



GX3 DATA SHEET

**System Fastener for interior finishing,
building construction, mechanical
and electrical application**



GX 3 System Fastener for interior finishing, building construction, mechanical and electrical application

Product data

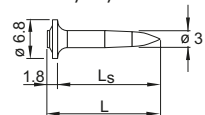
GX 3 gas tool



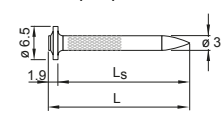
GX 3, GX 3-ME

Nails (For fastening to concrete)

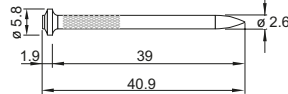
X-P 17/20/24 G3 MX



X-C 20/27/32 G3 MX

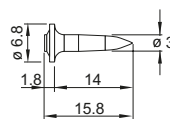


X-C 39 G3 MX



Nails (For fastening to steel)

X-S 14 G3 MX



General information

Material specifications: B3 threaded studs

X-P G3 MX, X-S G3 MX

Carbon steel, HRC 57.5, 2-13 µm zinc coating

X-C G3 MX

Carbon steel, HRC 56.5, 2-13 µm zinc coating

Approvals

ICC-ESR 1752 (USA)

X-P 17/20/24 G3 MX, X-C 20/27/32 G3 MX and X-S 14 G3 MX

IBMB

X-P 17/20/24 G3 MX, X-C 20/27/32/39 G3 MX

ETA-16/0301

X-P 20/24 G3 MX

Applications

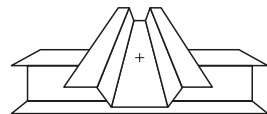
Examples



Drywall tracks



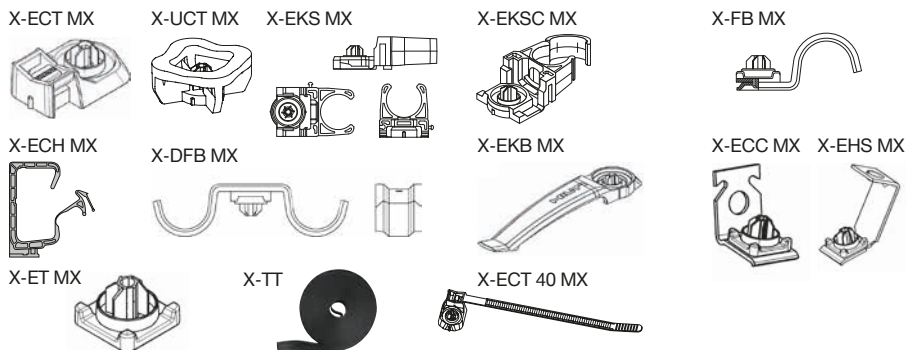
Light-duty building construction applications



Temporary tacking of composite deck to steel beams

Product data

Electrical elements to be used with nails



General information

Material specifications

XX-ECT MX, X-EKS, X-EKSC MX, ECH MX	PA, halogen free, silicone free, light grey RAL 7035
X-EKB MX	PA, halogen free, light grey RAL 7035
X-ECT-FR MX	PBT, silicone free, flame retardant, stone grey RAL 7030
X-EKB-FR MX	PBT, silicone free, flame retardant, stone grey RAL 7030
X-UCT MX, X-ET MX	HDPE, halogen free, silicone free, light grey RAL 7035
X-TT	PET
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 $f_u = 270-420 \text{ N/mm}^2$, 10-20 μm zinc coating

Approvals

ICC-ESR 1752 (USA), IBMB, ETA-16/0301

Applications



Conduits and light-duty pipes



Electrical cables

Product data

GX 3 gas tool

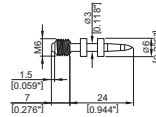


GX 3, GX 3-ME

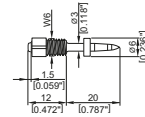
Studs

(For fastening to concrete)

