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IZJAVA O LASTNOSTIH

DoP Št.: **MKT-1.2-301_sl**

- ✧ **Enotna identifikacijska oznaka tipa proizvoda:** Sidro za nohte N
- ✧ **Predvidena uporaba:** Mozniki za sidranje v beton za odvečne nenosilne sisteme, glej Priloga/Annex B
- ✧ **Proizvajalec:** MKT Metall-Kunststoff-Technik GmbH & Co.KG
Auf dem Immel 2
67685 Weilerbach
- ✧ **Sistemi ocenjevanja in preverjanja nespremenljivosti lastnosti:** 2+
- ✧ **Evropski ocenjevalni dokument:** **EAD 330747-00-0601**
Evropska tehnična ocena: **ETA-11/0240, 21.12.2021**
Organ za tehnično ocenjevanje: DIBt, Berlin
Priglašeni organi: NB 2873 – Technische Universität Darmstadt
- ✧ **Navedene lastnosti:**

| Bistvene značilnosti | Lastnosti |
|---|----------------------|
| Varnost pri požaru (BWR 2) | |
| Ogenj vedenje | Razred A1 |
| Požarna odpornost | Priloga/Annex C2 |
| Varnost pri uporabi (BWR 4) | |
| Značilna odpornost za vse smeri obremenitve in vse načine odpovedi za poenostavljeno metodo načrtovanja | Priloga/Annex B2, C1 |
| Trajnost | Priloga/Annex B1 |

Lastnosti proizvoda, navedenega zgoraj, so v skladu z navedenimi lastnostmi. Za izdajo te izjave o lastnostih je v skladu z Uredbo (EU) št. 305/2011 odgovoren izključno proizvajalec, naveden zgoraj.

Podpisal za in v imenu proizvajalca:

Stefan Weustenhagen
(Generalni direktor)
Weilerbach, 21.12.2021

p.p.

Dipl.-Ing Detlef Bigalke
(Vodja razvoja izdelkov)



Izvirnik te izjave o uspehu je bil napisan v nemškem jeziku. V primeru odstopanj v prevodu je nemška različica veljavna.

Specifications of intended use

| Nail Anchor | N6 Thread M6 | N8 Thread M6 | N-K Nail head | N-M Coupling nut | N-O Loop |
|---|------------------------|--------------------|------------------|------------------------|-------------|
| Static or quasi-static action | ✓ | | | | |
| Fire exposure | R30 / R60 / R90 / R120 | | | | |
| Cracked or uncracked concrete | ✓ | | | | |
| Strength classes C12/15 to C50/60 according to EN 206:2013 + A1:2016 | ✓ | | | | |
| Compacted, reinforced or unreinforced normal weight concrete, without fibres according to EN 206:2013 + A1:2016 | ✓ | | | | |

| Use conditions (environmental conditions): | Effective anchorage depth |
|---|---|
| <ul style="list-style-type: none"> Structures subject to dry internal conditions (zinc plated steel, stainless steel or high corrosion resistant steel) | $h_{ef} \geq 30\text{mm}$ and $h_{ef,red} \geq 25\text{mm}$ |
| <ul style="list-style-type: none"> Structures subject to permanently damp internal conditions, if no particular aggressive conditions exist (stainless steel or high corrosion resistant steel) | $h_{ef} \geq 30\text{mm}$ and $h_{ef,red} \geq 25\text{mm}$ |
| <ul style="list-style-type: none"> Structures subject to external atmospheric exposure including industrial and marine environment, if no particular aggressive conditions exist (stainless steel or high corrosion resistant steel) | $h_{ef} \geq 30\text{mm}$ |
| <ul style="list-style-type: none"> Structures subject to external atmospheric exposure and to permanently damp internal conditions, if other particular aggressive conditions exist (high corrosion resistant steel) | $h_{ef} \geq 30\text{mm}$ |

Note: Particular aggressive conditions are e.g. permanent, alternating immersion in seawater or the splash zone of seawater, chloride atmosphere of indoor pools or atmosphere with extreme chemical pollution (e.g. in desulphurization plants or road tunnels where de-icing materials are used.)

