Einfach. Sicher. Upat

DECLARACIÓN DE PRESTACIONES

DoP 0289

para el Upat nail anchor UNA (anclaje mecánico para uso en hormigón) ES

1.	Código de identificación única del producto tipo:	**DoP 0289**
2.	Usos previstos:	**Fijación a posteriori en hormigón para sistemas no portantes redundantes, véase el apéndice, especialmente los anexos B1 - B3.**
3.	Fabricante:	**Upat Vertriebs GmbH, Bebelstraße 11, 79108 Freiburg im Breisgau, Alemania**
4.	Representante autorizado:	**–**
5.	Sistemas de evaluación y verificación de la constancia de las prestaciones (EVCP):	**2+**
6.	Documento de evaluación europeo:	**EAD 330747-00-0601, Edition 06/2018**
	Evaluación técnica europea:	**ETA-17/0287; 2021-09-03**
	Organismo de evaluación técnica:	**DIBt- Deutsches Institut für Bautechnik**
	Organismos notificados:	**2873 TU Darmstadt**

7. Prestaciones declaradas:

Seguridad en uso (BWR 4)

Resistencia característica a tracción (carga estática y cuasi-estática):

Resistencia de rotura del acero:	NPD
Résistance à la rupture par extraction glissement:	NPD
Resistencia de rotura por cono de hormigón:	NPD
Robustez:	Anexo C1
Distancia mínima entre el borde y el centro:	Anexos B2, C1
Distancia al borde para evitar la rotura del acero sometido a carga:	NPD

Resistencia característica a cortante (carga estática y cuasi-estática):

Resistencia de rotura del acero (esfuerzo cortante):	NPD
Resistencia falla por arrancamiento lateral:	NPD
Resistencia de rotura del hormigón al borde:	NPD

Resistencia característica para todas las direcciones de carga y modos de falla para un diseño simplificado:

Resistencia característica:	Anexo C1

Durabilidad:

Durabilidad:	Anexos A2, B1

Seguridad en caso de incendio (BWR 2)

Reacción al fuego:	Clase (A1)

Resistencia al fuego:

Resistencia al fuego, rotura del acero (carga de tracción):	NPD
Resistencia al fuego, a la extracción (carga de tracción):	NPD
Resistencia al fuego, rotura del acero (esfuerzo cortante):	NPD
Resistencia al fuego para todas las direcciones de carga y modos de fallo:	Anexo C2

8. Documentación técnica adecuada o documentación técnica específica: **–**

Las prestaciones del producto identificado anteriormente son conformes con el conjunto de prestaciones declaradas. La presente declaración de prestaciones se emite, de conformidad con el Reglamento (UE) no 305/2011, bajo la sola responsabilidad del fabricante arriba identificado.

Firmado por y en nombre del fabricante por:

Dr.-Ing. Oliver Geibig, Director General Unidades de Negocio e Ingeniería

Jürgen Grün, Director General de Química y Calidad

Tumlingen, 2021-09-10

Esta DdR se ha preparado en distintos idiomas. En caso de que haya alguna controversia sobre la interpretación prevalecerá siempre la versión inglesa.

El Apéndice incluye información voluntaria y complementaria en idioma inglés que excede los requisitos legales (de idioma neutral).

Specific Part

1 Technical description of the product

The Upat Nail Anchor UNA is an anchor made of galvanised (UNA) or stainless steel (UNA R) or high corrosion resistant steel (UNA HCR). The anchor is pushed into a predrilled cylindrical drill hole and expanded by loading.
The product description is given in Annex A.

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

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

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

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

3.1 Safety in case of fire (BWR 2)

Essential characteristic	Performance
Reaction to fire	Class A1
Resistance to fire	See Annex C 2

3.2 Safety in use (BWR 4)

Essential characteristic	Performance
Characteristic resistance to tension and shear load (static and quasi-static loading)	See Annex B 2 and C 1
Durability	See Annex B 1

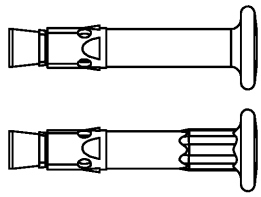
4 Assessment and verification of constancy of performance (AVCP) system applied, with reference to its legal base

In accordance with European Assessment Document EAD No. 330747-00-0601, the applicable European legal act is: [97/161/EC].

