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Designated according to Article29 of Regulation (EU) Nº 305/2011

Member of EOTA
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European Technical Assessment

ETA 24/1214 of 11/12/2024

English translation prepared by IETcc. Original version in Spanish language

General Part

Technical Assessment Body issuing the ETA designated according to Art. 29 of Regulation (EU) 305/2011:	Instituto de Ciencias de la Construcción Eduardo Torroja (IETcc)
Trade name of the construction product	**Ceiling anchor ANCU+**
Product family to which the construction product belongs	Anchor made of galvanized steel for use in concrete for redundant no structural systems.
Manufacturer	**Index - Técnicas Expansivas S.L.** Segador 13. 26006 Logroño (La Rioja) Spain. website: www.indexfix.com
Manufacturing plants	Index plant 2
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	European Assessment Document 330747-00-0601 “Fasteners for use in concrete for redundant non-structural systems”, edition May 2018

English translation prepared by IETcc

This European Technical Assessment is issued by the Technical Assessment Body in its official language. Translations of this European Technical Assessment in other languages shall fully correspond to the original issued document and should be identified as such.

This European Technical Assessment may be withdrawn by the issuing Technical Assessment Body, in particular pursuant to information by the Commission according to article 25 (3) of Regulation (EU) No 305/2011.

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SPECIFIC PART

1. Technical description of the product

The Index ceiling anchor ANCU+ in diameter 6 is an anchor made of galvanized steel. The anchor is installed into a predrilled cylindrical hole of diameter 6, hammering the anchor´s shank until reach the installation depth by means of controlled deformation. The anchorage is characterized by friction between the anchor and the inner side of the drilled hole in the concrete member.

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 mean to 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	Anchorages satisfy requirements for class A1
Resistance to fire	See annex C2

3.2 Safety in use (BWR 4)

Essential characteristic	Performance
Characteristic resistance under static and cuasi-static loads	See annex C2

4. Assessment and Verification of Constancy of Performances (hereinafter AVCP) system applied, with reference to its legal base

The applicable European legal act for the system of Assessment and Verification of Constancy of Performances (see annex V to Regulation (EU) No 305/2011) is 97/161/EC.

The system to be applied is 2+.

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

The technical details necessary for the implementation of the AVCP system are laid down in the quality plan deposited at Instituto de ciencias de la construcción Eduardo Torroja.

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On behalf of the Instituto de Ciencias de la Construcción Eduardo Torroja
Madrid, 11th of December 2024

Mr. Ángel Castillo Talavera
Director

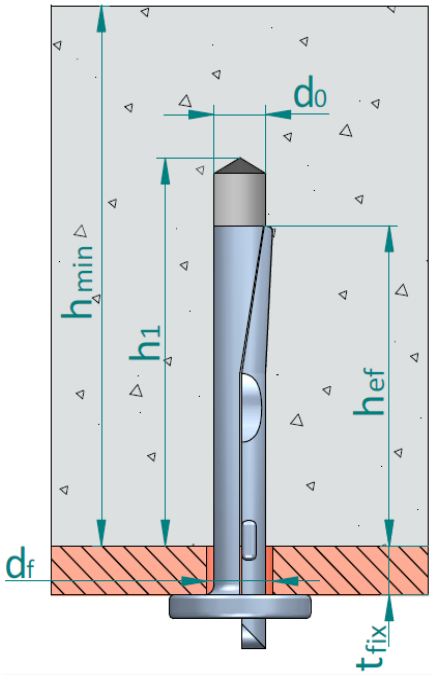
Product and installed condition

ANCU+ ceiling anchor:

Identification mark

Identification mark:

- Anchor type: ANCU+
- Manufacturer logo: NDX
- Mark: for example 6x40



Anchor dimensions	6
d: diameter [mm]	6
L: length [mm]	40 ÷ 100

d_0: Nominal diameter of drill bit
d_f: Fixture clearance hole diameter
h_{ef}: Effective anchorage depth
h_1: Depth of drilled hole
h_{min}: Minimum thickness of concrete member
t_{fix}: Fixture thickness

Table A1: materials

Item	Designation	Material for ANCU+
1	Anchor body	Carbon steel wire rod, galvanized ≥ 5 µm ISO 4042 Zn5
2	Shank	Carbon steel wire rod, galvanized ≥ 5 µm ISO 4042 Zn5

ANCU+ ceiling anchor	**Annex A1**
Product description Installed condition and materials	

Specifications of intended use

Anchorages subjected to:

- Static or quasi static loads for redundant non-structural systems.
- Use for anchorages with requirements related to resistance of fire.
- The anchor may only be used if in the design and installation specifications for the fixture the excessive slip or failure of one anchor will not result in a significant violation of the requirements on the fixture in the serviceability and ultimate state.

Base materials:

- Reinforced or unreinforced normal weight concrete without fibres according to EN 206-1:2013+A2:2021
- Strength classes C20/25 to C50/60 according to EN 206-1:2013+A2:2021.
- Cracked or uncracked concrete

Use conditions (environmental conditions):

- Anchorages subjected to dry internal conditions.

Design:

- Anchorages are designed under the responsibility of an engineer experienced in anchorages and concrete.
- Verifiable calculation rules and drawings are prepared taking into 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 are designed for design method B in accordance with EN 1992-4:2018
- Anchorages under fire exposure are designed in accordance to EN 1992-4:2018. It must be ensured that local spalling of the concrete cover does not occur.

