# ΔΗΛΩΣΗ ΕΠΙΔΟΣΕΩΝ

## DoP 0403

για fischer hollow ceiling anchor FHY (Εκτομούμενα αγκύρια για χρήση σε μπετόν) EL

1. Μοναδικός κωδικός ταυτοποίησης του τύπου του — **DoP 0403**
2. Προβλεπόμενη(-ες) χρήση(-εις): — **Μεταγενέστερη αγκύρωση σε σκυρόδεμα για μη φέρουσες κατασκευές, δείτε το παράρτημα, ειδικά τα παραρτήματα B1- B3.**

3. Κατασκευαστής: — **fischerwerke GmbH & Co. KG, Klaus-Fischer-Str. 1, 72178 Waldachtal, Γερμανία**

4. Εξουσιοδοτημένος αντιπρόσωπος: — **–**

5. Σύστημα/συστήματα AVCP (αξιολόγηση και επαλήθευση της σταθερότητας της επίδοσης): — **2+**

6. Ευρωπαϊκό έγγραφο αξιολόγησης: — **EAD 330747-00-0601; 2018-08 (EU 2018/C 281/04)**
   Ευρωπαϊκή τεχνική αξιολόγηση: — **ETA-21/0857; 2026-05-29**
   Οργανισμός τεχνικής αξιολόγησης: — **TZÚS - Technical and Test Institute for Construction Prague**
   Κοινοποιημένος(-οι) οργανισμός(-οι): — **2873 TU Darmstadt**

7. Δηλωθείσα(-ες) επίδοση(-εις):

**Ασφάλεια στη χρήση (BWR 4)**

**Χαρακτηριστική αντίσταση σε εφελκυστικό φορτίο (στατικό και σχεδόν στατικό):**

Αντίσταση σε αστοχία χάλυβα: NPD
Αντίσταση σε αστοχία από εξόλκευση: NPD
Αντίσταση σε αστοχία από κώνο σκυροδέματος: NPD
Ανθεκτικότητα: Παράρτημα C1
Ελάχιστη απόσταση από ακμή και μεταξύ αγκυρίων: Παραρτήματα B2, B3
Απόσταση από ακμή για αποφυγή θραύσης από φορτίο: NPD

**Χαρακτηριστική αντίσταση σε διατμητικό φορτίο (στατικό και σχεδόν στατικό):**

Αντίσταση σε αστοχία χάλυβα (διατμητικό φορτίο): Παράρτημα C1 — $V_{Rk,s}$=NPD; $k_7$=NPD
Αντίσταση σε ολίσθηση: NPD
Αντίσταση σε αστοχία ακμης σκυροδέματος: NPD

**Χαρακτηριστική αντίσταση για όλες τις κατευθύνσεις φόρτισης και μορφές αστοχίας για συνήθη σχεδιασμό:**

Χαρακτηριστική αντίσταση: Παράρτημα C1

**Διάρκεια:**

Διάρκεια: Παραρτήματα A2, B1

**Ασφάλεια σε περίπτωση φωτιάς (BWR 2)**

Αντίδραση σε φωτιά:Κατηγορίας (A1)

**Αντίσταση στη φωτιά:**

Αντίσταση σε φωτιά για αστοχία χάλυβα (εφελκυστικό φορτίο): δείτε το παράρτημα, ειδικά τα Παράρτημα C2, C3
Αντίσταση σε φωτιά για εξόλκευση (εφελκυστικό φορτίο): δείτε το παράρτημα, ειδικά τα Παράρτημα C2, C3
Αντίσταση σε φωτιά για αστοχία χάλυβα (διατμητικό φορτίο): δείτε το παράρτημα, ειδικά τα Παράρτημα C2, C3

8. Κατάλληλη τεχνική τεκμηρίωση και/ή ειδική τεχνική τεκμηρίωση: — **–**

Η επίδοση του προϊόντος που ταυτοποιείται ανωτέρω είναι σύμφωνη με τη (τις) δηλωθείσα(-ες) επίδοση(-εις). Αυτή η δήλωση επιδόσεων εκδίδεται σύμφωνα με τον Κανονισμό (ΕΕ) Αρ. 305/2011 με αποκλειστική ευθύνη του κατασκευαστή που προσδιορίζεται παραπάνω.

Υπογραφή για λογαριασμό και εξ ονόματος του κατασκευαστή από:

i.V.

Dr.Christian Weber, Διευθυντής Ανάπτυξης

Dieter Pfaff, Επικεφαλής της Διεθνούς Ομοσπονδίας Παραγωγής και Διαχείρισης Ποιότη

Tumlingen, 2026-07-01

Αυτή η Δήλωση Επιδόσεων μεταφράστηκε σε διάφορες γλώσσες. Σε περίπτωση που υπάρχει αμφιβολία για τη μετάφραση, υπερισχύει πάντα η αγγλική έκδοση.
Το παράρτημα περιλαμβάνει προαιρετικές και συμπληρωματικές πληροφορίες στα αγγλικά, που ξεπερνούν τις (οριζόμενες σε άλλες γλώσσες) νόμιμες απαιτήσεις.

