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European Technical Assessment

ETA-13/0055 from 01/02/2018

English translation prepared by CSTB - Original version in French language

General Part

Nom commercial *Trade name*	**PBZ-PRO**
Famille de produit *Product family*	Cheville métallique électrozinguée, pour usage multiple et pour applications non structurelles dans du béton. **Anchor made of galvanized steel, for multiple use and for non structural application in concrete**
Titulaire *Manufacturer*	DEWALT / Powers Stanley Black & Decker Deutschland GmbH Richard-Klinger-Str. 11 65510 Idstein Germany
Usine de fabrication *Manufacturing plants*	Usine 8 Plant 8
Cette evaluation contient: *This Assessment contains*	9 pages incluant 6 annexes qui font partie intégrante de cette évaluation 9 *pages including 6 annexes which form an integral part of this assessment*
Base de l'ETE *Basis of ETA*	ETAG 001-Part 6 used as European Assessment Document (EAD)
Cette évaluation remplace: *This Assessment replaces*	ETA 13/0055 with validity from 01/02/2013 to 31/01/2018 ETA 09/0011 with validity from 01/02/2013 to 31/01/2018

1 Technical description of the product

The ceiling anchor PBZ-PRO anchor is an anchor made of zinc electroplated steel, which is placed into a drilled hole and anchored by deformation-controlled expansion.

For the installed anchor see Figure given in Annex A.

2 Specification of the intended use

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

The provisions made in this European technical assessment are based on an assumed working life of the fastener 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 right products in relation to the expected economically reasonable working life of the works.

3 Performance of the product

3.1 Mechanical resistance and stability (BWR 1)

Essential characteristic	Performance
Characteristic resistance for static and quasi static loads, Displacements	See Annex C1 to C2

3.2 Safety in case of fire (BWR 2)

Essential characteristic	Performance
Reaction to fire	Anchorages satisfy requirements for Class A1
Resistance to fire	No performance assessed

3.3 Hygiene, health and the environment (BWR 3)

Regarding dangerous substances contained in this European technical approval, there may be requirements applicable to the products falling within its scope (e.g. transposed European legislation and national laws, regulations and administrative provisions).

3.4 Safety in use (BWR 4)

For Basic requirement Safety in use the same criteria are valid as for Basic Requirement Mechanical resistance and stability BWR1.

3.5 Protection against noise (BWR 5)

Not relevant.

3.6 Energy economy and heat retention (BWR 6)

Not relevant.

3.7 Sustainable use of natural resources (BWR 7)

For the sustainable use of natural resources no performance was determined for this product.

3.8 General aspects relating to fitness for use

Durability and Serviceability are only ensured if the specifications of intended use according to Annex B1 are kept.

4 Assessment and verification of constancy of performance (AVCP)

According to Decision of the Commission of 17 February 1997 (97/161/EC) (OJ L 062 of 04.03.97 p. 41-42), the system of assessment and verification of constancy of performance (see Annex V and Article 65 Paragraph 2 to Regulation (EU) No 305/2011) given in the following table applies.

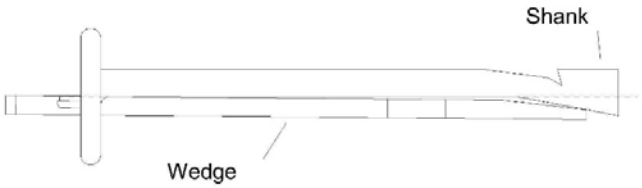
Product	Intended use	Level or class	System
Metal anchors for use in concrete	For use in redundant systems for fixing and/or supporting to concrete elements such as lightweight suspended ceilings, as well as installations	—	2+