Installation:

- Hole drilling by rotary plus hammer mode.
- Anchor installation carried out by appropriately qualified personal and under the supervision of the person responsible for technical matters of the site.
- In case of aborted hole: new drilling at a minimum distance away of twice the depth of aborted hole or smaller distance if the aborted hole is filled with high strength mortar and if under shear or oblique tension load it is not the direction of the load application.
- Anchor expansion by impact on the shank. The anchor is properly set, if no further driving by impact is possible and the excess of the shank is at maximum 3,5 mm.
- The anchor may only be set once.

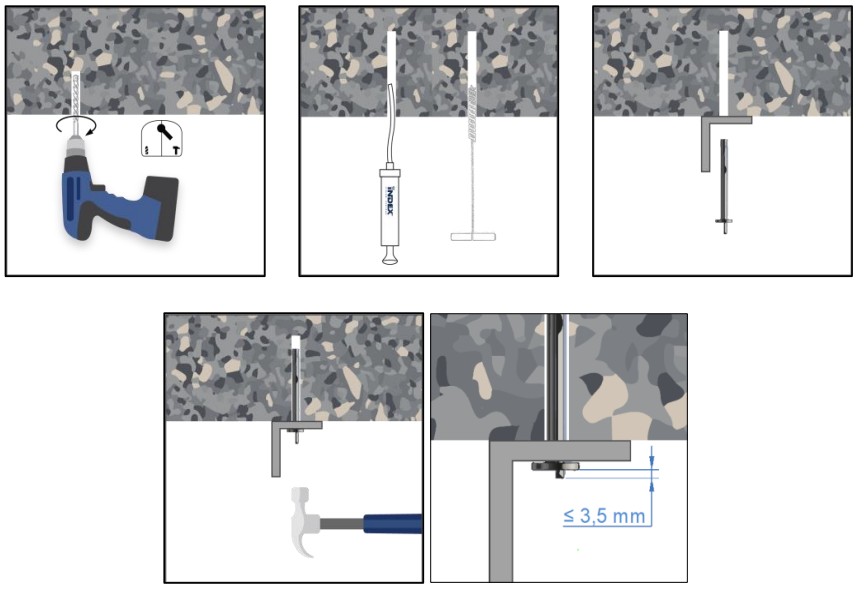
ANCU+ ceiling anchor	**Annex B1**
Intended use Specifications	

Table C1: Installation parameters for ANCU+ ceiling anchor

Installation parameters			Performances
			ANCU+ 6
d_0	Nominal diameter of drill bit:	[mm]	6
d_f	Fixture clearance hole diameter:	[mm]	7
h_{min}	Minimum thickness of concrete member:	[mm]	80
h_1	Depth of drilled hole ≥	[mm]	40
h_{nom}	Installation embedment	[mm]	35
h_{ef}	Effective anchorage depth ≥	[mm]	35
t_{fix}	Thickness of fixture:	[mm]	L – 35 [1)]
s_{cr}	Critical spacing	[mm]	70
c_{cr}	Critical edge distance	[mm]	70
s_{min}	Minimum spacing:	[mm]	70
c_{min}	Minimum edge distance:	[mm]	70

[1)] L = Total anchor length

Installation process



ANCU+ ceiling anchor	
Performances Installation parameters and installation procedure	**Annex C1**

Table C2: Essential characteristics in concrete to loads of design method C according to EN 1992-4 for ANCU+ ceiling anchor

Characteristic values of resistance to loads of design method C			Performances ANCU+ 6
Any load direction			
F^0_{Rk}	Characteristic resistance in C20/25 to C50/60 concrete:	[kN]	5,0
γ_{inst}	Installation safety factor: 1)	[-]	1,0
Shear loads: steel failure with lever arm			
$M^0_{Rk,s}$	Characteristic bending moment	[Nm]	4,57
γ_{Ms}	Partial safety factor: 1)	[-]	1,25

1) in absence of other national regulations

Table C3: Essential characteristics under fire exposure in concrete in any load direction according to EN 1992-4 for ANCU+ ceiling anchor

Characteristic resistance under fire exposure in concrete C20/25 to C50/60 in any load direction				Performances ANCU+ 6
R30	Characteristic resistance	$F^0_{Rk,fi,30}$ 1)	[kN]	0,25
R60	Characteristic resistance	$F^0_{Rk,fi,60}$ 1	[kN]	0,23
R90	Characteristic resistance	$F^0_{Rk,fi,90}$ 1)	[kN]	0,18
R120	Characteristic resistance	$F^0_{Rk,fi,120}$ 1)	[kN]	0,13
R30	Characteristic bending moment	$M^0_{Rk,s,fi,30}$ 1)	[Nm]	0,09
R60	Characteristic bending moment	$M^0_{Rk,s,fi,60}$ 1)	[Nm]	0,08
R90	Characteristic bending moment	$M^0_{Rk,s,fi,90}$ 1)	[Nm]	0,06
R120	Characteristic bending moment	$M^0_{Rk,s,fi,120}$ 1)	[Nm]	0,05
R30 to R120	Minimum spacing	$s_{min,fi}$	[mm]	70
	Minimum edge distance	$c_{min,fi}$ 2)	[mm]	70

1) in absence of other national regulations the partial safety factor for resistance under fire exposure $\gamma_{M,fi}$ =1.0 is recommended.

2) If fire attack is from more than one side, the design method may be taken if edge distance of the anchor is $c \geq 300$

ANCU+ ceiling anchor	**Annex C2**
Performances Essential characteristics in concrete Essential characteristics under fire exposure	