Translation guidance Essential Characteristics and Performance Parameters for Annexes

**Οδηγίες Μετάφρασης των βασικών χαρακτηριστικών και απόδοσης για τα παραρτήματα**

| | | |
|---|---|---|
| Safety in case of fire (BWR 2)<br>**Ασφάλεια σε περίπτωση φωτιάς (BWR 2)** | | |
| 1 | Reaction to fire:<br>**Αντίδραση σε φωτιά:** | Class<br>Κατηγορίας (A1) |
| Resistance to fire:<br>**Αντίσταση στη φωτιά:** | | |
| 2 | Fire resistance to steel failure (tension load):<br>**Αντίσταση σε φωτιά για αστοχία χάλυβα (εφελκυστικό φορτίο):** | $N_{Rk,s,fi}$ [kN] |
| 3 | Fire resistance to pull-out failure (tension load):<br>**Αντίσταση σε φωτιά για εξόλκευση (εφελκυστικό φορτίο):** | $N_{Rk,p,fi}$ [kN] |
| 4 | Fire resistance to steel failure (shear load):<br>**Αντίσταση σε φωτιά για αστοχία χάλυβα (διατμητικό φορτίο):** | $V_{Rk,s,fi}$ [kN], $M^0_{Rk,s,fi}$ [Nm] |
| Safety and accessibility in use (BWR 4)<br>**Ασφάλεια στη χρήση (BWR 4)** | | |
| Characteristic resistance to tension load (static and quasi-static loading):<br>**Χαρακτηριστική αντίσταση σε εφελκυστικό φορτίο (στατικό και σχεδόν στατικό):** | | |
| 6 | Resistance to steel failure:<br>**Αντίσταση σε αστοχία χάλυβα:** | $N_{Rk,s}$ [kN], $E_s$ [N/mm$^2$] |
| 7 | Resistance to pull- out failure:<br>**Αντίσταση σε αστοχία από εξόλκευση:** | $N_{Rk,p}$ [kN], $\psi_c$, $\tau_{Rk,p}$ [N/mm$^2$] |
| 8 | Resistance to concrete cone failure:<br>**Αντίσταση σε αστοχία από κώνο σκυροδέματος:** | $k_{cr,N}$, $k_{ucr,N}$ [-], $h_{ef}$, $c_{cr,N}$ [mm] |
| 9 | Robustness:<br>**Ανθεκτικότητα:** | $\gamma_{inst}$ [-] |
| 10 | Minimum edge distance and spacing:<br>**Ελάχιστη απόσταση από ακμή και μεταξύ αγκυρίων:** | $c_{min}$, $s_{min}$, $h_{min}$ [mm] |
| 11 | Edge distance to prevent splitting under load:<br>**Απόσταση από ακμή για αποφυγή θραύσης από φορτίο:** | $N^0_{Rk,sp}$ [kN], $c_{cr,sp}$ [mm] |
| Characteristic resistance to shear load (static and quasi-static loading):<br>**Χαρακτηριστική αντίσταση σε διατμητικό φορτίο (στατικό και σχεδόν στατικό):** | | |
| 12 | Resistance to steel failure (shear load):<br>**Αντίσταση σε αστοχία χάλυβα (διατμητικό φορτίο):** | $V_{Rk,s}$ [kN], $M^0_{Rk,s}$ [Nm], $k_7$ [-] |
| 13 | Resistance to pry-out failure:<br>**Αντίσταση σε ολίσθηση:** | $k_8$ [-] |
| 14 | Resistance to concrete edge failure:<br>**Αντίσταση σε αστοχία ακμης σκυροδέματος:** | $d_{nom}$, $l_f$ [mm] |
| Characteristic resistance for all load directions and modes of failure for simplified design:<br>**Χαρακτηριστική αντίσταση για όλες τις κατευθύνσεις φόρτισης και μορφές αστοχίας για συνήθη σχεδιασμό:** | | |
| 15 | Characteristic resistance:<br>**Χαρακτηριστική αντίσταση:** | $F^0_{Rk}$ [kN], $s_{cr}$, $c_{cr}$ [mm] |
| Durability:<br>**Διάρκεια:** | | |
| 16 | Durability:<br>**Διάρκεια:** | Description |

## Specific parts

### 1. Technical description of the product

The fischer hollow ceiling anchor FHY is a torque-controlled expansion anchor made of galvanised or stainless steel. It consists of an expansion sleeve and a cone with an internal thread and is anchored by torque-controlled expansion with a hexagon head bolt or threaded rod with nut and washer.

By tightening the screw/nut, the cone is pulled into the expansion sleeve and expanding it.

The product description is given in Annex 1.

### 2. Specification of the intended use in accordance with the applicable European Assessment Document (hereinafter EAD)

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

The provisions made in this European Technical Assessment are based on an assumed working life of the anchor of 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 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 Safety in case of fire (BWR 2)

| Essential characteristic | Performance |
|---|---|
| Reaction to fire | Class A1 according to EN 13501-1 |
| Resistance to fire | See Annex C2 and Annex C3 |

#### 3.2 Safety and accessibility in use (BWR 4)

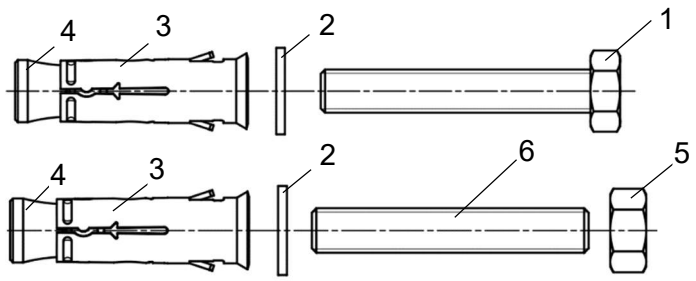
| Essential characteristic | Performance |
|---|---|
| Characteristic resistance for all load directions and modes of failure for simplified design | See Annex C1 |
| Durability | See Annex B1 |

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

According to the Decision 97/161/EC of the European Commission, the system of assessment verification of constancy of performance (see Annex IX to Regulation (EU) 2024/3110) is system 2+.

