameter of clearance hole in the fixture Minimum allowable edge distance Cable C 10.32.3: Characteristic resistance F Anchor size	h <sub>1</sub> ≥ h_nom = d <sub>f</sub> ≤ c <sub>min</sub> ≥	[mm] [-] [mm] [mm] [mm]	80 Rotary drilling 70 8.5 100 chor W-UR 8
Depth of drill hole to deepest point Drill method Overall plastic anchor embedment depth Diameter of clearance hole in the fixture Minimum allowable edge distance <b>Table C 10.32.3: Characteristic resistance F</b> Anchor size Installationsside <sup>6)</sup>	h <sub>1</sub> ≥ h <sub>nom</sub> = d <sub>f</sub> ≤ C <sub>min</sub> ≥ E <sub>Rk</sub> <sup>1)</sup> in [kN] for	[mm] [-] [mm] [mm] [mm] single an	80 Rotary drilling 70 8.5 100 chor W-UR 8 Inside / Outside
Depth of drill hole to deepest point Drill method Overall plastic anchor embedment depth Diameter of clearance hole in the fixture Minimum allowable edge distance <b>Fable C 10.32.3: Characteristic resistance F</b> Anchor size Installationsside <sup>6)</sup> Overall plastic anchor embedment depth	h <sub>1</sub> ≥ h <sub>nom</sub> = d <sub>f</sub> ≤ C <sub>min</sub> ≥ C <sub>Rk</sub> <sup>1)</sup> in [kN] for s h <sub>nom</sub> =	[mm] [-] [mm] [mm] [mm] single an [mm]	80 Rotary drilling 70 8.5 100 chor W-UR 8 Inside / Outside 70
Depth of drill hole to deepest point Drill method Overall plastic anchor embedment depth Diameter of clearance hole in the fixture Minimum allowable edge distance <b>Fable C 10.32.3: Characteristic resistance F</b> <b>Anchor size</b> Installationsside <sup>6)</sup> Overall plastic anchor embedment depth <b>Hollow brick THERMOPOR</b>	$h_1 ≥$ $h_{nom} =$ $d_f ≤$ $C_{min} ≥$ $C_{Rk}^{(1)}$ in [kN] for $h_{nom} =$ $30°C^{(3)} / 50°C^{(4)}$	[mm] [-] [mm] [mm] [mm] single an [mm] [kN]	80 Rotary drilling 70 8.5 100 chor W-UR 8 Inside / Outside
Depth of drill hole to deepest point Drill method Overall plastic anchor embedment depth Diameter of clearance hole in the fixture Minimum allowable edge distance <b>Table C 10.32.3: Characteristic resistance F</b> Anchor size Installationsside <sup>6)</sup>	h <sub>1</sub> ≥ h <sub>nom</sub> = d <sub>f</sub> ≤ C <sub>min</sub> ≥ C <sub>Rk</sub> <sup>1)</sup> in [kN] for s h <sub>nom</sub> =	[mm] [-] [mm] [mm] [mm] single an [mm] [kN]	80 Rotary drilling 70 8.5 100 chor W-UR 8 Inside / Outside 70
Depth of drill hole to deepest point Drill method Overall plastic anchor embedment depth Diameter of clearance hole in the fixture Minimum allowable edge distance <b>Fable C 10.32.3: Characteristic resistance F</b> <b>Anchor size</b> Installationsside <sup>6)</sup> Overall plastic anchor embedment depth Hollow brick THERMOPOR TV 9-Plan, $f_b \ge 4 \text{ N/mm}^2$ – Characteristic resistance $F_{Rk}$ Hollow brick THERMOPOR	$h_1 ≥$ $h_{nom} =$ $d_f ≤$ $C_{min} ≥$ $C_{Rk}^{(1)}$ in [kN] for $h_{nom} =$ $30°C^{(3)} / 50°C^{(4)}$	[mm] [-] [mm] [mm] [mm] single an [mm] [kN] [kN]	80 Rotary drilling 70 8.5 100 chor W-UR 8 Inside / Outside 70 0.75
Depth of drill hole to deepest point Drill method Overall plastic anchor embedment depth Diameter of clearance hole in the fixture Minimum allowable edge distance <b>Fable C 10.32.3: Characteristic resistance F</b> <b>Anchor size</b> Installationsside <sup>6)</sup> Overall plastic anchor embedment depth Hollow brick THERMOPOR TV 9-Plan, $f_b \ge 4 \text{ N/mm}^2$ – Characteristic resistance $F_{Rk}$ Hollow brick THERMOPOR TV 9-Plan, $f_b \ge 6 \text{ N/mm}^2$ –	$h_1 ≥$ $h_{nom} =$ $d_f ≤$ $C_{min} ≥$ $E_{Rk}^{(1)}$ in [kN] for $h_{nom} =$ $30°C^{(3)} / 50°C^{(4)}$ $50°C^{(3)} / 80°C^{(4)}$ $30°C^{(3)} / 50°C^{(4)}$	[mm] [-] [mm] [mm] [mm] single an [mm] [kN] [kN] [kN]	80 Rotary drilling 70 8.5 100 chor W-UR 8 Inside / Outside 70 0.75 0.75 0.9
Depth of drill hole to deepest point Drill method Overall plastic anchor embedment depth Diameter of clearance hole in the fixture Minimum allowable edge distance <b>Table C 10.32.3: Characteristic resistance F</b> <b>Anchor size</b> Installationsside <sup>6)</sup> Overall plastic anchor embedment depth Hollow brick THERMOPOR TV 9-Plan, $f_b \ge 4 \text{ N/mm}^2$ – Characteristic resistance $F_{Rk}$ Hollow brick THERMOPOR TV 9-Plan, $f_b \ge 6 \text{ N/mm}^2$ – Characteristic resistance $F_{Rk}$	$h_1 ≥$ $h_{nom} =$ $d_f ≤$ $C_{min} ≥$ $E_{Rk}^{(1)}$ in [kN] for $=$ $30^{\circ}C^{(3)} / 50^{\circ}C^{(4)}$ $50^{\circ}C^{(3)} / 50^{\circ}C^{(4)}$ $30^{\circ}C^{(3)} / 50^{\circ}C^{(4)}$ $50^{\circ}C^{(3)} / 80^{\circ}C^{(4)}$	[mm] [-] [mm] [mm] [mm] single an [mm] [kN] [kN] [kN] [kN]	80 Rotary drilling 70 8.5 100 chor W-UR 8 Inside / Outside 70 0.75 0.75 0.9 0.9
Depth of drill hole to deepest point Drill method Overall plastic anchor embedment depth Diameter of clearance hole in the fixture Minimum allowable edge distance <b>Fable C 10.32.3: Characteristic resistance F</b> <b>Anchor size</b> Installationsside <sup>6)</sup> Overall plastic anchor embedment depth Hollow brick THERMOPOR TV 9-Plan, $f_b \ge 4 \text{ N/mm}^2$ – Characteristic resistance $F_{Rk}$ Hollow brick THERMOPOR TV 9-Plan, $f_b \ge 6 \text{ N/mm}^2$ – Characteristic resistance $F_{Rk}$ Hollow brick THERMOPOR	$h_1 ≥$ $h_{nom} =$ $d_f ≤$ $C_{min} ≥$ $E_{Rk}^{(1)}$ in [kN] for $h_{nom} =$ $30^{\circ}C^{(3)} / 50^{\circ}C^{(4)}$ $50^{\circ}C^{(3)} / 80^{\circ}C^{(4)}$ $30^{\circ}C^{(3)} / 50^{\circ}C^{(4)}$	[mm] [-] [mm] [mm] [mm] single an [mm] [kN] [kN] [kN] [kN]	80 Rotary drilling 70 8.5 100 chor W-UR 8 Inside / Outside 70 0.75 0.75 0.9
Depth of drill hole to deepest point Drill method Overall plastic anchor embedment depth Diameter of clearance hole in the fixture Minimum allowable edge distance <b>Fable C 10.32.3: Characteristic resistance F</b> <b>Anchor size</b> Installationsside <sup>6)</sup> Overall plastic anchor embedment depth Hollow brick THERMOPOR TV 9-Plan, $f_b \ge 4 \text{ N/mm}^2$ – Characteristic resistance $F_{Rk}$ Hollow brick THERMOPOR TV 9-Plan, $f_b \ge 6 \text{ N/mm}^2$ – Characteristic resistance $F_{Rk}$ Hollow brick THERMOPOR TV 9-Plan, $f_b \ge 6 \text{ N/mm}^2$ – Characteristic resistance $F_{Rk}$ Hollow brick THERMOPOR TV 9-Plan, $f_b \ge 8 \text{ N/mm}^2$ –	$h_1 ≥$ $h_{nom} =$ $d_f ≤$ $C_{min} ≥$ $E_{Rk}^{(1)}$ in [kN] for $(h_{nom} =$ $30^{\circ}C^{(3)} / 50^{\circ}C^{(4)}$ $50^{\circ}C^{(3)} / 80^{\circ}C^{(4)}$ $30^{\circ}C^{(3)} / 50^{\circ}C^{(4)}$	[mm] [-] [mm] [mm] [mm] single an [mm] [kN] [kN] [kN] [kN] [kN]	80 Rotary drilling 70 8.5 100 chor W-UR 8 Inside / Outside 70 0.75 0.75 0.9 0.9
Depth of drill hole to deepest point Drill method Overall plastic anchor embedment depth Diameter of clearance hole in the fixture Minimum allowable edge distance Table C 10.32.3: Characteristic resistance F Anchor size Installationsside <sup>6)</sup> Overall plastic anchor embedment depth Hollow brick THERMOPOR TV 9-Plan, $f_b \ge 4 \text{ N/mm}^2$ – Characteristic resistance $F_{Rk}$ Hollow brick THERMOPOR TV 9-Plan, $f_b \ge 6 \text{ N/mm}^2$ – Characteristic resistance $F_{Rk}$ Hollow brick THERMOPOR TV 9-Plan, $f_b \ge 6 \text{ N/mm}^2$ – Characteristic resistance $F_{Rk}$ Hollow brick THERMOPOR TV 9-Plan, $f_b \ge 8 \text{ N/mm}^2$ – Characteristic resistance $F_{Rk}$	$h_1 ≥$ $h_{nom} =$ $d_f ≤$ $C_{min} ≥$ $F_{Rk}^{(1)}$ in [kN] for $f$ $h_{nom} =$ $30^{\circ}C^{(3)} / 50^{\circ}C^{(4)}$ $50^{\circ}C^{(3)} / 80^{\circ}C^{(4)}$ $50^{\circ}C^{(3)} / 50^{\circ}C^{(4)}$ $50^{\circ}C^{(3)} / 50^{\circ}C^{(4)}$ $50^{\circ}C^{(3)} / 50^{\circ}C^{(4)}$ $50^{\circ}C^{(3)} / 80^{\circ}C^{(4)}$	[mm] [-] [mm] [mm] [mm] single an [mm] [kN] [kN] [kN] [kN] [kN] [kN] [kN]	80 Rotary drilling 70 8.5 100 <b>chor</b> <b>W-UR 8</b> Inside / Outside 70 0.75 0.75 0.9 0.9 1.5
Depth of drill hole to deepest point Drill method Overall plastic anchor embedment depth Diameter of clearance hole in the fixture Minimum allowable edge distance <b>Fable C 10.32.3: Characteristic resistance F</b> <b>Anchor size</b> Installationsside <sup>6)</sup> Overall plastic anchor embedment depth Hollow brick THERMOPOR TV 9-Plan, $f_b \ge 4 \text{ N/mm}^2$ – Characteristic resistance $F_{Rk}$ Hollow brick THERMOPOR TV 9-Plan, $f_b \ge 6 \text{ N/mm}^2$ – Characteristic resistance $F_{Rk}$ Hollow brick THERMOPOR TV 9-Plan, $f_b \ge 6 \text{ N/mm}^2$ – Characteristic resistance $F_{Rk}$ Hollow brick THERMOPOR TV 9-Plan, $f_b \ge 8 \text{ N/mm}^2$ –	$h_1 ≥$ $h_{nom} =$ $d_f ≤$ $C_{min} ≥$ $E_{Rk}^{(1)}$ in [kN] for $f$ $h_{nom} =$ $30°C^{(3)} / 50°C^{(4)}$ $50°C^{(3)} / 80°C^{(4)}$ $50°C^{(3)} / 80°C^{(4)}$ $50°C^{(3)} / 80°C^{(4)}$ $50°C^{(3)} / 50°C^{(4)}$	[mm] [-] [mm] [mm] [mm] single an [mm] [kN] [kN] [kN] [kN] [kN]	80 Rotary drilling 70 8.5 100 <b>chor</b> <b>W-UR 8</b> Inside / Outside 70 0.75 0.75 0.9 0.9 1.5 1.5



Brick data	771-1-049		Kellerer ZMK X6
Type of brick			Hollow brick
Bulk density	$\rho \geq$	[kg/dm³]	0.60
Standard, approval	р <u>–</u>	[	EN 771-1:2011, Z-17.1-1067
			Ziegelsystem Michael Kellerer GmbH & C
Producer of brick			KG
			Ziegeleistraße 13, D-82281 Egenhofen
Measurement		[mm]	≥10DF (247x300x249)
Minimum thickness of member	h <sub>min</sub> =	[mm]	300
able C 10.33.2: Installation parameters Anchor size			W-UR 8
nstallationsside <sup>6)</sup>			Inside / Outside
Drill hole diameter	d <sub>0</sub> =		8
Cutting diameter of drill bit	d <sub>cut</sub> ≤		8.45
Depth of drill hole to deepest point	h <sub>1</sub> ≥		80
Drill method		[-]	Rotary drilling
Overall plastic anchor embedment depth	h <sub>nom</sub> =		70
Diameter of clearance hole in the fixture	d <sub>f</sub> ≤		8.5
Minimum allowable edge distance	C <sub>min</sub> ≥	⊵ [mm]	100
able C 10.33.3: Characteristic resistanc Anchor size	e F <sub>Rk</sub> <sup>1)</sup> in [kN] for si	ingle anch	or W-UR 8
nstallationsside <sup>6)</sup>		1	Inside / Outside
Overall plastic anchor embedment depth	h <sub>nom</sub> =	[mm]	70
Hollow brick Kellerer ZMK X6,	30°C <sup>3)</sup> / 50°C <sup>4</sup>		0.3
$f_b \ge 2 \text{ N/mm}^2$			0.5
Characteristic resistance F <sub>Rk</sub>	50°C <sup>3)</sup> / 80°C <sup>4)</sup>	<sup>)</sup> [kN]	0.3
Hollow brick Kellerer ZMK X6,	30°C <sup>3)</sup> / 50°C <sup>4)</sup>	) [kN]	0.5
$f_b \ge 4 \text{ N/mm}^2$	50°C <sup>3)</sup> / 80°C <sup>4)</sup>		
Characteristic resistance F <sub>Rk</sub>			0.5
Hollow brick Kellerer ZMK X6,	30°C <sup>3)</sup> / 50°C <sup>4)</sup>	<sup>)</sup> [kN]	0.75
$f_b \ge 6 \text{ N/mm}^2$	50°C <sup>3)</sup> / 80°C <sup>4)</sup>	) [kN]	0.75
Characteristic resistance F <sub>Rk</sub>	2'		2.5
Partial safety factor	γ <sub>Mm</sub> ~	) [-]	2.0
ootnotes see Annex C 3			



Brick data	771-1-050		Kellerer ZMK TX8
Type of brick			Hollow brick
Bulk density	$\rho \ge$	[kg/dm³]	0.60
Standard, approval			EN 771-1:2011, Z-17.1-1068
			Ziegelsystem Michael Kellerer GmbH & C
Producer of brick			KG
			Ziegeleistraße 13, D-82281 Egenhofen
Measurement		[mm]	≥10DF ( 247x300x249)
Minimum thickness of member	h <sub>min</sub> =	[mm]	300
able C 10.34.2: Installation parameters			
Anchor size			W-UR 8
Installationsside <sup>6)</sup>			Inside / Outside
Drill hole diameter	d <sub>o</sub> :	= [mm]	8
Cutting diameter of drill bit	d <sub>cut</sub>		8.45
Depth of drill hole to deepest point	h <sub>1</sub>		80
Drill method		[-]	Rotary drilling
Overall plastic anchor embedment depth	h <sub>nom</sub> :	= [mm]	70
Diameter of clearance hole in the fixture	d <sub>f</sub> :	≤ [mm]	8.5
Minimum allowable edge distance	C <sub>min</sub>	≥ [mm]	100
	- 1)		
able C 10.34.3: Characteristic resistance Anchor size	e F <sub>Rk</sub> ' in [KN] to	or single a	W-UR 8
Installationsside <sup>6)</sup>			Inside / Outside
Overall plastic anchor embedment depth	h <sub>nom</sub> :	= [mm]	70
Hollow brick Kellerer ZMK TX8,	30°C <sup>3)</sup> / 50°C		0.75
f <sub>b</sub> ≥4 N/mm <sup>2</sup>			
Characteristic resistance F <sub>Rk</sub>	50°C <sup>3)</sup> / 80°C		0.6
Hollow brick Kellerer ZMK TX8,	30°C <sup>3)</sup> / 50°C	<sup>4)</sup> [kN]	1.2
$f_b \ge 6 \text{ N/mm}^2$	50°C <sup>3)</sup> / 80°C	<sup>4)</sup> [kN]	0.9
Characteristic resistance F <sub>Rk</sub> Partial safety factor	γ <sub>Mm</sub>		2.5
	γMm	<sup>2)</sup> [-]	2.0

# Würth Plastic Anchor W-UR

Performances
Hollow brick: Kellerer ZMK TX8
Brick data, installation parameters, characteristic resistance



Brick data		771-1-017	Hollow brick Ladrillo P NV R150			
Type of brick			Hollow brick Ladrillo P NV R150			
Bulk density	<i>ρ</i> ≥	[kg/dm³]	1.2			
Standard, approval	p≥	[kg/ann]	EN 771-1:2011			
			Ceramica La Corona, S.A.			
Producer of brick			Carreta de Caldes, km 8, 9			
			08420 Canovelles, Spain			
Measurement		[mm]	≥ 276x128x95			
Minimum thickness of member	h <sub>min</sub> =	[mm]	128			
	276					
(A)	0000	900	8			
	naad	000	1			
		000	1. T			
000		$\psi\psi\psi$				
able C 10.35.2: Installation parameters			1			
Anchor size			W-UR 8			
Installationsside <sup>6)</sup>			Inside / Outside			
Drill hole diameter		<sub>0</sub> = [mm]	8			
Cutting diameter of drill bit		<sub>ut</sub> ≤ [mm]				
Depth of drill hole to deepest point	h	<u>₁ ≥ [mm]</u>				
Drill method	<u> </u>	<u>[-]</u>	Rotary drilling			
Overall plastic anchor embedment depth	h <sub>nor</sub>		70			
Diameter of clearance hole in the fixture		l <sub>f</sub> ≤ [mm]				
Minimum allowable edge distance	C <sub>mi</sub>	<sub>in</sub> ≥ [[mm]	100			
able C 10.35.3: Characteristic resistance F	<sub>Rk</sub> <sup>1)</sup> in [kN] fo	or single a	anchor			
Anchor size		<u> </u>	W-UR 8			
Installationsside <sup>6)</sup>			Inside / Outside			
Overall plastic anchor embedment depth	h <sub>nor</sub>	= [mm]	70			
Hollow brick Ladrillo P NV R150, $f_b \ge 12$	30°C <sup>3)</sup> / 50°		0.6			
$N/mm^2$						
Characteristic resistance F <sub>Rk</sub>	50°C <sup>3)</sup> / 80°	C <sup>4)</sup> [kN]	0.5			
Hollow brick Ladrillo P NV R150, $f_b \ge 20 \text{ N/mm}^2$	30°C <sup>3)</sup> / 50°	C <sup>4)</sup> [kN]	1.2			
Characteristic resistance F <sub>Rk</sub>	50°C <sup>3)</sup> / 80°	C <sup>4)</sup> [kN]	0.9			
Hollow brick Ladrillo P NV R150, f <sub>b</sub> ≥ 28 N/mm <sup>2</sup>	30°C <sup>3)</sup> / 50°		1.5			
Characteristic resistance $F_{Rk}$	50°C <sup>3)</sup> / 80°		1.2			
	30°C <sup>3)</sup> / 50°					
Hollow brick Ladrillo P NV R150, $f_b \ge 36 \text{ N/mm}^2$			2.0			
Characteristic resistance F <sub>Rk</sub>	50°C <sup>3)</sup> / 80°		1.5			
Partial safety factor	ŶΝ	1m <sup>2)</sup> [-]	2.5			
ootnotes see Annex C 3						
ootnotes see Annex C 3						
ootnotes see Annex C 3 Vürth Plastic Anchor W-UR						

