

PROHLÁŠENÍ O VLASTNOSTECH

DoP 0263

pro kotva pro velká zatížení fischer TA M, TA M S, TA M T (Kovové kotvy do betonu)

CS

1. Jedinečný identifikační kód typu výrobku: **DoP 0263**
2. Zamýšlené/zamýšlená použití: **Dodatečné upevnění v tlačené zóně betonu, viz. dodatek, obzvláště Přílohy B1 - B3.**
3. Výrobce: **fischerwerke GmbH & Co. KG, Klaus-Fischer-Str. 1, 72178 Waldachtal, Německo**
4. Zplnomocněný zástupce: **-**
5. Systém/systémy POSV: **1**
6. Evropský dokument pro posuzování: **EAD 330232-00-0601**
Evropské technické posouzení: **ETA-04/0003; 2018-06-12**
Subjekt pro technické posuzování: **DIBt- Deutsches Institut für Bautechnik**
Oznařený subjekt/oznařené subjekty: **2873 TU Darmstadt**

7. Deklarovaná vlastnost/Deklarované vlastnosti:

Mechanická odolnost a stabilita (BWR 1)

Charakteristická únosnost v tahu (pro statickou a kvazistatickou akci):

Odolnost proti selhání oceli: Přílohy C1

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

Odolnost proti selhání vytažením: Přílohy C1

Odolnost proti selhání betonu: Přílohy C1

Pevnost: Přílohy C1

Minimální vzdálenost od okraje a rozteč: Přílohy B2

Okrajová vzdálenost bránící rozštěpení při zatížení: Přílohy C1

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

Charakteristická únosnost ve smyku (pro statickou a kvazistatickou akci):

Odolnost proti selhání oceli (smykové zatížení): Přílohy C2

Odolnost proti selhání rozštěpením: Přílohy C2

Odolnost proti selhání okraje betonu: Přílohy C2

Posuny při statickém a kvazistatickém zatížení: Přílohy C2

Životnost: Přílohy A3, A4, B1

Charakteristická únosnost a posuny pro seismické kategorie C1 a C2:

Odolnost proti selhání oceli: NPD

Odolnost proti selhání vytažením: NPD

Mezní protažení: NPD

Koeficient prstencové mezery: NPD

Posuny: NPD

Bezpečnost v případě požáru (BWR 2)

Reakce na oheň: Třída (A1)

Odolnost proti požáru:

Požární odolnost proti selhání oceli (tahové zatížení): NPD

Požární odolnost proti selhání vytažením (tahové zatížení): NPD

Požární odolnost proti selhání oceli (smykové zatížení): NPD

8. Příslušná technická dokumentace a/nebo specifická technická dokumentace: **-**

Vlastnosti výše uvedeného výrobku jsou ve shodě se souborem deklarovaných vlastností. Toto prohlášení o vlastnostech se v souladu s nařízením (EU) č. 305/2011 vydává na výhradní odpovědnost výrobce uvedeného výše.

Podepsáno za výrobce a jeho jménem:



Dr.-Ing. Oliver Geibig, Výkonný ředitel pro obchodní jednotky a inženýrství
Tumlingen, 2021-01-12

Jürgen Grün, Výkonný ředitel pro chemii a kvalitu

Toto PoV bylo připraveno v různých jazykových mutacích. V případě rozporu vždy rozhoduje interpretace verze v anglickém jazyce.

Příloha obsahuje nepovinné a doplňkové informace v anglickém jazyce nad rámec zákonných požadavků.

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

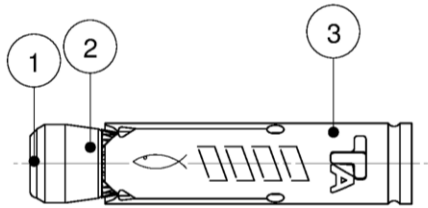
In accordance with European Assessment Documents EAD No. 330232-00-0601 the applicable European legal act is: [96/582/EC].