Design:

- Fastenings are designed under the responsibility of an engineer experienced in fastenings and concrete work.
- Verifiable calculation notes and drawings are prepared taking account of the loads to be fastened. The position of the fastener is indicated on the design drawings (e.g. position of the fastener relative to reinforcement or to supports, etc.).
- Design of fastenings according to EN 1992-4:2018, simplified design method C
- Fasteners are only to be used for redundant non-structural systems.

Installation:

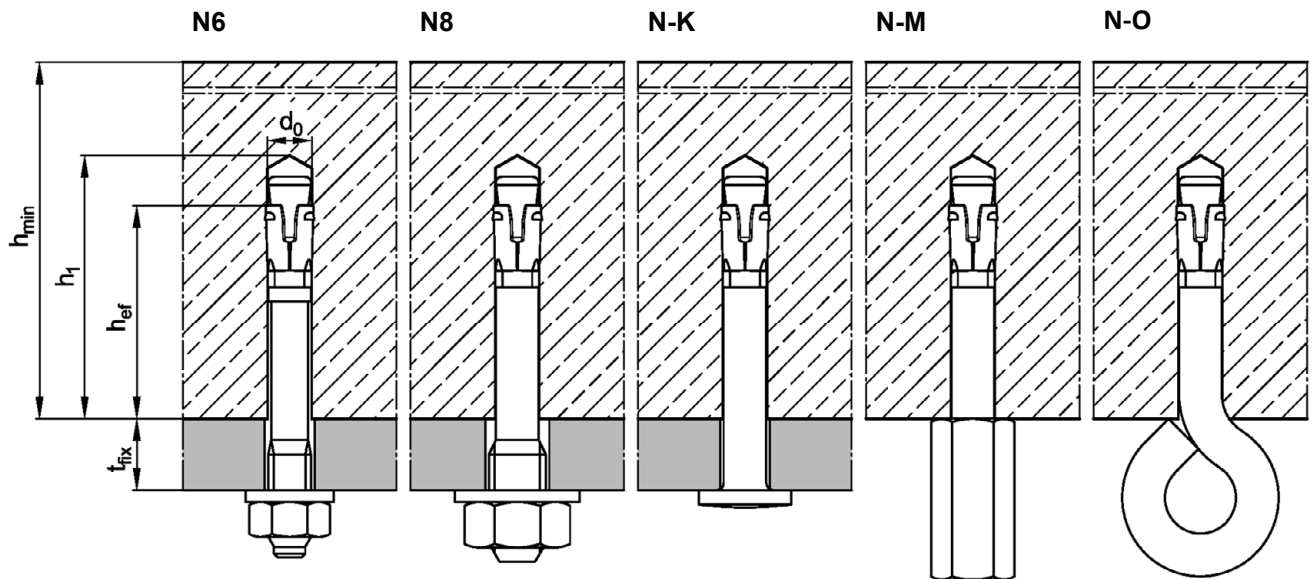
- Drill hole by hammer drilling or vacuum drilling.
- Installation only as supplied by the manufacturer, without replacement of individual parts.
- Fastener installation such that the effective setting depth is complied with. This compliance is ensured, if the admissible thickness of fixture is kept or the loop of Nail Anchor N-O rests on the concrete surface.

| | |
|-----------------------------|-----------------|
| Nail Anchor N | Annex B1 |
| Intended Use Specifications | |

Table B1: Installation parameters

| Fastener type | | N6 N-K N-O | N8 N-M | N6 N-K N-O | N8 N-M | |
|--|-----------------|------------------|------------------|------------------|-----------|---|
| Effective anchorage depth | $h_{ef} \geq$ | [mm] | 25 ¹⁾ | | 30 | |
| Nominal drill hole diameter | d_0 | [mm] | 6 | | 6 | |
| Cutting diameter to drill bit | $d_{cut} \leq$ | [mm] | 6,40 | | 6,40 | |
| Depth of drill hole | $h_1 \geq$ | [mm] | 35 | | 40 | |
| Diameter of clearance hole in the fixture | $d_f \leq$ | [mm] | 7 | 9 | 7 | 9 |
| Maximum tightening torque (N 6 and N 8) | $T_{inst} \leq$ | [Nm] | 4 | | 4 | |
| Minimum member thickness | h_{min} | [mm] | 80 | | 80 | |

