

## IZJAVA O SVOJSTVIMA

### DoP 0263

za fischer Heavy-duty anchor TA M, TA M S, TA M T (Mehaničko sidro za uporabu u betonu)

HR

1. Jedinstveni identifikator tipa proizvoda: DoP 0263
2. Namjena korištenja: Naknadno učvršćivanje u ne-napuknutom betonu, vidi dodatak, posebno priloge B1 - B3.
3. Proizvođač: fischerwerke GmbH & Co. KG, Klaus-Fischer-Str. 1, 72178 Waldachtal, Njemačka
4. Ovlašteni zastupnik: -
5. Sistem/i od AVCP: 1
6. Europski dokument za ocjenjivanje: EAD 330232-00-0601  
Europska tehnička ocjena: ETA-04/0003; 2018-06-12  
Tijelo za tehničko ocjenjivanje: DIBt- Deutsches Institut für Bautechnik  
Prijavljeno tijelo/prijavljena tijela: 2873 TU Darmstadt

7. Objavljena svojstva:

**Mehanička otpornost i stabilnost (BWR 1)**

**Karakteristični otpor na opterećenje (statičko i kvazi-statičko opterećenje):**

Otpornost na lom čelika: Priloge C1

$E_s = 210\,000\text{ MPa}$

Otpornost na čupanje: Priloge C1

Otpornost na lom betona: Priloge C1

Robusnost: Priloge C1

Minimalna udaljenost od ruba i razmak: Priloge B2

Udaljenost ruba kako bi se spriječilo cijepanje pod opterećenjem: Priloge C1

$N_{Rk,sp}^{0} = \text{NPD}$

**Karakteristični otpor na smicanje (statičko i kvazi-statičko opterećenje):**

Otpornost na lom čelika (posmično opterećenje): Priloge C2

Otpornost na otkazivanje: Priloge C2

Otpornost na lom ruba betona: Priloge C2

Pomaci pri statičkom i kvazi-statičkom opterećenju: Priloge C2

Trajnost: Priloge A3, A4, B1

**Karakteristični otpor i pomaci za kategorije seizmičke učinkovitosti C1 i C2:**

Otpornost na lom čelika: NPD

Otpornost na čupanje: NPD

Izduživanje loma: NPD

Faktor prstenaste pukotine: NPD

Pomaci: NPD

**Sigurnost u slučaju požara (BWR 2)**

Reakcija na vatru: Klasa (A1)

**Otpornost na vatru:**

Vatrootpornost na lom čelika (vlačna sila): NPD

Vatrootpornost na čupanje (vlačna sila): NPD

Vatrootpornost na lom čelika (posmik): NPD

8. Odgovarajuća tehnička dokumentacija i/ili specifična tehnička dokumentacija: -

Svojstva gore navedenog proizvoda su u skladu sa skupom izjava o svojstvima. Ova izjava o svojstvima se izdaje, u skladu sa Europskom regulativom (EU) Br. 305/2011, pod punom odgovornošću gore navedenog proizvođača

Za proizvođača i u njegovo ime potpisao:



Dr.-Ing. Oliver Geibig, Generalni direktor poslovne jedinice i inženjering  
Tumlingen, 2021-01-12

Jürgen Grün, Glavni direktor za kemiju i kvalitetu

Ovaj DoP je pripremljen u različitim jezicima. U slučaju da postoji spor u tumačenju, engleska verzija će uvijek prevladati.

U aneksu se nalaze dodatni podaci na engleskom jeziku, koji ne podliježu zakonskoj regulativi.

## Specific Part

### 1 Technical description of the product

The fischer Heavy-duty anchor TA M, TA M S and TA M T in the range of M6, M8, M10 and M12 is an anchor made of galvanised steel which is placed into a drilled hole and anchored by torque-controlled expansion with the hexagon head bolt.

The product description is given in Annex A.

### 2 Specification of the intended use in accordance with the applicable European Assessment Document

The performances given in Section 3 are only valid if the concrete screw is used in compliance with the specifications and conditions given in Annex B.

The verifications and assessment methods on which this European Technical Assessment is based lead the assumption of working life of the concrete screw of at least 50 years. The indications given on the working life cannot be interpreted as a guarantee given by the producer, but are to be regarded only as a means for choosing the right products in relation to the expected economically reasonable working life of the works.

