**Trutek Fasteners Polska Sp. z o.o.**
Al. Krakowska 38, Janki
05-090 Raszyn
NIP: PL 5342256188 REGON: 015722173

# Declaration of Performance

**Nr: TDA/01/20230426/1488-CPR-0680/Z**

ETA-22/0455

| | |
|---|---|
| Revision No: | 1 |
| Revision carried out by: | Ben Beardon |
| Revision date: | 26.04.2023 |

| | | |
|---|---|---|
| **1.** | **Unique identyfiaction code of product-type:** | |
| | TDA drop-in fasteners | |
| **2.** | **Indended use/es:** | |
| | Deformation-controlled expansion fasteners for use in concrete for redundant non-structural systems | |
| **3.** | **Manufacturer:** | |
| | Name: | Trutek Fasteners Polska Sp. z o.o. |
| | Address: | Al. Krakowska 38, Sękocin Janki<br>05-090 Raszyn, Polska |
| **4.** | **System/s of AVCP:** | |
| | System: | 2+ |
| **5.** | **European Assessment Document:** | |
| | In accordance with regulation (EU) No 305/2011 on the basis of European Assessment Document EAD 330747-00-0601 „ Fasteners for use in concrete for redundant non-structural systems” | |
| | European Technical Assessment | ETA-22/0455 of 25th of November 2022 |
| | Issued by: | ITB - Building Research Institute in Warsaw |
| **6.** | **Notyfied body/ies:** | |
| | Name: | Cerification Department of ITB - Building Research Institute in Warsaw |
| | Notified body/ies No: | 1488 |
| | No of Certificate of Constancy of Performance: | 1488-CPR-0680/Z |
| **7.** | **Declared performance/es:** | |
| | **Safety n case of fire (BWR 2)** | |
| | **Essential chracteristic** | **Performance** |
| | Reaction to fire | Anchor satisfy requirements for Class A |
| | Resistance to fire | Annex C2 |
| | **Safety and accessibility in use (BWR 4)** | |
| | **Essential chracteristic** | **Performance** |
| | Charecteristic resistance for all load directions | Annex C1 |
| | Edge distance and spacing | Annex C1 |
| | **Aspects of durability** | |
| | **Performance** | **Essential chracteristic** |
| | Durability | Annexes A1 and B1 |

The performance of the product indentified above is in conformity with the set of declared performance/es. This declaration of performance is issued, in accordance with Regulation (EU) No 305/2011, under the sole responsibility of the manufacturer identified above.

Janki, 24th of April 2023
Signed for and on behalf of the manufacturer by:

Ben Beardon
Operations Director

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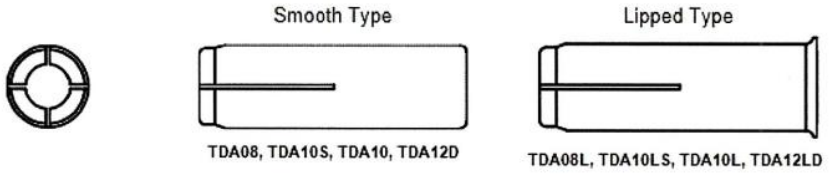
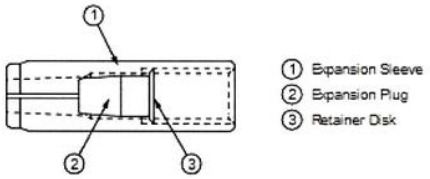