#### Deutsches Institut $\mathbb{D}$ für Bautechnik

Description of brick	771-1-002			k	(S	
Type of brick				Sand-lime	solid brick	
Bulk density	$\rho \ge$	[kg/dm³]		2	2.0	
Standard, approval			DIN V	106:2005-1	10; EN 771-2	2:2011
Producer of brick					-	
Format (measurement)		[mm]			10x115x71)	
Minimum thickness of member	h <sub>min</sub> =	[mm]		1	15	
Anchor size           Installationsside <sup>6)</sup>			W-U		Outside	R 10
Drill hole diameter	d <sub>0</sub> =	= [mm]	8	3	1	0
Cutting diameter of drill bit	d <sub>cut</sub> ≤	≤ [mm]	8.4	45	10	.45
Depth of drill hole to deepest point	h <sub>1</sub> ≥	≥ [mm]	60	80	60	80
Drill method		[-]	Hamme	r drilling	Hamme	r drilling
Overall plastic anchor embedment depth	h <sub>nom</sub> ≥	≥ [mm]	50	70	50	70
Diameter of clearance hole in the fixture	d <sub>f</sub> ≤	≤ [mm]	8.	5	10	).5
Spacing perpendicular to free edge	S <sub>1,mir</sub>	" [mm]	10		100	100
Spacing parallel to free edge	S <sub>2,mir</sub>	n [mm]	10	0	200	100
Minimum allowable edge distance	C <sub>min</sub> ≥	≥ [mm]	10	00	50	100
able C 10.36.3: Characteristic resistanc	e F <sub>Rk</sub> <sup>1)</sup> in [kN] fo	or single a	nchor			
Anchor size			W-U	IR 8	W-U	R 10
Installationsside <sup>6)</sup>				Inside /	Outside	
Overall plastic anchor embedment depth	h <sub>nom</sub> ≥	≥ [mm]	50	70	50	70
Sand-lime solid brick KS, f <sub>b</sub> ≥ 10 N/mm <sup>2</sup> —	30°C <sup>3)</sup> / 50°C <sup>4</sup>	- · ·	1.5	1.5	0.75	2.0
Characteristic resistance F <sub>Rk</sub>	50°C <sup>3)</sup> / 80°C <sup>4</sup>	<sup>))</sup> [kN]	1.5	1.5	0.75	1.5
Sand-lime solid brick KS,	30°C <sup>3)</sup> / 50°C <sup>4</sup>		2.5	2.5	1.5	3.0
$f_{\rm h} \ge 20  {\rm N/mm^2} \qquad -$	50°C <sup>3)</sup> / 80°C <sup>4</sup>	<sup>i)</sup> [kN]	2.0	2.5	1.5	2.5
	50°C / 80°C				1	
Characteristic resistance F <sub>Rk</sub> Sand-lime solid brick KS,	30°C <sup>3)</sup> / 50°C <sup>4</sup>		3.5	3.5	1.5	4.5
		<sup>)</sup> [kN]	3.5 3.0	3.5 3.5	1.5 1.5	4.5 3.5

Partial safety factor Footnotes see Annex C 3

### Würth Plastic Anchor W-UR

Performances Sand-lime solid brick: KS, NF Brick data, installation parameters, characteristic resistance



Description of brick	771-2-010		Silka XL Basic, Silka XL Plus		
Type of brick				solid brick	
Bulk density	<i>ρ</i> ≥	[kg/dm³]	2	.0	
Standard, approval	·			0; EN 771-2:2011,	
			Z-17.		
Producer of brick			Xella Deutsc Dr -Hamma	cher-Str. 49	
			DIHammacher-Str. 49 D-47119 Duisburg		
Format (measurement)		[mm]	≥ 248x175x498		
Minimum thickness of member	h <sub>min</sub> =	[mm]	17	75	
Table C 10.37.2: Installation parameters	5				
Anchor size			W-UR 8	W-UR 10	
Installationsside <sup>6)</sup>			Inside / Outside /	Inside / Outside /	
Drill hole diameter	d <sub>0</sub> =	[mm]	Reveal 8	Reveal 10	
Cutting diameter of drill bit	d <sub>0</sub> − d <sub>cut</sub> ≤	[mm]	8.45	10.45	
Depth of drill hole to deepest point	$h_1 \ge$	[mm]	80	80	
Drill method	II <u>1</u> ≤	[-]	Hammer drilling	Hammer drilling	
Overall plastic anchor embedment depth	h <sub>nom</sub> ≥	[ <sup>-</sup> ] [mm]	70	70	
Diameter of clearance hole in the fixture	d <sub>f</sub> ≤	[mm]	8.5	10.5	
Minimum allowable edge distance	C <sub>min</sub> ≥	[mm]	50	50	
		[]			
able C 10.37.3: Characteristic resistan آ	ce F <sub>Rk</sub> <sup>1)</sup> in [kN] f	or single a	nchor		
Anchor size			W-UR 8	W-UR 10	
Installationsside <sup>6)</sup>			Inside / Outside /	Inside / Outside /	
			Reveal	Reveal	
Overall plastic anchor embedment depth	$h_{nom} \ge$	[mm]	70	70	
Sand-lime solid brick Silka XL Basic,	30°C <sup>3)</sup> / 50°C <sup>4)</sup>	[kN]	1.5	2.5	
Silka XL Plus, $f_b \ge 10 \text{ N/mm}^2$ -	50°C <sup>3)</sup> / 80°C <sup>4)</sup>		4 5	0.5	
Characteristic resistance F <sub>Rk</sub>		[kN]	1.5	2.5	
Sand-lime solid brick Silka XL Basic, Silka XL Blue, $f > 20$ N/mm <sup>2</sup>	30°C <sup>3)</sup> / 50°C <sup>4)</sup>	[kN]	2.5	3.5	
Silka XL Plus, f <sub>b</sub> ≥ 20 N/mm <sup>2</sup> - Characteristic resistance F <sub>Rk</sub>	50°C <sup>3)</sup> / 80°C <sup>4)</sup>	[kN]	2.5	3.5	
Sand-lime solid brick Silka XL Basic,	30°C <sup>3)</sup> / 50°C <sup>4)</sup>	[kN]	3.5	4.5	
Silka XL Plus, $f_b \ge 28 \text{ N/mm}^2$ - Characteristic resistance $F_{Rk}$	50°C <sup>3)</sup> / 80°C <sup>4)</sup>	[kN]	3.5	3.5	
			0.0	0.0	
Partial safety factor	2) γMm	[-]	2.5	2.5	

Footnotes see Annex C 3

### Würth Plastic Anchor W-UR

Performances Sand-lime solid brick: Silka XL Basic, Silka XL Plus Brick data, installation parameters, characteristic resistance

#### Deutsches Institut für Bautechnik

Description of brick	771-2-003,771-2-004					
·					SL	
Type of brick			5		erforated brick	<
Bulk density	<i>ρ</i> ≥	[kg/dm³]	1.6 DIN V 106:2005-10; EN 771-2:201			
Standard, approval			DIN \	/ 106:2005-1	10; EN 771-2:	2011
Producer of brick					-	
Format (measurement)		[mm]			0x115x113)	
Minimum thickness of member	h <sub>min</sub> =	[mm]	<i>b</i> 2	1	15	
			15			
able C 10.38.2: Installation parameters						
Anchor size			W-U		W-U	
Installationsside <sup>6)</sup>	.1		Inside /	-		Outside
Drill hole diameter	$d_0 =$	[mm]	3			0
Cutting diameter of drill bit Depth of drill hole to deepest point	d <sub>cut</sub> ≤	[mm]	8.4 60	45 80	10 60	.45 80
Depth of dhir hole to deepest point	h <sub>1</sub> ≥	[mm] [-]	Rotary		Rotary	
Overall plastic anchor embedment depth	h <sub>nom</sub> =	[mm]	50	70	50	70
Diameter of clearance hole in the fixture	d <sub>f</sub> ≤	[mm]	8.			).5
Minimum allowable edge distance	C <sub>min</sub> ≥	[mm]	100 100			
able C 10.38.3: Characteristic resistance	e F <sub>Rk</sub> <sup>1)</sup> in [kN] for sing	gle anchor	W-u			
						D 40
Anchor size						R 10
Installationsside <sup>6)</sup>	h	[mm]	Inside /	Outside	Inside /	Outside
Installationsside <sup>6)</sup> Overall plastic anchor embedment depth	h <sub>nom</sub>	[mm]	Inside / ≥ <b>50</b> <sup>5)</sup>	Outside <b>= 70</b>	Inside / ≥ <b>50</b> <sup>5)</sup>	Outside <b>= 70</b>
Installationsside <sup>6)</sup> Overall plastic anchor embedment depth Sand-lime perforated brick KS L,	h <sub>nom</sub> 30°C <sup>3)</sup> / 50°C <sup>4)</sup>	[mm] [kN]	Inside /	Outside	Inside /	Outside
Installationsside <sup>6)</sup> Overall plastic anchor embedment depth			Inside / ≥ <b>50</b> <sup>5)</sup>	Outside <b>= 70</b>	Inside / ≥ <b>50</b> <sup>5)</sup>	Outside <b>= 70</b>
Installationsside <sup>6)</sup> Overall plastic anchor embedment depth Sand-lime perforated brick KS L, f <sub>b</sub> ≥ 6 N/mm <sup>2</sup> Characteristic resistance F <sub>Rk</sub> Sand-lime perforated brick KS L,	$\frac{30^{\circ}\text{C}^{3)}  /  50^{\circ}\text{C}^{4)}}{50^{\circ}\text{C}^{3)}  /  80^{\circ}\text{C}^{4)}}$	[kN] [kN]	Inside / ≥ <b>50</b> <sup>5)</sup> 0.6 0.5	Outside = 70 1.2 1.2	Inside / ≥ <b>50</b> <sup>5)</sup> 0.5 0.4	Outside = 70 0.9 0.9
Installationsside <sup>6)</sup> Overall plastic anchor embedment depth Sand-lime perforated brick KS L, $f_b ≥ 6 N/mm^2$ Characteristic resistance $F_{Rk}$ Sand-lime perforated brick KS L, $f_b ≥ 8 N/mm^2$		[kN] [kN] [kN]	Inside / ≥ 50 <sup>5)</sup> 0.6 0.5 0.9	Outside = 70 1.2 1.2 1.5	Inside / ≥ <b>50</b> <sup>5)</sup> 0.5 0.4 0.6	Outside = 70 0.9 0.9 1.2
Installationsside <sup>6)</sup> Overall plastic anchor embedment depth Sand-lime perforated brick KS L, $f_b \ge 6 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Sand-lime perforated brick KS L, $f_b \ge 8 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$	$ \frac{30^{\circ}C^{3)} / 50^{\circ}C^{4)}}{50^{\circ}C^{3)} / 80^{\circ}C^{4)}} \\ \frac{30^{\circ}C^{3)} / 50^{\circ}C^{4)}}{50^{\circ}C^{3)} / 80^{\circ}C^{4)}} $	[kN] [kN]	Inside / ≥ <b>50</b> <sup>5)</sup> 0.6 0.5	Outside = 70 1.2 1.2	Inside / ≥ <b>50</b> <sup>5)</sup> 0.5 0.4	Outside = 70 0.9 0.9
Installationsside <sup>6)</sup> Overall plastic anchor embedment depth Sand-lime perforated brick KS L, $f_b \ge 6 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Sand-lime perforated brick KS L, $f_b \ge 8 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Sand-lime perforated brick KS L,		[kN] [kN] [kN]	Inside / ≥ 50 <sup>5)</sup> 0.6 0.5 0.9	Outside = 70 1.2 1.2 1.5	Inside / ≥ <b>50</b> <sup>5)</sup> 0.5 0.4 0.6	Outside = 70 0.9 0.9 1.2
Installationsside <sup>6)</sup> Overall plastic anchor embedment depth Sand-lime perforated brick KS L, $f_b \ge 6 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Sand-lime perforated brick KS L, $f_b \ge 8 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Sand-lime perforated brick KS L, $f_b \ge 10 \text{ N/mm}^2$	$ \frac{30^{\circ}C^{3)} / 50^{\circ}C^{4)}}{50^{\circ}C^{3)} / 80^{\circ}C^{4)}} \\ \frac{30^{\circ}C^{3)} / 50^{\circ}C^{4)}}{50^{\circ}C^{3)} / 80^{\circ}C^{4)}} $	[kN] [kN] [kN] [kN]	Inside / ≥ 50 <sup>5)</sup> 0.6 0.5 0.9 0.6	Outside = 70 1.2 1.2 1.5 1.5	Inside / ≥ 50 <sup>5)</sup> 0.5 0.4 0.6 0.5	Outside = 70 0.9 0.9 1.2 1.2
Installationsside <sup>6)</sup> Overall plastic anchor embedment depth Sand-lime perforated brick KS L, $f_b \ge 6 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Sand-lime perforated brick KS L, $f_b \ge 8 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Sand-lime perforated brick KS L,	$ \frac{30^{\circ}C^{3)} / 50^{\circ}C^{4)}}{50^{\circ}C^{3)} / 80^{\circ}C^{4)}} \\ \frac{30^{\circ}C^{3)} / 50^{\circ}C^{4)}}{50^{\circ}C^{3)} / 80^{\circ}C^{4)}} \\ \frac{30^{\circ}C^{3)} / 80^{\circ}C^{4)}}{50^{\circ}C^{3)} / 50^{\circ}C^{4)}} \\ \frac{30^{\circ}C^{3)} / 80^{\circ}C^{4)}}{50^{\circ}C^{3)} / 80^{\circ}C^{4)}} \\ \frac{30^{\circ}C^{3)} / 80^{\circ}C^{4)}}{50^{\circ}C^{3)} / 80^{\circ}C^{4)}} \\ \frac{30^{\circ}C^{3}}{50^{\circ}C^{3}} / 80^{\circ}C^{4)}}{50^{\circ}C^{4)}} \\ \frac{30^{\circ}C^{3}}{50^{\circ}C^{3}} / 80^{\circ}C^{4)}} \\ \frac{30^{\circ}C^{3}}{50^{\circ}C^{3}} / 80^{\circ}C^{4)} \\ \frac{30^{\circ}C^{3}}{50^{\circ}C^{3}} / 80^{\circ}C^{4)}} \\ \frac{30^{\circ}C^{3}}{50^{\circ}C^{3}} / 80^{\circ}C^{4)}} \\ \frac{30^{\circ}C^{3}}{50^{\circ}C^{3}} / 80^{\circ}C^{4)} \\ \frac{30^{\circ}C^{3}}{50^{\circ}C^{3}} / 80^{\circ}C^{4)} \\ \frac{30^{\circ}C^{3}}{50^{\circ}C^{3}} / 80^{\circ}C^{4)} \\ \frac{30^{\circ}C^{3}} / 80^{\circ}C^{4}} / 80^{\circ}C^{4}} / 80^{\circ}C^{4}} \\ \frac{30^{\circ}C^{3}} / 80^{\circ}C^{4}} / 80^{\circ}C^{4} / 80^{\circ}C^{4}} / 80^{\circ}C^{4} / 80^{\circ}C^{4} / 80^{\circ}C^{4}} / 80^{\circ}C^{4} / 80^{\circ}C$	[kN] [kN] [kN] [kN] [kN] [kN]	Inside / ≥ 50 <sup>5)</sup> 0.6 0.9 0.6 0.9 0.9 0.9	Outside           = 70           1.2           1.2           1.5           2.0           2.0	Inside / ≥ 50 <sup>5)</sup> 0.5 0.4 0.6 0.5 0.6 0.5	Outside = 70 0.9 1.2 1.2 1.5 1.5
Installationsside <sup>6)</sup> Overall plastic anchor embedment depth Sand-lime perforated brick KS L, $f_b \ge 6 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Sand-lime perforated brick KS L, $f_b \ge 8 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Sand-lime perforated brick KS L, $f_b \ge 10 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Sand-lime perforated brick KS L, $f_b \ge 10 \text{ N/mm}^2$	$\begin{array}{c} 30^{\circ}\text{C}^{3)}  /  50^{\circ}\text{C}^{4)} \\ \hline 50^{\circ}\text{C}^{3)}  /  80^{\circ}\text{C}^{4)} \\ \hline 30^{\circ}\text{C}^{3)}  /  50^{\circ}\text{C}^{4)} \\ \hline 50^{\circ}\text{C}^{3)}  /  80^{\circ}\text{C}^{4)} \\ \hline 30^{\circ}\text{C}^{3)}  /  50^{\circ}\text{C}^{4)} \\ \hline 50^{\circ}\text{C}^{3)}  /  80^{\circ}\text{C}^{4)} \\ \hline 30^{\circ}\text{C}^{3)}  /  50^{\circ}\text{C}^{4)} \end{array}$	[kN] [kN] [kN] [kN] [kN] [kN] [kN]	Inside / ≥ 50 <sup>5)</sup> 0.6 0.5 0.9 0.6 0.9 0.9 0.9 0.9 1.2	Outside           = 70           1.2           1.2           1.5           1.5           2.0           2.0           2.5	Inside / ≥ 50 <sup>5)</sup> 0.5 0.4 0.6 0.5 0.6 0.5 0.5 0.9	Outside = 70 0.9 1.2 1.2 1.5 1.5 2.0
Installationsside <sup>6)</sup> Overall plastic anchor embedment depth Sand-lime perforated brick KS L, $f_b \ge 6 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Sand-lime perforated brick KS L, $f_b \ge 8 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Sand-lime perforated brick KS L, $f_b \ge 10 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Sand-lime perforated brick KS L, $f_b \ge 12 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$	$\begin{array}{c} 30^{\circ}\mathrm{C}^{3)}  /  50^{\circ}\mathrm{C}^{4)} \\ \hline 50^{\circ}\mathrm{C}^{3)}  /  80^{\circ}\mathrm{C}^{4)} \\ \hline 30^{\circ}\mathrm{C}^{3)}  /  50^{\circ}\mathrm{C}^{4)} \\ \hline 50^{\circ}\mathrm{C}^{3)}  /  80^{\circ}\mathrm{C}^{4)} \\ \hline 30^{\circ}\mathrm{C}^{3)}  /  50^{\circ}\mathrm{C}^{4)} \\ \hline 50^{\circ}\mathrm{C}^{3)}  /  80^{\circ}\mathrm{C}^{4)} \\ \hline 50^{\circ}\mathrm{C}^{3)}  /  80^{\circ}\mathrm{C}^{4)} \\ \hline 50^{\circ}\mathrm{C}^{3)}  /  80^{\circ}\mathrm{C}^{4)} \\ \hline \end{array}$	[kN] [kN] [kN] [kN] [kN] [kN]	Inside / ≥ 50 <sup>5)</sup> 0.6 0.9 0.6 0.9 0.9 0.9	Outside           = 70           1.2           1.2           1.5           2.0           2.0	Inside / ≥ 50 <sup>5)</sup> 0.5 0.4 0.6 0.5 0.6 0.5	Outside = 70 0.9 1.2 1.2 1.5 1.5
Installationsside <sup>6)</sup> Overall plastic anchor embedment depth Sand-lime perforated brick KS L, $f_b \ge 6 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Sand-lime perforated brick KS L, $f_b \ge 8 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Sand-lime perforated brick KS L, $f_b \ge 10 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Sand-lime perforated brick KS L, $f_b \ge 12 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Sand-lime perforated brick KS L, $f_b \ge 12 \text{ N/mm}^2$	$\begin{array}{c} 30^{\circ}\text{C}^{3)}  /  50^{\circ}\text{C}^{4)} \\ \hline 50^{\circ}\text{C}^{3)}  /  80^{\circ}\text{C}^{4)} \\ \hline 30^{\circ}\text{C}^{3)}  /  50^{\circ}\text{C}^{4)} \\ \hline 50^{\circ}\text{C}^{3)}  /  80^{\circ}\text{C}^{4)} \\ \hline 30^{\circ}\text{C}^{3)}  /  50^{\circ}\text{C}^{4)} \\ \hline 50^{\circ}\text{C}^{3)}  /  80^{\circ}\text{C}^{4)} \\ \hline 30^{\circ}\text{C}^{3)}  /  50^{\circ}\text{C}^{4)} \end{array}$	[kN] [kN] [kN] [kN] [kN] [kN] [kN]	Inside / ≥ 50 <sup>5)</sup> 0.6 0.5 0.9 0.6 0.9 0.9 0.9 0.9 1.2	Outside           = 70           1.2           1.2           1.5           1.5           2.0           2.0           2.5	Inside / ≥ 50 <sup>5)</sup> 0.5 0.4 0.6 0.5 0.6 0.5 0.5 0.9	Outside = 70 0.9 1.2 1.2 1.5 1.5 2.0
Installationsside <sup>6)</sup> Overall plastic anchor embedment depth Sand-lime perforated brick KS L, $f_b \ge 6 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Sand-lime perforated brick KS L, $f_b \ge 8 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Sand-lime perforated brick KS L, $f_b \ge 10 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Sand-lime perforated brick KS L, $f_b \ge 12 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Sand-lime perforated brick KS L, $f_b \ge 12 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Sand-lime perforated brick KS L, $f_b \ge 12 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$	$\begin{array}{c} 30^{\circ}\mathrm{C}^{3)}  /  50^{\circ}\mathrm{C}^{4)} \\ \hline 50^{\circ}\mathrm{C}^{3)}  /  80^{\circ}\mathrm{C}^{4)} \\ \hline 30^{\circ}\mathrm{C}^{3)}  /  50^{\circ}\mathrm{C}^{4)} \\ \hline 50^{\circ}\mathrm{C}^{3)}  /  80^{\circ}\mathrm{C}^{4)} \\ \hline 30^{\circ}\mathrm{C}^{3)}  /  50^{\circ}\mathrm{C}^{4)} \\ \hline 50^{\circ}\mathrm{C}^{3)}  /  80^{\circ}\mathrm{C}^{4)} \\ \hline 50^{\circ}\mathrm{C}^{3)}  /  80^{\circ}\mathrm{C}^{4)} \\ \hline 50^{\circ}\mathrm{C}^{3)}  /  80^{\circ}\mathrm{C}^{4)} \\ \hline \end{array}$	[kN] [kN] [kN] [kN] [kN] [kN] [kN]	Inside / ≥ 50 <sup>5)</sup> 0.6 0.5 0.9 0.6 0.9 0.9 0.9 1.2 0.9	Outside           = 70           1.2           1.2           1.5           2.0           2.0           2.5           2.5	Inside / ≥ 50 <sup>5)</sup> 0.5 0.4 0.6 0.5 0.6 0.5 0.6 0.5 0.9 0.75	Outside = 70 0.9 1.2 1.2 1.5 1.5 2.0 2.0
Installationsside <sup>6)</sup> Overall plastic anchor embedment depth Sand-lime perforated brick KS L, $f_b \ge 6 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Sand-lime perforated brick KS L, $f_b \ge 8 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Sand-lime perforated brick KS L, $f_b \ge 10 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Sand-lime perforated brick KS L, $f_b \ge 12 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Sand-lime perforated brick KS L, $f_b \ge 12 \text{ N/mm}^2$	$\begin{array}{c} 30^{\circ}\mathrm{C}^{3)}  /  50^{\circ}\mathrm{C}^{4)} \\ \hline 50^{\circ}\mathrm{C}^{3)}  /  80^{\circ}\mathrm{C}^{4)} \\ \hline 30^{\circ}\mathrm{C}^{3)}  /  50^{\circ}\mathrm{C}^{4)} \\ \hline 50^{\circ}\mathrm{C}^{3)}  /  80^{\circ}\mathrm{C}^{4)} \\ \hline 30^{\circ}\mathrm{C}^{3)}  /  50^{\circ}\mathrm{C}^{4)} \\ \hline 50^{\circ}\mathrm{C}^{3)}  /  80^{\circ}\mathrm{C}^{4)} \\ \hline 30^{\circ}\mathrm{C}^{3)}  /  50^{\circ}\mathrm{C}^{4)} \\ \hline 30^{\circ}\mathrm{C}^{3)}  /  50^{\circ}\mathrm{C}^{4)} \\ \hline 50^{\circ}\mathrm{C}^{3)}  /  80^{\circ}\mathrm{C}^{4)} \\ \hline \end{array}$	[kN] [kN] [kN] [kN] [kN] [kN] [kN] [kN]	Inside / ≥ 50 <sup>5)</sup> 0.6 0.5 0.9 0.6 0.9 0.9 0.9 1.2 0.9 1.2 0.9 1.5	Outside         = 70         1.2         1.2         1.5         1.5         2.0         2.0         2.5         2.5         2.5         2.5         2.5         2.5         2.5	Inside / ≥ 50 <sup>5)</sup> 0.5 0.4 0.6 0.5 0.6 0.5 0.9 0.75 0.9	Outside = 70 0.9 1.2 1.2 1.5 2.0 2.0 2.5 2.5

