



...eine starke Verbindung

SUORITUSTASOILMOITUS

DoP Nro: **MKT-1.1-500_fi**

- ✧ **Tuotetyypin yksilöllinen tunniste:** **Raskas kuorma ankkuri SL**
- ✧ **Aiottu käyttötarkoitus (aiotut käyttötarkoitukset):** Momenttia säätelevä ankkurointi ankkuri, joka on valmistettu galvanoituja terästä M10 kokoon, jota käytetään epäsäännöllisessä betonissa, katso liite / Annex B
- ✧ **Valmistaja:** MKT Metall-Kunststoff-Technik GmbH & Co.KG
Auf dem Immel 2
67685 Weilerbach
- ✧ **Suoritustason pysyvyyden arvioinnissa ja varmentamisessa käytetty järjestelmä/käytetyt järjestelmät:** 1
- ✧ **Eurooppalainen arviointiasiakirja:** **EAD 330232-00-0601**
Eurooppalainen tekninen arviointi: **ETA-08/0230, 14.05.2018**
Teknisestä arvioinnista vastaava laitos: DIBt, Berlin
Ilmoitettu laitos/ilmoitetut laitokset: NB 2873 – Technische Universität Darmstadt

✧ **Ilmoitettu suoritusaste/ilmoitetut suoritusasteet:**

| Olellaiset ominaisuudet | Suoritusaste |
|--|--|
| Mekaaninen lujuus ja vakaus (BWR 1) | |
| Karakteristiset vastukset staattisille ja kvasi-staattisille kuormille, Vuorossa | Liite/Annex C1 – C2 |
| Ominaisvastukset seismisten suorituskykyluokkien C1 + C2 osalta, Vuorossa | NPD (No Performance Determined) Suoritusastea ei ole määritetty |
| Paloturvallisuus (BWR 2) | |
| Palokäyttäytyminen | Luokka A1 |
| Palonkestävyys | NPD (No Performance Determined) Suoritusastea ei ole määritetty |

Edellä yksilöidyn tuotteen suoritusaste on ilmoitettujen suoritusasteojen joukon mukainen. Tämä suoritusasteilmoitus on asetuksen (EU) N:o 305/2011 mukaisesti annettu edellä ilmoitetun valmistajan yksinomaisella vastuulla.

Valmistajan puolesta allekirjoittanut:


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Weilerbach, 01.01.2021

p.p.


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(Tuotekehityksen johtaja)



Tämän suoritusasteilmoituksen alkuperäinen teksti on kirjoitettu saksaksi. Jos käännökset poikkeavat toisistaan, saksankielinen versio on pätevä.

Specifications of intended use

Anchorage subject to:

- Static or quasi-static action

Base materials:

- Reinforced or unreinforced normal weight concrete without fibres of strength classes C20/25 to C50/60 according to EN 206:2013
- Uncracked concrete

Use conditions (Environmental conditions):

- Structures subject to dry internal conditions (zinc plated steel).

Design:

- Anchorages are designed under the responsibility of an engineer experienced in anchorages and concrete work.
- Verifiable calculation notes and drawings are 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 are designed according to FprEN 1992-4: 2016 and EOTA Technical Report TR 055.

Installation:

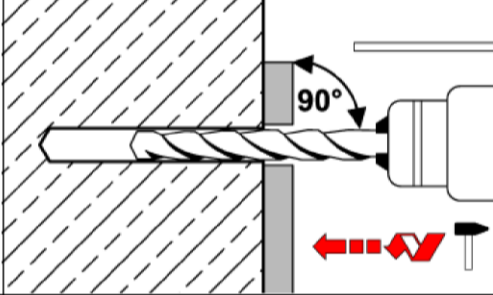
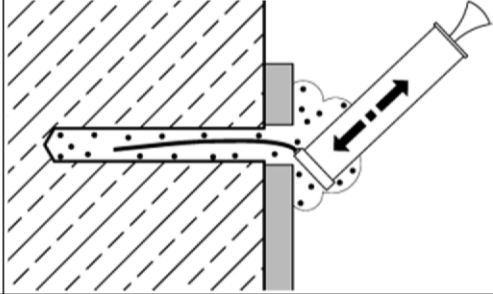
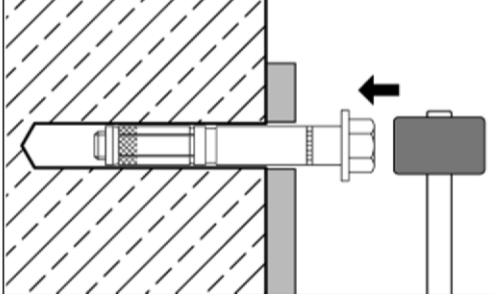
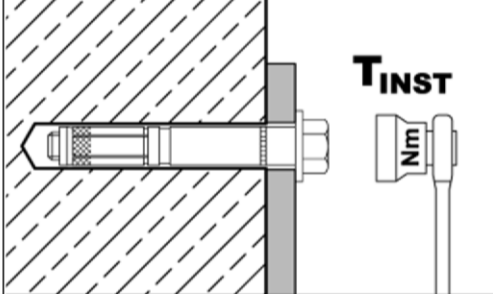
- Anchor installation carried out by appropriately qualified personnel and under the supervision of the person responsible for technical matters of the site.
- Positioning of the drill holes without damaging the reinforcement
- In case of aborted hole: new drilling at a minimum distance away of twice the depth of the aborted hole or smaller distance if the aborted drill hole is filled with high strength mortar and if under shear or oblique tension load it is not in the direction of load application.
- Anchor installation such that the effective anchorage depth is complied with. This compliance is ensured, when the embedment mark of the anchor does no more exceed the concrete surface
- Drilling by hammer drill bit (use of vacuum drill bit is admissible)