The system to be applied is: 1

Pre-positioned installation:

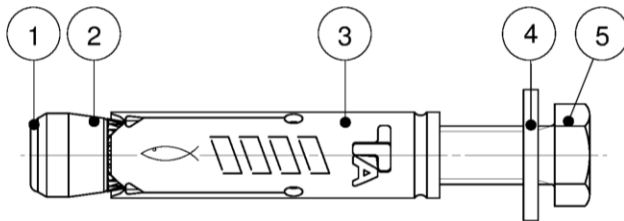
TA M

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



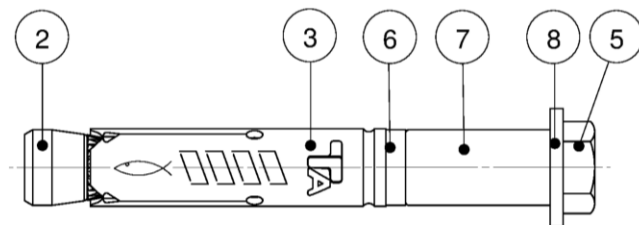
TA M S

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)

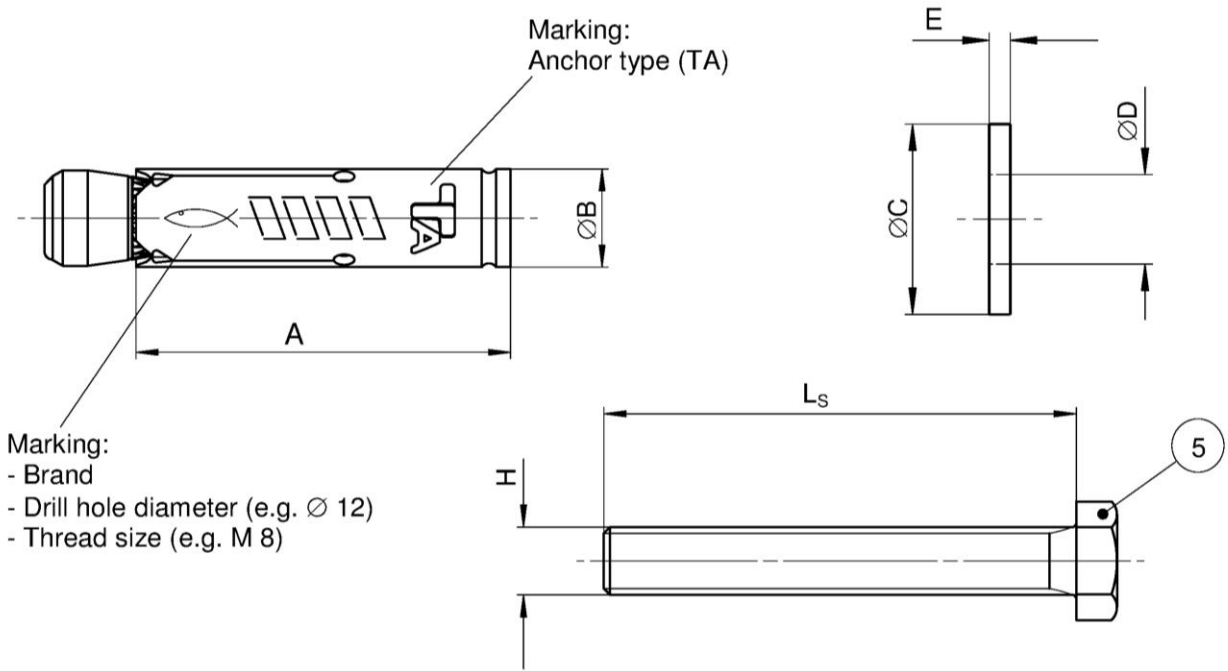
fischer Heavy-duty anchor TA M, TA M S, TA M T

