



... eine starke Verbindung

YDEEVNEDEKLARATION

DoP nr.: MKT-1.1-600_da

- ✧ **Varetypens unikke identifikationskode:** Anker med høj belastning SLZ
- ✧ **Tilsligtet anvendelse:** Kraftstyrede dyvel (galvaniseret stål) størrelse 14 / M10 til forankring i betonen, se bilag / Annex B
- ✧ **Fabrikant:** MKT Metall-Kunststoff-Technik GmbH & Co.KG
Auf dem Immel 2
67685 Weilerbach
- ✧ **System eller systemer til vurdering og kontrol af konstansen af ydeevnen:** 1
- ✧ **Europæisk vurderingsdokument:** EAD 330232-00-0601
Europæisk teknisk vurdering: ETA-09/0342, 01.03.2018
Teknisk vurderingsorgan: DIBt, Berlin
Notificeret organ/notificerede organer: NB 2873 – Technische Universität Darmstadt

✧ **Deklareret ydeevne/deklarerede ydeevner:**

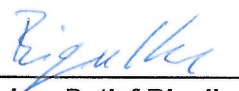
| Væsentlige funktioner | Ydeevne |
|---|-----------------------|
| Mekanisk modstandsdygtighed og stabilitet (BWR 1) | |
| Karakteristiske modstande (statiske og kvasistatiske effekter), Forskydninger | Bilag / Annex C1 – C2 |
| Brandsikring (BWR 2) | |
| Brandegenskaber | Klasse A1 |
| Brandsikkerhed | Bilag / Annex C3 |

Ydeevnen for den vare, der er anført ovenfor, er i overensstemmelse med den deklarerede ydeevne. Denne ydeevnedeklaration er udarbejdet i overensstemmelse med forordning (EU) nr. 305/2011 på eneansvar af den fabrikant, der er anført ovenfor.

Underskrevet for fabrikanten og på dennes vegne af:


Stefan Weustenhagen
(CEO)

Weilerbach, 01.01.2021

p.p. 
Dipl.-Ing. Detlef Bigalke
(Leder af produktudvikling)



Originalen af denne erklæringserklæring blev skrevet på tysk. I tilfælde af afvigelser i oversættelsen er den tyske udgave gyldig.

Specifications of intended use

Anchorage subject to:

- Static or quasi-static action
- fire exposure

Base materials:

- Reinforced or unreinforced normal weight concrete according to EN 206-1:2000
- Strength classes C20/25 to C50/60 according to EN 206-1:2000
- Cracked and 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 TR 055.

Installation:

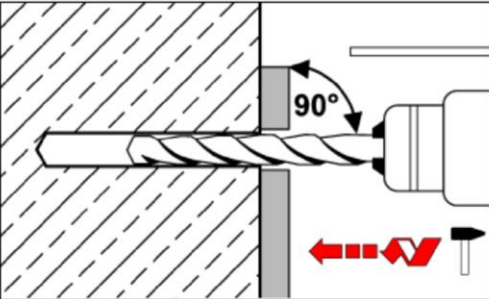
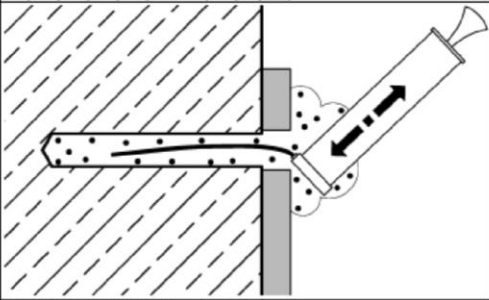
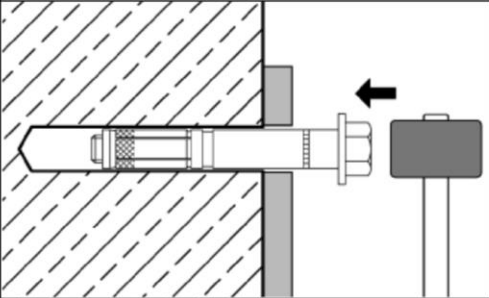
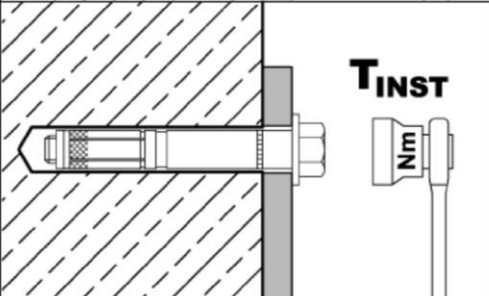
- Anchor installation carried out by appropriately qualified personnel and under the supervision of the person responsible for technical matters of the site.
- Positioning of the drill holes without damaging the reinforcement
- In case of aborted hole: new drilling at a minimum distance away of twice 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 SLZ