¹⁾ Internal use only



Nail Anchor N

Intended Use
Installation parameters

Annex B2

Installation instructions

| All fastener types | | | | |
|---|----------------------------------|---|----------------------------|--------------------|
| 1 | | Drill hole perpendicular to the concrete surface by hammer drilling or vacuum drilling. | | |
| 2 | | Blow out dust. Alternatively, vacuum clean down to the bottom of the hole. | | |
| | N6 / N8 Thread M6 / M8 | N-K Nail head | N-M Coupling nut | N-O Loop |
| 3 | | - | | - |
| Check position of nut. | | | | |
| 4 | | | | |
| Drive in fastener. | | | | |
| 5 | | | | |
| Apply installation torque $T_{inst} \leq 4 \text{ Nm}$. | | Installation condition | | |

Nail Anchor N

Intended Use
Installation instructions

Annex B3

Table C1: Characteristic resistance for a fixing point ¹⁾, all directions, design method C

| Fastener type | | | N6 | N8 N-K N-M | N-O | N6 | N8 N-K N-M | N-O |
|---|------------------|------------------------|------|------------------|---------------|-----|------------------|---------------|
| Effective anchorage depth | | h_{ef} [mm] | 25 | | | 30 | | |
| Optimized for maximum load | | | | | | | | |
| Characteristic resistance | C12/15 | F_{Rk} [kN] | 3,0 | 3,0 | 1,5 | 4,0 | 4,0 | 1,5 |
| | C20/25 to C50/60 | | 4,5 | 4,5 | 1,5 | 5,9 | 5,9 | 1,5 |
| Respective spacing between fixing points ^{1) 2)} | | s_{cr} [mm] | 100 | | | | | |
| | | for $c_{cr} \geq$ [mm] | 200 | | | | | |
| Respective edge distance ²⁾ | | c_{cr} [mm] | 100 | | | | | |
| | | for $s_{cr} \geq$ [mm] | 200 | | | | | |
| Partial factor | | γ_M | 1,5 | | | | | |
| Optimized for minimum edge distance | | | | | | | | |
| Characteristic resistance | C12/15 | F_{Rk} [kN] | 1,5 | 1,5 | 1,5 | 2,0 | 2,0 | 1,5 |
| | C20/25 to C50/60 | | 2,0 | 2,0 | 1,5 | 2,5 | 2,5 | 1,5 |
| Respective spacing between fixing points ^{1) 2)} | | c_{cr} [mm] | 50 | | | | | |
| | | for $s_{cr} \geq$ [mm] | 100 | | | | | |
| Partial factor | | γ_M | 1,5 | | | | | |
| Shear load with lever arm | | | | | | | | |
| Characteristic bending resistance, steel, zinc plated | | $M^0_{Rk,s}$ [Nm] | 9,2 | 12,7 | ³⁾ | 9,2 | 12,7 | ³⁾ |
| Characteristic bending resistance, stainless steel A4 / HCR | | $M^0_{Rk,s}$ [Nm] | 9,2 | 13,5 | ³⁾ | 9,2 | 13,5 | ³⁾ |
| Partial factor | | γ_{Ms} | 1,25 | | | | | |

¹⁾ A fixing point is defined as:

- Single fastener
- Fastener group with a minimum spacing s of $50 \text{ mm} \leq s < s_{cr}$

If the spacing in a fixing point is greater than or equal to the respective spacing in this table, the characteristic resistances apply to every single fastener.

²⁾ Intermediate values can be linearly interpolated

³⁾ No performance assessed.

