

TELJESÍTMÉNYNYILATKOZAT

DoP Száma: **MKT-2.5-100_hu**

- ✧ **A terméktípus egyedi azonosító kódja:** Vegyi horgony V
- ✧ **Felhasználás célja(i):** Kompozit tiplik betonba rögzítéséhez,
lásd a B. Mellékletet / Annex B
- ✧ **Gyártó:** MKT Metall-Kunststoff-Technik GmbH & Co.KG
Auf dem Immel 2
67685 Weilerbach
- ✧ **Az AVCP-rendszer(ek):** 1
- ✧ **Az európai értékelési dokumentum:** **EAD 330499-00-0601**
Európai műszaki értékelés: **ETA-05/0231, 29.05.2018**
A műszaki értékelést végző szerv: DIBt, Berlin
Bejelentett szerv(ek): NB 2873 – Technische Universität Darmstadt

✧ **A nyilatkozatban szereplő teljesítmény(ek):**

| Alapvető tulajdonságok | Teljesítmény |
|--|-------------------------|
| Mechanikai szilárdság és állékonyság (BWR 1) | |
| Jellemző ellenállás a húzófeszültség alatt (statikus és kvázi-statikusan terhelésekhez) | Melléklet/Annex C1 |
| Jellemző ellenállás a keresztirányú terhelés alatt (statikus és kvázi-statikusan terhelésekhez) | Melléklet/Annex C2 |
| Eltolódásokat (statikus és kvázi-statikusan terhelésekhez) | Melléklet/Annex C1 + C2 |

A fent azonosított termék teljesítménye megfelel a bejelentett teljesítmény(ek)nek. A 305/2011/EU rendeletnek megfelelően e teljesítménynyilatkozat kiadásáért kizárólag a fent meghatározott gyártó a felelős.

A gyártó nevében és részéről aláíró személy:



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A teljesítménynyilatkozat eredeti példányát németül írták. A fordítás eltérése esetén a német változat érvényes.

Specifications of intended use

| Chemical Anchor V | Anchor rod V-A | | | | | |
|-------------------------------|--|--|-----|-----|-----|-----|
| | M8 | M10 | M12 | M16 | M20 | M24 |
| Static or quasi-static action | ✓ | | | | | |
| Base materials | reinforced or unreinforced normal weight concrete without fibres acc. to EN 206:2013 | | | | | |
| | strength classes C20/25 to C50/60, acc. to EN 206:2013 | | | | | |
| | uncracked concrete | | | | | |
| Temperature Range I | -40°C to +40°C | max long term temperature +24°C and max short term temperature +40°C | | | | |
| Temperature Range II | -40°C to +80°C | max long term temperature +50°C and max short term temperature +80°C | | | | |

Use conditions (environmental conditions):

- Structures subject to dry internal conditions (zinc plated steel, stainless steel or high corrosion resistant steel)
- Structures subject to external atmospheric exposure (including industrial and marine environment) and to permanently damp internal condition, if no particular aggressive conditions exist (stainless steel or high corrosion resistant steel)
- Structures subject to external atmospheric exposure and to permanently damp internal condition, if other particular aggressive conditions exist (high corrosion resistant steel)

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

Design:

- 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 under the responsibility of an engineer experienced in anchorages and concrete work
- Anchorages are designed in accordance with FprEN 1992-4:2016 and TR 055

Chemical Anchor V

Intended use
Specifications

Annex B1

Table B1: Installation parameters

| Anchor size | | | M8 | M10 | M12 | M16 | M20 | M24 |
|---|----------------|------|------|------|------|------|------|------|
| Nominal diameter of drill hole | d_0 | [mm] | 10 | 12 | 14 | 18 | 25 | 28 |
| Cutting diameter of drill hole | $d_{cut} \leq$ | [mm] | 10,5 | 12,5 | 14,5 | 18,5 | 25,5 | 28,5 |
| Depth of drill hole | h_0 | [mm] | 80 | 90 | 110 | 125 | 170 | 210 |
| Effective anchorage depth | h_{ef} | [mm] | 80 | 90 | 110 | 125 | 170 | 210 |
| Diameter of clearance hole in the fixture | d_f | [mm] | 9 | 12 | 14 | 18 | 22 | 26 |
| Diameter of steel brush | d_b | [mm] | 11 | 13 | 16 | 20 | 27 | 30 |
| Maximum installation torque | T_{inst} | [Nm] | 10 | 20 | 40 | 80 | 120 | 180 |