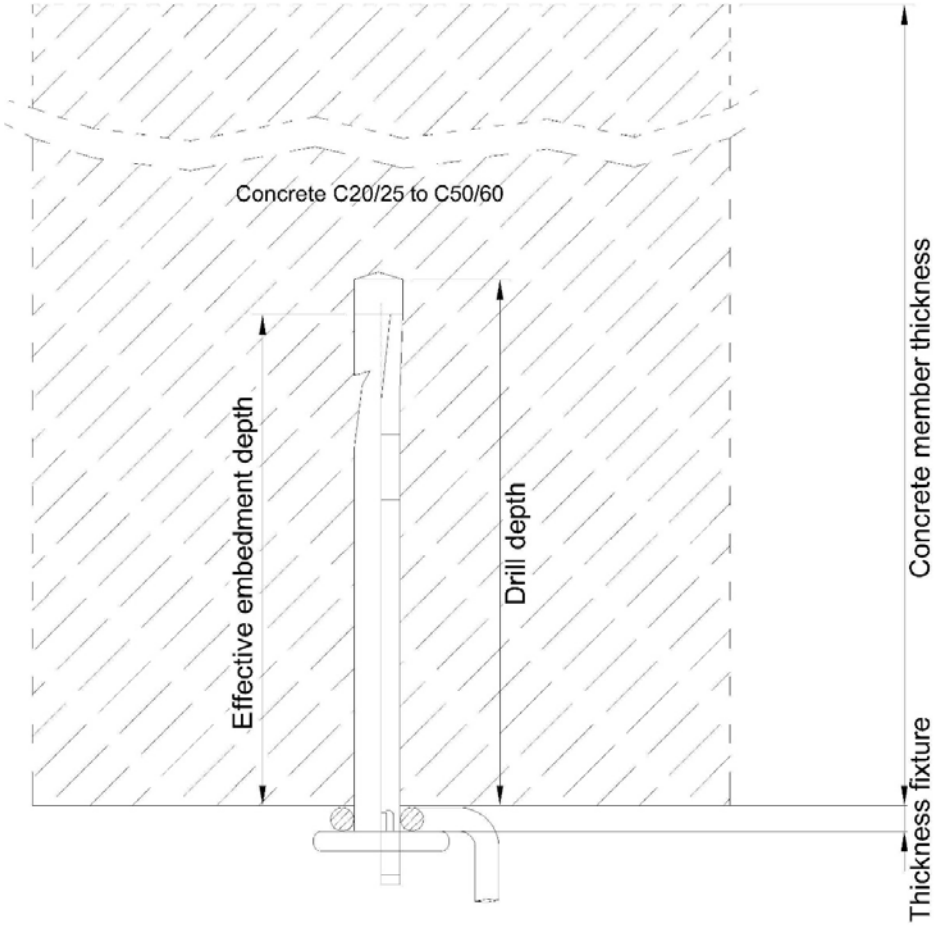
5 Technical details necessary for the implementation of the AVCP system

Technical details necessary for the implementation of the Assessment and verification of constancy of performance (AVCP) system are laid down in the control plan deposited at Centre Scientifique et Technique du Bâtiment.
The manufacturer shall, on the basis of a contract, involve a notified body approved in the field of fasteners for issuing the certificate of conformity CE based on the control plan.

The original French version is signed by

Charles Baloche
Technical Director





Ceiling Anchor PBZ-PRO	Annex A1
Product descripion Installation condition	

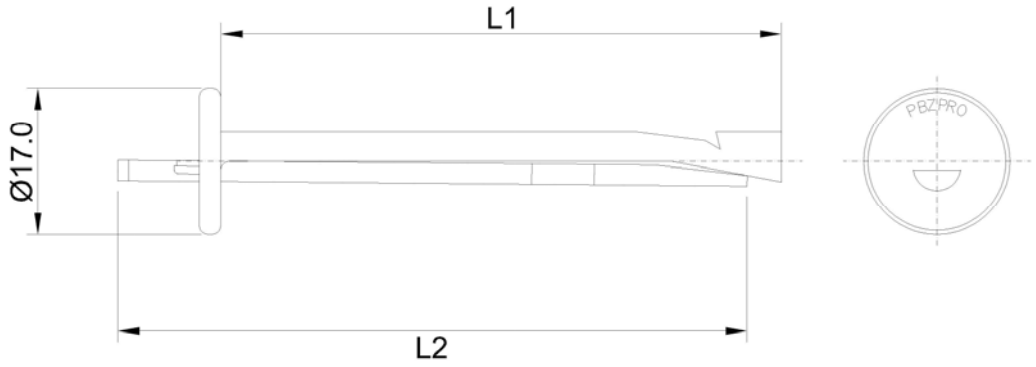


Table 1: Dimensions and materials

PBZ-PRO Ceiling Anchor		**6 - 5/40**	**6 - 35/70**
Length of wedge L2	[mm]	43	73
Length of shank L1	[mm]	35	65
Material wedge	Steel acc. to AISI 1045		
Material shank	Steel acc. to AISI 1008		