#### Deutsches Institut für Bautechnik

Description of brick	71-2-005, 771-2-013		KS L	
Type of brick		Sand	I-lime perfora	ated brick
Bulk density $p \ge 1$	[kg/dm³]		1.4	
Standard, approval	[	DIN V 106	6:2005-10: E	N 771-2:2011
Producer of brick			ella Deutschl	
Format (measurement)	[mm]	≥ 8	DF (≥ 248x24	40x238)
Minimum thickness of member h <sub>min</sub> =	[mm]		240	
2000	}			
able C 10.39.2: Installation parameters				
Anchor size	2) I	W-UR	8	W-UR 10
Anchor size		W-UR Inside / Outside	10	W-UR 10 Inside / Outside
Anchor size Installationsside <sup>6)</sup> Drill hole diameter d <sub>0</sub> =	[mm]	Inside / Outside 8	Reveal	Inside / Outside 10
Anchor size         Installationsside <sup>6)</sup> Drill hole diameter $d_0 =$ Cutting diameter of drill bit $d_{cut} \leq$	[mm]	Inside / Outside 8 8.45	Reveal	Inside / Outside 10 10.45
$\begin{tabular}{lllllllllllllllllllllllllllllllllll$	[mm] [mm]	Inside / Outside 8 8.45 80	Reveal	Inside / Outside 10 10.45 80
$\begin{tabular}{lllllllllllllllllllllllllllllllllll$	[mm] [mm] [-]	Inside / Outside 8 8.45 80 Rotary dr	Reveal	Inside / Outside 10 10.45 80 Rotary drilling
$\begin{tabular}{lllllllllllllllllllllllllllllllllll$	[mm] [mm] [-] [mm]	Inside / Outside 8 8.45 80 Rotary dr 70	Reveal	Inside / Outside 10 10.45 80 Rotary drilling 70
$\begin{array}{llllllllllllllllllllllllllllllllllll$	[mm] [mm] [-] [mm] [mm]	Inside / Outside 8 8.45 80 Rotary dr 70 8.5	Reveal	Inside / Outside 10 10.45 80 Rotary drilling 70 10.5
$\begin{array}{l} \mbox{Anchor size} \\ \hline \mbox{Installationsside}^{6)} \\ \hline \mbox{Drill hole diameter} & d_0 = \\ \hline \mbox{Cutting diameter of drill bit} & d_{cut} \leq \\ \hline \mbox{Depth of drill hole to deepest point} & h_1 \geq \\ \hline \mbox{Drill method} & \\ \hline \mbox{Overall plastic anchor embedment depth} & h_{nom} = \\ \hline \mbox{Diameter of clearance hole in the fixture} & d_f \leq \\ \hline \mbox{Minimum allowable edge distance} & \hline \mbox{C}_{min} \geq \\ \hline \mbox{Fable C 10.39.3: Characteristic resistance } F_{Rk}^{1)} \mbox{ in [kN] for single} \\ \hline \end{array}$	[mm] [mm] [-] [mm] [mm] [mm]	Inside / Outside 8 8.45 80 Rotary dr 70 8.5 60	Reveal illing 45	Inside / Outside 10 10.45 80 Rotary drilling 70 10.5 100
$\begin{array}{l} \mbox{Anchor size} \\ \hline \mbox{Installationsside}^{6)} \\ \hline \mbox{Drill hole diameter} & d_0 = \\ \hline \mbox{Cutting diameter of drill bit} & d_{cut} \leq \\ \hline \mbox{Cutting diameter of drill bit} & d_{cut} \leq \\ \hline \mbox{Depth of drill hole to deepest point} & h_1 \geq \\ \hline \mbox{Drill method} & \\ \hline \mbox{Overall plastic anchor embedment depth} & h_{nom} = \\ \hline \mbox{Diameter of clearance hole in the fixture} & d_f \leq \\ \hline \mbox{Minimum allowable edge distance} & c_{min} \geq \\ \hline \mbox{Fable C 10.39.3: Characteristic resistance $F_{Rk}^{1}$ in [kN] for sing $Anchor size} \\ \hline \end{array}$	[mm] [mm] [-] [mm] [mm] [mm]	Inside / Outside 8 8.45 80 Rotary dr 70 8.5 60 <b>W-UR</b>	Reveal illing 45	Inside / Outside 10 10.45 80 Rotary drilling 70 10.5 100 W-UR 10
$\begin{array}{l} \mbox{Anchor size} \\ \hline \mbox{Installationsside}^{6)} \\ \hline \mbox{Drill hole diameter} & d_0 = \\ \hline \mbox{Cutting diameter of drill bit} & d_{cut} \leq \\ \hline \mbox{Cutting diameter of drill bit} & d_{cut} \leq \\ \hline \mbox{Depth of drill hole to deepest point} & h_1 \geq \\ \hline \mbox{Drill method} & \\ \hline \mbox{Overall plastic anchor embedment depth} & h_{nom} = \\ \hline \mbox{Diameter of clearance hole in the fixture} & d_f \leq \\ \hline \mbox{Minimum allowable edge distance} & c_{min} \geq \\ \hline \mbox{Fable C 10.39.3: Characteristic resistance $F_{Rk}^{1}$ in [kN] for sing $Anchor size} \\ \hline \mbox{Installationsside}^{6)} \end{array}$	[mm] [mm] [-] [mm] [mm] [mm]	Inside / Outside 8 8.45 80 Rotary dr 70 8.5 60	Reveal illing 45	Inside / Outside 10 10.45 80 Rotary drilling 70 10.5 100 W-UR 10
Anchor size         Installationsside <sup>6)</sup> Drill hole diameter $d_0$ =         Cutting diameter of drill bit $d_{cut} \leq$ Depth of drill hole to deepest point $h_1 \geq$ Drill method       0         Overall plastic anchor embedment depth $h_{nom}$ =         Diameter of clearance hole in the fixture $d_f \leq$ Minimum allowable edge distance $c_{min} \geq$ Fable C 10.39.3: Characteristic resistance $F_{Rk}^{1}$ in [kN] for sing         Anchor size       Installationsside <sup>6</sup> Sand-lime perforated brick KS L, $30^{\circ}C^{3} / 50^{\circ}C^{4}$	[mm] [mm] [-] [mm] [mm] [mm]	Inside / Outside 8 8.45 80 Rotary dr 70 8.5 60 <b>W-UR</b>	Reveal illing 45 8	Inside / Outside 10 10.45 80 Rotary drilling 70 10.5 100 <b>W-UR 10</b>
Anchor size         Installationsside <sup>6)</sup> Drill hole diameter $d_0 =$ Cutting diameter of drill bit $d_{cut} \leq$ Depth of drill hole to deepest point $h_1 \geq$ Drill method       0         Overall plastic anchor embedment depth $h_{nom} =$ Diameter of clearance hole in the fixture $d_f \leq$ Minimum allowable edge distance $c_{min} \geq$ Table C 10.39.3: Characteristic resistance $F_{Rk}^{11}$ in [kN] for sing         Anchor size       Installationsside <sup>6)</sup> Sand-lime perforated brick KS L, $f_b \geq 6$ N/mm <sup>2</sup> $30^{\circ}C^{3} / 50^{\circ}C^{4}$	[mm] [mm] [-] [mm] [mm] [mm] gle anchor	Inside / Outside 8 8.45 80 Rotary dr 70 8.5 60 <b>W-UR</b> Inside / Outside	Reveal illing 45 8 Reveal	Inside / Outside 10 10.45 80 Rotary drilling 70 10.5 100 <b>W-UR 10</b> Inside / Outside
Anchor size         Installationsside <sup>6)</sup> Drill hole diameter $d_0$ =         Cutting diameter of drill bit $d_{cut} \leq$ Depth of drill hole to deepest point $h_1 \geq$ Drill method       0         Overall plastic anchor embedment depth $h_{nom}$ =         Diameter of clearance hole in the fixture $d_f \leq$ Minimum allowable edge distance $c_{min} \geq$ Table C 10.39.3: Characteristic resistance $F_{Rk}^{1)}$ in [kN] for sing         Anchor size         Installationsside <sup>6)</sup> Sand-lime perforated brick KS L, $30^\circ C^{3} / 50^\circ C^{4)}$	[mm] [mm] [-] [mm] [mm] gle anchor	Inside / Outside 8 8.45 80 Rotary dr 70 8.5 60 <b>W-UR</b> Inside / Outside 0.9	Reveal illing 45 8 Reveal 0.9	Inside / Outside 10 10.45 80 Rotary drilling 70 10.5 100 <b>W-UR 10</b> Inside / Outside 0.9

50°C<sup>3)</sup> / 80°C<sup>4)</sup>

30°C<sup>3)</sup> / 50°C<sup>4)</sup>

50°C<sup>3)</sup> / 80°C<sup>4)</sup>

30°C<sup>3)</sup> / 50°C<sup>4)</sup>

50°C<sup>3)</sup> / 80°C<sup>4)</sup>

30°C<sup>3)</sup> / 50°C<sup>4)</sup>

50°C<sup>3)</sup> / 80°C<sup>4)</sup>

γ<sub>Mm</sub><sup>2)</sup>

[kN]

[kN]

[kN]

[kN]

[kN]

[kN]

[kN]

[-]

