













## Direct fixings for to concrete for M&amp;E applications

Fixing to Concrete		GX/DX Standard				DX-Kwik	
		Embedment Depth $h_{ET}$					
Item			≥ 14 mm	≥ 18 mm (incl. Hollow core Pre-cast panels ≤ 18mm)	≥ 22 mm	≥ 27 mm	Use Drill Bit TX-C-5/23B (item # 28557)
Description							
Nail fixing See Brochure "Fastening of MM channel with powder actuated fasteners" for more details.	Track e.g. ML 	N <sub>rec</sub> Fastener	0.1kN X-EGN 14 X-U 15 X-DAK 16	0.2 kN X-GHP 20 X-U 19 X-DW 20	0.3 kN X-U 22 X-ZF 22	0.4 kN X-GN 27 X-U 27 X-DW 27 X-ZF 27	0.9 kN X-DKH 48
Threaded rod hanger	X-HS 	N <sub>rec</sub> Fastener		0.2 kN X-HS U22	0.3 kN X-HS U27 (on demand only, no stock)	0.4 kN X-HS U32	0.9 kN X-HS DKH 48
Ceiling clip	X-CC 	N <sub>rec</sub> Fastener		0.15 kN X-CC U22	0.20 kN X-CC U27		0.9 kN X-CC DKH 48
Threaded stud	X-M6-x-xxFP8 	N <sub>rec</sub> Fastener		0.2 kN X-M6-8-22FP8 X-M6-11-22FP8 X-M6-20-22FP8	0.3 kN X-M6-8-22FP8 X-M6-11-22FP8 X-M6-20-22FP9	0.4 kN X-M6-8-27FP8 X-M6-11-27FP8 X-M6-20-27FP8	0.6 kN (2.0kN) X-M6H-10-37 FP8 X-M6H-20-37 FP8
Rod Hanger	X-HS MX  Not to be used for Suspended Ceilings	N <sub>rec</sub> Fastener	0.1kN X-GHP20 MX X-U19 MX	0.2 kN X-U22 MX X-DNI22 MX X-ZF22 MX	0.3 kN X-U27 MX X-DNI27 MX X-ZF27 MX	0.4 kN X-U32 MX X-ZF32 MX X-DNI32 MX	
Ceiling Hanger For light electrical fixings only.	X-CC MX  Not to be used for Suspended Ceilings	N <sub>rec</sub> Fastener	0.05 kN X-GHP20 MX X-U19 MX	0.15 kN X-U22 MX X-DNI22 MX X-ZF22 MX	0.20 kN X-U27 MX X-DNI27 MX X-ZF27 MX	0.25 kN X-U32 MX X-DNI32 MX X-ZF32 MX	
Wire hanger	X-HS-W 	N <sub>rec</sub> Fastener	0.05 kN X-GHP 20	0.15 kN X-HS-W U22	0.20 kN X-HS-W U27	0.25 kN X-U32 MX X-DNI32 MX X-ZF32 MX	0.45 kN (Rec. load for wire) Requires DX 460 MX, X-HS-W MX with X-U 47 MX nail and TX-C-5/23B drill bit.

See notes at end of table overleaf.

		<b>GX/DX Standard</b>				
		<b>Embedment Depth <math>h_{ET}</math></b>				
Description	Item		$\geq 14$ mm	$\geq 18$ mm	$\geq 22$ mm	$\geq 27$ mm
Conduit clip	<b>X-FB X-DFB (MX)</b> 	$N_{rec}$	0.02 kN / 2x 0.02 kN	0.04kN / 2x 0.04 kN	0.06 kN / 2x 0.06 kN	0.08 kN / 2x 0.08 kN
		Fastener	X-U19 MX	X-U22 MX	X-U27 MX	X-U32 MX
			X-GHP20 MX	X-DNI22 MX	X-DNI27 MX	X-DNI32 MX
			X-ZF20 MX	X-ZF22 MX	X-ZF27 MX	X-ZF32 MX
Cable tie fastener	<b>X-ECT MX</b> 	$N_{rec}$	0.04 kN			
Fastener	X-GHP20 MX	Limited by plastic component	X-U22 MX	Limited by plastic component	X-DNI22 MX	Limited by plastic component
	X-ZF20 MX		X-ZF22 MX			
Cable clip	<b>X-EKB MX</b> 	Capacity	3 – 16 cables			
Fastener	X-GHP20 MX	Limited by plastic component	X-U22 MX	Limited by plastic component	X-DNI22 MX	Limited by plastic component
	X-ZF20 MX		X-ZF22 MX			
Cable trunking fastener	<b>X-ET MX</b> 	$N_{rec}$	0.1kN			
Fastener	X-GHP20 MX	Limited by plastic component	X-U22 MX	Limited by plastic component	X-DNI22 MX	Limited by plastic component
	X-ZF20 MX		X-ZF22 MX			
Pipe ring clip	<b>X-EKS / X-EKSC MX</b> 	$N_{rec}$	0.02 kN			
Fastener	X-GHP20 MX	Limited by plastic component	X-U22 MX	Limited by plastic component	X-DNI22 MX	Limited by plastic component
	X-ZF20 MX		X-ZF22 MX			

Design conditions:  
 For safety relevant fastenings sufficient redundancy of the entire system is required:

- Minimum 5 fastenings per fastened.
- All visible failures must be replaced.
- Valid for concrete with strength of  $f_{cc} \leq 35$  N/mm<sup>2</sup> (X-U  $f_{cc} \leq 45$  N/mm<sup>2</sup>)
- Valid for predominantly static loading.
- Failure of the fastened material is not considered in recommended loads
- To limit penetration of nail and to increase pullover load, use nails with washers.

Note this is a Quick Reference guide to be used for initial fastener selection only – for critical fixings check the full technical data available in the Hilti Direct Fastening Technology manual or available in our internet technical library at [www.hilti.co.uk/technical](http://www.hilti.co.uk/technical)

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**IMPORTANT NOTES**

1. The information and recommendations given herein are believed to be correct at the time of writing. The data has been obtained from tests done under laboratory, or other controlled, conditions and it is the users' responsibility to use the data given in the light of conditions on site and taking account of the intended use of the products concerned. Whilst Hilti (Gt. Britain) Limited can give general guidance and advice, the nature of Hilti products means that the ultimate responsibility for selecting the correct product for a particular application must lie with the customer.
2. All products must be used, handled and applied in accordance with current instructions for use published by Hilti (Gt. Britain) Limited.
3. All products are supplied, and advice given, subject to Hilti (Gt. Britain) Limited terms of business.
4. Hilti's policy is one of continuous development. We therefore reserve the right to alter specifications etc. without notice.
5. Construction materials and conditions vary on different sites. If it is suspected that the base material has insufficient strength to achieve a suitable fixing, contact the Hilti Technical Advisory Service.



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