



Designated according to The Construction Products (Amendment etc.) (EU Exit) Regulations 2020

UK Technical Assessment	UKTA-0836-22/6372 of 10/11/2022
Technical Assessment Body issuing the UK Technical Assessment:	British Board of Agrément
Trade name of the construction product:	FX-N
Product family to which the construction product belongs:	Area Code 33, Nailed-in plastic anchors for fixing of external thermal insulation composite systems with rendering and prefabricated units for external wall insulation in concrete and masonry
Manufacturer:	RAWLPLUG S.A. ul. Kwidzyńska 6 PL 51-416 Wrocław Poland
Manufacturing plant(s):	Manufacturing Plant No. 3
This UK Technical Assessment contains:	12 pages including 3 annexes which form an integral part of this assessment
This UK Technical Assessment is issued in accordance with The Construction Products (Amendment etc.) (EU Exit) Regulations 2020 on the basis of:	UKAD 330196-01-0604 <i>Plastic anchors made of virgin or non-virgin material for fixing of external thermal insulation composite systems with rendering</i>

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1 Technical description of the product

The FX-N nailed-in plastic anchors consists of a plastic expansion sleeve with a collar and a steel nail as an expansion pin. The anchor sleeve is manufactured from polyamide (PA). The nail is manufactured from of galvanized steel.

The collar is available in three versions (FX-N-..L., FX-N-..K., FX-N-..C.).

The plastic anchor sleeve is expanded by hammering in a nail, which press the sleeve against the wall of the drilled hole.

The illustration and the description of the product are given in Annex A.

2 Specification of the intended use(s) in accordance with the applicable UK Assessment Document (hereinafter UKAD)

The performances given in clause 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 UK Technical Assessment are based on an assumed working life of the anchor of 25 years. The indications given on the working life cannot be interpreted as a guarantee given by the producer or Technical Assessment Body, 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)

Not relevant.

3.2 Safety in case of fire (BWR 2)

Not relevant.

3.3 Health, hygiene and the environment (BWR 3)

Not relevant.

3.4 Safety and accessibility in use (BWR 4)

Essential characteristic	Performance
Characteristic resistance	Annex C1
Displacements	Annex C1
Edge distances and spacings	Annex B2

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)

No performance assessed.

4 Assessment and verification of constancy of performance (hereinafter AVCP) system applied

4.1 System of assessment and verification of constancy of performance

According to UKAD No. 330196-01-0604 and Annex V of the Construction Products Regulation (Regulation (EU) 305/2011 as brought into UK law and amended, the system of assessment and verification of constancy of performance (AVCP) 2+ applies.

5 Technical details necessary for the implementation of the AVCP system, as provided for in the applicable UKAD

Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited with the British Board of Agrément and made available to the UK Approved Bodies involved in the conformity attestation process.

5.1 UKCA marking for the product/ system must contain the following information:

- Identification number of the Approved Body
- Name/address of the manufacturer of the product/ system
- Marking with intention of clarification of intended use
- Date of marking
- Number of certificate of constancy of performance
- UKTA number.

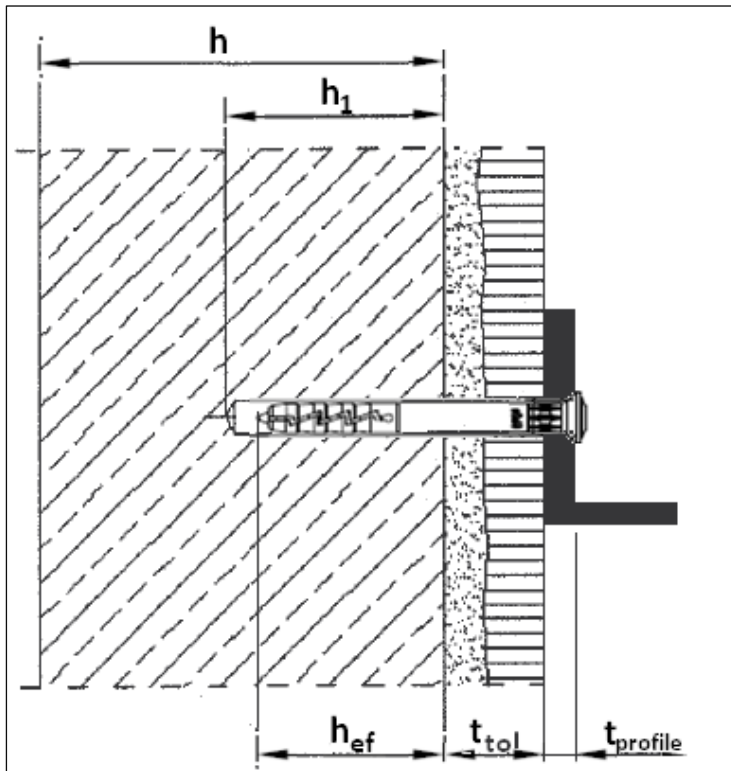
On behalf of the British Board of Agrément	
	
