

Approval body for construction products
and types of construction

Bautechnisches Prüfamt

An institution established by the Federal and
Laender Governments



European Technical Assessment

ETA-15/0809
of 23 April 2018

English translation prepared by DIBt - Original version in German language

General Part

Technical Assessment Body issuing the
European Technical Assessment:

Deutsches Institut für Bautechnik

Trade name of the construction product

Fixing-system FastFour

Product family
to which the construction product belongs

Screwed-in plastic anchor for fixing of external thermal
insulation composite systems with rendering in concrete
and masonry

Manufacturer

EJOT Baubefestigungen GmbH
In der Stockwiese 35
57334 Bad Laasphe
DEUTSCHLAND

Manufacturing plant

EJOT Herstellwerk 1, 2, 3 und 4
manufacturing plant EJOT 1, 2, 3 and 4

This European Technical Assessment
contains

13 pages including 3 annexes which form an integral part
of this assessment

This European Technical Assessment is
issued in accordance with Regulation (EU)
No 305/2011, on the basis of

EAD 330196-01-0604

The European Technical Assessment is issued by the Technical Assessment Body in its official language. Translations of this European Technical Assessment in other languages shall fully correspond to the original issued document and shall be identified as such.

Communication of this European Technical Assessment, including transmission by electronic means, shall be in full. However, partial reproduction may only be made with the written consent of the issuing Technical Assessment Body. Any partial reproduction shall be identified as such.

This European Technical Assessment may be withdrawn by the issuing Technical Assessment Body, in particular pursuant to information by the Commission in accordance with Article 25(3) of Regulation (EU) No 305/2011.

Specific Part

1 Technical description of the product

The screwed-in anchor of the Fixing-system FastFour consists of an anchor sleeve made of virgin polyamide, an anchor plate made of glass-fibre reinforced virgin polyamide and an accompanying specific nail of galvanised steel.

An illustration and the description of the product are 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 anchor 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 to the assumption of a working life of the anchor of at least 25 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 Safety and accessibility in use (BWR 4)

Essential characteristic	Performance
Characteristic tension resistance	See Annex C 1
Edge distances and spacing	See Annex B 2
Plate stiffness	See Annex C 2
Displacements	See Annex C 2

3.2 Energy economy and heat retention (BWR 6)

Essential characteristic	Performance
Point thermal transmittance	See Annex C 2

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

In accordance with EAD No. 330196-01-0604, the applicable European legal act is: [97/463/EC].

The system to be applied is: 2+

5 Technical details necessary for the implementation of the AVCP system, as provided for in the applicable European Assessment Document

