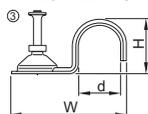


X-FB (X-DFB / X-EMTC) Electrical Conduit Fasteners

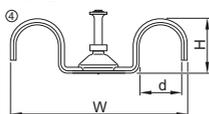
Product data

Dimensions

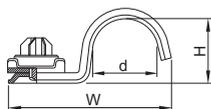
X-FB / X-EMTC



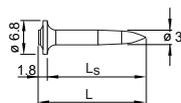
X-DFB



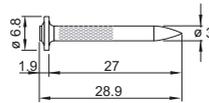
X-FB MX (X-BX/X-EMTC)



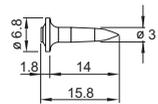
X-GHP 20/24



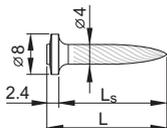
X-GN 27



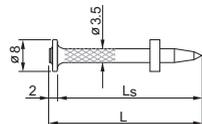
X-EGN 14



X-U 16/22/27



X-C 27



General information

Material specifications

See fastener selection for more details.

Fastening tools

GX 120-ME, GX 100-E, DX 351-MX,
DX 460-MX, DX 351-F8, DX 460-F8,
DX-E 72

See fastener selection for more details.

Applications

Example



X-FB for rigid conduits

Load data

Design data

Recommended loads

Fastener	Concrete N_{rec} [kN]	Sandlime stone N_{rec} [kN]	Steel N_{rec} [kN]
X-FB / X-DFB (pre-mounted)	0.06	0.06	–
X-FB MX with X-U or X-C ($L_s = 22$ or 27 mm)	0.06	0.06	–
X-FB MX with X-U 16 MX	–	–	0.06
X-FB MX with X-GHP ($L_s = 20$ or 24 mm)	0.02	–	–
X-FB MX with X-GN 27	–	0.06	–
X-FB MX with X-EGN 14 or X-U	–	–	0.06

Test data

Important note: test data are for information only.

Load capacity of the nails:

The nail resistance is not controlling the failure of the fastener.

Fastenings to concrete

Nail	Average tensile failure load $N_{u,m}$ [kN]	Scatter [%]	Embedment depth h_{ET} [mm]	Concrete strength f_{cc} [N/mm ²]
X-GHP 20 MX	1.61	52.0	14.0	52.2
X-GN 27 MX	1.91	47.1	19.2	23.7
X-U 22 MX	3.18	37.8	20.1	54.7
X-U 27 MX	4.04	35.4	24.5	30.9

Application requirements

Thickness of base material

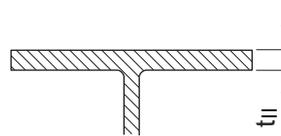
Concrete

X-U, X-C: $f_{min} = 80 \text{ mm}$

X-GHP, X-GN: $f_{min} = 60 \text{ mm}$

Steel

$t_{II} \geq 4 \text{ mm}$



Thickness of fastened material

X-FB (X-BX, X-EMTC) To fasten conduits, pipes and tubes of $\varnothing 8 \text{ mm}$ to 50 mm

Spacing and edge distances

Space fastenings as needed to control sag and maintain alignment.

Corrosion information

These zinc-coated fasteners are not suitable for long-term service outdoors or in otherwise corrosive environments.

For further detailed information on corrosion see relevant chapter in **Direct Fastening Principles and Technique** section.