Table 2: Installation parameters

PBZ-PRO Ceiling Anchor			**6 - 5/40**	**6 - 35/70**
Diameter of drill hole	d_0	[mm]	6	6
Depth of drill hole	$h_1 \geq$	[mm]	40	40
Effective anchorage depth	h_{ef}	[mm]	30	30
Minimum thickness of member	h_{min}	[mm]	80	80
Max. thickness of fixture	t_{fix}	[mm]	5	35
Design method B				
Minimum spacing	s_{min}	[mm]	90	90
Minimum edge distance	c_{min}	[mm]	200	200
Design method C				
Minimum spacing	s_{min}	[mm]	200	200
Minimum edge distance	c_{min}	[mm]	150	150

Ceiling Anchor PBZ-PRO

Annex A2

Product descripion
Materials, Dimensions and Installation data

Specifications of intended use

Anchorages subject to:

- Static and quasi-static loading.
- Fire exposure.

Base materials:

- Cracked and non-cracked concrete.
- Reinforced or unreinforced normal weight concrete according to EN 206:2013.
- Strength classes C20/25 to C50/60 according to EN 206:2013.

Use conditions (Environmental conditions):

- Structures subject to dry internal conditions.

Design:

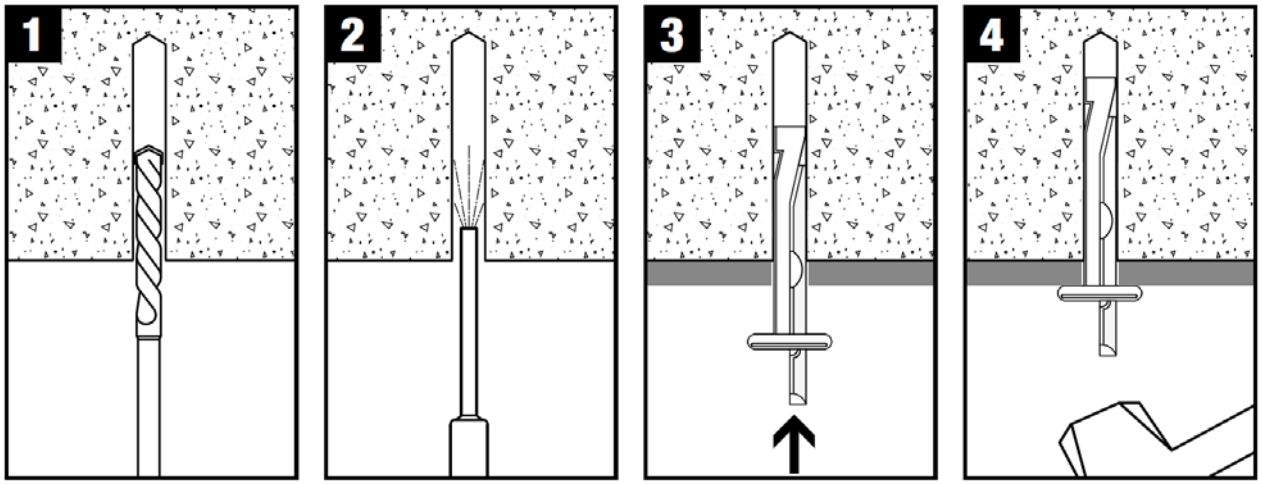
- Only for multiple use for non-structural applications, the definition of multiple use according to the Member States is given in the informative Annex 1 of ETAG 001, Part 6.
- Anchorages are designed under the responsibility of an engineer experienced in anchorages and concrete work.
- Verifiable calculation notes and drawings are prepared taking account of the loads to be 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 under static or quasi-static loading are designed in accordance with: ETAG001, Annex C "Design Method for Anchorages" or CEN/TS 1992-4 /2009.
- Anchorages under fire exposure are designed in accordance with: EOTA Technical Report TR 020 or CEN/TS 1992-4 /2009, Annex D.