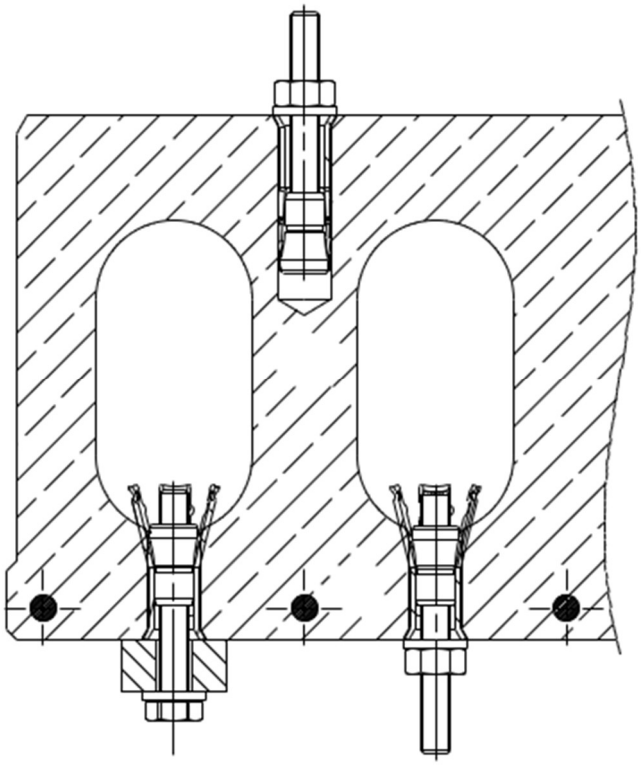
Following standards will be referred to in this European Technical Assessment:

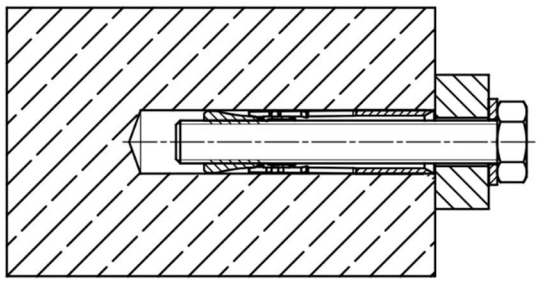
| | |
|---|---|
| EN 1993-1-4:2025 | Eurocode 3 - Design of steel structures - Part 1-4: Stainless steel structures |
| EN 1993-1-4/NA:2020 | National Annex - Nationally determined parameters - Eurocode 3: Design of steel structures - Part 1-4: General rules - Supplementary rules for stainless steels |
| EN ISO 4042:2022 | Fasteners - Electroplated coating systems |
| EN ISO 898-1:2013 | Mechanical properties of fasteners made of carbon steel and alloy steel - Part 1: Bolts, screws and studs with specified property classes - Coarse thread and fine pitch thread |
| EN ISO 898-2:2022 | Fasteners - Mechanical properties of fasteners made of carbon steel and alloy steel - Part 2: Nuts with specified property classes |
| EN 13501-1:2018 | Fire classification of construction products and building elements - Part 1: Classification using data from reaction to fire tests |
| EN ISO 3506-1:2020 | Fasteners - Mechanical properties of corrosion-resistant stainless steel fasteners - Part 1: Bolts, screws and studs with specified grades and property classes |
| EN ISO 3506-2:2020 | Fasteners - Mechanical properties of corrosion-resistant stainless steel fasteners - Part 2: Nuts with specified grades and property classes |
| EN 10139:2016+A1:2020 | Cold rolled uncoated low carbon steel narrow strip for cold forming - Technical delivery conditions |
| EN ISO 683-7:2024 | Heat-treatable steels, alloy steels and free-cutting steels - Part 7: Bright products of non-alloy and alloy steels |
| EN 10088-1:2023 | Stainless steels - Part 1: List of stainless steels; |
| EN 10088-2:2024 | Stainless steels - Part 2: Technical delivery conditions for sheet/plate and strip of corrosion resistant steels for general purposes |
| EN ISO 4017:2022 | Fasteners - Hexagon head screws - Product grades A and B |
| EN 206:2013+A2:2021 | Concrete - Specification, performance, production and conformity |




1 Hexagon screw
2 Washer
3 Expansion sleeve
4 Cone nut
5 Hexagon nut
6 Threaded rod

## Installed conditions:

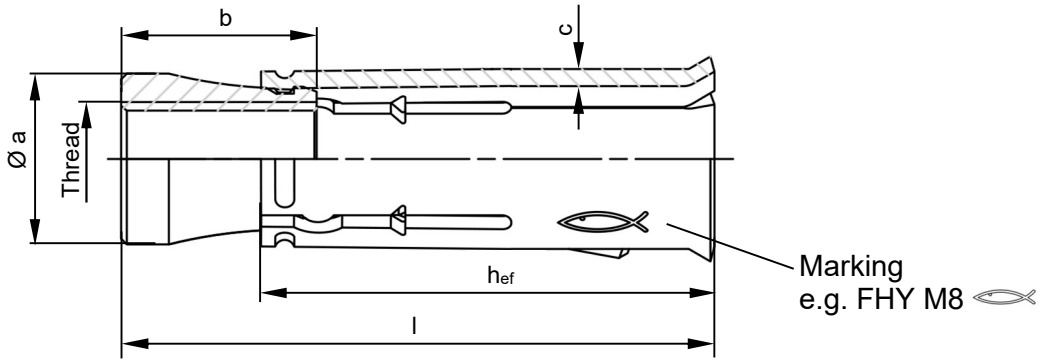




*Figures not to scale*

| | |
|---|---|
| fischer hollow ceiling anchor FHY | **Annex A1** |
| **Product description**<br>Installed conditions | |