### 3 Performance of the product and references to the methods used for its assessment

#### 3.1 Mechanical resistance and stability (BWR 1)

| Essential characteristic                                                                 | Performance             |
|------------------------------------------------------------------------------------------|-------------------------|
| Characteristic resistance to tension load (static and quasi-static loading)              | see Annex C 1           |
| Characteristic resistance to shear load (static and quasi-static loading)                | see Annex C 2           |
| Displacements (static and quasi-static loading)                                          | see Annex C 2           |
| Characteristic resistance and displacements for seismic performance categories C1 and C2 | No performance assessed |

#### 3.2 Safety in case of fire (BWR 2)

| Essential characteristic | Performance             |
|--------------------------|-------------------------|
| Reaction to fire         | Class A1                |
| Resistance to fire       | No performance assessed |

### 4 Assessment and verification of constancy of performance (AVCP) system applied, with reference to its legal base

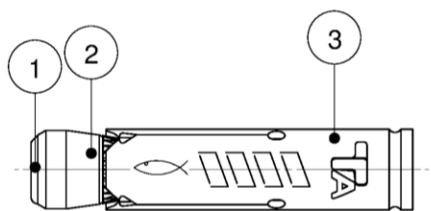
In accordance with European Assessment Documents EAD No. 330232-00-0601 the applicable European legal act is: [96/582/EC].

The system to be applied is: 1

**Pre-positioned installation:**

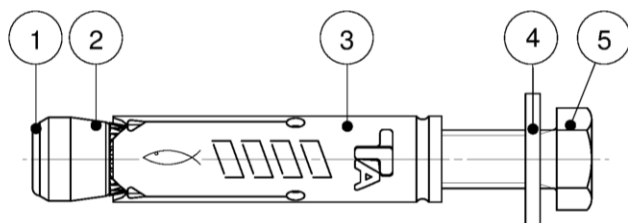
**TA M**

The hexagon head screw and the washer according to table A4.1 and A4.2 must be provided by the user



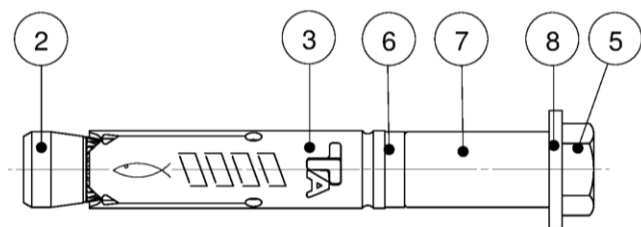
**TA M S**

The hexagon head screw is provided by the manufacturer (fischer) together with the anchor



**In-place installation:**

**TA M T**



- |                          |                      |
|--------------------------|----------------------|
| 1 Plastic cap (optional) | 5 Hexagon head screw |
| 2 Cone-nut               | 6 Distance ring      |
| 3 Expansion sleeve       | 7 Spacing sleeve     |
| 4 Washer (TA M / TA M S) | 8 Washer (TA M T)    |

(Fig. not to scale)

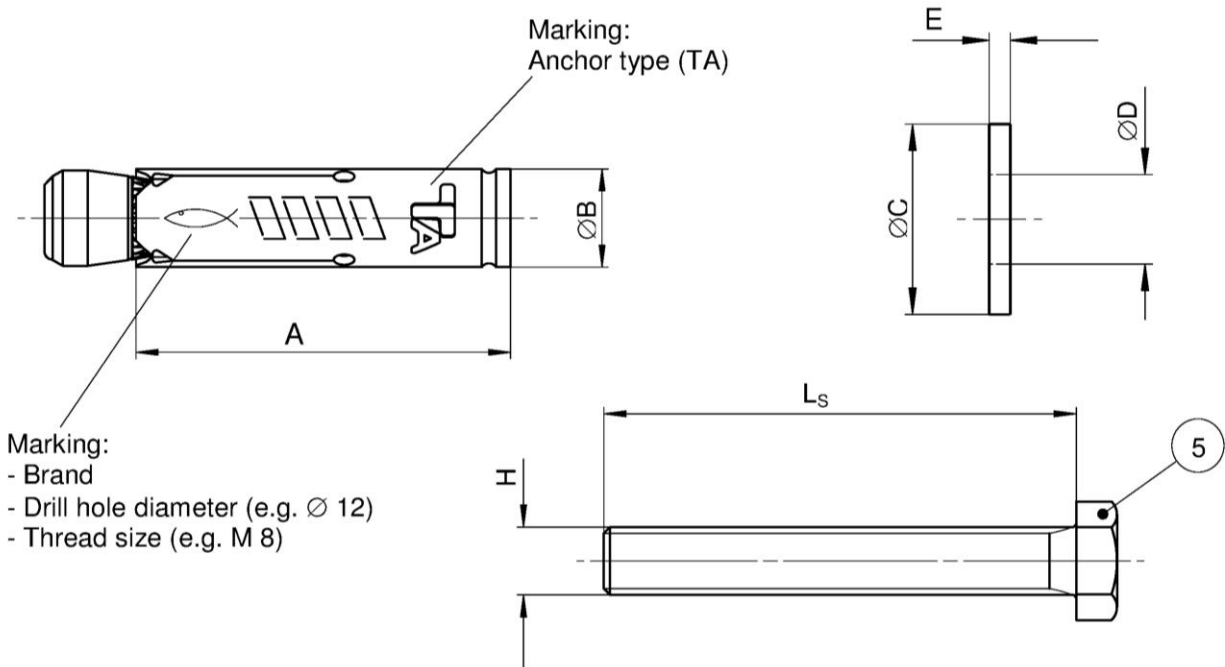
**fischer Heavy-duty anchor TA M, TA M S, TA M T**

