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European Technical Assessment Body
for construction products



European Technical Assessment

ETA-11/0309
of 18 September 2024

English translation prepared by DIBt - Original version in German language

General Part

Technical Assessment Body issuing the European Technical Assessment:

Deutsches Institut für Bautechnik

Trade name of the construction product

Würth Plastic Anchor W-UR SymCon

Product family to which the construction product belongs

Plastic anchor for redundant non-structural systems in concrete and masonry

Manufacturer

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

Manufacturing plant

Herstellwerk 2

This European Technical Assessment contains

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

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

EAD 330284-00-0604, edition 12/2020

This version replaces

ETA-11/0309 issued on 13 April 2018

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Specific Part

1 Technical description of the product

The Würth Plastic Anchor W-UR SymCon in the sizes W-UR 6, W-UR 10 and W-UR 14 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 Safety in case of fire (BWR 2)

Essential characteristic	Performance
Reaction to fire	Class A1
Resistance to fire	See Annex C 3

3.2 Mechanical resistance and stability (BWR 4)

Essential characteristic	Performance
Resistance to steel failure under tension loading	See Annex C 1 and C 2
Resistance to steel failure under shear loading	See Annex C 1 and C 2
Resistance to pull-out or concrete failure under tension loading (base material group a)	See Annex C 1, C 2, C 68 and C 69
Resistance in any load direction without lever arm (base material group b, c and d)	See Annexes C 11 – C 66
Edge distance and spacing (base material group a)	See Annex B 3
Edge distance and spacing (base material group b, c and d)	See Annex B 3, B 4 and C 11 – C 66
Displacements under short-term and long-term loading	See Annex C 3
Durability	See Annex B 1

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

In accordance with European Assessment Document EAD 330284-00-0604 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 EAD

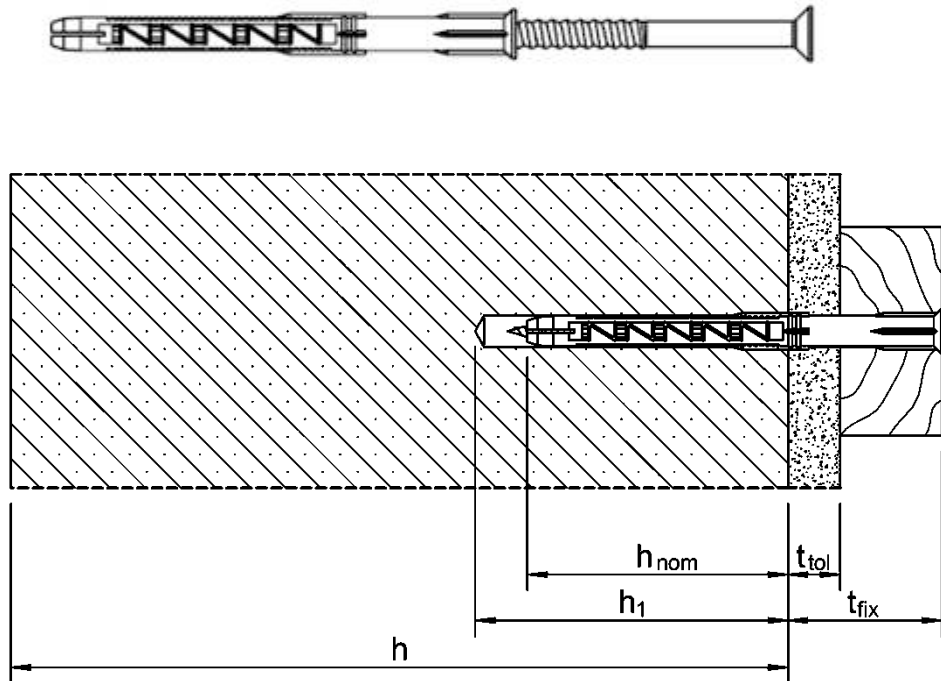
Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited with Deutsches Institut für Bautechnik.

Issued in Berlin on 18 September 2024 by Deutsches Institut für Bautechnik

Dipl.-Ing. Beatrix Wittstock
Head of Section

beglaubigt:
Aksünger

Plastic Anchor W-UR 6 SymCon



Legend:

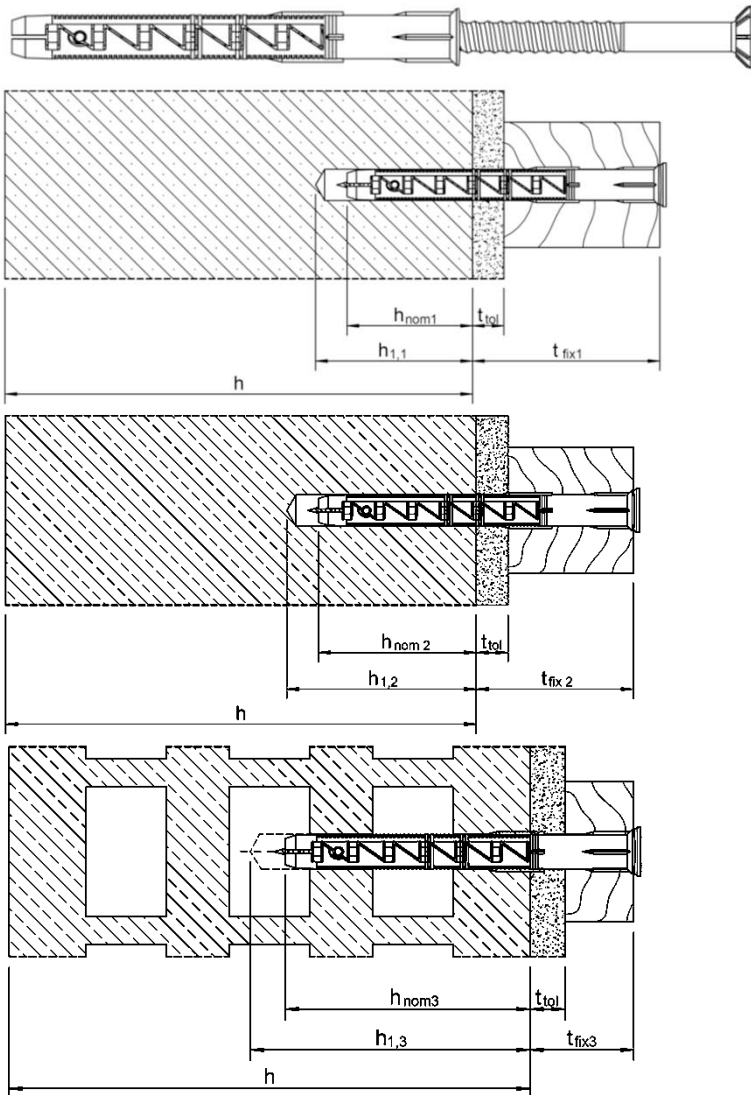
- h: thickness of member
- h_{nom} : overall plastic anchor embedment depth in the base material
- h_1 : depth of drilled hole
- t_{tol} : thickness of equalizing layer or non-load-bearing coating
- t_{fix} : thickness of fixture

Würth Plastic Anchor W-UR SymCon

Product description
 Installed condition W-UR 6 SymCon

Annex A 1

Plastic Anchor W-UR 10 SymCon



Legend:

- h: thickness of member
- h_{nom1}: overall plastic anchor embedment depth 1 in the base material
- h_{nom2}: overall plastic anchor embedment depth 2 in the base material
- h_{nom3}: overall plastic anchor embedment depth 3 in the base material
- h_{1,1}: depth of drill hole (1)
- h_{1,2}: depth of drill hole (2)
- h_{1,3}: depth of drill hole (3)
- t_{tol}: thickness of equalizing layer or non-load-bearing coating
- t_{fix1}: thickness of fixture (1)
- t_{fix2}: thickness of fixture (2)
- t_{fix3}: thickness of fixture (3)

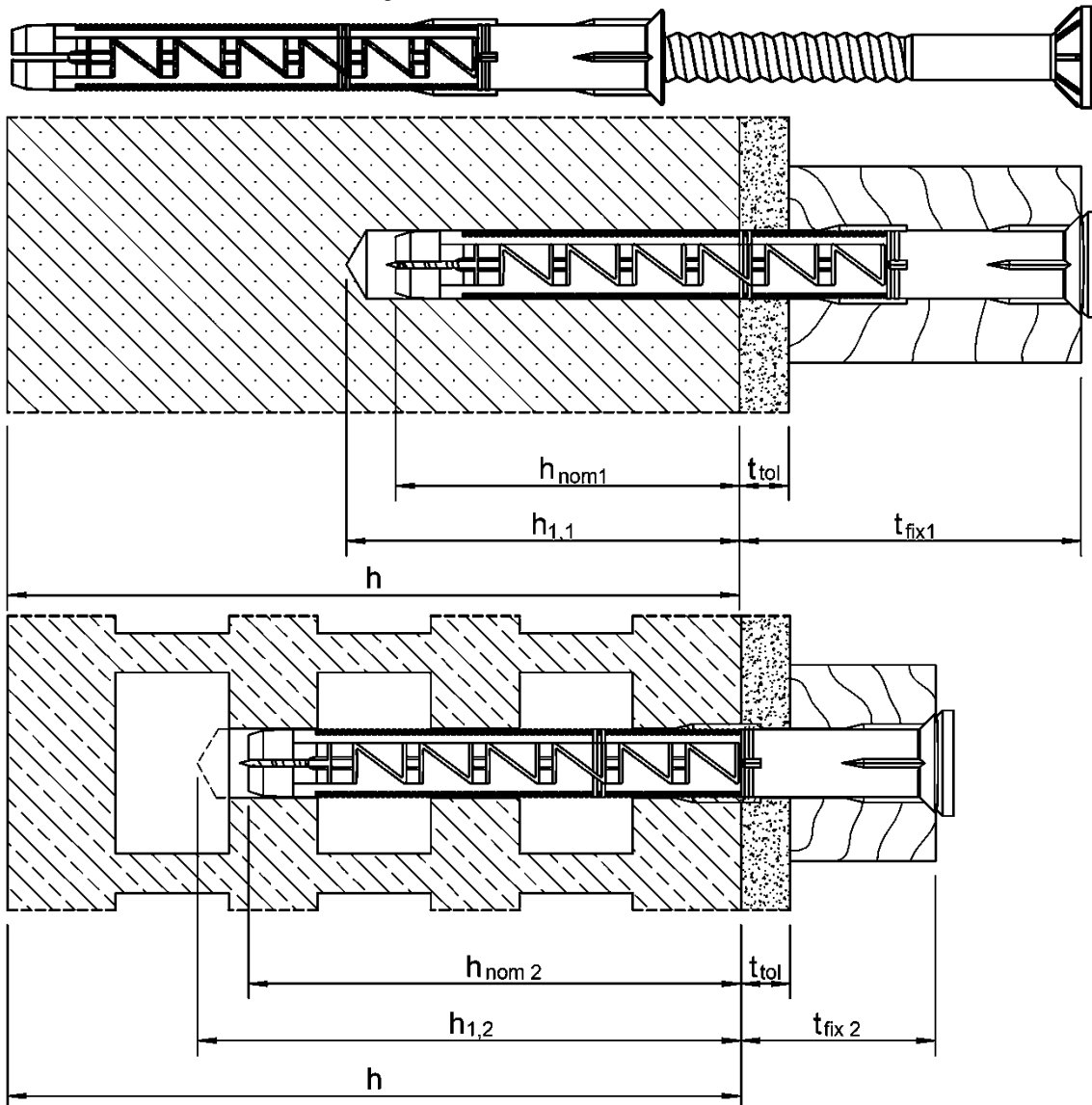
Würth Plastic Anchor W-UR SymCon

Product description

Installed condition W-UR 10 SymCon

Annex A 2

Plastic Anchor W-UR 14 SymCon



Legend:

- h: thickness of member
- h_{nom1} : overall plastic anchor embedment depth 1 in the base material
- h_{nom2} : overall plastic anchor embedment depth 2 in the base material
- $h_{1,1}$: depth of drill hole (1)
- $h_{1,2}$: depth of drill hole (2)
- t_{tol} : thickness of equalizing layer or non-load-bearing coating
- t_{fix1} : thickness of fixture (1)
- t_{fix2} : thickness of fixture (2)

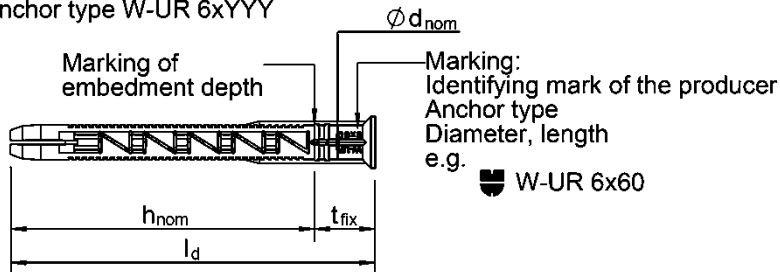
Würth Plastic Anchor W-UR SymCon

Product description
Installed condition W-UR 14 SymCon

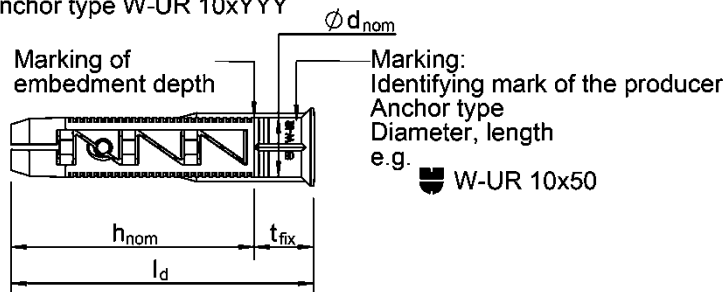
Annex A 3

Plastic sleeve

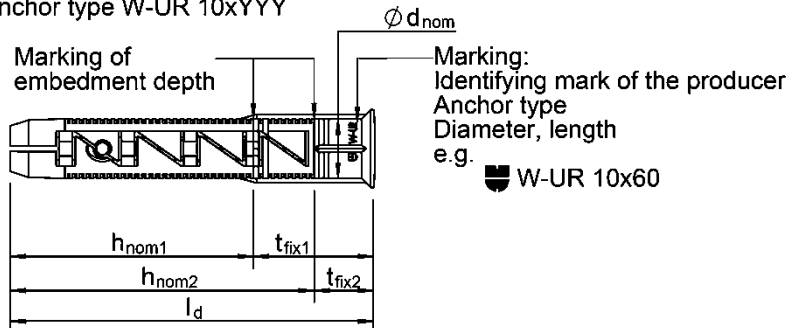
Anchor type W-UR 6xYYY



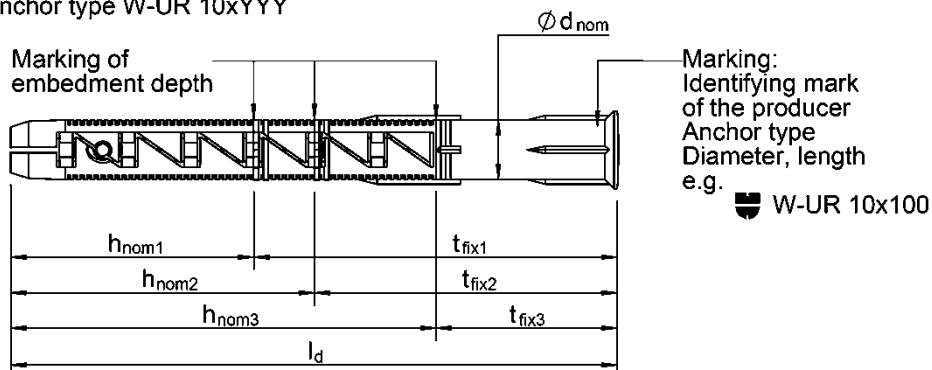
Anchor type W-UR 10xYYY



Anchor type W-UR 10xYYY



Anchor type W-UR 10xYYY



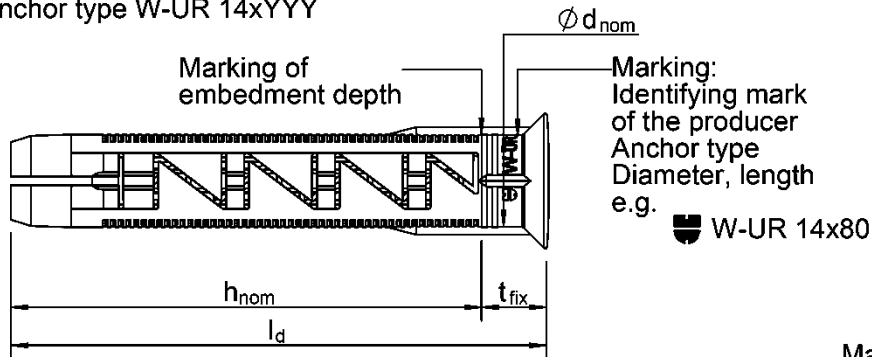
Würth Plastic Anchor W-UR SymCon

Product description

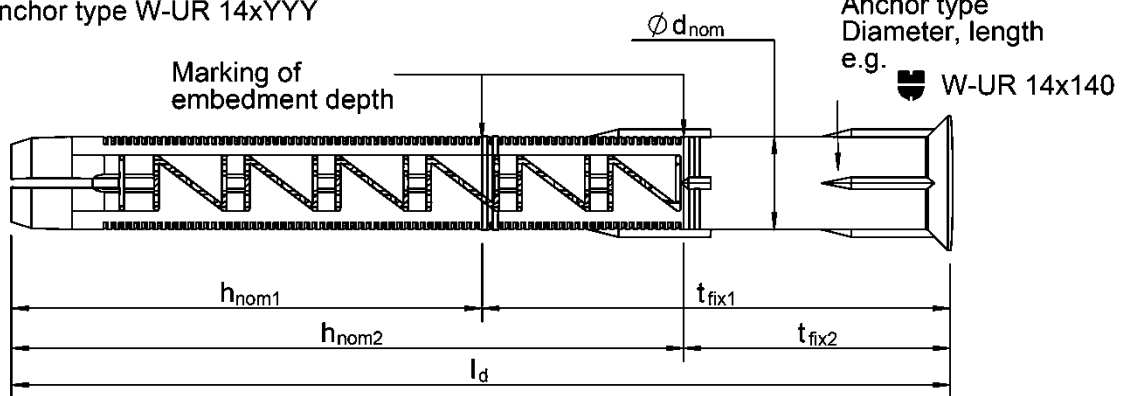
Anchor types W-UR 6 SymCon and W-UR 10 SymCon – marking and dimensions

Annex A 4

Anchor type W-UR 14xYYY

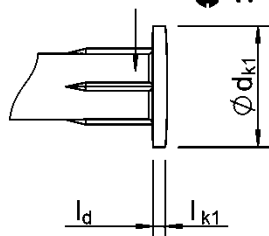


Anchor type W-UR 14xYYY



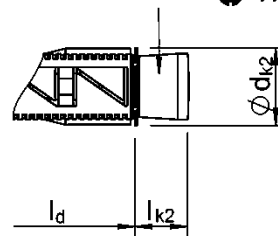
Anchor type W-UR F 6, 10 und 14

Marking:
Identifying mark
of the producer
Anchor type
Diameter, length
e.g. W-UR F 10x100



Anchor type W-UR XS 6, 10 und 14

Marking:
Identifying mark
of the producer
Anchor type
Diameter, length
e.g. W-UR XS 10x70



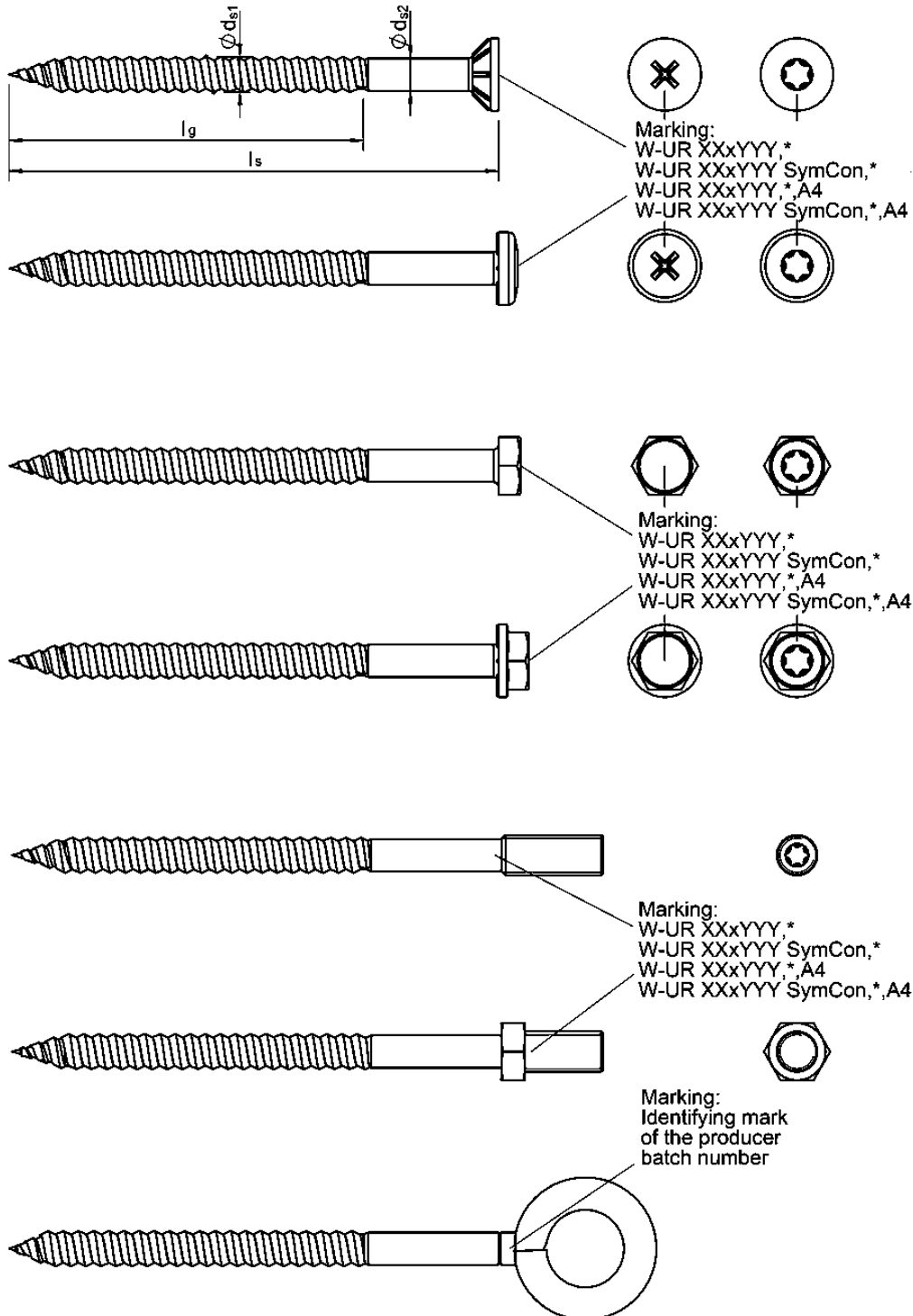
Würth Plastic Anchor W-UR SymCon

Product description

Anchor types W-UR 14 SymCon – marking and dimensions
Anchor types W-UR 6 SymCon to W-UR 14 SymCon – head versions of the sleeve

Annex A 5

Special screw



Würth Plastic Anchor W-UR SymCon

Product description
Specific screw, Stair bolt – loop – head versions
Marking and dimensions

Annex A 6

Table A1.1: Anchor dimensions W-UR 6 SymCon, W-UR 10 SymCon

Anchor type		W-UR 6 SymCon 6 x l _d	W-UR 10 SymCon 10 x l _d		
Overall plastic anchor embedment depth	h _{nom} ≥ [mm]	50	40	40 (h _{nom1}) or 50 (h _{nom2})	40 (h _{nom1}), 50 (h _{nom2}) or 70 (h _{nom3})
Plastic sleeve					
Plastic sleeve diameter	∅ d _{nom} = [mm]	6	10		
Length of plastic sleeve	l _d [mm]	≥ 50	≥ 40	≥ 50	≥ 70
Flat collar diameter	∅ d _{k1} = [mm]	12,5	18		
	∅ d _{k2} = [mm]	-	11,5		
Thickness of flat collar	l _{k1} ≥ [mm]	1,2	2		
	l _{k2} ≥ [mm]	-	7,8		
Thickness of fixture	t _{fix} ≥ [mm]	0	0		
Special screw					
Screw diameter	d _{s1} = [mm]	5	7,2		
Screw diameter	d _{s2} = [mm]	4,55	7		
Length of screw	l _s = [mm]	l _d + 5 mm	l _d + 5 mm		
Length of thread	l _g = [mm]	55	45	75	75

Table A1.2: Anchor dimensions W-UR 14 SymCon

Anchor type		W-UR 14 SymCon	
		14 x 80	14 x l _d
Overall plastic anchor embedment depth	h _{nom} ≥ [mm]	70	70 (h _{nom1}) or 100 (h _{nom2})
Plastic sleeve			
Plastic sleeve diameter	∅ d _{nom} = [mm]	14	
Length of plastic sleeve	l _d [mm]	= 80	≥ 110
Flat collar diameter	∅ d _{k1} = [mm]	24	
Thickness of flat collar	l _{k1} ≥ [mm]	3	
Thickness of fixture	t _{fix} ≥ [mm]	0	
Special screw			
Screw diameter	d _{s1} = [mm]	10,5	
Screw diameter	d _{s2} = [mm]	9,6	9,6 (head-form loop: 9,6 or 12,0)
Length of screw	l _s = [mm]	l _d + 5 mm	
Length of thread	l _g = [mm]	75	105

Würth Plastic Anchor W-UR SymCon

Product description
Dimensions

Annex A 7

Table A2: Materials

Designation	Material
Plastic sleeve	Polyamide, colour brown
Special screw	Carbon steel, according to EN ISO 4042:2022, galvanised Stainless steel "A2" of corrosion resistance class CRC II in accordance with EN 1993-1-4 Stainless steel "A4" of corrosion resistance class CRC III in accordance with EN 1993-1-4
Special screw – head-form loop $d_{s2} = 9.6 \text{ mm}$	Carbon steel, according to EN ISO 4042:2022, galvanised
Special screw – head-form loop $d_{s2} = 12 \text{ mm}$	Carbon steel, according to EN ISO 4042:2022, galvanised

Würth Plastic Anchor W-UR SymCon

Product description
Materials

Annex A 8

Specifications of intended use

Anchorage subject to:

- Static or quasi-static loads
- redundant non-structural systems

Base materials:

- Reinforced or unreinforced compacted normal weight concrete without fibres with strength classes \geq C12/15 (base material group a), in accordance with EN 206:2013+A1:2016, Annex C 1 – C 2. Precast or prestressed hollow core elements according to Annex C 66, weather resistant skins of external wall panels according to Annex C 67 - Annex C 68 and hollow core ceilings according to Annex C 69.

- Solid brick masonry (base material group b) as per EN 771-1:2011+A1:2015, EN 771-2:2011+A1:2015 or EN 771-3:2011+A1:2015, Annex C 11, C 12, C 39 – C 41 and C 48 – C 55.

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

- Hollow brick masonry (base material group c) as per EN 771-1:2011+A1:2015, EN 771-2:2011+A1:2015 or EN 771-3:2011+A1:2015, Annex C 13 – C 38, C 42 – C 47 and C 56 – C 63.

- Unreinforced autoclaved aerated concrete (base material group d) as per EN 771-4:2011+A1:2015, Annex C 64 – C65.
- Mortar strength class of the masonry \geq M2,5 at minimum according to EN 998-2:2010.

- For other base materials of the base material groups a, b, c and d the characteristic resistance of the anchor may be determined by job site tests according to EOTA Technical Report TR 51:2018-04

Temperature range:

- Range b): -40°C to $+80^{\circ}\text{C}$ (max. long term temperature $+50^{\circ}\text{C}$ and max. short term temperature $+80^{\circ}\text{C}$)
- Range c): -40°C to $+50^{\circ}\text{C}$ (max. long term temperature $+30^{\circ}\text{C}$ and max. short term temperature $+50^{\circ}\text{C}$)

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 EOTA Technical Report TR 64, 2022-12 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.

Installation:

- Hole drilling by the drill modes according to Annex C 11 – C 69.
- 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 -40°C to $+40^{\circ}\text{C}$.
- Exposure to UV due to solar radiation of the anchor not protected \leq 6 weeks.
- No ingress of water in the borehole at temperatures $< 0^{\circ}\text{C}$.

Würth Plastic Anchor W-UR SymCon

Intended use
Specifications

Annex B 1

Table B1.1: Installation parameters W-UR 6 SymCon, W-UR 10 SymCon

Anchor type		W-UR 6 SymCon		W-UR 10 SymCon		
		6 x I _d		10 x I _d		
Drill hole diameter	d ₀ = [mm]	6		10		
Overall plastic anchor embedment depth ^{1),2)}	h _{nom} ≥ [mm]	50	40	40 (h _{nom1}) or 50 (h _{nom2})	40 (h _{nom1}), 50 (h _{nom2}) or 70 (h _{nom3})	
Cutting diameter of drill bit	d _{cut} ≤ [mm]	6,4		10,45		
Depth of drill hole to deepest point ¹⁾	h ₁ ≥ [mm]	60	50	50 (h _{1,1}) or 60 (h _{1,2})	50 (h _{1,1}), 60 (h _{1,2}) or 80 (h _{1,3})	
Diameter of clearance hole in the fixture	d _f ≤ [mm]	6,5		10,5		

¹⁾ See Annex A 1 and Annex A 2

²⁾ For hollow and perforated masonry, the influence of h_{nom} > 70 mm (W-UR 10 SymCon) has to be detected by job site tests according EOTA Technical Report TR 51:2018-04.

For anchorages in hollow and perforated masonry with anchor type W-UR 10 SymCon 10 x I_d (with h_{nom2} = 50 mm and h_{nom3} = 70 mm) variable set in the range h_{nom2} = 50 mm ≤ h_{nom} < 70 mm = h_{nom3} the characteristic values F_{Rk} for h_{nom1} = 50 mm may be taken without performing additional job site tests (compare Annex C 60).

Table B1.2: Installation parameters W-UR 14 SymCon

Anchor type		W-UR 14 SymCon	
		14 x 80	14 x I _d
Drill hole diameter	d ₀ = [mm]	14	
Overall plastic anchor embedment depth ^{1),2)}	h _{nom} ≥ [mm]	70	70 (h _{nom1}) or 100 (h _{nom2})
Cutting diameter of drill bit	d _{cut} ≤ [mm]	14.45	
Depth of drill hole to deepest point ¹⁾	h ₁ ≥ [mm]	80	80 (h _{1,1}) or 110 (h _{1,2})
Diameter of clearance hole in the fixture	d _f ≤ [mm]	14.5	

¹⁾ See Annex A 3

²⁾ For hollow and perforated masonry, the influence of h_{nom} > 100 mm (W-UR 14 SymCon) has to be detected by job site tests according EOTA Technical Report TR 51:2018-04.

For anchorages in hollow and perforated masonry with anchor type W-UR 14 SymCon 14 x I_d (with h_{nom1} = 70 mm and h_{nom2} = 100 mm) variable set in the range h_{nom1} = 70 mm ≤ h_{nom} < 100 mm = h_{nom2} the characteristic values F_{Rk} for h_{nom1} = 70 mm may be taken without performing additional job site tests (compare Annex C 20, Annex C 29, Annex C 31, Annex C 33 and Annex C 45).

For anchorages in hollow and perforated masonry with anchor type W-UR 14 x 80 SymCon (h_{nom} = 70 mm) the influence 70 < h_{nom} ≤ 79 mm always has to be detected by job site tests.