## Product marking and dimensions:




FHY: Carbon steel, galvanised
FHY R: Stainless steel

**Table A2.1:** Dimensions [mm]

| Typ | $h_{ef}$ | Thread | ø a | b | c | l |
|---|---|---|---|---|---|---|
| FHY M6 | 30 | M6 | 9,6 | 12,0 | 1,0 | 37 |
| FHY M8 | 35 | M8 | 11,5 | 13,1 | 1,0 | 43 |
| FHY M10 | 40 | M10 | 15,0 | 17,2 | 1,5 | 52 |
| FHY M12 | 40 | M12 | 17,0 | 20,85 | 1,5 | 55 |

**Table A2.2:** Designations and materials FHY

| Part | Designation | Material | |
|---|---|---|---|
| | | FHY | FHY R |
| | Type of steel | Steel | Stainless steel R |
| | | Zinc plated ≥ 5 µm, EN ISO 4042 | Acc. to EN 10088 Corrosion resistance class CRC III acc. to EN 1993-1-4 and with EN 1993-1-4/NA |
| 1 | Hexagon screw [1)] | Steel, EN ISO 898-1 property class 8.8 (**M6**); property class 4.6, 5.8 or 8.8 (**M8**, **M10** and **M12**) | EN ISO 3506-1 property class ≥ 70 |
| 2 | Washer [1)] | Cold strip, EN 10139 | Stainless steel EN 10088 |
| 3 | Expansion sleeve | Cold strip, EN 10139 | |
| 4 | Cone nut | Steel EN ISO 683-7 | |
| 5 | Hexagon nut [1)] | Steel EN ISO 898-2 property class 8 (**M6**); 4 or 5 or 8 (**M8**, **M10** and **M12**) | Stainless steel EN ISO 3506-2 property class ≥ 70 |
| 6 | Threaded rod [1)] | Steel EN ISO 898-1, property class 8.8 (**M6**); 4.8, 5.8 or 8.8 (**M8**); 4.6, 5.8 or 8.8 (**M10** and **M12**) | Stainless steel EN ISO 3506-1; property class ≥ 70 |

[1)] Commercial threaded rods, washers, hexagon nuts and hexagon screws may also be used if the requirements in Table A2.2 are fulfilled. The strength of threaded parts in accordance with EN ISO 898-1 must be specified by the design engineer according to Table C1.1.

*Figure not to scale*

fischer hollow ceiling anchor FHY

**Product description**
Product label and dimensions

**Annex A2**

## Specifications of intended use

**Fastenings subject to:**

| Size | FHY, FHY R | | | |
|---|---|---|---|---|
| | M6 | M8 | M10 | M12 |
| Hammer drilling with standard drill bit  | | | ✓ | |
| Hammer drilling with hollow drill bit with automatic cleaning  | | | ✓ | |
| Static and quasi-static loads | | | ✓ | |
| Cracked and uncracked concrete | | | | |
| Fire exposure | | | | |

**Base materials:**

- Compacted reinforced and unreinforced normal weight concrete without fibres (cracked and uncracked) according to EN 206.
- Strength classes ≥ C20/25 according to EN 206.
- Pre-stressed hollow core slabs, where the cavity width does not exceed 4,2 times the web width ($b_H \leq 4{,}2 \times b_{St}$) with strength classes ≥ C45/55.

**Use conditions (Environmental conditions):**

- Structures subject to dry internal conditions (FHY, FHY R)
- For all other conditions according to EN 1993-1-4 corresponding to corrosion resistance class
  - CRC III: FHY R

**Design:**

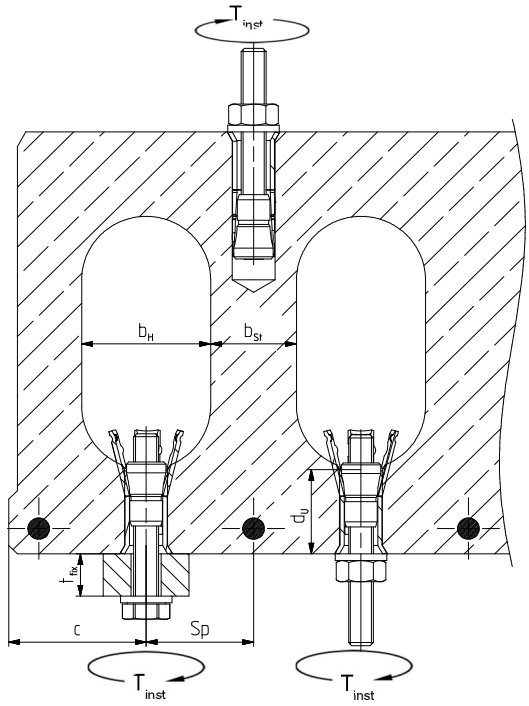
- Fastenings are to be designed under the responsibility of an engineer experienced in fastenings and concrete work
- Verifiable calculation notes and drawings are to be prepared taking account of the loads to be anchored. The position of the fastener is indicated on the design drawings (e.g. position of the fastener relative to reinforcement or to supports, etc.).
- Design under static or quasi-static actions shall be performed in accordance with EN 1992-4, design method B.

