



...eine starke Verbindung

## PRESTATIEVERKLARING

DoP Nr.: **MKT-261 - nl**

- ✧ **Unieke identificatiecode van het producttype:** **Zwaarlastanker SL**
- ✧ **Beoogd(e) gebruik(en):** Koppelbediend expansieanker van gegalvaniseerd staal met maat M10 voor gebruik in ongescheurd beton, zie bijlage / Annex B
- ✧ **Fabrikant:** MKT Metall-Kunststoff-Technik GmbH & Co.KG  
Auf dem Immel 2  
67685 Weilerbach
- ✧ **Het systeem of de systemen voor de Beoordeling en verificatie van de prestatiebestendigheid:** 1
- ✧ **Europees beoordelingsdocument:** **EAD 330232-00-0601**  
Europese technische beoordeling: **ETA-08/0230, 14.05.2018**  
Technische beoordelingsinstantie: **DIBt, Berlin**  
Aangemelde instantie(s): **NB 1343 – MPA, Darmstadt**
- ✧ **Aangegeven prestatie(s):**

| Essentiële kenmerken  | Prestaties  |
|---|---|
| <b>Mechanische weerstand en stabiliteit (BWR1)</b>  |   |
| Karakteristieke weerstanden voor statische en quasi-statische belastingen, Verschuivingen   | Bijlage/Annex C1 – C2                                     |
| Karakteristieke weerstanden voor de seismische prestatiecategorieën C1 + C2, Verschuivingen | NPD (No Performance Determined)<br>geen prestatie bepaald |
| <b>Brandveiligheid (BWR2)</b>   |   |
| Brandgedrag   | Klasse A1   |
| Brandwerendheid   | NPD (No Performance Determined)<br>geen prestatie bepaald |

De prestaties van het hierboven omschreven product zijn conform de aangegeven prestaties. Deze prestatieverklaring wordt in overeenstemming met Verordening (EU) nr. 305/2011 onder de exclusieve verantwoordelijkheid van de hierboven vermelde fabrikant verstrekt.

Ondertekend voor en namens de fabrikant door:

**Stefan Weustenhagen**  
(Directeur)  
**Weilerbach, 14.05.2018**

p.p.

**Dipl.-Ing. Detlef Bigalke**  
(Hoofd productontwikkeling)



Het origineel van deze prestatieverklaring was in het Duits geschreven. In geval van afwijkingen in de vertaling is de Duitse versie geldig.

## 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:

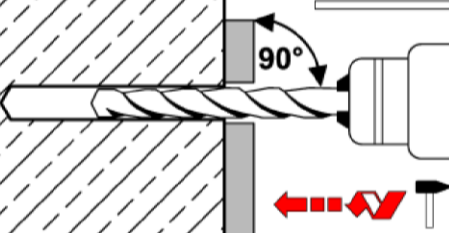
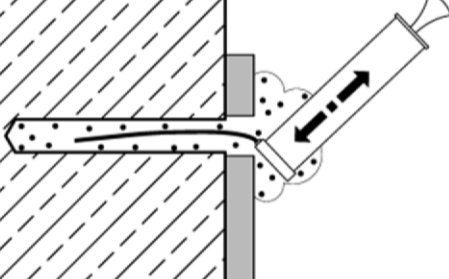
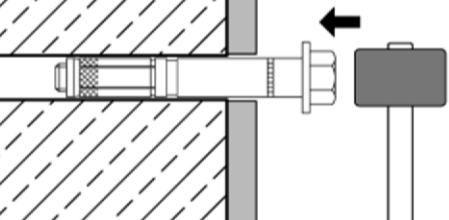
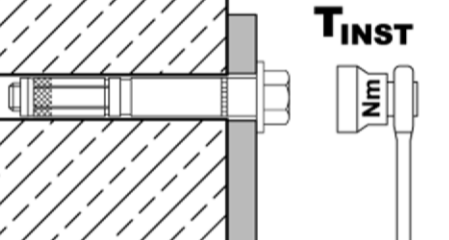
- Anchor installation carried out by appropriately qualified personnel and under the supervision of the person responsible for technical matters of the site.
- Positioning of the drill holes without damaging the reinforcement
- In case of aborted hole: new drilling at a minimum distance away of twice 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 <math>T_{inst}</math> by using torque wrench.</p>                        |