Würth Plastic Anchor W-UR SymCon

Intended use
Installation parameter

Annex B 2

**Table B2: Minimum thickness of member, edge distance and anchor spacing in base material group “a”:
Concrete**

W-UR 6 SymCon: Fixing points with a spacing $a \leq 55$ mm (for C12/15 $a \leq 80$ mm) are considered as a group with a max. characteristic resistance $N_{Rk,p}$ acc. to Table C 2.1. For $a > 55$ mm (for C12/15 $a > 80$ mm), the anchors are considered as single anchors, each with a characteristic resistance $N_{Rk,p}$ acc. to Table C 2.1

W-UR 10 SymCon: Fixing points with a spacing $a \leq 125$ mm (for C12/15 $a \leq 175$ mm) are considered as a group with a max. characteristic resistance $N_{Rk,p}$ acc. to Table C 2.1. For $a > 125$ mm (for C12/15 $a \geq 175$ mm), the anchors are considered as single anchors, each with a characteristic resistance $N_{Rk,p}$ acc. to Table 2.1.

W-UR 14 SymCon: Fixing points with a spacing $a \leq 130$ mm (for C12/15 $a \leq 185$ mm) are considered as a group with a max. characteristic resistance $N_{Rk,p}$ acc. to Table C 2.2. For $a > 130$ mm (for C12/15 $a \geq 185$ mm), the anchors are considered as single anchors, each with a characteristic resistance $N_{Rk,p}$ acc. to Table C 2.2.

		h_{nom} [mm]	h_{min} [mm]	c_{cr} [mm]	s_{cr} [mm]	c_{min} [mm]	s_{min} [mm]
W-UR 6 SymCon	Concrete \geq C16/20	≥ 50	90	40	55	40	40
	Concrete C12/15	≥ 50	90	60	80	60	60
W-UR 10 SymCon	Concrete \geq C16/20	≥ 40	80	60	90	40	50
	Concrete C12/15	≥ 40	80	80	125	55	70
	Concrete \geq C16/20	≥ 50	90	60	90	50	50
	Concrete C12/15	≥ 50	90	80	125	70	70
	Concrete \geq C16/20	≥ 70	110	60	125	60	50
	Concrete C12/15	≥ 70	110	80	175	80	70
W-UR 14 SymCon	Concrete \geq C16/20	≥ 70	110	80	125	60	60
	Concrete C12/15	≥ 70	110	110	175	85	85
	Concrete \geq C16/20	≥ 100	140	100	130	80	80
	Concrete C12/15	≥ 100	140	140	185	115	115

**Table B3: Minimum thickness of member, edge distance and anchor spacing in base material group “b”
and “c”: Masonry**

			Masonry			
			W-UR 10 SymCon		W-UR 14 SymCon	
Overall plastic anchor embedment depth	h_{nom}	[mm]	50	70	70	100
Minimum thickness of member	h_{min}	[mm]	115 ¹⁾		100 ¹⁾	
Single anchor						
Minimum allowable spacing	a_{min}	[mm]	250		250	
Minimum allowable edge distance	$c_{1,min}$	[mm]	100 ¹⁾		100 (240) ²⁾	
Anchor group						
Spacing perpendicular to free edge	$s_{1,min}$	[mm]	100 ¹⁾		200 (400) ²⁾	
Spacing parallel to free edge	$s_{2,min}$	[mm]	100 ¹⁾		400 (960) ²⁾	
Minimum allowable edge distance	c_{min}	[mm]	100 ¹⁾		100 (240) ²⁾	

1) h_{min} , c_{min} , and s_{min} depend on the brick size and/or on the brick: See the following Annex C 11- Annex C 65.

2) depends on brick (see the following Annex C 11 - Annex C 64) – the values in brackets govern for masonry units with a height < 100 mm

Würth Plastic Anchor W-UR SymCon

Intended use

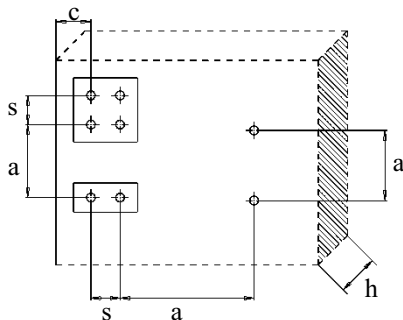
Edge distances and spacings for use in concrete and masonry

Annex B 3

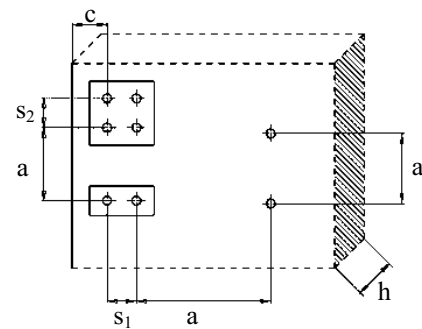
**Table B4: Minimum thickness of member, edge distance and anchor spacing in base material group “d”:
autoclaved aerated concrete (AAC)**

		Autoclaved Aerated Concrete							
		W-UR 10 SymCon				W-UR 14 SymCon			
		AAC 2		AAC 4		AAC 2		AAC 4	
		-		-		-		-	
		AAC 3.5		AAC 6		AAC 3.5		AAC 6	
Overall plastic anchor embedment depth	h_{nom}	70				100			
Minimum thickness of member	h_{min}	100	175 ¹⁾	100	175 ¹⁾	175	249		
Single anchor									
Minimum allowable spacing	a_{min}	250				250			
Minimum allowable edge distance	$c_{1,min}$	60	100 ¹⁾	100	100	240 ¹⁾	120	240 ¹⁾	
Minimum edge distance perpendicular to $c_{1,min}$	$c_{2,min}$	90	150 ¹⁾	150	150	360 ¹⁾	180	360 ¹⁾	
Anchor group									
Spacing perpendicular to free edge	$s_{1,min}$	100		200		80		240 250 ¹⁾	
Spacing parallel to free edge	$s_{2,min}$	100		250		80		250	
Minimum allowable edge distance	$c_{1,min}$	60	100 ¹⁾	100	100	240 ¹⁾	120	240 ¹⁾	
Minimum edge distance perpendicular to $c_{1,min}$	$c_{2,min}$	90	150 ¹⁾	150	150	360 ¹⁾	180	360 ¹⁾	

¹⁾ Larger member thickness and/or larger edge distance and spacing for greater characteristic resistances F_{Rk} see Annex C 64 and Annex C 65.



Concrete (Table B2):



Masonry (Table B3) and AAC (Table B4)

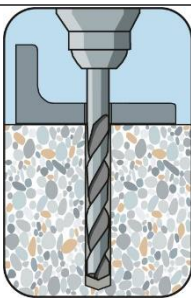
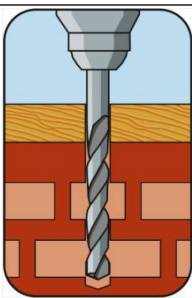
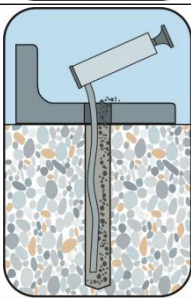
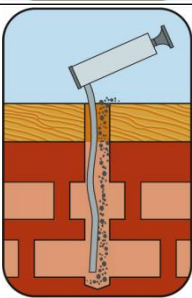
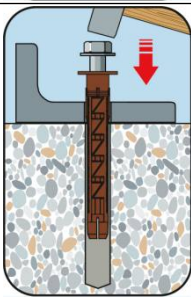
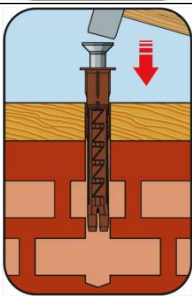
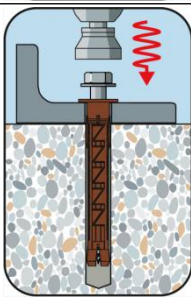
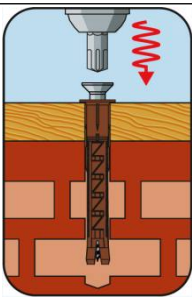
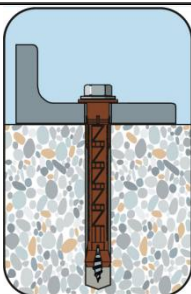
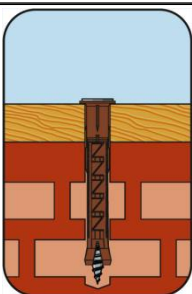
Würth Plastic Anchor W-UR SymCon

Intended use

Edge distances and spacings for use in autoclaved aerated concrete

Annex B 4

Installation instructions in-place installation for concrete and solid masonry or hollow masonry

		<p>Drill the bore hole</p>
		<p>Clean the drilled bore hole</p>
		<p>Gently hammer the fastener into the hole</p>
		<p>Insert the special screw into the sleeve</p>
		<p>Tighten the screw until the head of the screw touches the sleeve. The anchor is correct mounted, if there is no turn-through of the plastic sleeve in the drill hole and if slightly move on turning of the screw is impossible after the complete turn-in of the screw.</p>

Würth Plastic Anchor W-UR SymCon

Intended use
Installation instructions

Annex B 5

Table C1.1: Characteristic resistance of the screw W-UR 6 SymCon and W-UR 10 SymCon

Failure of expansion element (special screw)			Galvanised steel W-UR SymCon				Stainless steel W-UR SymCon			
			6		10		6		10	
Overall plastic anchor embedment depth	h_{nom}	[mm]	50	40	50	70	50	40	50	70
Screw diameter	d_{s1}/d_{s2}	[mm]	5 / 4,55	7,2 / 6,6		5 / 4,55		7,2 / 6,6		
Characteristic tension resistance	$N_{Rk,s}$	[kN]	7,17	18,70		8,36		21,82		
Partial safety factor	$\gamma_{Ms}^{1)}$	[-]	1,5	1,5		1,87		1,87		
Characteristic shear resistance	$V_{Rk,s}$	[kN]	3,58	9,35		4,18		10,91		
Partial safety factor	$\gamma_{Ms}^{1)}$	[-]	1,25	1,25		1,56		1,56		
Characteristic bending resistance	$M_{Rk,s}$	[Nm]	4,19	17,67		4,89		20,62		
Partial safety factor	$\gamma_{Ms}^{1)}$	[mm]	1,25	1,25		1,56		1,56		

1) In absence of other national regulations

Table C2.1: Characteristic resistance for pullout failure for use in concrete W-UR 6 SymCon and W-UR 10 SymCon (hammer drilling)

Pull-out failure (plastic sleeve)			Galvanised steel and stainless steel W-UR SymCon				
			6		10		
Overall plastic anchor embedment depth	h_{nom}	[mm]	50	40	50	70	
Concrete \geq C16/20							
Characteristic resistance	$30^{\circ}C^{2)} / 50^{\circ}C^{3)}$	$N_{Rk,p}$	[kN]	2,0	5,5	5,5	8,5
	$50^{\circ}C^{2)} / 80^{\circ}C^{3)}$	$N_{Rk,p}$	[kN]	-	5,0	5,0	5,5
Partial safety factor	$\gamma_{Mc}^{1)}$	[-]	1,8				
Concrete C12/15							
Characteristic resistance	$30^{\circ}C^{2)} / 50^{\circ}C^{3)}$	$N_{Rk,p}$	[kN]	2,0	4,0	4,0	7,5
	$50^{\circ}C^{2)} / 80^{\circ}C^{3)}$	$N_{Rk,p}$	[kN]	-	3,5	3,5	5,5
Partial safety factor	$\gamma_{Mc}^{1)}$	[-]	1,8				

1) In absence of other national regulations

2) Maximum long term temperature

3) Maximum short term temperature

Würth Plastic Anchor W-UR SymCon

Performances

Characteristic resistance of the screw, characteristic resistance for use in concrete (W-UR 6 SymCon, W-UR 10 SymCon)

Annex C 1

Table C1.2: Characteristic resistance of the screw W-UR 14 SymCon

Failure of expansion element (special screw)			Galvanised steel W-UR SymCon				Stainless steel W-UR SymCon	
			14		Head-form Loop 14		14	
Overall plastic anchor embedment depth	h_{nom}	[mm]	70	100	70	100	70	100
Screw diameter	d_{s1}/d_{s2}	[mm]	10,5 / 9,6		10,5 / 9,6	10,5 / 12,0	10,5 / 9,6	10,5 / 12,0
Characteristic tension resistance	$N_{Rk,s}$	[kN]	33,25	33,25	22,17	33,25	22,17	38,79
Partial safety factor	$\gamma_{Ms}^{1)}$	[-]	1,5	1,5	1,5	1,5	1,5	1,87
Characteristic shear resistance	$V_{Rk,s}$	[kN]	16,63	16,63	11,08	16,63	11,08	19,4
Partial safety factor	$\gamma_{Ms}^{1)}$	[-]	1,25	1,25	1,25	1,25	1,25	1,56
Characteristic bending resistance	$M_{Rk,s}$	[Nm]	41,9	41,9	27,93	41,9	27,93	48,88
Partial safety factor	$\gamma_{Ms}^{1)}$	[mm]	1,25	1,25	1,25	1,25	1,25	1,56

1) In absence of other national regulations

Table C2.2: Characteristic resistance for pullout failure for use in concrete W-UR 14 SymCon (hammer drilling)

Pull-out failure (plastic sleeve)			Galvanised steel W-UR SymCon				Stainless steel W-UR SymCon		
			14		Head-form Loop 14		14		
Overall plastic anchor embedment depth	h_{nom}	[mm]	70	100	70	100	70	100	
Concrete \geq C16/20									
Characteristic resistance	$30^{\circ}C^2) / 50^{\circ}C^3)$	$N_{Rk,p}$	[kN]	8,5	9,0	8,5	9,0	8,5	9,0
	$50^{\circ}C^2) / 80^{\circ}C^3)$	$N_{Rk,p}$	[kN]	7,5	9,0	7,5	9,0	7,5	9,0
Partial safety factor	$\gamma_{Mc}^{1)}$	[-]	1,8		1,8		1,8		
Concrete C12/15									
Characteristic resistance	$30^{\circ}C^2) / 50^{\circ}C^3)$	$N_{Rk,p}$	[kN]	6,0	7,5	6,0	7,5	6,0	7,5
	$50^{\circ}C^2) / 80^{\circ}C^3)$	$N_{Rk,p}$	[kN]	5,5	6,5	5,5	6,5	5,5	6,5
Partial safety factor	$\gamma_{Mc}^{1)}$	[-]	1,8		1,8		1,8		

1) In absence of other national regulations

2) Maximum long term temperature

3) Maximum short term temperature

Würth Plastic Anchor W-UR SymCon

Performances

Characteristic resistance of the screw, characteristic resistance for use in concrete (W-UR 14 SymCon)

Annex C 2

Table C3.1: Displacements¹⁾ under tension and shear loading in concrete and masonry

Anchor type	Tension load				Shear load		
	h_{nom} [mm]	$F_{Rk}^{2)}$ [kN]	δ_{N0} [mm]	$\delta_{N\infty}$ [mm]	$F_{Rk}^{2)}$ [kN]	δ_{V0} [mm]	$\delta_{V\infty}$ [mm]
W-UR 6 SymCon	50	1,0	0,38	0,76	1,0	0,68	1,02
W-UR 10 SymCon	40	2,2	0,60	1,20	2,2	3,51	5,26
	50	2,2	0,60	1,20	2,2	3,51	5,26
	70	3,4	0,68	1,36	3,4	3,90	5,85
W-UR 14 SymCon	70	3,4	0,35	0,70	3,4	1,95	2,93
	100	3,6	0,67	1,34	3,6	2,08	3,12

1) Valid for all ranges of temperatures

2) Intermediate values by linear interpolation

Table C3.2: Displacements¹⁾ under tension and shear loading in autoclaved aerated concrete AAC

	Tension load				Shear load		
	h_{nom} [mm]	$F_{Rk}^{2)}$ [kN]	δ_{N0} [mm]	$\delta_{N\infty}$ [mm]	$F_{Rk}^{2)}$ [kN]	δ_{V0} [mm]	$\delta_{V\infty}$ [mm]
W-UR 10 SymCon							
Autoclaved aerated concrete AAC 2	70	0,21	0,09	0,18	0,21	0,42	0,63
Autoclaved aerated concrete AAC 6	70	0,71	0,23	0,46	0,71	1,42	2,13
W-UR 14 SymCon							
Autoclaved aerated concrete AAC 2	100	0,18	0,24	0,48	0,18	0,36	0,54
Autoclaved aerated concrete AAC 6	100	1,25	0,67	1,34	1,25	2,50	3,75

1) Valid for all ranges of temperatures

2) Intermediate values by linear interpolation

Table C4: Characteristic values under fire exposure in concrete C20/25 to C50/60 in any load direction, no permanent centric tension load and without lever arm, fastening of facade systems

Anchor type	Fire resistance class	
	[-]	F_{Rk} [kN]
W-UR 10 SymCon	R 90	0,8
W-UR 14 SymCon	R 90	0,8

Würth Plastic Anchor W-UR SymCon

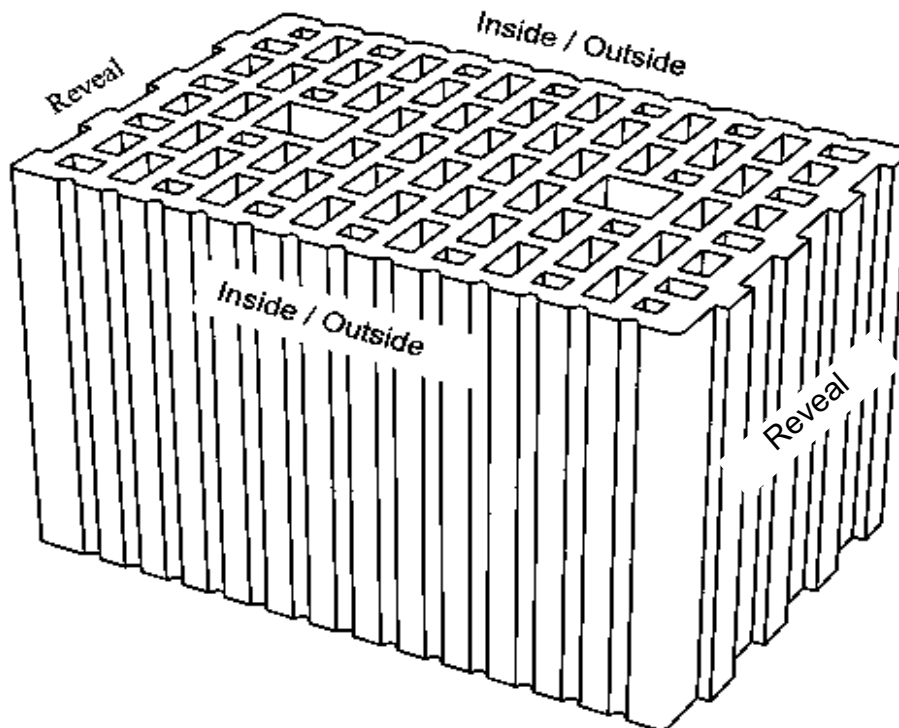
Performances

Displacements under tension and shear loading in concrete, masonry and autoclaved aerated concrete, characteristic resistance under fire exposure in concrete

Annex C 3

Footnotes for Annex C 11- Annex C 69

- 1) Characteristic resistance F_{Rk} 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_{min} according to Annex B 3 (concrete and masonry). The specific conditions for the design method have to be considered according to EOTA Technical Report TR 064, 2022-12: DESIGN OF PLASTIC ANCHORS IN CONCRETE AND MASONRY.
- 2) Absence of other national regulations.
- 3) Maximum long term temperature.
- 4) Maximum short term temperature.
- 5) The lowest load of two consecutive embedment depths in combination with the larger minimum edge distance (if the minimum edge distances are different) may be used for the intermediate embedment depths. Additional job site tests are not required for the intermediate anchoring depth.
- 6) Installation site see picture (e.g Hollow brick).



- 7) The characteristic resistance F_{Rk} for load direction V only (only valid for a single anchor or for a group of two anchors with spacing $s_{min} \geq 250$ mm for shear loads without lever arm in the reveal side).
- 8) For masonry units with a lower compressive strength (= existing mean compressive strength) than the mean compressive strength given in Table Annex C 11 – Annex C 65 (= mean compressive strength (table)) the characteristic resistance $F_{Rk,existing}$ shall be calculated according to the following equation:

$$F_{Rk,existing} = F_{Rk(table)} \cdot \left(\frac{\text{existing mean compressive strength}}{\text{mean compressive strength (table)}} \right)$$

- 9) No performance assessed.
- 10) Only with larger member thickness and/or larger edge distance and larger spacing, see Annex B 4.
- 11) No water may penetrate into the hollow bodies as a result of the drill holes

Würth Plastic Anchor W-UR SymCon

Performances
Footnotes

Annex C 4

Table C 8.1: Base material group “a”: Concrete

Base material group „a“: Concrete	Annex
Concrete \geq C12/15 as per EN 206:2013+A1:2016	Annex C 1 - Annex C 2
Precast prestressed hollow core slabs \geq C30/37 e.g. EN 1168.2011-12	Annex C 66
Thin concrete plates, Weather Resistant Skins of External Wall Panels \geq C16/20	Annex C 67 - Annex C 68
Hollow core ceilings \geq C20/25, e. g. COBIAX ceilings	Annex C 69

Table C 8.2: Base material group “b”: Solid masonry

Base material group „b“: Solid masonry	Format	Minimum dimensions [mm]	Mean compressive strength acc. to EN 771 [N/mm ²]	Bulk density [kg/dm ³]	Annex
Solid brick Mz acc. to EN 771-1:2011+A1:2015 e.g. Wienerberger GmbH	\geq NF	240x 115x 71	45,0 35,0 25,0 20,0 15,0	\geq 1,8	Annex C 11 <small>771-1-020</small>
	\geq 3DF	240x 175x 113	25,0 20,0 15,0 12,5 10,0	\geq 2,0	Annex C 12 <small>771-1-041</small>
Sand-lime solid brick KS acc. to EN 771-2:2011+A1:2015	\geq NF	240x 115x 71	45,0 35,0 25,0 20,0 15,0	\geq 1,8	Annex C 39 <small>771-2-011</small>
Sand-lime solid brick KS acc. to EN 771-2:2011+A1:2015	-	248x 175x 498	35,0 25,0 20,0 15,0	\geq 2,0	Annex C 40 <small>771-2-031</small>
Sand-lime solid brick Silka XL Basic, Sand-lime solid brick Silka XL Plus acc. to EN 771-2:2011+A1:2015; Z-17.1-997:2016-09	-	248x 175x 498	35,0 25,0 20,0 15,0 12,5	\geq 2,0	Annex C 41 <small>771-2-010</small>

Würth Plastic Anchor W-UR SymCon

Performances

Concrete (use category “a”), Solid masonry (use category "b"), Format, minimum dimensions, Mean compressive strength, Bulk density

Annex C 5

Base material group „b“: Solid masonry	Format	Minimum dimensions [mm]	Mean compressive strength acc. to EN 771 [N/mm ²]	Bulk density [kg/dm ³]	Annex
Concrete solid block - Vbn acc. to EN 771-3:2011+A1:2015	≥ NF	240x 115x 71	35,0 25,0 20,0 15,0 12,5	≥ 2,0	Annex C 48 771-3-004
Lightweight concrete solid brick e.g. Bisoclassic V acc. to EN 771-3:2011+A1:2015 Bisotherm GmbH	≥ NF	240x 115x 71	5,0 2,5	≥ 0,9	Annex C 49 771-3-008
Lightweight concrete solid brick e.g. BisoBims V acc. to EN 771-3:2011+A1:2015 Bisotherm GmbH	≥ NF	240x 115x 71	5,0 2,5	≥ 1,2	Annex C 50 771-3-007
Lightweight concrete solid brick V and Vbl e.g. BisoBims V and Vbl acc. to EN 771-3:2011+A1:2015 Bisotherm GmbH	≥ 3DF	240x 175x 113	5,0 2,5	≥ 1,2	Annex C 51 771-3-016
Lightweight concrete solid brick V and Vbl e.g. Bisophon acc. to EN 771-3:2011+A1:2015 Bisotherm GmbH	≥ 3DF	240x 175x 113	25,0 20,0 15,0 12,5 10,0	≥ 2,2	Annex C 52 771-3-017
Lightweight concrete solid block V P 2.0 - 0.55 e.g. Bisoplan acc. to EN 771-3:2011+A1:2015; Z-17.1-778:2019-10 Bisotherm GmbH	≥ 5DF	123x 300x 248	2,5 2,0	≥ 0,65	Annex C 53 771-3-032
Lightweight concrete solid block V P 4.0 - 0.65 e.g. Bisoplan acc. to EN 771-3:2011+A1:2015; Z-17.1-778:2019-10 Bisotherm GmbH	≥ 5DF	123x 300x 248	5,0 2,5	≥ 0,8	Annex C 54 771-3-033
Lightweight concrete solid block V 6 - 0.80 e.g. Bisotherm Bisoclassic acc. to EN 771-3:2011+A1:2015 Bisotherm GmbH	≥ 5DF	123x 300x 248	2,5 2,0	≥ 0,9	Annex C 55 771-3-035
Würth Plastic Anchor W-UR SymCon				Annex C 6	
Performances Solid masonry (use category "b"), Format, minimum dimensions, Mean compressive strength, Bulk density					

Table C 8.3: Base material group “c”: Hollow or perforated masonry

Base material group „c“: Hollow or perforated masonry	Format	Measure- ment [mm]	Mean compressive strength acc. to EN 771 [N/mm ²]	Bulk density [kg/dm ³]	Annex
Hollow brick HLz acc. to EN 771-1:2011+A1:2015 e.g. Wienerberger GmbH e.g. Schlagmann Baustoffwerke GmbH & Co. KG	2DF	240x 115x 113	25,0 20,0 15,0 12,5	≥ 1,2	Annex C 13 771-1-021
	12DF	373x 240x 238	10,0 7,5 5,0	≥ 1,2	Annex C 14 771-1-036
Hollow brick HLz T14-24,0 acc. to EN 771-1:2011+A1:2015, Z-17.1-651 Wienerberger GmbH	10DF	308x 240x 249	15,0 10,0 7,5	≥ 0,75	Annex C 15 771-1-048
Hollow brick POROTON Planziegel T18 acc. to EN 771-1:2011+A1:2015; Z-17.1-678:2017-11 Wienerberger GmbH Schlagmann Baustoffwerke GmbH & Co. KG	9DF	373x 175x 249	15,0 12,5 10,0 8,0	≥ 0,8	Annex C 16 771-1-125
Hollow brick POROTON T8-30.0-P acc. to EN 771-1:2011+A1:2015; Z-17.1-982:2014-12 Wienerberger GmbH Schlagmann Baustoffwerke GmbH & Co. KG	10DF	248x 300x 249	5,0	≥ 0,6	Annex C 17 771-1-022
Hollow brick POROTON T9-30.0-P acc. to EN 771-1:2011+A1:2015 ; Z-17.1-674:2020-01 Wienerberger GmbH Schlagmann Baustoffwerke GmbH & Co. KG	10DF	248x 300x 249	10,0 7,5 5,0	≥ 0,65	Annex C 18 771-1-045
Hollow brick POROTON Planziegel T10-30.0 acc. to EN 771-1:2011+A1:2015; Z-17.1-889:2011-03 Wienerberger GmbH Schlagmann Baustoffwerke GmbH & Co. KG	10DF	248x 300x 249	12,5 10,0 7,5	≥ 0,7	Annex C 19 771-1-047
Hollow brick POROTON S10 acc. to EN 771-1:2011+A1:2015; Z-17.1-1017:2019-05 Wienerberger GmbH Schlagmann Baustoffwerke GmbH & Co. KG	10DF	248x 300x 249	10,0 7,5	≥ 0,8	Annex C 20 771-1-032
Hollow brick POROTON S11-30.0-P acc. to EN 771-1:2011+A1:2015; Z-17.1-812:2020-01 Wienerberger GmbH Schlagmann Baustoffwerke GmbH & Co. KG	10DF	248x 300x 249	15,0 12,5 10,0 7,5	≥ 0,9	Annex C 21 771-1-046
Hollow brick for ceiling DIN EN 15037-3:2011- 07 (System Filigran) e.g. Wienerberger GmbH	16DF	252x 530x 205	5,0 2,5	≥ 0,65	Annex C 22 771-1-031
Hollow brick UNIPOR W07 SILVACOR acc. to EN 771-1:2011+A1:2015; Z-17.1-1162:2019-08 ZIZ Ziegel-Innovations-Zentrum GmbH	12DF	247x 365x 249	5,0 2,5	≥ 0,55	Annex C 23 771-1-109

Würth Plastic Anchor W-UR SymCon

Performances

Hollow or perforated masonry (use category "c"), Format, minimum dimensions,
Mean compressive strength, Bulk density

Annex C 7

Base material group „c“: Hollow or perforated masonry	Format	Measurement [mm]	Mean compressive strength acc. to EN 771 [N/mm ²]	Bulk density [kg/dm ³]	Annex
Hollow brick UNIPOR WS08 CORISO / UNIPOR WS08 SILVACOR acc. to EN 771-1:2011+A1:2015; Z-17.1-1114:2019-12; Z-17.1-1191:2019-01 ZIZ Ziegel-Innovations-Zentrum GmbH	12DF	247x 365x 249	10,0 7,5 5,0 2,5	≥ 0,65	Annex C 24 771-1-114
Hollow brick UNIPOR WS09 CORISO acc. to EN 771-1:2011+A1:2015; Z-17.1-1066:2020-04 ZIZ Ziegel-Innovations-Zentrum GmbH	12DF	247x 365x 249	10,0 7,5	≥ 0,7	Annex C 25 771-1-115
Hollow brick UNIPOR WH09 Planziegel acc. to EN 771-1:2011+A1:2015; Z-17.1-1042:2015-09 ZIZ Ziegel-Innovations-Zentrum GmbH	12DF	247x 365x 249	7,5 5,0	≥ 0,6	Annex C 26 771-1-120
Hollow brick UNIPOR WH10 Planziegel acc. to EN 771-1:2011+A1:2015; Z-17.1-1042:2015-09 ZIZ Ziegel-Innovations-Zentrum GmbH	12DF	247x 365x 249	7,5 5,0	≥ 0,65	Annex C 27 771-1-121
Hollow brick UNIPOR WS10 CORISO acc. to EN 771-1:2011+A1:2015; Z-17.1-1021:2016-10 ZIZ Ziegel-Innovations-Zentrum GmbH	12DF	247x 365x 249	15,0 12,5 10,0 7,5	≥ 0,9	Annex C 28 771-1-116
Hollow brick UNIPOR WS14 Hollow brick UNIPOR WS12 CORISO acc. to EN 771-1:2011+A1:2015; Z-17.1-883:2005-07 ZIZ Ziegel-Innovations-Zentrum GmbH	10DF	248x 300x 249	15,0 12,5 10,0	≥ 0,8	Annex C 29 771-1-016
UNIPOR WS CORISO (special shaped) acc. to EN 771-1:2011+A1:2015; in dependence Z-17.1-1021:2020-04 ZIZ Ziegel-Innovations-Zentrum GmbH	12DF	247x 365x 249	10,0 7,5 5,0	≥ 0,75	Annex C 30 771-1-117
Hollow brick ThermoPlan MZ10 acc. to EN 771-1:2011+A1:2015; Z-17.1-1015:2017-05 Mein Ziegelhaus GmbH & Co. KG	10DF	248x 300x 249	10,0 7,5 5,0	≥ 0,75	Annex C 31 771-1-034
Hollow brick ThermoPlan MZ 90 G acc. to EN 771-1:2011+A1:2015; Mein Ziegelhaus GmbH & Co. KG	12DF	248x 365x 249	5,0 2,5	≥ 0,7	Annex C 32 771-1-080
Hollow brick ThermoPlan TS² acc. to EN 771-1:2011+A1:2015; Z-17.1-993:2015-09 Mein Ziegelhaus GmbH & Co. KG	9DF	373x 175x 249	16,7 12,5 10,5 8,3	≥ 0,85	Annex C 33 771-1-024
Hollow brick THERMOPOR TV 8+ Plan acc. to EN 771-1:2011+A1:2015; Z-17.21-1227:2021-03 Otto Staudacher Vertriebs GmbH	12DF	247x 365x 249	10,0 7,5 5,0	≥ 0,7	Annex C 34 771-1-133
Würth Plastic Anchor W-UR SymCon				Annex C 8	
Performances Hollow or perforated masonry (use category "c"), Format, Measurement, Mean compressive strength, Bulk density					

