Einfach. Sicher.

DECLARATION OF PERFORMANCE

DoP: 0099
for Upat Nail Anchor UNA **(**Metal anchors for use in concrete (light-duty type)) – **EN**

1. Unique identification code of the product-type: **DoP: 0099**

2. Intended use/es: **For multiple use for non-structural applications in cracked and non-cracked concrete. For use in redundant systems for fixing and/or supporting to concrete elements such as lightweight suspended ceilings, as well as installations, see appendix, especially Annexes B 1 to B 2**

3. Manufacturer: **Upat Vertriebs GmbH, Bebelstraße 11, 79108 Freiburg im Breisgau, Germany**

4. Authorised representative: **--**

5. System/s of AVCP: **2+**

6. European Assessment Document: **ETAG 001; 2011-01**

   European Technical Assessment: **ETA-17/0287; 2017-04-06**

   Technical Assessment Body: **DIBt**

   Notified body/ies: **1343 – MPA Darmstadt**

7. Declared performance/s:

Mechanical resistance and stability (BWR 1), Safety in use (BWR 4)

- **Characteristic values: See appendix, especially Annex C 1**

Safety in case of fire (BWR 2)

- **Reaction to fire: Anchorages satisfy requirements for Class A 1**
- **Characteristic resistance under fire exposure: See appendix, especially Annex C 2**

8. Appropriate Technical Documentation and/or Specific Technical Documentation: ---

The performance of the product identified above is in conformity with the set of declared performance/s. This declaration of performance is issued, in accordance with Regulation (EU) No 305/2011, under the sole responsibility of the manufacturer identified above.

Signed for and on behalf of the manufacturer by:

Andreas Bucher, Dipl.-Ing.

Wolfgang Hengesbach, Dipl.-Ing., Dipl.-Wirtsch.-Ing.

Tumlingen, 2017-04-13

- This DoP has been prepared in different languages. In case there is a dispute on the interpretation the english version shall always prevail.
- The Appendix includes voluntary and complementary information in English language exceeding the (language-neutrally specified) legal requirements.

Specific Part

1 Technical description of the product

The Upat Nail Anchor UNA is an anchor made of galvanised steel, stainless steel (marking "A4") or high corrosion resistant steel (marking "C") which is pushed into a drilled 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 Mechanical resistance and stability (BWR 1)

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

3.2 Safety in case of fire (BWR 2)

Essential characteristic	Performance
Reaction to fire	Anchorages satisfy requirements for Class A1
Resistance to fire	See Annex C 2

3.3 Safety in use (BWR 4)

Essential characteristic	Performance
Characteristic resistance for all load directions	See Annex C 1

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

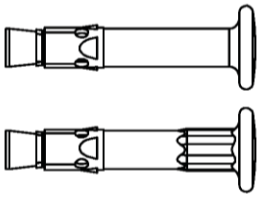
In accordance with guideline for European technical approval ETAG 001, April 2013 used as European Assessment Document (EAD) according to Article 66 Paragraph 3 of Regulation (EU) No 305/2011 the applicable European legal act is: [97/161/EC].

The system to be applied is: 2+

Only for multiple use for non-structural applications according to ETAG 001 Part 6 Annex 1

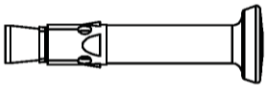
Design types:

Nail head



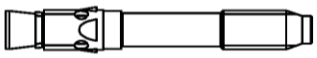
UNA 6x25/..
UNA 6x30/..

Nail head RB



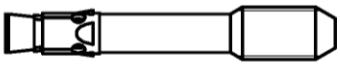
UNA 6x25/.. RB
UNA 6x30/.. RB

Threaded bolt with ISO standard metric thread M6



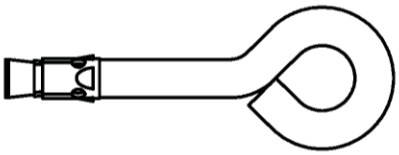
UNA 6x25 M6/..
UNA 6x30 M6/..