Date of Issue: 10 November 2022	Hardy Giesler Chief Executive Officer



British Board of Agrément,
1st Floor Building 3
Hatters Lane
Croxley Park
Watford
WD18 8YG

ANNEXES

This annex applies to the product described in the main body of the UK Technical Assessment.



Intended Use

Multiple fixing of profiles for external thermal insulation composite systems (ETICS) according to UKAD 040083-00-0404 or prefabricated units for external wall insulation (Veture Kits) according to UKAD 040914-00-0404, in concrete and masonry

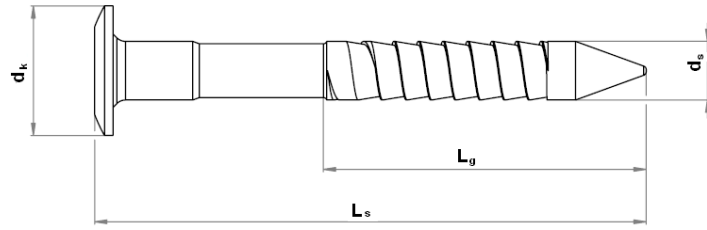
Legend

- h_{ef} = effective anchorage depth
- h_1 = depth of drill hole in base material
- h = thickness of base material
- t_{tol} = thickness of equalizing and/or non-load-bearing layer
- $t_{profile}$ = thickness of profile
- t_{fix} = thickness of fixture ($t_{tol} + t_{profile}$)

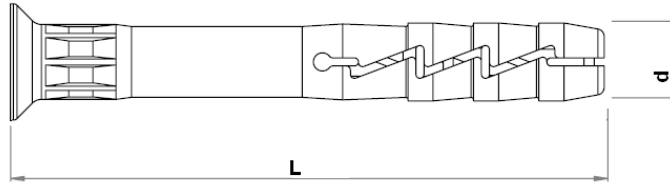
FX-N

Product description
Installation conditions

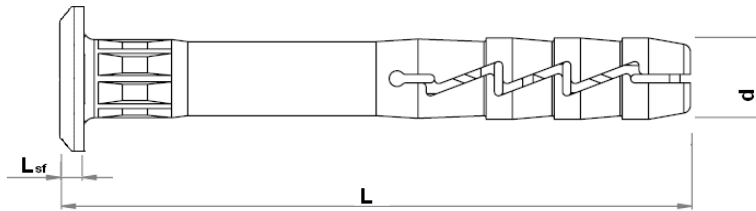
Annex A 1



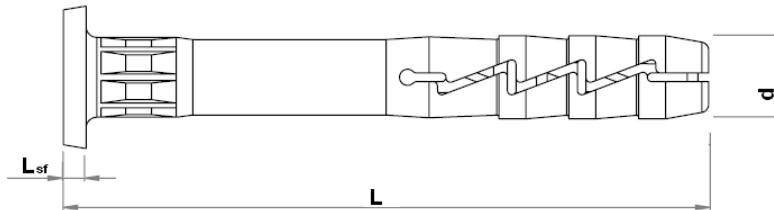
FX-N nail screw



FX-N-..L.. sleeve



FX-N-..K.. sleeve



FX-N-..C.. sleeve

FX-N

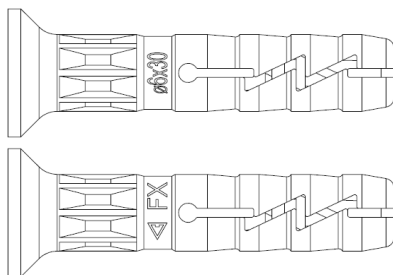
Product description
Types of expansion pins and expansion sleeves