Base material group „c“: Hollow or perforated masonry	Format	Measure- ment [mm]	Mean compressive strength acc. to EN 771 [N/mm ²]	Bulk density [kg/dm ³]	Annex
Hollow brick THERMOPOR TV 9-Plan acc. to EN 771-1:2011+A1:2015; Z-17.1-1006:2019-01 Thermopor Ziegel-Kontor Ulm GmbH	10DF	247x 300x 249	12,5 10,0 7,5 5,0	≥ 0,75	Annex C 35 771-1-029
Hollow brick THERMOPOR TV Aero-Plan acc. to EN 771-1:2011+A1:2015; Z-17.21-1220:2020-11 Otto Staudacher Vertriebs GmbH	12DF	247x 365x 249	7,5 5,0	≥ 0,75	Annex C 36 771-1-127
Hollow brick Kellerer ZMK-P 7.5 acc. to EN 771-1:2011+A1:2015; Z-17.1-1012:2016-06 Ziegelsysteme Michael Kellerer GmbH & Co. KG	12DF	247x 365x 249	5,0 2,5	≥ 0,6	Annex C 37 771-1-068
Hollow brick Ederplan XV 7.5 S acc. to EN 771-1:2011+A1:2015; Z-17.1-1175:2018-10 Ziegelwerk Freital Eder GmbH	10DF	200x 365x 249	7,5 5,0	≥ 0,75	Annex C 38 771-1-130
Sand-lime perforated brick KS L acc. to EN 771-2:2011+ A1:2015	2DF	240x 115x 113	20,0 15,0 12,5 10,0	≥ 1,4	Annex C 42 771-2-004
Sand-lime perforated brick KS L acc. to EN 771-2:2011+ A1:2015 e.g. Xella Deutschland GmbH	8DF	248x 240x 238	12,5 10,0 7,5	≥ 1,4	Annex C 43 771-2-013
Sand-lime perforated brick KS L acc. to EN 771-2:2011+ A1:2015	12DF	377x 240x 238	15,0 12,5 10,0 7,5	≥ 1,4	Annex C 44 771-2-001
Sand-lime perforated brick KS L acc. to EN 771-2:2011+ A1:2015 e.g. Xella Deutschland GmbH	9DF	373x 175x 238	25,0 20,0 15,0	≥ 1,4	Annex C 45 771-2-008
Sand-lime perforated brick KSL-R(P) acc. to EN 771-2:2011+ A1:2015 e.g. H+H Deutschland GmbH	6DF	248x 175x 248	15,0 12,5 10,0 7,5	≥ 1,6	Annex C 46 771-2-039
Sand-lime perforated brick KS L acc. to EN 771-2:2011+ A1:2015 e.g. H+H Deutschland GmbH	8DF	248x 240x 248	15,0 12,5 10,0 7,5	≥ 1,4	Annex C 47 771-2-040
Hollow brick lightweight concrete 3K Hbl acc. to EN 771-3:2011+A1:2015; e.g. Heinzmann Baustoffe GmbH, Liapor GmbH & Co. KG	16DF	495x 240x 238	2,5	≥ 0,7	Annex C 56 771-3-005
Hollow brick lightweight concrete Liapor PLANstein-SL-PLUS Hbl 2 acc. to EN 771-3:2011+A1:2015; Z-17.1-817:2015-03 e.g. E. KNOBEL GmbH & Co.KG	12DF	247x 365x 248	2,0	≥ 0,55	Annex C 57 771-3-018
Würth Plastic Anchor W-UR SymCon				Annex C 9	
Performances Hollow or perforated masonry (use category "c"), Format, Measurement, Mean compressive strength, Bulk density					

Base material group „c“: Hollow or perforated masonry	Format	Measure- ment [mm]	Mean compressive strength acc. to EN 771 [N/mm ²]	Bulk density [kg/dm ³]	Annex
Hollow brick lightweight concrete Liapor PLANstein-SL-PLUS Hbl 6 acc. to EN 771-3:2011+A1:2015; Z-17.1-817:2015-03 e.g. E. KNOBEL GmbH & Co.KG	12DF	247x 365x 248	5,0 2,5	≥ 0,9	Annex C 58 771-3-020
Hollow brick concrete 2K Hbn acc. to EN 771-3:2011+A1:2015 e.g. Stark Betonwerk GmbH & Co. KG	12DF	365x 240x 248	7,5 5,0 2,5	≥ 1,2	Annex C 59 771-3-011
Hollow brick lightweight concrete Gisoton Thermo Schall acc. to Z-15.2-18: 2021-02 Gisoton Wandsysteme, Baustoffwerke Gebhart & Söhne GmbH & Co.	16DF 21DF	498x 250x 248 498x 300x 248	2,5 2,0	≥ 0,45	Annex C 60 771-3-010 771-3-036
Hollow brick lightweight concrete Bisoplan 09 Super 1.6-0.4 acc. to EN 771-3:2011+A1:2015; Z-17.1-1003:2014-08 e.g. Bisotherm GmbH	12DF	247x 365x 249	1,8	≥ 0,65	Annex C 61 771-3-029
Hollow brick lightweight concrete Bisoplan 10 Hbl-P 2.0-0.45 acc. to EN 771-3:2011+A1:2015; Z-17.1-844:2015-06 e.g. Bisotherm GmbH	10DF	247x 300x 249	2,0	≥ 0,6	Annex C 62 771-3-034
Hollow brick lightweight concrete Bisotherm Hbl-P 4.0 - 0.50 acc. to EN 771-3:2011+A1:2015; Z-17.1-1029:2015-10 e.g. Bisotherm GmbH	12DF	247x 365x 249	2,0	≥ 0,55	Annex C 63 771-3-030

Table C 7.1: Base material group “d”: Autoclaved aerated concrete (AAC)

Base material group „d“: Autoclaved aerated concrete (AAC)	Format	Minimum dimen- sions [mm]	Mean compressive strength acc. to EN 771 [N/mm ²]	Bulk density [kg/dm ³]	Annex
Autoclaved aerated concrete acc. to EN 771-4:2015	-	499x100x 249	2,0 - 6,0	≥ 0,3	Annex C 64 - Annex C 65

Würth Plastic Anchor W-UR SymCon

Performances

Hollow or perforated masonry (use category "c"), Autoclaved aerated concrete (use category "d"), Format, minimum dimensions, Mean compressive strength, Bulk density

Annex C 10

Characteristic resistance F_{RK} [kN] in solid masonry (base material group „b“): Solid brick Mz, NF

Table C 8.1.1: Brick data

Description of brick		771-1-020	Mz
Type of brick			Solid brick Mz
Bulk density	$\rho \geq$ [kg/dm ³]		1,8
Standard, approval/type-approval			EN 771-1:2011+A1:2015
Producer of brick			e.g. Wienerberger GmbH
Format (measurement)	[mm]		\geq NF (\geq 240x115x71)
Minimum thickness of member	$h_{min} =$ [mm]		115

Table C 8.1.2 Installation parameters

Anchor size		10	14
Installation site ⁶⁾		Inside / Outside	Inside / Outside
Drill hole diameter	$d_0 =$ [mm]	10	14
Cutting diameter of drill bit	$d_{cut} \leq$ [mm]	10,45	14,45
Depth of drill hole to deepest point	$h_1 \geq$ [mm]	60 80	80
Drill method	[-]	Hammer drilling	Hammer drilling
Overall plastic anchor embedment depth	$h_{nom} \geq$ [mm]	50 70	70
Diameter of clearance hole in the fixture	$d_f \leq$ [mm]	10,5	14,5
Spacing perpendicular / parallel to free edge	$s_{1,min}/s_{2,min}$ [mm]	80 / 80	250 / 250
Minimum edge distance	$c_{min} \geq$ [mm]	100	240

Table C 8.1.3: Characteristic resistance F_{RK} ¹⁾⁸⁾ in [kN] for single anchor

Anchor size		10 ⁵⁾	14
Installation site ⁶⁾		Inside / Outside	Inside / Outside
Overall plastic anchor embedment depth	$h_{nom} \geq$ [mm]	50 70	70
Mean compressive strength acc. to EN 771			
Solid brick Mz, $\geq 54,8$ N/mm²	$F_{RK, 30^\circ C^3) / 50^\circ C^4)}$ [kN]	4,0 5,5	2,0
	$F_{RK, 50^\circ C^3) / 80^\circ C^4)}$ [kN]	4,0 4,0	1,5
Solid brick Mz, $\geq 45,0$ N/mm²	$F_{RK, 30^\circ C^3) / 50^\circ C^4)}$ [kN]	3,5 4,5	1,5
	$F_{RK, 50^\circ C^3) / 80^\circ C^4)}$ [kN]	3,0 3,5	1,5
Solid brick Mz, $\geq 35,0$ N/mm²	$F_{RK, 30^\circ C^3) / 50^\circ C^4)}$ [kN]	2,5 3,5	1,2
	$F_{RK, 50^\circ C^3) / 80^\circ C^4)}$ [kN]	2,5 2,5	1,2
Solid brick Mz, $\geq 25,0$ N/mm²	$F_{RK, 30^\circ C^3) / 50^\circ C^4)}$ [kN]	2,0 2,5	0,9
	$F_{RK, 50^\circ C^3) / 80^\circ C^4)}$ [kN]	1,5 2,0	0,75
Solid brick Mz, $\geq 20,0$ N/mm²	$F_{RK, 30^\circ C^3) / 50^\circ C^4)}$ [kN]	1,5 2,0	0,6
	$F_{RK, 50^\circ C^3) / 80^\circ C^4)}$ [kN]	1,5 1,5	0,6
Solid brick Mz, $\geq 15,0$ N/mm²	$F_{RK, 30^\circ C^3) / 50^\circ C^4)}$ [kN]	1,2 1,5	0,5
	$F_{RK, 50^\circ C^3) / 80^\circ C^4)}$ [kN]	0,9 1,2	0,5
Partial safety factor	$\gamma_{Mm}^{2)}$ [-]	2,5	

Footnotes see Annex C 4

Würth Plastic Anchor W-UR SymCon

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

Annex C 11

Characteristic resistance F_{RK} [kN] in solid masonry (base material group „b“): Mz, 3DF

Table C 8.2.1: Brick data

Description of brick		771-1-041	Mz
Type of brick			Solid brick
Bulk density	$\rho \geq$	[kg/dm ³]	2,0
Standard, approval/type-approval			EN 771-1:2011+A1:2015
Producer of brick			e.g. Wienerberger GmbH
Format (measurement)		[mm]	$\geq 3DF (\geq 240 \times 175 \times 113)$
Minimum thickness of member	$h_{min} =$	[mm]	175

Table C 8.2.2 Installation parameters

Anchor size		10	14
Installation site ⁶⁾		Inside / Outside	Inside / Outside
Drill hole diameter	$d_0 =$	[mm]	10
Cutting diameter of drill bit	$d_{cut} \leq$	[mm]	10,45
Depth of drill hole to deepest point	$h_1 \geq$	[mm]	80
Drill method		[-]	Hammer drilling
Overall plastic anchor embedment depth	$h_{nom} \geq$	[mm]	70
Diameter of clearance hole in the fixture	$d_f \leq$	[mm]	10,5
Spacing perpendicular / parallel to free edge	$s_{1,min}/s_{2,min}$	[mm]	200 / 250
Minimum edge distance	$c_{min} \geq$	[mm]	100

Table C 8.2.3: Characteristic resistance F_{RK} ¹⁾⁸⁾ in [kN] for single anchor

Anchor size		10	14
Installation site ⁶⁾		Inside / Outside	Inside / Outside
Overall plastic anchor embedment depth	$h_{nom} \geq$	[mm]	70
Mean compressive strength acc. to EN 771			100
Solid brick Mz, $\geq 33,7 \text{ N/mm}^2$	$F_{RK, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN]	6,0
	$F_{RK, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN]	5,5
Solid brick Mz, $\geq 25,0 \text{ N/mm}^2$	$F_{RK, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN]	5,0
	$F_{RK, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN]	4,5
Solid brick Mz, $\geq 20,0 \text{ N/mm}^2$	$F_{RK, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN]	4,5
	$F_{RK, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN]	4,0
Solid brick Mz, $\geq 15,0 \text{ N/mm}^2$	$F_{RK, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN]	3,5
	$F_{RK, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN]	3,0
Solid brick Mz, $\geq 12,5 \text{ N/mm}^2$	$F_{RK, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN]	3,5
	$F_{RK, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN]	3,0
Solid brick Mz, $\geq 10,0 \text{ N/mm}^2$	$F_{RK, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN]	3,0
	$F_{RK, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN]	2,5
Partial safety factor	$\gamma_{Mm}^{2)}$	[-]	2,5

Footnotes see Annex C 4

Würth Plastic Anchor W-UR SymCon

Performances
Solid masonry: Solid brick Mz, 3DF
Brick data, Installation parameters, Characteristic resistance

Annex C 12

Characteristic resistance F_{Rk} [kN] in hollow or perforated masonry (base material group „c“): HLz, 2DF

Table C 8.3.1: Brick data

Description of brick		771-1-021	HLz
Type of brick			Hollow brick
Bulk density	$\rho \geq$	[kg/dm ³]	1,2
Standard, approval/type-approval			EN 771-1:2011+A1:2015
Producer of brick			e.g. Wienerberger GmbH
Format (measurement)		[mm]	2DF (240x115x113)
Minimum thickness of member	$h_{min} =$	[mm]	115

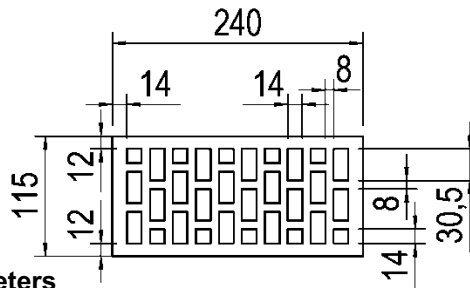


Table C 8.3.2: Installation parameters

Anchor size			10
Installation site ⁶⁾			Inside / Outside
Drill hole diameter	$d_0 =$	[mm]	10
Cutting diameter of drill bit	$d_{cut} \leq$	[mm]	10,45
Depth of drill hole to deepest point	$h_1 \geq$	[mm]	80
Drill method		[-]	Rotary drilling
Overall plastic anchor embedment depth	$h_{nom} =$	[mm]	70
Diameter of clearance hole in the fixture	$d_f \leq$	[mm]	10,5
Spacing perpendicular / parallel to free edge	$s_{1,min}/s_{2,min}$	[mm]	100 / 100
Minimum edge distance	$c_{min} \geq$	[mm]	100

Table C 8.3.3: Characteristic resistance F_{Rk} ¹⁾⁸⁾ in [kN] for single anchor

Anchor size			10
Installation site ⁶⁾			Inside / Outside
Overall plastic anchor embedment depth	$h_{nom} =$	[mm]	70
Mean compressive strength acc. to EN 771			
Hollow brick HLz, $\geq 27,2 \text{ N/mm}^2$	$F_{Rk}, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN]	2,5
	$F_{Rk}, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN]	2,5
Hollow brick HLz, $\geq 25,0 \text{ N/mm}^2$	$F_{Rk}, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN]	2,5
	$F_{Rk}, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN]	2,0
Hollow brick HLz, $\geq 20,0 \text{ N/mm}^2$	$F_{Rk}, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN]	2,0
	$F_{Rk}, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN]	1,5
Hollow brick HLz, $\geq 15,0 \text{ N/mm}^2$	$F_{Rk}, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN]	1,5
	$F_{Rk}, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN]	1,2
Hollow brick HLz, $\geq 12,5 \text{ N/mm}^2$	$F_{Rk}, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN]	1,2
	$F_{Rk}, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN]	0,9
Partial safety factor	$\gamma_{Mm}^2)$	[-]	2,5

Footnotes see Annex C 4

Würth Plastic Anchor W-UR SymCon

Performances
Hollow brick HLz, 2DF
Brick data, Installation parameters, Characteristic resistance

Annex C 13

Characteristic resistance F_{RK} [kN] in hollow or perforated masonry (base material group „c“): HLz, 12DF

Table C 8.4.1: Brick data

Description of brick		771-1-036	HLz
Type of brick			Hollow brick
Bulk density	$\rho \geq$	[kg/dm ³]	1,2
Standard, approval/type-approval			EN 771-1:2011+A1:2015
Producer of brick			e.g. Schlagmann Baustoffwerke
Format (measurement)		[mm]	12DF (373x240x238)
Minimum thickness of member	$h_{min} =$	[mm]	240

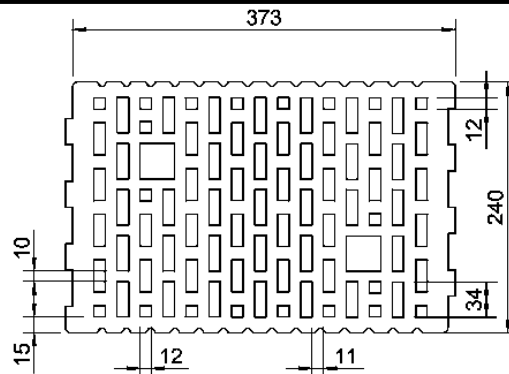


Table C 8.4.2: Installation parameters

Anchor size		10	14
Installation site ⁶⁾		Inside / Outside	Inside / Outside
Drill hole diameter	$d_0 =$	[mm]	10
Cutting diameter of drill bit	$d_{cut} \leq$	[mm]	10,45
Depth of drill hole to deepest point	$h_1 \geq$	[mm]	80
Drill method		[-]	Rotary drilling
Overall plastic anchor embedment depth	$h_{nom} =$	[mm]	70
Diameter of clearance hole in the fixture	$d_f \leq$	[mm]	10,5
Spacing perpendicular / parallel to free edge	$s_{1,min}/s_{2,min}$	[mm]	200 / 250
Minimum edge distance	$c_{min} \geq$	[mm]	100

Table C 8.4.3: Characteristic resistance F_{RK} ¹⁾⁸⁾ in [kN] for single anchor

Anchor size		10	14
Installation site ⁶⁾		Inside / Outside	Inside / Outside
Overall plastic anchor embedment depth	$h_{nom} =$	[mm]	70
Mean compressive strength acc. to EN 771			100
Hollow brick HLz, $\geq 10,0$ N/mm ²	$F_{RK, 30^\circ C^3) / 50^\circ C^4)}$	[kN]	2,5
	$F_{RK, 50^\circ C^3) / 80^\circ C^4)}$	[kN]	2,5
Hollow brick HLz, $\geq 7,5$ N/mm ²	$F_{RK, 30^\circ C^3) / 50^\circ C^4)}$	[kN]	2,0
	$F_{RK, 50^\circ C^3) / 80^\circ C^4)}$	[kN]	1,5
Hollow brick HLz, $\geq 5,0$ N/mm ²	$F_{RK, 30^\circ C^3) / 50^\circ C^4)}$	[kN]	1,5
	$F_{RK, 50^\circ C^3) / 80^\circ C^4)}$	[kN]	1,2
Partial safety factor	$\gamma_{Mm}^{2)}$	[-]	2,5

Footnotes see Annex C 4

Würth Plastic Anchor W-UR SymCon

Performances

Hollow brick HLz, 12DF

Brick data, Installation parameters, Characteristic resistance

Annex C 14

Characteristic resistance F_{Rk} [kN] in hollow or perforated masonry (base material group „c“): HLz T14-24.0

Table C 8.5.1 Brick data

Description of brick		771-1-048	HLz T14-24.0
Type of brick			Hollow brick
Bulk density	$\rho \geq$	[kg/dm ³]	0,75
Standard, approval/type-approval			EN 771-1:2011+A1:2015; Z-17.1-651
Producer of brick			Wienerberger GmbH Oldenburger Allee 26 D-30659 Hannover
Format (measurement)		[mm]	10DF (308x240x249)
Minimum thickness of member	$h_{min} =$	[mm]	240

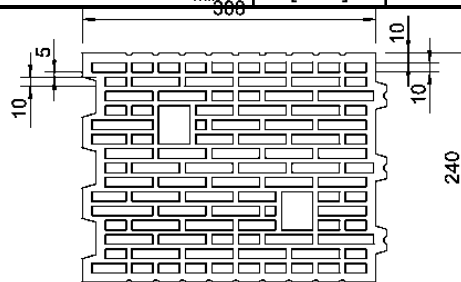


Table C 8.5.2: Installation parameters

Anchor size		14
Installation site ⁶⁾		Inside / Outside
Drill hole diameter	$d_0 =$	[mm] 14
Cutting diameter of drill bit	$d_{cut} \leq$	[mm] 14,45
Depth of drill hole to deepest point	$h_1 \geq$	[mm] 110
Drill method		[-] Rotary drilling
Overall plastic anchor embedment depth	$h_{nom} =$	[mm] 100
Diameter of clearance hole in the fixture	$d_f \leq$	[mm] 14,5
Spacing perpendicular / parallel to free edge	$s_{1,min}/s_{2,min}$	[mm] 200 / 250
Minimum edge distance	$c_{min} \geq$	[mm] 100

Table C 8.5.3: Characteristic resistance F_{Rk} ¹⁾⁸⁾ in [kN] for single anchor

Anchor size		14
Installation site ⁶⁾		Inside / Outside
Overall plastic anchor embedment depth	$h_{nom} =$	[mm] 100
Mean compressive strength acc. to EN 771		
Hollow brick HLz T14-24.0, $\geq 15,0 \text{ N/mm}^2$	$F_{Rk, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN] 1,2
	$F_{Rk, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN] 1,2
Hollow brick HLz T14-24.0, $\geq 12,5 \text{ N/mm}^2$	$F_{Rk, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN] 0,9
	$F_{Rk, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN] 0,9
Hollow brick HLz T14-24.0, $\geq 10,0 \text{ N/mm}^2$	$F_{Rk, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN] 0,75
	$F_{Rk, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN] 0,75
Hollow brick HLz T14-24.0, $\geq 7,5 \text{ N/mm}^2$	$F_{Rk, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN] 0,6
	$F_{Rk, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN] 0,6
Partial safety factor	$\gamma_{Mm}^{2)}$	[-] 2,5

Footnotes see Annex C 4

Würth Plastic Anchor W-UR SymCon

Performances

Hollow brick HLz T14-24.0

Brick data, Installation parameters, Characteristic resistance

Annex C 15

**Characteristic resistance F_{RK} [kN] in hollow or perforated masonry (base material group „c“):
POROTON Planziegel T18, 9DF**

Table C 8.6.1 Brick data

Description of brick		771-1-125	POROTON Planziegel T18	
Type of brick			Hollow brick	
Bulk density	$\rho \geq$	[kg/dm ³]	0,8	
Standard, approval/type-approval			EN 771-1:2011+A1:2015; Z-17.1-678:2017-11	
Producer of brick			Wienerberger GmbH Oldenburger Allee 26 D-30659 Hannover	Schlagmann Baustoffwerke GmbH & Co. KG Ziegeleistraße 1 D-84367 Zeilarn
Format (measurement)		[mm]	9DF (373x175x249)	
Minimum thickness of member	$h_{min} =$	[mm]	175	

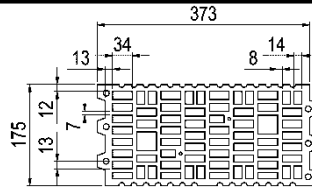


Table C 8.6.2: Installation parameters

Anchor size		10	
Installation site ⁶⁾		Inside / Outside	
Drill hole diameter	$d_0 =$	[mm]	10
Cutting diameter of drill bit	$d_{cut} \leq$	[mm]	10,45
Depth of drill hole to deepest point	$h_1 \geq$	[mm]	80
Drill method		[-]	Rotary drilling
Overall plastic anchor embedment depth	$h_{nom} =$	[mm]	70
Diameter of clearance hole in the fixture	$d_f \leq$	[mm]	10,5
Spacing perpendicular / parallel to free edge	$s_{1,min}/s_{2,min}$		200 / 250
Minimum edge distance	$c_{min} \geq$	[mm]	100

Table C 8.6.3: Characteristic resistance F_{RK} ¹⁾⁸⁾ in [kN] for single anchor

Anchor size		10	
Installation site ⁶⁾		Inside / Outside	
Overall plastic anchor embedment depth	$h_{nom} =$	[mm]	70
Mean compressive strength acc. to EN 771			
POROTON Planziegel T18, $\geq 14,24 \text{ N/mm}^2$	$F_{RK, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN]	0,9
	$F_{RK, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN]	0,75
POROTON Planziegel T18, $\geq 12,5 \text{ N/mm}^2$	$F_{RK, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN]	0,75
	$F_{RK, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN]	0,6
POROTON Planziegel T18, $\geq 10,0 \text{ N/mm}^2$	$F_{RK, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN]	0,6
	$F_{RK, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN]	0,5
POROTON Planziegel T18, $\geq 8,0 \text{ N/mm}^2$	$F_{RK, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN]	0,5
	$F_{RK, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN]	0,4
Partial safety factor	$\gamma_{Mm}^2)$	[-]	2,5

Footnotes see Annex C 4

Würth Plastic Anchor W-UR SymCon

Performances

Hollow brick POROTON Planziegel T18, 9DF

Brick data, Installation parameters, Characteristic resistance

Annex C 16

**Characteristic resistance F_{Rk} [kN] in hollow or perforated masonry (base material group „c“):
POROTON-T8-30.0-P**

Table C 8.7.1: Brick data

Description of brick	771-1-022	POROTON-T8-30.0-P
Type of brick		Hollow brick
Bulk density	$\rho \geq$ [kg/dm ³]	0,6
Standard, approval/type-approval		EN 771-1:2011+A1:2015; Z-17.1-982:2014-12
Producer of brick		Wienerberger GmbH Oldenburger Allee 26 D-30659 Hannover Schlagmann Baustoffwerke GmbH & Co. KG Ziegeleistraße 1 D-84367 Zeilarn
Format (measurement)	[mm]	10DF (248x300x249)
Minimum thickness of member	$h_{min} =$ [mm]	300

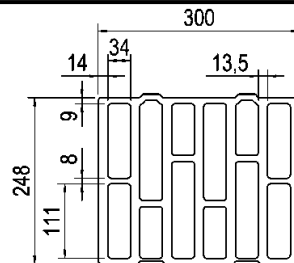


Table C 8.7.2: Installation parameters

Anchor size		10
Installation site ⁶⁾		Inside / Outside
Drill hole diameter	$d_0 =$ [mm]	10
Cutting diameter of drill bit	$d_{cut} \leq$ [mm]	10.45
Depth of drill hole to deepest point	$h_1 \geq$ [mm]	80
Drill method	[-]	Rotary drilling
Overall plastic anchor embedment depth	$h_{nom} =$ [mm]	70
Diameter of clearance hole in the fixture	$d_f \leq$ [mm]	10,5
Spacing perpendicular / parallel to free edge	$s_{1,min}/s_{2,min}$ [mm]	200 / 250
Minimum edge distance	$c_{min} \geq$ [mm]	100

Table C 8.7.3: Characteristic resistance F_{Rk} ¹⁾⁸⁾ in [kN] for single anchor

Anchor size		10
Installation site ⁶⁾		Inside / Outside
Overall plastic anchor embedment depth	$h_{nom} =$ [mm]	70
Mean compressive strength acc. to EN 771		
POROTON-T8-30.0-P, $\geq 6,5$ N/mm ²	$F_{Rk}, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$ [kN]	1,2
	$F_{Rk}, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$ [kN]	1,2
POROTON-T8-30.0-P, $\geq 5,0$ N/mm ²	$F_{Rk}, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$ [kN]	0,9
	$F_{Rk}, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$ [kN]	0,9
POROTON-T8-30.0-P, $\geq 2,5$ N/mm ²	$F_{Rk}, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$ [kN]	0,5
	$F_{Rk}, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$ [kN]	0,5
Partial safety factor	$\gamma_{Mm}^2)$ [-]	2,5

Footnotes see Annex C 4

Würth Plastic Anchor W-UR SymCon

Performances
Hollow brick: POROTON-T8-30.0-P
Brick data, Installation parameters, Characteristic resistance

Annex C 17

**Characteristic resistance F_{RK} [kN] in hollow or perforated masonry (base material group „c“):
POROTON-T9-30.0-P**

Table C 8.8.1: Brick data

Description of brick	771-1-045	POROTON-T9-30.0-P	
Type of brick		Hollow brick	
Bulk density $\rho \geq$ [kg/dm ³]		0,65	
Standard, approval/type-approval		EN 771-1:2011+A1:2015; Z-17.1-674:2020-01	
Producer of brick		Wienerberger GmbH Oldenburger Allee 26 D-30659 Hannover	Schlagmann Baustoffwerke GmbH & Co. KG, Ziegeleistraße 1 D-84367 Zeilarn
Format (measurement)	[mm]	10DF (248x300x249)	
Minimum thickness of member $h_{min} =$	[mm]	300	

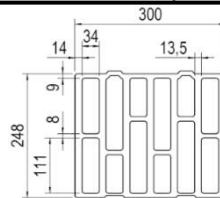


Table C 8.8.2: Installation parameters

Anchor size		10	14
Installation site ⁶⁾		Inside / Outside	Inside / Outside
Drill hole diameter $d_0 =$ [mm]		10	10
Cutting diameter of drill bit $d_{cut} \leq$ [mm]		10,45	14,45
Depth of drill hole to deepest point $h_1 \geq$ [mm]		80	100
Drill method	[-]	Rotary drilling	Rotary drilling
Overall plastic anchor embedment depth $h_{nom} =$ [mm]		70	100
Diameter of clearance hole in the fixture $d_f \leq$ [mm]		10,5	10,5
Spacing perpendicular / parallel to free edge $s_{1,min}/s_{2,min}$ [mm]		200 / 250	200 / 250
Minimum edge distance $c_{min} \geq$ [mm]		100	100

Table C 8.8.3: Characteristic resistance F_{RK} ¹⁾⁸⁾ in [kN] for single anchor

Anchor size		10	14
Installation site ⁶⁾		Inside / Outside	Inside / Outside
Overall plastic anchor embedment depth $h_{nom} =$ [mm]		70	100
Mean compressive strength acc. to EN 771			
POROTON-T9-30.0-P, $\geq 11,6 \text{ N/mm}^2$	$F_{RK, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$ [kN]	2,5	2,5
	$F_{RK, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$ [kN]	2,0	2,5
POROTON-T9-30.0-P, $\geq 10,0 \text{ N/mm}^2$	$F_{RK, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$ [kN]	2,0	2,0
	$F_{RK, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$ [kN]	1,5	2,0
POROTON-T9-30.0-P, $\geq 7,5 \text{ N/mm}^2$	$F_{RK, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$ [kN]	1,5	1,5
	$F_{RK, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$ [kN]	1,2	1,5
POROTON-T9-30.0-P, $\geq 5,0 \text{ N/mm}^2$	$F_{RK, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$ [kN]	0,9	0,9
	$F_{RK, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$ [kN]	0,9	0,9
Partial safety factor $\gamma_{Mm}^{2)}$	[-]	2,5	