Threaded bolt with ISO standard metric thread M8



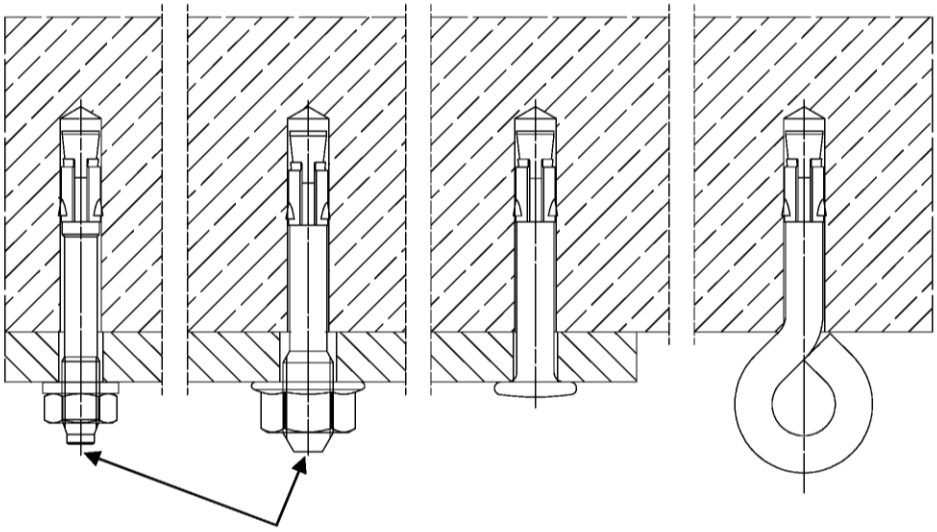
UNA 6x25 M8/..
UNA 6x30 M8/..

UNA OE with eye



UNA 6x25 OE
UNA 6x30 OE

Intended use:

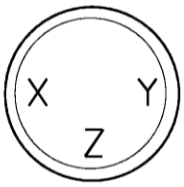


Additional marking only galvanised steel for h_{ef} = 25 mm (centring, bar or points)

Upat Nail Anchor UNA	**Annex A 1**
Product description Product and intended use	

Marking:

Nail head



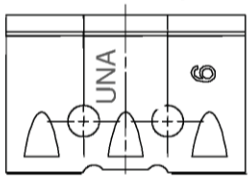
Marking at **X**: "O" for h_{ef} = 25 mm
and "I" for h_{ef} = 30 mm;

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

Marking at **Z**: "A4" or "C" (stainless steel)

Expansion sleeve (or bolt)

e.g.:



For stainless steel additional marking "A4" or "C"

Marking-Codes for **Y**:

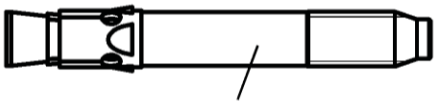
	A	Q	T	N	P	B	L	H	U
t_{fix}	5	10	15	20	25	30	35	40	45

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

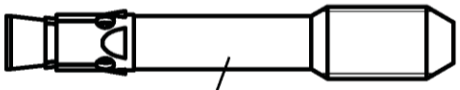
	(A)	F	(B)	(D)	(E)	G	J
t_{fix}	95	100	105	110	115	120	125

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

Shaft (threaded bolt)



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



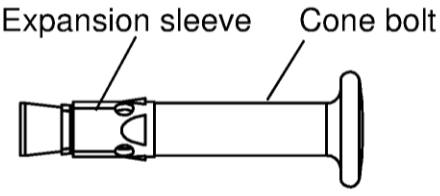
Marking e.g.: 8/10
thread size /thickness of the fixture
Exception: 8/5 no marking

Table A1: Materials

Designation	**Material:** Galvanized steel
Cone Bolt	Cold form steel or free cutting steel (zinc plated) Nominal steel tensile strength: $f_{uk} \leq 1000$ N/mm²
Expansion sleeve	Cold strip, EN 10139:2013 (zinc plated)

Designation	**Material:** A4 (stainless steel)
Cone Bolt	Stainless steel EN 100882: 2014 Nominal steel tensile strength: $f_{uk} \leq 1000$ N/mm²
Expansion sleeve	Stainless steel EN 10088: 2014

Designation	**Material:** C (high corrosion resistant steel)
Cone Bolt	High corrosion resistant steel EN 10088: 2014 Nominal steel tensile strength: $f_{uk} \leq 1000$ N/mm²
Expansion sleeve	Stainless steel EN 10088: 2014



Upat Nail Anchor UNA	**Annex A 2**
Product description Marking and materials	

Specifications of intended use

Anchorages subject to:

- Static and quasi-static loads: All types and all embedment depths
- Fasteners are only to be used for multiple use for non-structural applications, according to ETAG 001 Part 6, Edition January 2011
- Fire exposure: only for concrete C20/25 to C50/60

Base materials:

- Reinforced and unreinforced normal weight concrete according to EN 206-1: 2000
- Strength classes C12/15 to C50/60 according to EN 206-1: 2000
- Uncracked and cracked concrete: All types and all embedment depths

