

BX 3 system: fasteners for Mechanical & Electrical and Interior Finishing applications

Product data

BX 3 battery-actuated fastening tool



Nails

(For fastening to concrete)

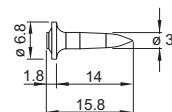
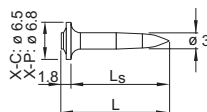
X-P 17/20/24 B3 MX

X-P 30/36 B3 P7

X-C 20/24 B3 MX

(For fastening to steel)

X-S 14 B3 MX



Electrical elements to be used with nails

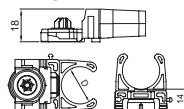
X-ECT MX



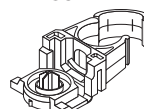
X-UCT MX



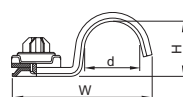
X-EKS MX



X-EKSC MX



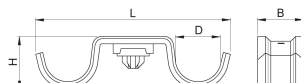
X-FB MX



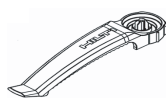
X-ECH MX



X-DFB MX



X-EKB MX



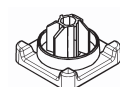
X-ECC MX



X-EHS MX



X-ET MX



X-TT



X-ECT 40 MX



General information

Material specifications

X-P B3 MX/P7, X-S B3 MX

Carbon steel, HRC 57.5, 2-10 µm zinc coating

X-C B3 MX

Carbon steel, HRC 56.5, 5-13 µm zinc coating

X-ECT MX, X-EKS MX, X-EKSC MX,

Polyamide (halogen and silicon-free), light grey RAL 7035

X-EKB MX, X-ECH MX

X-ECT-FR MX, X-EKB-FR MX

PBT (silicon free, flame retardant), stone grey RAL 7030

X-UCT MX, X-ET MX

HDPE (halogen and silicon free), light grey RAL 7035

X-TT

Polyester (PES)

X-FB MX, X-DFB MX

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

X-ECC MX, X-EHS MX

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

Approvals

ICC-ESR 1752

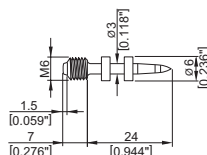
Product data

BX 3 battery-actuated fastening tool

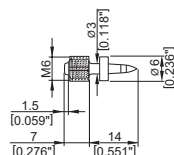


Threaded studs

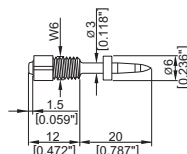
(For fastening to concrete)
X-M6-7-24 B3 P7



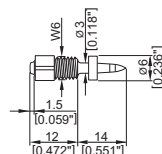
(For fastening to steel)
X-M6-7-14 B3 P7



X-W6-12-20 B3 P7



X-W6-12-14 B3 P7



General information

Material specifications: B3 threaded studs

Carbon steel shank HRC 57.5
Zinc coating 2–10 µm

Applications

Examples

With nails and elements



Flexible or rigid cable conduits
with cable ties



Fastening cables



Cable conduits or light-duty pipes

With threaded studs

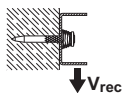


Junction boxes, switch boxes, etc.

With nails



Drywall tracks to concrete and
steel

Load data
Recommended loads (nails and threaded studs only)

**X-P B3 and X-C B3 nails
(Base material: concrete / sand-lime masonry)**

N_{rec} [kN]	V_{rec} [kN]	h_{ET} [mm]
0.4	0.4	≥ 27
0.3	0.3	≥ 22
0.2	0.2	≥ 18
0.1	0.1	≥ 14

**X-S 14 B3 nails
(Base material: steel)**

N_{rec} [kN]	V_{rec} [kN]
0.4	0.4

Design conditions

- Minimum 5 fastenings per fastened unit
- All visible failures must be replaced

Threaded stud	Recommended loads and tightening torque			Base material
	N_{rec} [kN]	V_{rec} [kN]	T_{rec} [Nm]	
X-M6-7-24 B3 P7 X-W6-12-20 B3 P7	0.05	0.05	3.0	Concrete, sand-lime masonry
X-M6-7-14 B3 P7 X-W6-12-14 B3 P7	0.2	0.2	3.0	Steel

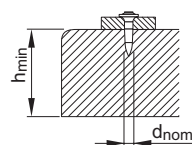
Recommended loads and capacities (electrical elements used with nails)

Element	Max. service load, F_{max} (concrete, sand-lime masonry and steel)
X-ECT (FR) MX	40 N
X-UCT MX	40 N
X-EKS MX	11 N
X-EKSC MX	32 N
X-FB MX / X-DFB MX	20 N
X-ECC MX	50 N
X-EHS MX	80 N
	Cable trunking
X-ET MX	100 N