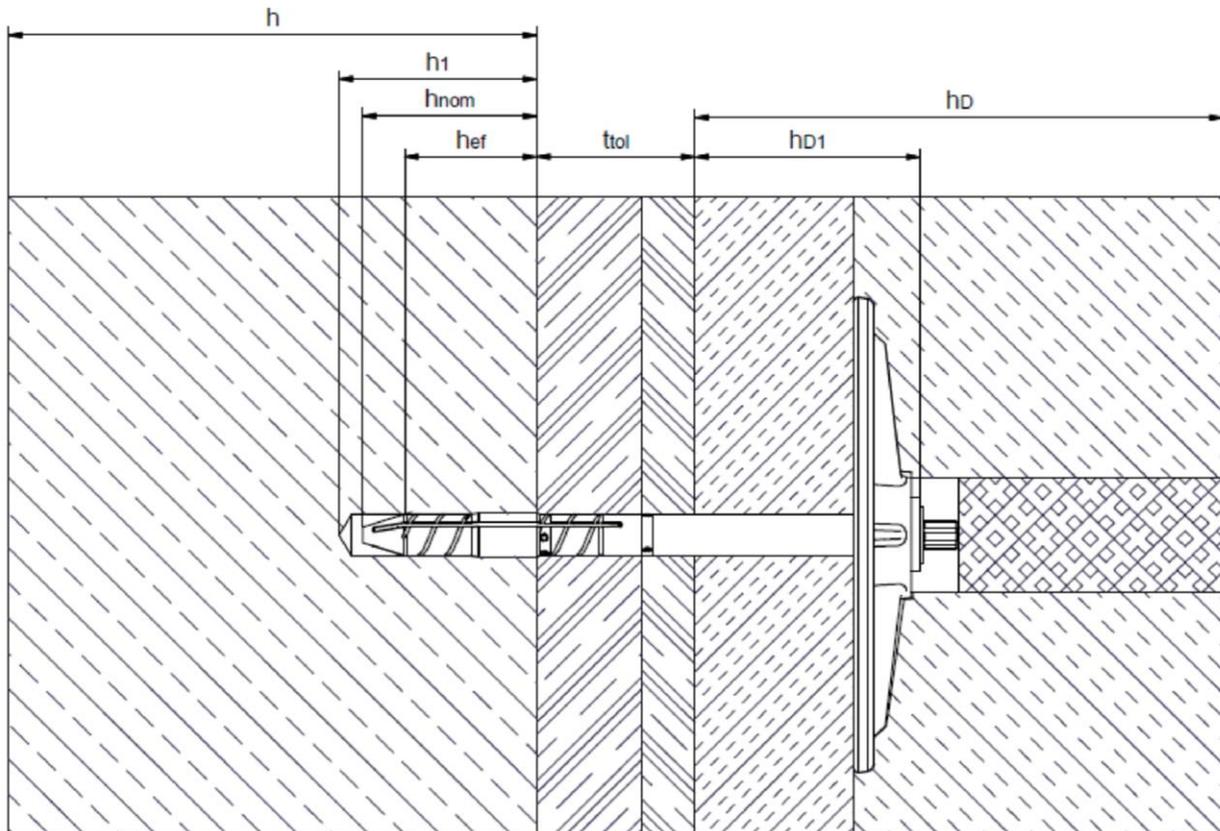
Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited with Deutsches Institut für Bautechnik.

Issued in Berlin on 23 April 2018 by Deutsches Institut für Bautechnik

BD Dipl.-Ing. Andreas Kummerow
Head of Department

beglaubigt:
Ziegler

Fixing-system FastFour



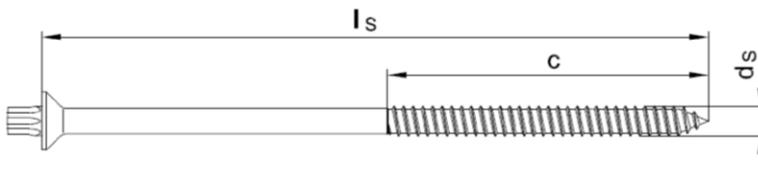
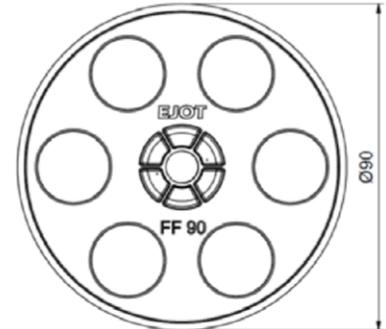
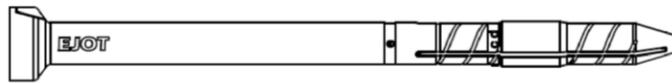
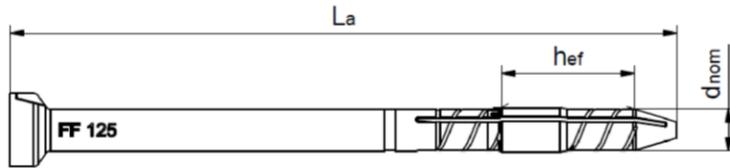
- Legend:
- h_D = thickness of insulation material
 - h_{D1} = thickness of insulation material below anchor plate
 - h_{ef} = effective anchorage depth
 - h = thickness of member (wall)
 - h_1 = depth of drilled hole to deepest point
 - t_{toi} = thickness of equalizing layer or non-load-bearing coating

