INSTYTUT TECHNIKI BUDOWLANEJ

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

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European Technical Assessment

ETA-25/0814 of 27/08/2025

General Part

Technical Assessment Body issuing the European Technical Assessment	Instytut Techniki Budowlanej
Trade name of the construction product	TUC
Product family to which the construction product belongs	Concrete screws for use in concrete for redundant non-structural systems
Manufacturer	Trutek Fasteners Polska Sp. z o.o. ul. Wojska Polskiego 3 39-300 Mielec Poland
Manufacturing plants	Trutek Plants
This European Technical Assessment contains	14 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	European Assessment Document (EAD) 330747-00-0601 “Fasteners for use in concrete for redundant non-structural systems”

Specific Part

1 Technical description of the product

The TUC is concrete screw of size 6 mm, made of zinc coated, hardened steel.

The concrete screw is screwed into a predrilled cylindrical drill hole. The special thread of the anchor cuts an internal thread into the concrete member while setting. The anchorage is characterized by mechanical interlock in the special thread.

The description of the product is given in Annex A.

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

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

The provisions made in this European Technical Assessment are based on an assumed working life of the fastener of 50 years. The indications given on the working life cannot be interpreted as a guarantee given by the producer or Technical Assessment Body, 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 Performance of the product

3.1.1 Safety in case of fire (BWR 2)

Essential characteristic	Performance
Reaction to fire	Class A1
Resistance to fire	Annex C2

3.1.2 Safety and accessibility in use (BWR 4)

Essential characteristic	Performance
Characteristic resistance in concrete	Annex C1
Durability	Annex B1

3.2 Methods used for the assessment

The assessment has been made in accordance with EAD 330747-00-0601.

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

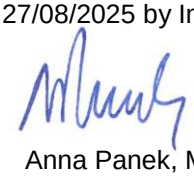
According to Decision 97/161/EC of the European Commission the system 2+ of assessment and verification of constancy of performance applies (see Annex V to regulation (EU) No 305/2011).

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

Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited in Instytut Techniki Budowlanej.

For type testing the results of the tests performed as part of the assessment for the European Technical Assessment shall be used unless there are changes in the production line or plant. In such cases the necessary type testing has to be agreed between Instytut Techniki Budowlanej and the notified body.

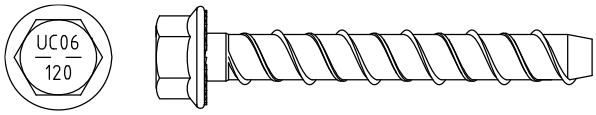
Issued in Warsaw on 27/08/2025 by Instytut Techniki Budowlanej



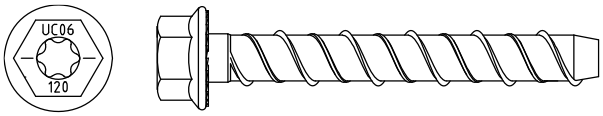
Anna Panek, MSc

Deputy Director of ITB

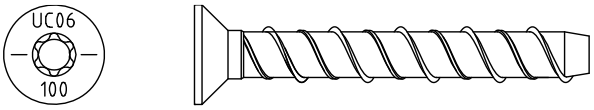
TUC Anchor
Hexagon flange head



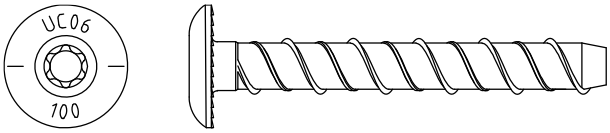
TUC Anchor TX
Hexagon flange head with Torx