Steelbrush d_b 

Table B2: Minimum member thickness, edge distance and spacing

| Anchor size | | | M8 | M10 | M12 | M16 | M20 | M24 |
|--------------------------|-----------|------|-----|-----|-----|-----|-----|-----|
| Minimum member thickness | h_{min} | [mm] | 110 | 120 | 140 | 160 | 220 | 260 |
| Minimum edge distance | c_{min} | [mm] | 40 | 45 | 55 | 65 | 85 | 105 |
| Minimum spacing | s_{min} | [mm] | 40 | 45 | 55 | 65 | 85 | 105 |

Table B3: Minimum curing time

| Temperature in the drill hole | Minimum curing time | |
|-------------------------------|---------------------|--------------|
| | dry concrete | wet concrete |
| $\geq 0^\circ\text{C}$ | 5 h | 10 h |
| $\geq + 5^\circ\text{C}$ | 1 h | 2 h |
| $\geq +20^\circ\text{C}$ | 20 min | 40 min |
| $\geq +30^\circ\text{C}$ | 10 min | 20 min |

Chemical Anchor V

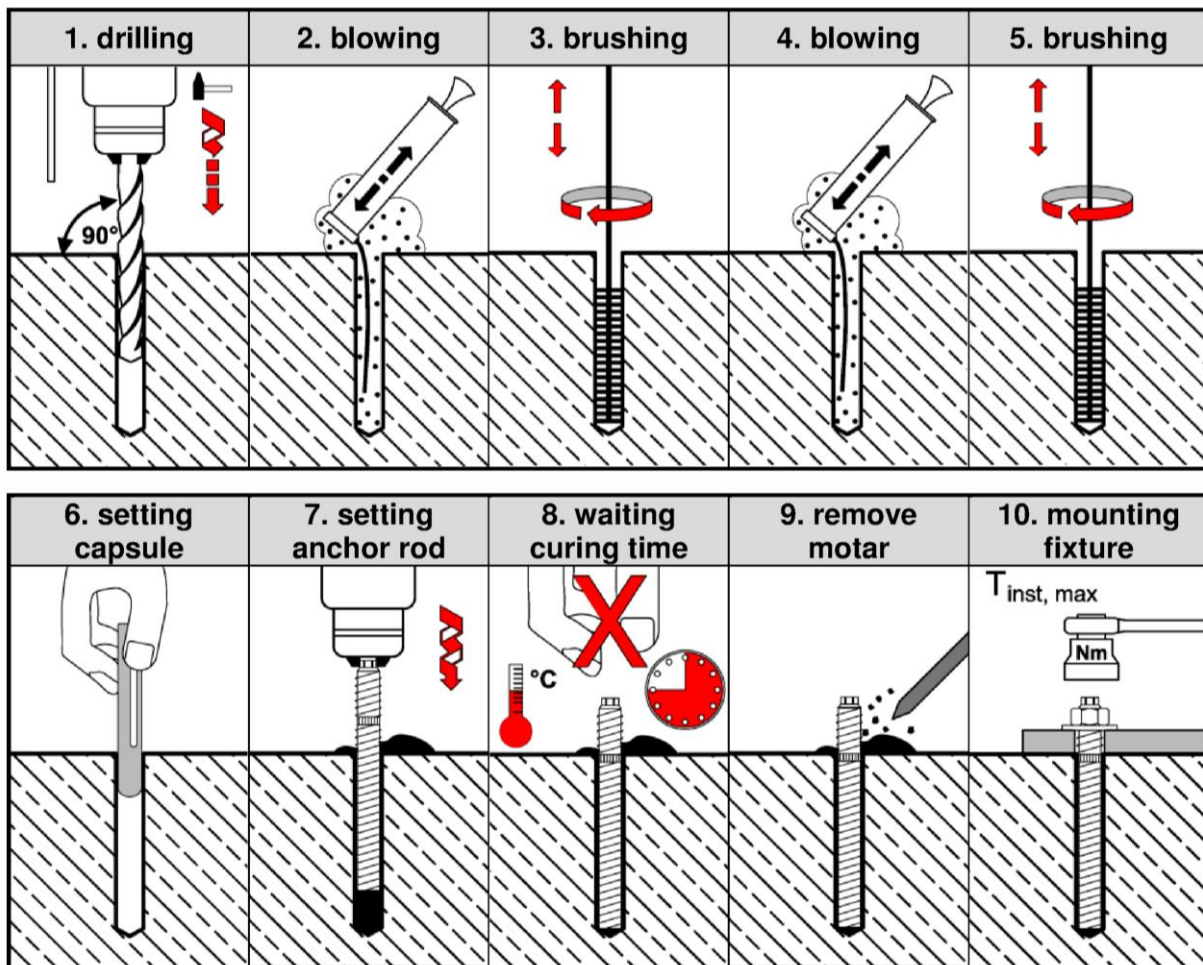
Intended use
Installation parameters / Curing Time