Element (recommended for cables $\varnothing$ 8 mm and $\varnothing$ 10 mm)	Max. fastener capacities (concrete, sand-lime masonry and steel) (at spacing of 50–100 cm to limit cable slack)	
	NYM 3x1.5 mm ² ($\varnothing$ 8 mm)	NYM 5x1.5 mm ² ($\varnothing$ 10 mm)
X-EKB (FR) 4 MX	4	3
X EKB (FR) 8 MX	8	5
X EKB (FR) 16 MX	16	10
X-ECH-15 MX and X-ECH-B MX	15	10
X-ECH-30 MX and X-ECH-B MX	30	20

Application requirements

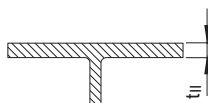
Thickness of base material



Concrete (for nails
and threaded studs)

$$h_{\min} = 60\text{mm}$$

$$d_{\text{nom}} = 3.0\text{mm}$$



Steel

$$t_{II} \geq 4.0\text{mm (for nails)}$$

$$t_{II} \geq 6.0\text{mm (for threaded studs)}$$

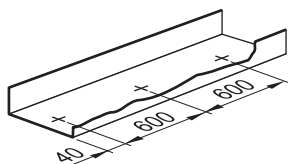
Thickness of fastened material

Wooden track: $t_I \leq 27\text{mm}$

Metal track: $t_I \leq 2\text{mm}$

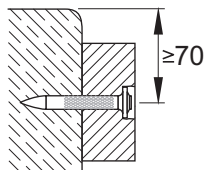
Spacing and edge distances (mm)

Spacing along track

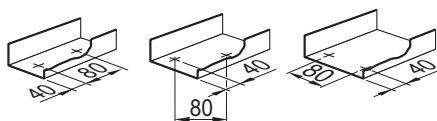


Fastener spacing max. 30 cm for proprietary light non-load-bearing partition walls with fire classification

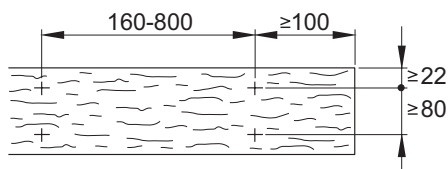
Distance to edge of concrete / sand-lime masonry



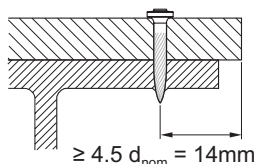
All track ends (cut-outs for doors),
secure with 2 nails



Fastener spacing on wood:

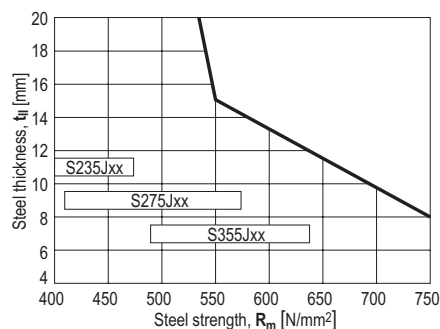


Distance to edge of fastened material (steel base material)

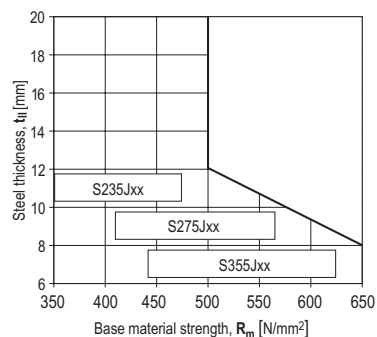


Application limits

X-S 14 B3 MX



X-M6-7-14 B3 P7, X-W6-12-14 B3 P7



Corrosion information

The intended use only comprises fastenings which are not directly exposed to external weather conditions or moist atmospheres, i.e. only intended for dry indoor areas.

Fastener selection and system recommendation

Fastener program

Nails

Nail	Item no.	Shank length (mm)	Shank diameter (mm)	Base material
X-S 14 B3 MX	2105402	14	3	Steel
X-C 20 B3 MX	2123993	20	3	Concrete
X-C 24 B3 MX	2123994	24	3	Concrete
X-P 17 B3 MX	2105403	17	3	Concrete
X-P 20 B3 MX	2105404	20	3	Concrete
X-P 24 B3 MX	2105405	24	3	Concrete
X-P 30 B3 P7	2105406	30	3	Concrete
X-P 36 B3 P7	2105407	36	3	Concrete

Threaded studs

Threaded studs	Item no.	Thread size	Thread length (mm)	Shank length (mm)	Shank diameter (mm)	Base material
X-M6-7-14 B3 P7	2105408	M6	7	14	3	Steel
X-M6-7-24 B3 P7	2105409	M6	7	24	3	Concrete
X-W6-12-14 B3 P7	2105800	W6	12	14	3	Steel
X-W6-12-20 B3 P7	2105801	W6	12	20	3	Concrete