The system to be applied is: 2+

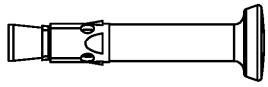
Only for use for for redundant non-structural systems according to EN 1992-4:2018

Design types:



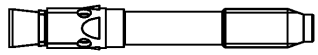
Nail head

UNA 6x25/..
UNA 6x30/..



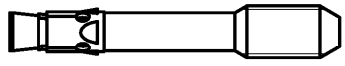
Nail head RB

UNA 6x25/.. RB
UNA 6x30/.. RB



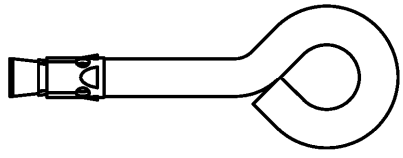
Threaded bolt with ISO standard metric thread M6

UNA 6x25 M6/..
UNA 6x30 M6/..



Threaded bolt with ISO standard metric thread M8

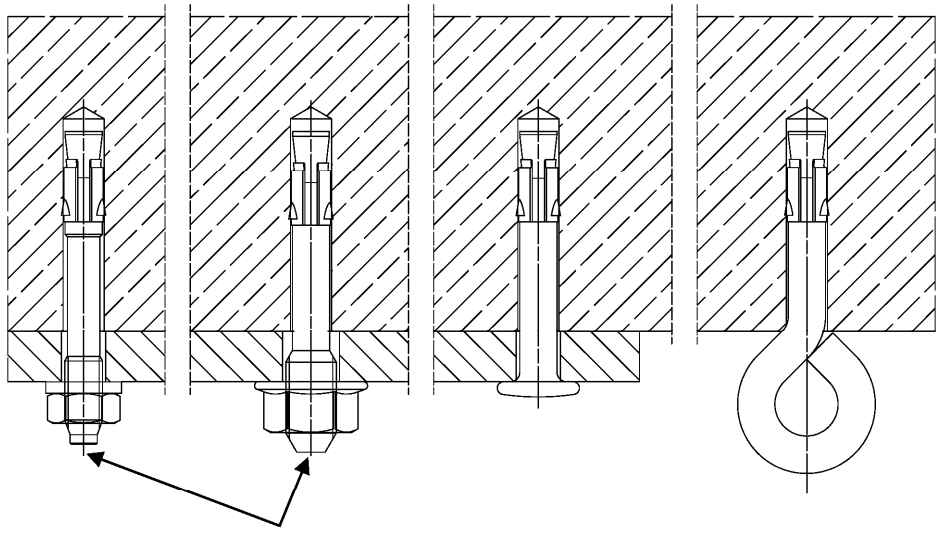
UNA 6x25 M8/..
UNA 6x30 M8/..



UNA OE with eye

UNA 6x25 OE
UNA 6x30 OE

Intended use:



Additional marking only galvanised steel for h_{ef} = 25 mm (centring, bar or points)

(Fig. not to scale)

Upat Nail anchor UNA

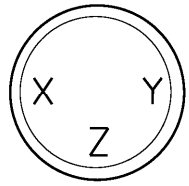
Product description
Product and intended use

Annex A 1

Appendix 2 / 8

Marking:

Nail head



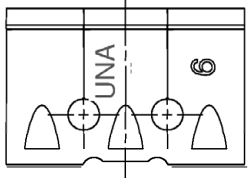
Marking at **X**: "O" for h_{ef} = 25 mm
and "I" for h_{ef} = 30 mm;

Marking at **Y**: t_{fix}

Marking at **Z**: "R" or "HCR" (stainless steel)

Expansion sleeve (or bolt)

e.g.:



For stainless steel additional marking "R" or "HCR"

Marking-Codes for **Y**:

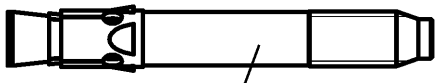
	A	Q	T	N	P	B	L	H	U
t_{fix}	5	10	15	20	25	30	35	40	45

	D	V	S	W	X	E	M	Z	K
t_{fix}	50	55	60	65	70	75	80	85	90

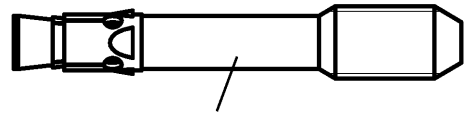
	(A)	F	(B)	(D)	(E)	G	J
t_{fix}	95	100	105	110	115	120	125

At t_{fix} > 125 mm the corresponding figure is marked.