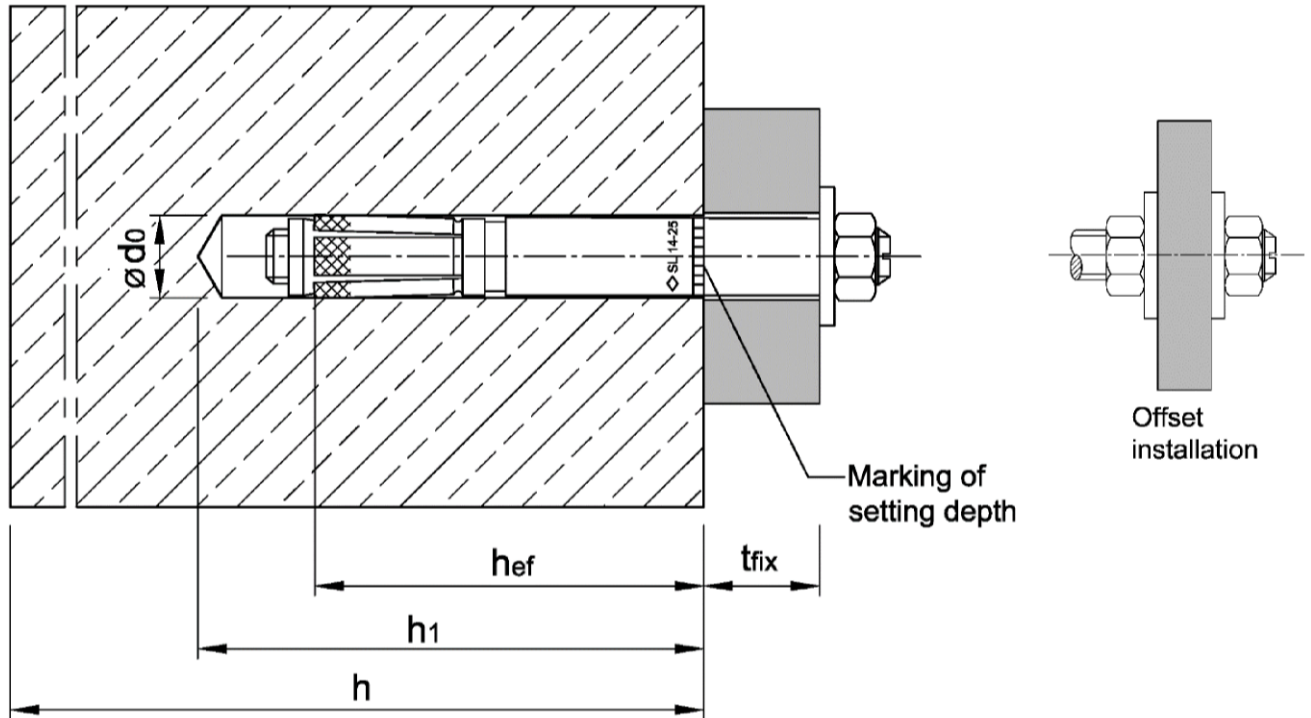
### Highload Anchor SL

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**

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

**Table C2: Displacements under tension loads**

| <b>Anchor size</b>                 |                    |      | <b>14/M10</b> |
|------------------------------------|--------------------|------|---------------|
| Tension load in uncracked concrete | N                  | [kN] | 9,5           |
| Displacement                       | $\delta_{N0}$      | [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 |
|---|---------------|------|--------|
| <b>Steel failure without lever arm</b>  |               |      |        |
| 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  | $\gamma_{Ms}$ | [-]  | 1,25   |
| <b>Steel failure with lever arm</b>   |               |      |        |
| Characteristic resistance   | $M^0_{Rk,s}$  | [Nm] | 60     |
| Partial factor  | $\gamma_{Ms}$ | [-]  | 1,25   |
| <b>Concrete pry-out failure</b>   |               |      |        |
| Factor  | $k_8$         | [-]  | 2,0    |
| <b>Concrete edge failure</b>  |               |      |        |
| 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                     | $\delta_{v0}$      | [mm] | 2,2    |
|                                  | $\delta_{v\infty}$ | [mm] | 3,3    |

**Highload Anchor SL**

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

**Annex C2**