**Marking on the body**

1. TDA anchor identification and type
   XX – size
2. producer identification mark



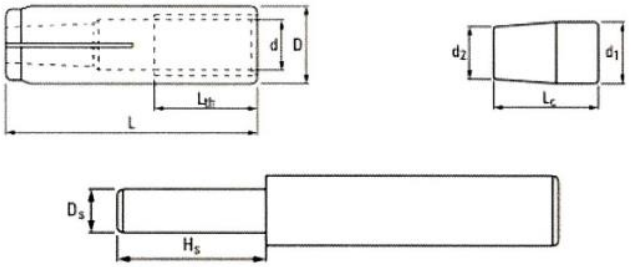




**Table A1. Dimensions**

| Dimensions | | | TDA08 TDA08L | TDA10S TDA10LS | TDA10 TDA10L | TDA12D TDA12LD |
|---|---|---|---|---|---|---|
| **Fastener size** | | | **M8x30** | **M10x30** | **M10x40** | **M12x50** |
| **Expansion sleeve** | | | | | | |
| Sleeve diameter | D | [mm] | 10 | 12 | 12 | 16 |
| Sleeve length | L | [mm] | 30 | 30 | 40 | 50 |
| Thread | d | [-] | M8 | M10 | M10 | M12 |
| Thread length | $L_{th}$ | [mm] | 13 | 13 | 19 | 22 |
| **Expansion plug** | | | | | | |
| Plug diameter | $d_1$ | [mm] | 6.5 | 8 | 8.1 | 10.15 |
| | $d_2$ | [mm] | 5.55 | 6.925 | 6.5 | 8.5 |
| Plug length | $L_c$ | [mm] | 12 | 11.1 | 15.25 | 20.0 |
| **Installation pin** | | | | | | |
| Setting pin diameter | $D_s$ | [mm] | 6.5 | 8.0 | 8.0 | 10.2 |
| Setting pin length | $H_s$ | [mm] | 18 | 18 | 24 | 30 |

**Table A2. Materials**

| Element | Material | Protection |
|---|---|---|
| Expansion sleeve | Carbon steel wire rod grade C1008 | Zinc coating ≥ 5 µm<br>Electroplated according to EN ISO 4042 |
| Expansion plug | Carbon steel wire rod grade Q195 | |

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| **TDA drop-in fasteners** | **Annex A1** |
| **Product description**<br>Characteristics of the product | of European Technical Assessment ETA-22/0455 |

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**Specification of intended use**

**Anchorages subject to:**
- Multiple use for non-structural application.
- Static and quasi-static loads.

**Base material:**
- Reinforced or unreinforced normal weight concrete (without fibres) of strength class C20/25 to C50/60 according to EN 206.
- Uncracked and cracked concrete.

**Use conditions (environmental conditions):**
- Structures subject to dry internal conditions.

**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 transmitted. The position of the fastener is indicated on the design drawings (e.g. position of the fastener relative to reinforcement or to supports, etc.).
- Anchorages under static and quasi-static loads and under fire exposure are designed in accordance with EN 1992-4:2018.
- Fasteners are only to be used for multiple use for non-structural applications according to EAD 330747-00-0601.

**Installation:**
- Fastener installation carried out by appropriately qualified personnel and under the supervision of the person responsible for technical matters of the site.
- Use of the fastener only as supplied by the manufacturer without exchanging any component of the fastener.
- Fastener installation in accordance with the manufacturer's specifications and drawings and using the appropriate tools.
- Check of concrete being well compacted, e.g. without significant voids.
- 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.
- Fastener installation such that the effective anchorage depth is complied with.

| TDA drop-in fasteners | **Annex B1** |
|---|---|
| **Intended use**<br>Specifications | of European Technical Assessment ETA-22/0455 |

TRUTEK™
CONSTRUCTION FASTENING SYSTEMS

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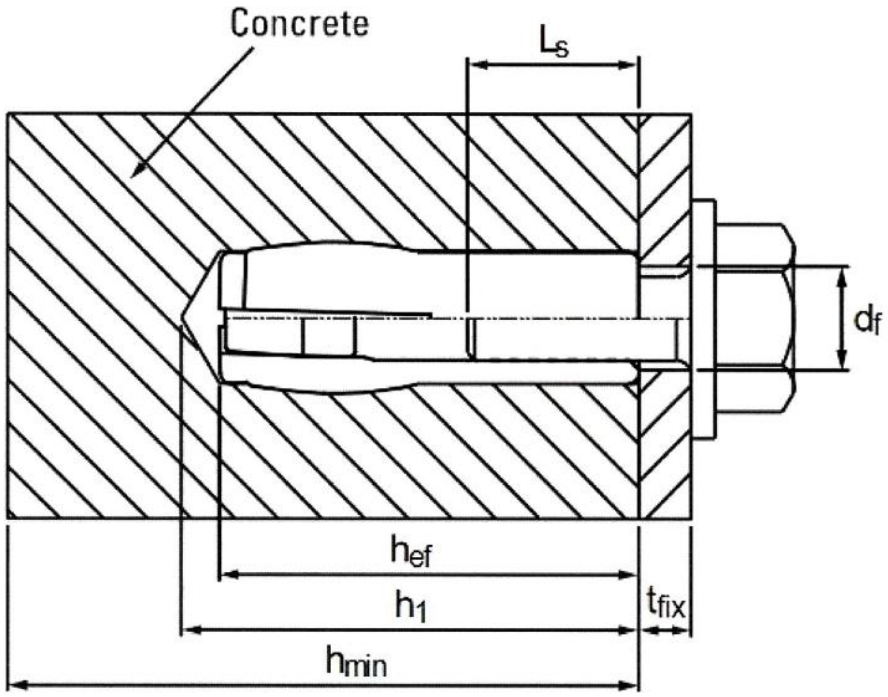