*Figures not to scale*

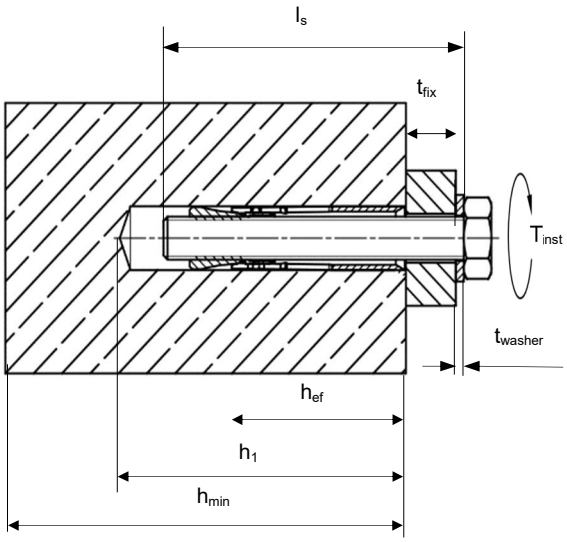
| | |
|---|---|
| fischer hollow ceiling anchor FHY | **Annex B1** |
| **Intended use**<br>Specifications | |

## **Table B2.1:** Installation parameters

| Size | | | FHY, FHY R | | | |
|---|---|---|---|---|---|---|
| | | | M6 | M8 | M10 | M12 |
| Nominal drill hole diameter | $d_0$ = | [mm] | 10 | 12 | 16 | 18 |
| Effective embedment depth | $h_{ef}$ ≥ | | 30 | 35 | 40 | 40 |
| Depth of drill hole to deepest point | $h_1$ ≥ | | 50 | 60 | 65 | 70 |
| Diameter of clearance hole in the fixture | $d_f$ ≤ | | 7 | 9 | 12 | 14 |
| Length of screw [1] | $l_s$ ≥ | | 37 + $t_{washer}$ + $t_{fix}$ | 43 + $t_{washer}$ + $t_{fix}$ | 52 + $t_{washer}$ + $t_{fix}$ | 55 + $t_{washer}$ + $t_{fix}$ |
| Length of the threaded bolt | $l_b$ ≥ | | 42 + $t_{washer}$ + $t_{fix}$ | 50 + $t_{washer}$ + $t_{fix}$ | 60 + $t_{washer}$ + $t_{fix}$ | 65 + $t_{washer}$ + $t_{fix}$ |
| Required setting torque FHY | $T_{inst}$ = | [Nm] | 8 | 10 | 20 | 30 |
| Required setting torque FHY R | $T_{inst}$ = | [Nm] | 15 | 20 | 40 | 50 |
| [1] For screws with shaft according to EN ISO 4017 the shaft length must be ≤ $t_{fix}$ | | | | | | |
| Pre-stressed hollow core slab ≥ C45/55 web thickness ≥ 25mm | | | | | | |
| Minimum spacing | $s_{min}$ ≥ | [mm] | 70 | 70 | 80 | 80 |
| Minimum edge distance | $c_{min}$ ≥ | [mm] | 100 | 100 | 100 | 150 |
| Solid concrete ≥ C20/25 | | | | | | |
| Minimum spacing | $s_{min}$ ≥ | [mm] | 70 | 70 | 80 | 80 |
| Minimum edge distance | $c_{min}$ ≥ | [mm] | 100 | | | |
| Minimum thickness of concrete member | $h_{min}$ ≥ | [mm] | 100 | | | |




Anchoring in pre-stressed hollow core slabs and in solid material




$S_p$ = Distance to the tensioning strands
$t_{fix}$ = Thickness of fixture
$d_u$ = Thickness of the slab web
c = Edge distance
$T_{inst}$ = Installation moment
$b_H$ = Cavity width
$b_{st}$ = Web thickness