Footnotes see Annex C 4

Würth Plastic Anchor W-UR SymCon

Performances
Hollow brick: POROTON-T9-30.0-P
Brick data, Installation parameters, Characteristic resistance

Annex C 18

**Characteristic resistance F_{Rk} [kN] in hollow or perforated masonry (base material group „c“):
POROTON Planziegel T10-30.0**

Table C 8.9.1: Brick data

Description of brick	771-1-047	POROTON Planziegel T10-30.0
Type of brick		Hollow brick
Bulk density $\rho \geq$ [kg/dm ³]		0,7
Standard, approval/type-approval		EN 771-1:2011+A1:2015; Z-17.1-889:2011-03
Producer of brick		Wienerberger GmbH Oldenburger Allee 26 D-30659 Hannover Schlagmann Baustoffwerke GmbH & Co. KG Ziegeleistraße 1 D-84367 Zeilarn
Format (measurement)	[mm]	10DF (248x300x249)
Minimum thickness of member $h_{min} =$	[mm]	300

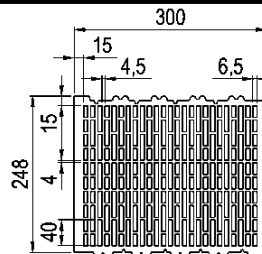


Table C 8.9.2: Installation parameters

Anchor size		14
Installation site ⁶⁾		Inside / Outside
Drill hole diameter $d_0 =$ [mm]		14
Cutting diameter of drill bit $d_{cut} \leq$ [mm]		14,45
Depth of drill hole to deepest point $h_1 \geq$ [mm]		110
Drill method	[-]	Rotary drilling
Overall plastic anchor embedment depth $h_{nom} =$ [mm]		100
Diameter of clearance hole in the fixture $d_f \leq$ [mm]		14,5
Spacing perpendicular / parallel to free edge $s_{1,min}/s_{2,min}$ [mm]		200 / 250
Minimum edge distance $c_{min} \geq$ [mm]		100

Table C 8.9.3: Characteristic resistance F_{Rk} ¹⁾⁸⁾ in [kN] for single anchor

Anchor size		14
Installation site ⁶⁾		Inside / Outside
Overall plastic anchor embedment depth $h_{nom} =$ [mm]		100
Mean compressive strength acc. to EN 771		
POROTON Planziegel T10-30, $\geq 12,5$ N/mm²	$F_{Rk, 30^\circ C^3) / 50^\circ C^4)$ [kN]	0,5
	$F_{Rk, 50^\circ C^3) / 80^\circ C^4)$ [kN]	0,5
POROTON Planziegel T10-30, $\geq 10,0$ N/mm²	$F_{Rk, 30^\circ C^3) / 50^\circ C^4)$ [kN]	0,4
	$F_{Rk, 50^\circ C^3) / 80^\circ C^4)$ [kN]	0,4
POROTON Planziegel T10-30, $\geq 7,5$ N/mm²	$F_{Rk, 30^\circ C^3) / 50^\circ C^4)$ [kN]	0,3
	$F_{Rk, 50^\circ C^3) / 80^\circ C^4)$ [kN]	0,3
Partial safety factor $\gamma_{Mm}^{2)}$	[-]	2,5

Footnotes see Annex C 4

Würth Plastic Anchor W-UR SymCon

Performances
Hollow brick: POROTON Planziegel T10-30.0
Brick data, Installation parameters, Characteristic resistance

Annex C 19

**Characteristic resistance F_{Rk} [kN] in hollow or perforated masonry (base material group „c“):
POROTON S10**

Table C 8.10.1: Brick data

Description of brick	771-1-032	POROTON S10	
Type of brick		Hollow brick	
Bulk density $\rho \geq$ [kg/dm ³]		0,8	
Standard, approval/type-approval		EN 771-1:2011+A1:2015; Z-17.1-1017:2019-05	
Producer of brick		Wienerberger GmbH Oldenburger Allee 26 D-30659 Hannover	Schlagmann Baustoffwerke GmbH & Co. KG Ziegeleistraße 1 D-84367 Zeilarn
Format (measurement)	[mm]	10DF (248x300x249)	
Minimum thickness of member $h_{min} =$	[mm]	300	

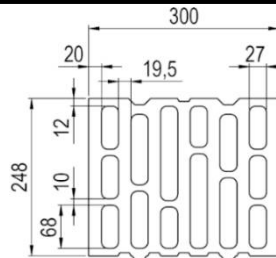


Table C 8.10.2: Installation parameters

Anchor size		14	
Installation site ⁶⁾		Inside / Outside	
Drill hole diameter $d_o =$ [mm]		14	
Cutting diameter of drill bit $d_{cut} \leq$ [mm]		14,45	
Depth of drill hole to deepest point $h_1 \geq$ [mm]		80	110
Drill method	[-]	Rotary drilling	
Overall plastic anchor embedment depth $h_{nom} =$ [mm]		70	100
Diameter of clearance hole in the fixture $d_f \leq$ [mm]		14,5	
Spacing perpendicular / parallel to free edge $s_{1,min}/s_{2,min}$ [mm]		200 / 250	200 / 250
Minimum edge distance $c_{min} \geq$ [mm]		100	100

Table C 8.10.3: Characteristic resistance F_{Rk} ¹⁾⁵⁾⁸⁾ in [kN] for single anchor

Anchor size		14 ⁵⁾	
Installation site ⁶⁾		Inside / Outside	
Overall plastic anchor embedment depth $h_{nom} =$ [mm]		70	100
Mean compressive strength acc. to EN 771			
POROTON S10, $\geq 11,9 \text{ N/mm}^2$	$F_{Rk}, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$ [kN]	0,75	2,0
	$F_{Rk}, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$ [kN]	0,75	2,0
POROTON S10, $\geq 10,0 \text{ N/mm}^2$	$F_{Rk}, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$ [kN]	0,75	1,5
	$F_{Rk}, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$ [kN]	0,75	1,5
POROTON S10, $\geq 7,5 \text{ N/mm}^2$	$F_{Rk}, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$ [kN]	0,5	1,2
	$F_{Rk}, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$ [kN]	0,5	1,2
Partial safety factor γ_{Mm} ²⁾	[-]	2,5	

Footnotes see Annex C 4

Würth Plastic Anchor W-UR SymCon

Performances
Hollow brick: POROTON S10
Brick data, Installation parameters, Characteristic resistance

Annex C 20

**Characteristic resistance F_{Rk} [kN] in hollow or perforated masonry (base material group „c“):
POROTON - S11-30.0-P**

Table C 8.11.1: Brick data

Description of brick		771-1-046	POROTON-S11-30.0-P
Type of brick			Hollow brick
Bulk density	$\rho \geq$ [kg/dm ³]		0,9
Standard, approval/type-approval			EN 771-1:2011+A1:2015; Z-17.1-812:2020-01
Producer of brick		Wienerberger GmbH Oldenburger Allee 26 D-30659 Hannover	Schlagmann Baustoffwerke GmbH & Co. KG Ziegeleistraße 1 D-84367 Zeilarn
Format (measurement)	[mm]		10DF (248x300x249)
Minimum thickness of member	$h_{min} =$ [mm]		300

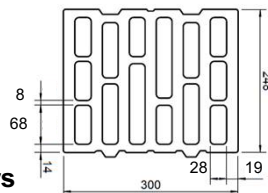


Table C 8.11.2: Installation parameters

Anchor size		14
Installation site ⁶⁾		Inside / Outside
Drill hole diameter	$d_0 =$ [mm]	14
Cutting diameter of drill bit	$d_{cut} \leq$ [mm]	14,45
Depth of drill hole to deepest point	$h_1 \geq$ [mm]	110
Drill method	[-]	Rotary drilling
Overall plastic anchor embedment depth	$h_{nom} =$ [mm]	100
Diameter of clearance hole in the fixture	$d_f \leq$ [mm]	14,5
Spacing perpendicular / parallel to free edge	$s_{1,min}/s_{2,min}$ [mm]	200 / 250
Minimum edge distance	$c_{min} \geq$ [mm]	100

Table C 8.11.3: Characteristic resistance F_{Rk} ¹⁾⁸⁾ in [kN] for single anchor

Anchor size		14
Installation site ⁶⁾		Inside / Outside
Overall plastic anchor embedment depth	$h_{nom} =$ [mm]	100
Mean compressive strength acc. to EN 771		
POROTON-S11-30.0-P, $\geq 15,0 \text{ N/mm}^2$	$F_{Rk, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$ [kN]	2,5
	$F_{Rk, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$ [kN]	2,5
POROTON-S11-30.0-P, $\geq 12,5 \text{ N/mm}^2$	$F_{Rk, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$ [kN]	2,0
	$F_{Rk, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$ [kN]	2,0
POROTON-S11-30.0-P, $\geq 10,0 \text{ N/mm}^2$	$F_{Rk, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$ [kN]	1,5
	$F_{Rk, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$ [kN]	1,5
POROTON-S11-30.0-P, $\geq 7,5 \text{ N/mm}^2$	$F_{Rk, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$ [kN]	1,2
	$F_{Rk, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$ [kN]	1,2
Partial safety factor	$\gamma_{Mm}^{2)}$ [-]	2,5

Footnotes see Annex C 4

Würth Plastic Anchor W-UR SymCon

Performances
Hollow brick: POROTON-S11-30.0-P
Brick data, Installation parameters, Characteristic resistance

Annex C 21

**Characteristic resistance F_{Rk} [kN] in hollow or perforated masonry (base material group „c“):
Brick for ceiling (System Filigran)**

Table C 8.12.1: Brick data

Description of brick		771-1-031	Brick for ceiling (System Filigran)
Type of brick			Brick for ceiling
Bulk density	$\rho \geq$	[kg/dm ³]	0,65
Standard, approval/type-approval			DIN EN 15037-3:2011-07
Producer of brick			Wienerberger GmbH Oldenburger Allee 26 D-30659 Hannover
Format (measurement)		[mm]	16DF (252x530x205)
Minimum thickness of member	$h_{min} =$	[mm]	528

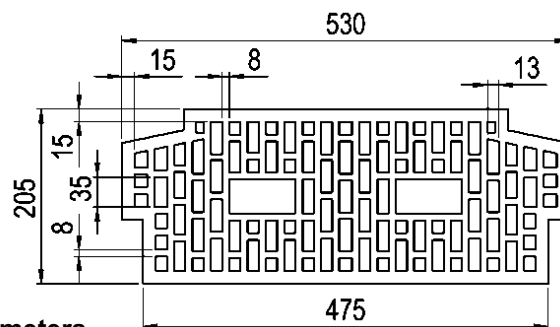


Table C 8.12.2: Installation parameters

Anchor size		10
Installation site		bottom view
Drill hole diameter	$d_0 =$	[mm] 10
Cutting diameter of drill bit	$d_{cut} \leq$	[mm] 10,45
Depth of drill hole to deepest point	$h_1 \geq$	[mm] 80
Drill method		[-] Rotary drilling
Overall plastic anchor embedment depth	$h_{nom} =$	[mm] 70
Diameter of clearance hole in the fixture	$d_f \leq$	[mm] 10,5
Spacing perpendicular / parallel to free edge	$s_{1,min}/s_{2,min}$	200 / 250
Minimum edge distance	$c_{min} \geq$	[mm] 100

Table C 8.12.3: Characteristic resistance F_{Rk} ¹⁾⁸⁾ in [kN] for single anchor

Anchor size		10
Installation site		bottom view
Overall plastic anchor embedment depth	$h_{nom} =$	[mm] 70
Mean compressive strength acc. to EN 771		
Brick für ceiling (System Filigran), $\geq 7,4 \text{ N/mm}^2$	$F_{Rk, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN] 2,0
	$F_{Rk, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN] 1,5
Brick für ceiling (System Filigran), $\geq 5,0 \text{ N/mm}^2$	$F_{Rk, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN] 1,5
	$F_{Rk, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN] 1,2
Brick für ceiling (System Filigran), $\geq 2,5 \text{ N/mm}^2$	$F_{Rk, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN] 0,75
	$F_{Rk, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN] 0,6
Partial safety factor	$\gamma_{Mm}^{2)}$	[-] 2,5

Footnotes see Annex C 4

Würth Plastic Anchor W-UR SymCon

Performances

Hollow brick: Brick for ceiling (System Filigran)

Brick data, Installation parameters, Characteristic resistance

Annex C 22

**Characteristic resistance F_{Rk} [kN] in hollow or perforated masonry (base material group „c“):
UNIPOR W07 SILVACOR**

Table C 8.13.1: Brick data

Description of brick		771-1-109	UNIPOR W07 SILVACOR
Type of brick			Hollow brick
Bulk density	$\rho \geq$	[kg/dm ³]	0,55
Standard, approval/type-approval			EN 771-1:2011+A1:2015; Z-17.1-1162:2019-08
Producer of brick			ZIZ Ziegel-Innovations-Zentrum GmbH Landsberger Straße 392 D-81241 München
Format (measurement)		[mm]	12DF (247x365x249)
Minimum thickness of member	$h_{min} =$	[mm]	365

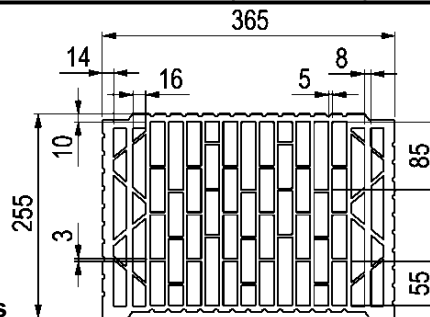


Table C 8.13.2: Installation parameters

Anchor size		10
Installation site ⁶⁾		Inside / Outside
Drill hole diameter	$d_0 =$	[mm] 10
Cutting diameter of drill bit	$d_{cut} \leq$	[mm] 10,45
Depth of drill hole to deepest point	$h_1 \geq$	[mm] 80
Drill method		[-] Rotary drilling
Overall plastic anchor embedment depth	$h_{nom} =$	[mm] 70
Diameter of clearance hole in the fixture	$d_f \leq$	[mm] 10,5
Spacing perpendicular / parallel to free edge	$s_{1,min}/s_{2,min}$	[mm] 200 / 250
Minimum edge distance	$c_{min} \geq$	[mm] 100

Table C 8.13.3: Characteristic resistance F_{Rk} ¹⁾⁸⁾ in [kN] for single anchor

Anchor size		10
Installation site ⁶⁾		Inside / Outside
Overall plastic anchor embedment depth	$h_{nom} =$	[mm] 70
Mean compressive strength acc. to EN 771		
UNIPOR W07 SILVACOR, $\geq 6,2 \text{ N/mm}^2$	$F_{Rk, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN] 1,2
	$F_{Rk, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN] 0,9
UNIPOR W07 SILVACOR, $\geq 5,0 \text{ N/mm}^2$	$F_{Rk, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN] 0,9
	$F_{Rk, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN] 0,9
UNIPOR W07 SILVACOR, $\geq 2,5 \text{ N/mm}^2$	$F_{Rk, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN] 0,5
	$F_{Rk, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN] 0,4
Partial safety factor	$\gamma_{Mm}^{2)}$	[-] 2,5

Footnotes see Annex C 4

Würth Plastic Anchor W-UR SymCon

Performances
Hollow brick: UNIPOR W07 SILVACOR
Brick data, Installation parameters, Characteristic resistance

Annex C 23

**Characteristic resistance F_{RK} [kN] in hollow or perforated masonry (base material group „c“):
UNIPOR WS08 CORISO and UNIPOR WS08 SILVACOR**

Table C 8.14.1: Brick data

Description of brick		UNIPOR WS08 CORISO UNIPOR WS08 SILVACOR
Type of brick	771-1-114	Hollow brick
Bulk density	$\rho \geq$ [kg/dm ³]	0,65
Standard, approval/type-approval		EN 771-1:2011+A1:2015; Z-17.1-1114:2019-12; Z-17.1-1191:2019-01
Producer of brick		ZIZ Ziegel-Innovations-Zentrum GmbH Landsberger Straße 392 D-81241 München
Format (measurement)	[mm]	12DF (247x365x249)
Minimum thickness of member	$h_{min} =$ [mm]	365

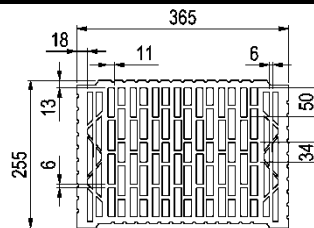


Table C 8.14.2: Installation parameters

Anchor size		10
Installation site ⁶⁾		Inside / Outside
Drill hole diameter	$d_0 =$ [mm]	10
Cutting diameter of drill bit	$d_{cut} \leq$ [mm]	10,45
Depth of drill hole to deepest point	$h_1 \geq$ [mm]	80
Drill method	[-]	Rotary drilling
Overall plastic anchor embedment depth	$h_{nom} =$ [mm]	70
Diameter of clearance hole in the fixture	$d_f \leq$ [mm]	10,5
Spacing perpendicular / parallel to free edge	$s_{1,min}/s_{2,min}$ [mm]	200 / 250
Minimum edge distance	$c_{min} \geq$ [mm]	100

Table C 8.14.3: Characteristic resistance F_{RK} ¹⁾⁸⁾ in [kN] for single anchor

Anchor size		10
Installation site ⁶⁾		Inside / Outside
Overall plastic anchor embedment depth	$h_{nom} =$ [mm]	70
Mean compressive strength acc. to EN 771		
UNIPOR WS08 CORISO/SILVACOR, $\geq 10,0$ N/mm²	$F_{RK, 30^\circ C^3) / 50^\circ C^4)}$ [kN]	2,0
	$F_{RK, 50^\circ C^3) / 80^\circ C^4)}$ [kN]	1,5
UNIPOR WS08 CORISO/SILVACOR, $\geq 7,5$ N/mm²	$F_{RK, 30^\circ C^3) / 50^\circ C^4)}$ [kN]	1,5
	$F_{RK, 50^\circ C^3) / 80^\circ C^4)}$ [kN]	1,2
UNIPOR WS08 CORISO/SILVACOR, $\geq 5,0$ N/mm²	$F_{RK, 30^\circ C^3) / 50^\circ C^4)}$ [kN]	0,9
	$F_{RK, 50^\circ C^3) / 80^\circ C^4)}$ [kN]	0,75
UNIPOR WS08 CORISO/SILVACOR, $\geq 2,5$ N/mm²	$F_{RK, 30^\circ C^3) / 50^\circ C^4)}$ [kN]	0,5
	$F_{RK, 50^\circ C^3) / 80^\circ C^4)}$ [kN]	0,4
Partial safety factor	$\gamma_{Mm}^{2)}$ [-]	2,5

Footnotes see Annex C 4

Würth Plastic Anchor W-UR SymCon

Performances
Hollow brick: UNIPOR WS08 CORISO and UNIPOR WS08 SILVACOR
Brick data, Installation parameters, Characteristic resistance

Annex C 24

**Characteristic resistance F_{Rk} [kN] in hollow or perforated masonry (base material group „c“):
UNIPOR WS09 CORISO**

Table C 8.15.1: Brick data

Description of brick	771-1-115	UNIPOR WS09 CORISO
Type of brick		Hollow brick
Bulk density	$\rho \geq$ [kg/dm ³]	0,7
Standard, approval/type-approval		EN 771-1:2011+A1:2015; Z-17.1-1066:2020-04
Producer of brick		ZIZ Ziegel-Innovations-Zentrum GmbH Landsberger Straße 392 D-81241 München
Format (measurement)	[mm]	12DF (247x365x249)
Minimum thickness of member	$h_{min} =$ [mm]	365

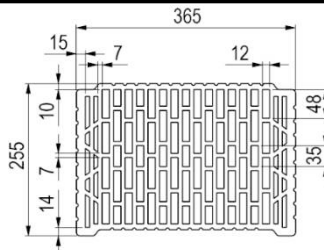


Table C 8.15.2: Installation parameters

Anchor size		10
Installation site ⁶⁾		Inside / Outside
Drill hole diameter	$d_o =$ [mm]	10
Cutting diameter of drill bit	$d_{cut} \leq$ [mm]	10,45
Depth of drill hole to deepest point	$h_1 \geq$ [mm]	80
Drill method	[-]	Rotary drilling
Overall plastic anchor embedment depth	$h_{nom} =$ [mm]	70
Diameter of clearance hole in the fixture	$d_f \leq$ [mm]	10.5
Spacing perpendicular / parallel to free edge	$s_{1,min}/s_{2,min}$ [mm]	250 / 250
Minimum edge distance	$c_{min} \geq$ [mm]	125

Table C 8.15.3: Characteristic resistance F_{Rk} ¹⁾⁸⁾ in [kN] for single anchor

Anchor size		10
Installation site ⁶⁾		Inside / Outside
Overall plastic anchor embedment depth	$h_{nom} =$ [mm]	70
Mean compressive strength acc. to EN 771		
UNIPOR WS09 CORISO, $\geq 10,6 \text{ N/mm}^2$	$F_{Rk, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$ [kN]	2,0
	$F_{Rk, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$ [kN]	2,0
UNIPOR WS09 CORISO, $\geq 10,0 \text{ N/mm}^2$	$F_{Rk, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$ [kN]	1,5
	$F_{Rk, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$ [kN]	1,5
UNIPOR WS09 CORISO, $\geq 7,5 \text{ N/mm}^2$	$F_{Rk, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$ [kN]	1,2
	$F_{Rk, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$ [kN]	1,2
UNIPOR WS09 CORISO, $\geq 5,0 \text{ N/mm}^2$	$F_{Rk, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$ [kN]	0,9
	$F_{Rk, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$ [kN]	0,9
Partial safety factor	$\gamma_{Mm}^{2)}$ [-]	2,5

Footnotes see Annex C 4

Würth Plastic Anchor W-UR SymCon

Performances
Hollow brick: UNIPOR WS09 CORISO
Brick data, Installation parameters, Characteristic resistance

Annex C 25

**Characteristic resistance F_{RK} [kN] in hollow or perforated masonry (base material group „c“):
UNIPOR WH09 Planziegel**

Table C 8.16.1: Brick data

Description of brick		771-1-120	UNIPOR WH09 Planziegel
Type of brick			Hollow brick
Bulk density	$\rho \geq$	[kg/dm ³]	0,6
Standard, approval/type-approval			EN 771-1:2011+A1:2015; Z-17.1-1042:2015-09
Producer of brick			ZIZ Ziegel-Innovations-Zentrum GmbH Landsberger Straße 392 D-81241 München
Format (measurement)		[mm]	12DF (247x365x249)
Minimum thickness of member	$h_{min} =$	[mm]	365

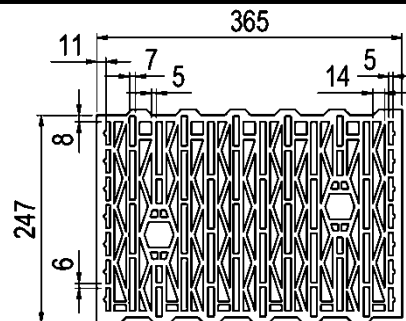


Table C 8.16.2: Installation parameters

Anchor size		10
Installation site ⁶⁾		Inside / Outside
Drill hole diameter	$d_0 =$	[mm] 10
Cutting diameter of drill bit	$d_{cut} \leq$	[mm] 10,45
Depth of drill hole to deepest point	$h_1 \geq$	[mm] 80
Drill method		[-] Rotary drilling
Overall plastic anchor embedment depth	$h_{nom} =$	[mm] 70
Diameter of clearance hole in the fixture	$d_f \leq$	[mm] 10,5
Spacing perpendicular / parallel to free edge	$s_{1,min}/s_{2,min}$	[mm] 200 / 250
Minimum edge distance	$c_{min} \geq$	[mm] 100

Table C 8.16.3: Characteristic resistance F_{RK} ¹⁾⁸⁾ in [kN] for single anchor

Anchor size		10
Installation site ⁶⁾		Inside / Outside
Overall plastic anchor embedment depth	$h_{nom} =$	[mm] 70
Mean compressive strength acc. to EN 771		
UNIPOR WH09 Planziegel, $\geq 7,8 \text{ N/mm}^2$	$F_{RK, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN] 0,9
	$F_{RK, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN] 0,75
UNIPOR WH09 Planziegel, $\geq 7,5 \text{ N/mm}^2$	$F_{RK, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN] 0,9
	$F_{RK, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN] 0,6
UNIPOR WH09 Planziegel, $\geq 5,0 \text{ N/mm}^2$	$F_{RK, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN] 0,6
	$F_{RK, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN] 0,4
Partial safety factor	$\gamma_{Mm}^{2)}$	[-] 2,5

Footnotes see Annex C 4

Würth Plastic Anchor W-UR SymCon

Performances
Hollow brick: UNIPOR WH09 Planziegel
Brick data, Installation parameters, Characteristic resistance

Annex C 26

**Characteristic resistance F_{RK} [kN] in hollow or perforated masonry (base material group „c“):
UNIPOR WH10 Planziegel**

Table C 8.17.1: Brick data

Description of brick		771-1-121	UNIPOR WH10 Planziegel
Type of brick			Hollow brick
Bulk density	$\rho \geq$	[kg/dm ³]	0,65
Standard, approval/type-approval			EN 771-1:2011+A1:2015; Z-17.1-1042:2015-09
Producer of brick			ZIZ Ziegel-Innovations-Zentrum GmbH Landsberger Straße 392 D-81241 München
Format (measurement)		[mm]	12DF (247x365x249)
Minimum thickness of member	$h_{min} =$	[mm]	365

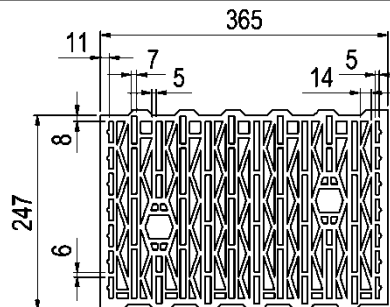


Table C 8.17.2: Installation parameters

Anchor size		10
Installation site ⁶⁾		Inside / Outside
Drill hole diameter	$d_0 =$	[mm] 10
Cutting diameter of drill bit	$d_{cut} \leq$	[mm] 10,45
Depth of drill hole to deepest point	$h_1 \geq$	[mm] 80
Drill method		[-] Rotary drilling
Overall plastic anchor embedment depth	$h_{nom} =$	[mm] 70
Diameter of clearance hole in the fixture	$d_f \leq$	[mm] 10,5
Spacing perpendicular / parallel to free edge	$s_{1,min}/s_{2,min}$	[mm] 200 / 250
Minimum edge distance	$c_{min} \geq$	[mm] 100

Table C 8.17.3: Characteristic resistance F_{RK} ¹⁾⁸⁾ in [kN] for single anchor

Anchor size		10
Installation site ⁶⁾		Inside / Outside
Overall plastic anchor embedment depth	$h_{nom} =$	[mm] 70
Mean compressive strength acc. to EN 771		
UNIPOR WH10 Planziegel, $\geq 9,2 \text{ N/mm}^2$	$F_{RK, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN] 0,9
	$F_{RK, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN] 0,6
UNIPOR WH10 Planziegel, $\geq 7,5 \text{ N/mm}^2$	$F_{RK, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN] 0,75
	$F_{RK, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN] 0,6
UNIPOR WH10 Planziegel, $\geq 5,0 \text{ N/mm}^2$	$F_{RK, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN] 0,5
	$F_{RK, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN] 0,4
Partial safety factor	$\gamma_{Mm}^{2)}$	[-] 2,5

Footnotes see Annex C 4

Würth Plastic Anchor W-UR SymCon

Performances
Hollow brick: UNIPOR WH10 Planziegel
Brick data, Installation parameters, Characteristic resistance

Annex C 27

**Characteristic resistance F_{Rk} [kN] in hollow or perforated masonry (base material group „c“):
UNIPOR WS10 CORISO**

Table C 8.18.1: Brick data

Description of brick	771-1-116	UNIPOR WS10 CORISO
Type of brick		Hollow brick
Bulk density $\rho \geq$	[kg/dm ³]	0,9
Standard, approval/type-approval		EN 771-1:2011+A1:2015; Z-17.1-1021:2016-10
Producer of brick		ZIZ Ziegel-Innovations-Zentrum GmbH Landsberger Straße 392 D-81241 München
Format (measurement)	[mm]	12DF (247x365x249)
Minimum thickness of member $h_{min} =$	[mm]	365

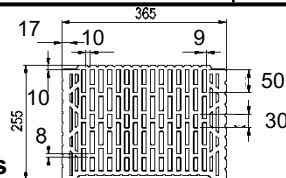


Table C 8.18.2: Installation parameters

Anchor size		10
Installation site ⁶⁾		Inside / Outside
Drill hole diameter $d_0 =$	[mm]	10
Cutting diameter of drill bit $d_{cut} \leq$	[mm]	10,45
Depth of drill hole to deepest point $h_1 \geq$	[mm]	80
Drill method	[-]	Rotary drilling
Overall plastic anchor embedment depth $h_{nom} =$	[mm]	70
Diameter of clearance hole in the fixture $d_f \leq$	[mm]	10,5
Spacing perpendicular / parallel to free edge $s_{1,min}/s_{2,min}$	[mm]	240 / 250
Minimum edge distance $c_{min} \geq$	[mm]	120

Table C 8.18.3: Characteristic resistance F_{Rk} ¹⁾⁸⁾ in [kN] for single anchor

Anchor size		10	
Installation site ⁶⁾		Inside / Outside	
Overall plastic anchor embedment depth $h_{nom} =$	[mm]	70	
Mean compressive strength acc. to EN 771			
UNIPOR WS10 CORISO, $\geq 19,2 \text{ N/mm}^2$	$F_{Rk, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN]	2,5
	$F_{Rk, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN]	2,5
UNIPOR WS10 CORISO, $\geq 15,0 \text{ N/mm}^2$	$F_{Rk, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN]	2,0
	$F_{Rk, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN]	2,0
UNIPOR WS10 CORISO, $\geq 12,5 \text{ N/mm}^2$	$F_{Rk, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN]	1,5
	$F_{Rk, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN]	1,5
UNIPOR WS10 CORISO, $\geq 10,0 \text{ N/mm}^2$	$F_{Rk, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN]	1,2
	$F_{Rk, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN]	1,2
UNIPOR WS10 CORISO, $\geq 7,5 \text{ N/mm}^2$	$F_{Rk, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN]	0,9
	$F_{Rk, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN]	0,9
Partial safety factor $\gamma_{Mm}^{2)}$	[-]		2,5

Footnotes see Annex C 4

Würth Plastic Anchor W-UR SymCon

Performances
Hollow brick: UNIPOR WS10 CORISO
Brick data, Installation parameters, Characteristic resistance

Annex C 28

**Characteristic resistance F_{Rk} [kN] in hollow or perforated masonry (base material group „c“):
UNIPOR WS14 and UNIPOR WS12 CORISO**

Table C 8.19.1: Brick data

Description of brick		UNIPOR WS14 and UNIPOR WS12 CORISO
Type of brick	771-1-016	Hollow brick
Bulk density	$\rho \geq$ [kg/dm ³]	0,8
Standard, approval/type-approval		EN 771-1:2011+A1:2015; Z-17.1-883:2005-07
Producer of brick		ZIZ Ziegel-Innovations-Zentrum GmbH Landsberger Straße 392 D-81241 München
Format (measurement)	[mm]	10DF (248x300x249)
Minimum thickness of member	$h_{min} =$ [mm]	300