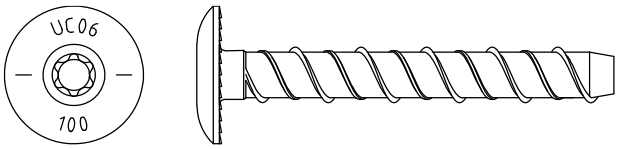
TUC Anchor CS
Countersunk head



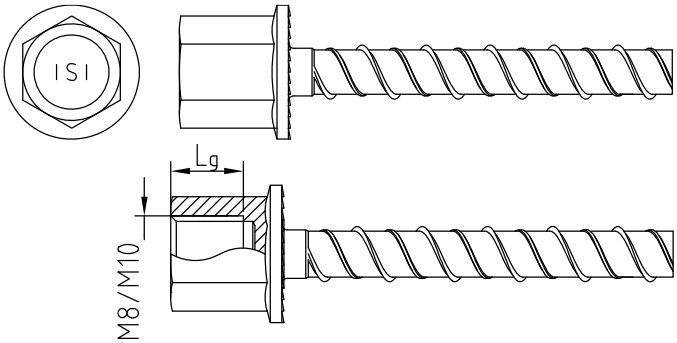
TUC Anchor PM
Pan head Ø16 mm



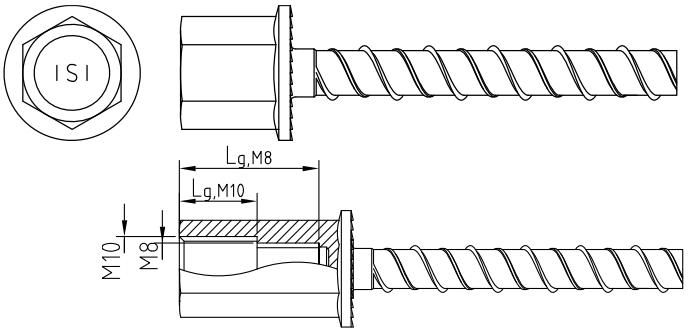
TUC Anchor P
Pan head Ø18 mm



TUC RH 10
TUC RH 8
TUC RH 3/8
Socket head
M10 internal thread for RH 10
M8 internal thread for RH 8
3/8 UNC internal thread for RH 3/8
Size: 6
L_g = 9 mm, D = M10 for RH 10
L_g = 7 mm, D = M8 for RH 8
L_g = 9 mm, D = 3/8 UNC for RH 3/8



TUC RH D
Dual Socket head
M10 and M8 dual internal thread
$L_{g,M8}$ = 7 mm
$L_{g,M10}$ = 9 mm



TUC	Annex A1 of European Technical Assessment ETA-25/0814
Product description Screw types	

Table A1: Head screw characteristic

Head screw characteristic				
TUC Anchor	Wrench size	SW	mm	10,0
	Flange diameter	Ød$_h$	mm	14,0
TUC Anchor TX	Wrench size	SW	mm	10,0
	Flange diameter	Ød$_h$	mm	14,0
	Torx size	-	-	T30
TUC Anchor CS	Head Diameter	Ød$_h$	mm	13,0
	Torx size	-	-	T30
TUC Anchor PM	Head Diameter	Ød$_h$	mm	16,0
	Torx size	-	-	T30
TUC Anchor P	Head Diameter	Ød$_h$	mm	18,0
	Torx size	-	-	T30
TUC RH 10	Wrench size	SW	mm	13,0
TUC RH 8	Wrench size	SW	mm	13,0
TUC RH 3/8	Wrench size	SW	mm	13,0
TUC RH D	Wrench size	SW	mm	13,0

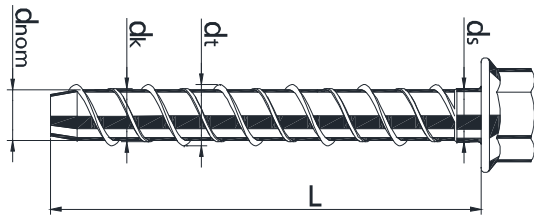
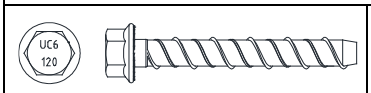
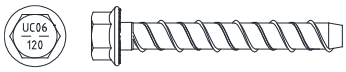
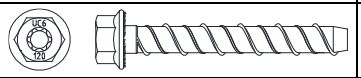
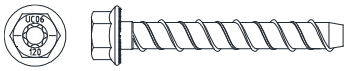
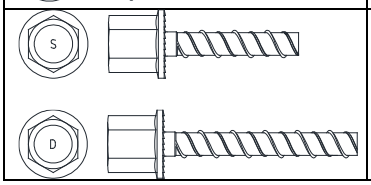
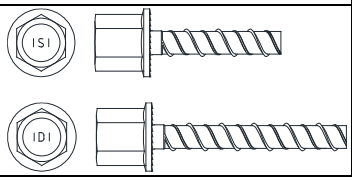