Annex A 2

Table A3: Dimensions

Anchor index			Anchor sleeve		Expansion nail			t_{fix}
FX-N-..L..	FX-N-..K..	FX-N-..C..	L	d	L_s	d_s	d_k	-
			mm	mm	mm	mm	mm	mm
FX-N-05L025	-	FX-N-05C025	25	4.9	28	3.3	8.0	≤ 1
FX-N-05L030	FX-N-05K030	FX-N-05C030	30	4.9	33	3.3	8.0	≤ 5
FX-N-05L035	FX-N-05K035	FX-N-05C035	35	4.9	38	3.3	8.0	≤ 10
FX-N-05L040	FX-N-05K040	FX-N-05C040	40	4.9	43	3.3	8.0	≤ 15
FX-N-05L050	FX-N-05K050	FX-N-05C050	50	4.9	54	3.3	8.0	≤ 25
FX-N-06L030	FX-N-06K030	FX-N-06C030	30	5.9	34	3.8	9.0	≤ 1
FX-N-06L035	FX-N-06K035	FX-N-06C035	35	5.9	39	3.8	9.0	≤ 6
FX-N-06L040	FX-N-06K040	FX-N-06C040	40	5.9	44	3.8	9.0	≤ 11
FX-N-06L045	FX-N-06K045	FX-N-06C045	45	5.9	49	3.8	9.0	≤ 16
FX-N-06L050	FX-N-06K050	FX-N-06C050	50	5.9	54	3.8	9.0	≤ 21
FX-N-06L055	FX-N-06K055	FX-N-06C055	55	5.9	59	3.8	9.0	≤ 26
FX-N-06L060	FX-N-06K060	FX-N-06C060	60	5.9	64	3.8	9.0	≤ 31
FX-N-06L070	FX-N-06K070	FX-N-06C070	70	5.9	74	3.8	9.0	≤ 41
FX-N-06L080	FX-N-06K080	FX-N-06C080	80	5.9	84	3.8	9.0	≤ 51
FX-N-08L045	FX-N-08K045	FX-N-08C045	45	7.9	51	4.8	11.0	≤ 5
FX-N-08L060	FX-N-08K060	FX-N-08C060	60	7.9	66	4.8	11.0	≤ 20
FX-N-08L080	FX-N-08K080	FX-N-08C080	80	7.9	86	4.8	11.0	≤ 40
FX-N-08L100	FX-N-08K100	FX-N-08C100	100	7.9	106	4.8	11.0	≤ 60
FX-N-08L120	FX-N-08K120	FX-N-08C120	120	7.9	126	4.8	11.0	≤ 80
FX-N-08L140	FX-N-08K140	FX-N-08C140	140	7.9	146	4.8	11.0	≤ 100
FX-N-08L160	FX-N-08K160	FX-N-08C160	160	7.9	166	4.8	11.0	≤ 120

Marking:



KOELNER identifying mark

FX

anchor trade name

ø6x30

diameter x length (e.g. ø6 x 30 mm)

FX-N

Product description
Dimensions and marking

Annex A 3

Table A4: Materials

Designation	Material
Anchor sleeve	Polyamide (PA6), grey or blue, virgin material
Expansion pin made of steel	Carbon steel ($f_{y,k} \geq 285$ MPa, $f_{u,k} \geq 330$ MPa) galvanized ≥ 5 μm according to EN ISO 4042

FX-N**Product description**
Materials**Annex A 4**

Specification of intended use

Anchorage subject to:

- Wind suction loads.
Note: The anchor shall not be used for the transmission of dead loads of the external insulation system (EWIS) or prefabricated units for external wall insulation (Veture Kits).

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 and 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 experiences 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 with anchor positions are prepared taking into account of the loads to be anchored.
- Fasteners are only to be used for multiple fixings of profiles for external insulation system (EWIS) according to UKAD 040083-00-0404 or prefabricated units for external wall insulation (Veture Kits) according to UKAD 040914-00-0404.

Installation:

- Drill method according to Annex C1.
- Anchor installation shall be carried out by appropriately qualified personnel and under the supervision of the person responsible for technical matters of the site.
- Installation shall be executed in temperature from 0°C to +40°C.
- Exposure to UV due to solar radiation of the anchor not protected by rendering by the mortar shall not exceed 6 weeks.