**Product description**  
Anchor types

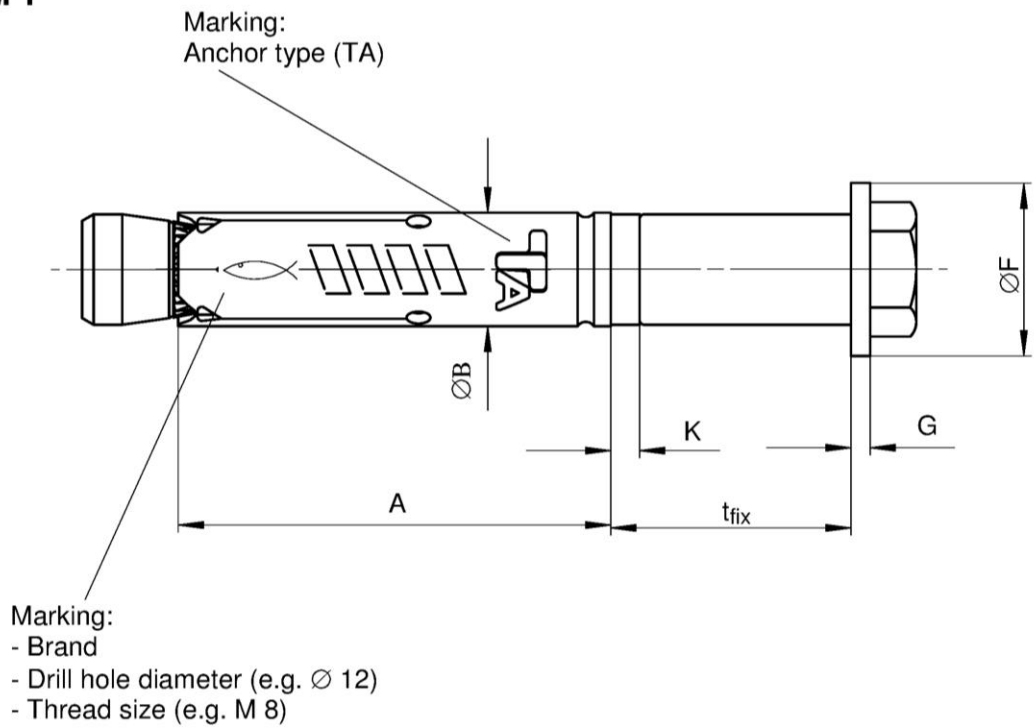
**Annex A 1**

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TA M / TA M S



TA M T



(Fig. not to scale)

fischer Heavy-duty anchor TA M, TA M S, TA M T

**Product description**  
Anchor components

**Annex A 2**

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**Table A3.1: Anchor dimensions [mm]**