Table A2: Dimensions and material

Anchor size			**TUC**	
Head types			**Anchor / Anchor TX / Anchor CS / Anchor PM / Anchor P**	**RH 10 / RH 8 / RH 3/8 / RH D**
Length of anchor	L_{min}	mm	35	
	L_{max}	mm	150	
Nominal hole diameter	d_0	mm	6,00	
Nominal core diameter	d_{nom}	mm	5,35	
Shaft diameter	d_s	mm	5,72	
Higher thread diameter	d_t	mm	7,70	
Lower thread diameter	d_k	mm	6,00	
Thread pitch	h_t	mm	7,50	
Tip chamfer	h_s	mm	4,0	0,0
Material			Hardened carbon steel, $A_5 \leq 8\%$	
Coating			Zinc coating (≥ 5 µm); electroplated acc. to EN ISO 4042 or mechanically deposited acc. to EN ISO 12683	

TUC	**Annex A2** of European Technical Assessment ETA-25/0814
Product description Head screw characteristic, dimensions and material	

Marking:

Trutek Plants		TUC	Designations
		**Anchor, Anchor CS, Anchor PM, Anchor P**	UC Product identification 6 / 06 Screw size 120 Screw length L, mm
		**Anchor TX**	UC Product identification 6 / 06 Screw size 120 Screw length L,mm
		**RH 10, RH 8, RH 3/8, RH D**	S Length of anchor, mm L = 35 D Length of anchor, mm L = 55

TUC	**Annex A3** of European Technical Assessment ETA-25/0814
Product description Marking	

Specification of intended use

Anchorages subject to:

- Static and quasi-static loading.
- Multiple use for redundant non-structural applications according to EN 1992-4:2018.
- Anchorages with requirements related to resistance to fire in concrete (does not apply to precast pre-stressed hollow core concrete slabs).

Base material:

- Uncracked and cracked concrete.
- Reinforced or unreinforced normal weight concrete (without fibres) of strength classes C20/25 to C50/60 according to EN 206.
- Precast pre-stressed hollow core concrete slabs (with w/e ≤ 4,2) of strength classes C40/50 to C50/60 according to EN 206.

Use conditions (environmental conditions):

- Structures subject to dry internal conditions.

Design:

- Anchorages are designed under the responsibility of an engineer experienced in anchorages and concrete work.
- Verifiable calculation notes and drawings are prepared taking account of the loads to be transmitted. The position of the anchor is indicated on the design drawings (e.g. position of the anchor relative to reinforcement or to supports, etc.).
- Design of fastenings according to EN 1992-4:2018 and EOTA Technical Report TR 055.

Installation of anchors:

- Hammer drilling only.
- Anchor installation carried out by appropriately qualified personnel and under the supervision of the person responsible for technical matters of the site.
- Anchor installation in accordance with the manufacturer's specifications and drawings and using the appropriate tools.
- Check of concrete being well compacted, e.g. without significant voids.
- Positioning of the drill holes without damaging the reinforcement.
- Anchor installation such that the effective anchorage depth is complied with.
- After installation further turning of the anchor is not possible.
- The head of the anchor is supported on the fixture and is not damaged.

TUC	**Annex B1** of European Technical Assessment ETA-25/0814
Intended use Specifications	