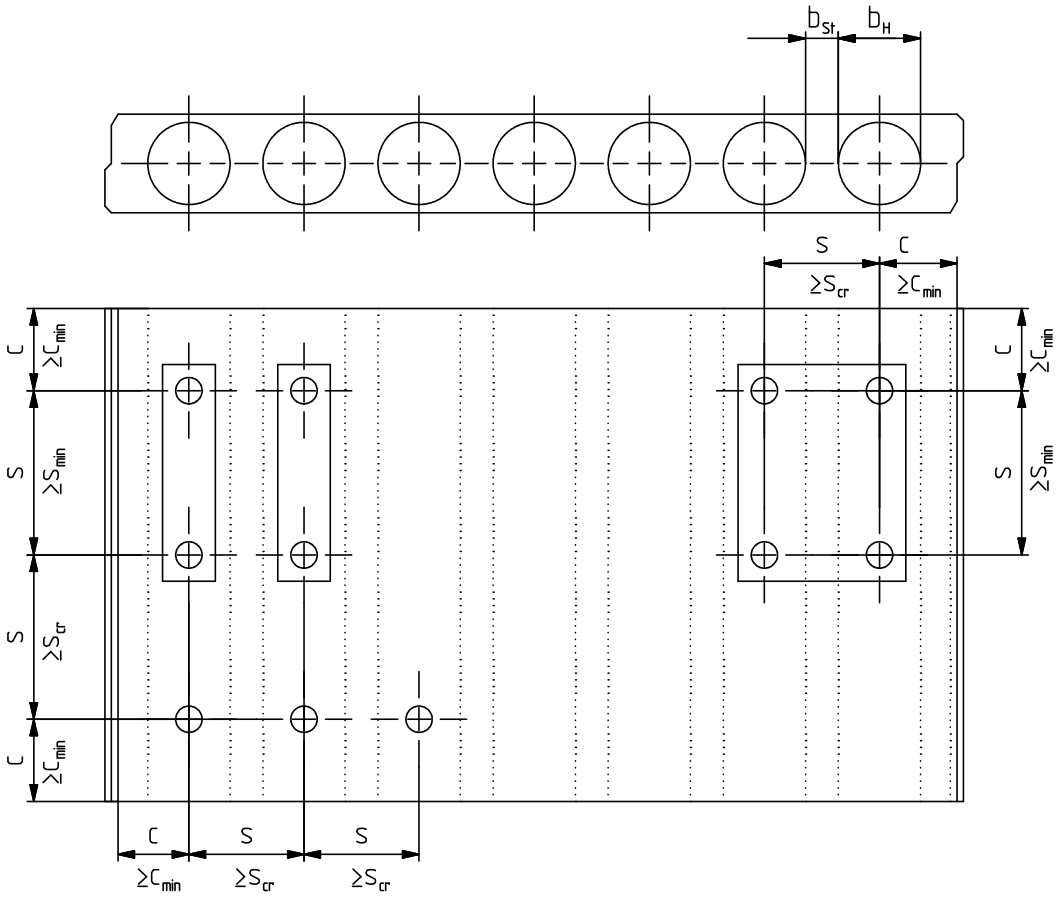
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fischer hollow ceiling anchor FHY

**Intended use**
Installation parameters

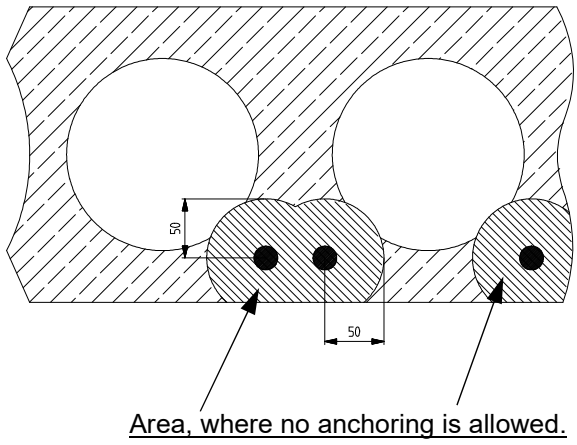
**Annex B2**

**Picture B3.1: Anchoring in pre-stressed hollow core slab – Anchoring condition: $b_H \leq 4{,}2 \times b_{St}$**




$s_{min}$ and $c_{min}$ see Annex B2 – $s_{cr}$ see Annex C1.

**Picture B3.2: Minimum distance $S_p$ to the tensioning strand**



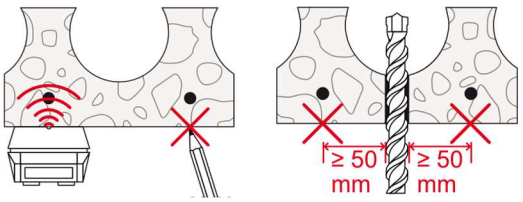
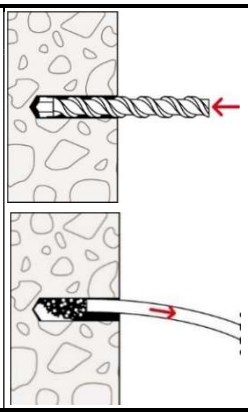
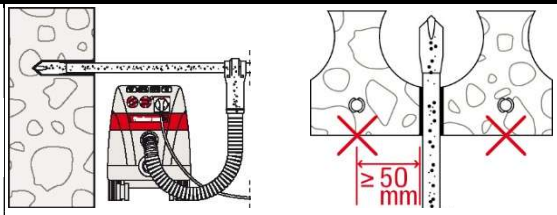

The anchor must have a distance from the anchor axis to the tensioning strands of at least 50 mm.

*Figures not to scale*

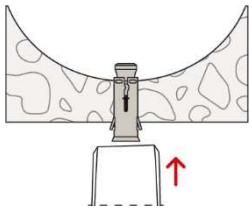
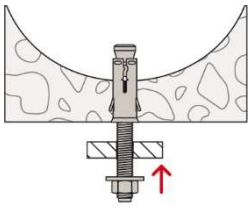
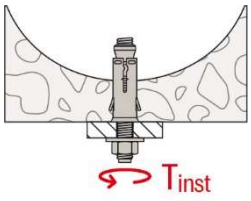
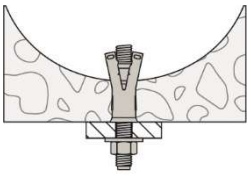
| | |
|---|---|
| fischer hollow ceiling anchor FHY | |
| **Intended use**<br>Installation parameters | **Annex B3** |

## Installation instructions:

- Fastener installation carried out by appropriately qualified personnel and under the supervision of the person responsible for technical matters on the site.
- Hammer or hollow drilling.
- 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.
- In Precast pre-stressed hollow core slabs the anchor FHY may be installed from all directions, if the web thicknesses is ≥ 25mm and the spacing to the tensioning strands of ≥ 50mm is observed (also in the area of solid material).