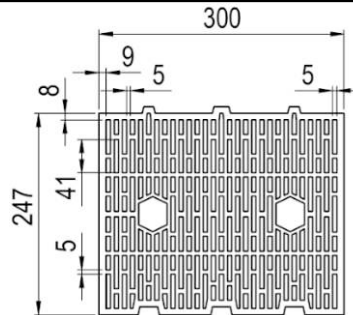


Table C 8.19.2: Installation parameters

Anchor size		14	
Installation site ⁶⁾		Inside / Outside	
Drill hole diameter	$d_0 =$ [mm]	14	
Cutting diameter of drill bit	$d_{cut} \leq$ [mm]	14,45	
Depth of drill hole to deepest point	$h_1 \geq$ [mm]	80	110
Drill method	[-]	Rotary drilling	
Overall plastic anchor embedment depth	$h_{nom} =$ [mm]	70	100
Diameter of clearance hole in the fixture	$d_f \leq$ [mm]	14,5	
Spacing perpendicular / parallel to free edge	$s_{1,min}/s_{2,min}$ [mm]	220 / 250	220 / 250
Minimum edge distance	$c_{min} \geq$ [mm]	110	110

Table C 8.19.3: Characteristic resistance F_{Rk} ¹⁾⁵⁾⁸⁾ in [kN] for single anchor

Anchor size		14 ⁵⁾	
Overall plastic anchor embedment depth	$h_{nom} =$ [mm]	70	100
Installation site ⁶⁾		Inside / Outside	
UNIPOR WS14 and UNIPOR WS12 CORISO, $\geq 15,0$ N/mm ²	F_{Rk} , 30°C ³⁾ / 50°C ⁴⁾ [kN]	1,2	1,5
	F_{Rk} , 50°C ³⁾ / 80°C ⁴⁾ [kN]	1,2	1,5
UNIPOR WS14 and UNIPOR WS12 CORISO, $\geq 12,5$ N/mm ²	F_{Rk} , 30°C ³⁾ / 50°C ⁴⁾ [kN]	0,9	1,2
	F_{Rk} , 50°C ³⁾ / 80°C ⁴⁾ [kN]	0,9	1,2
UNIPOR WS14 and UNIPOR WS12 CORISO, $\geq 10,0$ N/mm ²	F_{Rk} , 30°C ³⁾ / 50°C ⁴⁾ [kN]	0,75	0,9
	F_{Rk} , 50°C ³⁾ / 80°C ⁴⁾ [kN]	0,75	0,9
Partial safety factor	γ_{Mm} ²⁾ [-]	2,5	

Footnotes see Annex C 4

Würth Plastic Anchor W-UR SymCon

Performances
Hollow brick: UNIPOR WS14 and UNIPOR WS12 CORISO
Brick data, Installation parameters, Characteristic resistance

Annex C 29

**Characteristic resistance F_{Rk} [kN] in hollow or perforated masonry (base material group „c“):
UNIPOR WS CORISO (special shaped)**

Table C 8.20.1: Brick data

Description of brick		771-1-117	UNIPOR WS CORISO (special shaped)
Type of brick			Hollow brick
Bulk density	$\rho \geq$	[kg/dm ³]	0,75
Standard, approval/type-approval			EN 771-1:2011+A1:2015
Producer of brick			ZIZ Ziegel-Innovations-Zentrum GmbH Landsberger Straße 392 D-81241 München
Format (measurement)		[mm]	12DF (247x365x249)
Minimum thickness of member	$h_{min} =$	[mm]	247

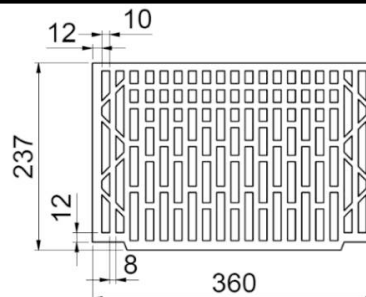


Table C 8.20.2: Installation parameters

Anchor size		10
Installation site ⁶⁾		Reveal
Drill hole diameter	$d_0 =$	[mm] 10
Cutting diameter of drill bit	$d_{cut} \leq$	[mm] 10,45
Depth of drill hole to deepest point	$h_1 \geq$	[mm] 80
Drill method		[-] Rotary drilling
Overall plastic anchor embedment depth	$h_{nom} =$	[mm] 70
Diameter of clearance hole in the fixture	$d_f \leq$	[mm] 10,5
Spacing perpendicular / parallel to free edge	$s_{1,min}/s_{2,min}$	[mm] 140 / 250
Minimum edge distance	$c_{min} \geq$	[mm] 70

Table C 8.20.3: Characteristic resistance F_{Rk} ⁷⁾⁸⁾ in [kN] for single anchor

Anchor size		10
Installation site ⁶⁾		Reveal
Overall plastic anchor embedment depth	$h_{nom} =$	[mm] 70
Characteristic resistance for single anchor		[kN] F_{Rk} ⁷⁾
Mean compressive strength acc. to EN 771		
UNIPOR WS CORISO 12DF, $\geq 10,0 \text{ N/mm}^2$	$F_{Rk, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN] 0,9
	$F_{Rk, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN] 0,9
UNIPOR WS CORISO 12DF, $\geq 7,5 \text{ N/mm}^2$	$F_{Rk, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN] 0,75
	$F_{Rk, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN] 0,75
UNIPOR WS CORISO 12DF, $\geq 5,0 \text{ N/mm}^2$	$F_{Rk, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN] 0,5
	$F_{Rk, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN] 0,5
Partial safety factor	$\gamma_{Mm}^{2)}$	[-] 2,5

Footnotes see Annex C 4

Würth Plastic Anchor W-UR SymCon

Performances
Hollow brick: UNIPOR WS CORISO (special shaped)
Brick data, Installation parameters, Characteristic resistance

Annex C 30

**Characteristic resistance F_{Rk} [kN] in hollow or perforated masonry (base material group „c“):
ThermoPlan MZ10**

Table C 8.21.1: Brick data

Description of brick		771-1-034	ThermoPlan MZ10
Type of brick			Hollow brick
Bulk density	$\rho \geq$	[kg/dm ³]	0,75
Standard, approval/type-approval			EN 771-1:2011+A1:2015; Z-17.1-1015:2017-05
Producer of brick			Mein Ziegelhaus GmbH & Co. KG Märkerstraße 44 D-63755 Alzenau
Format (measurement)		[mm]	10DF (248x300x249)
Minimum thickness of member	$h_{min} =$	[mm]	300

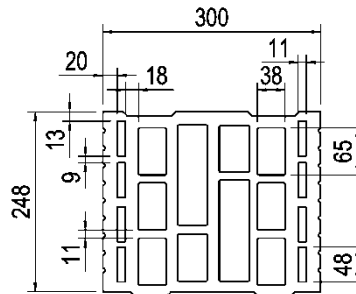


Table C 8.21.2: Installation parameters

Anchor size		14	
Installation site ⁶⁾		Inside / Outside	
Drill hole diameter	$d_0 =$	[mm]	14
Cutting diameter of drill bit	$d_{cut} \leq$	[mm]	14,45
Depth of drill hole to deepest point	$h_1 \geq$	[mm]	80 110
Drill method		[-]	Rotary drilling
Overall plastic anchor embedment depth	$h_{nom} =$	[mm]	70 100
Diameter of clearance hole in the fixture	$d_f \leq$	[mm]	14,5
Spacing perpendicular / parallel to free edge	$s_{1,min}/s_{2,min}$	[mm]	200 / 250 200 / 250
Minimum edge distance	$c_{min} \geq$	[mm]	100 100

Table C 8.21.3: Characteristic resistance F_{Rk} ¹⁾⁵⁾⁸⁾ in [kN] for single anchor

Anchor size		14 ⁵⁾	
Installation site ⁶⁾		Inside / Outside	
Overall plastic anchor embedment depth	$h_{nom} =$	[mm]	70 100
Mean compressive strength acc. to EN 771			
ThermoPlan MZ10, $\geq 10,0 \text{ N/mm}^2$	$F_{Rk, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN]	2,5 2,5
	$F_{Rk, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN]	2,5 2,5
ThermoPlan MZ10, $\geq 7,5 \text{ N/mm}^2$	$F_{Rk, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN]	2,0 2,5
	$F_{Rk, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN]	2,0 2,5
ThermoPlan MZ10, $\geq 5,0 \text{ N/mm}^2$	$F_{Rk, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN]	1,2 2,0
	$F_{Rk, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN]	1,2 2,0
Partial safety factor	$\gamma_{Mm}^{2)}$	[-]	2,5

Footnotes see Annex C 4

Würth Plastic Anchor W-UR SymCon

Performances
Hollow brick: ThermoPlan MZ10
Brick data, Installation parameters, Characteristic resistance

Annex C 31

**Characteristic resistance F_{RK} [kN] in hollow or perforated masonry (base material group „c“):
ThermoPlan MZ 90 G**

Table C 8.22.1: Brick data

Description of brick		771-1-080	ThermoPlan MZ 90 G
Type of brick			Hollow brick
Bulk density	$\rho \geq$ [kg/dm ³]		0,7
Standard, approval/type-approval			EN 771-1:2011+A1:2015;
Producer of brick			Mein Ziegelhaus GmbH & Co. KG Märkerstraße 44 D-63755 Alzenau
Format (measurement)	[mm]		12DF (248x365x249)
Minimum thickness of member	$h_{min} =$ [mm]		300

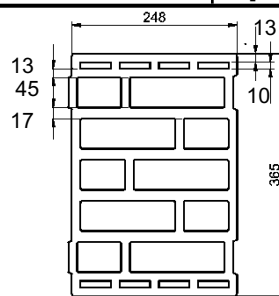


Table C 8.22.2: Installation parameters

Anchor size			10
Installation site ⁶⁾			Inside / Outside
Drill hole diameter	$d_0 =$ [mm]		10
Cutting diameter of drill bit	$d_{cut} \leq$ [mm]		10,45
Depth of drill hole to deepest point	$h_1 \geq$ [mm]		80
Drill method	[-]		Rotary drilling
Overall plastic anchor embedment depth	$h_{nom} =$ [mm]		70
Diameter of clearance hole in the fixture	$d_f \leq$ [mm]		10,5
Spacing perpendicular / parallel to free edge	$s_{1,min}/s_{2,min}$ [mm]		200 / 250
Minimum edge distance	$c_{min} \geq$ [mm]		100

Table C 8.22.3: Characteristic resistance F_{RK} ¹⁾⁸⁾ in [kN] for single anchor

Anchor size			10
Installation site ⁶⁾			Inside / Outside
Overall plastic anchor embedment depth	$h_{nom} =$ [mm]		70
Mean compressive strength acc. to EN 771			
ThermoPlan MZ 90 G, $\geq 6,5 \text{ N/mm}^2$	$F_{RK, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$ [kN]		2,0
	$F_{RK, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$ [kN]		2,0
ThermoPlan MZ 90 G, $\geq 5,0 \text{ N/mm}^2$	$F_{RK, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$ [kN]		1,5
	$F_{RK, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$ [kN]		1,5
ThermoPlan MZ 90 G, $\geq 2,5 \text{ N/mm}^2$	$F_{RK, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$ [kN]		0,9
	$F_{RK, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$ [kN]		0,9
Partial safety factor	$\gamma_{Mm}^2)$ [-]		2,5

Footnotes see Annex C 4

Würth Plastic Anchor W-UR SymCon

Performances
Hollow brick: ThermoPlan MZ 90 G
Brick data, Installation parameters, Characteristic resistance

Annex C 32

**Characteristic resistance F_{RK} [kN] in hollow or perforated masonry (base material group „c“):
ThermoPlan TS²**

Table C 8.23.1: Brick data

Description of brick		771-1-024	ThermoPlan TS ²
Type of brick			Hollow brick
Bulk density	$\rho \geq$	[kg/dm ³]	0,85
Standard, approval/type-approval			EN 771-1:2011+A1:2015; Z-17.1-993:2015-09
Producer of brick			Mein Ziegelhaus GmbH & Co. KG Märkerstraße 44 D-63755 Alzenau
Format (measurement)		[mm]	9DF (373x175x249)
Minimum thickness of member	$h_{min} =$	[mm]	175

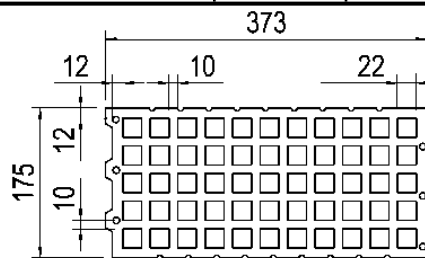


Table C 8.23.2: Installation parameters

Anchor size		14	
Installation site ⁶⁾		Inside / Outside	
Drill hole diameter	$d_0 =$	[mm]	14
Cutting diameter of drill bit	$d_{cut} \leq$	[mm]	14,45
Depth of drill hole to deepest point	$h_1 \geq$	[mm]	80 110
Drill method		[-]	Rotary drilling
Overall plastic anchor embedment depth	$h_{nom} =$	[mm]	70 100
Diameter of clearance hole in the fixture	$d_f \leq$	[mm]	14,5
Spacing perpendicular / parallel to free edge	$s_{1,min}/s_{2,min}$	[mm]	170 / 250 200 / 250
Minimum edge distance	$c_{min} \geq$	[mm]	85 100

Table C 8.23.3: Characteristic resistance F_{RK} ¹⁾⁵⁾⁸⁾ in [kN] for single anchor

Anchor size		14 ⁵⁾	
Installation site ⁶⁾		Inside / Outside	
Overall plastic anchor embedment depth	$h_{nom} =$	[mm]	70 100
Mean compressive strength acc. to EN 771			
ThermoPlan TS ² , $\geq 16,7 \text{ N/mm}^2$	$F_{RK, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN]	2,0 1,5
	$F_{RK, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN]	2,0 1,5
ThermoPlan TS ² , $\geq 12,5 \text{ N/mm}^2$	$F_{RK, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN]	1,5 1,2
	$F_{RK, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN]	1,5 1,2
ThermoPlan TS ² , $\geq 10,5 \text{ N/mm}^2$	$F_{RK, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN]	1,2 0,9
	$F_{RK, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN]	1,2 0,9
ThermoPlan TS ² , $\geq 8,3 \text{ N/mm}^2$	$F_{RK, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN]	0,9 0,75
	$F_{RK, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN]	0,9 0,75
Partial safety factor	$\gamma_{Mm}^2)$	[-]	2,5

Footnotes see Annex C 4

Würth Plastic Anchor W-UR SymCon

Performances
Hollow brick: ThermoPlan TS²
Brick data, Installation parameters, Characteristic resistance

Annex C 33

**Characteristic resistance F_{Rk} [kN] in hollow or perforated masonry (base material group „c“):
THERMOPOR TV 8+ Plan**

Table C 8.24.1: Brick data

Description of brick		771-1-133	THERMOPOR TV 8+ Plan
Type of brick			Hollow brick
Bulk density	$\rho \geq$	[kg/dm ³]	0,7
Standard, approval/type-approval			EN 771-1:2011+A1:2015; Z-17.21-1227:2021-03
Producer of brick			Otto Staudacher Vertriebs GmbH St.-Leonhard-Straße 25 86483 Balzhausen
Format (measurement)		[mm]	12DF (247x365x249)
Minimum thickness of member	$h_{min} =$	[mm]	365

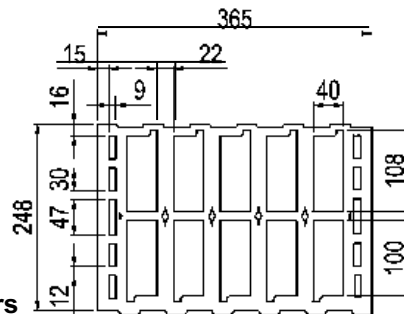


Table C 8.24.2: Installation parameters

Anchor size		10
Installation site ⁶⁾		Inside / Outside
Drill hole diameter	$d_0 =$	[mm] 10
Cutting diameter of drill bit	$d_{cut} \leq$	[mm] 10,45
Depth of drill hole to deepest point	$h_1 \geq$	[mm] 80
Drill method		[-] Rotary drilling
Overall plastic anchor embedment depth	$h_{nom} =$	[mm] 70
Diameter of clearance hole in the fixture	$d_f \leq$	[mm] 10,5
Spacing perpendicular / parallel to free edge	$s_{1,min}/s_{2,min}$	[mm] 200 / 250
Minimum edge distance	$c_{min} \geq$	[mm] 100

Table C 8.24.3: Characteristic resistance F_{Rk} ¹⁾⁸⁾ in [kN] for single anchor

Anchor size		10
Installation site ⁶⁾		Inside / Outside
Overall plastic anchor embedment depth	$h_{nom} =$	[mm] 70
Mean compressive strength acc. to EN 771		
THERMOPOR TV 8+ Plan, $\geq 10,0 \text{ N/mm}^2$	$F_{Rk, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN] 2,5
	$F_{Rk, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN] 2,5
THERMOPOR TV 8+ Plan, $\geq 7,5 \text{ N/mm}^2$	$F_{Rk, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN] 2,0
	$F_{Rk, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN] 1,5
THERMOPOR TV 8+ Plan, $\geq 5,0 \text{ N/mm}^2$	$F_{Rk, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN] 1,5
	$F_{Rk, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN] 1,2
Partial safety factor	$\gamma_{Mm}^2)$	[-] 2,5

Footnotes see Annex C 4

Würth Plastic Anchor W-UR SymCon

Performances
Hollow brick: THERMOPOR TV 8+ Plan
Brick data, Installation parameters, Characteristic resistance

Annex C 34

**Characteristic resistance F_{Rk} [kN] in hollow or perforated masonry (base material group „c“):
THERMOPOR TV 9-Plan**

Table C 8.25.1: Brick data

Description of brick	771-1-029	THERMOPOR TV 9-Plan
Type of brick		Hollow brick
Bulk density $\rho \geq$ [kg/dm ³]		0,75
Standard, approval/type-approval		EN 771-1:2011+A1:2015; Z-17.1-1006:2019-01
Producer of brick		Thermopor Ziegel-Kontor Ulm GmbH Olgastraße 94 D-89073 Ulm
Format (measurement)	[mm]	10DF (247x300x249)
Minimum thickness of member $h_{min} =$ [mm]		300

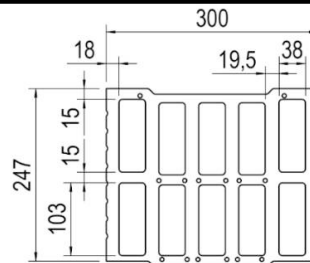


Table C 8.25.2: Installation parameters

Anchor size		14
Installation site ⁶⁾		Inside / Outside
Drill hole diameter $d_0 =$ [mm]		14
Cutting diameter of drill bit $d_{cut} \leq$ [mm]		14,45
Depth of drill hole to deepest point $h_1 \geq$ [mm]		110
Drill method	[-]	Rotary drilling
Overall plastic anchor embedment depth $h_{nom} =$ [mm]		100
Diameter of clearance hole in the fixture $d_f \leq$ [mm]		14,5
Spacing perpendicular / parallel to free edge $s_{1,min}/s_{2,min}$ [mm]		200 / 250
Minimum edge distance $c_{min} \geq$ [mm]		100

Table C 8.25.3: Characteristic resistance F_{Rk} ¹⁾⁸⁾ in [kN] for single anchor

Anchor size		14
Installation site ⁶⁾		Inside / Outside
Overall plastic anchor embedment depth $h_{nom} =$ [mm]		100
Mean compressive strength acc. to EN 771		
THERMOPOR TV 9-Plan, $\geq 12,5 \text{ N/mm}^2$	$F_{Rk, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$ [kN]	2,5
	$F_{Rk, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$ [kN]	2,5
THERMOPOR TV 9-Plan, $\geq 10,0 \text{ N/mm}^2$	$F_{Rk, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$ [kN]	2,5
	$F_{Rk, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$ [kN]	2,5
THERMOPOR TV 9-Plan, $\geq 7,5 \text{ N/mm}^2$	$F_{Rk, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$ [kN]	1,5
	$F_{Rk, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$ [kN]	1,5
THERMOPOR TV 9-Plan, $\geq 5,0 \text{ N/mm}^2$	$F_{Rk, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$ [kN]	1,2
	$F_{Rk, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$ [kN]	1,2
Partial safety factor $\gamma_{Mm}^{2)}$ [-]		2,5

Footnotes see Annex C 4

Würth Plastic Anchor W-UR SymCon

Performances
Hollow brick: THERMOPOR TV 9-Plan
Brick data, Installation parameters, Characteristic resistance

Annex C 35

**Characteristic resistance F_{Rk} [kN] in hollow or perforated masonry (base material group „c“):
THERMOPOR Plan TV Aero**

Table C 8.26.1: Brick data

Description of brick		771-1-127	THERMOPOR Plan TV Aero
Type of brick			Hollow brick
Bulk density	$\rho \geq$	[kg/dm ³]	0,75
Standard, approval/type-approval			EN 771-1:2011+A1:2015; Z-17.21-1220:2020-11
Producer of brick			Otto Staudacher Vertriebs GmbH St.-Leonhard-Str. 86483 Balzhausen
Format (measurement)		[mm]	12DF (247x365x249)
Minimum thickness of member	$h_{min} =$	[mm]	365

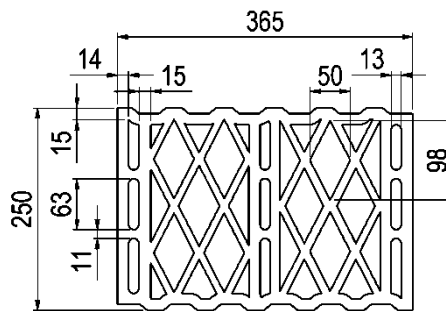


Table C 8.26.2: Installation parameters

Anchor size			10
Installation site ⁶⁾			Inside / Outside
Drill hole diameter	$d_0 =$	[mm]	10
Cutting diameter of drill bit	$d_{cut} \leq$	[mm]	10,45
Depth of drill hole to deepest point	$h_1 \geq$	[mm]	80
Drill method		[-]	Rotary drilling
Overall plastic anchor embedment depth	$h_{nom} =$	[mm]	70
Diameter of clearance hole in the fixture	$d_f \leq$	[mm]	10,5
Spacing perpendicular / parallel to free edge	$s_{1,min}/s_{2,min}$	[mm]	200 / 250
Minimum edge distance	$c_{min} \geq$	[mm]	100

Table C 8.26.3: Characteristic resistance F_{Rk} ¹⁾⁸⁾ in [kN] for single anchor

Anchor size			10
Installation site ⁶⁾			Inside / Outside
Overall plastic anchor embedment depth	$h_{nom} =$	[mm]	70
Mean compressive strength acc. to EN 771			
THERMOPOR Plan TV Aero, $\geq 9,4 \text{ N/mm}^2$	$F_{Rk, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN]	1,5
	$F_{Rk, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN]	1,2
THERMOPOR Plan TV Aero, $\geq 7,5 \text{ N/mm}^2$	$F_{Rk, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN]	1,2
	$F_{Rk, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN]	0,9
THERMOPOR Plan TV Aero, $\geq 5,0 \text{ N/mm}^2$	$F_{Rk, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN]	0,75
	$F_{Rk, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN]	0,6
Partial safety factor	$\gamma_{Mm}^{2)}$	[-]	2,5

Footnotes see Annex C 4

Würth Plastic Anchor W-UR SymCon

Performances
Hollow brick: THERMOPOR Plan TV Aero
Brick data, Installation parameters, Characteristic resistance

Annex C 36

**Characteristic resistance F_{Rk} [kN] in hollow or perforated masonry (base material group „c“):
Kellerer ZMK-P 7.5**

Table C 8.27.1: Brick data

Description of brick		771-1-068	Kellerer ZMK-P 7.5
Type of brick			Hollow brick
Bulk density	$\rho \geq$	[kg/dm ³]	0,6
Standard, approval/type-approval			EN 771-1:2011+A1:2015; Z-17.1-1012:2016-06
Producer of brick			Ziegelsystem Michael Kellerer GmbH & Co KG Ziegeleistraße 13 D-82281 Egenhofen
Format (measurement)		[mm]	12DF (247x365x249)
Minimum thickness of member	$h_{min} =$	[mm]	365

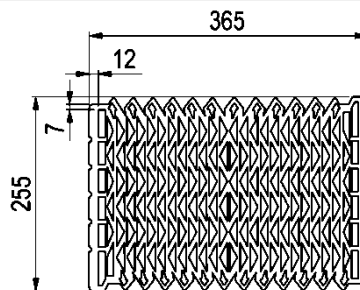


Table C 8.27.2: Installation parameters

Anchor size		10	
Installation site ⁶⁾		Inside / Outside	
Drill hole diameter	$d_0 =$	[mm]	10
Cutting diameter of drill bit	$d_{cut} \leq$	[mm]	10,45
Depth of drill hole to deepest point	$h_1 \geq$	[mm]	80
Drill method		[-]	Rotary drilling
Overall plastic anchor embedment depth	$h_{nom} =$	[mm]	70
Diameter of clearance hole in the fixture	$d_f \leq$	[mm]	10,5
Spacing perpendicular / parallel to free edge	$s_{1,min}/s_{2,min}$	[mm]	200 / 250
Minimum edge distance	$c_{min} \geq$	[mm]	100

Table C 8.27.3: Characteristic resistance F_{Rk} ¹⁾⁸⁾ in [kN] for single anchor

Anchor size		10	
Installation site ⁶⁾		Inside / Outside	
Overall plastic anchor embedment depth	$h_{nom} =$	[mm]	70
Mean compressive strength acc. to EN 771			
Kellerer ZMK-P 7.5, $\geq 6,8 \text{ N/mm}^2$	$F_{Rk}, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN]	0,9
	$F_{Rk}, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN]	0,75
Kellerer ZMK-P 7.5, $\geq 5,0 \text{ N/mm}^2$	$F_{Rk}, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN]	0,75
	$F_{Rk}, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN]	0,6
Kellerer ZMK-P 7.5, $\geq 2,5 \text{ N/mm}^2$	$F_{Rk}, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN]	0,4
	$F_{Rk}, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN]	0,3
Partial safety factor	$\gamma_{Mm}^{2)}$	[-]	2,5

Footnotes see Annex C 4

Würth Plastic Anchor W-UR SymCon

Performances

Hollow brick: Kellerer ZMK-P-7.5

Brick data, Installation parameters, Characteristic resistance

Annex C 37

Characteristic resistance F_{Rk} [kN] in hollow or perforated masonry (base material group „c“): Eder XV 7.5 S

Table C 8.28.1: Brick data

Description of brick	771-1-130	Eder XV 7.5 S
Type of brick		Hollow brick
Bulk density	$\rho \geq$ [kg/dm ³]	0,75
Standard, approval/type-approval		EN 771-1:2011+A1:2015; Z-17.1-1175:2018-10
Producer of brick		Ziegelwerk Freital Eder GmbH Wilsdruffer Straße 25 01705 Freital
Format (measurement)	[mm]	10DF (200x365x249)
Minimum thickness of member	$h_{min} =$ [mm]	365

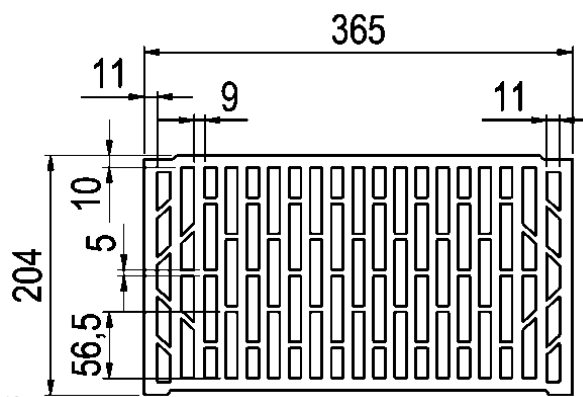


Table C 8.28.2: Installation parameters

Anchor size		10
Installation site ⁶⁾		Inside / Outside
Drill hole diameter	$d_0 =$ [mm]	10
Cutting diameter of drill bit	$d_{cut} \leq$ [mm]	10,45
Depth of drill hole to deepest point	$h_1 \geq$ [mm]	80
Drill method	[-]	Rotary drilling
Overall plastic anchor embedment depth	$h_{nom} \geq$ [mm]	70
Diameter of clearance hole in the fixture	$d_f \leq$ [mm]	10,5
Spacing perpendicular / parallel to free edge	$s_{1,min}/s_{2,min}$ [mm]	200 / 250
Minimum edge distance	$c_{min} \geq$ [mm]	100

Table C 8.28.3: Characteristic resistance F_{Rk} ¹⁾⁸⁾ in [kN] for single anchor

Anchor size		10
Installation site ⁶⁾		Inside / Outside
Overall plastic anchor embedment depth	$h_{nom} =$ [mm]	70
Mean compressive strength acc. to EN 771		
Eder XV 7.5 S, $\geq 7,5 \text{ N/mm}^2$	$F_{Rk, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$ [kN]	2,0
	$F_{Rk, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$ [kN]	2,0
Eder XV 7.5 S, $\geq 5,0 \text{ N/mm}^2$	$F_{Rk, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$ [kN]	1,2
	$F_{Rk, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$ [kN]	1,2
Partial safety factor	$\gamma_{Mm}^{2)}$ [-]	2,5

Footnotes see Annex C 4

Würth Plastic Anchor W-UR SymCon

Performances

Hollow brick: Eder XV 7.5 S

Brick data, Installation parameters, Characteristic resistance

Annex C 38

Characteristic resistance F_{RK} [kN] in solid masonry (base material group „b“): KS, NF

Table C 8.29.1: Brick data

Description of brick		771-2-011	KS	
Type of brick			Sand-lime solid brick	
Bulk density	$\rho \geq$	[kg/dm ³]	1,8	
Standard, approval/type-approval			EN 771-2:2011+A1:2015	
Producer of brick			-	
Format (measurement)		[mm]	\geq NF (\geq 240x115x71)	
Minimum thickness of member	$h_{min} =$	[mm]	115	

Table C 8.29.2: Installation parameters

Anchor size			10	
Installation site ⁶⁾			Inside / Outside	
Drill hole diameter	$d_0 =$	[mm]	10	
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		[-]	Hammer drilling	
Overall plastic anchor embedment depth	$h_{nom} \geq$	[mm]	50	70
Diameter of clearance hole in the fixture	$d_f \leq$	[mm]	10.5	
Spacing perpendicular / parallel to free edge	$s_{1,min}/s_{2,min}$	[mm]	250 / 250	200 / 250
Minimum edge distance	$c_{min} \geq$	[mm]	100	100

Table C 8.29.3: Characteristic resistance F_{RK} ¹⁾⁸⁾ in [kN] for single anchor

Anchor size			10 ⁵⁾	
Installation site ⁶⁾			Inside / Outside	
Overall plastic anchor embedment depth	$h_{nom} \geq$	[mm]	50	70
Mean compressive strength acc. to EN 771				
Sand-lime solid brick KS, $\geq 49,38$ N/mm ²	$F_{RK, 30^\circ C^3) / 50^\circ C^4)}$	[kN]	2,5	4,0
	$F_{RK, 50^\circ C^3) / 80^\circ C^4)}$	[kN]	2,5	3,0
Sand-lime solid brick KS, $\geq 45,0$ N/mm ²	$F_{RK, 30^\circ C^3) / 50^\circ C^4)}$	[kN]	2,5	3,5
	$F_{RK, 50^\circ C^3) / 80^\circ C^4)}$	[kN]	2,5	3,0
Sand-lime solid brick KS, $\geq 35,0$ N/mm ²	$F_{RK, 30^\circ C^3) / 50^\circ C^4)}$	[kN]	2,0	2,5
	$F_{RK, 50^\circ C^3) / 80^\circ C^4)}$	[kN]	2,0	2,0
Sand-lime solid brick KS, $\geq 25,0$ N/mm ²	$F_{RK, 30^\circ C^3) / 50^\circ C^4)}$	[kN]	1,2	2,0
	$F_{RK, 50^\circ C^3) / 80^\circ C^4)}$	[kN]	1,2	1,5
Sand-lime solid brick KS, $\geq 20,0$ N/mm ²	$F_{RK, 30^\circ C^3) / 50^\circ C^4)}$	[kN]	1,2	1,5
	$F_{RK, 50^\circ C^3) / 80^\circ C^4)}$	[kN]	1,2	1,2
Sand-lime solid brick KS, $\geq 15,0$ N/mm ²	$F_{RK, 30^\circ C^3) / 50^\circ C^4)}$	[kN]	0,75	1,2
	$F_{RK, 50^\circ C^3) / 80^\circ C^4)}$	[kN]	0,75	0,9
Partial safety factor	$\gamma_{Mm}^{2)}$	[-]	2,5	