Fixing-system FastFour

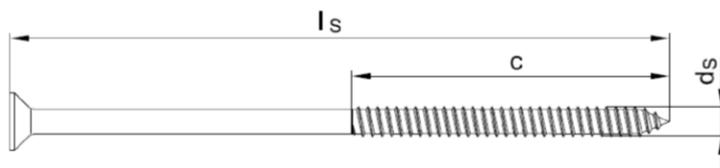
Product description
Installed condition

Annex A1

Fixing-system FastFour, use category A, B, C, D

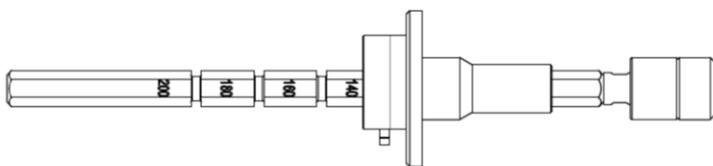
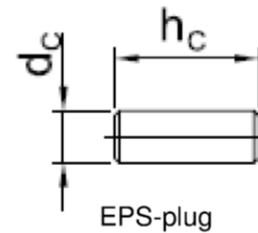


type A: steel screw with torx T30 outside



type B: steel screw with countersunk head T 30

Marking:
Manufacturer: EJOT
Anchor plate (e.g. FF 90)
Length of anchor (e.g. 105)
Use category (A,B,C,D,E)



FastFour mounting tool

Tabelle A 1: Dimensions

Anchor type	Anchor sleeve					Anchor screw			EPS plug	
	d _{nom} [mm]	h _{D1} [mm]	h _{ef} [mm]	h _{nom} [mm]	min L _a max L _a [mm]	d _s [mm]	c [mm]	min l _s max l _s [mm]	h _c	d _c
FastFour FF	8	42	25	33	85 165	5,5	60	85 165 (type A + B)	50	22

Determination of the anchor length L_a [mm] for fixing-system FastFour

$$L_a = t_{tol} + h_{nom} + h_{D1} \quad \text{e.g.: FF 105} = 30 \text{ mm} + 33 \text{ mm} + 42 \text{ mm}$$

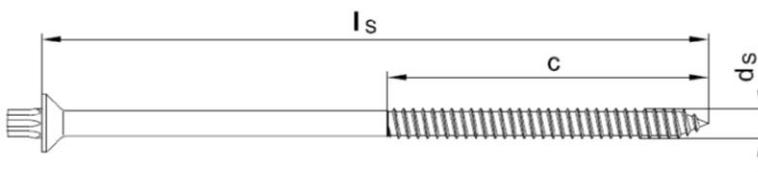
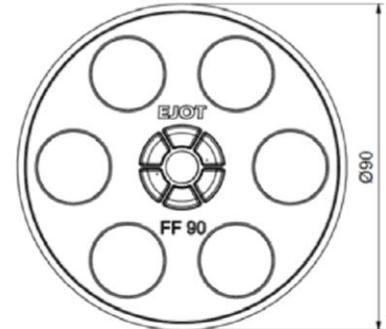
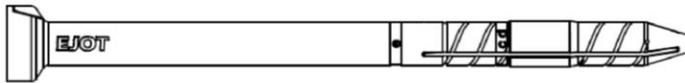
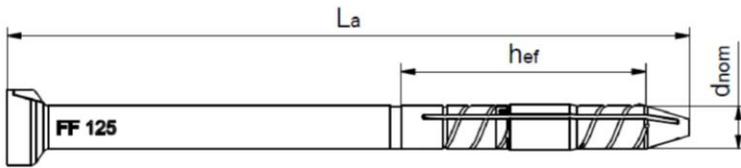
Fixing-system FastFour