| Part | Designation                      | Type of anchor            |                  | M6                    | M8                    | M10                   | M12                   |
|------|----------------------------------|---------------------------|------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 3    | Expansion sleeve                 | TA M / TA M S /<br>TA M T | A                | 40,0                  | 45,0                  | 55,0                  | 70,0                  |
|      |                                  |                           | Ø B              | 9,6                   | 11,8                  | 14,5                  | 17,5                  |
| 4    | Washer <sup>1)</sup>             | TA M S                    | Ø C ≥            | 11,0                  | 15,0                  | 19,0                  | 23,0                  |
|      |                                  |                           | E ≥              | 1,4                   | 1,4                   | 1,8                   | 2,3                   |
| 8    | Washer                           | TA M T                    | Ø F ≥            | 17,0                  | 21,0                  | 25,0                  | 30,0                  |
|      |                                  |                           | G ≥              | 1,4                   | 1,8                   | 2,3                   | 2,7                   |
| 5    | Hexagon head screw <sup>2)</sup> | TA M S / TA M T           | L <sub>s</sub> ≥ | t <sub>fix</sub> + 50 | t <sub>fix</sub> + 55 | t <sub>fix</sub> + 70 | t <sub>fix</sub> + 85 |
|      |                                  |                           | H                | M6                    | M8                    | M10                   | M12                   |
| 6    | Distance ring                    | TA M T                    | K =              | 3,0                   | 3,0                   | 3,0                   | 3,0                   |

<sup>1)</sup> For specification - summary of washer for TA M see table A4.2

<sup>2)</sup> For specification - summary of hexagon head screw for TA M see table A4.1

**Table A3.2: Materials**

| Part | Designation                      | Type of anchor            | Materials                                                   | Treatment                                                                          |
|------|----------------------------------|---------------------------|-------------------------------------------------------------|------------------------------------------------------------------------------------|
| 1    | Plastic cap <sup>1)</sup>        | TA M / TA M S             | Polyamide                                                   | -                                                                                  |
| 2    | Cone-nut                         | TA M / TA M S /<br>TA M T | Steel, EN 10277:2008                                        | Zinc plated according to EN ISO 4042:2017, min 5 µm, additional functional coating |
| 3    | Expansion sleeve                 | TA M / TA M S /<br>TA M T | Cold-rolled steel<br>EN 10139:2016                          | Zinc plated according to EN ISO 4042:2017, min 5 µm                                |
| 4    | Washer <sup>2)</sup>             | TA M S                    | Steel, min 140 HV                                           |                                                                                    |
| 8    | Washer                           | TA M T                    |                                                             |                                                                                    |
| 5    | Hexagon head screw <sup>3)</sup> | TA M S / TA M T           | Steel, property class 8.8                                   |                                                                                    |
| 6    | Distance ring                    | TA M T                    | Polyethylen                                                 | -                                                                                  |
| 7    | Distance sleeve                  | TA M T                    | Cold-rolled steel<br>EN 10139:2016/<br>Steel EN 10 277:2008 | Zinc plated according to EN ISO 4042:2017, min 5 µm                                |

<sup>1)</sup> Optional

<sup>2)</sup> For specification - summary of washer for TA M see table A4.2

<sup>3)</sup> For specification - summary of hexagon head screw for TA M see table A4.1

**fischer Heavy-duty anchor TA M, TA M S, TA M T**

**Product description**

Anchor dimensions

Materials

**Annex A 3**

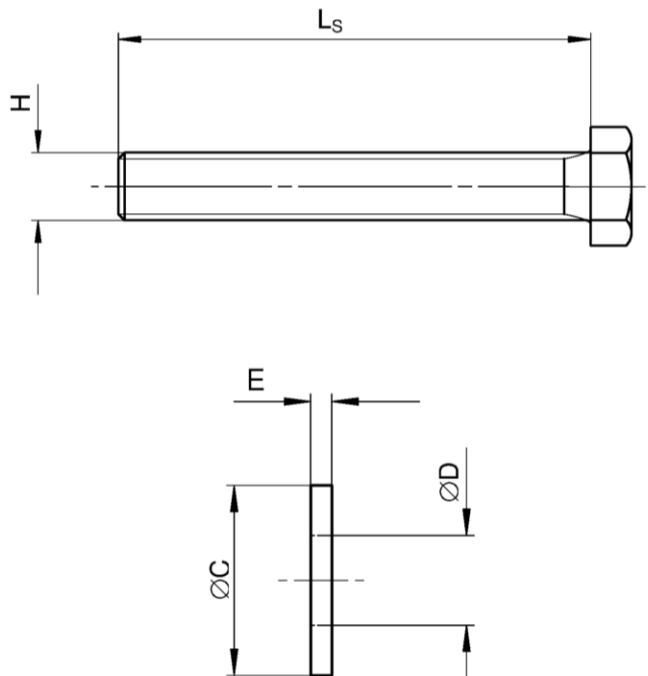
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**Table A4.1:** Selection criteria for the hexagon head screw (TA M)