Annex B2

Installation

- Anchor installation carried out by appropriately qualified personnel and under the supervision of the person responsible for technical matters of the site
- Dry or wet concrete, all sizes
- Hole drilling by hammer drilling
- Cleaning the drill hole:

Removing possibly existing water in the drill hole completely and cleaning the drill hole by at least one blowing operation, by at least 1 x blowing / 1 x brushing / 1 x blowing / 1 x brushing operation by using the steel brush supplied by the manufacturer; before brushing cleaning the brush and checking whether the brush diameter according to Annex B2, Table B1 is still sufficient. The steel brush shall produce natural resistance as it enters the anchor hole. If this is not the case a new brush or a brush with a larger diameter must be used.
- Curing time must be observed prior to loading the anchor.
- Observe expiration date



Chemical Anchor V

Intended use
Installation

Annex B3

Table C1: Characteristic values for tension loads

| Anchor size | | | M8 | M10 | M12 | M16 | M20 | M24 | |
|--|--|----------------------|-------------------------------------|------------|-----|-----|-----|-----|-----|
| Steel failure | | | | | | | | | |
| Characteristic resistance | Steel, zinc plated property class 5.8 | $N_{Rk,s}$ | [kN] | 18 | 29 | 42 | 78 | 123 | 177 |
| | Steel, zinc plated property class 8.8 | $N_{Rk,s}$ | [kN] | 29 | 46 | 67 | 126 | 196 | 282 |
| | Stainless steel A4 property class 70 | $N_{Rk,s}$ | [kN] | 26 | 40 | 59 | 110 | 172 | 247 |
| | Stainless steel A4 property class 80 | $N_{Rk,s}$ | [kN] | 29 | 46 | 67 | 126 | 196 | 282 |
| | High corrosion resistant steel HCR | $N_{Rk,s}$ | [kN] | 26 | 40 | 59 | 110 | 172 | 247 |
| Combined pull-out and concrete failure | | | | | | | | | |
| Characteristic resistance in uncracked concrete C20/25 to C50/60 | | | | | | | | | |
| Temperature range I | τ_{Rk} | [N/mm ²] | 10 | 11 | 9,5 | 9,5 | 8,5 | 7,5 | |
| Temperature range II | τ_{Rk} | [N/mm ²] | 10 | 11 | 9,5 | 8,0 | 7,0 | 5,5 | |
| Concrete cone failure | | | | | | | | | |
| Factor for k_1 | $k_{Ucr,N}$ | [-] | 11,0 | | | | | | |
| Edge distance | $c_{cr,N}$ | [mm] | 1,5 h_{ef} | | | | | | |
| Spacing | $s_{cr,N}$ | [mm] | 3 h_{ef} | | | | | | |
| Splitting | | | | | | | | | |
| Characteristic resistance | $N^0_{Rk,sp}$ | [kN] | min [$N^0_{Rk,p}$; $N^0_{Rk,c}$] | | | | | | |
| Edge distance | $c_{cr,sp}$ | [mm] | 1,5 h_{ef} | 1 h_{ef} | | | | | |
| Spacing | $s_{cr,sp}$ | [mm] | 3 h_{ef} | 2 h_{ef} | | | | | |
| Installation factor | γ_{inst} | [-] | 1,2 | | | | | | |