Use conditions (Environmental conditions):

- Structures subject to dry internal conditions (gvz, A4, C) with $h_{ef} \geq 25$ mm
- Structures subject to permanently damp internal condition, if no other particular aggressive conditions exist (A4, C) with $h_{ef} \geq 25$ mm
- Structures subject to external atmospheric exposure including industrial and marine environment, if no particular aggressive conditions exist (A4, C) with $h_{ef} \geq 30$ mm
- Structures subject to external atmospheric exposure and to permanently damp internal condition, if other particular aggressive conditions exist (C) with $h_{ef} \geq 30$ mm

  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:

- Anchorages have to be designed under the responsibility of an engineer experienced in anchorages and concrete work
- Verifiable calculation notes and drawings have to be prepared taking account of the loads to be anchored. The position of the anchor is indicated on the design drawings (e.g. position of the anchor relative to reinforcement or to supports, etc.)
- Anchorages under static or quasi-static actions have to be designed in accordance with:
  - ETAG 001, Annex C, design method C, Edition August 2010 or
  - CEN/TS 1992-4: 2009, design method C
- Anchorages under fire exposure have to be designed in accordance with:
  - EOTA Technical Report TR 020, Edition May 2004
  - CEN/TS 1992-4: 2009
  - It must be ensured that local spalling of the concrete cover does not occur

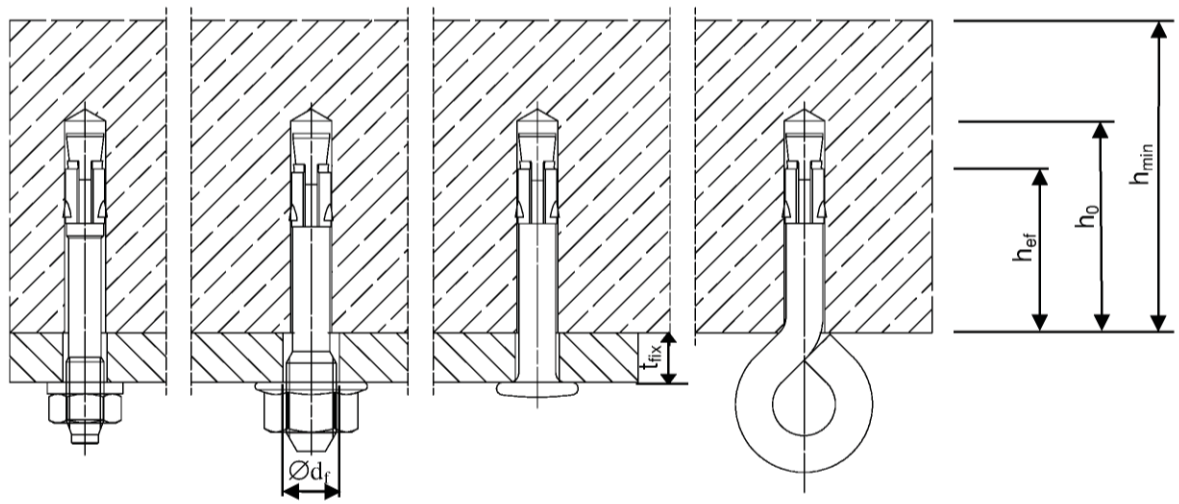
Installation:

- Anchor installation carried out by appropriately qualified personnel and under the supervision of the person responsible for technical matters of the site
- Create drill hole with hammer drill and clean the hole
- Anchor installation such that the effective anchorage depth is complied with. This compliance is ensured, if the admissible thickness of the fixture is kept. For the anchor type UNA 6 x h_{ef} OE the loop has to sit direct at the concrete surface.
- In case of aborted hole: New hole must be drilled at a minimum distance of twice the depth of the aborted hole or closer, if the hole is filled with a high strength mortar and only if the hole is not in the direction of the oblique tensile or shear load