Product description
Anchor types

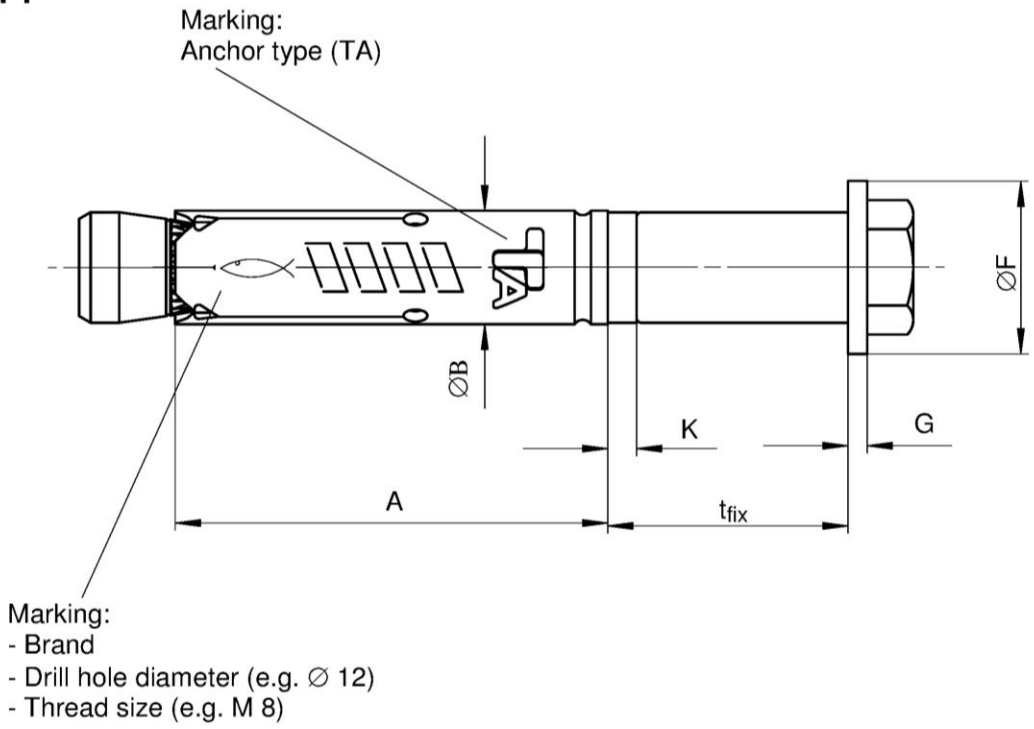
Annex A 1

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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

Appendix 3 / 10

Table A3.1: Anchor dimensions [mm]

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

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

²⁾ 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 ¹⁾ | TA M / TA M S | Polyamide | - |
| 2 | Cone-nut | TA M / TA M S / 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 / TA M T | Cold-rolled steel EN 10139:2016 | Zinc plated according to EN ISO 4042:2017, min 5 µm |
| 4 | Washer ²⁾ | TA M S | Steel, min 140 HV | |
| 8 | Washer | TA M T | | |
| 5 | Hexagon head screw ³⁾ | 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 EN 10139:2016/ Steel EN 10 277:2008 | Zinc plated according to EN ISO 4042:2017, min 5 µm |

¹⁾ Optional

²⁾ For specification - summary of washer for TA M see table A4.2

³⁾ 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

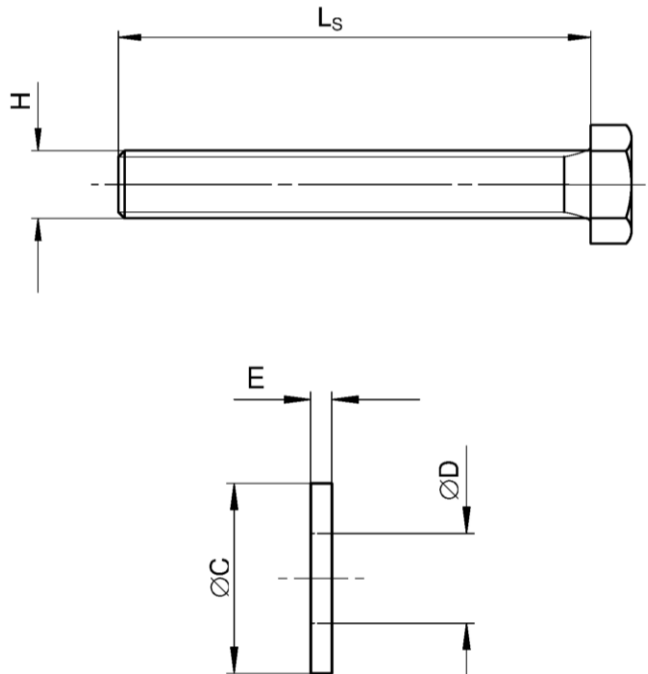
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Table A4.1: Selection criteria for the hexagon head screw (TA M)

| 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 μ 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] | $\geq 11,0$ | $\geq 15,0$ | $\geq 19,0$ | $\geq 23,0$ |
| 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 μ m | | | |



(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 +/- 5° 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