Table C2: Displacements under tension load

| Anchor size | | | M8 | M10 | M12 | M16 | M20 | M24 |
|--------------|--------------------|------|-----|-----|-----|-----|-----|-----|
| Tension load | N | [kN] | 8 | 12 | 16 | 20 | 30 | 38 |
| Displacement | δ_{N0} | [mm] | 0,1 | 0,2 | 0,2 | 0,2 | 0,5 | 0,4 |
| | $\delta_{N\infty}$ | [mm] | 0,5 | | | | | |

Chemical Anchor V

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

Annex C1

Table C3: Characteristic values for shear loads

| Anchor size | | | | M8 | M10 | M12 | M16 | M20 | M24 |
|--|---------------------------------------|--------------|------|----|-----|-----|-----|-----|-----|
| Steel failure without lever arm | | | | | | | | | |
| Characteristic shear resistance | Steel, zinc plated property class 5.8 | $V_{Rk,s}^0$ | [kN] | 9 | 14 | 21 | 39 | 61 | 88 |
| | Steel, zinc plated property class 8.8 | $V_{Rk,s}^0$ | [kN] | 15 | 23 | 33 | 63 | 98 | 141 |
| | Stainless steel A4 property class 70 | $V_{Rk,s}^0$ | [kN] | 13 | 20 | 29 | 55 | 86 | 124 |
| | Stainless steel A4 property class 80 | $V_{Rk,s}^0$ | [kN] | 15 | 23 | 33 | 62 | 98 | 141 |
| | High corrosion resistant steel HCR | $V_{Rk,s}^0$ | [kN] | 13 | 20 | 29 | 55 | 86 | 124 |
| Ductility factor | k_7 | [-] | 0,8 | | | | | | |
| Steel failure with lever arm | | | | | | | | | |
| Characteristic bending moment | Steel, zinc plated property class 5.8 | $M_{Rk,s}^0$ | [Nm] | 19 | 37 | 65 | 166 | 325 | 561 |
| | Steel, zinc plated property class 8.8 | $M_{Rk,s}^0$ | [Nm] | 30 | 60 | 105 | 266 | 519 | 898 |
| | Stainless steel A4 property class 70 | $M_{Rk,s}^0$ | [Nm] | 26 | 52 | 92 | 233 | 454 | 785 |
| | Stainless steel A4 property class 80 | $M_{Rk,s}^0$ | [Nm] | 30 | 60 | 105 | 266 | 519 | 898 |
| | High corrosion resistant steel HCR | $M_{Rk,s}^0$ | [Nm] | 26 | 52 | 92 | 233 | 454 | 785 |
| Pry-out failure | | | | | | | | | |
| Factor | k_8 | [-] | 2,0 | | | | | | |
| Concrete edge failure | | | | | | | | | |
| Effective length of anchor | l_f | [mm] | 80 | 90 | 110 | 125 | 170 | 210 | |
| Effective diameter of anchor | d_{nom} | [mm] | 10 | 12 | 14 | 18 | 25 | 28 | |
| Installation factor | γ_{inst} | [-] | 1,0 | | | | | | |

Table C4: Displacements under shear load

| Anchor size | | | | M8 | M10 | M12 | M16 | M20 | M24 |
|--------------|--------------------|------|---|----|-----|-----|-----|-----|-----|
| Shear load | V | [kN] | 5 | 8 | 12 | 22 | 35 | 50 | |
| Displacement | δ_{V0} | [mm] | 2 | 3 | 3 | 4 | 5 | 5 | |
| | $\delta_{V\infty}$ | [mm] | 4 | 5 | 5 | 6 | 7 | 7 | |

Chemical Anchor V

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

Annex C2