X-M6-7-24 G3 P7

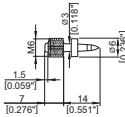


X-W6-12-20 G3 P7

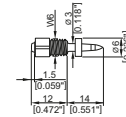


(For fastening to steel)

X-M6-7-14 G3 P7



X-W6-12-14 G3 P7



General information

Material specifications

Carbon steel shank

HRC 57.5

Zinc coating

2-10 μm

Applications



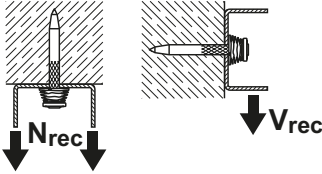
Junction boxes, switch boxes, etc.



Pipe rings for light-duty pipes

Performance data

Performance data for drywall track fastening



X-S 14 G3 MX (Base material: steel)

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

X-P G3, X-C G3 (Base material: concrete / sand-lime masonry)

Embedment [mm]	Recommended Loads [kN]					
	Tension N_{rec}		Shear V_{rec}		Tension N_{rec}	Shear V_{rec}
	Concrete Type				Sand-lime masonry	
	Soft	Tough	Soft	Tough		
≥ 22	-	-	-	-	0.3	0.3
≥ 18	0.2	-	0.2	-	0.2	0.2
≥ 14	0.1	0.1	0.1	0.1	0.1	0.1

Conditions:

- For safety relevant fastenings sufficient redundancy of the entire system is required; Minimum of 5 nails per fastened track. All visible setting failures must be replaced
- Sheet metal failure is not considered in recommended loads and must be assessed separately
- Soft concrete up to $f_{c,cube} = 45 \text{ N/mm}^2$ (C35/45), some tough concrete up to $f_{c,cube} = 60 \text{ N/mm}^2$ (C50/60).
- Concrete with aggregate like granite or river rock or softer, and up to 16 mm diameter



	Stick rate estimation	
	Soft Concrete	Tough concrete
X-P G3	85% - 98%	70% - 85%
X-C G3	75% - 90%	55% - 70%

- The stick rate indicates the percentage of nails that were driven correctly to carry a load. Stick rate can vary from the above values depending on job site conditions.

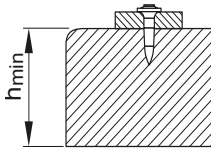
Threaded stud	Recommended loads and tightening torque			Base material
	N_{rec} [kN]	V_{rec} [kN]	T_{rec} [Nm]	
X-M6-7-24 G3 P7	0.05	0.05	3.0	Concrete, sand-lime masonry
X-W6-12-20 G3 P7				
X-M6-7-14 G3 P7	0.2	0.2	3.0	Steel
X-W6-12-14 G3 P7				

Recommended loads (electrical elements used with nails)

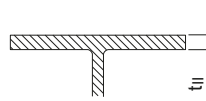
Element	Maximum service load F_{max} [N]
X-ECT (FR) MX	40
X-UCT MX	40
X-EKS MX	11
X-EKSC MX	32
X-FB MX / X-DFB MX	20
X-ECC MX	50
X-EHS MX	80
X-EKB (FR) 4 MX	9
X-EKB (FR) 8 MX	14
X-EKB (FR) 16 MX	18
X-ECH MX	40
	Cable trunking
X-ET MX	100

Application requirements

Thickness of base material



Concrete (for nails and threaded studs)
 $h_{\min} = 60 \text{ mm}$

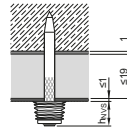


Steel
 $t_{II} \geq 4.0 \text{ mm}$ (for nails)
 $t_{II} \geq 6.0 \text{ mm}$ (for threaded studs)