| Description                  |       |      | TA M6                                                          | TA M8               | TA M10              | TA M12              |
|------------------------------|-------|------|----------------------------------------------------------------|---------------------|---------------------|---------------------|
| Length of hexagon head screw | $L_S$ | [mm] | $\geq t_{fix} + 50$                                            | $\geq t_{fix} + 55$ | $\geq t_{fix} + 70$ | $\geq t_{fix} + 85$ |
| Thread size                  | H     | [-]  | M6                                                             | M8                  | M10                 | M12                 |
| Standardisation              |       |      | ISO 4014:2017 / ISO 4017:2014 or DIN 931:1987 / DIN 933:1987   |                     |                     |                     |
| Material                     |       |      | Steel, property class 8.8                                      |                     |                     |                     |
| Treatment                    |       |      | Zinc plated according to EN ISO 4042:2017, min 5 $\mu\text{m}$ |                     |                     |                     |

**Table A4.2:** Selection criteria for the washer (TA M)

| Description       |   |      | TA M6                                               | TA M8  | TA M10 | TA M12 |
|-------------------|---|------|-----------------------------------------------------|--------|--------|--------|
| Hole diameter     | D | min  | 6,0                                                 | 8,0    | 10,0   | 12,0   |
|                   |   | max  | 6,6                                                 | 8,6    | 10,8   | 13,3   |
| External diameter | C | [mm] | ≥ 11,0                                              | ≥ 15,0 | ≥ 19,0 | ≥ 23,0 |
| Thickness         | E | min  | 1,4                                                 | 1,4    | 1,8    | 2,3    |
|                   |   | max  | 3,0                                                 | 3,0    | 4,0    | 5,0    |
| Material          |   |      | Steel, hardness class min 140 HV                    |        |        |        |
| Treatment         |   |      | Zinc plated according to EN ISO 4042:2017, min 5 µm |        |        |        |



(Fig. not to scale)

**fischer Heavy-duty anchor TA M, TA M S, TA M T****Product description**

Dimensions

Materials

**Annex A 4**

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## Specifications of intended use

| fischer Heavy-duty anchor     | TA M6 | TA M8 | TA M10 | TA M12 |
|-------------------------------|-------|-------|--------|--------|
| Steel, zinc plated            |       |       | ✓      |        |
| Static and quasi-static loads |       |       | ✓      |        |
| Uncracked concrete            |       |       | ✓      |        |

### Base materials:

- Normal weight concrete according to EN 206-1:2000
- Strength classes C20/25 to C50/60 according to EN 206-1:2000

### Use conditions (Environmental conditions):

- Structures subject to dry internal conditions

### Design:

- Anchorages have to be designed under the responsibility of an engineer experienced in anchorages and concrete work
- Verifiable calculation notes and drawings have to be 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.)
- Design of fastenings 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
- Hammer or hollow drilling according to Annex B3
- Drill hole created perpendicular  $\pm 5^\circ$  to concrete surface, positioning without damaging the reinforcement
- In case of aborted hole: new drilling at a minimum distance twice the depth of the aborted drill 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

**fischer Heavy-duty anchor TA M, TA M S, TA M T**

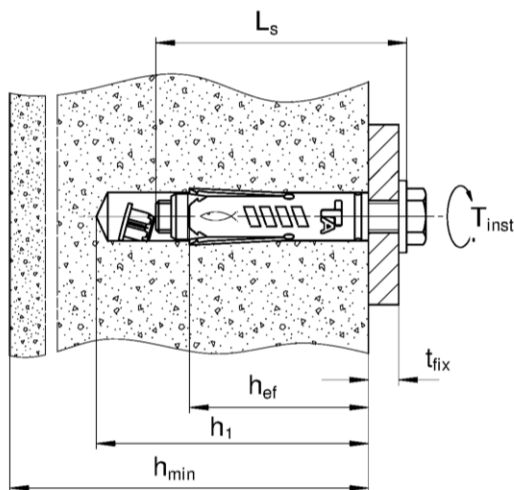
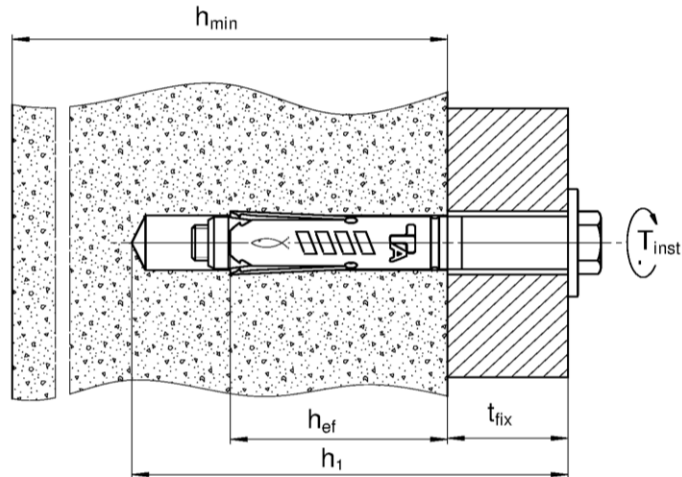
**Intended use**  
Specifications