Product description

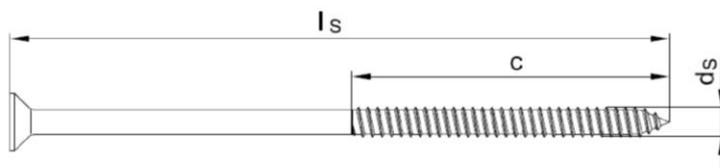
Marking and dimensions, use category: A,B,C,D

Annex A 2

Fixing-system FastFour, use category E

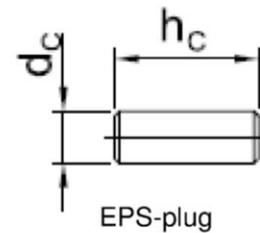


type A: steel screw with torx T30 outside

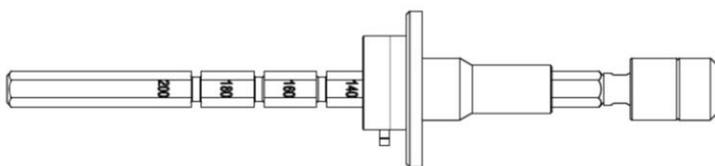


type B: steel screw with countersunk head T 30

Marking:
Manufacturer: EJOT
Anchor plate (e.g. FF 90)
Length of anchor (e.g. 125)
Use category (A,B,C,D,E)



EPS-plug



FastFour mounting tool

Tabelle A 2: Dimensions

Anchor type	Anchor sleeve					Anchor screw			EPS plug	
	d _{nom} [mm]	h _{D1} [mm]	h _{ef} [mm]	h _{nom} [mm]	min L _a max L _a [mm]	d _s [mm]	c [mm]	min l _s max l _s [mm]	h _c	d _c
FastFour FF	8	42	45	53	85 165	5,5	60	85 165 (type A + B)	50	22

Determination of the anchor length L_a [mm] for fixing-system FastFour

$$L_a = t_{tol} + h_{nom} + h_{D1} \quad \text{e.g.: FF 105} = 10 \text{ mm} + 53 \text{ mm} + 42 \text{ mm}$$

Fixing-system FastFour

Product description
Marking and dimensions, use category: E

Annex A 3

Table A3: Materials

Anchor sleeve	virgin polyamide PA colour: nature
Anchor plate	virgin polyamide PA GF 50 colour: nature
Insulation plug	Polystyrene PS 30
Specific steel screw	Steel 5.8, electro galvanized $\geq 5 \mu\text{m}$ according to EN ISO 4042:1999, blue passivated

Fixing-system FastFour

Product description
Materials

Annex A 4

Specifications of intended use

Anchorage subject to:

- The anchor may only be used for transmission of wind suction loads and shall not be used for the transmission of dead loads of the thermal insulation composite system.

Base materials:

- Normal weight concrete (use category A) according to Annex C1.
- Solid masonry (use category B), according to Annex C1.
- Hollow or perforated masonry (use category C), according to Annex C1.
- Lightweight aggregate concrete (use category D), according to Annex C1.
- autoclaved aerated concrete (use category E), according to Annex C1.
- For other base materials of the use categories A, B, C, D or E the characteristic resistance of the anchor may be determined by job site tests according to EOTA Technical Report TR 051 edition December 2016.

Temperature Range:

- 0°C to +40°C (max. short term temperature +40°C and max. long term temperature +24°C)

Design:

- The anchorages are designed under the responsibility of an engineer experienced in anchorages and masonry work with the partial safety factors $\gamma_M = 2,0$ and $\gamma_F = 1,5$, if there are no other national regulations.
- 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.
- Fasteners are only to be used for multiple fixings of thermal insulation composite systems.