Highload Anchor SL

Intended use
Specifications

Annex B1

Installation instructions

| | | |
|---|---|---|
| 1 |  | <p>Drill hole perpendicular to concrete surface. Using a vacuum drill bit, proceed with step 3.</p> |
| 2 |  | <p>Blow out dust. Alternatively vacuum clean down to the bottom of the hole.</p> |
| 3 |  | <p>Drive in anchor.</p> |
| 4 |  | <p>Apply tightening torque T_{inst} by using torque wrench.</p> |

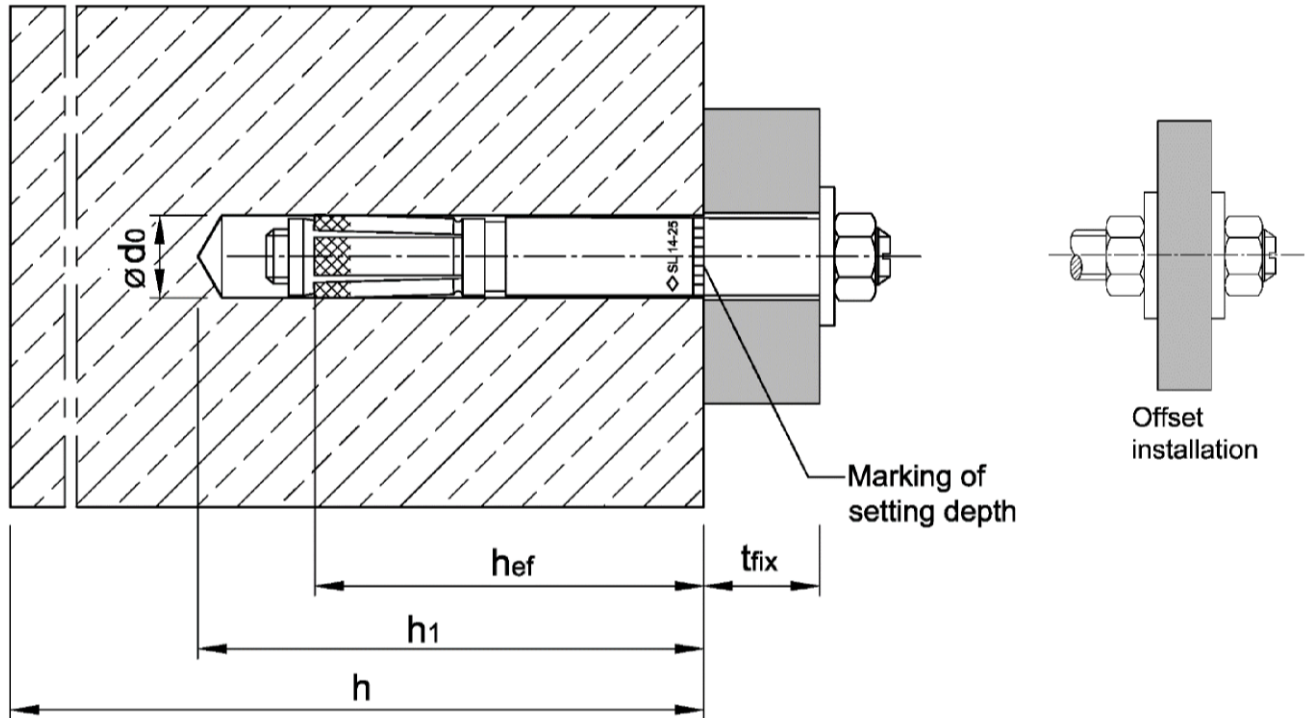
Highload Anchor SL

Intended use
Installation instructions

Annex B2

Table B1: Installation parameters

| Anchor size | | | 14/M10 |
|--|----------------|------|--------|
| Size of thread | | | M10 |
| Effective anchorage depth | h_{ef} | [mm] | 65 |
| Nominal diameter of drill bit | d_0 | [mm] | 14 |
| Cutting diameter of drill bit | $d_{cut} \leq$ | [mm] | 14,5 |
| Depth of drill hole | $h_1 \geq$ | [mm] | 85 |
| Diameter of clearance hole in the fixture mounted on distance sleeve | $d_f \leq$ | [mm] | 16 |
| Diameter of clearance hole in the fixture mounted on threaded bolt | $d_f \leq$ | [mm] | 12 |
| Installation torque | T_{inst} | [Nm] | 50 |
| Minimum thickness of member | h_{min} | [mm] | 130 |
| Minimum spacing | s_{min} | [mm] | 60 |
| Minimum edge distance | c_{min} | [mm] | 120 |



Highload Anchor SL

Intended use
Installation parameters

Annex B3

Table C1: Characteristic values for tension loads

| Anchor size | | | 14/M10 |
|--|-----------------|------|--|
| Installation factor | γ_{inst} | [-] | 1,0 |
| Steel failure | | | |
| Characteristic resistance | $N_{Rk,s}$ | [kN] | 46 |
| Partial factor | γ_{Ms} | [-] | 1,5 |
| Pull-out failure | | | |
| Characteristic resistance in uncracked concrete C20/25 | $N_{Rk,p}$ | [kN] | 20 |
| Increasing factor for $N_{Rk,p}$ | ψ_C | [-] | $\left(\frac{f_{ck}}{20}\right)^{0,5}$ |
| Concrete cone failure | | | |
| Effective Anchorage depth | h_{ef} | [mm] | 65 |
| Spacing | $s_{cr,N}$ | [mm] | 3 h_{ef} |