0.9

1.5

0.9

1.5

1.2

2.0

1.5

2.5

1.2

1.5

1.5

2.0

2.0

2.0

2.0

Footnotes see Annex C 3

Partial safety factor

### Würth Plastic Anchor W-UR

Performances

f<sub>b</sub> ≥ 8 N/mm<sup>2</sup>

 $f_b \ge 10 \text{ N/mm}^2$ 

 $f_b \ge 12 \text{ N/mm}^2$ 

 $f_b \ge 16 \text{ N/mm}^2$ 

Characteristic resistance F<sub>Rk</sub> Sand-lime perforated brick KS L,

Characteristic resistance F<sub>Rk</sub> Sand-lime perforated brick KS L,

Characteristic resistance F<sub>Rk</sub> Sand-lime perforated brick KS L,

Characteristic resistance F<sub>Rk</sub>

Sand-lime perforated brick: KS L, 8DF

Brick data, installation parameters, characteristic resistance

Annex C 49

0.9

1.5

1.2

2.0

1.5

2.5

2.0

2.5



Description of brick	771-2-001		KS L	
ype of brick			Sand-lime perfor	ated brick
Bulk density	<i>ρ</i> ≥	[kg/dm³]	1.4	
Standard, approval	р <u>–</u>	[	DIN V 106:2005-10; E	EN 771-2:2011
Producer of brick			-	
ormat (measurement)		[mm]	≥ 12DF (≥ 373x2	240x238)
Ainimum thickness of member	h <sub>min</sub> =	[mm]	240	,
	90 90 90 90 90 90 90 90 90 90 90 90 90 9		240	
able C 10.40.2: Installation parameters	11 1		1	
Anchor size			W-UR 8	
nstallationsside <sup>6)</sup>			Inside / Outside	Reval
Drill hole diameter	d <sub>0</sub> =	[mm]	8	
Cutting diameter of drill bit	$d_{cut} \leq$	[mm]	8.45	
Depth of drill hole to deepest point	$h_1 \geq$	[mm]	60	80
Drill method		[-]	Rotary drill	ling
Overall plastic anchor embedment depth	h <sub>nom</sub> =	[mm]	50	70
Diameter of clearance hole in the fixture	$d_{f} \leq$	[mm]	8.5	
Diameter of clearance hole in the fixture Ainimum allowable edge distance	d <sub>f</sub> ≤ c <sub>min</sub> ≥	[mm] [mm]	8.5 100	50
/inimum allowable edge distance	C <sub>min</sub> ≥	[mm]		50
Ainimum allowable edge distance able C 10.40.3: Characteristic resistance	C <sub>min</sub> ≥	[mm]	100	
Ainimum allowable edge distance Able C 10.40.3: Characteristic resistance Anchor size	C <sub>min</sub> ≥	[mm]	100 W-UR 8	3
Ainimum allowable edge distance able C 10.40.3: Characteristic resistance Anchor size Installationsside <sup>6)</sup>	c <sub>min</sub> ≥ F <sub>Rk</sub> <sup>1)</sup> in [kN] for sing	[mm] jle anchor	100 W-UR 8 Inside / Outside	Reveal
Ainimum allowable edge distance able C 10.40.3: Characteristic resistance Anchor size Installationsside <sup>6)</sup> Overall plastic anchor embedment depth	c <sub>min</sub> ≥ F <sub>Rk</sub> <sup>1)</sup> in [kN] for sing h <sub>nom</sub>	[mm] gle anchor [mm]	$\frac{100}{W-UR 8}$ Inside / Outside $50 \text{ mm} \le h_{nom} \le 70 \text{ mm}^{5}$	Reveal <b>= 70</b>
Ainimum allowable edge distance able C 10.40.3: Characteristic resistance Anchor size Installationsside <sup>6)</sup> Overall plastic anchor embedment depth Sand-lime perforated brick KS L,	c <sub>min</sub> ≥ F <sub>Rk</sub> <sup>1)</sup> in [kN] for sing 	[mm] jle anchor	100 W-UR 8 Inside / Outside	Reveal
Ainimum allowable edge distance able C 10.40.3: Characteristic resistance Anchor size Installationsside <sup>6)</sup> Overall plastic anchor embedment depth	c <sub>min</sub> ≥ F <sub>Rk</sub> <sup>1)</sup> in [kN] for sing h <sub>nom</sub>	[mm] gle anchor [mm]	$\frac{100}{W-UR 8}$ Inside / Outside $50 \text{ mm} \le h_{nom} \le 70 \text{ mm}^{5}$	Reveal <b>= 70</b>
An Antipart	$c_{min} ≥$ $F_{Rk}^{(1)}$ in [kN] for sing $h_{nom}$ $30^{\circ}C^{(3)} / 50^{\circ}C^{(4)}$ $50^{\circ}C^{(3)} / 80^{\circ}C^{(4)}$	[mm] gle anchor [mm] [kN] [kN]	100         W-UR 8         Inside / Outside         50 mm $\leq$ h <sub>nom</sub> $\leq$ 70 mm <sup>5</sup> )         0.6         0.5	Reveal = <b>70</b> 0.9 0.75
Aninimum allowable edge distance able C 10.40.3: Characteristic resistance Anchor size Installationsside <sup>6)</sup> Overall plastic anchor embedment depth Sand-lime perforated brick KS L, $_{b} \ge 6 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Sand-lime perforated brick KS L, $_{b} \ge 8 \text{ N/mm}^2$	$c_{min} ≥$ $F_{Rk}^{(1)}$ in [kN] for sing $h_{nom}$ $30^{\circ}C^{(3)} / 50^{\circ}C^{(4)}$ $50^{\circ}C^{(3)} / 80^{\circ}C^{(4)}$ $30^{\circ}C^{(3)} / 50^{\circ}C^{(4)}$	[mm] Jle anchor [mm] [kN] [kN] [kN]	100         W-UR 8         Inside / Outside         50 mm $\leq$ h <sub>nom</sub> $\leq$ 70 mm <sup>5</sup> )         0.6         0.5         0.9	Reveal = 70 0.9 0.75 1.2
Animum allowable edge distance able C 10.40.3: Characteristic resistance Anchor size Installationsside <sup>6)</sup> Overall plastic anchor embedment depth Sand-lime perforated brick KS L, b $\geq$ 6 N/mm <sup>2</sup> Characteristic resistance F <sub>Rk</sub> Sand-lime perforated brick KS L, b $\geq$ 8 N/mm <sup>2</sup> Characteristic resistance F <sub>Rk</sub>	$\begin{array}{c} {c_{min}} \geq \\ \hline {F_{Rk}}^{1)} \text{ in [kN] for sing} \\ \hline \\ \hline \\ \hline \\ & \\ \hline \\ \hline \\ & \\ \hline \\ \\ & \\ \hline \\ \\ & \\ \hline \\ \\ \hline \\ \\ \\ \hline \\ \\ \\ \hline \\ \hline \\ \\ \hline \\ \\ \hline \\ \hline \\ \\ \hline \\ \hline \\ \\ \hline \\ \hline \\ \hline \\ \hline \\ \\ \hline \hline \\ \hline \\ \hline \hline \\ \hline \\ \hline \hline \\ \hline \\ \hline \\ \hline \hline \\ \hline \\ \hline \hline \\ \hline \\ \hline \hline \\ \hline \hline \\ \hline \\ \hline \\ \hline \hline \\ \hline \hline \\ \hline \\ \hline \hline \hline \\ \hline \hline \hline \\ \hline \hline \hline \hline \\ \hline $	[mm] gle anchor [mm] [kN] [kN]	100         W-UR 8         Inside / Outside         50 mm $\leq$ h <sub>nom</sub> $\leq$ 70 mm <sup>5</sup> )         0.6         0.5	Reveal = <b>70</b> 0.9 0.75
Aninimum allowable edge distance able C 10.40.3: Characteristic resistance Anchor size Installationsside <sup>6)</sup> Overall plastic anchor embedment depth Sand-lime perforated brick KS L, $b \ge 6 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Sand-lime perforated brick KS L, $b \ge 8 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Sand-lime perforated brick KS L, $b \ge 8 \text{ N/mm}^2$	$c_{min} ≥$ $F_{Rk}^{(1)}$ in [kN] for sing $h_{nom}$ $30^{\circ}C^{(3)} / 50^{\circ}C^{(4)}$ $50^{\circ}C^{(3)} / 80^{\circ}C^{(4)}$ $30^{\circ}C^{(3)} / 50^{\circ}C^{(4)}$	[mm] Jle anchor [mm] [kN] [kN] [kN]	100         W-UR 8         Inside / Outside         50 mm $\leq$ h <sub>nom</sub> $\leq$ 70 mm <sup>5</sup> )         0.6         0.5         0.9	Reveal = 70 0.9 0.75 1.2
Aninimum allowable edge distance able C 10.40.3: Characteristic resistance Anchor size Installationsside <sup>6)</sup> Overall plastic anchor embedment depth Sand-lime perforated brick KS L, $b \ge 6 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Sand-lime perforated brick KS L, $b \ge 8 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Sand-lime perforated brick KS L, $b \ge 8 \text{ N/mm}^2$	$c_{min} ≥$ $F_{Rk}^{11}$ in [kN] for sing $h_{nom}$ $30^{\circ}C^{3} / 50^{\circ}C^{41}$ $50^{\circ}C^{3} / 80^{\circ}C^{41}$ $30^{\circ}C^{3} / 50^{\circ}C^{41}$ $50^{\circ}C^{3} / 80^{\circ}C^{41}$ $50^{\circ}C^{3} / 50^{\circ}C^{41}$	[mm] jle anchor [mm] [kN] [kN] [kN] [kN] [kN]	100         W-UR 8         Inside / Outside         50 mm $\leq$ h <sub>nom</sub> $\leq$ 70 mm <sup>5</sup> )         0.6         0.5         0.9         0.6         0.9         0.9         0.9	Reveal = 70 0.9 0.75 1.2 0.9 1.5
Aninimum allowable edge distance able C 10.40.3: Characteristic resistance Anchor size Installationsside <sup>6)</sup> Overall plastic anchor embedment depth Sand-lime perforated brick KS L, $_{b} \ge 6 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Sand-lime perforated brick KS L, $_{b} \ge 8 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Sand-lime perforated brick KS L, $_{b} \ge 8 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Sand-lime perforated brick KS L, $_{b} \ge 10 \text{ N/mm}^2$	$\begin{array}{c} {c_{min}} \geq \\ \hline {F_{Rk}}^{1)} \text{ in [kN] for sing} \\ \hline \\ \hline \\ & \\ \hline \\ \\ \hline \\ \\ \\ \hline \\ \hline \\ \hline \\ \\ \hline \hline \\ \hline \\ \hline \\ \hline \hline \\ \hline \hline \\ \hline \\ \hline \\ \hline \hline \\ \hline \\ \hline \hline \hline \\ \hline \hline \\ \hline \hline \\ \hline \hline \hline \\ \hline \hline \\ \hline \hline \\ \hline \hline \hline \\ \hline \hline \\ \hline \hline \\ \hline \hline \hline \\ \hline \hline \\ \hline \hline \hline \\ \hline \hline \\ \hline \hline \hline \hline \\ \hline \hline \hline \\ \hline \hline \\ \hline \hline \hline \hline \hline \\ \hline \hline \hline \hline \\ \hline \hline \hline \hline \hline \hline \hline \\ \hline \hline \hline \hline \hline \hline \hline \hline \hline $	[mm] <b>jle anchor</b> [mm] [kN] [kN] [kN] [kN] [kN] [kN]	100         W-UR 8         Inside / Outside         50 mm $\leq$ h <sub>nom</sub> $\leq$ 70 mm <sup>5</sup> )         0.6         0.5         0.9         0.6         0.9         0.6         0.9         0.6         0.9         0.6         0.9         0.6	Reveal = 70 0.9 0.75 1.2 0.9 1.5 1.2
Aninimum allowable edge distance able C 10.40.3: Characteristic resistance Anchor size Installationsside <sup>6)</sup> Overall plastic anchor embedment depth Sand-lime perforated brick KS L, $b \ge 6 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Sand-lime perforated brick KS L, $b \ge 8 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Sand-lime perforated brick KS L, $b \ge 10 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Sand-lime perforated brick KS L, $b \ge 10 \text{ N/mm}^2$	$\begin{array}{c} {c_{min}} \geq \\ \hline {F_{Rk}}^{1)} \text{ in [kN] for sing} \\ \hline \\ \hline \\ & \\ \hline \\ \\ \hline \\ \hline \\ \\ \hline \\ \hline \\ \hline \\ \\ \hline \\ \\ \hline \hline \\ \hline \hline \\ \hline \\ \hline \\ \hline \hline \\ \hline \\ \hline \\ \hline \\ \hline \\ \hline \\ \hline \hline \\ \hline \hline \hline \\ \hline \hline \hline \\ \hline \hline \hline \\ \hline \hline \hline \\ \hline \hline \hline \hline \\ \hline \hline \hline \hline \hline \hline \\ \hline \hline $	[mm] jle anchor [mm] [kN] [kN] [kN] [kN] [kN]	100         W-UR 8         Inside / Outside         50 mm $\leq$ h <sub>nom</sub> $\leq$ 70 mm <sup>5</sup> )         0.6         0.5         0.9         0.6         0.9         0.9         0.9	Reveal = 70 0.9 0.75 1.2 0.9 1.5
Aninimum allowable edge distance able C 10.40.3: Characteristic resistance Anchor size Installationsside <sup>6)</sup> Overall plastic anchor embedment depth Sand-lime perforated brick KS L, $_{b} \ge 6 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Sand-lime perforated brick KS L, $_{b} \ge 8 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Sand-lime perforated brick KS L, $_{b} \ge 8 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Sand-lime perforated brick KS L, $_{b} \ge 10 \text{ N/mm}^2$	$\begin{array}{c} {c_{min}} \geq \\ \hline {F_{Rk}}^{1)} \text{ in [kN] for sing} \\ \hline \\ \hline \\ & \\ \hline \\ \\ \hline \\ \\ \\ \hline \\ \hline \\ \hline \\ \\ \hline \hline \\ \hline \\ \hline \\ \hline \hline \\ \hline \hline \\ \hline \\ \hline \\ \hline \hline \\ \hline \\ \hline \hline \hline \\ \hline \hline \\ \hline \hline \\ \hline \hline \hline \\ \hline \hline \\ \hline \hline \\ \hline \hline \hline \\ \hline \hline \\ \hline \hline \\ \hline \hline \hline \\ \hline \hline \\ \hline \hline \hline \\ \hline \hline \\ \hline \hline \hline \hline \\ \hline \hline \hline \\ \hline \hline \\ \hline \hline \hline \hline \hline \\ \hline \hline \hline \hline \\ \hline \hline \hline \hline \hline \hline \hline \\ \hline \hline \hline \hline \hline \hline \hline \hline \hline $	[mm] <b>jle anchor</b> [mm] [kN] [kN] [kN] [kN] [kN] [kN]	100         W-UR 8         Inside / Outside         50 mm $\leq$ h <sub>nom</sub> $\leq$ 70 mm <sup>5</sup> )         0.6         0.5         0.9         0.6         0.9         0.6         0.9         0.6         0.9         0.6         0.9         0.6	Reveal = 70 0.9 0.75 1.2 0.9 1.5 1.2
Animum allowable edge distance         Able C 10.40.3: Characteristic resistance         Anchor size         Installationsside <sup>6)</sup> Overall plastic anchor embedment depth         Sand-lime perforated brick KS L, $b \ge 6$ N/mm <sup>2</sup> Characteristic resistance $F_{Rk}$ Sand-lime perforated brick KS L, $b \ge 8$ N/mm <sup>2</sup> Characteristic resistance $F_{Rk}$ Sand-lime perforated brick KS L, $b \ge 10$ N/mm <sup>2</sup> Characteristic resistance $F_{Rk}$ Sand-lime perforated brick KS L, $b \ge 10$ N/mm <sup>2</sup> Characteristic resistance $F_{Rk}$ Sand-lime perforated brick KS L, $b \ge 10$ N/mm <sup>2</sup>	$\begin{array}{c} c_{min} \geq \\ \hline F_{Rk}{}^{1)} \text{ in [kN] for sing} \\ \hline \\ \hline \\ \hline \\ & \\ \hline \\ \\ \\ \\ \hline \hline \\ \hline \\ \hline \hline $	[mm] jle anchor [mm] [kN] [kN] [kN] [kN] [kN] [kN] [kN] [kN]	100         W-UR 8         Inside / Outside         50 mm $\leq$ h <sub>nom</sub> $\leq$ 70 mm <sup>5</sup> )         0.6         0.9         0.6         0.9         0.6         0.9         0.6         0.9         0.6         0.9         0.6         0.9         0.6         0.9         0.6         0.9         0.6         0.9         0.6         0.9         0.6         0.9	Reveal = 70 0.9 0.75 1.2 0.9 1.5 1.2 2.0 1.5
Aninimum allowable edge distance able C 10.40.3: Characteristic resistance Anchor size Installationsside <sup>6)</sup> Overall plastic anchor embedment depth Sand-lime perforated brick KS L, b $\geq$ 6 N/mm <sup>2</sup> Characteristic resistance F <sub>Rk</sub> Sand-lime perforated brick KS L, b $\geq$ 8 N/mm <sup>2</sup> Characteristic resistance F <sub>Rk</sub> Sand-lime perforated brick KS L, b $\geq$ 10 N/mm <sup>2</sup> Characteristic resistance F <sub>Rk</sub> Sand-lime perforated brick KS L, b $\geq$ 10 N/mm <sup>2</sup> Characteristic resistance F <sub>Rk</sub> Sand-lime perforated brick KS L, b $\geq$ 10 N/mm <sup>2</sup> Characteristic resistance F <sub>Rk</sub> Sand-lime perforated brick KS L, b $\geq$ 12 N/mm <sup>2</sup> Characteristic resistance F <sub>Rk</sub>	$\begin{array}{c} {c_{min}} \geq \\ \hline {F_{Rk}}^{1)} \text{ in [kN] for sing} \\ \hline \\ \hline \\ & \\ \hline \\ \\ & \\ \hline \\ \\ & \\ \hline \\ \\ \hline \\ \\ & \\ \hline \\ \hline \\ \\ \hline \\ \hline \\ \\ \hline \\ \hline \\ \hline \\ \\ \hline \\ \hline \\ \\ \hline \\ \hline \\ \hline \\ \\ \hline \\ \\ \hline \hline \\ \hline \\ \hline \\ \hline \\ \hline \\ \hline \hline \\ \hline \\ \hline \hline \\ \hline \\ \hline \hline \\ \hline \hline \\ \hline \hline \\ \hline \\ \hline \hline \hline \\ \hline \hline \\ \hline \hline \\ \hline \hline \hline \hline \hline \\ \hline \hline \hline \hline \hline \hline \hline \hline \\ \hline \hline \hline \hline \hline \hline \hline \hline \\ \hline \hline$	[mm] [mm] [kN] [kN] [kN] [kN] [kN] [kN] [kN] [kN] [kN] [kN]	100         W-UR 8         Inside / Outside         50 mm $\leq$ h <sub>nom</sub> $\leq$ 70 mm <sup>5</sup> )         0.6         0.5         0.9         0.6         0.9         0.6         0.9         0.6         0.9         0.6         0.9         0.6         1.2         0.9         1.5	Reveal = 70 0.9 0.75 1.2 0.9 1.5 1.2 2.0 1.5 2.0
Animum allowable edge distance able C 10.40.3: Characteristic resistance Anchor size Installationsside <sup>6)</sup> Overall plastic anchor embedment depth Sand-lime perforated brick KS L, b $\geq$ 6 N/mm <sup>2</sup> Characteristic resistance F <sub>Rk</sub> Sand-lime perforated brick KS L, b $\geq$ 8 N/mm <sup>2</sup> Characteristic resistance F <sub>Rk</sub> Sand-lime perforated brick KS L, b $\geq$ 10 N/mm <sup>2</sup> Characteristic resistance F <sub>Rk</sub> Sand-lime perforated brick KS L, b $\geq$ 10 N/mm <sup>2</sup> Characteristic resistance F <sub>Rk</sub> Sand-lime perforated brick KS L, b $\geq$ 12 N/mm <sup>2</sup> Characteristic resistance F <sub>Rk</sub> Sand-lime perforated brick KS L,	$\begin{array}{c} c_{min} \geq \\ \hline F_{Rk}{}^{1)} \text{ in [kN] for sing} \\ \hline \\ \hline \\ \hline \\ & \\ \hline \\ \\ \\ \\ \hline \hline \\ \hline \\ \hline \hline $	[mm] [mm] [kN] [kN] [kN] [kN] [kN] [kN] [kN] [kN] [kN] [kN] [kN]	100         W-UR 8         Inside / Outside         50 mm $\leq$ h <sub>nom</sub> $\leq$ 70 mm <sup>5</sup> )         0.6         0.9         0.6         0.9         0.6         0.9         0.6         0.9         0.6         0.9         0.6         0.9         0.6         0.9         0.6         0.9         0.6         0.9         0.6         0.9         0.6         0.9	Reveal = 70 0.9 0.75 1.2 0.9 1.5 1.2 2.0 1.5

Performances Sand-lime perforated brick: KS L, 12DF

Brick data, installation parameters, characteristic resistance



Description of brick	771-2-001			K	(S L	
Type of brick			-	Sand-lime p		brick
Bulk density	$\rho \geq$	[kg/dm³]			1.4	
Standard, approval	р <u>–</u>	[		DIN V 106:2005		71-2:2011
Producer of brick					-	
Format (measurement)		[mm]		≥ 12DF (≥	373x240x	238)
Minimum thickness of member	h <sub>min</sub> =	[mm]		1	240	
				240		
able C 10.40.5: Installation parameters		140				
Anchor size					UR 10	,
Installationsside <sup>6)</sup>				Inside	/ Outside	
Drill hole diameter	d <sub>0</sub> =	[mm]			10	
Cutting diameter of drill bit	d <sub>cut</sub> ≤	[mm]	_		0.45	
Depth of drill hole to deepest point	h₁≥	[mm]		60 Data		80
Drill method	h	[-]	_		ry drilling	70
Overall plastic anchor embedment depth Diameter of clearance hole in the fixture	h <sub>nom</sub> =	[mm]		50	10.5	70
Spacing perpendicular to free edge	d <sub>f</sub> ≤	[mm] [mm]		10.5 120 100		100
Spacing perpendicular to nee edge	S <sub>1,min</sub> S <sub>2,min</sub>	[mm]		240		100
Minimum allowable edge distance	C <sub>min</sub> ≥	[mm]	-	60		100
able C 10.40.6: Characteristic resistance F <sub>Rk</sub> <sup>1)</sup> in Anchor size nstallationsside <sup>6)</sup>	[kN] for sing				W-UR 10 ide / Outs	ide
Overall plastic anchor embedment depth		h <sub>nom</sub>	[mm]	50 mm ≤ h <sub>nom</sub> ≤	70 mm⁵)	= 70
Sand-lime perforated brick KS L, $f_b \ge 6 N/mm^2$	30°C <sup>3)</sup>	/ 50°C <sup>4)</sup>	[kN]	0.4		0.9
Characteristic resistance F <sub>Rk</sub>		/ 80°C <sup>4)</sup>	[kN]	0.3		0.6
Sand-lime perforated brick KS L, $f_b \ge 8 N/mm^2$	30°C <sup>3)</sup>	/ 50°C <sup>4)</sup>	[kN]	0.5		1.2
Characteristic resistance F <sub>Rk</sub>	50°C <sup>3)</sup>	<sup>)</sup> / 80°C <sup>4)</sup>	[kN]	0.5		0.75
Sand-lime perforated brick KS L, $f_b \ge 10 \text{ N/mm}^2$	30°C <sup>3)</sup>	<sup>)</sup> / 50°C <sup>4)</sup>	[kN]	0.5		1.5
Characteristic resistance $F_{Rk}$	50°C <sup>3)</sup>	<sup>)</sup> / 80°C <sup>4)</sup>	[kN]	0.5		0.9
Sand-lime perforated brick KS L, $f_b \ge 12 \text{ N/mm}^2$		<sup>)</sup> / 50°C <sup>4)</sup>	[kN]	0.75		1.5
Characteristic resistance $F_{Rk}$		<sup>)</sup> / 80°C <sup>4)</sup>	[kN]	0.6		1.3
		<sup>)</sup> / 50°C <sup>4)</sup>		0.8		
Sand-lime perforated brick KS L, f <sub>b</sub> ≥ 16 N/mm <sup>2</sup> Characteristic resistance F <sub>Rk</sub>			[kN]			2.0
	50°C°,	<sup>)</sup> / 80°C <sup>4)</sup>	[kN]	0.6		1.5
Partial safety factor		γ <sub>Mm</sub> <sup>2)</sup>	[-]		2.5	
ootnotes see Annex C 3						
Vürth Plastic Anchor W-UR erformances and-lime perforated brick: KS L, 12DF					Ar	nex C 51