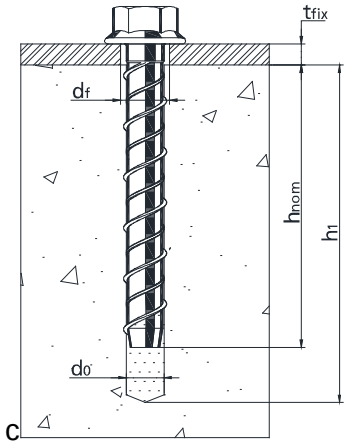


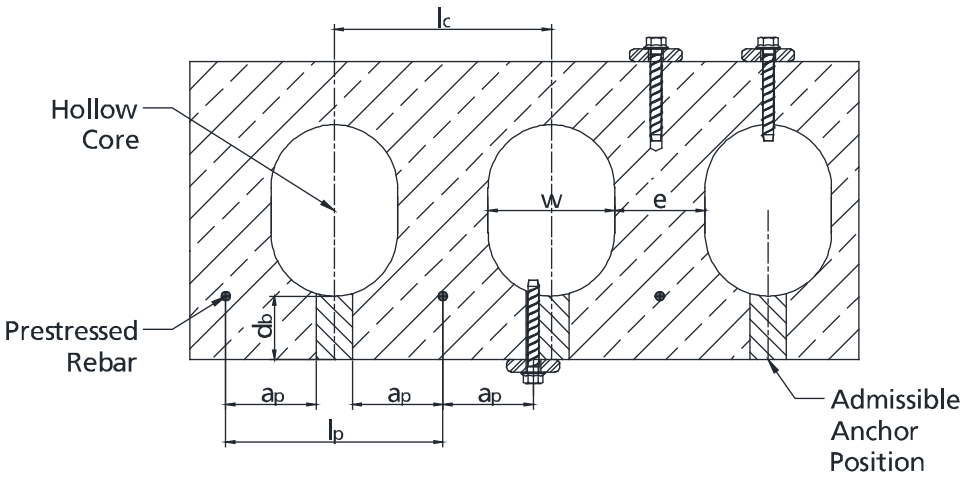
Table B1: Installation parameters – **concrete**

Anchor size			**TUC**	
Nominal drill hole diameter	d_0	mm	6	
Cutting diameter of drill bit	$d_{cut} \leq$	mm	6,40	
Depth of drill hole [1)]	$h_1 \geq$	mm	45	65
Nominal embedment depth	h_{nom}	mm	35	55
Effective embedment depth	h_{ef}	mm	25	41
Clearance hole diameter in the fixture	d_f	mm	8	
Maximum installation torque	$T_{imp,max}$	Nm	250	
Minimum thickness of member	h_{min}	mm	80	
Maximum thickness of fixture	t_{fix}	mm	L - h_{nom}	
Minimum edge distance	c_{min}	mm	40	55
Minimum spacing	s_{min}	mm	80	110
[1)] for horizontally and vertically downwards installation in concrete with no cleaning, depth of drill hole = $h_1 + 3 \cdot d_0$				

Table B2: Installation parameters – **precast pre-stressed hollow core concrete slabs**

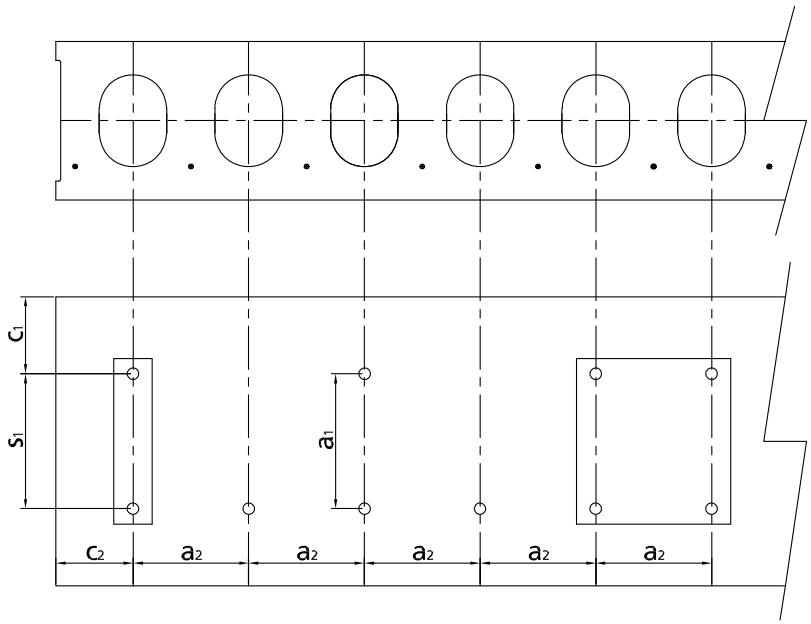
Anchor size			**TUC**
Nominal drill hole diameter	d_0	mm	6
Cutting diameter of drill bit	$d_{cut} \leq$	mm	6,40
Depth of drill hole	$h_1 \geq$	mm	35
Nominal embedment depth	h_{nom}	mm	35
Effective embedment depth	h_{ef}	mm	25
Clearance hole diameter in the fixture	d_f	mm	8
Maximum installation torque	$T_{imp,max}$	Nm	250
Minimum thickness of member	h_{min}	mm	35
Thickness of the fixture, max.	t_{fix}	mm	L - h_{nom}
Minimum edge distance	c_{min}	mm	40
Minimum spacing	s_{min}	mm	80
Minimum distance between anchor groups	a_{min}	mm	80