**Annex B 1**

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**Table B2.1:** Installation parameters for TA M / TA M S / TA M T

| Anchor size                                               |                |      | TA M6                | TA M8          | TA M10               | TA M12         |
|-----------------------------------------------------------|----------------|------|----------------------|----------------|----------------------|----------------|
| Nominal drill hole diameter                               | $d_0$          | [mm] | 10                   | 12             | 15                   | 18             |
| Maximum drill bit diameter                                | $d_{cut} \leq$ |      | 10,45                | 12,50          | 15,50                | 18,50          |
| Length of hexagon head screw                              | $L_S \geq$     |      | $t_{fix} + 50$       | $t_{fix} + 55$ | $t_{fix} + 70$       | $t_{fix} + 85$ |
| Depth of drill hole (TA M / TA M S)                       | $h_1$          |      | $L_S - t_{fix} + 15$ |                | $L_S - t_{fix} + 20$ |                |
| Depth of drill hole (TA M T)                              | $h_1 \geq$     |      | $L_S + 10$           |                |                      |                |
| Diameter of clearance hole in the fixture (TA M / TA M S) | $d_f \leq$     |      | 7                    | 9              | 12                   | 14             |
| Diameter of clearance hole in the fixture (TA M T)        | $d_f$          |      | 12                   | 14             | 18                   | 20             |
| Thickness of fixture                                      | $t_{fix,min}$  |      | 1                    |                |                      |                |
|                                                           | $t_{fix,max}$  | 150  | 200                  | 250            | 300                  |                |
| Required torque moment                                    | $T_{inst}$     | [Nm] | 10                   | 20             | 40                   | 75             |

**TA M / TA M S:****TA M T:** $L_s$  = Length of hexagon head screw $h_{ef}$  = Effective embedment depth $t_{fix}$  = Thickness of the fixture $h_{min}$  = Minimum thickness of concrete member $h_1$  = Depth of drill hole to deepest point $T_{inst}$  = Required setting torque**Table B2.2:** Minimum thickness of concrete member, minimum spacing and minimum edge distances

| Anchor size                          |                | TA M6 | TA M8 | TA M10 | TA M12 |
|--------------------------------------|----------------|-------|-------|--------|--------|
| Minimum thickness of concrete member | $h_{min}$      | 100   | 100   | 110    | 140    |
| Minimum spacing                      | $s_{min}$ [mm] | 80    | 90    | 110    | 160    |
| Minimum edge distance                | $c_{min}$      | 50    | 60    | 70     | 120    |

(Fig. not to scale)