Installation:

- Anchor installation carried out by appropriately qualified personnel and under the supervision of the person responsible for technical matters of the site.
- Use of the anchor only as supplied by the manufacturer without exchanging the components of an anchor.
- Anchor installation in accordance with the manufacturer's specifications and drawings and using the appropriate tools.
- Effective anchorage depth, edge distances and spacing not less than the specified values without minus tolerances.
- Hole drilling by hammer drill.
- Cleaning of the hole of drilling dust.
- Overhead installation is admissible.
- In case of aborted hole, drilling of new hole at a minimum distance of twice the depth of the aborted hole, or smaller distance provided the aborted drill hole is filled with high strength mortar and no shear or oblique tension loads in the direction of aborted hole

Ceiling Anchor PBZ-PRO	Annex B1
Intended use Specifications	

Installation: PBZ-PRO



Ceiling Anchor PBZ-PRO	Annex B2
Intended use Installation	

Table 3: *Design method B*: Characteristic resistances, safety factors and design values

PBZ-PRO Ceiling Anchor				
Tension and shear			**6 - 4,5/40**	**6 - 35/70**
Char. resistance (C20/25 to C50/60)	F_{Rk}	[kN]	3,0	3,0
Partial safety factor	γ_M 1)	[-]	1,0	1,0
Design value of resistance	F_{Rd}	[kN]	2,0	2,0
Char. spacing (design method B)	s_{cr}	[mm]	200	200
Char. edge distance (design method B)	c_{cr}	[mm]	200	200
Shear load with lever arm				
Characteristic bending moment	$M^0_{Rk,s}$	[Nm]	6,1	6,1
Partial safety factor	γ_M 1)	[-]	1,25	1,25
Design value	$M^0_{Rd,s}$	[Nm]	4,88	4,88

1) In absence of other national regulations

Table 4: *Design method C*: Characteristic resistances, safety factors and design values

PBZ-PRO Ceiling Anchor				
Tension and shear			**6 - 4,5/40**	**6 - 35/70**
Char. resistance (C20/25 to C50/60)	F_{Rk}	[kN]	3,0	3,0
Partial safety factor	γ_M 1)	[-]	1,0	1,0
Design value of resistance	F_{Rd}	[kN]	2,0	2,0
Char. spacing (design method C)	s_{cr}	[mm]	200	200
Char. edge distance (design method C)	c_{cr}	[mm]	150	150
Shear load with lever arm				
Characteristic bending moment	$M^0_{Rk,s}$	[Nm]	6,1	6,1
Partial safety factor	γ_M 1)	[-]	1,25	1,25
Design value	$M^0_{Rd,s}$	[Nm]	4,88	4,88

1) In absence of other national regulations

The anchor is to be used only for multiple use for non-structural applications, the definition of multiple use according to the Member States is given in the informative Annex 1 of ETAG 001, Part 6.

Ceiling Anchor PBZ-PRO	Annex C1
Design Method B and C, characteristic values	

Table 5: Characteristic values under fire exposure in concrete C20/25 to C50/60 in any load direction without lever arm, Design method B and C

Fire resistance class	**PBZ-PRO Ceiling Anchor**		**6 - 4,5/40**	**6 - 35/70**
Tension and shear [1)]				
R 30	Characteristic resistance $F_{Rk,fi}$ [2)]	[kN]	0,80	0,80
R 60	Characteristic resistance $F_{Rk,fi}$ [2)]	[kN]	0,63	0,63
R 90	Characteristic resistance $F_{Rk,fi}$ [2)]	[kN]	0,38	0,38
R 120	Characteristic resistance $F_{Rk,fi}$ [2)]	[kN]	0,25	0,25
Shear load with lever arm [1)]				
R 30	Char. bending resistance $M_{Rk,fi}$ [2)]	[Nm]	0,79	0,79
R 60	Char. bending resistance $M_{Rk,fi}$ [2)]	[Nm]	0,56	0,56
R 90	Char. bending resistance $M_{Rk,fi}$ [2)]	[Nm]	0,34	0,34
R 120	Char. bending resistance $M_{Rk,fi}$ [2)]	[Nm]	0,23	0,23

[1)] In case of fire attack from more than one side, the edge distance shall be ≥ 300mm
[2)] In absence of other national regulations the partial safety factor for resistance under fire exposure. $\gamma_{M,fi}$ = 1,0 is recommended