Installation:

- Hole drilling by the drill modes according to Annex C1.
- Anchor installation carried out by appropriately qualified personnel and under the supervision of the person responsible for technical matters of the site.
- Installation temperature from 0°C to +40°C
- Exposure to UV due to solar radiation of the anchor not protected by rendering ≤ 6 weeks

Fixing-system FastFour

Intended use
Specifications

Annex B 1

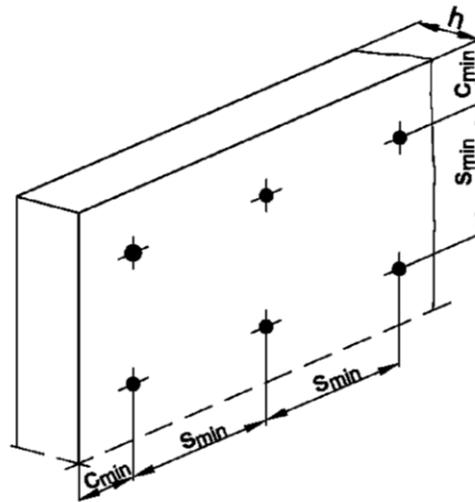
Table B1: Installation parameters

Anchor type		FastFour FF	
		A B C D	E
Drill hole diameter	d_0 [mm] =	8	8
Cutting diameter of drill bit	d_{cut} [mm] ≤	8,45	8,45
Depth of drill hole to deepest point	h_1 [mm] ≥	35	55
Effective anchorage depth	h_{ef} [mm] ≥	25	45

Table B2: Anchor distances and dimensions of members

Anchor type		FastFour FF
Minimum spacing	$s_{min} \geq$ [mm]	100
Minimum edge distance	$c_{min} \geq$ [mm]	100
Minimum thickness of member	$h \geq$ [mm]	100

Scheme of distance and spacing



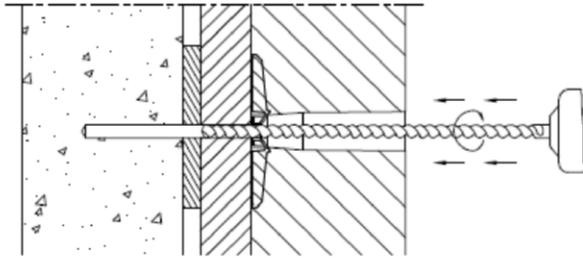
Fixing-system FastFour

Intended use

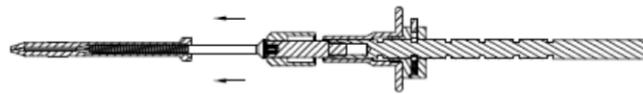
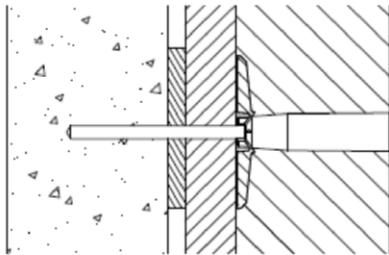
Installation parameters, edge distances and spacing, dimensions of member

Annex B 2

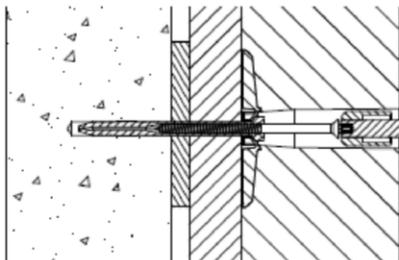
Installation instructions



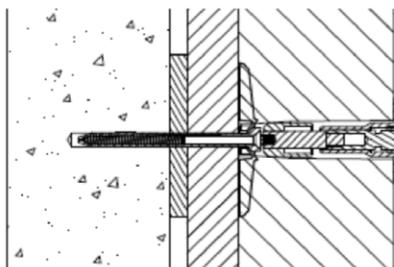
Drill the hole perpendicular to the substrate surface.
Clean the drill hole 3x.



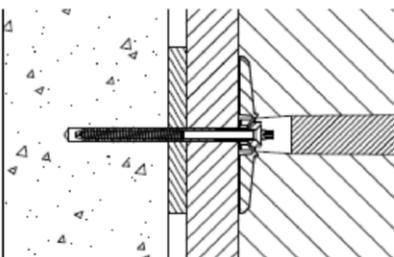
Put the screw into the drive unit from the FastFour mounting tool.