Upat Nail Anchor UNA	**Annex B 1**
Intended Use Specifications	

Table B1: Installation parameters

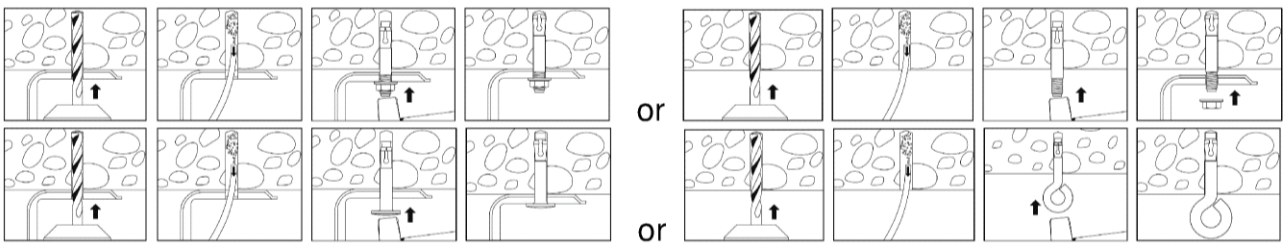
Effective embedment depth	$h_{ef} \geq$	[mm]	25	30
Nominal drill bit diameter	d_0	[mm]	6	
Cutting diameter of drill bit	$d_{cut} \leq$	[mm]	6,4	
Depth of drill hole	$h_0 \geq$	[mm]	31	36
Diameter of clearance hole in the fixture for all UNA except for M8 and OE	$d_f \leq$	[mm]	7	
Diameter of clearance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



Installation instruction:

Push through installation

Pre-positioned installation



Upat Nail Anchor UNA

Intended Use
Installation parameters

Annex B 2

Table C1: 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			galv.			galv., A4, C		
Effective anchorage depth	$h_{ef} \geq$	[mm]	25			30[4]		
Installation safety factor	γ_2	[-]	1,0					
Characteristic bending moment	$M^0_{Rk,s}$ [3]	[Nm]	10,7	9,2			13,2	9,2
Partial safety factor	γ_{Ms}	[-]	1,25					
Maximum load for normal spacing - and edge distances								
Characteristic spacing **between** fixing points[1]	$s_{cr} \geq$	[mm]	200					
Minimum spacing **within** a fixing point[1]	$s_{min} \geq$	[mm]	50					
Characteristic resistance F_{Rk} C20/25 to C50/60 (C12/15)	c_{cr} [2] ≥ 100	[kN]	3,0 (2,5)		1,5		5,0 (4,0)	
	c_{cr} [2] ≥ 50		2,35 (1,9)				2,35 (1,9)	
Reduced loads for reduced spacing - and corresponding edge distances								
Characteristic spacing **between** fixing points[1]	$s_{cr} \geq$	[mm]	100					
Minimum spacing **within** a fixing point[1]	$s_{min} \geq$	[mm]	50					
Characteristic resistance F_{Rk} C20/25 to C50/60 (C12/15)	c_{cr} [2] ≥ 200	[kN]	3,0 (2,5)		1,5		5,0 (4,0)	
	c_{cr} [2] ≥ 50		1,7 (1,2)		1,5 (1,2)		1,7 (1,2)	
Reduced loads for minimum spacing - and edge distance								
Characteristic spacing **between** fixing points[1]	$s_{cr} \geq$	[mm]	100					
Minimum spacing **within** a fixing point[1]	$s_{min} \geq$	[mm]	40					
Characteristic resistance F_{Rk} C20/25 to C50/60 (C12/15)	$c_{cr} \geq 40$	[kN]	1,30 (0,85)					

[1] A fixing point is defined as a single anchor or a group of 2 or 4 anchors
[2] Intermediate values for c may be calculated by linear interpolation
[3] Characteristic bending moment $M^0_{Rk,s}$ according equation (5.5), ETAG 001, Annex C
[4] Exception see B1 – use conditions – point 2

Table C2: Characteristic resistance under fire exposure in concrete C20/25 to C50/60

Fire resistance class 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/..galv.	100	50	25	0,6	0,6	0,5	0,3
UNA 6x25 M6/.. galv. UNA 6x25 M8/.. galv.					0,35	0,3	
UNA 6x25 OE galv.				0,3	0,2		0,1

Fire resistance class 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/..galv.	120	60	30	0,9	0,8	0,5	0,3
	100	50		0,6	0,6		
UNA 6x30 M6/.. galv. UNA 6x30 M8/.. galv.	120	60			0,35	0,3	
	100	50					
UNA 6x30/..A4/C	120	60		0,9			0,7
	100	50		0,6			0,5
UNA 6x30 M6/..A4/C UNA 6x30 M8/..A4/C	120	60		0,9			0,7
	100	50		0,6			0,5
UNA 6x30 OE A4/C	100	50		0,3	0,2		0,1

Fire resistance class 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/..A4/C UNA 6x30 M6/..A4/C UNA 6x30 M8/..A4/C	140	70	30+5[1]	1,3		1,0	0,7
	100	50		0,7			0,6

[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.

In case of fire attack from more than one side, the edge distance shall be ≥ 300 mm