#### Page 66 of European Technical Assessment ETA-08/0190 of 5 September 2017



Description of brick 771-2-0	008		KSL	
Type of brick		Sand-lim	e perforated brick	
Bulk density β	o ≥ [kg/dm³]		1.4	
Standard, approval			05-10; EN 771-2:2011	
Draduces of briefs			eutschland GmbH	
Producer of brick			mmacher-Str.49 119 Duisburg	
Format (measurement)	[mm]	the second s	(≥ 373x175x249)	
Minimum thickness of member hmir			175	
able C 10.41.2: Installation parameters Anchor size			W-UR 8	
Installationsside <sup>6)</sup>			Inside / Outside	
Drill hole diameter	d <sub>0</sub> =	[mm]	8	
Cutting diameter of drill bit	d <sub>cut</sub> ≤	[mm]	8.45	
Depth of drill hole to deepest point	$h_1 \ge$	[mm]	80 Deters drilling	
Drill method Overall plastic anchor embedment depth	h <sub>nom</sub> =	[-] [mm]	Rotary drilling 70	
Diameter of clearance hole in the fixture	d <sub>f</sub> ≤	[mm]	8.5	
Minimum allowable edge distance	C <sub>min</sub> ≥	[mm]	100	
able C 10.41.3: Characteristic resistance F <sub>Rk</sub> <sup>1)</sup> in [kN] for s	ingle anchor			
Anchor size			W-UR 8	
			W-UR 8 Inside / Outside	
Anchor size	h <sub>nom</sub> =	[mm]		
Anchor size Installationsside <sup>6)</sup> Overall plastic anchor embedment depth Sand-lime perforated brick KS L, $f_b \ge 6 N/mm^2$		[mm] [kN]	Inside / Outside	
Anchor size Installationsside <sup>6)</sup> Overall plastic anchor embedment depth	h <sub>nom</sub> =		Inside / Outside <b>70</b>	
Anchor size         Installationsside <sup>6)</sup> Overall plastic anchor embedment depth         Sand-lime perforated brick KS L, $f_b \ge 6 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$	h <sub>nom</sub> = 30°C <sup>3)</sup> / 50°C <sup>4)</sup>	[kN]	Inside / Outside <b>70</b> 0.6	
Anchor size Installationsside <sup>6)</sup> Overall plastic anchor embedment depth Sand-lime perforated brick KS L, $f_b \ge 6 N/mm^2$	$h_{nom} = 30^{\circ}C^{3} / 50^{\circ}C^{4}$ $50^{\circ}C^{3} / 80^{\circ}C^{4}$	[kN] [kN]	Inside / Outside <b>70</b> 0.6 0.4	
Anchor size         Installationsside <sup>5)</sup> Overall plastic anchor embedment depth         Sand-lime perforated brick KS L, $f_b \ge 6 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Sand-lime perforated brick KS L, $f_b \ge 8 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$	$h_{nom} = \frac{1}{30^{\circ}C^{3}} / 50^{\circ}C^{4}}$ $50^{\circ}C^{3} / 80^{\circ}C^{4}}$ $30^{\circ}C^{3} / 50^{\circ}C^{4}}$	[kN] [kN] [kN] [kN]	Inside / Outside 70 0.6 0.4 0.75 0.6	
Anchor size         Installationsside <sup>6)</sup> Overall plastic anchor embedment depth         Sand-lime perforated brick KS L, $f_b \ge 6 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Sand-lime perforated brick KS L, $f_b \ge 8 \text{ N/mm}^2$	$h_{nom} = \frac{1}{30^{\circ}C^{3} / 50^{\circ}C^{4}}$ $50^{\circ}C^{3} / 80^{\circ}C^{4}}$ $30^{\circ}C^{3} / 50^{\circ}C^{4}$ $50^{\circ}C^{3} / 80^{\circ}C^{4}$ $30^{\circ}C^{3} / 50^{\circ}C^{4}$	[kN] [kN] [kN] [kN] [kN]	Inside / Outside 70 0.6 0.4 0.75 0.6 0.9	
Anchor size         Installationsside <sup>5)</sup> Overall plastic anchor embedment depth         Sand-lime perforated brick KS L, $f_b \ge 6 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Sand-lime perforated brick KS L, $f_b \ge 8 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Sand-lime perforated brick KS L, $f_b \ge 10 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$	$h_{nom} = \frac{1}{30^{\circ}C^{3} / 50^{\circ}C^{4}}$ $50^{\circ}C^{3} / 80^{\circ}C^{4}$ $30^{\circ}C^{3} / 50^{\circ}C^{4}$ $50^{\circ}C^{3} / 80^{\circ}C^{4}$ $30^{\circ}C^{3} / 50^{\circ}C^{4}$ $50^{\circ}C^{3} / 80^{\circ}C^{4}$	[kN] [kN] [kN] [kN] [kN] [kN]	Inside / Outside 70 0.6 0.4 0.75 0.6 0.9 0.75	
Anchor size         Installationsside <sup>5)</sup> Overall plastic anchor embedment depth         Sand-lime perforated brick KS L, $f_b \ge 6 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Sand-lime perforated brick KS L, $f_b \ge 8 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Sand-lime perforated brick KS L, $f_b \ge 10 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Sand-lime perforated brick KS L, $f_b \ge 10 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Sand-lime perforated brick KS L, $f_b \ge 10 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$	$\begin{array}{c c} h_{nom} = \\ \hline 30^{\circ}C^{3} / 50^{\circ}C^{4} \\ \hline 50^{\circ}C^{3} / 80^{\circ}C^{4} \\ \hline 30^{\circ}C^{3} / 50^{\circ}C^{4} \\ \hline 50^{\circ}C^{3} / 80^{\circ}C^{4} \\ \hline \end{array}$	[kN] [kN] [kN] [kN] [kN] [kN] [kN]	Inside / Outside 70 0.6 0.4 0.75 0.6 0.9 0.75 1.2	
Anchor size         Installationsside <sup>5)</sup> Overall plastic anchor embedment depth         Sand-lime perforated brick KS L, $f_b \ge 6 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Sand-lime perforated brick KS L, $f_b \ge 8 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Sand-lime perforated brick KS L, $f_b \ge 10 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$	$\begin{array}{c} h_{nom} = \\ 30^{\circ}C^{3)} / 50^{\circ}C^{4)} \\ 50^{\circ}C^{3)} / 80^{\circ}C^{4)} \\ 30^{\circ}C^{3)} / 50^{\circ}C^{4)} \\ 50^{\circ}C^{3)} / 80^{\circ}C^{4)} \\ 30^{\circ}C^{3)} / 50^{\circ}C^{4)} \\ 50^{\circ}C^{3)} / 80^{\circ}C^{4)} \\ 50^{\circ}C^{3)} / 80^{\circ}C^{4)} \\ 50^{\circ}C^{3)} / 50^{\circ}C^{4)} \\ 50^{\circ}C^{3)} / 80^{\circ}C^{4)} \\ \end{array}$	[kN] [kN] [kN] [kN] [kN] [kN] [kN] [kN]	Inside / Outside 70 0.6 0.4 0.75 0.6 0.9 0.75 1.2 0.9	
Anchor size         Installationsside <sup>5)</sup> Overall plastic anchor embedment depth         Sand-lime perforated brick KS L, $f_b \ge 6 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Sand-lime perforated brick KS L, $f_b \ge 8 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Sand-lime perforated brick KS L, $f_b \ge 10 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Sand-lime perforated brick KS L, $f_b \ge 10 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Sand-lime perforated brick KS L, $f_b \ge 12 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Sand-lime perforated brick KS L, $f_b \ge 12 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$	$\begin{array}{c} h_{nom} = \\ 30^{\circ}C^{3)} / 50^{\circ}C^{4)} \\ 50^{\circ}C^{3)} / 80^{\circ}C^{4)} \\ 30^{\circ}C^{3)} / 50^{\circ}C^{4)} \\ 50^{\circ}C^{3)} / 80^{\circ}C^{4)} \\ 30^{\circ}C^{3)} / 50^{\circ}C^{4)} \\ 50^{\circ}C^{3)} / 80^{\circ}C^{4)} \\ 30^{\circ}C^{3)} / 50^{\circ}C^{4)} \\ 30^{\circ}C^{3)} / 50^{\circ}C^{4)} \\ 30^{\circ}C^{3)} / 50^{\circ}C^{4)} \\ 50^{\circ}C^{3)} / 80^{\circ}C^{4)} \\ \end{array}$	[kN] [kN] [kN] [kN] [kN] [kN] [kN]	Inside / Outside 70 0.6 0.4 0.75 0.6 0.9 0.75 1.2	
Anchor size         Installationsside <sup>5)</sup> Overall plastic anchor embedment depth         Sand-lime perforated brick KS L, $f_b \ge 6 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Sand-lime perforated brick KS L, $f_b \ge 8 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Sand-lime perforated brick KS L, $f_b \ge 10 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Sand-lime perforated brick KS L, $f_b \ge 10 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Sand-lime perforated brick KS L, $f_b \ge 12 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$	$\begin{array}{c c} h_{nom} = \\ \hline & \\ 30^{\circ}C^{3)} / 50^{\circ}C^{4)} \\ \hline & \\ 50^{\circ}C^{3)} / 80^{\circ}C^{4)} \\ \hline & \\ 30^{\circ}C^{3)} / 50^{\circ}C^{4)} \\ \hline & \\ 50^{\circ}C^{3)} / 80^{\circ}C^{4)} \\ \hline & \\ 50^{\circ}C^{3)} / 80^{\circ}C^{4)} \\ \hline & \\ 50^{\circ}C^{3)} / 50^{\circ}C^{4)} \\ \hline & \\ 50^{\circ}C^{3)} / 80^{\circ}C^{4)} \\ \hline \end{array}$	[kN] [kN] [kN] [kN] [kN] [kN] [kN] [kN]	Inside / Outside 70 0.6 0.4 0.75 0.6 0.9 0.75 1.2 0.9	
Anchor size         Installationsside <sup>5)</sup> Overall plastic anchor embedment depth         Sand-lime perforated brick KS L, $f_b \ge 6 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Sand-lime perforated brick KS L, $f_b \ge 8 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Sand-lime perforated brick KS L, $f_b \ge 10 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Sand-lime perforated brick KS L, $f_b \ge 10 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Sand-lime perforated brick KS L, $f_b \ge 12 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Sand-lime perforated brick KS L, $f_b \ge 20 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Partial safety factor	$\begin{array}{c} h_{nom} = \\ 30^{\circ}C^{3)} / 50^{\circ}C^{4)} \\ 50^{\circ}C^{3)} / 80^{\circ}C^{4)} \\ 30^{\circ}C^{3)} / 50^{\circ}C^{4)} \\ 50^{\circ}C^{3)} / 80^{\circ}C^{4)} \\ 30^{\circ}C^{3)} / 50^{\circ}C^{4)} \\ 50^{\circ}C^{3)} / 80^{\circ}C^{4)} \\ 30^{\circ}C^{3)} / 50^{\circ}C^{4)} \\ 30^{\circ}C^{3)} / 50^{\circ}C^{4)} \\ 30^{\circ}C^{3)} / 50^{\circ}C^{4)} \\ 50^{\circ}C^{3)} / 80^{\circ}C^{4)} \\ \end{array}$	[kN] [kN] [kN] [kN] [kN] [kN] [kN] [kN]	Inside / Outside 70 0.6 0.4 0.75 0.6 0.9 0.75 1.2 0.9 2.0	
Anchor size         Installationsside <sup>5)</sup> Overall plastic anchor embedment depth         Sand-lime perforated brick KS L, $f_b \ge 6 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Sand-lime perforated brick KS L, $f_b \ge 8 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Sand-lime perforated brick KS L, $f_b \ge 10 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Sand-lime perforated brick KS L, $f_b \ge 10 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Sand-lime perforated brick KS L, $f_b \ge 12 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Sand-lime perforated brick KS L, $f_b \ge 20 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Sand-lime perforated brick KS L, $f_b \ge 20 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$	$\begin{array}{c c} h_{nom} = \\ \hline & \\ 30^{\circ}C^{3)} / 50^{\circ}C^{4)} \\ \hline & \\ 50^{\circ}C^{3)} / 80^{\circ}C^{4)} \\ \hline & \\ 30^{\circ}C^{3)} / 50^{\circ}C^{4)} \\ \hline & \\ 50^{\circ}C^{3)} / 80^{\circ}C^{4)} \\ \hline & \\ 50^{\circ}C^{3)} / 80^{\circ}C^{4)} \\ \hline & \\ 50^{\circ}C^{3)} / 50^{\circ}C^{4)} \\ \hline & \\ 50^{\circ}C^{3)} / 80^{\circ}C^{4)} \\ \hline \end{array}$	[kN] [kN] [kN] [kN] [kN] [kN] [kN] [kN]	Inside / Outside 70 0.6 0.4 0.75 0.6 0.9 0.75 1.2 0.9 2.0 1.5	



Description of brick	771-2-009		KS-NT
Type of brick			Sand-lime perforated brick
Bulk density	$\rho \geq$	[kg/dm³]	
Standard, approval	μz	[Kg/ulli ]	P-1109/884/07-MPA BS
			BMO KS-Vertrieb
Producer of brick			Bielefeld-Münster-Osnabrück GmbH & Co KG Averdiekstr. 9; D-49078 Osnabrück
Format (measurement)		[mm]	≥ 4DF (≥ 249x115x248)
Minimum thickness of member	h <sub>min</sub> =	[mm]	115
	248	81	24 FZ L9 FZ
able C 10.42.2: Installation parameters Anchor size			W-UR 8
Installationsside <sup>6)</sup>			Inside / Outside
Drill hole diameter	d <sub>0</sub> =	[mm]	8
Cutting diameter of drill bit	d <sub>cut</sub> ≤		8.45
Depth of drill hole to deepest point	h <sub>1</sub> ≥	[mm]	80
Drill method		[-]	Rotary drilling
Overall plastic anchor embedment depth	h <sub>nom</sub> =	[mm]	70
Diameter of clearance hole in the fixture	d <sub>f</sub> ≤		8.5
Minimum allowable edge distance	C <sub>min</sub> ≥	: [mm]	100
able C 10.42.3: Characteristic resistanc	e F <sub>Rk</sub> <sup>1)</sup> in [kN] fo	r single a	
Anchor size Installationsside <sup>6)</sup>			W-UR 8
	I		Inside / Outside
Overall plastic anchor embedment depth <b>Sand-lime perforated brick KS-NT</b> ,	$h_{\text{nom}} =$		70
$f_b \ge 12 \text{ N/mm}^2$ —	30°C <sup>3)</sup> / 50°C <sup>4)</sup>		1.5
Characteristic resistance F <sub>Rk</sub>	50°C <sup>3)</sup> / 80°C <sup>4)</sup>	[kN]	1.2
Sand-lime perforated brick KS-NT,	30°C <sup>3)</sup> / 50°C <sup>4)</sup>	<sup>)</sup> [kN]	2.5
f <sub>b</sub> ≥ 20 N/mm <sup>2</sup> –	50°C <sup>3)</sup> / 80°C <sup>4)</sup>		2.0
Characteristic resistance F <sub>Rk</sub>			
Partial safety factor	2) γMm	) [-]	2.5
ootnotes see Annex C 3			

#### Deutsches Institut D für Bautechnik

Description of brick	771-3-004		V	bn	
Type of brick			Concrete	solid block	
Bulk density	$\rho \ge$	[kg/dm³]	2	.0	
Standard, approval			DIN V 18153-100:200	05-10; EN 7	71-3:201
Producer of brick				-	
Format (measurement)		[mm]	≥ NF (≥ 24	0x115x71)	
Minimum thickness of member	h <sub>min</sub> =	[mm]	1	15	
Table C 10 12 2: Installation nerometers					
Table C 10.43.2: Installation parameters           Anchor size			WLIE 8	\A/_	R 10
Table C 10.43.2: Installation parameters         Anchor size         Installationsside <sup>6)</sup>			<b>W-UR 8</b> Inside / Outside		R 10 Outside
Anchor size	d	0 = [mm]		Inside /	
Anchor size			Inside / Outside	Inside / 1	Outside
Anchor size Installationsside <sup>6)</sup> Drill hole diameter	d <sub>cı</sub>		Inside / Outside 8	Inside / 1	Outside 0
Anchor size Installationsside <sup>6)</sup> Drill hole diameter Cutting diameter of drill bit	d <sub>cı</sub>	<sub>it</sub> ≤ [mm]	Inside / Outside 8 8.45	Inside / 1 10 60	Outside 0 .45
Anchor size Installationsside <sup>6)</sup> Drill hole diameter Cutting diameter of drill bit Depth of drill hole to deepest point	d <sub>cı</sub>	$r_{it} \leq [mm]$ $r_{1} \geq [mm]$ $r_{1} \geq [-]$	Inside / Outside 8 8.45 60	Inside / 1 10 60	Outside 0 .45 80
Anchor size Installationsside <sup>6)</sup> Drill hole diameter Cutting diameter of drill bit Depth of drill hole to deepest point Drill method	d <sub>cı</sub> h	$r_{it} \leq [mm]$ $r_{1} \geq [mm]$ $r_{1} \geq [-]$	Inside / Outside 8 8.45 60 Hammer drilling	Inside / 1 10 60 Hamme 50	Outside 0 .45 80 r drilling

[mm]

[mm]

**S**<sub>2,min</sub>

 $\textbf{c}_{min} \geq$ 

100

100

200

50

100

100

### Table C 10.43.3: Characteristic resistance $F_{Rk}^{(1)}$ in [kN] for single anchor

Anchor size			W-UR 8	W-U	R 10
Installationsside <sup>6)</sup>			Inside / Outside	Inside /	Outside
Overall plastic anchor embedment depth	$h_{nom} \ge$	[mm]	50	50	70
Concrete solid block Vbn, $f_b \ge 10 \text{ N/mm}^2$ -	30°C <sup>3)</sup> / 50°C <sup>4)</sup>	[kN]	1.5	0.75	2.0
Characteristic resistance $F_{Rk}$	50°C <sup>3)</sup> / 80°C <sup>4)</sup>	[kN]	1.5	0.75	2.0
Concrete solid block Vbn, $f_b \ge 20 \text{ N/mm}^2$	30°C <sup>3)</sup> / 50°C <sup>4)</sup>	[kN]	2.5	1.2	3.0
Characteristic resistance $F_{Rk}$	50°C <sup>3)</sup> / 80°C <sup>4)</sup>	[kN]	2.5	0.9	3.0
Concrete solid block Vbn, $f_b \ge 28 \text{ N/mm}^2$	30°C <sup>3)</sup> / 50°C <sup>4)</sup>	[kN]	3.5	1.5	4.5
Characteristic resistance $F_{Rk}$	50°C <sup>3)</sup> / 80°C <sup>4)</sup>	[kN]	3.5	1.5	4.5
Partial safety factor	2) γMm	[-]	2.5	2	.5

Footnotes see Annex C 3

Spacing parallel to free edge

Minimum allowable edge distance

### Würth Plastic Anchor W-UR

Performances
Concrete solid block Vbn, NF
Brick data, installation parameters, characteristic resistance



Table C 10.44.1: Brick data					
Description of brick	771-3-008		V		
Type of brick			Lightweight concrete solid brick		
Bulk density	$ ho \geq$	[kg/dm³]	0.9		
Standard, approval			EN 771-3:2011, DIN V 18152-100:2005-1		
Producer of brick			e.g. Bisoclassic V Bisotherm GmbH Eisenbahnstraße 12 D-56218 Mühlheim-Kärlich		
Format (measurement)		[mm]	≥ NF (≥ 240x115x71)		
Minimum thickness of member	h <sub>min</sub> =	[mm]	115		

### Table C 10.44.2: Installation parameters

Anchor size			W-UR 8
Installationsside <sup>6)</sup>			Inside / Outside
Drill hole diameter	d <sub>0</sub> =	[mm]	8
Cutting diameter of drill bit	$d_{cut} \leq$	[mm]	8.45
Depth of drill hole to deepest point	$h_1 \geq$	[mm]	80
Drill method		[-]	Hammer drilling
Overall plastic anchor embedment depth	$h_{nom} \ge$	[mm]	70
Diameter of clearance hole in the fixture	$d_{f} \leq$	[mm]	8.5
Minimum allowable edge distance	$c_{min} \geq$	[mm]	100

# Table C 10.44.3: Characteristic resistance $F_{Rk}^{(1)}$ in [kN] for single anchor

Anchor size			W-UR 8
Installationsside <sup>6)</sup>			Inside / Outside
Overall plastic anchor embedment depth	$h_{nom} \ge$	[mm]	70
Lightweight concrete solid brick V2, $f_{h} \ge 2 N/mm^{2}$	30°C <sup>3)</sup> / 50°C <sup>4)</sup>	[kN]	0.6
Characteristic resistance $F_{Rk}$	50°C <sup>3)</sup> / 80°C <sup>4)</sup>	[kN]	0.5
Lightweight concrete solid brick V4, $f_b \ge 4 \text{ N/mm}^2$	30°C <sup>3)</sup> / 50°C <sup>4)</sup>	[kN]	1.2
Characteristic resistance $F_{Rk}$	50°C <sup>3)</sup> / 80°C <sup>4)</sup>	[kN]	0.9
Partial safety factor	2) γMm	[-]	2.5

Footnotes see Annex C 3

### Würth Plastic Anchor W-UR

Performances Lightweight concrete solid brick V, NF Brick data, installation parameters, characteristic resistance



Description of brick	771-3-007		V
Type of brick			Lightweight concrete solid brick
Bulk density	$\rho \ge$	[kg/dm³]	1.0
Standard, approval			EN 771-3:2011, DIN V 18152-100:2005-10
Producer of brick			e.g. BisoBims, Bisotherm GmbH Eisenbahnstraße 12 D-56218 Mühlheim-Kärlich
Format (measurement)		[mm]	≥ NF (≥ 240x115x71)
Minimum thickness of member	h <sub>min</sub> =	[mm]	115
Fable C 10.45.2: Installation parameters			
Anchor size			W-UR 8
Installationsside <sup>6)</sup>			Inside / Outside
Drill hole diameter	<b>d</b> <sub>0</sub> :	= [mm]	8
Cutting diameter of drill bit	d <sub>cut</sub>	≤ [mm]	8.45
e attaining and attained atta	Cut	_ []	

cut —	L J		
$h_1 \geq$	[mm]	60	80
	[-]	Hamme	r drilling
$h_{nom} \ge$	[mm]	50	70
$d_{\rm f}$ $\leq$	[mm]	8.5	
$c_{min} \geq$	[mm]	100	
	$h_1 \ge$ $h_{nom} \ge$ $d_f \le$	$\begin{array}{c c} h_1 \geq & [mm] \\ \hline & [-] \\ h_{nom} \geq & [mm] \\ d_f \leq & [mm] \end{array}$	$\begin{array}{c c} h_1 \geq & [mm] & 60 \\ \hline & [-] & Hamme \\ h_{nom} \geq & [mm] & 50 \\ d_f \leq & [mm] & 8 \\ \end{array}$

### Table C 10.45.3: Characteristic resistance $F_{Rk}^{(1)}$ in [kN] for single anchor

Anchor size				W-UR 8		
Installationsside <sup>6)</sup>			Inside /	Outside		
Overall plastic anchor embedment depth	$h_{nom} \ge$	[mm]	50	70		
Lightweight concrete solid brick V 2, $f_b \ge 2 N/mm^2$	30°C <sup>3)</sup> / 50°C <sup>4)</sup>	[kN]	0.4	0.6		
Characteristic resistance $F_{Rk}$	50°C <sup>3)</sup> / 80°C <sup>4)</sup>	[kN]	0.3	0.6		
Lightweight concrete solid brick V 4, $f_h \ge 4 \text{ N/mm}^2$	30°C <sup>3)</sup> / 50°C <sup>4)</sup>	[kN]	0.9	1.2		
Characteristic resistance $F_{Rk}$	50°C <sup>3)</sup> / 80°C <sup>4)</sup>	[kN]	0.75	1.2		
Partial safety factor	2) γ <sub>Mm</sub>	[-]	2.5			

Footnotes see Annex C 3

### Würth Plastic Anchor W-UR

Performances
Lightweight concrete solid brick V, NF
Brick data, installation parameters, characteristic resistance



Description of brick	771-3-017		V and Vbl
Type of brick			Lightweight concrete solid brick
Bulk density	$\rho \geq$	[kg/dm³]	2.0
Standard, approval			EN 771-3:2011, DIN V 18152-100:2005-10
Producer of brick			e.g. BisoBims, Bisotherm GmbH Eisenbahnstraße 12 D-56218 Mühlheim-Kärlich
Format (measurement)		[mm]	≥ 3 DF (≥ 240x175x113)
Minimum thickness of member	h <sub>min</sub> =	[mm]	175

Anchor size			W-U	R 8
Installationsside <sup>6)</sup>			Inside / Outs	ide / Reveal
Drill hole diameter	$d_0 =$	[mm]	8	
Cutting diameter of drill bit	$d_{cut} \leq$	[mm]	8.45	
Depth of drill hole to deepest point	$h_1 \geq$	[mm]	60 80	
Drill method		[-]	Hammer drilling	
Overall plastic anchor embedment depth	$h_{nom} \geq$	[mm]	50 70	
Diameter of clearance hole in the fixture	$d_{f} \leq$	[mm]	8.5	
Minimum allowable edge distance	$c_{min} \geq$	[mm]	45	

### Table C 10.46.3: Characteristic resistance $F_{Rk}^{(1)}$ in [kN] for single anchor

Anchor size			W-UR 8
Installationsside <sup>6)</sup>			Inside / Outside / Reveal
Overall plastic anchor embedment depth	$h_{nom} \ge$	[mm]	70
Lightweight concrete solid brick V and Vbl, f <sub>b</sub> ≥ 10 N/mm <sup>2</sup> —	30°C <sup>3)</sup> / 50°C <sup>4)</sup>	[kN]	3.5
Characteristic resistance $F_{Rk}$	50°C <sup>3)</sup> / 80°C <sup>4)</sup>	[kN]	3.0
Lightweight concrete solid brick V and Vbl, $f_b \ge 20 \text{ N/mm}^2$ —	30°C <sup>3)</sup> / 50°C <sup>4)</sup>	[kN]	5.0
Characteristic resistance $F_{Rk}$	50°C <sup>3)</sup> / 80°C <sup>4)</sup>	[kN]	4.0
Partial safety factor	2) γ <sub>Mm</sub>	[-]	2.5

Footnotes see Annex C 3

### Würth Plastic Anchor W-UR

**Performances Lightweight concrete solid brick V and VbI 3DF** Brick data, installation parameters, characteristic resistance