**Table B1.** Installation parameters

| **Fastener** | | | **TDA08 TDA08L** | **TDA10S TDA10LS** | **TDA10 TDA10L** | **TDA12D TDA12LD** |
|---|---|---|---|---|---|---|
| **Size** | | | **M8x30** | **M10x30** | **M10x40** | **M12x50** |
| Effective anchorage depth | $h_{ef}$ | [mm] | 30 | 30 | 40 | 50 |
| Drill hole depth | $h_1$ | [mm] | 33 | 33 | 43 | 54 |
| Drill hole diameter | $d_0$ | [mm] | 10 | 12 | 12 | 16 |
| Maximum installation torque | $T_{inst}$ | [mm] | 11 | 17 | 17 | 38 |
| Minimum thickness of concrete member | $h_{min}$ | [mm] | 80 | 80 | 80 | 80 |
| Minimum screwing depth | $L_{s,min}$ | [mm] | 8 | 10 | 10 | 12 |
| Maximum screwing depth | $L_{s,max}$ | [mm] | 13 | 13 | 19 | 22 |
| Diameter of clearance hole in the fixture | $d_f$ | [mm] | 9 | 12 | 12 | 14 |
| Minimum spacing | $s_{min}$ | [mm] | 200 | 200 | 200 | 250 |
| Minimum edge distance | $c_{min}$ | [mm] | 150 | 150 | 150 | 150 |

Fastening screws or fastener threaded rods:
Steel, property class 4.8 / 5.8 / 6.8 / 8.8 according to EN-ISO 898-1; thickness of zinc coating ≥ 5 µm

| **TDA drop-in fasteners** | **Annex B2** |
|---|---|
| **Intended use**<br>Installation parameters | of European Technical Assessment ETA-22/0455 |

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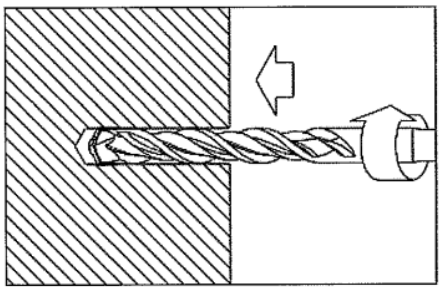
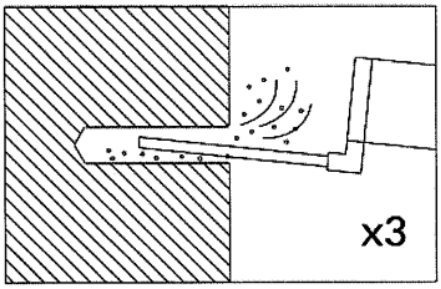
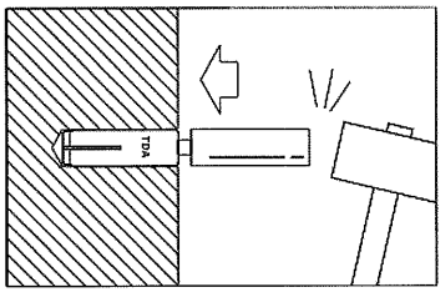


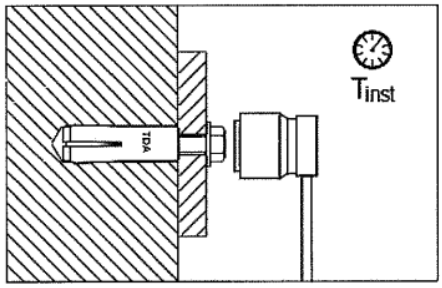
Drill hole with metal hammer drill machine.
Drill to a required depth.




Blow out dust at least 3 times with a hand pump.




Put the fastener into the drill hole, hammering with the installation tool, until the setting pin fully insert into the fastener.