Shaft (threaded bolt)



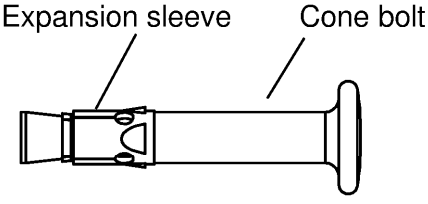
Marking e.g.: 6/10
thread size/thickness of the fixture



Marking e.g.: 8/10
thread size /thickness of the fixture
Exception: 8/5 no marking

Table A2.1: Materials UNA

Part	Designation	Material		
		UNA	UNA R	UNA HCR
	Steel grade	Steel	Stainless steel R	High corrosion resistant steel HCR
		Zinc plated ≥ 5 µm, EN ISO 4042:2018	Acc. to EN 10088:2014 Corrosion resistance class CRC III acc. to EN 1993-1-4:2015	Acc. to EN 10088:2014 Corrosion resistance class CRC V acc. to EN 1993-1-4:2015
1	Expansion sleeve	Cold strip, EN 10139:2016 or stainless steel EN 10088:2014	Stainless steel EN 10088:2014	Stainless steel EN 10088:2014
2	Cone bolt	Cold form steel or free cutting steel		High corrosion resistant steel EN 10088:2014



(Fig. not to scale)

Upat Nail anchor UNA

Product description
Marking and materials

Annex A 2

Specifications of intended use

Fastenings subject to:

Size	UNA, UNA R, UNA HCR
Hammer drilling with standard drill bit 	All types
Static and quasi-static loads	✓
Cracked and uncracked concrete	
Fire exposure	

Base materials:

- Compacted reinforced and unreinforced normal weight concrete without fibres (cracked and uncracked) according to EN 206:2013+A1:2016
- Strength classes C12/15 to C50/60 according to EN 206:2013+A1:2016

Use conditions (Environmental conditions):

- Structures subject to dry internal conditions (UNA, UNA R, UNA HCR) with $h_{ef} \geq 25$ mm
- For all other conditions according to EN 1993-1-4:2006 + A1:2015 corresponding to corrosion resistance class
  - CRC III: for UNA R with $h_{ef} \geq 30$ mm
  - CRC V: for UNA HCR with $h_{ef} \geq 30$ mm

Design:

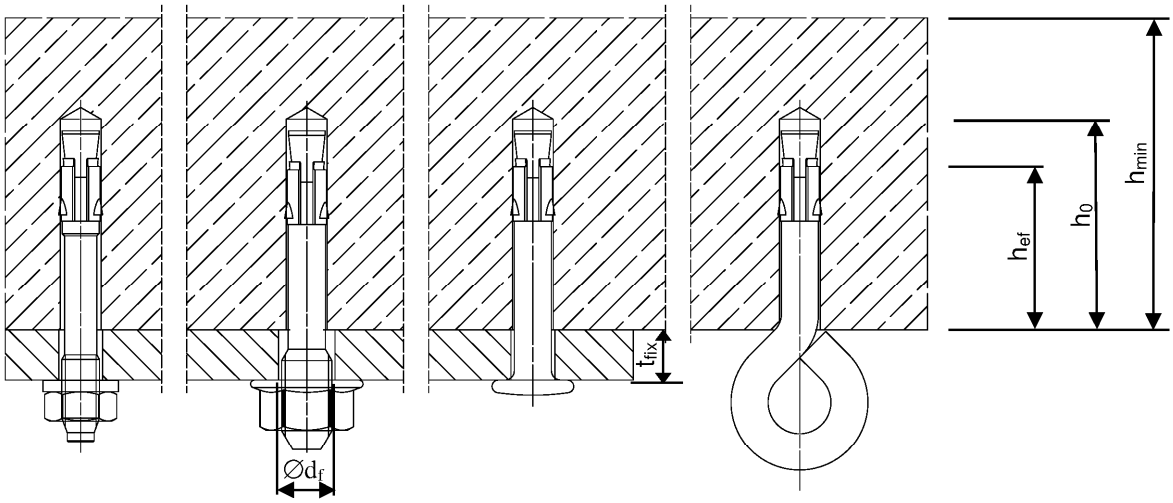
- Fastenings are to be designed under the responsibility of an engineer experienced in fastenings and concrete work
- Verifiable calculation notes and drawings have to be prepared taking account of the loads to be anchored. The position of the fastener is indicated on the design drawings (e.g. position of the fastener relative to reinforcement or to supports, etc.)
- Only for use for for redundant non-structural systems according to EN 1992-4:2018, Chapter 7.3
- Simplified design method C according to EN 1992-4:2018 Annex G