#### Deutsches Institut für Bautechnik

Description of brick	LAC2		Vbl 2-0	,6-24DF
Type of brick			Lightweight Agg	regate Concrete
Bulk density	$\rho \ge$	[kg/dm³]	0	.6
Standard, approval			DIN V 18152	-100:2005-10
Producer of brick			by: Liapor Gr	ssive Wall LAC2 nbH & Co. KG Hallerndorf
			≥ <b>24</b> DF	
Measurement		[mm]	≥ <b>2</b> 4	4DF
Measurement Minimum thickness of member Table C 10.47.2: Installation parameters Anchor size	h <sub>min</sub> =	[mm] [mm]		4DF 55 <b>W-UR 10</b>
Minimum thickness of member Table C 10.47.2: Installation parameters Anchor size	h <sub>min</sub> =		36 W-UR 8	95 W-UR 10
Minimum thickness of member Table C 10.47.2: Installation parameters Anchor size Installationsside <sup>6)</sup>		[mm]	36	65 <b>W-UR 10</b> Inside / Outside
Minimum thickness of member Table C 10.47.2: Installation parameters Anchor size	d <sub>o</sub>	[mm]	30 W-UR 8 Inside / Outside	95 W-UR 10
Minimum thickness of member Table C 10.47.2: Installation parameters Anchor size Installationsside <sup>6)</sup> Drill hole diameter		[mm] = [mm] ≤ [mm]	36 W-UR 8 Inside / Outside 8	35 <b>W-UR 10</b> Inside / Outside 10
Minimum thickness of member <b>Table C 10.47.2: Installation parameters</b> <b>Anchor size</b> Installationsside <sup>6)</sup> Drill hole diameter Cutting diameter of drill bit	d <sub>o</sub> d <sub>cut</sub>	[mm] = [mm] ≤ [mm]	36 W-UR 8 Inside / Outside 8 8.45	65 <b>W-UR 10</b> Inside / Outside 10 10.45
Minimum thickness of member <b>Table C 10.47.2: Installation parameters</b> <b>Anchor size</b> Installationsside <sup>6)</sup> Drill hole diameter Cutting diameter of drill bit Depth of drill hole to deepest point	d <sub>o</sub> d <sub>cut</sub>	[mm] [mm] = [mm] ≤ [mm] ≥ [mm]	36 W-UR 8 Inside / Outside 8 8.45 80	65 <b>W-UR 10</b> Inside / Outside 10 10.45 80
Minimum thickness of member <b>Table C 10.47.2: Installation parameters</b> <b>Anchor size</b> Installationsside <sup>6)</sup> Drill hole diameter Cutting diameter of drill bit Depth of drill hole to deepest point Drill method	d <sub>0</sub> d <sub>cut</sub> h <sub>1</sub>	[mm] = [mm] ≤ [mm] ≥ [mm] ≥ [mm]	30 W-UR 8 Inside / Outside 8 8.45 80 Hammer drilling	35 <b>W-UR 10</b> Inside / Outside 10 10.45 80 Hammer drilling

Anchor size			W-UR 8	W-UR 10
Installationsside <sup>6)</sup>			Inside / Outside	Inside / Outside
Overall plastic anchor embedment depth	$h_{nom} \ge$	[mm]	70	70
Lightweight concrete solid block Vbl 2, $f_b \ge 2 N/mm^2$ -	30°C <sup>3)</sup> / 50°C <sup>4)</sup>	[kN]	1.2	1.5
Characteristic resistance $F_{Rk}$	50°C <sup>3)</sup> / 80°C <sup>4)</sup>	[kN]	1.2	1.5
Partial safety factor	2) γ <sub>Mm</sub>	[-]	2.5	2.5

Footnotes see Annex C 3

# Würth Plastic Anchor W-UR

Performances
Lightweight concrete solid block Vbl
Brick data, installation parameters, characteristic resistance

#### Page 73 of European Technical Assessment ETA-08/0190 of 5 September 2017

English translation prepared by DIBt



Description of brick	771-3-012		Vbl 2-16DF
Type of brick			Lightweight Aggregate Concrete
Bulk density	<i>ρ</i> ≥	[kg/dm³]	0.65
Standard, approval			DIN V 18152-100:2005-10, Z-17.1-83
Producer of brick			e.g. Liapor Compact by: Liapor GmbH & Co. KG D-91352 Hallerndorf
			Meier Betonwerke GmbH Zur Schanze 2 92283 Lauterhofen
Measurement		[mm]	≥ 16DF (≥ 498x240x239)
Minimum thickness of member	h <sub>min</sub> =	[mm]	240
able C 10.48.2: Installation parameters			24
Anchor size			W-UR 8
Installationsside <sup>6)</sup>			Inside / Outside
Drill hole diameter	d	) = [mm]	8
Cutting diameter of drill bit	d <sub>cu</sub>	<sub>tt</sub> ≤ [mm]	8.45
Depth of drill hole to deepest point	h.	1 ≥ [mm]	80
Drill method		[-]	Hammer drilling
Overall plastic anchor embedment depth		<u>n</u> ≥ [mm]	70
Diameter of clearance hole in the fixture	d	<sub>f</sub> ≤ [mm]	8.5
Minimum allowable edge distance	C <sub>mir</sub>	<sub>n</sub> ≥ [[mm]	100
able C 10.48.3: Characteristic resistance F <sub>Rk</sub>	<sup>1)</sup> in [kN] fo	or single a	Inchor
Anchor size			W-UR 8
Installationsside <sup>6)</sup>			Inside / Outside
Overall plastic anchor embedment depth	h <sub>non</sub>		70
Vbl 2, $f_h \ge 2 N/mm^2$ ——	80°C <sup>3)</sup> / 50°C		1.2
Characteristic resistance F <sub>Rk</sub> 5	50°C <sup>3)</sup> / 80°0	C <sup>4)</sup> [kN]	0.9
Partial safety factor	γм	m <sup>2)</sup> [-]	2.5
ootnotes see Annex C 3			



Description of brick	LC16/18		Vbn 12-	1,4-12DF
Type of brick			Con	crete
Bulk density	$\rho \ge$	[kg/dm³]	1	.4
Standard, approval			DIN V 18153	-100:2005-10
Producer of brick			by: Liapor Gn	ent Wall LC16/18 nbH & Co. KG Hallerndorf
Measurement		[mm]	≥ 12DF	
Minimum thickness of member Fable C 10.49.2: Installation parameters	h <sub>min</sub> =	[mm]	1	75
Minimum thickness of member Fable C 10.49.2: Installation parameters Anchor size	h <sub>min</sub> =		1 <sup>.</sup> W-UR 8	75 W-UR 10
Minimum thickness of member <b>Table C 10.49.2: Installation parameters</b> <b>Anchor size</b> Installationsside <sup>6)</sup>		[mm]	1 <sup>°</sup> <b>W-UR 8</b> Inside / Outside	75 <b>W-UR 10</b> Inside / Outside
Minimum thickness of member <b>Fable C 10.49.2: Installation parameters</b> <b>Anchor size</b> Installationsside <sup>6)</sup> Drill hole diameter		[mm]	1 <sup>°</sup> <b>W-UR 8</b> Inside / Outside 8	75 <b>W-UR 10</b> Inside / Outside 10
Minimum thickness of member <b>Table C 10.49.2: Installation parameters</b> <b>Anchor size</b> Installationsside <sup>6)</sup> Drill hole diameter Cutting diameter of drill bit	d	[mm]	1 <b>W-UR 8</b> Inside / Outside 8 8.45	75 <b>W-UR 10</b> Inside / Outside 10 10.45
Minimum thickness of member <b>Fable C 10.49.2: Installation parameters</b> <b>Anchor size</b> Installationsside <sup>6)</sup> Drill hole diameter Cutting diameter of drill bit Depth of drill hole to deepest point	d d <sub>ci</sub>	$[mm]$ $0 = [mm]$ $ut \leq [mm]$ $1 \geq [mm]$	1 W-UR 8 Inside / Outside 8 8.45 80	75 <b>W-UR 10</b> Inside / Outside 10 10.45 80
Minimum thickness of member <b>Table C 10.49.2: Installation parameters</b> <b>Anchor size</b> Installationsside <sup>6)</sup> Drill hole diameter Cutting diameter of drill bit Depth of drill hole to deepest point Drill method	d d <sub>ci</sub>	$[mm]$ $0 = [mm]$ $1 \le [mm]$ $1 \ge [mm]$	1 <sup>°</sup> W-UR 8 Inside / Outside 8 8.45 80 Hammer drilling	75 <b>W-UR 10</b> Inside / Outside 10 10.45 80 Hammer drilling
Minimum thickness of member <b>Table C 10.49.2: Installation parameters</b> <b>Anchor size</b> Installationsside <sup>6)</sup> Drill hole diameter Cutting diameter of drill bit Depth of drill hole to deepest point Drill method Overall plastic anchor embedment depth	d d <sub>ci</sub>	$[mm]$ $0 = [mm]$ $1 \leq [mm]$ $1 \geq [mm]$ $1 \geq [mm]$ $m \geq [mm]$	1 W-UR 8 Inside / Outside 8 8.45 80 Hammer drilling 70	75 W-UR 10 Inside / Outside 10 10.45 80 Hammer drilling 70
Minimum thickness of member <b>Table C 10.49.2: Installation parameters</b> <b>Anchor size</b> Installationsside <sup>6)</sup> Drill hole diameter Cutting diameter of drill bit Depth of drill hole to deepest point Drill method	d d <sub>cı</sub> h	$[mm]$ $0 = [mm]$ $1 \le [mm]$ $1 \ge [mm]$	1 <sup>°</sup> W-UR 8 Inside / Outside 8 8.45 80 Hammer drilling	75 <b>W-UR 10</b> Inside / Outside 10 10.45 80 Hammer drilling

### Table C 10.49.3: Characteristic resistance $F_{Rk}^{(1)}$ in [kN] for single anchor

Anchor size			W-UR 8	W-UR 10
Installationsside <sup>6)</sup>			Inside / Outside	Inside / Outside
Overall plastic anchor embedment depth	$h_{nom} \ge$	[mm]	70	70
Concrete solid block Vbn 12, $f_b \ge 12 \text{ N/mm}^2$	30°C <sup>3)</sup> / 50°C <sup>4)</sup>	[kN]	3.5	3.5
Characteristic resistance $F_{Rk}$	50°C <sup>3)</sup> / 80°C <sup>4)</sup>	[kN]	3.5	3.5
Partial safety factor	2) γMm	[-]	2.5	2.5

Footnotes see Annex C 3

# Würth Plastic Anchor W-UR

Performances	
Lightweight concrete solid block Vbn	
Brick data, installation parameters, characteristic resistance	

#### Page 75 of European Technical Assessment ETA-08/0190 of 5 September 2017

English translation prepared by DIBt

#### Deutsches Institut für Bautechnik

Description of brick		771-3-002	14	( Hbl
Type of brick		771-3-002		eight concrete 1K Hbl
Bulk density	$\rho \geq$	[kg/dm³]	-	1.2
Standard, approval	р –	[9,]		005-10; EN 771-3:201
Producer of brick			e.g. Stahl Betonw	erk GmbH & Co. KG münkheim-Kupfer
Format (measurement)		[mm]		490x175x238)
Minimum thickness of member	h <sub>min</sub> =	[mm]		175
		400		in diense
		490	155 60	1
				175
Table C 10.50.2: Installation parameters Anchor size			W-UR 8	 W-UR 10
Installationsside <sup>6)</sup>			Inside / Outside	Inside / Outside
Drill hole diameter	d	) = [mm]	8	10
Cutting diameter of drill bit	d <sub>cu</sub>		8.45	10.45
Depth of drill hole to deepest point	h.	<sub>1</sub> ≥ [mm]	80	80
Drill method		[-]	Rotary drilling	Rotary drilling
Overall plastic anchor embedment depth	h <sub>nom</sub>	n = [mm]	70	70
Diameter of clearance hole in the fixture	d	<sub>f</sub> ≤ [mm]	8.5	10.5
Minimum allowable edge distance	C <sub>mir</sub>	$n \ge [mm]$	100	100
able C 10.50.3: Characteristic resistance	e F <sub>ek</sub> <sup>1)</sup> in [kN] fo	or single a	nchor	
Anchor size			W-UR 8	W-UR 10
Installationsside <sup>6)</sup>			Inside / Outside	Inside / Outside
Overall plastic anchor embedment depth	h <sub>non</sub>	n = [mm]	70	70
Hollow brick lightweight concrete 1K Hbl, f <sub>b</sub> ≥ 2 N/mm²	30°C <sup>3)</sup> / 50°C		0.9	0.9
	50°C <sup>3)</sup> / 80°C	C <sup>4)</sup> [kN]	0.9	0.75
	30°C <sup>3)</sup> / 50°0		2.0	2.0
Characteristic resistance $F_{Rk}$ Hollow brick lightweight concrete 1K Hbl, f <sub>b</sub> ≥ 4 N/mm <sup>2</sup>	-	~4)   ILNI	2.0	1.5
Hollow brick lightweight concrete	50°C <sup>3)</sup> / 80°C	C <sup>4)</sup> [kN]		
Hollow brick lightweight concrete 1K Hbl, f <sub>b</sub> ≥ 4 N/mm²		m <sup>2)</sup> [-]	2.5	2.5

Hollow brick lightweight concrete 1K Hbl Brick data, installation parameters, characteristic resistance

#### Deutsches Institut für Bautechnik

able C 10.51.1: Brick data Description of brick	771-3-005			3K	Hbl	
Type of brick			Hollow brid			oncrete 3K Hbl
Bulk density	$\rho \geq$	[kg/dm³]		0.	.7	
Standard, approval	,		DIN V 1815	1-100:200	)5-10;	EN 771-3:201
Producer of brick			e.g. He	inzmann I	Bausto	offe GmbH,
				apor Gmb		
Format (measurement)		[mm]	≥ 1	6DF (≥ 49		0x238)
Minimum thickness of member	h <sub>min</sub> =	[mm]		24	10	
(				0113		
able C 10.51.2: Installation parameters						
Anchor size			Inside /	JR 8		W-UR 10
Installationsside <sup>6)</sup>			Outside	Reve	al	Inside / Outsic
Drill hole diameter	d <sub>o</sub> :	= [mm]		8		10
Cutting diameter of drill bit	d <sub>cut</sub> :	≤ [mm]	8.	45		10.45
Depth of drill hole to deepest point	h <sub>1</sub> :	≥ [mm]		30		80
Drill method		[-]		<sup>,</sup> drilling		Rotary drilling
Overall plastic anchor embedment depth	h <sub>nom</sub> :			70		70
Diameter of clearance hole in the fixture	d <sub>f</sub> :		100	5 55		10.5
Minimum allowable edge distance	C <sub>min</sub> 2	≥  [mm]	100	55		100
able C 10.51.3: Characteristic resistand	ce F <sub>Rk</sub> <sup>1)</sup> in [kN] fo	or single a	anchor			
Anchor size		_	W-1	JR 8		W-UR 10
Installationsside <sup>6)</sup>			Inside / Outside	Reve	al	Inside / Outsic
Overall plastic anchor embedment depth	h <sub>nom</sub> :	= [mm]	7	70		70
Hollow brick lightweight concrete	30°C <sup>3)</sup> / 50°C	<sup>1)</sup> [kN]	0.6	0.6		0.5
<b>3K HbI, f<sub>b</sub> ≥ 2 N/mm²</b> Characteristic resistance F <sub>Rk</sub>	50°C <sup>3)</sup> / 80°C	<sup>4)</sup> [kN]	0.4	0.6		0.3
Hollow brick lightweight concrete	30°C <sup>3)</sup> / 50°C <sup>4</sup>		1.2	1.2		0.9
3K Hbl, $f_b \ge 4 N/mm^2$						
Characteristic resistance F <sub>Rk</sub>	50°C <sup>3)</sup> / 80°C		0.9	1.2		0.6
Hollow brick lightweight concrete	30°C <sup>3)</sup> / 50°C	<sup>4)</sup> [kN]	1.5	1.2		1.5
	50°C <sup>3)</sup> / 80°C	<sup>i)</sup> [kN]	1.2	1.2		0.9
<b>3K HbI, f<sub>b</sub> ≥ 6 N/mm²</b> Characteristic resistance F <sub>Rk</sub>		<sup>2)</sup> [-]	2	.5		2.5
Characteristic resistance F <sub>Rk</sub>	γMm					
	γ́Mm					

# Deutsches Institut für Bautechnik DIBt

Description of brick 77	1-3-006		Liapor-	Super-K
Type of brick			=	veight concrete 7K
Bulk density	ρ≥ <b>[k</b> g	g/dm³]	0	.8
Standard, approval			EN 771-3:201	1; Z-17.1-501
Producer of brick			•	H & Co. KG
				Hallerndorf
Format (measurement)		mm]		95x240x238)
Minimum thickness of member h <sub>n</sub>	<sub>min</sub> = [	[mm]	24	40
				20   11 11 21,5
able C 10.52.2: Installation parameters Anchor size		1	W-UR 8	W-UR 10
Installationsside <sup>6)</sup>			Inside / Outside	Inside / Outside
Drill hole diameter	d <sub>0</sub> =	[mm]	8	10
Cutting diameter of drill bit	$d_{cut} \leq$	[mm]	8.45	10.45
Depth of drill hole to deepest point	$h_1 \ge$	[mm]	80	80
Drill method		[-]	Rotary drilling	Rotary drilling
Overall plastic anchor embedment depth	h <sub>nom</sub> =	[mm]	70	70
Diameter of clearance hole in the fixture	d <sub>f</sub> ≤	[mm]	8.5	10.5
Minimum allowable edge distance Fable C 10.52.3: Characteristic resistance F <sub>Rk</sub> <sup>1)</sup> in [k		[mm]	100 nchor	100
Anchor size	_	-	W-UR 8	W-UR 10
			Inside / Outside	Inside / Outside
	h —	[mm]	70	70
Overall plastic anchor embedment depth	h <sub>nom</sub> =		0.75	0.9
Overall plastic anchor embedment depth Hollow brick lightweight concrete 30°C <sup>3)</sup>	/ 50°C <sup>4)</sup>	[kN]		
Overall plastic anchor embedment depthHollow brick lightweight concrete $30^{\circ}C^{3}$ Liapor-Super-K, f <sub>b</sub> $\geq$ 2 N/mm <sup>2</sup>	/ 50°C <sup>4)</sup>		0.6	0.6
Overall plastic anchor embedment depthHollow brick lightweight concrete Liapor-Super-K, $f_b \ge 2 N/mm^2$ $30^\circ C^{3/}$ Characteristic resistance $F_{Rk}$ $50^\circ C^{3/}$ Hollow brick lightweight concrete $30^\circ C^{3/}$	/ 50°C <sup>4)</sup>	[kN]	0.6	2.0
Overall plastic anchor embedment depthHollow brick lightweight concrete Liapor-Super-K, $f_b \ge 2 N/mm^2$ Characteristic resistance $F_{Rk}$ $30^\circ C^{3/}$ $50^\circ C^{3/}$ Hollow brick lightweight concrete Liapor-Super-K, $f_b \ge 4 N/mm^2$ $30^\circ C^{3/}$	/ 50°C <sup>4)</sup> / 80°C <sup>4)</sup>	[kN] [kN]		
Overall plastic anchor embedment depthHollow brick lightweight concrete Liapor-Super-K, $f_b \ge 2 \text{ N/mm}^2$ $30^\circ \text{C}^3$ / $50^\circ \text{C}^3$ / $50^\circ \text{C}^3$ / $50^\circ \text{C}^3$ / $100 \text{ brick lightweight concrete}Liapor-Super-K, f_b \ge 4 \text{ N/mm}^230^\circ \text{C}^3 /50^\circ \text{C}^3 /$	/ 50°C <sup>4)</sup> / 80°C <sup>4)</sup> / 50°C <sup>4)</sup>	[kN] [kN] [kN]	1.5	2.0
Liapor-Super-K, $f_b \ge 2 \text{ N/mm}^2$ $50^\circ \text{C}^{3)}$ Characteristic resistance $F_{\text{Rk}}$ $50^\circ \text{C}^{3)}$ Hollow brick lightweight concrete $30^\circ \text{C}^{3)}$ Liapor-Super-K, $f_b \ge 4 \text{ N/mm}^2$ $30^\circ \text{C}^{3}$	/ 50°C <sup>4)</sup> / 80°C <sup>4)</sup> / 50°C <sup>4)</sup> / 80°C <sup>4)</sup> 21	[kN] [kN] [kN] [kN]	1.5 1.2	2.0 1.2



Description of brick	771-3-011		2K Hb	n
Type of brick			Hollow brick of	concrete
Bulk density	$\rho \ge$	[kg/dm³]	1.2	
Standard, approval			DIN V 18153-100:2005-1	0; EN 771-3:201
Producer of brick			e.g. Stark Betonwerk D-74547 Untermür	
Format (measurement)		[mm]	≥ 12DF (≥ 375)	(240x238)
Minimum thickness of member	h <sub>min</sub> =	[mm]	240	7
			540 23	
Anchor size			R PR	8
Anchor size			W-UR Inside / Outside	8 Reveal
Anchor size Installationsside <sup>6)</sup> Drill hole diameter	d <sub>0</sub> =	[mm]	Inside / Outside 8	Reveal
Anchor size Installationsside <sup>6)</sup> Drill hole diameter Cutting diameter of drill bit	$d_{cut} \leq$	[mm]	Inside / Outside 8 8.45	Reveal
Anchor size Installationsside <sup>6)</sup> Drill hole diameter Cutting diameter of drill bit Depth of drill hole to deepest point		[mm] [mm]	Inside / Outside 8 8.45 80	Reveal
Anchor size Installationsside <sup>6)</sup> Drill hole diameter Cutting diameter of drill bit Depth of drill hole to deepest point Drill method	$d_{cut} \leq h_1 \geq$	[mm] [mm] [-]	Inside / Outside 8 8.45 80 Rotary dr	Reveal
Fable C 10.53.2: Installation parameters         Anchor size         Installationsside <sup>6)</sup> Drill hole diameter         Cutting diameter of drill bit         Depth of drill hole to deepest point         Drill method         Overall plastic anchor embedment depth	$\frac{d_{cut} \leq}{h_1 \geq}$ $h_{nom} =$	[mm] [mm] [-] [mm]	Inside / Outside 8 8.45 80 Rotary dr 70	Reveal
Anchor size Installationsside <sup>6)</sup> Drill hole diameter Cutting diameter of drill bit Depth of drill hole to deepest point Drill method	$d_{cut} \leq h_1 \geq$	[mm] [mm] [-]	Inside / Outside 8 8.45 80 Rotary dr	Reveal