Footnotes see Annex C 4

Würth Plastic Anchor W-UR SymCon

Performances
Sand-lime solid brick: KS, NF
Brick data, Installation parameters, Characteristic resistance

Annex C 39

Characteristic resistance F_{RK} [kN] in solid masonry (base material group „b“): KS, 6DF

Table C 8.30.1: Brick data

Description of brick		771-2-031	KS
Type of brick			Sand-lime solid brick
Bulk density	$\rho \geq$	[kg/dm ³]	2,0
Standard, approval/type-approval			EN 771-2:2011+A1:2015
Producer of brick			-
Format (measurement)		[mm]	$\geq 248 \times 175 \times 498$
Minimum thickness of member	$h_{min} =$	[mm]	175

Table C 8.30.2: Installation parameters

Anchor size			10
Installation site ⁶⁾			Inside / Outside
Drill hole diameter	$d_0 =$	[mm]	10
Cutting diameter of drill bit	$d_{cut} \leq$	[mm]	10.45
Depth of drill hole to deepest point	$h_1 \geq$	[mm]	60
Drill method		[-]	Hammer drilling
Overall plastic anchor embedment depth	$h_{nom} \geq$	[mm]	50
Diameter of clearance hole in the fixture	$d_f \leq$	[mm]	10.5
Spacing perpendicular / parallel to free edge	$s_{1,min}/s_{2,min}$	[mm]	250 / 250
Minimum edge distance	$c_{min} \geq$	[mm]	125

Table C 8.30.3: Characteristic resistance $F_{RK}^{1)8)}$ in [kN] for single anchor

Anchor size			10
Installation site ⁶⁾			Inside / Outside
Overall plastic anchor embedment depth	$h_{nom} \geq$	[mm]	50
Mean compressive strength acc. to EN 771			
Sand-lime solid brick KS, $\geq 44,67 \text{ N/mm}^2$	$F_{RK, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)}$	[kN]	8,5
	$F_{RK, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)}$	[kN]	5,5
Sand-lime solid brick KS, $\geq 35,0 \text{ N/mm}^2$	$F_{RK, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)}$	[kN]	7,0
	$F_{RK, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)}$	[kN]	5,5
Sand-lime solid brick KS, $\geq 25,0 \text{ N/mm}^2$	$F_{RK, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)}$	[kN]	5,0
	$F_{RK, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)}$	[kN]	4,5
Sand-lime solid brick KS, $\geq 20,0 \text{ N/mm}^2$	$F_{RK, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)}$	[kN]	4,0
	$F_{RK, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)}$	[kN]	3,5
Sand-lime solid brick KS, $\geq 15,0 \text{ N/mm}^2$	$F_{RK, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)}$	[kN]	3,0
	$F_{RK, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)}$	[kN]	2,5
Partial safety factor	$\gamma_{Mm}^{2)}$	[-]	2,5

Footnotes see Annex C 4

Würth Plastic Anchor W-UR SymCon

Performances
Sand-lime solid brick: KS, 6DF
Brick data, Installation parameters, Characteristic resistance

Annex C 40

Characteristic resistance F_{RK} [kN] in solid masonry (base material group „b“): Silka XL Basic, Silka XL Plus

Table C 8.31.1: Brick data

Description of brick		771-2-010	Silka XL Basic, Silka XL Plus	
Type of brick			Sand-lime solid brick	
Bulk density	$\rho \geq$	[kg/dm ³]	2,0	
Standard, approval/type-approval			EN 771-2:2011+A1:2015; Z-17.1-997:2016-09	
Producer of brick			Xella Deutschland GmbH Dr.-Hammacher-Str. 49 D-47119 Duisburg	
Format (measurement)		[mm]	$\geq 248 \times 175 \times 498$	
Minimum thickness of member	$h_{min} =$	[mm]	175	

Table C 8.31.2: Installation parameters

Anchor size		14		
Installation site ⁶⁾		Inside / Outside		
Drill hole diameter	$d_0 =$	[mm]	14	
Cutting diameter of drill bit	$d_{cut} \leq$	[mm]	14,45	
Depth of drill hole to deepest point	$h_1 \geq$	[mm]	80	110
Drill method		[-]	Hammer drilling	
Overall plastic anchor embedment depth	$h_{nom} \geq$	[mm]	70	100
Diameter of clearance hole in the fixture	$d_f \leq$	[mm]	10,45	
Spacing perpendicular / parallel to free edge	$s_{1,min}/s_{2,min}$	[mm]	120 / 240	120 / 240
Minimum edge distance	$c_{min} \geq$	[mm]	60	60

Table C 8.31.3: Characteristic resistance F_{RK} ¹⁾⁸⁾ in [kN] for single anchor

Anchor size		14		
Installation site ⁶⁾		Inside / Outside		
Overall plastic anchor embedment depth	$h_{nom} \geq$	[mm]	70	100
Mean compressive strength acc. to EN 771				
Sand-lime solid brick Silka XL Basic, Silka XL Plus, $\geq 39,06 \text{ N/mm}^2$	$F_{RK, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN]	3,0	6,5
	$F_{RK, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN]	3,0	6,5
Sand-lime solid brick Silka XL Basic, Silka XL Plus, $\geq 35,0 \text{ N/mm}^2$	$F_{RK, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN]	3,0	6,0
	$F_{RK, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN]	3,0	6,0
Sand-lime solid brick Silka XL Basic, Silka XL Plus, $\geq 25,0 \text{ N/mm}^2$	$F_{RK, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN]	2,5	4,5
	$F_{RK, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN]	2,5	4,5
Sand-lime solid brick Silka XL Basic, Silka XL Plus, $\geq 20,0 \text{ N/mm}^2$	$F_{RK, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN]	2,5	3,5
	$F_{RK, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN]	2,5	3,5
Sand-lime solid brick Silka XL Basic, Silka XL Plus, $\geq 15,0 \text{ N/mm}^2$	$F_{RK, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN]	2,0	2,5
	$F_{RK, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN]	2,0	2,5
Sand-lime solid brick Silka XL Basic, Silka XL Plus, $\geq 12,5 \text{ N/mm}^2$	$F_{RK, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN]	2,0	2,0
	$F_{RK, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN]	2,0	2,0
Partial safety factor	$\gamma_{Mm}^{2)}$	[-]	2,5	

Footnotes see Annex C 4

Würth Plastic Anchor W-UR SymCon

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

Annex C 41

Characteristic resistance F_{RK} [kN] in hollow or perforated masonry (base material group „c“):KS L, 2DF

Table C 8.32.1: Brick data

Description of brick		771-2-004	KS L
Type of brick			Sand-lime perforated brick
Bulk density	$\rho \geq$	[kg/dm ³]	1,4
Standard, approval/type-approval			EN 771-2:2011+ A1:2015
Producer of brick			-
Format (measurement)		[mm]	2DF (240x115x113)
Minimum thickness of member	$h_{min} =$	[mm]	115

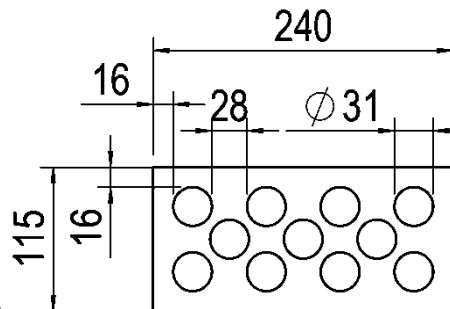


Table C 8.32.2: Installation parameters

Anchor size			10
Installation site ⁶⁾			Inside / Outside
Drill hole diameter	$d_0 =$	[mm]	10
Cutting diameter of drill bit	$d_{cut} \leq$	[mm]	10,45
Depth of drill hole to deepest point	$h_1 \geq$	[mm]	80
Drill method		[-]	Rotary drilling
Overall plastic anchor embedment depth	$h_{nom} =$	[mm]	70
Diameter of clearance hole in the fixture	$d_f \leq$	[mm]	10.5
Spacing perpendicular / parallel to free edge	$s_{1,min}/s_{2,min}$	[mm]	200 / 250
Minimum edge distance	$c_{min} \geq$	[mm]	100

Table C 8.32.3: Characteristic resistance F_{RK} ¹⁾⁸⁾ in [kN] for single anchor

Anchor size			10
Installation site ⁶⁾			Inside / Outside
Overall plastic anchor embedment depth	$h_{nom} =$	[mm]	70
Mean compressive strength acc. to EN 771			
Sand-lime perforated brick KS L, $\geq 22,6 \text{ N/mm}^2$	$F_{RK, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)}$	[kN]	2,5
	$F_{RK, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)}$	[kN]	2,5
Sand-lime perforated brick KS L, $\geq 20,0 \text{ N/mm}^2$	$F_{RK, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)}$	[kN]	2,5
	$F_{RK, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)}$	[kN]	2,0
Sand-lime perforated brick KS L, $\geq 15,0 \text{ N/mm}^2$	$F_{RK, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)}$	[kN]	2,0
	$F_{RK, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)}$	[kN]	1,5
Sand-lime perforated brick KS L, $\geq 12,5 \text{ N/mm}^2$	$F_{RK, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)}$	[kN]	1,5
	$F_{RK, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)}$	[kN]	1,2
Sand-lime perforated brick KS L, $\geq 10,0 \text{ N/mm}^2$	$F_{RK, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)}$	[kN]	1,2
	$F_{RK, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)}$	[kN]	0,9
Partial safety factor	$\gamma_{Mm}^{2)}$	[-]	2,5

Footnotes see Annex C 4

Würth Plastic Anchor W-UR SymCon

Performances

Sand-lime perforated brick: KS L, 2DF

Brick data, Installation parameters, Characteristic resistance

Annex C 42

Characteristic resistance F_{RK} [kN] in hollow or perforated masonry (base material group „c“): KS L, 8DF

Table C 8.33.1: Brick data

Description of brick		771-2-013	KS L
Type of brick			Sand-lime perforated brick
Bulk density	$\rho \geq$	[kg/dm ³]	1,4
Standard, approval/type-approval			EN 771-2:2011+ A1:2015
Producer of brick			e.g. Xella Deutschland GmbH
Format (measurement)		[mm]	8DF (248x240x238)
Minimum thickness of member	$h_{min} =$	[mm]	240

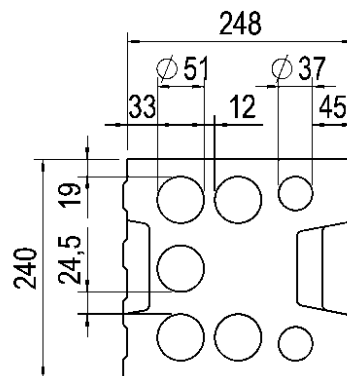


Table C 8.33.2: Installation parameters

Anchor size		10	14
Installation site ⁶⁾		Inside / Outside	Inside / Outside
Drill hole diameter	$d_0 =$	[mm]	10
Cutting diameter of drill bit	$d_{cut} \leq$	[mm]	10,45
Depth of drill hole to deepest point	$h_1 \geq$	[mm]	80
Drill method		[-]	Rotary drilling
Overall plastic anchor embedment depth	$h_{nom} =$	[mm]	70
Diameter of clearance hole in the fixture	$d_f \leq$	[mm]	10,5
Spacing perpendicular / parallel to free edge	$s_{1,min}/s_{2,min}$	[mm]	200 / 250
Minimum edge distance	$c_{min} \geq$	[mm]	100

Table C 8.33.3: Characteristic resistance F_{RK} ¹⁾⁸⁾ in [kN] for single anchor

Anchor size		10	14
Installation site ⁶⁾		Inside / Outside	Inside / Outside
Overall plastic anchor embedment depth	$h_{nom} =$	[mm]	70
Mean compressive strength acc. to EN 771			
Sand-lime perforated brick KS L, $\geq 14,9 \text{ N/mm}^2$	$F_{RK, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN]	2,5
	$F_{RK, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN]	2,5
Sand-lime perforated brick KS L, $\geq 12,5 \text{ N/mm}^2$	$F_{RK, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN]	2,5
	$F_{RK, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN]	2,0
Sand-lime perforated brick KS L, $\geq 10,0 \text{ N/mm}^2$	$F_{RK, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN]	2,0
	$F_{RK, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN]	2,0
Sand-lime perforated brick KS L, $\geq 7,5 \text{ N/mm}^2$	$F_{RK, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN]	1,5
	$F_{RK, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN]	1,2
Partial safety factor	$\gamma_{Mm}^2)$	[-]	2,5

Footnotes see Annex C 4

Würth Plastic Anchor W-UR SymCon

Performances
Sand-lime perforated brick: KS L, 8DF
Brick data, Installation parameters, Characteristic resistance

Annex C 43

Characteristic resistance F_{Rk} [kN] in hollow or perforated masonry (base material group „c“): KS L, 12DF

Table C 8.34.1: Brick data

Description of brick		771-2-001	KS L
Type of brick			Sand-lime perforated brick
Bulk density	$\rho \geq$	[kg/dm ³]	1,4
Standard, approval/type-approval			EN 771-2:2011+ A1:2015
Producer of brick			-
Format (measurement)		[mm]	12DF (377x240x238)
Minimum thickness of member	$h_{min} =$	[mm]	240

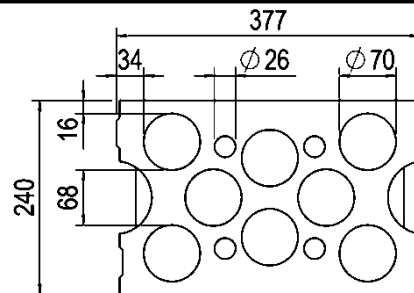


Table C 8.34.2: Installation parameters

Anchor size		10
Installation site ⁶⁾		Inside / Outside
Drill hole diameter	$d_0 =$	[mm] 10
Cutting diameter of drill bit	$d_{cut} \leq$	[mm] 10,45
Depth of drill hole to deepest point	$h_1 \geq$	[mm] 80
Drill method		[-] Rotary drilling
Overall plastic anchor embedment depth	$h_{nom} =$	[mm] 70
Diameter of clearance hole in the fixture	$d_f \leq$	[mm] 10,5
Spacing perpendicular / parallel to free edge	$s_{1,min}/s_{2,min}$	[mm] 200 / 250
Minimum allowable edge distance	$c_{min} \geq$	[mm] 100

Table C 8.34.3: Characteristic resistance $F_{Rk}^{1)8)}$ in [kN] for single anchor

Anchor size		10
Installation site ⁶⁾		Inside / Outside
Overall plastic anchor embedment depth	$h_{nom} =$	[mm] 70
Mean compressive strength acc. to EN 771		
Sand-lime perforated brick KS L, $\geq 18,9 \text{ N/mm}^2$	$F_{Rk}, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN] 2,5
	$F_{Rk}, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN] 2,0
Sand-lime perforated brick KS L, $\geq 15,0 \text{ N/mm}^2$	$F_{Rk}, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN] 2,0
	$F_{Rk}, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN] 1,5
Sand-lime perforated brick KS L, $\geq 12,5 \text{ N/mm}^2$	$F_{Rk}, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN] 1,5
	$F_{Rk}, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN] 1,2
Sand-lime perforated brick KS L, $\geq 10,0 \text{ N/mm}^2$	$F_{Rk}, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN] 1,2
	$F_{Rk}, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN] 0,9
Sand-lime perforated brick KS L, $\geq 7,5 \text{ N/mm}^2$	$F_{Rk}, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN] 0,9
	$F_{Rk}, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN] 0,75
Partial safety factor	$\gamma_{Mm}^{2)}$	[-] 2,5

Footnotes see Annex C 4

Würth Plastic Anchor W-UR SymCon

Performances

Sand-lime perforated brick: KS L, 12DF

Brick data, Installation parameters, Characteristic resistance

Annex C 44

Characteristic resistance F_{Rk} [kN] in hollow or perforated masonry (base material group „c“): KS L, 9DF

Table C 8.35.1: Brick data

Description of brick		771-2-008	KS L
Type of brick			Sand-lime perforated brick
Bulk density	$\rho \geq$	[kg/dm ³]	1,4
Standard, approval/type-approval			EN 771-2:2011+ A1:2015
Producer of brick			Xella Deutschland GmbH Dr.-Hammacher-Str. 49 D-47119 Duisburg
Format (measurement)		[mm]	9DF (373x175x238)
Minimum thickness of member	$h_{min} =$	[mm]	175

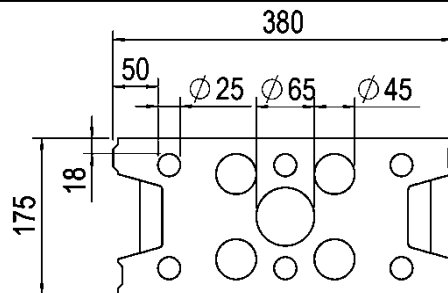


Table C 8.35.2: Installation parameters

Anchor size		14	
Installation site ⁶⁾		Inside / Outside	
Drill hole diameter	$d_0 =$	[mm]	14
Cutting diameter of drill bit	$d_{cut} \leq$	[mm]	14,45
Depth of drill hole to deepest point	$h_1 \geq$	[mm]	80 110
Drill method		[-]	Rotary drilling
Overall plastic anchor embedment depth	$h_{nom} =$	[mm]	70 100
Diameter of clearance hole in the fixture	$d_f \leq$	[mm]	14,5
Spacing perpendicular / parallel to free edge	$s_{1,min}/s_{2,min}$	[mm]	200 / 250 250 / 250
Minimum edge distance	$c_{min} \geq$	[mm]	100 130

Table C 8.35.3: Characteristic resistance F_{Rk} ¹⁾⁵⁾⁸⁾ in [kN] for single anchor

Anchor size		14 ⁵⁾	
Installation site ⁶⁾		Inside / Outside	
Overall plastic anchor embedment depth	$h_{nom} =$	[mm]	70 100
Mean compressive strength acc. to EN 771			
Sand-lime perforated brick KS L, $\geq 31,9 \text{ N/mm}^2$	$F_{Rk}, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN]	1,5 3,0
	$F_{Rk}, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN]	1,5 3,0
Sand-lime perforated brick KS L, $\geq 25,0 \text{ N/mm}^2$	$F_{Rk}, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN]	1,2 2,5
	$F_{Rk}, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN]	1,2 2,5
Sand-lime perforated brick KS L, $\geq 20,0 \text{ N/mm}^2$	$F_{Rk}, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN]	0,9 2,0
	$F_{Rk}, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN]	0,9 2,0
Sand-lime perforated brick KS L, $\geq 15,0 \text{ N/mm}^2$	$F_{Rk}, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN]	0,75 1,5
	$F_{Rk}, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN]	0,75 1,5
Partial safety factor	$\gamma_{Mm}^{2)}$	[-]	2,5

Footnotes see Annex C 4

Würth Plastic Anchor W-UR SymCon

Performances

Sand-lime perforated brick: KS L, 9DF

Brick data, Installation parameters, Characteristic resistance

Annex C 45

Characteristic resistance F_{RK} [kN] in hollow or perforated masonry (base material group „c“): KSL-R(P), 6DF

Table C 8.36.1: Brick data

Description of brick		771-2-039	KSL-R(P)
Type of brick			Sand-lime perforated brick
Bulk density	$\rho \geq$	[kg/dm ³]	1,6
Standard, approval/type-approval			EN 771-2:2011+ A1:2015
Producer of brick			e.g. H+H Deutschland GmbH Industriestr. 3, 23829 Wittenborn
Format (measurement)		[mm]	6DF (248x175x248)
Minimum thickness of member	$h_{min} =$	[mm]	175

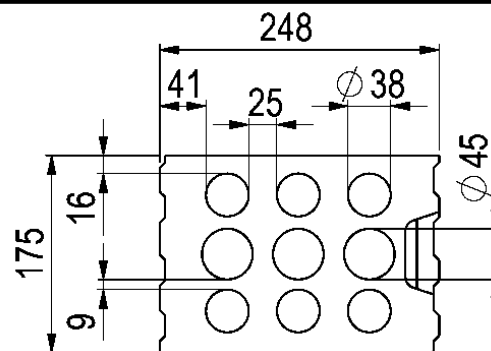


Table C 8.36.2: Installation parameters

Anchor size		10
Installation site ⁶⁾		Inside / Outside
Drill hole diameter	$d_0 =$	[mm] 10
Cutting diameter of drill bit	$d_{cut} \leq$	[mm] 10,45
Depth of drill hole to deepest point	$h_1 \geq$	[mm] 80
Drill method		[-] Rotary drilling
Overall plastic anchor embedment depth	$h_{nom} =$	[mm] 70
Diameter of clearance hole in the fixture	$d_f \leq$	[mm] 10,5
Spacing perpendicular / parallel to free edge	$s_{1,min}/s_{2,min}$	[mm] 200 / 250
Minimum edge distance	$c_{min} \geq$	[mm] 100

Table C 8.36.3: Characteristic resistance F_{RK} ¹⁾⁸⁾ in [kN] for single anchor

Anchor size		10
Installation site ⁶⁾		Inside / Outside
Overall plastic anchor embedment depth	$h_{nom} =$	[mm] 70
Mean compressive strength acc. to EN 771		
Sand-lime perforated brick KSL-R(P) $\geq 15,0 \text{ N/mm}^2$	$F_{RK, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN] 2,5
	$F_{RK, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN] 2,5
Sand-lime perforated brick KSL-R(P) $\geq 12,5 \text{ N/mm}^2$	$F_{RK, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN] 2,5
	$F_{RK, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN] 2,5
Sand-lime perforated brick KSL-R(P) $\geq 10,0 \text{ N/mm}^2$	$F_{RK, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN] 2,5
	$F_{RK, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN] 2,0
Sand-lime perforated brick KSL-R(P) $\geq 7,5 \text{ N/mm}^2$	$F_{RK, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN] 2,0
	$F_{RK, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN] 1,5
Partial safety factor	$\gamma_{Mm}^{2)}$	[-] 2,5

Footnotes see Annex C 4

Würth Plastic Anchor W-UR SymCon

Performances
Sand-lime perforated brick: KSL-R(P), 6DF
Brick data, Installation parameters, Characteristic resistance

Annex C 46

Characteristic resistance F_{RK} [kN] in hollow or perforated masonry (base material group „c“): KS L, 8DF

Table C 8.37.1: Brick data

Description of brick		771-2-040	KS L
Type of brick			Sand-lime perforated brick
Bulk density	$\rho \geq$	[kg/dm ³]	1.4
Standard, approval/type-approval			EN 771-2:2011+ A1:2015
Producer of brick			e.g. H+H Deutschland GmbH Industriestr. 3, 23829 Wittenborn
Format (measurement)		[mm]	8DF (248x240x248)
Minimum thickness of member	$h_{min} =$	[mm]	240

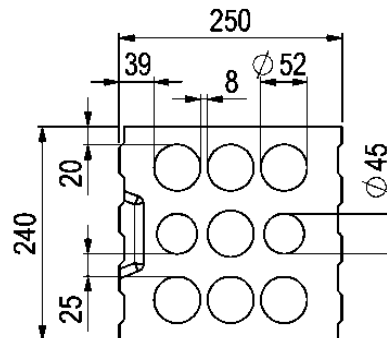


Table C 8.37.2: Installation parameters

Anchor size		10	
Installation site ⁶⁾		Inside / Outside	
Drill hole diameter	$d_0 =$	[mm]	10
Cutting diameter of drill bit	$d_{cut} \leq$	[mm]	10,45
Depth of drill hole to deepest point	$h_1 \geq$	[mm]	80
Drill method		[-]	Rotary drilling
Overall plastic anchor embedment depth	$h_{nom} =$	[mm]	70
Diameter of clearance hole in the fixture	$d_f \leq$	[mm]	10,5
Spacing perpendicular / parallel to free edge	$s_{1,min}/s_{2,min}$	[mm]	200 / 250
Minimum edge distance	$c_{min} \geq$	[mm]	100

Table C 8.37.3: Characteristic resistance F_{RK} ¹⁾⁸⁾ in [kN] for single anchor

Anchor size		10	
Installation site ⁶⁾		Inside / Outside	
Overall plastic anchor embedment depth	$h_{nom} =$	[mm]	70
Mean compressive strength acc. to EN 771			
Sand-lime perforated brick KS L, $\geq 15,0 \text{ N/mm}^2$	$F_{RK, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN]	2,5
	$F_{RK, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN]	2,0
Sand-lime perforated brick KS L, $\geq 12,5 \text{ N/mm}^2$	$F_{RK, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN]	2,0
	$F_{RK, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN]	1,5
Sand-lime perforated brick KS L, $\geq 10,0 \text{ N/mm}^2$	$F_{RK, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN]	1,5
	$F_{RK, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN]	1,5
Sand-lime perforated brick KS L, $\geq 7,5 \text{ N/mm}^2$	$F_{RK, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN]	1,2
	$F_{RK, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN]	0,9
Partial safety factor	$\gamma_{Mm}^{2)}$	[-]	2,5

Footnotes see Annex C 4

Würth Plastic Anchor W-UR SymCon

Performances

Sand-lime perforated brick: KS L, 8DF

Brick data, Installation parameters, Characteristic resistance

Annex C 47

Characteristic resistance F_{Rk} [kN] in solid masonry (base material group „b“): Vbn, NF

Table C 8.38.1: Brick data

Description of brick		771-3-004	Vbn
Type of brick			Concrete solid block
Bulk density	$\rho \geq$ [kg/dm ³]		2,0
Standard, approval/type-approval			EN 771-3:2011+A1:2015
Producer of brick			-
Format (measurement)	[mm]		\geq NF (\geq 240x115x71)
Minimum thickness of member	$h_{min} =$ [mm]		115

Table C 8.38.2: Installation parameters

Anchor size		10	14
Installation site ⁶⁾		Inside / Outside	Inside / Outside
Drill hole diameter	$d_0 =$ [mm]	10	14
Cutting diameter of drill bit	$d_{cut} \leq$ [mm]	10,45	14,45
Depth of drill hole to deepest point	$h_1 \geq$ [mm]	60	80
Drill method	[-]	Hammer drilling	Hammer drilling
Overall plastic anchor embedment depth	$h_{nom} =$ [mm]	50	70
Diameter of clearance hole in the fixture	$d_f \leq$ [mm]	10,5	14,5
Spacing perpendicular / parallel to free edge	$s_{1,min}/s_{2,min}$ [mm]	80 / 80	200 / 250
Minimum edge distance	$c_{min} \geq$ [mm]	100	100

Table C 8.38.3: Characteristic resistance F_{Rk} ¹⁾⁸⁾ in [kN] for single anchor

Anchor size		10	14
Installation site ⁶⁾		Inside / Outside	Inside / Outside
Overall plastic anchor embedment depth	$h_{nom} \geq$ [mm]	50	70
Mean compressive strength acc. to EN 771			
Concrete solid block Vbn, $\geq 39,8$ N/mm ²	$F_{Rk}, 30^\circ C^3) / 50^\circ C^4)$ [kN]	2,5	4,5
	$F_{Rk}, 50^\circ C^3) / 80^\circ C^4)$ [kN]	2,5	4,0
Concrete solid block Vbn, $\geq 35,0$ N/mm ²	$F_{Rk}, 30^\circ C^3) / 50^\circ C^4)$ [kN]	2,0	4,0
	$F_{Rk}, 50^\circ C^3) / 80^\circ C^4)$ [kN]	2,0	3,5
Concrete solid block Vbn, $\geq 25,0$ N/mm ²	$F_{Rk}, 30^\circ C^3) / 50^\circ C^4)$ [kN]	1,5	2,5
	$F_{Rk}, 50^\circ C^3) / 80^\circ C^4)$ [kN]	1,5	2,5
Concrete solid block Vbn, $\geq 20,0$ N/mm ²	$F_{Rk}, 30^\circ C^3) / 50^\circ C^4)$ [kN]	1,2	2,0
	$F_{Rk}, 50^\circ C^3) / 80^\circ C^4)$ [kN]	1,2	2,0
Concrete solid block Vbn, $\geq 15,0$ N/mm ²	$F_{Rk}, 30^\circ C^3) / 50^\circ C^4)$ [kN]	0,9	1,5
	$F_{Rk}, 50^\circ C^3) / 80^\circ C^4)$ [kN]	0,9	1,5
Concrete solid block Vbn, $\geq 12,5$ N/mm ²	$F_{Rk}, 30^\circ C^3) / 50^\circ C^4)$ [kN]	0,75	1,2
	$F_{Rk}, 50^\circ C^3) / 80^\circ C^4)$ [kN]	0,75	1,2
Partial safety factor	$\gamma_{Mm}^{2)}$ [-]	2,5	

Footnotes see Annex C 4

Würth Plastic Anchor W-UR SymCon

Performances
Concrete solid block: Vbn, NF
Brick data, Installation parameters, Characteristic resistance

Annex C 48

Characteristic resistance F_{RK} [kN] in solid masonry (base material group „b“): V, NF

Table C 8.39.1: Brick data

Description of brick		771-3-008	V		
Type of brick			Lightweight concrete solid brick		
Bulk density	$\rho \geq$	[kg/dm ³]	0.9		
Standard, approval/type-approval			EN 771-3:2011+A1:2015		
Producer of brick			e.g. Bisoclassic V Bisootherm GmbH Eisenbahnstraße 12 D-56218 Mühlheim-Kärlich		
Format (measurement)		[mm]	\geq NF (\geq 240x115x71)		
Minimum thickness of member	$h_{min} =$	[mm]	115		

Table C 8.39.2: Installation parameters

Anchor size		10			
Installation site ⁶⁾		Inside / Outside			
Drill hole diameter	$d_0 =$	[mm]	10		
Cutting diameter of drill bit	$d_{cut} \leq$	[mm]	10,45		
Depth of drill hole to deepest point	$h_1 \geq$	[mm]	60	60	80
Drill method		[-]	Hammer drilling	Rotary drilling	
Overall plastic anchor embedment depth	$h_{nom} \geq$	[mm]	50	50	70
Diameter of clearance hole in the fixture	$d_f \leq$	[mm]	10,5		
Spacing perpendicular / parallel to free edge	$s_{1,min}/s_{2,min}$	[mm]	200 / 250	200 / 250	200 / 250
Minimum edge distance	$c_{min} \geq$	[mm]	100	100	100