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> |

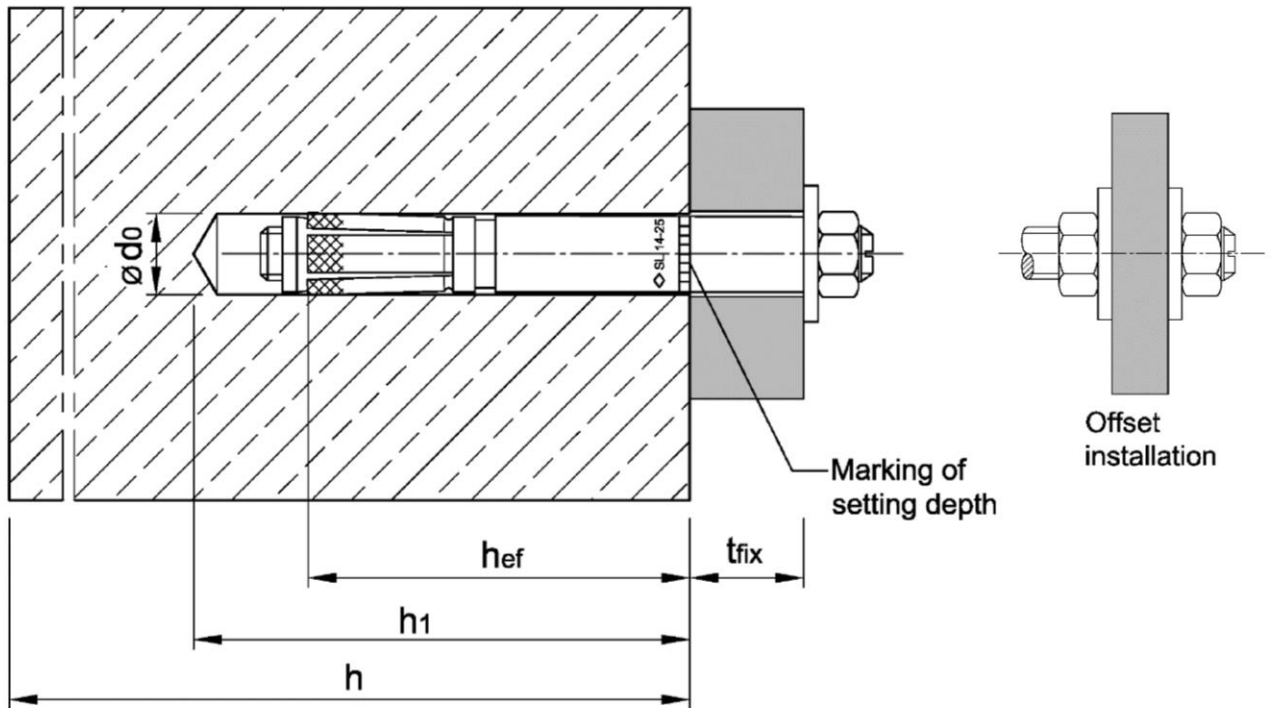
Highload Anchor SLZ

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 |
| | $c \geq$ | [mm] | 120 |
| Minimum edge distance | c_{min} | [mm] | 70 |
| | $s \geq$ | [mm] | 130 |



Highload Anchor SLZ

Intended use
Installation parameters

Annex B3

Table C1: Characteristic values for tension loads

| Anchor size | | | 14/M10 |
|--|-----------------|------|--|
| Installation safety factor | γ_{inst} | [-] | 1,0 |
| Steel failure | | | |
| Characteristic resistance | $N_{RK,s}$ | [kN] | 46 |
| Partial safety factor | γ_{Ms} | [-] | 1,5 |
| Pull-out failure | | | |
| Characteristic resistance in cracked concrete C20/25 | $N_{RK,p}$ | [kN] | 12 |
| Characteristic resistance in uncracked concrete C20/25 | $N_{RK,p}$ | [kN] | 20 |
| Increasing factors 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 for cracked concrete | $k_{cr,N}$ | [-] | 7,7 |
| Factor k_1 for uncracked concrete | $k_{ucr,N}$ | [-] | 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] | 390 |
| Edge distance | $c_{cr,sp}$ | [mm] | 195 |

Table C2: Displacements under tension loads

| Anchor size | | | 14/M10 |
|------------------------------------|--------------------|------|---------------|
| Tension load in cracked concrete | N | [kN] | 5,7 |
| Displacement | δ_{N0} | [mm] | 0,8 |
| | $\delta_{N\infty}$ | [mm] | 1,5 |
| Tension load in uncracked concrete | N | [kN] | 9,5 |
| Displacement | δ_{N0} | [mm] | 0,3 |
| | $\delta_{N\infty}$ | [mm] | 1,2 |

Highload Anchor SLZ**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 | $V_{RK,s}^0$ | [kN] | 32,8 |
| Characteristic resistance, fixture mounted on distance sleeve with $t_{fix} > 75$ mm | $V_{RK,s}^0$ | [kN] | 23,2 |
| Factor | k_7 | [-] | 1,0 |
| Partial safety factor | γ_{Ms} | [-] | 1,25 |
| Steel failure with lever arm | | | |
| Characteristic resistance | $M_{RK,s}^0$ | [Nm] | 60 |
| Partial safety 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 non-cracked concrete | V | [kN] | 13,2 |
| Displacement | δ_{V0} | [mm] | 2,2 |
| | $\delta_{V\infty}$ | [mm] | 3,3 |

Highload Anchor SLZ

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

Annex C2

Table C5: Characteristic values under fire exposure in concrete C20/25 to C50/60

| | | | | |
|--|------|-----------------|---------------|-----|
| Anchor size | | | 14/M10 | |
| Tension load | | | | |
| Steel failure | | | | |
| Characteristic resistance | R30 | $N_{Rk,s,fi}$ | [kN] | 0,9 |
| | R60 | | | 0,8 |
| | R90 | | | 0,6 |
| | R120 | | | 0,5 |
| Shear load | | | | |
| Steel failure without lever arm | | | | |
| Characteristic resistance | R30 | $V_{Rk,s,fi}$ | [kN] | 0,9 |
| | R60 | | | 0,8 |
| | R90 | | | 0,6 |
| | R120 | | | 0,5 |
| Steel failure with lever arm | | | | |
| Characteristic resistance | R30 | $M^0_{Rk,s,fi}$ | [Nm] | 1,1 |
| | R60 | | | 1,0 |
| | R90 | | | 0,7 |
| | R120 | | | 0,6 |

Highload Anchor SLZ

Performance
Characteristic values under **fire exposure**

Annex C3