Installationsside <sup>6)</sup>			Inside / Outside	Rev	/eal
Overall plastic anchor embedment depth	h <sub>nom</sub> =	[mm]	7	'0	
Characteristic resistance for single anchor		[kN]	F <sub>Rk</sub> <sup>1)</sup>	F <sub>Rk</sub> <sup>1)</sup>	<b>F</b> <sub>RK</sub> <sup>7)</sup>
Hollow brick concrete 2K Hbn 2, f <sub>b</sub> ≥ 2 N/mm <sup>2</sup> -	30°C <sup>3)</sup> / 50°C <sup>4)</sup>	[kN]	0.75	0.3	1.2
Characteristic resistance $F_{Rk}$	50°C <sup>3)</sup> / 80°C <sup>4)</sup>	[kN]	0.6	0.3	1.2
Hollow brick concrete	30°C <sup>3)</sup> / 50°C <sup>4)</sup>	[kN]	1.5	0.6	2.0
<b>2K Hbn 4,</b> $f_b \ge 4 \text{ N/mm}^2$ - Characteristic resistance $F_{Rk}$	50°C <sup>3)</sup> / 80°C <sup>4)</sup>	[kN]	1.2	0.5	2.0
Hollow brick concrete 2K Hbn 6, f <sub>b</sub> ≥ 6 N/mm <sup>2</sup> -	30°C <sup>3)</sup> / 50°C <sup>4)</sup>	[kN]	2.0	0.6	2.0
Characteristic resistance $F_{Rk}$	50°C <sup>3)</sup> / 80°C <sup>4)</sup>	[kN]	1.5	0.5	2.0
Hollow brick concrete 2K Hbn 8, f <sub>b</sub> ≥ 8 N/mm <sup>2</sup> −	30°C <sup>3)</sup> / 50°C <sup>4)</sup>	[kN]	3.0	0.6	2.0
Characteristic resistance $F_{Rk}$	50°C <sup>3)</sup> / 80°C <sup>4)</sup>	[kN]	2.0	0.5	2.0
Partial safety factor	2) γ <sub>Mm</sub> 2)	[-]	2	.5	

# Würth Plastic Anchor W-UR

Performances
Hollow brick concrete 2K Hbn
Brick data, installation parameters, characteristic resistance



Description of brick 771-3-009		Gisoton WärmeDämmBlock
Type of brick		Hollow brick lightweight concrete
Bulk density $\rho \ge$	[kg/dm³]	0.8
Standard, approval		Z-17.1-873
Producer of brick		Gisoton Wandsysteme Baustoffwerke Gebhart & Söhne GmbH & Co Hochstraße 2 D-88317 Aichstetten
Format (measurement)	[mm]	≥ 375x300x248
Minimum thickness of member $h_{min} =$	[mm]	300

#### Table C 10.54.2: Installation parameters

Anchor size			W-UR 8
Installationsside <sup>6)</sup>			Inside / Outside
Drill hole diameter	d <sub>0</sub> =	[mm]	8
Cutting diameter of drill bit	$d_{cut} \leq$	[mm]	8.45
Depth of drill hole to deepest point	$h_1 \geq$	[mm]	80
Drill method		[-]	Rotary drilling
Overall plastic anchor embedment depth	h <sub>nom</sub> =	[mm]	70
Diameter of clearance hole in the fixture	$d_{f} \leq$	[mm]	8.5
Minimum allowable edge distance	$c_{min} \geq$	[mm]	100

### Table C 10.54.3: Characteristic resistance $F_{Rk}^{(1)}$ in [kN] for single anchor

Anchor size			W-UR 8
Installationsside <sup>6)</sup>			Inside / Outside
Overall plastic anchor embedment depth	h <sub>nom</sub> =	[mm]	70
Gisoton WärmeDämmBlock, f <sub>b</sub> ≥ 4 N/mm² -	30°C <sup>3)</sup> / 50°C <sup>4)</sup>	[kN]	1.5
Characteristic resistance $F_{Rk}$	50°C <sup>3)</sup> / 80°C <sup>4)</sup>	[kN]	1.5
Partial safety factor	2) γMm	[-]	2.5

Footnotes see Annex C 3

## Würth Plastic Anchor W-UR

Performances
Gisoton WärmeDämmBlock
Brick data, installation parameters, characteristic resistance



Fable C 10.55.1: Brick data			
Description of brick	771-3-010		Gisoton Thermo Schall
Type of brick			Hollow brick lightweight concrete
Bulk density	$\rho \ge$	[kg/dm³]	0.45
Standard, approval			Z-15.2-18
Producer of brick			Gisoton Wandsysteme Baustoffwerke Gebhart & Söhne GmbH & Co Hochstraße 2 D-88317 Aichstetten
Format (measurement)		[mm]	≥ 498x300x248
Minimum thickness of member	h <sub>min</sub> =	[mm]	300
		2010 - BUDU	
Table C 10 FE 2: Installation norameters		A	8
Anchor size			W-UR 8 Inside / Outside
Anchor size	d		W-UR 8
Anchor size Installationsside <sup>6)</sup> Drill hole diameter	d, d <sub>cu</sub>		W-UR 8 Inside / Outside
Anchor size Installationsside <sup>6)</sup> Drill hole diameter Cutting diameter of drill bit Depth of drill hole to deepest point	d <sub>cı</sub>		W-UR 8 Inside / Outside 8 8.45 80
Anchor size Installationsside <sup>6)</sup> Drill hole diameter Cutting diameter of drill bit Depth of drill hole to deepest point Drill method	d <sub>cı</sub>	$\frac{1}{1} \ge [mm]$ $\frac{1}{1} \ge [mm]$ $\frac{1}{1} \ge [mm]$	W-UR 8 Inside / Outside 8 8.45 80 Rotary drilling
Anchor size Installationsside <sup>6)</sup> Drill hole diameter Cutting diameter of drill bit Depth of drill hole to deepest point Drill method Overall plastic anchor embedment depth	d <sub>cı</sub> h	$\begin{array}{c} 1 \\ 1 \\ 1 \\ 1 \\ \end{array} \begin{bmatrix} mm \\ mm \end{bmatrix}$ $\begin{array}{c} 1 \\ mm \\ \hline \\ 1 \\ 1$	W-UR 8 Inside / Outside 8 8.45 80 Rotary drilling 70
Anchor size Installationsside <sup>6)</sup> Drill hole diameter Cutting diameter of drill bit Depth of drill hole to deepest point Drill method Overall plastic anchor embedment depth Diameter of clearance hole in the fixture	d <sub>cı</sub> h h <sub>nor</sub>	$\begin{array}{c c} & \hline & & \\ \hline \hline & & \\ \hline \hline & & \\ \hline \hline \\ \hline & & \\ \hline \hline \\ \hline \\$	W-UR 8 Inside / Outside 8 8.45 80 Rotary drilling 70 8.5
Anchor size Installationsside <sup>6)</sup> Drill hole diameter Cutting diameter of drill bit Depth of drill hole to deepest point Drill method Overall plastic anchor embedment depth Diameter of clearance hole in the fixture	d <sub>cı</sub> h h <sub>nor</sub>	$\begin{array}{c} 1 \\ 1 \\ 1 \\ 1 \\ \end{array} \begin{bmatrix} mm \\ mm \end{bmatrix}$ $\begin{array}{c} 1 \\ mm \\ \hline \\ 1 \\ 1$	W-UR 8 Inside / Outside 8 8.45 80 Rotary drilling 70
Anchor size Installationsside <sup>6)</sup> Drill hole diameter Cutting diameter of drill bit Depth of drill hole to deepest point Drill method Overall plastic anchor embedment depth Diameter of clearance hole in the fixture Minimum allowable edge distance	d <sub>cu</sub> h h <sub>nor</sub> d C <sub>mi</sub>	$\begin{array}{c c} & \hline & & \hline & & \\ \hline & & & \\ \hline \\ \hline$	W-UR 8 Inside / Outside 8 8.45 80 Rotary drilling 70 8.5 100 nchor
Anchor size Installationsside <sup>6)</sup> Drill hole diameter Cutting diameter of drill bit Depth of drill hole to deepest point Drill method Overall plastic anchor embedment depth Diameter of clearance hole in the fixture Minimum allowable edge distance Table C 10.55.3: Characteristic resistance Anchor size	d <sub>cu</sub> h h <sub>nor</sub> d C <sub>mi</sub>	$\begin{array}{c c} & \hline & & \hline & & \\ \hline & & & \\ \hline \\ \hline$	W-UR 8           Inside / Outside           8           8.45           80           Rotary drilling           70           8.5           100           w-UR 8
Anchor size Installationsside <sup>6)</sup> Drill hole diameter Cutting diameter of drill bit Depth of drill hole to deepest point Drill method Overall plastic anchor embedment depth Diameter of clearance hole in the fixture Minimum allowable edge distance Cable C 10.55.3: Characteristic resistance Anchor size Installationsside <sup>6)</sup>	d <sub>cı</sub> h n <sub>nor</sub> C <sub>mi</sub> F <sub>Rk</sub> <sup>1)</sup> in [kN] fa	$t_{1} \leq [mm]$ $t_{1} \geq [mm]$ $t_{1} \geq [mm]$ $t_{1} = [mm]$ $t_{1} \leq [mm]$ $t_{1} \leq [mm]$ $t_{2} = [mm]$	W-UR 8           Inside / Outside           8           8.45           80           Rotary drilling           70           8.5           100           M-UR 8           Inside / Outside
Anchor size Installationsside <sup>6)</sup> Drill hole diameter Cutting diameter of drill bit Depth of drill hole to deepest point Drill method Overall plastic anchor embedment depth Diameter of clearance hole in the fixture Minimum allowable edge distance Cable C 10.55.3: Characteristic resistance Anchor size Installationsside <sup>6)</sup> Overall plastic anchor embedment depth	d <sub>cu</sub> h h <sub>nor</sub> c F <sub>Rk</sub> <sup>1)</sup> in [kN] fo h <sub>nor</sub>	$\begin{array}{c c} r & r & r \\ r$	W-UR 8           Inside / Outside           8           8.45           80           Rotary drilling           70           8.5           100           w-UR 8           Inside / Outside           70
Anchor size Installationsside <sup>6)</sup> Drill hole diameter Cutting diameter of drill bit Depth of drill hole to deepest point Drill method Overall plastic anchor embedment depth Diameter of clearance hole in the fixture Minimum allowable edge distance Table C 10.55.3: Characteristic resistance Anchor size Installationsside <sup>6)</sup> Overall plastic anchor embedment depth Gisoton Thermo Schall,	d <sub>cı</sub> h n <sub>nor</sub> C <sub>mi</sub> F <sub>Rk</sub> <sup>1)</sup> in [kN] fa	$\begin{array}{c c} & & & \\ mm \\ 1 \geq & [mm] \\ \hline 1 \geq & [mm] \\ \hline 1 = & [mm] \\ 1 = $	W-UR 8           Inside / Outside           8           8.45           80           Rotary drilling           70           8.5           100           M-UR 8           Inside / Outside
<b>Fable C 10.55.2: Installation parameters Anchor size</b> Installationsside <sup>6)</sup> Drill hole diameter         Cutting diameter of drill bit         Depth of drill hole to deepest point         Drill method         Overall plastic anchor embedment depth         Diameter of clearance hole in the fixture         Minimum allowable edge distance <b>Table C 10.55.3: Characteristic resistance Anchor size</b> Installationsside <sup>6)</sup> Overall plastic anchor embedment depth <b>Gisoton Thermo Schall,</b> $f_b \ge 2 N/mm^2$ Characteristic resistance $F_{Rk}$	d <sub>cu</sub> h h <sub>nor</sub> c F <sub>Rk</sub> <sup>1)</sup> in [kN] fo h <sub>nor</sub>	$t_{rt} \leq [mm]$ $t_{r} \geq [mm]$ $t_{r} \geq [mm]$ $t_{r} = [mm]$ $t_{r} \leq [mm]$ $t_{r} \geq [mm]$ $t_{r} \geq [mm]$ $t_{r} = [mm]$ $t_{r} = [mm]$	W-UR 8           Inside / Outside           8           8.45           80           Rotary drilling           70           8.5           100           w-UR 8           Inside / Outside           70

Footnotes see Annex C 3

# Würth Plastic Anchor W-UR

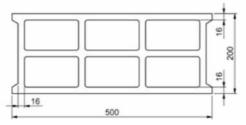
Performances	
Gisoton Thermo Schall	
Brick data, installation parameters, characteristic resistance	

#### Deutsches Institut für Bautechnik

Description of brick	771-3-015		Bisomark <sup>TEC</sup>
Type of brick			Hollow brick lightweight concrete
Bulk density	$\rho \geq$	[kg/dm	
Standard, approval	μ	1.0	Z-17.1-1026
			Bisotherm GmbH
Producer of brick			Eisenbahnstraße 12
		-	D-56218 Mühlheim-Kärlich
Format (measurement)		[mm]	] ≥ 20DF (≥ 497x300x249)
Minimum thickness of member	h <sub>min</sub> =	[mm]	] 300
	497	· 112 .40	
-			-
			4
			300
			48
able C 10.56.2: Installation parameters			
Anchor size			W-UR 8
Installationsside <sup>6)</sup>			Inside / Outside
Drill hole diameter	d	<sub>0</sub> = [mr	m] 8
Cutting diameter of drill bit		<u>, c</u> <sub>ut</sub> ≤ [mr	
Depth of drill hole to deepest point		<u>1 ≥ [</u> mr	•
Drill method		<u></u> [-]	-
Overall plastic anchor embedment depth	h <sub>nor</sub>		
Diameter of clearance hole in the fixture		<mark>ri ⊑</mark> d <sub>f</sub> ≤ [mr	-
Minimum allowable edge distance	C <sub>mi</sub>	<u> </u>	-
5			
able C 10.56.3: Characteristic resistanc	e F <sub>Rk</sub> <sup>1)</sup> in [kN] fo	or single	e anchor
Anchor size			W-UR 8
Installationsside <sup>6)</sup>			Inside / Outside
Overall plastic anchor embedment depth	h <sub>nor</sub>	<sub>ຠ</sub> = [mr	m] 70
Bisomark <sup>TEC</sup> ,	30°C <sup>3)</sup> / 50°		0.6
f <sub>b</sub> ≥ 1.6 N/mm <sup>2</sup>			
Characteristic resistance F <sub>Rk</sub>	50°C <sup>3)</sup> / 80°		N] 0.5
Bisomark <sup>TEC</sup> ,	30°C <sup>3)</sup> / 50°	C⁴) [kN	N] 0.75
$f_b \ge 2 N/mm^2$	50°C <sup>3)</sup> / 80°	C <sup>4)</sup> [kN	N] 0.6
Characteristic resistance F <sub>Rk</sub>		•	-
Bisomark <sup>⊤EC</sup> , f <sub>b</sub> ≥ 4 N/mm²	30°C <sup>3)</sup> / 50°	C <sup>4)</sup> [kN	N] 1.5
$F_b \ge 4 N/mm$ Characteristic resistance $F_{Rk}$	50°C <sup>3)</sup> / 80°	C <sup>4)</sup> [kN	N] 1.2
Partial safety factor	<u>مر</u>	2)	-
Footnotes see Annex C 3	ŶΜ	un <b>  L</b> -J	<u> </u>
Nürth Plastic Anchor W-UR			
			Annex C 67



able C 10.57.1: Brick data			
Description of brick	771-3-025		SEPA Blocs Creux
Type of brick			Hollow brick lightweight concrete
Bulk density	$\rho \ge$	[kg/dm³]	0.9
Standard, approval			EN 771-3:2011
Producer of brick			Sepa (France)
Format (measurement)		[mm]	500x200x200
Minimum thickness of member	h <sub>min</sub> =	[mm]	200



#### Table C 10.57.2: Installation parameters

Anchor size			W-UI	R 10
Installationsside <sup>6)</sup>			Inside /	Outside
Drill hole diameter	d <sub>0</sub> =	[mm]	1	D
Cutting diameter of drill bit	$d_{cut} \leq$	[mm]	10.	45
Depth of drill hole to deepest point	$h_1 \geq$	[mm]	60	80
Drill method		[-]	Rotary	drilling
Overall plastic anchor embedment depth	h <sub>nom</sub> =	[mm]	50	70
Diameter of clearance hole in the fixture	$d_{\rm f}$ $\leq$	[mm]	10	.5
Minimum allowable edge distance	$c_{min} \geq$	[mm]	10	0

### Table C 10.57.3: Characteristic resistance $F_{Rk}^{(1)}$ in [kN] for single anchor

Anchor size			W-UR 10
Installationsside <sup>6)</sup>			Inside / Outside
Overall plastic anchor embedment depth	h <sub>nom</sub> =	[mm]	50 mm ≤ h <sub>nom</sub> ≤ 70 mm <sup>5)</sup>
B SEPA Blocs Creux,	30°C <sup>3)</sup> / 50°C <sup>4)</sup>	[kN]	0.5
$f_b \ge 4 \text{ N/mm}^2$ - Characteristic resistance $F_{Rk}$	50°C <sup>3)</sup> / 80°C <sup>4)</sup>	[kN]	0.4
SEPA Blocs Creux,	30°C <sup>3)</sup> / 50°C <sup>4)</sup>	[kN]	0.75
$f_b \ge 6 \text{ N/mm}^2$ - Characteristic resistance $F_{Rk}$	50°C <sup>3)</sup> / 80°C <sup>4)</sup>	[kN]	0.6
Partial safety factor	2) γMm	[-]	2.5

Footnotes see Annex C 3

Recommendation: On the basis of experience values the characteristic resistance  $F_{Rk}$  have to be confirmed by job site tests.

### Würth Plastic Anchor W-UR

Performances Hollow brick lightweight concrete: SEPA Blocs Creux Brick data, installation parameters, characteristic resistance