Fix the fixture by screw or threaded rod with max. $T_{inst}$

| TDA drop-in fasteners | Annex B3 |
|---|---|
| **Intended use**<br>Installation instructions and tools | of European Technical Assessment ETA-22/0455 |

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**Table C1:** Characteristic resistance in concrete C20/25 to C50/60

| **Fastener** | | | **TDA08 TDA08L** | **TDA10S TDA10LS** | **TDA10 TDA10L** | **TDA12D TDA12LD** |
|---|---|---|---|---|---|---|
| **Size** | | | **M8x30** | **M10x30** | **M10x40** | **M12x50** |
| **All load directions (fastening screw or threaded rod property class ≥ 4.8)** | | | | | | |
| Characteristic resistance in concrete C20/25 to C50/60 | $F^0_{Rk}$ | [kn] | 4.0 | 4.5 | 4.5 | 7.0 |
| Installation safety factor | $\gamma_{inst}$ | [-] | 1.4 | 1.4 | 1.2 | 1.2 |
| Partial factor | $\gamma_M$ 1) | [-] | 1.5 | 1.5 | 1.5 | 1.5 |
| Spacing | $s_{cr}$ | [mm] | 200 | 200 | 200 | 250 |
| Edge distance | $c_{cr}$ | [mm] | 150 | 150 | 150 | 150 |
| Minimum member thickness | $h_{min}$ | [mm] | 80 | 80 | 80 | 80 |
| **Shear load: steel failure with lever arm** | | | | | | |
| Characteristic bending moment: screw class 4.8 | $M^0_{Rk,s}$ | [Nm] | 15.0 | 30.0 | 30.0 | 52.4 |
| Partial factor | $\gamma_{Ms}$ 1) | [-] | 1.25 | 1.25 | 1.25 | 1.25 |
| Characteristic bending moment: screw class 5.8 | $M^0_{Rk,s}$ | [Nm] | 19.0 | 37.0 | 37.0 | 65.6 |
| Partial factor | $\gamma_{Ms}$ 1) | [-] | 1.25 | 1.25 | 1.25 | 1.25 |
| Characteristic bending moment: screw class 6.8 | $M^0_{Rk,s}$ | [Nm] | 23.0 | 45.0 | 45.0 | 78.7 |
| Partial factor | $\gamma_{Ms}$ 1) | [-] | 1.25 | 1.25 | 1.25 | 1.25 |
| Characteristic bending moment: screw class 8.8 | $M^0_{Rk,s}$ | [Nm] | 30.0 | 60.0 | 60.0 | 104.9 |
| Partial factor | $\gamma_{Ms}$ 1) | [-] | 1.25 | 1.25 | 1.25 | 1.25 |

1) in the absence of other national regulation

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| **TDA drop-in fasteners** | **Annex C1** |
| **Performance**<br>Characteristic resistance | of European Technical Assessment ETA-22/0455 |

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**Table C2:** Characteristic resistance under fire exposure in concrete C20/25 to C50/60

| **Fastener** | | | **TDA08 TDA08L** | **TDA10S TDA10LS** | **TDA10 TDA10L** | **TDA12D TDA12LD** |
|---|---|---|---|---|---|---|
| **Size** | | | **M8x30** | **M10x30** | **M10x40** | **M12x50** |
| **Fire resistance class (fastening screw or threaded rod property class ≥ 4.8)** | | | | | | |
| R30 | Characteristic resistance $F^0_{Rk,fi}$ [1)] | [kN] | 0.89 | 0.89 | 1.13 | 1.75 |
| R60 | | [kN] | 0.89 | 0.89 | 1.13 | 1.75 |
| R90 | | [kN] | 0.89 | 0.89 | 1.13 | 1.75 |
| R120 | | [kN] | 0.71 | 0.71 | 0.90 | 1.40 |
| Spacing | $s_{cr,fi}$ | [mm] | 4 x $h_{ef}$ | | | |
| Edge distance | $c_{cr,fi}$ | [mm] | 2 x $h_{ef}$ | | | |

The design method covers fasteners with a fire attack from one side only. In case of fire attack from more than one side, the edge distance shall be ≥ 300 mm.

[1)] in the absence of other national regulation a partial safety factor $\gamma_{M,fi} = 1,0$ is recommended

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| **TDA drop-in fasteners** | **Annex C2** of European Technical Assessment ETA-22/0455 |
| **Performance** Characteristic resistance under fire exposure | |