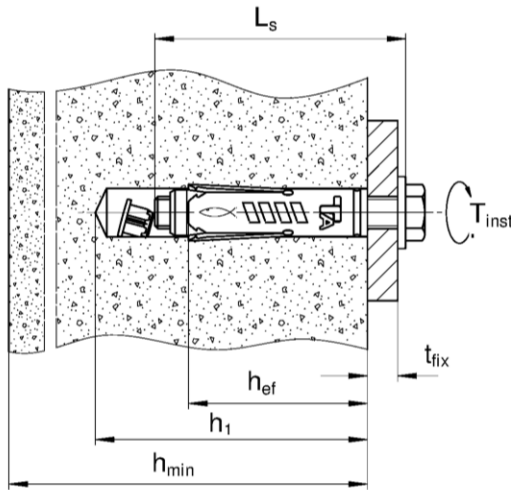
Annex B 1

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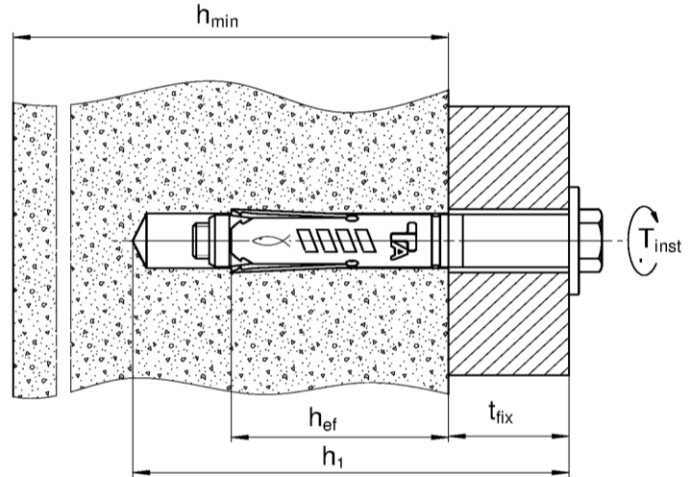
Table B2.1: Installation parameters for TA M / TA M S / TA M T

| Anchor size | | TA M6 | TA M8 | TA M10 | TA M12 |
|---|-----------------|----------------------|----------------|----------------------|----------------|
| Nominal drill hole diameter | d_0 | 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) | $h_1 \geq$ | $L_s - t_{fix} + 15$ | | $L_s - t_{fix} + 20$ | |
| 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 [mm] | 7 | 9 | 12 | 14 |
| Diameter of clearance hole in the fixture (TA M T) | $d_f \leq$ | 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

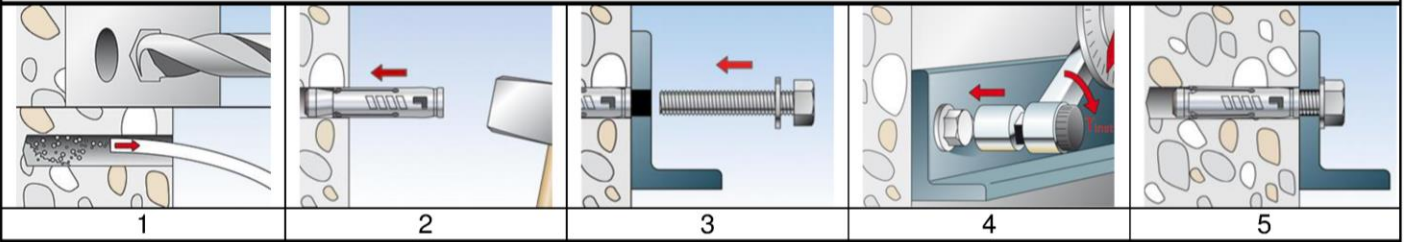
Installation instructions
 Minimum thickness of concrete member, minimum spacing and minimum edge distance

Annex B 2

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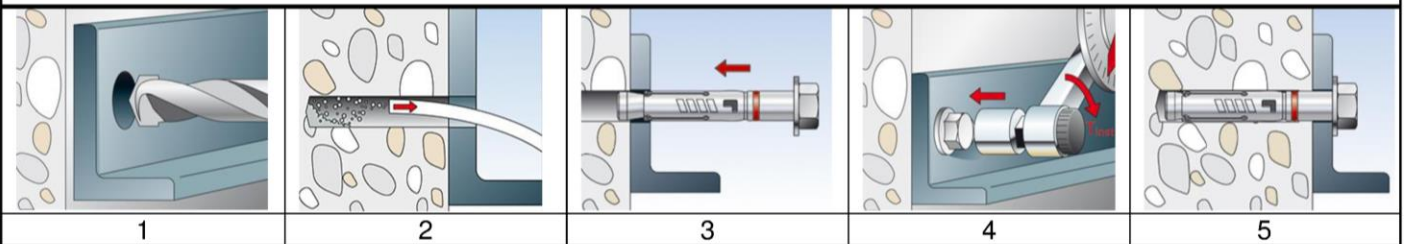
Installation instruction

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

Appendix 8 / 10

Table C 1.1: Characteristic **tension** 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 | ψ_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 | γ_{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 ²⁾ | | | | |
| 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 | |

¹⁾ In absence of other national regulations

²⁾ Based on concrete strength as cylinder strength

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

Performances

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

Annex C 1

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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 property class 8.8 | $V_{Rk,s}^0$ [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 property class 8.8 | $M_{Rk,s}^0$ [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} [mm] | 10 | 12 | 15 | 18 |

¹⁾ 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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