FX-N

Intended use
Specifications

Annex B 1

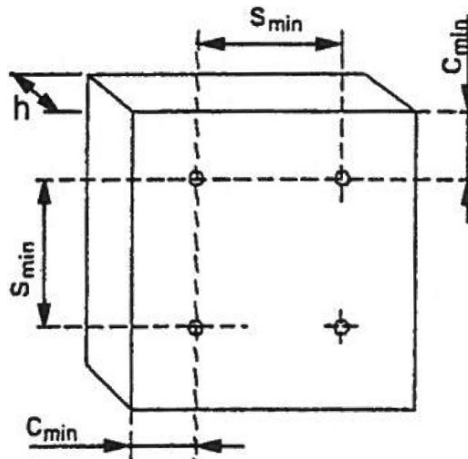
Table B1: Installation characteristics

Anchor type		FX-N-05	FX-N-06	FX-N-08
Nominal diameter	d_{nom} [mm]	5.0	6.0	8.0
Nominal diameter of drill bit	d_o [mm]	5.0	6.0	8.0
Cutting diameter of drill bit	d_{cut} [mm]	≤ 5.40	≤ 6.40	≤ 8.45
Depth of drill hole	h_1 [mm]	≥ 35	≥ 40	≥ 50
Effective anchorage depth	h_{ef} [mm]	25	29	40

Table B2: Minimum thickness of base material, edge distance and anchor spacing

Anchor type		FX-N
Minimum thickness of base material	h_{min} [mm]	100
Minimum spacing	s_{min} [mm]	100
Minimum edge distance	c_{min} [mm]	100

Diagram of spacing







FX-N

Intended use

Installation characteristics, minimum thickness of base material, edge distance and spacing

Annex B 2

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

Base material	Reference standard	Bulk density [kg/dm ³]	Compressive strength [N/mm ²]	Drilling method	N_{Rk} [kN]		
					FX-N-05	FX-N-06	FX-N-08
Concrete C12/15	EN 206-1	–	–	hammer drilling	0.2	0.2	0.3
Concrete C20/25 to C50/60	EN 206-1	–	–		0.3	0.3	0.5
Solid clay brick 	EN 771-1	≥ 1.7	≥ 30.0	hammer drilling	0.2	0.2	0.5
Solid calcium silicate brick (e.g. KS NF 20-2.0) 	EN 771-2	≥ 2.0	≥ 20.0	hammer drilling	0.2	0.4	0.4
Calcium silicate hollow block (eg. KS L-R(P) 8 DF) a = 30 mm 	EN 771-2	≥ 1.6	≥ 12.0	rotary drilling	0.3	0.3	–
Lightweight concrete hollow block Hbl a = 30 mm 	DIN 18151	≥ 0.8	≥ 2.0	rotary drilling	0.2	0.3	0.3
Lightweight concrete block LAC 20	EN 771-3	≥ 1.56	≥ 20.0	rotary drilling	0.2	0.3	0.5
Autoclaved aerated concrete block AAC 2	EN 771-4	≥ 0.35	≥ 2.0	rotary drilling	–	0.1	0.1
Partial safety factor $\gamma_M^{(1)}$	2.0						

¹⁾ in absence of national regulations

Table C2: Displacements behaviour

Base material	$\frac{N_{Rk}}{3}$ [kN]			δ (for $\frac{N_{Rk}}{3}$) [mm]		
	FX-N-05	FX-N-06	FX-N-08	FX-N-05	FX-N-06	FX-N-08
Concrete C12/15	0.07	0.07	0.10	0.20	0.13	0.27
Concrete C20/25 to C50/60	0.10	0.10	0.17	0.26	0.26	0.40
Solid clay brick	0.07	0.07	0.17	0.19	0.32	0.70
Solid calcium silicate brick	0.07	0.13	0.13	0.30	0.21	0.16
Calcium silicate hollow block	0.10	0.10	–	0.28	0.32	–
Lightweight concrete hollow block	0.07	0.10	0.10	0.36	0.35	0.73
Lightweight concrete block LAC 20	0.07	0.10	0.17	0.21	0.42	0.14
Autoclaved aerated concrete block AAC 2	–	0.03	0.03	–	0.08	0.08

FX-N

Performances

Characteristic resistance and displacements

Annex C 1



British Board of Agrément,
1st Floor Building 3
Hatters Lane
Croxley Park
Watford
WD18 8YG