Thickness of fastened material

Wooden track: $t_I \leq 25 \text{ mm}$

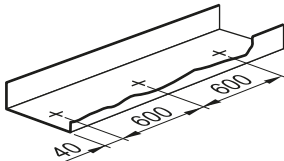
Metal track: $t_I \leq 2 \text{ mm}$



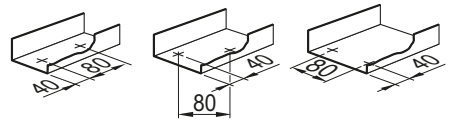
Deflection head:
 $t_{l,tot} \leq 21 \text{ mm}$ (gypsum strip + metal track and sealant)

Spacing and edge distances (mm)

Spacing along track

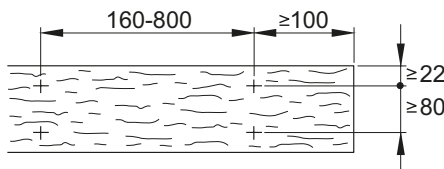
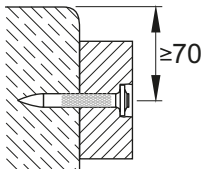


All track ends (cut-outs for doors),
 secure with 2 nails

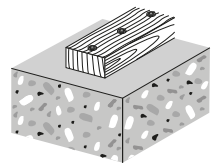


Fastener spacing max. 30 cm for proprietary light non-load-bearing partition walls with fire classification

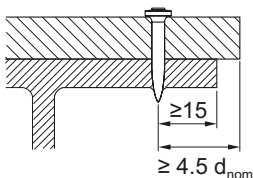
Distance to edge of concrete / sand-lime masonry



Spacing between nails when fastening wood to concrete

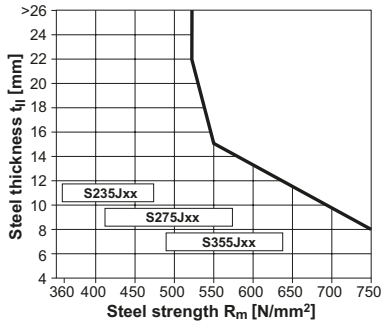


Distance to edge of fastened material (steel base material)

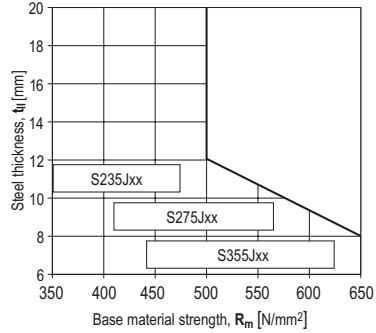


Application limits

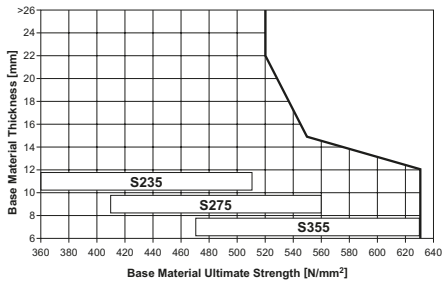
X-S 14 G3 MX



X-M6-7-14 G3 P7, X-W6-12-14 G3 P7



For temporary tacking of composite decks



Design conditions:

- Single layer sheet with a maximum thickness of 1.25 mm.
- Sheeting grade up to S450 acc. to EN 10346.
- Minimum base material thickness: 6 mm
- Minimum steel grade: S235 acc. to EN 10025-2

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




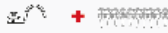




Nails

Nail	Item no.	Shank length (mm)	Shank diameter (mm)	Base material	Length recommendation
X-S 14 G3 MX	2101547	14	3	Steel	
X-P 17 G3 MX	2101046	17	3	Concrete / Sand-lime masonry	<p>Increasing strength of base material</p> <p>Increasing thickness of fastened material</p>
X-P 20 G3 MX	2101047	20	3		
X-P 24 G3 MX	2101048	24	3		
X-C 20 G3 MX	2100955	20	3		
X-C 27 G3 MX	2100956	27	3		
X-C 32 G3 MX	2100957	32	3		
X-C 39 G3 MX	2100958	39	2.8		