Fastener program

Cable mount

Element	Item no.	Maximum number of cables	
		NYM 3x1.5 mm ² (Ø 8 mm)	NYM 5x1.5 mm ² (Ø 10 mm)
X-ECT MX	285709	14	10
X-ECT 40 MX	432947		
X-UCT MX	2095183	14	10
X-EKB 4 MX	285712	4	3
X-EKB 8 MX	285713	8	5
X-EKB 16 MX	285714	16	10
X-ECH-15 MX	2018247	15	10
X-ECH-30 MX	2018248	30	20

Pipe supports

Element	Item no.	Pipe diameter
X-ECT MX	285709	16–40 mm
X-ECT 40 MX	432947	
X-UCT MX	2095183	16–40 mm
X-EKS MX	See X-EKS MX and X-EKSC MX product pages	16–40 mm
X-EKSC MX		
X-FB MX	See X-FB MX and X-DFB MX product pages	5–40 mm
X-DFB MX		

Fastener selection

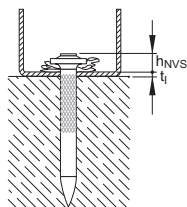
		Nail Selector for BX 3			HILTI
		Brick	Concrete		Steel
			Wall / Floor	Ceiling	
	X-C 20 B3 MX X-C 24 B3 MX	X-C 20 B3 MX	X-P 17 B3 MX	X-S 14 B3 MX	
	X-P 36 B3 P7 X-P 30 B3 P7		-----	-----	
	X-C 20 B3 MX X-C 24 B3 MX	X-C 20 B3 MX X-P 20 B3 MX	X-P 20 B3 MX	X-S 14 B3 MX	
	X-P 17 B3 MX X-P 20 B3 MX	X-P 17 B3 MX	X-P 17 B3 MX	X-S 14 B3 MX	
	X-C 20 B3 MX X-C 24 B3 MX	X-C 20 B3 MX X-P 20 B3 MX	X-P 20 B3 MX	X-S 14 B3 MX	
	X-W6-12-20 B3 P7 X-M6-7-24 B3 P7			X-W6-12-14 B3 P7 X-M6-7-14 B3 P7	
Propellant-free					

Fastener guide	Item no.	Use
X-FG B3-ME	2101258	With nails + elements or only studs
X-FG B3-IF	2116415	With nails or studs only

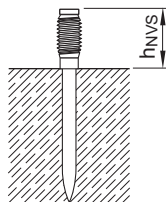
Fastening quality assurance

Fastening inspection

Nails and studs in concrete / sand-lime masonry

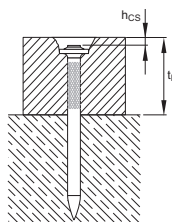


X-C_B3, X-P_B3:
 $h_{NVS} = 2-5 \text{ mm}$



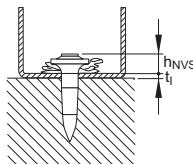
X-M6-7-24 B3 P7
X-W6-12-20 B3 P7

h_{NVS}
 $\geq 7 \text{ mm}$
 $\geq 12 \text{ mm}$

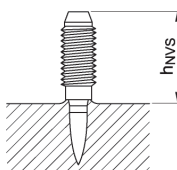


X-C_B3, X-P_B3:
 $h_{CS} = 2-3 \text{ mm}$

Nails and studs in steel



X-S_B3:
 $h_{NVS} = 2-9 \text{ mm}$

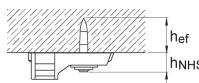
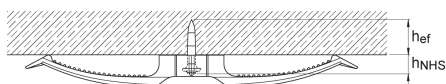
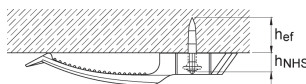


X-M6-7-14 B3 P7
X-W6-12-14 B3 P7

h_{NVS}
 $\geq 7 \text{ mm}$
 $\geq 12 \text{ mm}$

Element	$h_{NHS} \text{ (mm)}$	
	Concrete	Steel
X-EKB 4/8 MX	6-11	6-9
X-EKB 16 MX	6-11	6-9
X-ECT MX	6-11	6-9
X-UCT MX	6-11	6-9
X-ECH MX	6-11	6-9
X-EKS MX	6-11	6-9
X-EKSC MX	6-11	6-9
X-FB MX	7-11	7-9
X-DFB MX	7-11	7-9
X-ECC MX	7-11	7-9
X-EHS MX	7-11	7-9
X-ET MX*	5-10	5-9

Examples



*) With X-ET MX, the h_{NVS} is measured against the cable trunk.