

Approval body for construction products
and types of construction

Bautechnisches Prüfamt

An institution established by the Federal and
Laender Governments



European Technical Assessment

ETA-15/0480
of 22 September 2015

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

UIP Ceiling Nail MDN-IV

Product family
to which the construction product belongs

Metal anchor made of galvanised steel and stainless steel
for multiple use for non-structural applications in concrete

Manufacturer

UIP GmbH & Co. KG
Industriestraße 5
63814 Mainaschaff
DEUTSCHLAND

Manufacturing plant

UIP GmbH & Co. KG, Werk 1

This European Technical Assessment
contains

8 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

Guideline for European technical approval of "Metal
anchors for use in concrete", ETAG 001 Part 6: "Anchors
for multiple use for non-structural applications", Edition
August 2010,
used as European Assessment Document (EAD)
according to Article 66 Paragraph 3 of Regulation (EU)
No 305/2011.

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Page 2 of 8 | 22 September 2015

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Specific Part

1 Technical description of the product

The UIP Ceiling Nail MDN-IV of size 6x45, 6x50 and 6x72 is an anchor made of zinc-plated steel (MDN-IV-SZ) or stainless steel (MDN-IV-A4, MDN-IV-HCR) which is placed into a drilled hole and anchored by load-controlled expansion.

Product and 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	Anchorage satisfy requirements for Class A1
Resistance to fire	See Annex C 1

3.3 Safety in use (BWR 4)

Essential characteristic	Performance
Characteristic resistance in concrete	See Annex C 1
Edge distances and spacing	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+

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 22 September 2015 by Deutsches Institut für Bautechnik

Andreas Kummerow
p. p. Head of Department

beglaubigt:
Tempel

Installed condition for MDN-IV

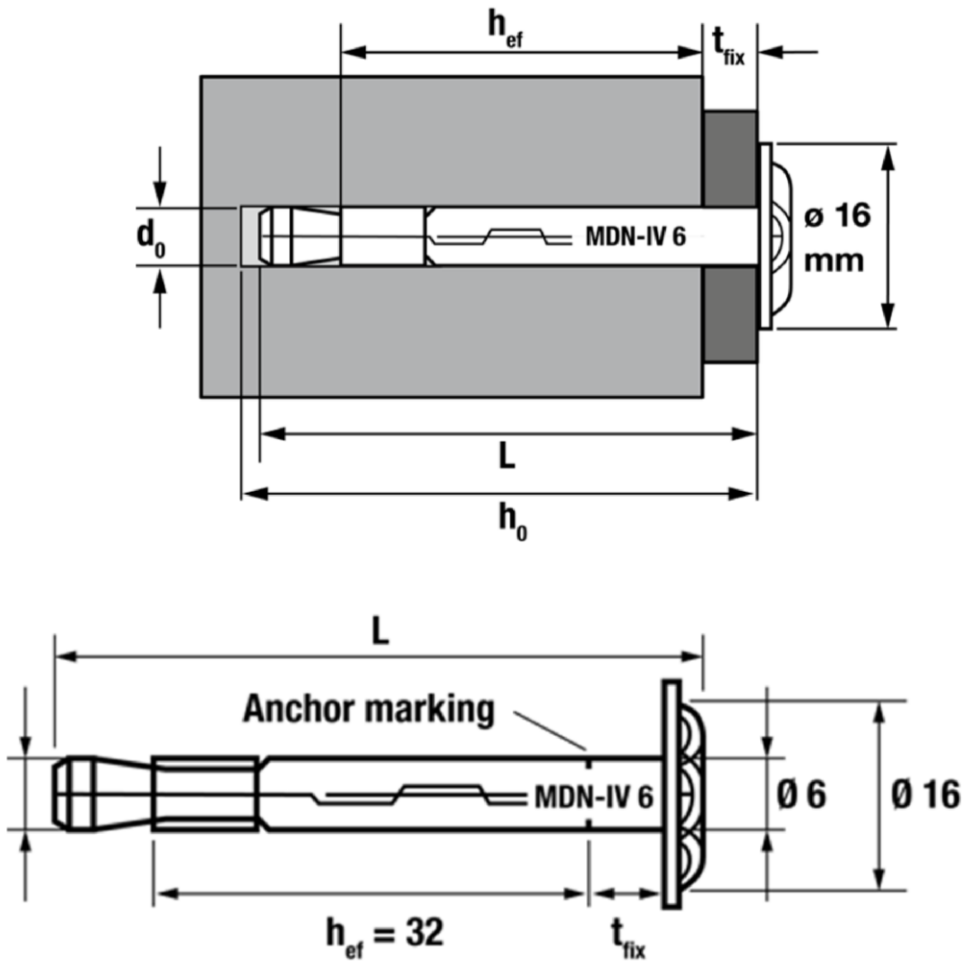


Table A1: Anchor dimension, marking and material

MDN-IV			6 x 45	6 x 50	6 x 72
Marking / embossing			MDN-IV 6/5	MDN-IV 6/10	MDN-IV 6/32
Anchor length	L	[mm]	45	50	72
MDN-IV-SZ, galvanized			H340LAD Z100 / HX420LAD Z100		
MDN-IV-A4, stainless steel			1.4404 / 1.4571		
MDN-IV-HCR, high corrosion resistant steel			1.4529		

MDN-IV-SZ, MDN-IV-A4, MDN-IV-HCR

Product description
Installed condition, anchor types, dimensions and materials

Annex A 1

Specifications of intended use

Anchorage subject to:

- Static and quasi-static loads,
- Used only for multiple use for non-structural applications according to ETAG 001, Part 6,
- Used for anchorages with requirements related to resistance of fire.