**fischer Heavy-duty anchor TA M, TA M S, TA M T****Intended Use**

Installation instructions

Minimum thickness of concrete member, minimum spacing and minimum edge distance

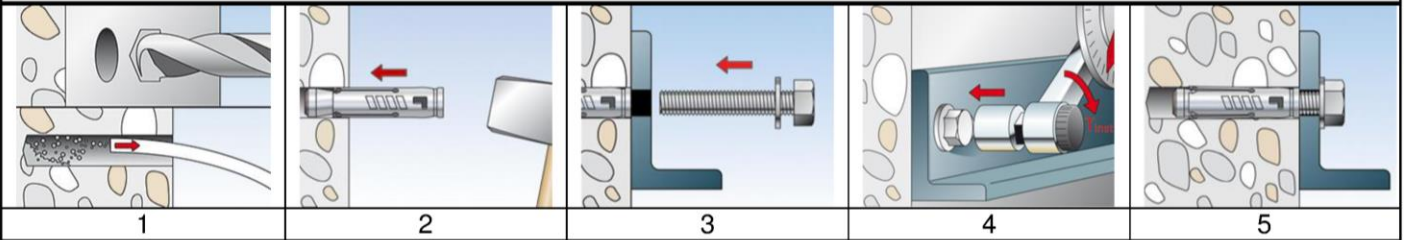
**Annex B 2**

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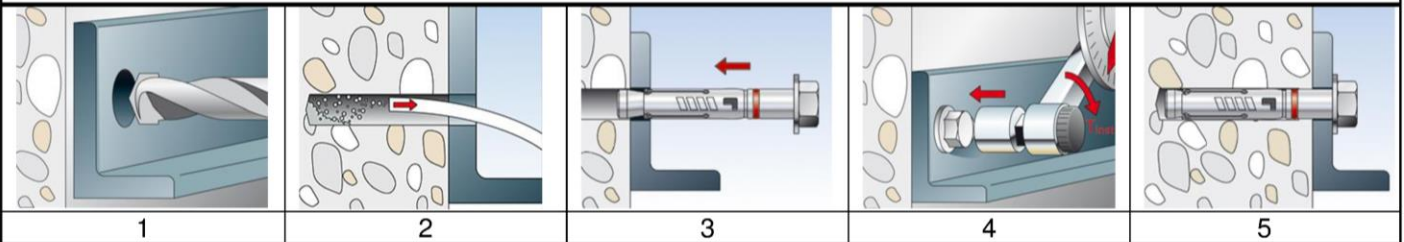
## Installation instruction

### Pre-positioned installation TA M / TA M S



| No. | Description                                          |                                                        |
|-----|------------------------------------------------------|--------------------------------------------------------|
| 1   | Create drill hole with hammer drill, clean bore hole | Create drill hole with hollow drill and vacuum cleaner |
| 2   | Set the fastener                                     |                                                        |
| 3   | Attach the fixture and turn the screw in             |                                                        |
| 4   | Apply required torque moment $T_{inst}$              |                                                        |
| 5   | Installed fastener                                   |                                                        |

### Push-through installation TA M T



| No. | Description                             |                                                        |
|-----|-----------------------------------------|--------------------------------------------------------|
| 1   | Create drill hole with hammer drill     | Create drill hole with hollow drill and vacuum cleaner |
| 2   | Clean bore hole                         | -                                                      |
| 3   | Set the fastener                        |                                                        |
| 4   | Apply required torque moment $T_{inst}$ |                                                        |
| 5   | Installed fastener                      |                                                        |

#### Types of drills

Hammer drill



Hollow drill



**fischer Heavy-duty anchor TA M, TA M S, TA M T**

**Intended use**  
Installation instruction

**Annex B 3**

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| Table C 1.1: Characteristic <b>tension</b> resistance under static and quasi-static loads |          |                    |             |                    |       |                 |        |
|-------------------------------------------------------------------------------------------|----------|--------------------|-------------|--------------------|-------|-----------------|--------|
| Anchor size                                                                               |          |                    |             | TA M6              | TA M8 | TA M10          | TA M12 |
| Steel failure                                                                             |          |                    |             |                    |       |                 |        |
| Characteristic resistance property class 8.8                                              |          | $N_{Rk,s}$         | [kN]        | 16,1               | 29,3  | 46,4            | 67,4   |
| Partial factor                                                                            |          | $\gamma_{Ms}^{1)}$ | [-]         | 1,5                |       |                 |        |
| Pull-out failure                                                                          |          |                    |             |                    |       |                 |        |
| Characteristic resistance in uncracked concrete                                           |          | $N_{Rk,p}$         | [kN] C20/25 | 7,5                | 12    | 20              | 25     |
| Increasing factors for $N_{Rk,p}$ for uncracked concrete                                  | $\psi_c$ | C25/30             |             | 1,12               |       |                 |        |
|                                                                                           |          | C30/37             |             | 1,22               |       |                 |        |
|                                                                                           |          | C35/45             |             | 1,32               |       |                 |        |
|                                                                                           |          | C40/50             |             | 1,41               |       |                 |        |
|                                                                                           |          | C45/55             |             | 1,50               |       |                 |        |
|                                                                                           |          | C50/60             |             | 1,58               |       |                 |        |
| Installation factor                                                                       |          | $\gamma_{inst}$    | [-]         | 1,0                |       |                 |        |
| Concrete cone failure and splitting failure                                               |          |                    |             |                    |       |                 |        |
| Effective embedment depth                                                                 |          | $h_{ef}$           | [mm]        | 40                 | 45    | 55              | 70     |
| Factor $k_1$                                                                              |          | $k_{ucr,N}$        | [-]         | 11,0 <sup>2)</sup> |       |                 |        |
| Spacing (concrete cone failure)                                                           |          | $s_{cr,N}$         | [mm]        | 120                | 135   | 220             | 210    |
| Edge distance (concrete cone failure)                                                     |          | $c_{cr,N}$         |             | 60                 | 68    | 110             | 105    |
| Spacing (splitting)                                                                       |          | $s_{cr,sp}$        |             | 120                | 180   | 330             | 420    |
| Edge distance (splitting)                                                                 |          | $c_{cr,sp}$        |             | 60                 | 90    | 165             | 210    |
| <sup>1)</sup> In absence of other national regulations                                    |          |                    |             |                    |       |                 |        |
| <sup>2)</sup> Based on concrete strength as cylinder strength                             |          |                    |             |                    |       |                 |        |
| fischer Heavy-duty anchor TA M, TA M S, TA M T                                            |          |                    |             |                    |       | Annex C 1       |        |
| Performances                                                                              |          |                    |             |                    |       |                 |        |
| Characteristic <b>tension</b> resistance under static and quasi-static loads              |          |                    |             |                    |       |                 |        |
|                                                                                           |          |                    |             |                    |       | Appendix 9 / 10 |        |