Installation:

- Fastener installation carried out by appropriately qualified personnel and under the supervision of the person responsible for technical matters on site
- Use of the fastener only as supplied by the manufacturer without exchanging the components of the fastener
- Checking before placing the fastener to ensure that the strength class of the concrete in which the fastener is to be placed, is in the range given and is not lower than that of the concrete to which the characteristic loads apply
- Check of concrete being well compacted, e.g. without significant voids
- Drill hole created perpendicular +/- 5° to concrete surface, positioning without damaging the reinforcement
- In case of aborted hole: new drilling at a minimum distance twice the depth of the aborted drill hole or smaller distance if the aborted drill hole is filled with high strength mortar (e.g. UPM 66, UPM 55, UPM 44) and if under shear or oblique tension load it is not in the direction of load application

Table B2.1: Installation parameters

Effective embedment depth	$h_{ef} \geq$	[mm]	25	30
Nominal drill bit diameter	$d_0 =$		6	
Cutting diameter of drill bit	$d_{cut,max} \leq$		6,4	
Depth of drill hole	$h_0 \geq$		31	36
Diameter of clearance hole in the fixture for all UNA except for M8 and OE	$d_f \leq$		7	
Diameter of clearance hole in the fixture for M8	$d_f \leq$		9	
Maximum torque moment (only threaded types)	max. $T_{inst} \leq$	[Nm]	4	
Minimum thickness of member	h_{min}	[mm]	80	
Maximum thickness of fixture	max. t_{fix}		400	



(Fig. not to scale)