Table C 8.39.3: Characteristic resistance F_{RK} ¹⁾⁸⁾ in [kN] for single anchor

Anchor size		10			
Installation site ⁶⁾		Inside / Outside			
Overall plastic anchor embedment depth	$h_{nom} \geq$	[mm]	50	50	70
Mean compressive strength acc. to EN 771					
Lightweight concrete solid brick V, $\geq 6,1$ N/mm ²	$F_{RK, 30^\circ C^3) / 50^\circ C^4)}$	[kN]	0,9	1,2	2,0
	$F_{RK, 50^\circ C^3) / 80^\circ C^4)}$	[kN]	0,75	1,2	2,0
Lightweight concrete solid brick V, $\geq 5,0$ N/mm ²	$F_{RK, 30^\circ C^3) / 50^\circ C^4)}$	[kN]	0,75	0,9	2,0
	$F_{RK, 50^\circ C^3) / 80^\circ C^4)}$	[kN]	0,6	0,9	1,5
Lightweight concrete solid brick V, $\geq 2,5$ N/mm ²	$F_{RK, 30^\circ C^3) / 50^\circ C^4)}$	[kN]	0,3	0,5	0,9
	$F_{RK, 50^\circ C^3) / 80^\circ C^4)}$	[kN]	0,3	0,5	0,75
Partial safety factor	$\gamma_{Mm}^{2)}$	[-]	2,5		

Footnotes see Annex C 4

Würth Plastic Anchor W-UR SymCon

Performances
Lightweight concrete solid brick: V, NF
Brick data, Installation parameters, Characteristic resistance

Annex C 49

Characteristic resistance F_{RK} [kN] in solid masonry (base material group „b“): V, NF

Table C 8.40.1: Brick data

Description of brick		771-3-007	V
Type of brick			Lightweight concrete solid brick
Bulk density	$\rho \geq$ [kg/dm ³]		1.2
Standard, approval/type-approval			EN 771-3:2011+A1:2015
Producer of brick			e.g. BisoBims V, BisoTherm GmbH Eisenbahnstraße 12 D-56218 Mühlheim-Kärlich
Format (measurement)	[mm]		\geq NF (\geq 240x115x71)
Minimum thickness of member	$h_{min} =$ [mm]		115

Table C 8.40.2: Installation parameters

Anchor size		10	14
Installation site ⁶⁾		Inside / Outside	Inside / Outside
Drill hole diameter	$d_0 =$ [mm]	10	14
Cutting diameter of drill bit	$d_{cut} \leq$ [mm]	10,45	14,45
Depth of drill hole to deepest point	$h_1 \geq$ [mm]	60	110
Drill method	[-]	Hammer drilling	Hammer drilling
Overall plastic anchor embedment depth	$h_{nom} \geq$ [mm]	50	100
Diameter of clearance hole in the fixture	$d_f \leq$ [mm]	10,5	14,5
Spacing perpendicular / parallel to free edge	$s_{1,min}/s_{2,min}$ [mm]	250 / 250	250 / 250
Minimum edge distance	$c_{min} \geq$ [mm]	250	240

Table C 8.40.3: Characteristic resistance F_{RK} ¹⁾⁸⁾ in [kN] for single anchor

Anchor size		10	14
Installation site ⁶⁾		Inside / Outside	Inside / Outside de
Overall plastic anchor embedment depth	$h_{nom} \geq$ [mm]	50	100
Mean compressive strength acc. to EN 771			
Lightweight concrete solid brick V, $\geq 7,3$ N/mm ²	$F_{RK, 30^\circ C^3) / 50^\circ C^4)}$ [kN]	1,5	2,5
	$F_{RK, 50^\circ C^3) / 80^\circ C^4)}$ [kN]	1,5	2,0
Lightweight concrete solid brick V, $\geq 5,0$ N/mm ²	$F_{RK, 30^\circ C^3) / 50^\circ C^4)}$ [kN]	1,2	1,5
	$F_{RK, 50^\circ C^3) / 80^\circ C^4)}$ [kN]	1,2	1,5
Lightweight concrete solid brick V, $\geq 2,5$ N/mm ²	$F_{RK, 30^\circ C^3) / 50^\circ C^4)}$ [kN]	0,6	0,9
	$F_{RK, 50^\circ C^3) / 80^\circ C^4)}$ [kN]	0,6	0,75
Partial safety factor	$\gamma_{Mm}^{2)}$ [-]	2,5	

Footnotes see Annex C 4

Würth Plastic Anchor W-UR SymCon

Performances
Lightweight concrete solid brick: V, NF
Brick data, Installation parameters, Characteristic resistance

Annex C 50

Characteristic resistance F_{RK} [kN] in solid masonry (base material group „b“): V and Vbl 3DF

Table C 8.41.1: Brick data

Description of brick		771-3-016	V and Vbl
Type of brick			Lightweight concrete solid brick
Bulk density	$\rho \geq$ [kg/dm ³]		1,2
Standard, approval/type-approval			EN 771-3:2011+A1:2015
Producer of brick			e.g. BisoBims V and Vbl, BisoTherm GmbH Eisenbahnstraße 12 D-56218 Mühlheim-Kärlich
Format (measurement)	[mm]		\geq 3DF (\geq 240x175x113)
Minimum thickness of member	$h_{min} =$ [mm]		175

Table C 8.41.2: Installation parameters

Anchor size		10	14
Installation site ⁶⁾		Inside / Outside	Inside / Outside
Drill hole diameter	$d_0 =$ [mm]	10	14
Cutting diameter of drill bit	$d_{cut} \leq$ [mm]	10,45	14,45
Depth of drill hole to deepest point	$h_1 \geq$ [mm]	80	110
Drill method	[-]	Hammer drilling	Hammer drilling
Overall plastic anchor embedment depth	$h_{nom} \geq$ [mm]	70	100
Diameter of clearance hole in the fixture	$d_f \leq$ [mm]	10,5	14,5
Spacing perpendicular / parallel to free edge	$s_{1,min}/s_{2,min}$ [mm]	200 / 250	200 / 250
Minimum edge distance	$c_{min} \geq$ [mm]	100	100

Table C 8.41.3: Characteristic resistance F_{RK} ¹⁾⁸⁾ in [kN] for single anchor

Anchor size		10	14
Installation site ⁶⁾		Inside / Outside	Inside / Outside
Overall plastic anchor embedment depth	$h_{nom} \geq$ [mm]	70	100
Mean compressive strength acc. to EN 771			
Lightweight concrete solid brick V, ≥ 6.8 N/mm ²	$F_{RK, 30^\circ C^3) / 50^\circ C^4)}$ [kN]	1,2	2,5
	$F_{RK, 50^\circ C^3) / 80^\circ C^4)}$ [kN]	0,9	2,5
Lightweight concrete solid brick V, ≥ 5.0 N/mm ²	$F_{RK, 30^\circ C^3) / 50^\circ C^4)}$ [kN]	0,9	1,5
	$F_{RK, 50^\circ C^3) / 80^\circ C^4)}$ [kN]	0,75	1,5
Lightweight concrete solid brick V, ≥ 2.5 N/mm ²	$F_{RK, 30^\circ C^3) / 50^\circ C^4)}$ [kN]	0,5	0,9
	$F_{RK, 50^\circ C^3) / 80^\circ C^4)}$ [kN]	0,4	0,9
Partial safety factor	$\gamma_{Mm}^{2)}$ [-]	2,5	

Footnotes see Annex C 4

Würth Plastic Anchor W-UR SymCon

Performances
Lightweight concrete solid brick: V and Vbl 3DF
Brick data, Installation parameters, Characteristic resistance

Annex C 51

Characteristic resistance F_{Rk} [kN] in solid masonry (base material group „b“): V and Vbl, 3DF

Table C 8.42.1: Brick data

Description of brick		771-3-017	V and Vbl
Type of brick			Lightweight concrete solid brick
Bulk density	$\rho \geq$	[kg/dm ³]	2,2
Standard, approval/type-approval			EN 771-3:2011+A1:2015
Producer of brick			e.g. Bisophon V and Vbl Bisotherm GmbH Eisenbahnstraße 12 D-56218 Mühlheim-Kärlich
Format (measurement)		[mm]	\geq 3DF (\geq 240x175x113)
Minimum thickness of member	$h_{min} =$	[mm]	175

Table C 8.42.2: Installation parameters

Anchor size			10	14
Installation site ⁶⁾			Inside / Outside	Inside / Outside
Drill hole diameter	$d_0 =$	[mm]	10	14
Cutting diameter of drill bit	$d_{cut} \leq$	[mm]	10,45	14,45
Depth of drill hole to deepest point	$h_1 \geq$	[mm]	80	110
Drill method		[-]	Hammer drilling	Hammer drilling
Overall plastic anchor embedment depth	$h_{nom} \geq$	[mm]	70	100
Diameter of clearance hole in the fixture	$d_f \leq$	[mm]	10,5	14,5
Spacing perpendicular / parallel to free edge	$s_{1,min}/s_{2,min}$		200 / 250	200 / 250
Minimum edge distance	$c_{min} \geq$	[mm]	100	100

Table C 8.42.3: Characteristic resistance F_{Rk} ¹⁾⁸⁾ in [kN] for single anchor

Anchor size			10	14
Installation site ⁶⁾			Inside / Outside	Inside / Outside
Overall plastic anchor embedment depth	$h_{nom} \geq$	[mm]	70	100
Mean compressive strength acc. to EN 771				
Lightweight concrete solid block V and Vbl, $\geq 31,4$ N/mm ²	$F_{Rk}, 30^\circ C^3) / 50^\circ C^4)$	[kN]	6,0	7,0
	$F_{Rk}, 50^\circ C^3) / 80^\circ C^4)$	[kN]	5,5	7,0
Lightweight concrete solid block V and Vbl, $\geq 25,0$ N/mm ²	$F_{Rk}, 30^\circ C^3) / 50^\circ C^4)$	[kN]	5,0	6,0
	$F_{Rk}, 50^\circ C^3) / 80^\circ C^4)$	[kN]	5,0	5,5
Lightweight concrete solid block V and Vbl, $\geq 20,0$ N/mm ²	$F_{Rk}, 30^\circ C^3) / 50^\circ C^4)$	[kN]	4,5	5,0
	$F_{Rk}, 50^\circ C^3) / 80^\circ C^4)$	[kN]	4,5	4,5
Lightweight concrete solid block V and Vbl, $\geq 15,0$ N/mm ²	$F_{Rk}, 30^\circ C^3) / 50^\circ C^4)$	[kN]	4,0	3,5
	$F_{Rk}, 50^\circ C^3) / 80^\circ C^4)$	[kN]	4,0	3,5
Lightweight concrete solid block V and Vbl, $\geq 12,5$ N/mm ²	$F_{Rk}, 30^\circ C^3) / 50^\circ C^4)$	[kN]	3,5	3,0
	$F_{Rk}, 50^\circ C^3) / 80^\circ C^4)$	[kN]	3,5	2,5
Lightweight concrete solid block V and Vbl, $\geq 10,0$ N/mm ²	$F_{Rk}, 30^\circ C^3) / 50^\circ C^4)$	[kN]	3,0	2,5
	$F_{Rk}, 50^\circ C^3) / 80^\circ C^4)$	[kN]	3,0	2,0
Partial safety factor	$\gamma_{Mm}^{2)}$	[-]	2,5	

Footnotes see Annex C 4

Würth Plastic Anchor W-UR SymCon

Performances
Lightweight concrete solid brick: V and Vbl, 3DF
Brick data, Installation parameters, Characteristic resistance

Annex C 52

Characteristic resistance F_{Rk} [kN] in solid masonry (base material group „b“): V P 2.0 – 0.55

Table C 8.43.1: Brick data

Description of brick		771-3-032	V P 2.0 – 0.55
Type of brick			Lightweight concrete solid block
Bulk density	$\rho \geq$ [kg/dm ³]		0,65
Standard, approval/type-approval			EN 771-3:2011+A1:2015; Z-17.1-778:2019-10
Producer of brick			Bisotherm GmbH Eisenbahnstraße 12 D-56218 Mühlheim-Kärlich
Format (measurement)	[mm]		$\geq 5DF (\geq 123 \times 300 \times 248)$
Minimum thickness of member	$h_{min} =$ [mm]		300

Table C 8.43.2: Installation parameters

Anchor size			10
Installation site ⁶⁾			Inside / Outside
Drill hole diameter	$d_0 =$ [mm]		10
Cutting diameter of drill bit	$d_{cut} \leq$ [mm]		10,45
Depth of drill hole to deepest point	$h_1 \geq$ [mm]		80
Drill method	[-]		Hammer drilling
Overall plastic anchor embedment depth	$h_{nom} \geq$ [mm]		70
Diameter of clearance hole in the fixture	$d_f \leq$ [mm]		10,5
Spacing perpendicular / parallel to free edge	$s_{1,min}/s_{2,min}$ [mm]		200 / 250
Minimum edge distance	$c_{min} \geq$ [mm]		100

Table C 8.43.3: Characteristic resistance F_{Rk} ¹⁾⁸⁾ in [kN] for single anchor

Anchor size			10
Installation site ⁶⁾			Inside / Outside
Overall plastic anchor embedment depth	$h_{nom} \geq$ [mm]		70
Mean compressive strength acc. to EN 771			
Lightweight concrete solid block V P 2.0 – 0.55, $\geq 3,0 \text{ N/mm}^2$	$F_{Rk, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$ [kN]		1,2
	$F_{Rk, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$ [kN]		1,2
Lightweight concrete solid block V P 2.0 – 0.55 $\geq 2,5 \text{ N/mm}^2$	$F_{Rk, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$ [kN]		1,2
	$F_{Rk, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$ [kN]		1,2
Partial safety factor	$\gamma_{Mm}^{2)}$ [-]		2,5

Footnotes see Annex C 4

Würth Plastic Anchor W-UR SymCon

Performances

Lightweight concrete solid block: V P 2.0 - 0.55

Brick data, Installation parameters, Characteristic resistance

Annex C 53

Characteristic resistance F_{Rk} [kN] in solid masonry (base material group „b“): V P 4.0 – 0.65

Table C 8.44.1: Brick data

Description of brick		771-3-033	V P 4.0 – 0.65
Type of brick			Lightweight concrete solid block
Bulk density	$\rho \geq$	[kg/dm ³]	0,8
Standard, approval/type-approval			EN 771-3:2011+A1:2015; Z-17.1-778:2019-10
Producer of brick			Bisotherm GmbH Eisenbahnstraße 12 D-56218 Mühlheim-Kärlich
Format (measurement)		[mm]	$\geq 5DF (\geq 123 \times 300 \times 248)$
Minimum thickness of member	$h_{min} =$	[mm]	300

Table C 8.44.2: Installation parameters

Anchor size			10
Installation site ⁶⁾			Inside / Outside
Drill hole diameter	$d_0 =$	[mm]	10
Cutting diameter of drill bit	$d_{cut} \leq$	[mm]	10,45
Depth of drill hole to deepest point	$h_1 \geq$	[mm]	80
Drill method		[-]	Hammer drilling
Overall plastic anchor embedment depth	$h_{nom} \geq$	[mm]	70
Diameter of clearance hole in the fixture	$d_f \leq$	[mm]	10,5
Spacing perpendicular / parallel to free edge	$s_{1,min}/s_{2,min}$	[mm]	200/250
Minimum edge distance	$c_{min} \geq$	[mm]	100

Table C 8.44.3: Characteristic resistance F_{Rk} ¹⁾⁸⁾ in [kN] for single anchor

Anchor size			10
Installation site ⁶⁾			Inside / Outside
Overall plastic anchor embedment depth	$h_{nom} \geq$	[mm]	70
Mean compressive strength acc. to EN 771			
Lightweight concrete solid block V P 4.0 – 0.65 $\geq 5,0 \text{ N/mm}^2$	$F_{Rk}, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN]	2,5
	$F_{Rk}, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN]	2,5
Lightweight concrete solid block V P 4.0 – 0.65 $\geq 2,5 \text{ N/mm}^2$	$F_{Rk}, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN]	1,5
	$F_{Rk}, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN]	1,5
Partial safety factor	$\gamma_{Mm}^{2)}$	[-]	2,5

Footnotes see Annex C 4

Würth Plastic Anchor W-UR SymCon

Performances

Lightweight concrete solid block: V P 4.0 – 0.65

Brick data, Installation parameters, Characteristic resistance

Annex C 54

Characteristic resistance F_{Rk} [kN] in solid masonry (base material group „b“): V 6 – 0.80

Table C 8.45.1: Brick data

Description of brick		771-3-035	V 6 – 0.80
Type of brick			Lightweight concrete solid block
Bulk density	$\rho \geq$	[kg/dm ³]	0,9
Standard, approval/type-approval			EN 771-3:2011+A1:2015
Producer of brick			Bisotherm GmbH Eisenbahnstraße 12 D-56218 Mühlheim-Kärlich
Format (measurement)		[mm]	$\geq 5DF (\geq 123 \times 300 \times 248)$
Minimum thickness of member	$h_{min} =$	[mm]	300

Table C 8.45.2: Installation parameters

Anchor size			10
Installation site ⁶⁾			Inside / Outside
Drill hole diameter	$d_0 =$	[mm]	10
Cutting diameter of drill bit	$d_{cut} \leq$	[mm]	10,45
Depth of drill hole to deepest point	$h_1 \geq$	[mm]	80
Drill method		[-]	Hammer drilling
Overall plastic anchor embedment depth	$h_{nom} \geq$	[mm]	70
Diameter of clearance hole in the fixture	$d_f \leq$	[mm]	10,5
Spacing perpendicular / parallel to free edge	$s_{1,min}/s_{2,min}$	[mm]	200 / 250
Minimum edge distance	$c_{min} \geq$	[mm]	100

Table C 8.45.3: Characteristic resistance $F_{Rk}^{1)8)}$ in [kN] for single anchor

Anchor size			10
Installation site ⁶⁾			Inside / Outside
Overall plastic anchor embedment depth	$h_{nom} \geq$	[mm]	70
Mean compressive strength acc. to EN 771			
Concrete solid block V 6 – 0.80, $\geq 4,2 \text{ N/mm}^2$	$F_{Rk, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)}$	[kN]	2,0
	$F_{Rk, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)}$	[kN]	2,0
Concrete solid block V 6 - 0.80, $\geq 2,5 \text{ N/mm}^2$	$F_{Rk, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)}$	[kN]	1,5
	$F_{Rk, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)}$	[kN]	1,5
Concrete solid block V 6 - 0.80, $\geq 2,0 \text{ N/mm}^2$	$F_{Rk, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)}$	[kN]	1,2
	$F_{Rk, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)}$	[kN]	1,2
Partial safety factor	$\gamma_{Mm}^{2)}$	[-]	2,5

Footnotes see Annex C 4

Würth Plastic Anchor W-UR SymCon

Performances
Lightweight concrete solid block: V 6 - 0.80
Brick data, Installation parameters, Characteristic resistance

Annex C 55

Characteristic resistance F_{Rk} [kN] in hollow or perforated masonry (base material group „c“): 3K Hbl

Table C 8.46.1: Brick data

Description of brick		771-3-005	3K Hbl
Type of brick			Hollow brick lightweight concrete
Bulk density	$\rho \geq$	[kg/dm ³]	0,7
Standard, approval/type-approval			EN 771-3:2011+A1:2015
Producer of brick			e.g. Heinzmann Baustoffe GmbH, Liapor GmbH & Co. KG
Format (measurement)		[mm]	16DF (495x240x238)
Minimum thickness of member	$h_{min} =$	[mm]	240

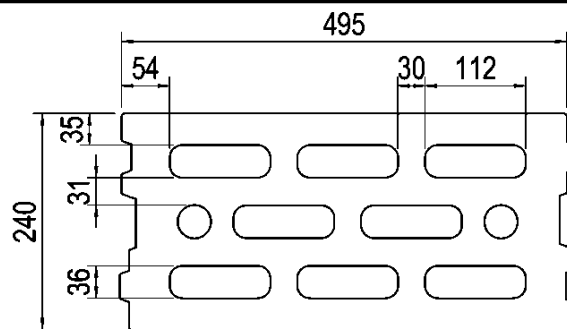


Table C 8.46.2: Installation parameters

Anchor size			10	14
Installation site ⁶⁾			Inside / Outside	Inside / Outside
Drill hole diameter	$d_0 =$	[mm]	10	14
Cutting diameter of drill bit	$d_{cut} \leq$	[mm]	10,45	14,45
Depth of drill hole to deepest point	$h_1 \geq$	[mm]	80	110
Drill method		[-]	Rotary drilling	Rotary drilling
Overall plastic anchor embedment depth	$h_{nom} =$	[mm]	70	100
Diameter of clearance hole in the fixture	$d_f \leq$	[mm]	10,5	14,5
Spacing perpendicular / parallel to free edge	$s_{1,min}/s_{2,min}$	[mm]	80 / 80	200 / 250
Minimum edge distance	$c_{min} \geq$	[mm]	100	100

Table C 8.46.3: Characteristic resistance F_{Rk} ¹⁾⁸⁾ in [kN] for single anchor

Anchor size			10	14
Installation site ⁶⁾			Inside / Outside	Inside / Outside
Overall plastic anchor embedment depth	$h_{nom} =$	[mm]	70	100
Mean compressive strength acc. to EN 771				
Hollow brick lightweight concrete 3K Hbl, $\geq 4,9$ N/mm²	$F_{Rk}, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN]	2,0	1,5
	$F_{Rk}, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN]	1,5	1,5
Hollow brick lightweight concrete 3K Hbl, $\geq 2,5$ N/mm²	$F_{Rk}, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN]	0,9	0,9
	$F_{Rk}, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN]	0,9	0,75
Partial safety factor	$\gamma_{Mm}^{2)}$	[-]	2,5	

Footnotes see Annex C 4

Würth Plastic Anchor W-UR SymCon

Performances
Hollow brick lightweight concrete: 3K Hbl
Brick data, Installation parameters, Characteristic resistance

Annex C 56

**Characteristic resistance F_{RK} [kN] in hollow or perforated masonry (base material group „c“):
Liapor PLANstein-SL-PLUS Hbl 2**

Table C 8.47.1: Brick data

Description of brick	771-3-018	Liapor PLANstein-SL-PLUS Hbl 2
Type of brick		Hollow brick lightweight concrete
Bulk density	$\rho \geq$ [kg/dm ³]	0,55
Standard, approval/type-approval		EN 771-3:2011+A1:2015; Z-17.1-817:2015-03
Producer of brick		Liapor GmbH & Co. KG E. KNOBEL GmbH & Co.KG
Format (measurement)	[mm]	12DF (247x365x248)
Minimum thickness of member	$h_{min} =$ [mm]	365

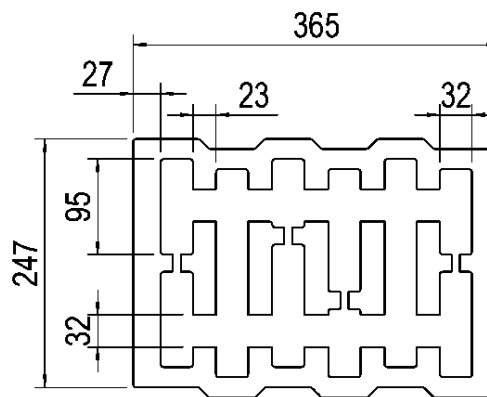


Table C 8.47.2: Installation parameters

Anchor size		10
Installation site ⁶⁾		Inside / Outside
Drill hole diameter	$d_0 =$ [mm]	10
Cutting diameter of drill bit	$d_{cut} \leq$ [mm]	10,45
Depth of drill hole to deepest point	$h_1 \geq$ [mm]	80
Drill method	[-]	Rotary drilling
Overall plastic anchor embedment depth	$h_{nom} =$ [mm]	70
Diameter of clearance hole in the fixture	$d_f \leq$ [mm]	10,5
Spacing perpendicular / parallel to free edge	$s_{1,min}/s_{2,min}$ [mm]	200 / 250
Minimum edge distance	$c_{min} \geq$ [mm]	100

Table C 8.47.3: Characteristic resistance F_{RK} ¹⁾⁸⁾ in [kN] for single anchor

Anchor size		10
Installation site ⁶⁾		Inside / Outside
Overall plastic anchor embedment depth	$h_{nom} =$ [mm]	70
Mean compressive strength acc. to EN 771		
Liapor PLANstein-SL-PLUS Hbl, $\geq 2,2$ N/mm²	$F_{RK, 30^\circ C^3) / 50^\circ C^4)}$ [kN]	0,9
	$F_{RK, 50^\circ C^3) / 80^\circ C^4)}$ [kN]	0,75
Liapor PLANstein-SL-PLUS Hbl, $\geq 2,0$ N/mm²	$F_{RK, 30^\circ C^3) / 50^\circ C^4)}$ [kN]	0,9
	$F_{RK, 50^\circ C^3) / 80^\circ C^4)}$ [kN]	0,6
Partial safety factor	$\gamma_{Mm}^{2)}$ [-]	2,5

Footnotes see Annex C 4

Würth Plastic Anchor W-UR SymCon

Performances

Hollow brick lightweight concrete: Liapor PLANstein-SL-PLUS Hbl 2
Brick data, Installation parameters, Characteristic resistance

Annex C 57

**Characteristic resistance F_{Rk} [kN] in hollow or perforated masonry (base material group „c“):
Liapor PLANstein-SL-PLUS Hbl 6**

Table C 8.48.1: Brick data

Description of brick		771-3-020	Liapor PLANstein-SL-PLUS Hbl 6
Type of brick			Hollow brick lightweight concrete
Bulk density	$\rho \geq$ [kg/dm ³]		0,9
Standard, approval/type-approval			EN 771-3:2011+A1:2015; Z-17.1-817:2015-03
Producer of brick			Liapor GmbH & Co. KG E. KNOBEL GmbH & Co.KG
Format (measurement)	[mm]		12DF (247x365x248)
Minimum thickness of member	$h_{min} =$ [mm]		365

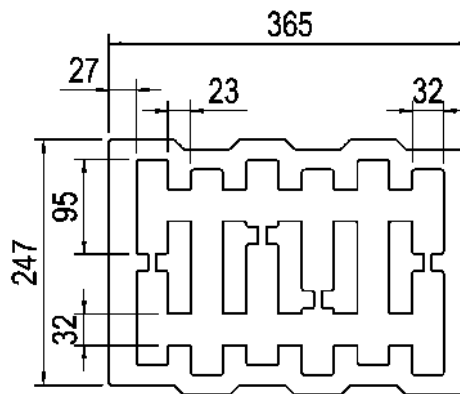


Table C 8.48.2: Installation parameters

Anchor size		10
Installation site ⁶⁾		Inside / Outside
Drill hole diameter	$d_0 =$ [mm]	10
Cutting diameter of drill bit	$d_{cut} \leq$ [mm]	10.45
Depth of drill hole to deepest point	$h_1 \geq$ [mm]	80
Drill method	[-]	Rotary drilling
Overall plastic anchor embedment depth	$h_{nom} =$ [mm]	70
Diameter of clearance hole in the fixture	$d_f \leq$ [mm]	10,5
Spacing perpendicular / parallel to free edge	$s_{1,min}/s_{2,min}$ [mm]	200 / 250
Minimum edge distance	$c_{min} \geq$ [mm]	100

Table C 8.48.3: Characteristic resistance F_{Rk} ¹⁾⁸⁾ in [kN] for single anchor

Anchor size		10
Installation site ⁶⁾		Inside / Outside
Overall plastic anchor embedment depth	$h_{nom} =$ [mm]	70
Mean compressive strength acc. to EN 771		
Liapor PLANstein-SL-PLUS Hbl, $\geq 5,0 \text{ N/mm}^2$	$F_{Rk}, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$ [kN]	2,5
	$F_{Rk}, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$ [kN]	2,5
Liapor PLANstein-SL-PLUS Hbl, $\geq 2,5 \text{ N/mm}^2$	$F_{Rk}, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$ [kN]	1,5
	$F_{Rk}, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$ [kN]	1,2
Partial safety factor	$\gamma_{Mm}^2)$ [-]	2,5

Footnotes see Annex C 4

Würth Plastic Anchor W-UR SymCon

Performances

Hollow brick lightweight concrete: Liapor PLANstein-SL-PLUS Hbl 6
Brick data, Installation parameters, Characteristic resistance

Annex C 58

Characteristic resistance F_{RK} [kN] in hollow or perforated masonry (base material group „c“): 2K Hbn

Table C 8.49.1: Brick data

Description of brick		771-3-011	2K Hbn
Type of brick			Hollow brick concrete
Bulk density	$\rho \geq$ [kg/dm ³]		1,2
Standard, approval/type-approval			EN 771-3:2011+A1:2015
Producer of brick			e.g. Stark Betonwerk GmbH & Co. KG D-74547 Untermünkheim-Kupfer
Format (measurement)	[mm]		12DF (365x240x248)
Minimum thickness of member	$h_{min} =$ [mm]		240

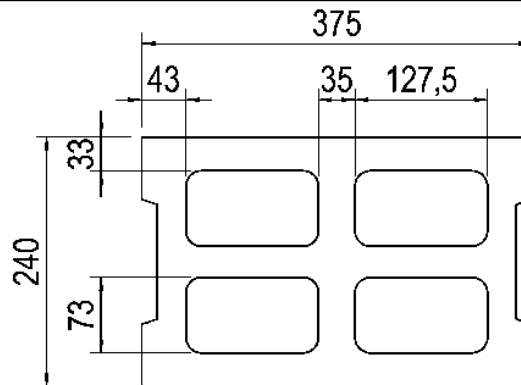


Table C 8.49.2: Installation parameters

Anchor size		10
Installation site ⁶⁾		Inside / Outside
Drill hole diameter	$d_0 =$ [mm]	10
Cutting diameter of drill bit	$d_{cut} \leq$ [mm]	10,45
Depth of drill hole to deepest point	$h_1 \geq$ [mm]	80
Drill method	[-]	Rotary drilling
Overall plastic anchor embedment depth	$h_{nom} =$ [mm]	70
Diameter of clearance hole in the fixture	$d_f \leq$ [mm]	10,5
Spacing perpendicular / parallel to free edge	$s_{1,min}/s_{2,min}$ [mm]	120 / 240
Minimum edge distance	$c_{min} \geq$ [mm]	60

Table C 8.49.3: Characteristic resistance F_{RK} ¹⁾⁸⁾ in [kN] for single anchor

Anchor size		10
Installation site ⁶⁾		Inside / Outside
Overall plastic anchor embedment depth	$h_{nom} =$ [mm]	70
Mean compressive strength acc. to EN 771		
Hollow brick concrete 2K Hbn, $\geq 7,5$ N/mm²	$F_{RK, 30^\circ C^3) / 50^\circ C^4)}$ [kN]	3,0
	$F_{RK, 50^\circ C^3) / 80^\circ C^4)}$ [kN]	2,5
Hollow brick concrete 2K Hbn, $\geq 5,0$ N/mm²	$F_{RK, 30^\circ C^3) / 50^\circ C^4)}$ [kN]	2,0
	$F_{RK, 50^\circ C^3) / 80^\circ C^4)}$ [kN]	1,5
Hollow brick concrete 2K Hbn, $\geq 2,5$ N/mm²	$F_{RK, 30^\circ C^3) / 50^\circ C^4)}$ [kN]	0,9
	$F_{RK, 50^\circ C^3) / 80^\circ C^4)}$ [kN]	0,75
Partial safety factor	$\gamma_{Mm}^{2)}$ [-]	2,5

Footnotes see Annex C 4

Würth Plastic Anchor W-UR SymCon

Performances
Hollow brick concrete: 2K Hbn
Brick data, Installation parameters, Characteristic resistance

Annex C 59

**Characteristic resistance F_{Rk} [kN] in hollow or perforated masonry (base material group „c“):
Gisoton Thermo Schall**

Table C 8.50.1: Brick data

Description of brick		771-3-010 771-3-036	Gisoton Thermo Schall	
Type of brick			Hollow brick lightweight concrete	
Bulk density	$\rho \geq$	[kg/dm ³]	0,45	
Standard, approval/type-approval			Z-15.2-18:2021-02	
Producer of brick			Gisoton Wandsysteme Baustoffwerke Gebhart & Söhne GmbH & Co. Hochstraße 2 D-88317 Aichstetten	
Format (measurement)		[mm]	21DF (498x300x248)	16DF (498x250x248)
Minimum thickness of member	$h_{min} =$	[mm]	300	250