TUC	**Annex B2** of European Technical Assessment ETA-25/0814
Intended use Installation parameters – concrete and precast pre-stressed hollow core concrete slabs	



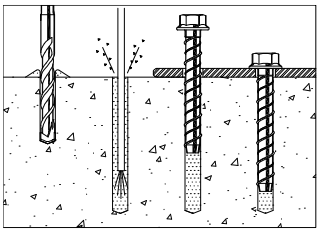
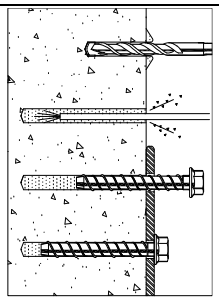
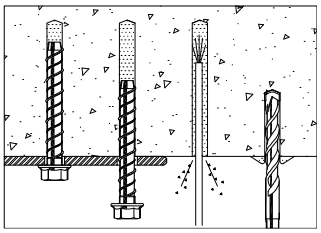
$d_b \geq 35$ mm
$w/e \leq 4{,}2$

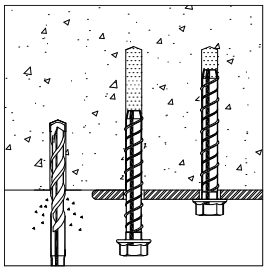
Core width	$w \leq 180$ mm
Core distance	$l_c \geq 210$ mm
Web thickness	$e = l_c - w$
Prestressing steel distance	$l_p \geq 210$ mm
Distance between anchor position and prestressing steel	$a_p \geq 50$ mm

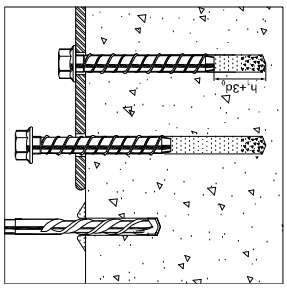
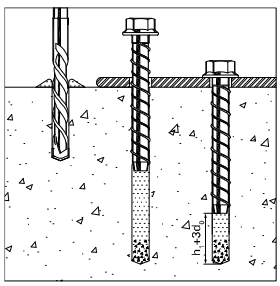


c_1, c_2 – edge distance
s_1, s_2 – anchor spacing
a_1, a_2 – distance between anchors group

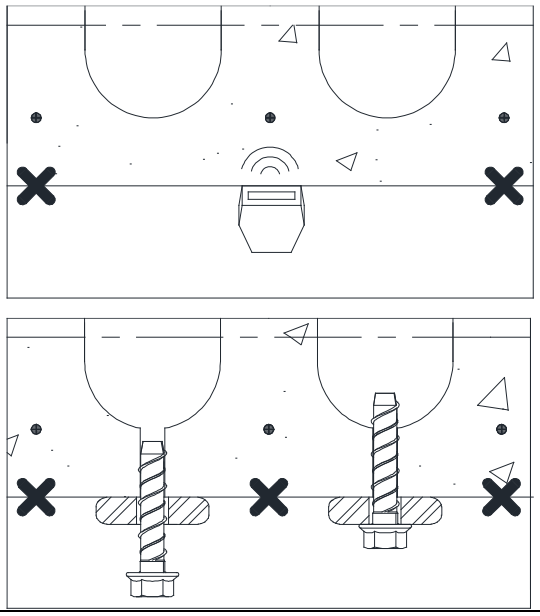
TUC	**Annex B3** of European Technical Assessment ETA-25/0814
Intended use Installed condition in precast pre-stressed hollow core concrete slabs	

Vertically downwards, vertically upwards and horizontally installation in concrete with cleaning	
  	
Drilling	Make drilling depth h_1.
Cleaning	Cleaning 3 times needed in downward and horizontal installation direction with drill hole depth.
Setting	Setting by impact screw driver (impact wrench tool) or torque wrench.
Checking	After installation a further turning of the screw must not be possible. The head of the screw must be in contact with the fixture and undamaged.