| Edge distance | $c_{cr,N}$ | [mm] | 1,5 h_{ef} |
| Factor k_1 | $k_{ucr,N}$ | [-] | 11,0 |
| Splitting failure | | | |
| Characteristic resistance in uncracked concrete | $N^0_{Rk,sp}$ | [kN] | min [$N_{Rk,p}; N^0_{Rk,c}$] |
| Spacing | $s_{cr,sp}$ | [mm] | 6 h_{ef} |
| Edge distance | $c_{cr,sp}$ | [mm] | 3 h_{ef} |

Table C2: Displacements under tension loads

| Anchor size | | | 14/M10 |
|------------------------------------|--------------------|------|---------------|
| Tension load in uncracked concrete | N | [kN] | 9,5 |
| Displacement | δ_{N0} | [mm] | 0,3 |
| | $\delta_{N\infty}$ | [mm] | 0,6 |

Highload Anchor SL

Performance
Characteristic values and displacements under **tension load**

Annex C1

Table C3: Characteristic values for shear loads

| Anchor size | | | 14/M10 |
|---|---------------|------|--------|
| Steel failure without lever arm | | | |
| Characteristic resistance, fixture mounted on distance sleeve with $t_{fix} \leq 75$ mm | $V^0_{Rk,s}$ | [kN] | 32,8 |
| Characteristic resistance, fixture mounted on distance sleeve with $t_{fix} > 75$ mm | $V^0_{Rk,s}$ | [kN] | 23,2 |
| Factor | k_7 | [-] | 1,0 |
| Partial factor | γ_{Ms} | [-] | 1,25 |
| Steel failure with lever arm | | | |
| Characteristic resistance | $M^0_{Rk,s}$ | [Nm] | 60 |
| Partial factor | γ_{Ms} | [-] | 1,25 |
| Concrete pry-out failure | | | |
| Factor | k_8 | [-] | 2,0 |
| Concrete edge failure | | | |
| Effective length of anchor in shear loading | l_f | [mm] | 65 |
| Outside diameter of anchor | d_{nom} | [mm] | 14 |

Table C4: Displacements under shear loads

| Anchor size | | | 14/M10 |
|----------------------------------|--------------------|------|--------|
| Shear load in uncracked concrete | V | [kN] | 13,2 |
| Displacement | δ_{v0} | [mm] | 2,2 |
| | $\delta_{v\infty}$ | [mm] | 3,3 |

Highload Anchor SL
Performance
 Characteristic values and displacements under **shear load**
Annex C2