Threaded studs

Threaded studs	Item no.	Thread size	Thread length (mm)	Shank length (mm)	Shank diameter (mm)	Base material
X-M6-7-14 G3 P7	2101052	M6	7	14	3	Steel
X-M6-7-24 G3 P7	2101053	M6	7	24	3	Concrete
X-W6-12-14 G3 P7	2101054	W6	12	14	3	Steel
X-W6-12-20 G3 P7	2101055	W6	12	20	3	Concrete

Fastener recommendations

	Nail Selector for GX 3			
	Hollow brick	Concrete		Steel
		Wall / Floor	Ceiling	
	X-C 27 G3 MX X-C 20 G3 MX	X-C 20 G3 MX	X-C 20 G3 MX X-P 17 G3 MX	X-S 14 G3 MX
	X-C 39 G3 MX X-C 32 G3 MX			
	X-C 27 G3 MX X-C 20 G3 MX	X-C 20 G3 MX	X-C 20 G3 MX X-P 17 G3 MX	X-S 14 G3 MX
	X-C 20 G3 MX		X-C 20 G3 MX X-P 17 G3 MX	X-S 14 G3 MX
	X-C 20 G3 MX		X-C 20 G3 MX X-P 17 G3 MX	X-S 14 G3 MX
	X-W6-12-20 G3 P7 X-M6-7-24 G3 P7			X-W6-12-14 G3 P7 X-M6-7-14 G3 P7
Gas can		GC 40 / GC 41 / GC 42 - For all base materials		

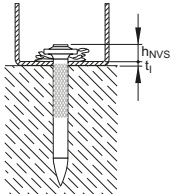
For more details and information, please contact your nearest Hilti representative.

Fastener guide	Item no.	Use
X-FG G3	2102280	With nails or studs only
X-FG G3-ME	2102281	With nails + elements or only studs

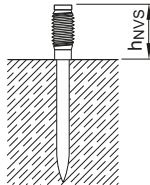
Fastening quality assurance

Fastening inspection

Nails and studs in concrete / sand-lime masonry

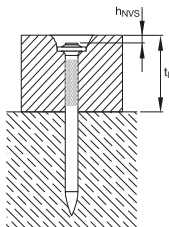


X-P_G3 MX, X-C_G3 MX:
 $h_{NVS} = 2-5 \text{ mm}$

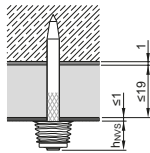


X-M6-7-24 G3 P7
 X-W6-12-20 G3 P7

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

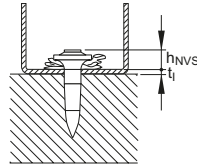


X-P_G3 MX, X-C_G3 MX:
 $h_{NVS} = 2-3 \text{ mm}$

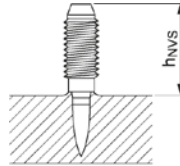


Deflection head
 X-C 39 G3 MX
 12.5 mm board: $h_{NVS} \leq 15 \text{ mm}$
 15 mm board: $h_{NVS} \leq 12 \text{ mm}$
 19 mm board: $h_{NVS} \leq 8 \text{ mm}$

Nails and studs in steel



X-S 14 G3 MX:
 $h_{NVS} = 2-9 \text{ mm}$

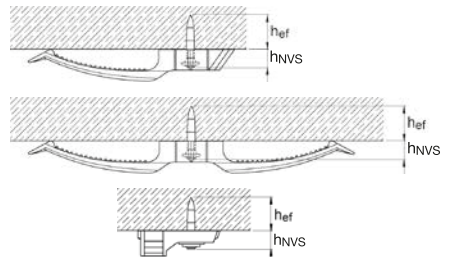


X-M6-7-14 G3 P7
 X-W6-12-14 G3 P7

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

Element	h_{NVS} (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.