able C 10.58.1: Brick data			-	
Description of brick	AAC			AC
Type of brick				rated Concrete
Bulk density	$\rho \ge$	[kg/dm³]		.3
Standard, approval				-4:2011
Measurement		[mm]		175x249
Minimum thickness of member	h <sub>min</sub> =	[mm]	1	75
Table C 10.58.2: Installation parametersAnchor size			W-UR 8	W-UR 10
Installationsside <sup>6)</sup>			Inside / Outside /	Inside / Outside
			Reveal	Reveal
Drill hole diameter	d	<sub>0</sub> = [mm]	8	10
Cutting diameter of drill bit	d <sub>c</sub>	<sub>ut</sub> ≤ [mm]	8.45	10.45
Depth of drill hole to deepest point	h	$ _1 \ge [mm]$	80	80
Drill method		[-]	Hammer drilling	Hammer drilling
Overall plastic anchor embedment depth	L.			
e rerai plactic anoner embedment deput	n <sub>no</sub>	$m \ge [mm]$	70	70
Diameter of clearance hole in the fixture		$m \ge [mm]$ $d_f \le [mm]$	70 8.5	70 10.5
Diameter of clearance hole in the fixture Table C 10.58.3: Characteristic resistance	(	d <sub>f</sub> ≤ [mm]	8.5 anchor W-UR 8	10.5 <b>W-UR 10</b>
Diameter of clearance hole in the fixture Table C 10.58.3: Characteristic resistance	(	d <sub>f</sub> ≤ [mm]	8.5	10.5 <b>W-UR 10</b>
Diameter of clearance hole in the fixture <b>Table C 10.58.3: Characteristic resistance</b> <b>Anchor size</b> Installationsside <sup>6)</sup>	(	$d_f \leq [mm]$	8.5 anchor W-UR 8 Inside / Outside /	10.5 W-UR 10 Inside / Outside /
Diameter of clearance hole in the fixture <b>Fable C 10.58.3: Characteristic resistance</b> <b>Anchor size</b> Installationsside <sup>6)</sup> Overall plastic anchor embedment depth <b>Autoclaved Aerated Concrete AAC</b>	e F <sub>Rk</sub> <sup>1)</sup> in [kN] f h <sub>nor</sub> 30°C <sup>3)</sup> / 50°	$d_f \leq [mm]$ or single a $m \geq [mm]$ $C^{4)}$ [kN]	8.5 anchor W-UR 8 Inside / Outside / Reveal	10.5 <b>W-UR 10</b> Inside / Outside Reveal
Diameter of clearance hole in the fixture <b>Fable C 10.58.3: Characteristic resistance</b> <b>Anchor size</b> Installationsside <sup>6)</sup> Overall plastic anchor embedment depth <b>Autoclaved Aerated Concrete AAC</b>	e F <sub>Rk</sub> <sup>1)</sup> in [kN] f h <sub>noi</sub>	$d_f \leq [mm]$ or single a $m \geq [mm]$ $C^{4)}$ [kN]	8.5 Anchor W-UR 8 Inside / Outside / Reveal 70	10.5 <b>W-UR 10</b> Inside / Outside / Reveal <b>70</b>
Diameter of clearance hole in the fixture Table C 10.58.3: Characteristic resistance Anchor size Installationsside <sup>6)</sup> Overall plastic anchor embedment depth Autoclaved Aerated Concrete AAC $f_b \ge 2 N/mm^2$ Characteristic resistance $F_{Rk}$ Autoclaved Aerated Concrete AAC	e F <sub>Rk</sub> <sup>1)</sup> in [kN] f h <sub>nor</sub> 30°C <sup>3)</sup> / 50° 50°C <sup>3)</sup> / 80° 30°C <sup>3)</sup> / 50°	or single a $m \ge [mm]$ $C^{4)} [kN]$ $C^{4)} [kN]$ $C^{4)} [kN]$	8.5 Anchor W-UR 8 Inside / Outside / Reveal 70 0.5	10.5 <b>W-UR 10</b> Inside / Outside Reveal <b>70</b> 0.75
Diameter of clearance hole in the fixture Table C 10.58.3: Characteristic resistance Anchor size Installationsside <sup>6)</sup> Overall plastic anchor embedment depth Autoclaved Aerated Concrete AAC $f_b \ge 2 N/mm^2$ Characteristic resistance $F_{Rk}$ Autoclaved Aerated Concrete AAC $f_b \ge 4 N/mm^2$	e F <sub>Rk</sub> <sup>1)</sup> in [kN] f h <sub>nor</sub> 30°C <sup>3)</sup> / 50° 50°C <sup>3)</sup> / 80°	or single a $m \ge [mm]$ $C^{4)} [kN]$ $C^{4)} [kN]$ $C^{4)} [kN]$	8.5 Anchor W-UR 8 Inside / Outside / Reveal 70 0.5 0.4	10.5 <b>W-UR 10</b> Inside / Outside Reveal 70 0.75 0.6
Diameter of clearance hole in the fixture Table C 10.58.3: Characteristic resistance Anchor size Installationsside <sup>6)</sup> Overall plastic anchor embedment depth Autoclaved Aerated Concrete AAC $f_b \ge 2 N/mm^2$ Characteristic resistance $F_{Rk}$ Autoclaved Aerated Concrete AAC $f_b \ge 4 N/mm^2$ Characteristic resistance $F_{Rk}$ Autoclaved Aerated Concrete AAC	e F <sub>Rk</sub> <sup>1)</sup> in [kN] f h <sub>nor</sub> 30°C <sup>3)</sup> / 50° 50°C <sup>3)</sup> / 80° 30°C <sup>3)</sup> / 50°	or single a $m \ge [mm]$ $C^{4)} [kN]$ $C^{4)} [kN]$ $C^{4)} [kN]$ $C^{4)} [kN]$	8.5 <b>W-UR 8</b> Inside / Outside / Reveal 70 0.5 0.4 1.5	10.5 <b>W-UR 10</b> Inside / Outside / Reveal 70 0.75 0.6 1.7
Diameter of clearance hole in the fixture Table C 10.58.3: Characteristic resistance Anchor size Installationsside <sup>6)</sup> Overall plastic anchor embedment depth Autoclaved Aerated Concrete AAC $f_b \ge 2 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Autoclaved Aerated Concrete AAC $f_b \ge 4 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Autoclaved Aerated Concrete AAC $f_b \ge 4 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$ Autoclaved Aerated Concrete AAC $f_b \ge 6 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$	e F <sub>Rk</sub> <sup>1)</sup> in [kN] f h <sub>nor</sub> 30°C <sup>3)</sup> / 50° 50°C <sup>3)</sup> / 80° 30°C <sup>3)</sup> / 80°	$d_f ≤ [mm]$ or single a m ≥ [mm] $C^{4}$ [kN] $C^{4}$ [kN] $C^{4}$ [kN] $C^{4}$ [kN] $C^{4}$ [kN] $C^{4}$ [kN]	8.5 <b>W-UR 8</b> Inside / Outside / Reveal 70 0.5 0.4 1.5 1.2	10.5 <b>W-UR 10</b> Inside / Outside / Reveal 70 0.75 0.6 1.7 1.4
Diameter of clearance hole in the fixture Table C 10.58.3: Characteristic resistance Anchor size Installationsside <sup>6)</sup> Overall plastic anchor embedment depth Autoclaved Aerated Concrete AAC $f_b \ge 2 N/mm^2$ Characteristic resistance $F_{Rk}$ Autoclaved Aerated Concrete AAC $f_b \ge 4 N/mm^2$ Characteristic resistance $F_{Rk}$ Autoclaved Aerated Concrete AAC $f_b \ge 4 N/mm^2$ Characteristic resistance $F_{Rk}$ Autoclaved Aerated Concrete AAC $f_b \ge 6 N/mm^2$	e F <sub>Rk</sub> <sup>1)</sup> in [kN] f h <sub>nor</sub> 30°C <sup>3)</sup> / 50° 50°C <sup>3)</sup> / 80° 30°C <sup>3)</sup> / 80° 50°C <sup>3)</sup> / 80° 30°C <sup>3)</sup> / 80°	$d_f ≤ [mm]$ or single a m ≥ [mm] $C^{4}$ [kN] $C^{4}$ [kN] $C^{4}$ [kN] $C^{4}$ [kN] $C^{4}$ [kN] $C^{4}$ [kN] $C^{4}$ [kN] $C^{4}$ [kN]	8.5 <b>W-UR 8</b> Inside / Outside / Reveal 70 0.5 0.4 1.5 1.2 2.5	10.5 <b>W-UR 10</b> Inside / Outside Reveal 70 0.75 0.6 1.7 1.4 2.6

[-]

<u>γμα</u>ας<sup>2)</sup>

2.0

Partial safety factor Footnotes see Annex C 3

## Würth Plastic Anchor W-UR

Performances Solid masonry: Autoclaved Aerated Concrete Brick data, installation parameters, characteristic resistance Annex C 69

2.0



Description				(Prefabricated) Reinforced components
Bulk density	<i>ρ</i> ≥	[ka	/dm³]	made of autoclaved aerated concrete 0.4
Standard, approval	μ≥	[N9		EN 12 602:2016
Minimum thickness of member	h <sub>min</sub> =	[n	nm]	175
able C 10.59.2: Installation parameters				
Anchor size				W-UR 10
Installationsside <sup>6)</sup>				Inside / Outside
Drill hole diameter	d	0 =	[mm]	10
Cutting diameter of drill bit	d <sub>cu</sub>	ut ≤	[mm]	10.45
Depth of drill hole to deepest point	h	1 ≥	[mm]	80
Drill method			[-]	Hammer drilling
Overall plastic anchor embedment depth	h <sub>nor</sub>		[mm]	70
Diameter of clearance hole in the fixture	С	$I_{f} \leq$	[mm]	10.5
Minimum allowable edge distance	C <sub>mi</sub>	in≥	[mm]	150
able C 10.59.3: Characteristic resistance F	<sub>Rk</sub> <sup>1)</sup> in [kN] for s	ingl	e ancho	or
Anchor size				W-UR 10
nstallationsside <sup>6)</sup>				Inside / Outside
Overall plastic anchor embedment depth	h <sub>non</sub>	n≥	[mm]	70
(Prefabricated) Reinforced AAC f <sub>b</sub> ≥ 2 N/mm² –	30°C <sup>3)</sup> / 50°	C <sup>4)</sup>	[kN]	0.5
Characteristic resistance F <sub>Rk</sub>	50°C <sup>3)</sup> / 80°	C <sup>4)</sup>	[kN]	0.4
(Prefabricated) Reinforced AAC f <sub>b</sub> ≥ 3 N/mm² –	30°C <sup>3)</sup> / 50°	C <sup>4)</sup>	[kN]	1.0
Γ <sub>b</sub> ≥ 3 N/mm	50°C <sup>3)</sup> / 80°	C <sup>4)</sup>	[kN]	0.9
(Prefabricated) Reinforced AAC f <sub>b</sub> ≥ 4 N/mm² –	30°C <sup>3)</sup> / 50°	C <sup>4)</sup>	[kN]	1.5
Characteristic resistance F <sub>Rk</sub>	50°C <sup>3)</sup> / 80°	C <sup>4)</sup>	[kN]	1.3
(Prefabricated) Reinforced AAC f <sub>b</sub> ≥ 4.5 N/mm <sup>2</sup> –	30°C <sup>3)</sup> / 50°	C <sup>4)</sup>	[kN]	1.75
Characteristic resistance F <sub>Rk</sub>	50°C <sup>3)</sup> / 80°	C <sup>4)</sup>	[kN]	1.5
(Prefabricated) Reinforced AAC f <sub>b</sub> ≥ 5 N/mm² –	30°C <sup>3)</sup> / 50°	C <sup>4)</sup>	[kN]	1.75
Characteristic resistance F <sub>Rk</sub>	50°C <sup>3)</sup> / 80°	C <sup>4)</sup>	[kN]	1.5
(Prefabricated) Reinforced AAC f <sub>b</sub> ≥ 6 N/mm² –	30°C <sup>3)</sup> / 50°		[kN]	1.75
Characteristic resistance F <sub>Rk</sub>	50°C <sup>3)</sup> / 80°	C <sup>4)</sup>	[kN]	1.5
(Prefabricated) Reinforced AAC f <sub>b</sub> ≥ 7 N/mm² –	30°C <sup>3)</sup> / 50°	C <sup>4)</sup>	[kN]	1.75
Characteristic resistance F <sub>Rk</sub>	50°C <sup>3)</sup> / 80°		[kN]	1.5
Partial safety factor	γмая	4C <sup>2)</sup>	[-]	2.0

### Würth Plastic Anchor W-UR

Performances Solid masonry: Reinforced components of autoclaved aerated concrete Brick data, installation parameters, characteristic resistance



Description			
			Precast prestressed hollow core eleme
Bulk density	$\rho \geq [k]$	g/dm³]	2.4
Standard, approval	p = [	<u>9, 1</u>	DIN EN 1168:2011-12; Z-15.10-276
			e.g. Ketonia GmbH Spannbeton-
Jraducer of brick			Fertigteilwerk
Producer of brick			Almesbach 4
			D-92637 Weiden
Format (measurement)		[mm]	≥ 1200x800x200
Ainimum thickness of member h	n <sub>min</sub> =	[mm]	200
able C 10.60.2: Installation parameters	1197	2	
Anchor size			W-UR 8
nstallationsside			top view / bottom view
Drill hole diameter	d <sub>0</sub> =	[mm]	8
Cutting diameter of drill bit	$d_{cut} \le$	[mm]	8.45
Depth of drill hole to deepest point	$h_1 \geq$	[mm]	80
Drill method		[-]	Hammer drilling
Overall plastic anchor embedment depth	h <sub>nom</sub> =	[mm]	70
Diameter of clearance hole in the fixture	${\rm d_f} \leq$	[mm]	8.5
able C 10.60.3: Characteristic resistance F <sub>Rk</sub> <sup>1)</sup> in [	kN1 for s	single a	nchor
Anchor size		ingio u	W-UR 8
nstallationsside			top view / bottom view
Overall plastic anchor embedment depth	h <sub>nom</sub> =	[mm]	70
Precast prestressed hollow core 30°C <sup>3)</sup>	/ 50°C <sup>4)</sup>	[kN]	1.5
elements VMM-L SCD 20, C45/55	/ 80°C <sup>4)</sup>	[kN]	1.2
Partial safety factor	2) γ <sub>Mc</sub>	[-]	1.8
ootnotes see Annex C 3			
/ürth Plastic Anchor W-UR			



Гаble С 10.61.1: Data		
Description		VMM-L EPD 32
Туре		Precast prestressed hollow core elements
Bulk density $\rho \ge$	[kg/dm³]	2.4
Standard, approval		DIN EN 1168:2011-12; Z-15.10-276
Producer of brick		e.g. Ketonia GmbH Spannbeton- Fertigteilwerk Almesbach 4 D-92637 Weiden
Format (measurement)	[mm]	≥ 1200x800x320
Minimum thickness of member h <sub>min</sub> =	[mm]	320
	≥50	anchor position
•		W-IIR 8
Anchor size		W-UR 8 top view / bottom view
Anchor size	0 = [mm]	W-UR 8 top view / bottom view 8
Anchor size Installationsside Drill hole diameter d		top view / bottom view
Anchor size Installationsside Drill hole diameter d Cutting diameter of drill bit d <sub>ci</sub>		top view / bottom view 8 8.45
Anchor sizeInstallationssideDrill hole diameterdCutting diameter of drill bitdcDepth of drill hole to deepest point	<sub>ut</sub> ≤ [mm]	top view / bottom view 8 8.45
Anchor size         Installationsside         Drill hole diameter       d         Cutting diameter of drill bit       d <sub>ct</sub> Depth of drill hole to deepest point       h         Drill method       H	$\begin{array}{c c} & & & \\ & & \\  & \\ 1 \\ 1 \\ \hline \end{array} & \begin{bmatrix} mm \end{bmatrix} \\ \hline \\ & \\ \hline \\ \hline$	top view / bottom view 8 8.45 80
Anchor size         Installationsside         Drill hole diameter       d         Cutting diameter of drill bit       dcd         Depth of drill hole to deepest point       h         Drill method       Overall plastic anchor embedment depth       h_nor	$\begin{array}{c c} & & & \\ & & \\  & \\ 1 \\ 1 \\ \hline \end{array} & \begin{bmatrix} mm \end{bmatrix} \\ \hline \\ & \\ \hline \\ \hline$	top view / bottom view 8 8.45 80 Hammer drilling
Anchor size         Installationsside         Drill hole diameter       d         Cutting diameter of drill bit       d <sub>ct</sub> Depth of drill hole to deepest point       h         Drill method       Overall plastic anchor embedment depth       h <sub>nor</sub> Diameter of clearance hole in the fixture       c         Cable C 10.61.3: Characteristic resistance F <sub>Rk</sub> <sup>1)</sup> in [kN] fe         Anchor size	$\begin{array}{c c} & & & \\ & & \\ 1 \\ 1 \\ \hline \\ 1 \\ 1$	top view / bottom view 8 8.45 80 Hammer drilling 70 8.5
Anchor size         Installationsside         Drill hole diameter       d         Cutting diameter of drill bit       dca         Depth of drill hole to deepest point       h         Drill method       Overall plastic anchor embedment depth       hnor         Diameter of clearance hole in the fixture       c         Call Comparison       c       c         Call Comparison       c       c         Diameter of clearance hole in the fixture       c       c         Call Comparison       c       c       c	$\begin{array}{c c} & & & \\ & & \\ 1 \\ 1 \\ \hline \\ 1 \\ 1$	top view / bottom view 8 8.45 80 Hammer drilling 70 8.5 nchor
Anchor size         Installationsside         Drill hole diameter       d         Cutting diameter of drill bit       d_c         Depth of drill hole to deepest point       h         Drill method       Overall plastic anchor embedment depth       h_nor         Diameter of clearance hole in the fixture       c         Cable C 10.61.3: Characteristic resistance $F_{Rk}^{1}$ in [kN] for         Anchor size         Installationsside         Overall plastic anchor embedment depth	$L_{t} \leq [mm]$ $1 \geq [mm]$ $1 \geq [mm]$ m = [mm] $M_{f} \leq [mm]$ or single a	top view / bottom view 8 8.45 80 Hammer drilling 70 8.5 nchor W-UR 8
Anchor size         Installationsside         Drill hole diameter       d         Cutting diameter of drill bit       dct         Depth of drill hole to deepest point       h         Drill method       Overall plastic anchor embedment depth       hnor         Diameter of clearance hole in the fixture       c         Table C 10.61.3: Characteristic resistance $F_{Rk}^{1}$ in [kN] for         Anchor size         Installationsside         Overall plastic anchor embedment depth         Anchor size         Installationsside         Overall plastic anchor embedment depth         9.0°C <sup>3)</sup> / 50°	$\begin{array}{c c} & & & \\ m_{1} \leq & [mm] \\ 1 \geq & [mm] \\ \hline & & [-] \\ m = & [mm] \\ p_{f} \leq & [mm] \\ \hline \\ or single a \\ \hline \\ m = & [mm] \end{array}$	top view / bottom view 8 8.45 80 Hammer drilling 70 8.5 nchor W-UR 8 top view / bottom view
Cutting diameter of drill bit $d_{ci}$ Depth of drill hole to deepest point       h         Drill method       0         Overall plastic anchor embedment depth $h_{nor}$ Diameter of clearance hole in the fixture       c         Table C 10.61.3: Characteristic resistance $F_{Rk}^{1}$ in [kN] fe         Anchor size         Installationsside         Overall plastic anchor embedment depth         Precast prestressed hollow core         elements VMM-L EPD 32, C45/55         Characteristic resistance $F_{Rk}$	$\begin{array}{c c} & & & \\ m \\ 1 \geq & [mm] \\ \hline 1 \geq & [mm] \\ \hline \\ m \\ m$	top view / bottom view 8 8.45 80 Hammer drilling 70 8.5 nchor W-UR 8 top view / bottom view 70

# Würth Plastic Anchor W-UR

Performances Precast prestressed hollow core elements VMM-L EPD 32 Brick data, installation parameters, characteristic resistance



Description	VMM VSD 16			
Гуре			Precast prestressed hollow core elements	
Bulk density	$\rho \ge$	[kg/dm³]	2.4	
Standard, approval			DIN EN 1168:2011-12; Z-15.10-276	
			z.B. Ketonia GmbH Spannbeton-	
Producer of brick			Fertigteilwerk	
			Almesbach 4	
Format (magguramant)		[	D-92637 Weiden	
Format (measurement) Minimum thickness of member	b	[mm]	≥ 1200x400x160 160	
	h <sub>min</sub> =	[mm]	160	
Anchor size			tion 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
nstallationsside			top view / bottom view	
Drill hole diameter	d <sub>o</sub>	= [mm]	8	
Cutting diameter of drill bit	d <sub>cut</sub>	<u> </u>	8.45	
Depth of drill hole to deepest point		≥ [mm]	80	
Drill method	•	[-]	Hammer drilling	
Overall plastic anchor embedment depth	h <sub>nom</sub>		70	
Diameter of clearance hole in the fixture		≤ [mm]	8.5	
able C 10.62.3Characteristic resistance F <sub>R</sub>	<sup>1)</sup> in [kN] for	single an	chor	
Anchor size			W-UR 8	
			top view / bottom view	
	h <sub>nom</sub>	= [mm]	70	
		2 <sup>4)</sup> [kN]	2.5	
Overall plastic anchor embedment depth Precast prestressed hollow core	30°C <sup>3)</sup> / 50°C		2.0	
nstallationsside Overall plastic anchor embedment depth Precast prestressed hollow core elements VMM VSD 16, C45/55 — Characteristic resistance F <sub>Rk</sub>	30°C <sup>3)</sup> / 50°C 50°C <sup>3)</sup> / 80°C	2 <sup>4)</sup> [kN]	2.0	
Dverall plastic anchor embedment depth         Precast prestressed hollow core         elements VMM VSD 16, C45/55			1.8	

Performances Precast prestressed hollow core elements VMM VSD 16 Brick data, installation parameters, characteristic resistance



Description of brick			MultiGips R.max Schallschutzplatte
Гуре of brick			Gypsum blocks
Bulk density	$\rho \ge$	[kg/dm³]	1.2
Standard, approval			DIN EN 12859:2011-05
Producer of brick			VG-ORTH GmbH & Co. KG Holeburgweg 24 D-37627 Stadtoldendorf
		[	> 500-500-400
Format (measurement)		[mm]	≥ 500x500x100
Minimum thickness of member	h <sub>min</sub> =	[mm] [mm]	100
	h <sub>min</sub> =		
Minimum thickness of member Table C 10.63.2: Installation parameters Anchor size	h <sub>min</sub> =		100
Minimum thickness of member         Table C 10.63.2: Installation parameters			100 <b>W-UR 8</b>
Minimum thickness of member Table C 10.63.2: Installation parameters Anchor size Installationsside <sup>6)</sup>	d	[mm]	100 <b>W-UR 8</b> Inside / Outside
Minimum thickness of member <b>Table C 10.63.2: Installation parameters</b> <b>Anchor size</b> Installationsside <sup>6)</sup> Drill hole diameter Cutting diameter of drill bit	d d <sub>ci</sub>	[mm]	100 <b>W-UR 8</b> Inside / Outside 8
Minimum thickness of member <b>Table C 10.63.2: Installation parameters</b> <b>Anchor size</b> Installationsside <sup>6)</sup> Drill hole diameter	d d <sub>ci</sub>	[mm]	100 W-UR 8 Inside / Outside 8 8.45
Minimum thickness of member <b>able C 10.63.2: Installation parameters</b> <b>Anchor size</b> Installationsside <sup>6)</sup> Drill hole diameter Cutting diameter of drill bit Depth of drill hole to deepest point	d d <sub>ci</sub>	$[mm]$ $0 = [mm]$ $u_{t} \leq [mm]$ $1 \geq [mm]$ $[-]$	100 <b>W-UR 8</b> Inside / Outside 8 8.45 80

Anchor size			W-UR 8
Installationsside <sup>6)</sup>			Inside / Outside
Overall plastic anchor embedment depth	h <sub>nom</sub> ≥	[mm]	70
Gypsum blocks: MultiGips R.max Schallschutzplatte, $f_b \ge 11,7 \text{ N/mm}^2$ Characteristic resistance $F_{Rk}$	30°C <sup>3)</sup> / 50°C <sup>4)</sup>	[kN]	1.2
	50°C <sup>3)</sup> / 80°C <sup>4)</sup>	[kN]	1.2
Partial safety factor	2) γ <sub>Mm</sub>	[-]	2.5

Footnotes see Annex C 3

## Würth Plastic Anchor W-UR

**Performances Gypsum blocks: MultiGips R.max Schallschutzplatte** Brick data, installation parameters, characteristic resistance