Base materials:

- Reinforced or unreinforced normal weight concrete according to EN 206-1:2000-12
- Strength classes C20/25 to C50/60 according to EN 206-1:2000-12
- Non-cracked and cracked concrete

Use conditions (environmental conditions):

- Structures subject to dry internal conditions (all anchor types),
- Structures subject to external atmospheric exposure (including industrial and marine environment) and to permanently damp internal condition, if no particular aggressive conditions exist (anchors of stainless and high corrosion resistant steel),
- Structures subject to particular aggressive conditions (only anchors of high corrosion resistant steel).
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 to be designed under the responsibility of an engineer experienced in anchorages and concrete 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 shall be 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 are designed in accordance with:
 - ETAG 001, Annex C, design method C, Edition August 2010.
- Anchorages under fire exposure are designed in accordance with:
 - EOTA Technical Report TR 020, Edition May 2004.

Installation:

- Hole drilling by hammer drilling,
- Anchor installation has to be carried out by appropriately qualified personnel and under the supervision of the person responsible for technical matters of the site,
- The anchor may only be set once.

MDN-IV-SZ, MDN-IV-A4, MDN-IV-HCR

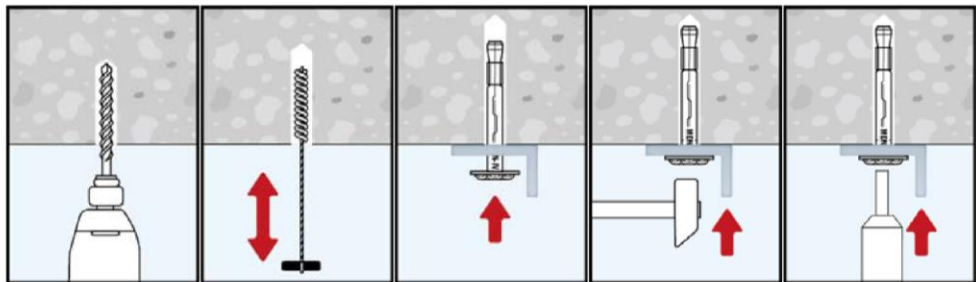
Intended use
Specifications

Annex B 1

Table B1: Installation parameters

MDN-IV			6 x 45	6 x 50	6 x 72
Nominal drill hole diameter	d_o	[mm]	6	6	6
Drill hole depth	$h_o \geq$	[mm]	$48 - t_{fix}$	$53 - t_{fix}$	$75 - t_{fix}$
Effective anchorage depth	$h_{ef} \geq$	[mm]	32	32	32
Minimum thickness of concrete member	for $t_{fix} > 20\text{mm}$	h_{min}	-	-	80
	for $t_{fix} \leq 20\text{mm}$				
Maximum thickness of fixture	$\max t_{fix}$	[mm]	5	10	32
Diameter of clearance hole in the fixture	$d_f \leq$	[mm]	7,5		

Installation instructions:



drilling
of hole

cleaning
of drill hole

setting anchor
through fixture

driving in with
a hammer

or driving in with
a setting tool

MDN-IV-SZ, MDN-IV-A4, MDN-IV-HCR

Intended use

Installation parameters, edge distance and spacing,
Installation instructions

Annex B 2

Table C1: Characteristic values of resistance in concrete in all load directions without lever arm (Design according to ETAG 001, Annex C, design method C)

MDN-IV			6 x 45 6 x 50 6 x 72	
All load directions			MDN-IV-SZ	MDN-IV-A4 MDN-IV-HCR
Characteristic resistance in concrete C20/25 to C50/60	F_{Rk}	[kN]	3,0	4,0
Partial safety factor	γ_M	[-]	1,5	2,25
Spacing	s_{cr}	[mm]	200	
Edge distance	c_{cr}	[mm]	100	

Table C2: Characteristic values under fire exposure in concrete C20/25 to C50/60 for all load directions without lever arm (Design according to EOTA TR 020)

Fire resistance class	MDN-IV			MDN-IV-SZ	MDN-IV-A4 MDN-IV-HCR
R 30	Characteristic resistance	$F_{Rk,fi}$	[kN]	0,35	1,0
R 60				0,25	1,0
R 90				0,15	0,6
R 120				0,1	0,3
R 30 - R 120	Spacing	$s_{cr,fi}$	[mm]	200	
	Edge distance ¹⁾	$c_{cr,fi}$	[mm]	100	

¹⁾ The edge distance shall be ≥ 300 mm if there is a fire to more than one side of the concrete member

MDN-IV-SZ, MDN-IV-A4, MDN-IV-HCR

Performances

Characteristic resistances in concrete
Design method C according to ETAG 001, Annex C

Annex C 1