| | | | |
|---|---|---|---|
| 1a)<br>Hammer drill<br>(e.g. fischer Quattric II) |  | <br>**Prestressed hollow core slabs:**<br>Determine and mark the position of the tensioning strands, e.g. with a suitable scanner. | <br>**Solid material/solid areas of hollow core slabs** |
| 1b)<br>Hollow drill<br>(e.g. fischer FHD) |  | <br>Drill the hole with automatic cleaning | - |

## Installation of the fastener (exemplary in a pre-stressed hollow core slabs)

| | | | |
|---|---|---|---|
|  |  |  |  |
| Set the fastener | Fixation of fixture | Apply $T_{inst}$ | Installed fastener |

*Figures not to scale*

| | |
|---|---|
| fischer hollow ceiling anchor FHY | **Annex B4** |
| **Intended use**<br>Installation instructions | |

**Table C1.1:** Characteristic resistance for all load directions

| Size | | | | | FHY, FHY R M6 | FHY, FHY R M8 | FHY, FHY R M10 | FHY, FHY R M12 |
|---|---|---|---|---|---|---|---|---|
| **Concrete solid material** | | | | | | | | |
| Characteristic resistance in C20/25 | | | $F^0_{Rk}$ | [kN] | 3,0 | 6,5 | 8,5 | 8,5 |
| Partial factor | | | $\gamma_{Mc}$ | [-] | 1,5 | 1,5 | 1,5 | 1,5 |
| Characteristic spacing | | | $s_{cr}$ | [mm] | 200 | 200 | 200 | 200 |
| Characteristic edge distance | | | $c_{cr}$ | [mm] | 100 | 105 | 120 | 120 |
| **Pre-stressed hollow core slab ≥ C45/55** | | | | | | | | |
| Characteristic resistance | $d_u \geq 25$ mm $< 30$ mm | | $F^0_{Rk}$ | [kN] | 5,0 | 7,0 | 8,0 | 9,0 |
| | $d_u \geq 30$ mm $< 40$ mm | | | | 5,0 | 7,0 | 10,0 | 9,0 |
| | $d_u \geq 40$ mm | | | | 5,0 | 7,0 | 10,0 | 10,0 |
| Partial factor | | | $\gamma_{Mc}$ | [-] | 1,5 | 1,5 | 1,5 | 1,5 |
| Characteristic spacing | $d_u \geq 25$ mm $< 30$ mm | | $s_{cr}$ | [mm] | 200 | 200 | 200 | 200 |
| | $d_u \geq 30$ mm $< 40$ mm | | | | 200 | 200 | 200 | 200 |
| | $d_u \geq 40$ mm | | | | 200 | 200 | 200 | 200 |
| Characteristic edge distance | $d_u \geq 25$ mm $< 30$ mm | | $c_{cr}$ | [mm] | 100 | 100 | 100 | 150 |
| | $d_u \geq 30$ mm $< 40$ mm | | | | 100 | 100 | 100 | 150 |
| | $d_u \geq 40$ mm | | | | 100 | 105 | 120 | 150 |
| **Characteristic bending moment (screw)** | | | | | | | | |
| FHY | Property class | 4.6 | $M^0_{Rk,s}$ | [Nm] | -[2] | 15,0 | 29,9 | 52,4 |
| | | 4.8 | | | -[2] | -[2] | -[2] | -[2] |
| | | 5.8 | | | -[2] | 18,7 | 37,4 | 65,5 |
| | | 8.8 | | | 12,2 | 30,0 | 62,3 | 109,2 |
| FHY R | | ≥ A4-70 | | | 10,7 | 26,4 | 52,3 | 91,7 |
| FHY | Partial factor for property class | 4.6 | $\gamma_{Ms}$[1] | [-] | -[2] | 1,67 | | |
| | | 4.8 / 5.8 | | | -[2] | 1,25 | | |
| | | 8.8 | | | 1,25 | | | |
| FHY R | | ≥ A4-70 | | | 1,56 | | | |
| **Characteristic bending moment (threaded rod)** | | | | | | | | |
| FHY | Property class | 4.6 | $M^0_{Rk,s}$ | [Nm] | -[2] | -[2] | 29,9 | 52,4 |
| | | 4.8 | | | -[2] | 15,0 | -[2] | -[2] |
| | | 5.8 | | | -[2] | 18,7 | 37,4 | 65,5 |
| | | 8.8 | | | 12,2 | 30,0 | 62,3 | 109,2 |
| FHY R | | ≥ A4-70 | | | 10,7 | 26,4 | 52,3 | 91,7 |
| FHY | Partial factor for property class | 4.6 | $\gamma_{Ms}$[1] | [-] | -[2] | 1,67 | | |
| | | 4.8 / 5.8 | | | -[2] | 1,25 | | |
| | | 8.8 | | | 1,25 | | | |
| FHY R | | ≥ A4-70 | | | 1,56 | | | |

[1] In absence of other national regulations.
[2] No Performance assessed.