**Table C2.1:** Characteristic values of **shear** resistance under static and quasi-static loads

| Anchor size                                         |                    |      | TA M6 | TA M8 | TA M10 | TA M12 |
|-----------------------------------------------------|--------------------|------|-------|-------|--------|--------|
| Shear load without lever arm                        |                    |      |       |       |        |        |
| Characteristic resistance<br>property class 8.8     | $V^0_{Rk,s}$       | [kN] | 5,8   | 11,7  | 19,2   | 29,8   |
| Partial factor                                      | $\gamma_{Ms}^{1)}$ | [-]  | 1,25  |       |        |        |
| Ductility factor                                    | $k_7$              |      | 1,0   |       |        |        |
| Shear load with lever arm                           |                    |      |       |       |        |        |
| Characteristic bending moment<br>property class 8.8 | $M^0_{Rk,s}$       | [Nm] | 12    | 30    | 60     | 105    |
| Partial factor                                      | $\gamma_{Ms}^{1)}$ | [-]  | 1,25  |       |        |        |
| Concrete pryout failure                             |                    |      |       |       |        |        |
| Ductility factor                                    | $k_7$              | [-]  | 1,0   |       |        |        |
| Factor                                              | $k_8$              |      | 1,1   | 1,8   | 1,8    | 2,0    |
| Concrete edge failure                               |                    |      |       |       |        |        |
| Effective length of the fastener                    | $l_f$              | [mm] | 40    | 45    | 55     | 70     |
| Outside diameter of fastener                        | $d_{nom}$          |      | 10    | 12    | 15     | 18     |

<sup>1)</sup> In absence of other national regulations

**Table C2.2:** Displacements under static and quasi static **tension** loads

| Anchor size                        |                                             | TA M6 | TA M8 | TA M10 | TA M12 |
|------------------------------------|---------------------------------------------|-------|-------|--------|--------|
| Tension load in uncracked concrete | [kN]                                        | 3,0   | 4,8   | 7,9    | 9,9    |
| Displacements                      | $\frac{\delta_{N0}}{\delta_{N\infty}}$ [mm] | 0,7   | 0,7   | 1,2    | 1,2    |
|                                    |                                             | 1,0   | 1,0   | 1,8    | 1,8    |

**Table C2.3:** Displacements under static and quasi static **shear** loads

| Anchor size                      |                                             | TA M6 | TA M8 | TA M10 | TA M12 |
|----------------------------------|---------------------------------------------|-------|-------|--------|--------|
| Shear load in uncracked concrete | [kN]                                        | 3,3   | 6,7   | 11,0   | 17,0   |
| Displacements                    | $\frac{\delta_{V0}}{\delta_{V\infty}}$ [mm] | 2,1   | 1,9   | 3,1    | 3,3    |
|                                  |                                             | 3,1   | 2,8   | 4,6    | 4,9    |

**fischer Heavy-duty anchor TA M, TA M S, TA M T**

#### Performances

Characteristic **shear** resistance under static and quasi-static loads  
Displacements under tension and shear loads

**Annex C 2**

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