Application limits

X-C and Gas nails $f_c \leq 30 \text{ N/mm}^2$

X-U $f_c \leq 40 \text{ N/mm}^2$

Fastener selection

Fastener program

Technical information

With pre-mounted nail		Without pre-mounted nail		
Designation	Designation	d [mm]	W [mm]	H [mm]
③ X-FB 8-C27	X-FB 8 MX	8	31	10
③ X-EMTC 3/8"-C27/-U22	X-BX 3/8" MX	10 (3/8")	33	12
③ X-FB 11-C27	X-FB 11 MX	11	34	13
③ X-EMTC 1/2"-C27/-U22		13 (1/2")		
③ X-FB 13-C27	X-EMTC 1/2" MX	13 (1/2")	42	15
③ X-FB 16-C27	X-FB 16 MX	16	44	18
③ X-FB 18-C27		18	46	20
③ X-EMTC 3/4"-C27/-U22	X-EMTC 3/4" MX	19 (3/4")	47	21
③ X-FB 20-C27	X-FB 20 MX	20	48	22
③ X-FB 22-C27	X-FB 22 MX	22	50	24
③ X-FB 24-C27		24	52	26
③ X-FB 25-U27	X-FB 25, X-EMTC 1" MX	25 (1")	53	27
③ X-EMTC 1"-C27/-U22		25 (1")		
③ X-FB 28-C27	X-FB 28 MX	28	56	30
③ X-FB 32-C27	X-FB 32 MX	32	58	34
③ X-FB 35-C27		35	64	37
③ X-FB 40-C27	X-FB 40 MX	40	69	42
③ X-FB 50-C27		50	77	52
④ X-DFB 8-C27				
④ X-DFB 11-C27				
④ X-DFB 16-C27	X-DFB 16 MX	16	66	15
④ X-DFB 18-C27		18	70	18
④ X-DFB 20-C27	X-DFB 20 MX	20	75	20
④ X-DFB 22-C27	X-DFB 22 MX	22	79	22
④ X-DFB 24-C27	X-DFB 25 MX	24	83	24
④ X-DFB 25-C27		25		
④ X-DFB 28-C27	X-DFB 28 MX	28	91	28
④ X-DFB 35-C27		35	106	30
④ X-DFB 40-C27		40	116	37
X-U nail	Nail shank: Carbon steel, HRC 58		Zinc coating: 5–13 µm	
X-C nail	Nail shank: Carbon steel, HRC 53		Zinc coating: 5–13 µm	
X-GHP nail	Nail shank: Carbon steel, HRC 58		Zinc coating: 2–8 µm	
X-GN nail	Nail shank: Carbon steel, HRC 53.5		Zinc coating: 2–8 µm	

Material specification:

③ + ④ Galvanized steel sheet, $f_u = 270-420 \text{ N/mm}^2$, 10–20 μm zinc coating

Tools:

DX 351-F8, DX 460-F8, DX-E 72 for all **X-FB/DFB/EMTC** with pre-mounted nails
 and

GX 120-ME, GX 100-E, DX 351-MX, DX 460-MX for **X-FB/DFB/EMTC __MX**

X-FB/DFB:
Fastening of electrical conduits and light-duty water or heating pipes on concrete

Capacity:

Nail choice:

conduit $\varnothing \leq d$	X-C and Gas Nails for $f_c \leq 30 \text{ N/mm}^2$
------------------------------	---

conduit $\varnothing \leq d$	X-U for $f_c \leq 40 \text{ N/mm}^2$
------------------------------	---

System recommendation

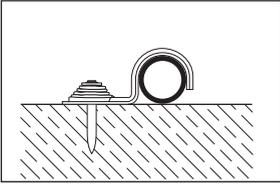
DX tools:	Steel:	6.8/11M yellow or red cartridge
	Concrete:	6.8/11M yellow cartridge on green/fresh and standard concrete 6.8/11M red cartridge on precast, old and hard concrete
	Masonry:	6.8/11M green cartridge
GX 120 tool:		Gas can GC 21 (GC 22 in USA)
GX 100 tool:		Gas can GC 11 (GC 12 in USA)

Tool energy adjustment by setting tests on site.

Fastening quality assurance

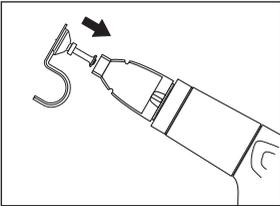
Fastening inspection

Nailhead not protruding

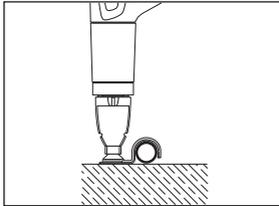


Installation details

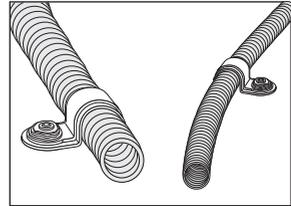
X-FB:



1.
Load X-FB in the tool



2.
Position against the conduit



3.
Compress tool, pull the trigger
and the conduit is fastened

Spacing: Space fastenings as needed to control sag and maintain alignment