Vertically upwards installation in concrete with no cleaning	
	
Drilling	Make drilling depth h_1.
Cleaning	No cleaning needed.
Setting	Setting by impact screw driver (impact wrench tool) or torque wrench.
Checking	After installation a further turning of the screw must not be possible. The head of the screw must be in contact with the fixture and undamaged.

Horizontally and vertically downwards installation in concrete with no cleaning	
 	
Drilling	Make drilling depth: $h_1 + 3 \cdot d_0$
Cleaning	No cleaning needed.
Setting	Setting by impact screw driver (impact wrench tool) or torque wrench.
Checking	After installation a further turning of the screw must not be possible. The head of the screw must be in contact with the fixture and undamaged.

TUC	**Annex B4** of European Technical Assessment ETA-25/0814
Intended use Installation instruction (1)	

Installation in precast pre-stressed hollow core slabs (bottom side) with no cleaning		
Positioning rebar	Detecting and marking the rebar position by rebar detector.	
Positioning anchor	Check the admissible requirements: $a_p \geq 50$ mm. Mark the installation position of anchor axis.	
Drilling	Make drilling depth ≥ h_1	
Cleaning	No cleaning needed.	
Setting	Setting by impact screw driver.	
Checking	After installation a further turning of the anchor must not be possible. The head of the anchor must be in contact with the fixture and undamaged.	

TUC	**Annex B4** of European Technical Assessment ETA-25/0814
Intended use Installation instruction (2)	

Table C1: Characteristic resistance **in concrete**

Anchor			**TUC**	
Size			**6**	
Effective embedment depth	h_{ef}	[mm]	25	41
Nominal embedment depth	h_{nom}	mm	35	55
All load directions				
Characteristic resistance in cracked and uncracked concrete C20/25 to C50/60	F^0_{Rk}	[kN]	1	4
Installation safety factor	γ_{inst}	[-]	1,2	1,2
Spacing	s_{cr}	[mm]	80	110
Edge distance	c_{cr}	[mm]	40	55
Shear load with lever arm				
Characteristic bending resistance	$M^0_{Rk,s}$	[Nm]	16,2	16,2
Partial safety factor	$\gamma_{M,s}$	[-]	1,5	1,5

Table C2: Characteristic resistance **in precast pre-stressed hollow core concrete slabs**

Anchor			**TUC**
Size			**6**
Effective embedment depth	h_{ef}	[mm]	25
Nominal embedment depth	h_{nom}	mm	35
All load directions			
Characteristic resistance in precast pre-stressed hollow core concrete slabs C40/50 to C50/60	F^0_{Rk}	[kN]	4,5
Installation safety factor	γ_{inst}	[-]	1,2
Spacing	s_{cr}	[mm]	80
Edge distance	c_{cr}	[mm]	40
Shear load with lever arm			
Characteristic bending resistance	$M^0_{Rk,s}$	[Nm]	16,2
Partial safety factor	$\gamma_{M,s}$	[-]	1,5

Table C3: Characteristic resistance under fire exposure **in concrete** C20/25 to C50/60

Anchor			**TUC**
Size			**6**
Effective embedment depth	h_{ef}	[mm]	41
Nominal embedment depth	h_{nom}	mm	55
All load directions			
Characteristic resistance $F^0_{Rk,fi}$ [1)]	R30	[kN]	0,22
	R60	[kN]	0,20
	R90	[kN]	0,16
	R120	[kN]	0,11
Characteristic bending resistance $M^0_{Rk,fi}$	R30	[Nm]	0,18
	R60	[Nm]	0,16
	R90	[Nm]	0,13
	R120	[Nm]	0,09
Spacing	$s_{cr,fi}$	[mm]	2 x h_{ef}
Edge distance	$c_{cr,fi}$	[mm]	4 x h_{ef}

The design method covers anchors with a fire attack from one side only. In case of fire attack from more than one side, the edge distance shall be ≥ 300 mm.

[1)] in the absence of other national regulations a partial safety factor $\gamma_{M,fi}$ = 1,0 is recommended