Nail Anchor N

Performances
Characteristic resistance

Annex C1

Table C2: Characteristic resistance for a fixing point ¹⁾ under fire exposure in concrete C20/25 to C50/60, design method C

| Fire resistance class | | | Fastener type | | | | | | | | |
|---|--|----------------------------|---------------|-----|-------------------|-----|---------------|-----|-------------------|-----|---------------|
| | | | N6 N8 | N-K | N-M ³⁾ | N-O | N6 N8 | N-K | N-M ³⁾ | N-O | |
| Effective anchorage depth | | h_{ef} | [mm] | | 25 | | | | 30 | | |
| Load in any direction | | | | | | | | | | | |
| R 30 | Characteristic resistance, steel zinc plated | $F_{Rk,fi}$ | [kN] | 0,6 | 0,6 | 0,6 | 0,2 | 0,9 | 0,9 | 0,8 | - |
| R 60 | | | | 0,6 | 0,6 | 0,6 | 0,2 | 0,7 | 0,8 | 0,7 | - |
| R 90 | | | | 0,5 | 0,6 | 0,6 | 0,1 | 0,5 | 0,6 | 0,6 | - |
| R 120 | | | | 0,4 | 0,5 | 0,5 | 0,1 | 0,4 | 0,5 | 0,6 | - |
| R 30 | Characteristic resistance, stainless steel A4 / HCR | $F_{Rk,fi}$ | [kN] | 0,6 | 0,6 | 0,6 | 0,2 | 0,9 | 0,9 | 0,8 | 0,2 |
| R 60 | | | | 0,6 | 0,6 | 0,6 | 0,2 | 0,9 | 0,9 | 0,7 | 0,2 |
| R 90 | | | | 0,5 | 0,6 | 0,6 | 0,1 | 0,9 | 0,9 | 0,6 | 0,1 |
| R 120 | | | | 0,4 | 0,5 | 0,5 | 0,1 | 0,7 | 0,7 | 0,6 | 0,1 |
| R 30 - R 120 | Edge distance | $C_{cr,fi}$ | [mm] | 50 | | | | 50 | | | |
| | Spacing | $S_{cr,fi}$ | [mm] | 100 | | | | 100 | | | |
| Shear load with lever arm | | | | | | | | | | | |
| R 30 | Characteristic resistance, steel zinc plated | $M^0_{Rk,fi}$ | [Nm] | 0,7 | 1,0 | 0,7 | ²⁾ | 0,7 | 1,0 | 0,7 | ²⁾ |
| R 60 | | | | 0,5 | 0,8 | 0,7 | ²⁾ | 0,5 | 0,8 | 0,7 | ²⁾ |
| R 90 | | | | 0,4 | 0,5 | 0,6 | ²⁾ | 0,4 | 0,5 | 0,6 | ²⁾ |
| R 120 | | | | 0,3 | 0,4 | 0,5 | ²⁾ | 0,3 | 0,4 | 0,5 | ²⁾ |
| R 30 | Characteristic resistance, stainless steel A4 / HCR | $M^0_{Rk,fi}$ | [Nm] | 1,4 | 2,1 | 0,7 | ²⁾ | 1,4 | 2,1 | 0,7 | ²⁾ |
| R 60 | | | | 1,1 | 1,5 | 0,7 | ²⁾ | 1,1 | 1,5 | 0,7 | ²⁾ |
| R 90 | | | | 0,7 | 1,0 | 0,6 | ²⁾ | 0,7 | 1,0 | 0,6 | ²⁾ |
| R 120 | | | | 0,5 | 0,7 | 0,5 | ²⁾ | 0,5 | 0,7 | 0,5 | ²⁾ |
| If the fire attack is from more than one side, the edge distance shall be ≥ 300 mm | | | | | | | | | | | |

¹⁾ A fixing point is defined as:

- Single fastener,
- Fastener group with a minimum spacing s of $50 \text{ mm} \leq s < s_{cr}$

If the spacing in a fixing point is greater than or equal to the respective spacing in this table, the characteristic resistances apply to every single fastener

²⁾ No performance assessed

³⁾ Only in connection with threaded rods M8, M10 or M12 minimum strength class 5.8.

Nail Anchor N

Performances
Characteristic resistance under fire exposure

Annex C2