fischer hollow ceiling anchor FHY

**Performances**
Characteristic resistance for all load directions

**Annex C1**

**Table C2.1:** Characteristic resistance under **fire exposure** for concrete solid material for all load directions

| Size | | | | FHY M6 | FHY M8 | FHY M10 | FHY M12 |
|---|---|---|---|---|---|---|---|
| Characteristic resistance for all load directions **Concrete solid material** | $F_{Rk,fi}$ | R30 | [kN] | 0,75 | 1,25 | 1,74 | 1,74 |
| | | R60 | | 0,58 | 1,25 | 1,74 | 1,74 |
| | | R90 | | 0,38 | 0,80 | 1,30 | 1,74 |
| | | R120 | | 0,28 | 0,57 | 0,96 | 1,39 |
| Characteristic resistance for shear load with lever arm **Concrete solid material** | $M^0_{Rk,fi}$ | R30 | [Nm] | 0,60 | 1,80 | 3,40 | 6,00 |
| | | R60 | | 0,40 | 1,30 | 2,50 | 4,50 |
| | | R90 | | 0,30 | 0,80 | 1,70 | 2,90 |
| | | R120 | | 0,20 | 0,60 | 1,20 | 2,20 |

| Size | | | | FHY R M6 | FHY R M8 | FHY R M10 | FHY R M12 |
|---|---|---|---|---|---|---|---|
| Characteristic resistance for all load directions **Concrete solid material** | $F_{Rk,fi}$ | R30 | [kN] | 0,75 | 1,25 | 1,74 | 1,74 |
| | | R60 | | 0,75 | 1,25 | 1,74 | 1,74 |
| | | R90 | | 0,75 | 0,96 | 1,06 | 1,54 |
| | | R120 | | 0,60 | 0,48 | 0,69 | 1,00 |
| Characteristic resistance for shear load with lever arm **Concrete solid material** | $M^0_{Rk,fi}$ | R30 | [Nm] | 1,90 | 2,90 | 3,30 | 5,70 |
| | | R60 | | 1,30 | 2,00 | 2,30 | 4,10 |
| | | R90 | | 0,80 | 1,00 | 1,40 | 2,40 |
| | | R120 | | 0,50 | 0,50 | 0,90 | 1,60 |

**Table C3.1:** Characteristic resistance under **fire exposure** for pre-stressed hollow core slabs for all load directions

| Size | | | | | FHY M6 | FHY M8 | FHY M10 | FHY M12 |
|---|---|---|---|---|---|---|---|---|
| Characteristic resistance for all load directions **Pre-stressed hollow core slabs** | $d_u \geq 25$ mm < 30 mm | $F_{Rk,fi}$ | R30 | [kN] | 0,78 | 1,15 | 1,15 | 1,15 |
| | | | R60 | | 0,58 | 1,15 | 1,15 | 1,15 |
| | | | R90 | | 0,38 | 0,80 | 1,15 | 1,15 |
| | | | R120 | | 0,28 | 0,57 | 0,92 | 0,92 |
| | $d_u \geq 30$ mm < 40 mm | | R30 | [kN] | 0,78 | 1,52 | 1,52 | 1,52 |
| | | | R60 | | 0,58 | 1,26 | 1,52 | 1,52 |
| | | | R90 | | 0,38 | 0,80 | 1,30 | 1,52 |
| | | | R120 | | 0,28 | 0,57 | 0,96 | 1,21 |
| | $d_u \geq 40$ mm | | R30 | [kN] | 0,78 | 1,71 | 2,33 | 2,33 |
| | | | R60 | | 0,58 | 1,26 | 1,98 | 2,33 |
| | | | R90 | | 0,38 | 0,80 | 1,30 | 1,89 |
| | | | R120 | | 0,28 | 0,57 | 0,96 | 1,39 |
| Characteristic resistance for shear load with lever arm **Pre-stressed hollow core slabs $d_u \geq 25$ mm** | | $M^0_{Rk,fi}$ | R30 | [Nm] | 0,60 | 1,80 | 3,40 | 6,00 |
| | | | R60 | | 0,40 | 1,30 | 2,50 | 4,50 |
| | | | R90 | | 0,30 | 0,80 | 1,70 | 2,90 |
| | | | R120 | | 0,20 | 0,60 | 1,20 | 2,20 |

| Size | | | | | FHY-R M6 | FHY-R M8 | FHY-R M10 | FHY-R M12 |
|---|---|---|---|---|---|---|---|---|
| Characteristic resistance for all load directions **Pre-stressed hollow core slabs** | $d_u \geq 25$ mm < 30 mm | $F_{Rk,fi}$ | R30 | [kN] | 1,15 | 1,15 | 1,15 | 1,15 |
| | | | R60 | | 1,15 | 1,15 | 1,15 | 1,15 |
| | | | R90 | | 1,04 | 0,96 | 1,06 | 1,15 |
| | | | R120 | | 0,68 | 0,48 | 0,69 | 0,92 |
| | $d_u \geq 30$ mm < 40 mm | | R30 | [kN] | 1,52 | 1,52 | 1,52 | 1,52 |
| | | | R60 | | 1,52 | 1,52 | 1,52 | 1,52 |
| | | | R90 | | 1,04 | 0,96 | 1,06 | 1,52 |
| | | | R120 | | 0,68 | 0,48 | 0,69 | 1,00 |
| | $d_u \geq 40$ mm | | R30 | [kN] | 1,52 | 1,91 | 2,33 | 2,33 |
| | | | R60 | | 1,52 | 1,91 | 1,80 | 2,33 |
| | | | R90 | | 1,04 | 0,96 | 1,06 | 1,54 |
| | | | R120 | | 0,68 | 0,48 | 0,69 | 1,00 |
| Characteristic resistance for shear load with lever arm **Pre-stressed hollow core slabs $d_u \geq 25$ mm** | | $M^0_{Rk,fi}$ | R30 | [Nm] | 1,90 | 2,90 | 3,30 | 5,70 |
| | | | R60 | | 1,30 | 2,00 | 2,30 | 4,10 |
| | | | R90 | | 0,80 | 1,00 | 1,40 | 2,40 |
| | | | R120 | | 0,50 | 0,50 | 0,90 | 1,60 |