Upat Nail anchor UNA

Intended Use
Installation parameters

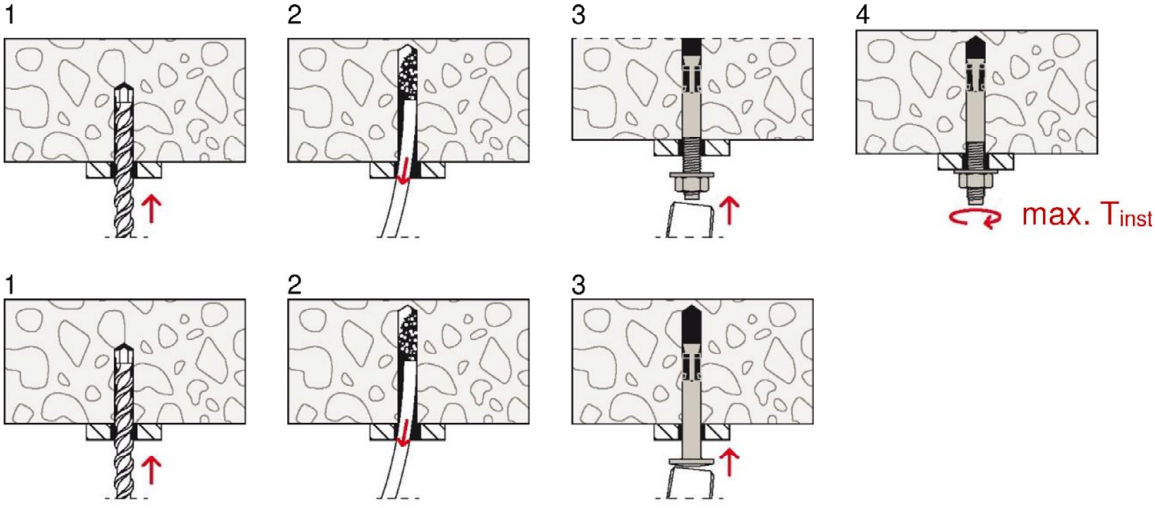
Annex B 2

Appendix 5 / 8

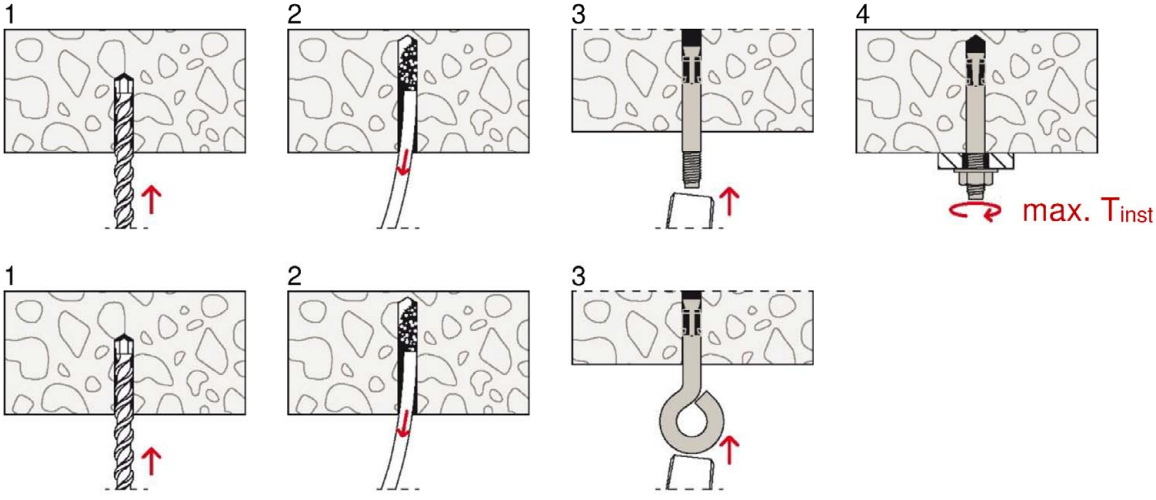
Installation instruction:

Drill the hole | **Clean the hole** | **Set the fastener** | **Apply max. T_{inst}**

Push through installation



Pre-positioned installation



(Fig. not to scale)

Upat Nail anchor UNA

Intended Use
Installation instruction

Annex B 3

Appendix 6 / 8

Table C1.1: Characteristic resistance of a fixing point[1] for all load directions

Type of anchor			UNA 6x25/..	UNA 6x25 M6/.. UNA 6x25 M8/..	UNA 6x25 OE	UNA 6x30 OE	UNA 6x30/..	UNA 6x30 M6/.. UNA 6x30 M8/..
Material			UNA			UNA, UNA R, UNA HCR		
Effective anchorage depth	$h_{ef} \geq$	[mm]	25			30		
Installation factor	γ_{inst}	[-]	1,0					
Characteristic bending moment	$M^0_{Rk,s}$	[Nm]	10,7	9,2			13,2	9,2
Partial factor	γ_{Ms}	[-]	1,25					
Maximum load and corresponding spacing - and edge distances								
Characteristic spacing **between** fixing points[1]	$a_1 = a_2 \geq$	[mm]	200					
Minimum spacing **within** a fixing point[1]	$s_{cr} =$		50					
Characteristic resistance F_{Rk} C20/25 to C50/60 (C12/15)	c_{cr}[2] $\geq$ 100 mm	[kN]	3,0 (2,5)		1,5		5,0 (4,0)	
	c_{cr}[2] $\geq$ 50 mm		2,35 (1,9)				2,35 (1,9)	
Partial factor	γ_M	[-]	1,5					
Reduced loads for reduced spacing - and corresponding edge distances								
Characteristic spacing **between** fixing points[1]	$a_1 = a_2 \geq$	[mm]	100					
Minimum spacing **within** a fixing point[1]	$s_{cr} =$		50					
Characteristic resistance F_{Rk} C20/25 to C50/60 (C12/15)	c_{cr}[2] $\geq$ 200 mm	[kN]	3,0 (2,5)		1,5		5,0 (4,0)	
	c_{cr}[2] $\geq$ 50 mm		1,7 (1,2)		1,5 (1,2)		1,7 (1,2)	
Partial factor	γ_M	[-]	1,5					
Reduced loads for minimum spacing - and edge distance								
Characteristic spacing **between** fixing points[1]	$a_1 = a_2 \geq$	[mm]	100					
Minimum spacing **within** a fixing point[1]	$s_{cr} =$		40					
Characteristic resistance F_{Rk} C20/25 to C50/60 (C12/15)	$c_{cr} \geq$ 40 mm	[kN]	1,30 (0,85)					
Partial factor	γ_M	[-]	1,5					