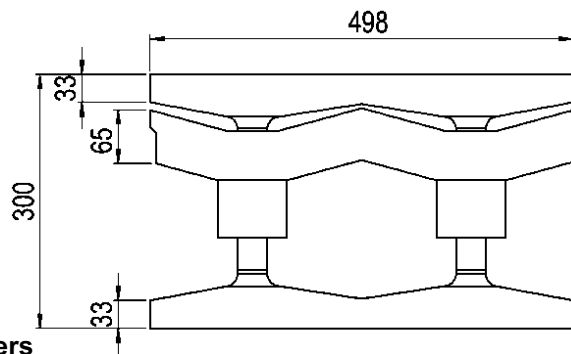


Table C 8.50.2: Installation parameters

Anchor size		10	
Installation site ⁶⁾		Inside / Outside	
Drill hole diameter	$d_o =$	[mm]	10
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	$h_{nom} =$	[mm]	50 70
Diameter of clearance hole in the fixture	$d_f \leq$	[mm]	10.5
Spacing perpendicular / parallel to free edge	$s_{1,min}/s_{2,min}$	[mm]	250 / 250 250 / 250
Minimum edge distance	$c_{min} \geq$	[mm]	250 250

Table C 8.50.3: Characteristic resistance F_{Rk} ¹⁾⁵⁾⁸⁾ in [kN] for single anchor

Anchor size		10 ⁵⁾	
Installation site ⁶⁾		Inside / Outside	
Overall plastic anchor embedment depth	$h_{nom} =$	[mm]	50 70
Mean compressive strength acc. to EN 771			
Gisoton Thermo Schall, $\geq 2,5 \text{ N/mm}^2$	$F_{Rk, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN]	0,75 9)
	$F_{Rk, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN]	0,75 9)
Gisoton Thermo Schall, $\geq 2,0 \text{ N/mm}^2$	$F_{Rk, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN]	0,6 2,0
	$F_{Rk, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN]	0,6 2,0
Partial safety factor	$\gamma_{Mm}^{2)}$	[-]	2,5

Footnotes see Annex C 4

Würth Plastic Anchor W-UR SymCon

Performances

Hollow brick lightweight concrete: Gisoton Thermo Schall
Brick data, Installation parameters, Characteristic resistance

Annex C 60

**Characteristic resistance F_{RK} [kN] in hollow or perforated masonry (base material group „c“):
Bisoplan 09 Super 1.6-0.4**

Table C 8.51.1: Brick data

Description of brick		771-3-029	Bisoplan 09 Super 1.6-0.4
Type of brick			Hollow brick lightweight concrete
Bulk density	$\rho \geq$	[kg/dm ³]	0,65
Standard, approval/type-approval			EN 771-3:2011+A1:2015; Z-17.1-1003:2014-08
Producer of brick			Bisotherm GmbH Eisenbahnstraße 12 D-56218 Mühlheim-Kärlich
Format (measurement)		[mm]	12DF (247x365x249)
Minimum thickness of member	$h_{min} =$	[mm]	365

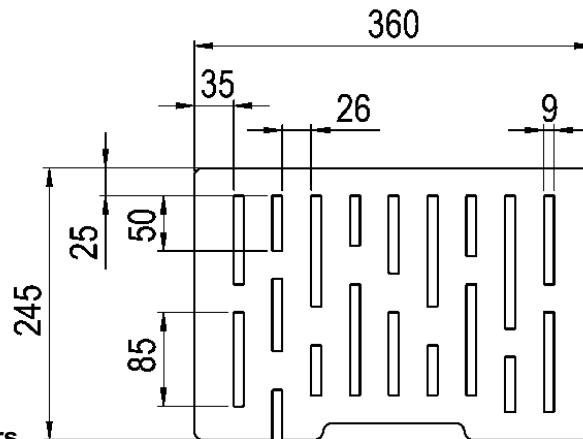


Table C 8.51.2: Installation parameters

Anchor size		10
Installation site ⁶⁾		Inside / Outside
Drill hole diameter	$d_0 =$	[mm] 10
Cutting diameter of drill bit	$d_{cut} \leq$	[mm] 10,45
Depth of drill hole to deepest point	$h_1 \geq$	[mm] 80
Drill method		[-] Rotary drilling
Overall plastic anchor embedment depth	$h_{nom} =$	[mm] 70
Diameter of clearance hole in the fixture	$d_f \leq$	[mm] 10,5
Spacing perpendicular / parallel to free edge	$s_{1,min}/s_{2,min}$	[mm] 200 / 250
Minimum edge distance	$c_{min} \geq$	[mm] 100

Table C 8.51.3: Characteristic resistance F_{RK} ¹⁾⁸⁾ in [kN] for single anchor

Anchor size		10
Installation site ⁶⁾		Inside / Outside
Overall plastic anchor embedment depth	$h_{nom} =$	[mm] 70
Mean compressive strength acc. to EN 771		
Bisoplan 09 Super 1.6-0.4, $\geq 1,8 \text{ N/mm}^2$	$F_{RK, 30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN] 0,9
	$F_{RK, 50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN] 0,6
Partial safety factor	$\gamma_{Mm}^{2)}$	[-] 2,5

Footnotes see Annex C 4

Würth Plastic Anchor W-UR SymCon

Performances
Hollow brick lightweight concrete: Bisoplan 09 Super 1.6-0.4
Brick data, Installation parameters, Characteristic resistance

Annex C 61

**Characteristic resistance F_{Rk} [kN] in hollow or perforated masonry (base material group „c“):
Bisoplan 10 Hbl-P 2.0-0.45**

Table C 8.52.1: Brick data

Description of brick		771-3-034	Bisoplan 10 Hbl-P 2.0-0.45
Type of brick			Hollow brick lightweight concrete
Bulk density	$\rho \geq$ [kg/dm ³]		0,6
Standard, approval/type-approval			EN 771-3:2011+A1:2015; Z17.1-844
Producer of brick			Bisotherm GmbH Eisenbahnstraße 12 D-56218 Mühlheim-Kärlich
Format (measurement)	[mm]		10DF (247x300x249)
Minimum thickness of member	$h_{min} =$ [mm]		300

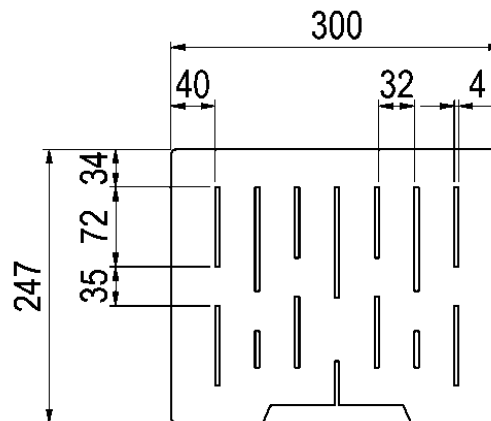


Table C 8.52.2: Installation parameters

Anchor size		10
Installation site ⁶⁾		Inside / Outside
Drill hole diameter	$d_0 =$ [mm]	10
Cutting diameter of drill bit	$d_{cut} \leq$ [mm]	10,45
Depth of drill hole to deepest point	$h_1 \geq$ [mm]	80
Drill method	[-]	Rotary drilling
Overall plastic anchor embedment depth	$h_{nom} =$ [mm]	70
Diameter of clearance hole in the fixture	$d_f \leq$ [mm]	10,5
Spacing perpendicular / parallel to free edge	$s_{1,min}/s_{2,min}$ [mm]	200 / 250
Minimum edge distance	$c_{min} \geq$ [mm]	100

Table C 8.52.3: Characteristic resistance F_{Rk} ¹⁾⁸⁾ in [kN] for single anchor

Anchor size		10
Installation site ⁶⁾		Inside / Outside
Overall plastic anchor embedment depth	$h_{nom} =$ [mm]	70
Mean compressive strength acc. to EN 771		
Bisoplan 10 Hbl-P 2.0-0.45, $\geq 2,0$ N/mm²	$F_{Rk, 30^\circ C^3) / 50^\circ C^4)$ [kN]	1,5
	$F_{Rk, 50^\circ C^3) / 80^\circ C^4)$ [kN]	1,2
Partial safety factor	$\gamma_{Mm}^{2)}$ [-]	2,5

Footnotes see Annex C 4

Würth Plastic Anchor W-UR SymCon

Performances
Hollow brick lightweight concrete: Bisoplan 10 Hbl-P 2.0-0.45
Brick data, Installation parameters, Characteristic resistance

Annex C 62

**Characteristic resistance F_{RK} [kN] in hollow or perforated masonry (base material group „c“):
Bisotherm Hbl-P 4.0 - 0.50**

Table C 8.53.1: Brick data

Description of brick		771-3-030	Bisotherm Hbl-P 4.0 - 0.50
Type of brick			Hollow brick lightweight concrete
Bulk density	$\rho \geq$	[kg/dm ³]	0,55
Standard, approval/type-approval			EN 771-3:2011+A1:2015; Z-17.1-1029:2015-10
Producer of brick			Bisotherm GmbH Eisenbahnstraße 12 D-56218 Mühlheim-Kärlich
Format (measurement)		[mm]	12DF (247x365x249)
Minimum thickness of member	$h_{min} =$	[mm]	365

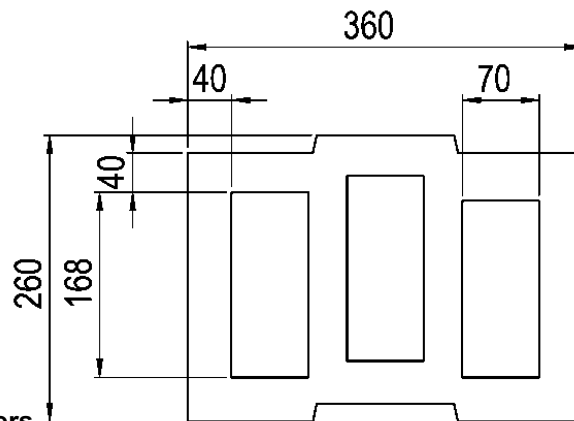


Table C 8.53.2: Installation parameters

Anchor size		10
Installation site ⁶⁾		Inside / Outside
Drill hole diameter	$d_0 =$	[mm] 10
Cutting diameter of drill bit	$d_{cut} \leq$	[mm] 10,45
Depth of drill hole to deepest point	$h_1 \geq$	[mm] 80
Drill method		[-] Rotary drilling
Overall plastic anchor embedment depth	$h_{nom} =$	[mm] 70
Diameter of clearance hole in the fixture	$d_f \leq$	[mm] 10,5
Spacing perpendicular / parallel to free edge	$s_{1,min}/s_{2,min}$	[mm] 250 / 250
Minimum edge distance	$c_{min} \geq$	[mm] 125

Table C 8.53.3: Characteristic resistance F_{RK} ¹⁾⁸⁾ in [kN] for single anchor

Anchor size		10
Installation site ⁶⁾		Inside / Outside
Overall plastic anchor embedment depth	$h_{nom} =$	[mm] 70
Mean compressive strength acc. to EN 771		
Bisotherm Hbl-P 4.0 - 0.50, $\geq 2,0$ N/mm²	$F_{RK, 30^\circ C^3) / 50^\circ C^4)}$	[kN] 1,5
	$F_{RK, 50^\circ C^3) / 80^\circ C^4)}$	[kN] 1,5
Partial safety factor	$\gamma_{Mm}^{2)}$	[-] 2,5

Footnotes see Annex C 4

Würth Plastic Anchor W-UR SymCon

Performances
Hollow brick lightweight concrete: Bisotherm Hbl-P 4.0 - 0.50
Brick data, Installation parameters, Characteristic resistance

Annex C 63

Characteristic resistance F_{Rk} [kN] in autoclaved aerated concrete AAC (base material group „d“)

Table C 8.54.1: Brick data

Description of brick		AAC
Type of brick		Autoclaved Aerated Concrete
Bulk density	$\rho \geq$ [kg/dm ³]	0,3
Standard, approval/type-approval		EN 771-4:2015
Format (measurement)	[mm]	$\geq 499 \times 100 \times 249$

Table C 8.54.2: Installation parameters

Anchor size		10
Installation site ⁶⁾		Inside / Outside / Reveal
Drill hole diameter	$d_0 =$ [mm]	10
Cutting diameter of drill bit	$d_{cut} \leq$ [mm]	10,45
Depth of drill hole to deepest point	$h_1 \geq$ [mm]	80
Drill method	[-]	Hammer drilling
Overall plastic anchor embedment depth	$h_{nom} \geq$ [mm]	70
Diameter of clearance hole in the fixture	$d_f \leq$ [mm]	10,5

Table C 8.54.3: Characteristic resistance F_{Rk} ¹⁾⁸⁾ in [kN] for single anchor

Anchor size		10					
Installation site ⁶⁾		Inside / Outside / Reveal					
Overall plastic anchor embedment depth, $h_{nom} \geq 70$ mm							
Mean compressive strength acc. to EN 771							
	$F_{Rk, 30^\circ C^3) / 50^\circ C^4)$	$F_{Rk, 50^\circ C^3) / 80^\circ C^4)$	h_{min}	$C_{1,min}$	$C_{2,min}$	$S_{min,pa}$	$S_{min,per}$
	[kN]	[kN]	[mm]	[mm]	[mm]	[mm]	[mm]
AAC $f_{cm,decl} \geq 6,0$ N/mm ²	2,0	1,5	100	100	150	250	200
	2,0 ¹⁰⁾	1,5 ¹⁰⁾	175				
AAC $f_{cm,decl} \geq 5,0$ N/mm ²	1,5		100				
	1,5 ¹⁰⁾		175				
AAC $f_{cm,decl} \geq 4,5$ N/mm ²	1,5	1,2	100				
	1,5 ¹⁰⁾		175				
AAC $f_{cm,decl} \geq 4,0$ N/mm ²	1,2		100				
	1,5 ¹⁰⁾	1,2 ¹⁰⁾	175				
AAC $f_{cm,decl} \geq 3,5$ N/mm ²	1,2		100	100	90	100	100
	1,2 ¹⁰⁾		175				
AAC $f_{cm,decl} \geq 3,0$ N/mm ²	0,9		100				
	1,2 ¹⁰⁾	0,9 ¹⁰⁾	175				
AAC $f_{cm,decl} \geq 2,5$ N/mm ²	0,9		100				
	0,9 ¹⁰⁾		175				
AAC $f_{cm,decl} \geq 2,0$ N/mm ²	0,6		100				
	0,9 ¹⁰⁾	0,75 ¹⁰⁾	175				
Partial safety factor $\gamma_{Mm}^{2)}$	2,0						

Footnotes see Annex C 4

Würth Plastic Anchor W-UR SymCon

Performances
Autoclaved Aerated Concrete AAC
Brick data, Installation parameters, Characteristic resistance

Annex C 64

Characteristic resistance F_{Rk} [kN] in autoclaved aerated concrete AAC (base material group „d“)

Table C 8.55.1: Brick data

Description of brick		AAC
Type of brick		Autoclaved Aerated Concrete
Bulk density	$\rho \geq$ [kg/dm ³]	0,3
Standard, approval/type-approval		EN 771-4:2015
Format (measurement)	[mm]	$\geq 499 \times 100 \times 249$

Table C 8.55.2: Installation parameters

Anchor size		14
Installation site ⁶⁾		Inside / Outside
Drill hole diameter	$d_0 =$ [mm]	14
Cutting diameter of drill bit	$d_{cut} \leq$ [mm]	14,45
Depth of drill hole to deepest point	$h_1 \geq$ [mm]	110
Drill method	[-]	Hammer drilling
Overall plastic anchor embedment depth	$h_{nom} \geq$ [mm]	100
Diameter of clearance hole in the fixture	$d_f \leq$ [mm]	14,5

Table C 8.55.3: Characteristic resistance F_{Rk} ¹⁾⁸⁾ in [kN] for single anchor

Anchor size		14					
Installation site ⁶⁾		Inside / Outside / Reveal					
Overall plastic anchor embedment depth, $h_{nom} \geq 100$ mm							
Mean compressive strength acc. to EN 771							
	$F_{Rk, 30^\circ C^3) / 50^\circ C^4)}$	$F_{Rk, 50^\circ C^3) / 80^\circ C^4)}$	h_{min}	$C_{1,min}$	$C_{2,min}$	$S_{min,pa}$	$S_{min,per}$
	[kN]	[kN]	[mm]	[mm]	[mm]	[mm]	[mm]
AAC	3,5		249	120	180	250	240
$f_{cm,decl} \geq 6,0$ N/mm ²	5,0 ¹⁰⁾	4,5 ¹⁰⁾		240	360		250
AAC	3,0	2,5		120	180		240
$f_{cm,decl} \geq 5,0$ N/mm ²	4,0 ¹⁰⁾	3,5 ¹⁰⁾		240	360		250
AAC	2,5			120	180		240
$f_{cm,decl} \geq 4,5$ N/mm ²	3,5 ¹⁰⁾	3,0 ¹⁰⁾		240	360		250
AAC	2,0		120	180	240		
$f_{cm,decl} \geq 4,0$ N/mm ²	3,0 ¹⁰⁾	2,5 ¹⁰⁾	240	360	250		
AAC	1,5		175	100	150	80	80
$f_{cm,decl} \geq 3,5$ N/mm ²	2,0 ¹⁰⁾			240	360		
AAC	1,2			100	150		
$f_{cm,decl} \geq 3,0$ N/mm ²	1,5 ¹⁰⁾			240	360		
AAC	0,9			100	150		
$f_{cm,decl} \geq 2,5$ N/mm ²	1,2 ¹⁰⁾	0,9 ¹⁰⁾		240	360		
AAC	0,5		100	150			
$f_{cm,decl} \geq 2,0$ N/mm ²	0,5 ¹⁰⁾		240	360			
Partial safety factor γ_{Mm} ²⁾	2,0						

Footnotes see Annex C 4

Würth Plastic Anchor W-UR SymCon

Performances
Autoclaved Aerated Concrete AAC
Brick data, Installation parameters, Characteristic resistance

Annex C 65

Characteristic resistance F_{RK} [kN] in precast prestressed hollow core elements (base material group „a“)

Table C 8.56.1: Data

Description of brick	Precast prestressed hollow core elements
Type	Precast prestressed hollow core elements ≥ C30/37
Standard, approval/type-approval	DIN EN 1168:2011-12

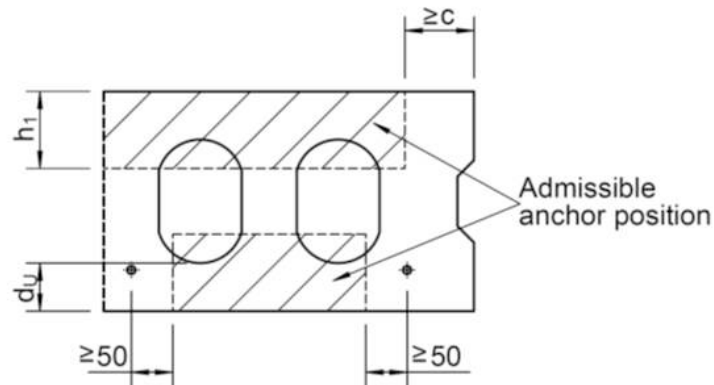


Table C 8.56.2: Installation parameters

Anchor size	10			
Member thickness $d_u ≥$ [mm]	25	30	35	40
Drill hole diameter $d_0 =$ [mm]	10			
Cutting diameter of drill bit $d_{cut} ≤$ [mm]	10,45			
Depth of drill hole to deepest point $h_1 ≥$ [mm]	80			
Drill method	[-] Hammer drilling			
Overall plastic anchor embedment depth $h_{nom} =$ [mm]	≥ 50 / ≤ 70			
Diameter of clearance hole in the fixture $d_f ≤$ [mm]	10,5			

Table C 8.56.3: Characteristic resistance $F_{RK}^{1)}$ in [kN] for single anchor

Anchor size	[mm]	10			
Overall plastic anchor embedment depth $h_{nom} ≥$ [mm]	≥ 50 / ≤ 70				
Member thickness $d_u ≥$ [mm]	25	30	35	40	
Precast prestressed hollow core elements ≥ C30/37	$F_{RK, 30°C^3) / 50°C^4)}$ [kN]	1,0	2,0	3,0	4,0
	Characteristic resistance $F_{RK, 50°C^3) / 80°C^4)}$ [kN]	1,0	2,0	3,0	4,0
Partial safety factor $γ_{Mc}^{2)}$	[-]	1,8			

Footnotes see Annex C 4

Würth Plastic Anchor W-UR SymCon

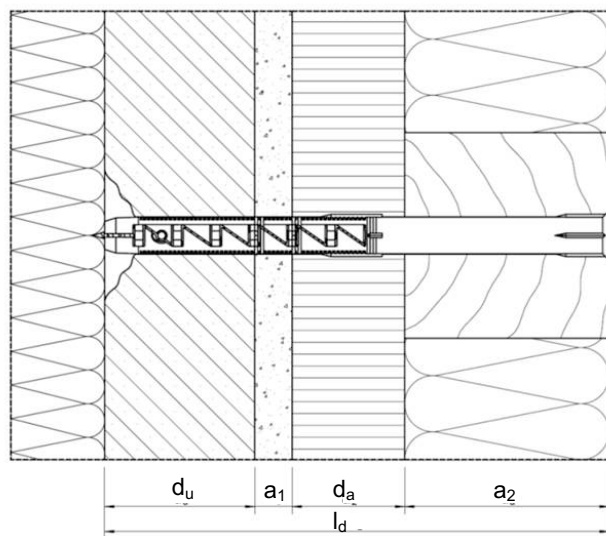
Performances
Precast prestressed hollow core elements
Brick data, Installation parameters, Characteristic resistance

Annex C 66

Characteristic resistance F_{RK} [kN] in thin concrete elements, weather resistant skins of external wall panels made of concrete (base material group „a“)

Table C 8.57.1: Data

Description of brick	Thin concrete elements, weather resistant skins of external wall panels made of concrete
Base material	Thin concrete elements, weather resistant skins of external wall panels made of concrete \geq C16/20



- d_u : Thickness of weather resistant skin of external wall panel or thin concrete elements
- a_1 : Thickness of non-load-bearing layer
- a_2 : Tolerance adjustment of facade surface
- d_a : Thickness of fixture
- l_d : Length of plastic sleeve

$$l_d \geq d_a + 40 \text{ mm} + \max a_1 + \max a_2$$

$$l_d \leq d_a + 70 \text{ mm} + \min a_1 + \min a_2$$

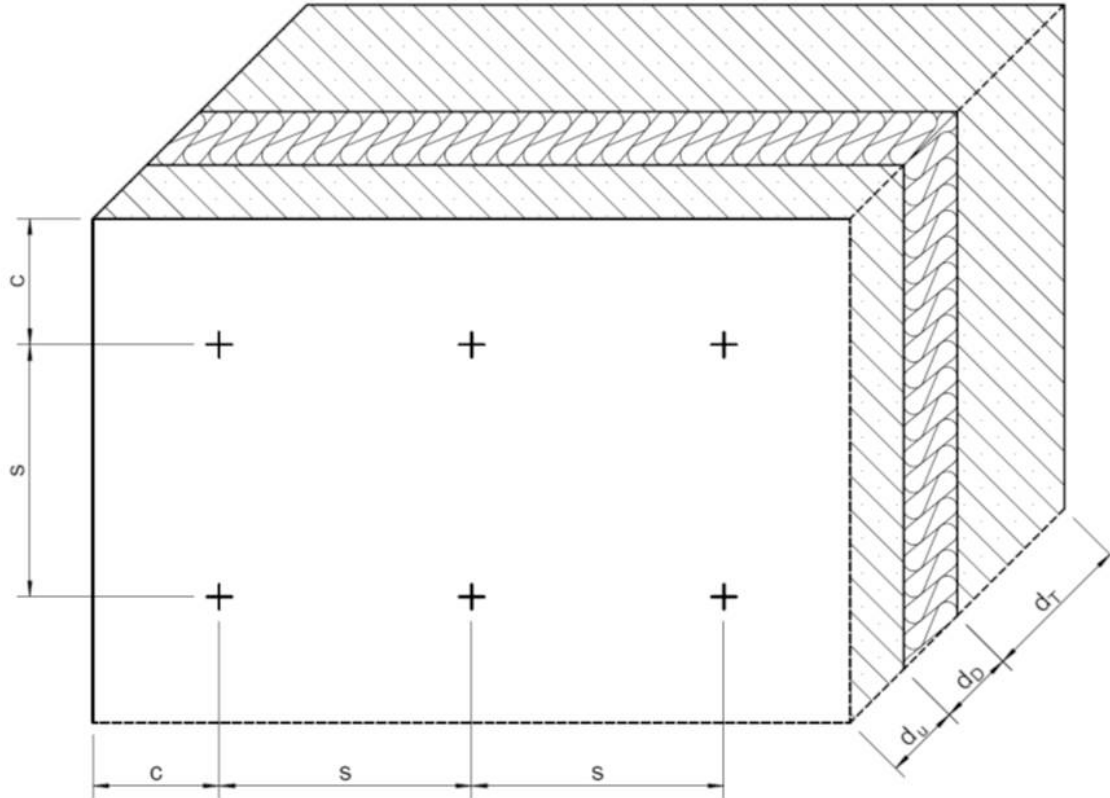
Table C 8.57.2: Installation parameters

Anchor size		10
Member thickness	$d_u \geq$	40
Drill hole diameter	$d_0 =$ [mm]	10
Cutting diameter of drill bit	$d_{cut} \leq$ [mm]	10,45
Depth of drill hole to deepest point	$h_1 \geq$ [mm]	80
Drill method	[-]	Hammer drilling
Overall plastic anchor embedment depth	$h_{nom} \geq$ [mm]	70
Diameter of clearance hole in the fixture	$d_f \leq$ [mm]	10,5

Würth Plastic Anchor W-UR SymCon

Performances
Thin concrete elements, weather resistant skins of external wall panels made of concrete \geq C16/20, Brick data, Installation parameters

Annex C 67



- d_U : Thickness of weather resistant skin of external wall panel or thickness of the thin concrete element
- d_D : Thickness of insulation
- d_T : Thickness of member
- c : Edge distance
- s : Spacing

Table C 8.57.3: Characteristic resistance $F_{Rk}^{1)}$ in [kN] for single anchor

Anchor size			10
Member thickness	$d_U \geq$	[mm]	40
Thin concrete elements, weather resistant skins of external wall panels made of concrete \geq 16/20, Characteristic resistance F_{Rk}	$30^\circ\text{C}^3) / 50^\circ\text{C}^4)$	[kN]	1,5
	$50^\circ\text{C}^3) / 80^\circ\text{C}^4)$	[kN]	1,5
Partial safety factor	$\gamma_{Mm}^{2)}$	[-]	1,8

Footnotes see Annex C 4

Würth Plastic Anchor W-UR SymCon

Performances

Thin concrete elements, weather resistant skins of external wall panels made of concrete \geq C16/20, Brick data, Characteristic resistance

Annex C 68

Characteristic resistance F_{Rk} [kN] in hollow core ceilings \geq C20/25, COBIX ceilings (base material group „a“)

Table C 8.58.1 Data

Description	Hollow core ceilings, COBIA X ceilings
Base material	Hollow core ceilings \geq C20/25, COBIA X ceilings
Standard, approval/type-approval	Z-15.1-282 of 29.04.2022 and Z-15.1-307 of 24.07.2023

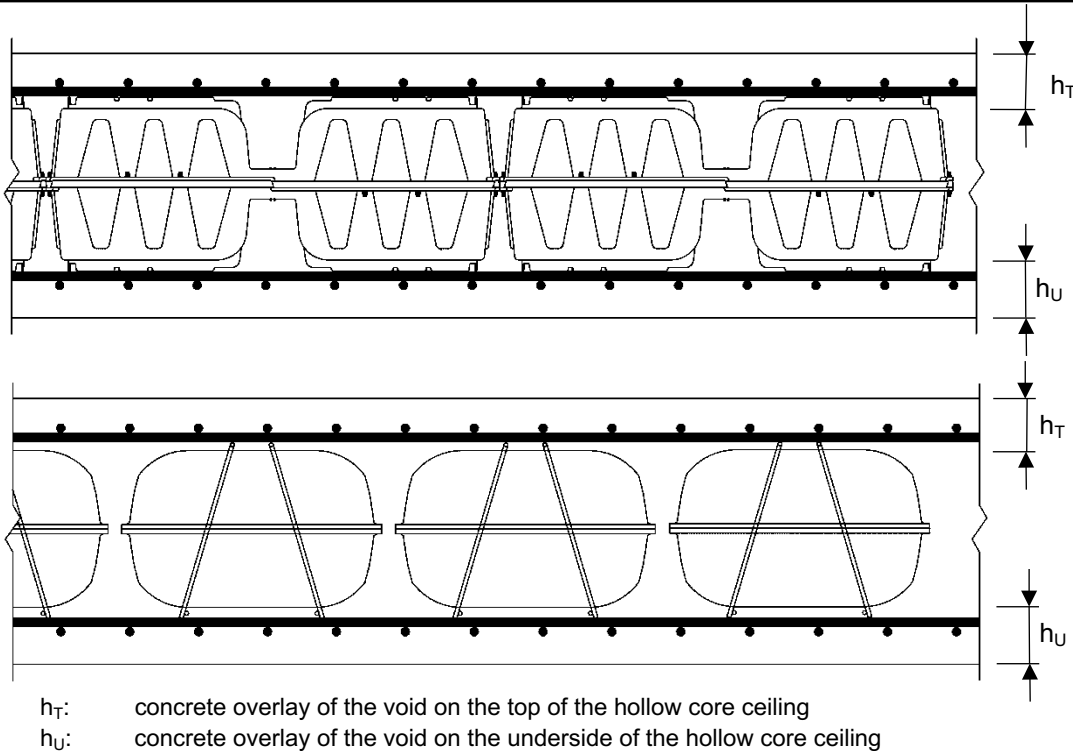


Table C 8.58.2: Installation parameters

Anchor size		10	
Drill hole diameter	$d_0 =$ [mm]	10	
Cutting diameter of drill bit	$d_{cut} \leq$ [mm]	10,45	
Depth of drill hole to deepest point on the topside	$h_{1,T} \geq$ [mm]	50	80
Depth of drill hole to deepest point on the underside	$h_{1,U} \geq$	50	80
Drill method	[-]	Hammer drilling	
Overall plastic anchor embedment depth	$h_{nom} =$ [mm]	40 – 69 ¹¹⁾	70 ¹¹⁾
Diameter of clearance hole in the fixture	$d_f \leq$ [mm]	10,5	

Table C 8.58.3: Characteristic resistance F_{Rk} ¹⁾ in [kN] for single anchor

Anchor size		10	
Concrete overlay of the void	h_T and $h_U \geq$ [mm]	50	50
Overall plastic anchor embedment depth	$h_{nom} =$ [mm]	40 – 69 ¹¹⁾	70 ¹¹⁾
Hollow core ceilings, e.g. COBIA X ceilings, \geq C20/25	$F_{Rk, 30^\circ C^3) / 50^\circ C^4)}$ [kN]	2,5	3,5
	$F_{Rk, 50^\circ C^3) / 80^\circ C^4)}$ [kN]	2,5	3,0
Partial safety factor	$\gamma_{Mm}^{2)}$ [-]	1,8	

Footnotes see Annex C 4

Würth Plastic Anchor W-UR SymCon

Performances
Hollow core ceilings, e.g. COBIA X ceilings
Brick data, Installation parameters, Characteristic resistance

Annex C 69