Insert the FastFour mounting tool into the insulation until the optical setting mark.



Drill the specific screw into the anchor until the disk is flush with the insulation surface.



Insert the EPS plug
Installed condition of
FastFour FF anchor system.

Fixing-system FastFour

Intended use
Installation instructions

Anhang B 3

Table C1: Characteristic resistance to tension loads N_{Rk} in concrete and masonry for a single anchor in kN

Anchor type					FastFour FF
Base materials	Bulk density ρ [kg/dm ³]	minimum compressive strength f_b [N/mm ²]	General remarks	Drill method	N_{Rk} [kN]
Concrete C12/15 EN 206-1:2000				hammer	1,5
Concrete C25/25 – C50/60 EN 206-1:2000				hammer	1,5
Clay bricks, Mz e.g. according to EN 771-1:2011	$\geq 1,8$	12	Vertically perforation up to 15 %.	hammer	1,5
Sand-lime solid bricks, KS e.g. according to EN 771-2:2011	$\geq 1,8$	12	Vertically perforation up to 15 %.	hammer	1,5
Vertically perforated clay bricks, HLz e.g. according to EN 771-1:2011	$\geq 0,9$	12	Vertically perforation more than 15 % and less than 50 %. Outer web thickness ≥ 11 mm	rotary	1,2 ¹⁾
Sand-lime perforated bricks, KSL e.g. according to EN 771-2:2011	$\geq 1,6$	12	Vertically perforation more than 15 % and less than 50 %. Outer web thickness ≥ 20 mm	hammer	1,5 ²⁾
Lightweight aggregate concrete LAC 4 – LAC 25 e.g. according to EN 1520:2011, EN 771-3:2011	$\geq 0,7$	4		rotary	0,9
Autoclaved aerated concrete AAC4 – AAC 7 e.g. according to EN 771-4:2011	$\geq 0,55$	4		rotary	1,5

1) The value applies only for outer web thickness ≥ 11 mm; otherwise the characteristic resistance shall be determined by job site pull-out tests.

2) The value applies only for outer web thickness ≥ 20 mm; otherwise the characteristic resistance shall be determined by job site pull-out tests.

Fixing-system FastFour

Performances
Characteristic resistance

Annex C 1

Table C2: Point thermal transmittance according EOTA Technical Report TR 025:2016-05

anchor type	insulation thickness	point thermal transmittance
	h_D [mm]	χ [W/K]
FastFour	100 – 300	0

Table C3: Plate stiffness according EOTA Technical Report TR 025:2016-05

anchor type	diameter of the anchor plate	load resistance of the anchor plate	plate stiffness
	[mm]	[kN]	[kN/mm]
FastFour	90	≥ 1,5	2,5

Table C4: Displacements

Base materials	Bulk density ρ [kg/dm ³]	Minimum Compressive strength f_b [N/mm ²]	Tension load N [kN]	displacements $\delta(N)$ [mm]
				FastFour FF
Concrete C20/25 – C50/60 (EN 206-1:2000)			0,5	0,4
Clay bricks, Mz (EN 771-1:2011)	≥ 1,8	12	0,5	0,3
Sand-lime solid bricks, KS (EN 771-2:2011)	≥ 1,8	12	0,5	0,2
Vertically perforated clay bricks, HLz (EN 771-1:2011)	≥ 0,9	12	0,4	0,2
Sand-lime perforated bricks, KSL (EN 771-2:2011)	≥ 1,6	12	0,5	0,3
Lightweight aggregate concrete, LAC 4 – LAC 25 (EN 1520:2011, EN 771-3:2011)	≥ 0,7	4	0,3	0,2
Autoclaved aerated concrete, AAC 4 – AAC 7 (EN 771-4:2011)	≥ 0,55	4	0,5	0,4

Fixing-system FastFour

Performances
Point thermal transmittance, plate stiffness and displacements

Annex C 2