[1] See EN 1992-4:2018, Picture 3.4
[2] Intermediate values for c may be calculated by linear interpolation

Table C2.1: Characteristic resistance of a fixing point[2] under fire exposure in concrete C20/25 to C50/60

Characteristic resistance under fire exposure for all load directions for h_{ef} = 25 mm

Type of anchor	Spacing	Edge distance	Effective anchorage depth	Characteristic resistance $F_{Rk,fi}$ [kN]			
	$s_{cr,fi} \geq$ [mm]	$c_{cr,fi} \geq$ [mm]	$h_{ef} \geq$ [mm]	R 30	R 60	R 90	R 120
UNA 6x25/..	100	50	25	0,6	0,6	0,5	0,3
UNA 6x25 M6/.. UNA 6x25 M8/..					0,35	0,3	
UNA 6x25 OE				0,3	0,2		0,1

Characteristic resistance under fire exposure for all load directions for h_{ef} = 30 mm

Type of anchor	Spacing	Edge distance	Effective anchorage depth	Characteristic resistance $F_{Rk,fi}$ [kN]			
	$s_{cr,fi} \geq$ [mm]	$c_{cr,fi} \geq$ [mm]	$h_{ef} \geq$ [mm]	R 30	R 60	R 90	R 120
UNA 6x30/..	120	60	30	0,9	0,8	0,5	0,3
	100	50		0,6	0,6		
UNA 6x30 M6/.. UNA 6x30 M8/..	120	60			0,35	0,3	
	100	50					
UNA 6x30/..R/HCR	120	60		0,9			0,7
	100	50		0,6			0,5
UNA 6x30 M6/.. R/HCR	120	60		0,9			0,7
UNA 6x30 M8/.. R/HCR	100	50		0,6			0,5
UNA 6x30 OE R/HCR	100	50		0,3	0,2		0,1

Characteristic resistance under fire exposure for all load directions for h_{ef} = 30 + 5[1] mm

Type of anchor	Spacing	Edge distance	Effective anchorage depth	Characteristic resistance $F_{Rk,fi}$ [kN]			
	$s_{cr,fi} \geq$ [mm]	$c_{cr,fi} \geq$ [mm]	$h_{ef} \geq$ [mm]	R 30	R 60	R 90	R 120
UNA 6x30/.. R/HCR	140	70	30+5[1]	1,3		1,0	0,7
UNA 6x30 M6/.. R/HCR UNA 6x30 M8/.. R/HCR	100	50		0,7			0,6

Characteristic resistance under fire exposure for shear load without level arm

Type of anchor	Characteristic resistance $M^0_{Rk,s,fi}$ [Nm]			
	R 30	R 60	R 90	R 120
UNA 6x25 OE/..	0,2	0,1	0,08	0,07
UNA 6x25..; UNA 6x25 .. RB; /..	0,9	0,7	0,4	0,3
UNA 6x25 M6..; UNA 6x25 M8.. / ..	0,3	0,2	0,2	0,2
UNA 6x30..; UNA 6x30 .. RB; /.. R/HCR	4,4	2,0	1,2	0,8
UNA 6x30 M6..; UNA 6x30 M8.. /.. R/HCR	2,8	1,3	0,8	0,5

[1] The effective anchorage depth h_{ef} = 30 + 5 mm is reached by setting the anchor UNA 6x30/… 5 mm deeper with an anchor that is 5 mm longer than required for the actual thickness of the fixture.

[2] A fixing point is defined as a single anchor or a group of 2 or 4 anchors

In case of fire attack from more than one side, the edge distance shall be $c_{fi,min} \geq$ 300 mm

Upat Nail anchor UNA

Performances
Characteristic resistance under fire exposure

Annex C 2