



X-DKH DATA SHEET

Suspended ceiling fastener



X-DKH Hybrid fastener

Product info

Product description

Designation

X-DKH

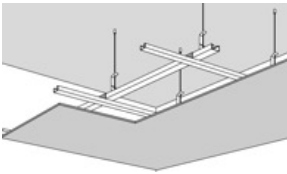


Features

- Uses the DX Hybrid technique – a direct fastening method engineered to maximize fastener reliability and loads, while minimizing concrete spalling.
- Peace of mind – European Technical Assessment (ETA) approved system for suspended ceilings.
- Suitable for Nonius and eyelet ceiling hangers.

Application conditions

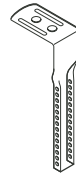
Applications



Suspended ceiling

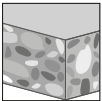


Suspended ceiling
Hanger type: Eyelet
Wire diameter: 4 mm



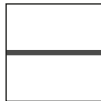
Suspended ceiling
Hanger type: Nonius

Base materials



Concrete

Load conditions



Static/
quasi static

Environmental conditions



Dry indoor

Approvals

Approvals and certificates

Authority	Approval/certificate	Date of issue
DIBt	ETA-22/0587	07/2023



- Not all information presented in this product data sheet might be subject to approval/certificate content. Please refer to approval/certificate for further information.

Product info

Dimensions

	X-DKH 48 P8S15
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Material specification and material properties

Designation	Element	Material	Coating	Minimum coating thickness t_c [μm]	Hardness [HRC]
X-DKH 48 P8S15	Nail	Carbon steel	Zinc	5	58

Element	Material	Standard	Coating	Minimum coating thickness t_c [μm]	Diameter [mm]
Steel washer	DC 01 C390	EN 10139	Zinc	10	15
Plastic washer	Propylene	-	-	-	8

Application requirements

Base material properties and fastener positioning in base material

	Base material	Concrete
	Concrete class	C20/25 – C50/60
	Base material thickness h_{\min} [mm]	100
	Edge distance $c_{1,\min}$, $c_{2,\min}$ [mm]	150
	Spacing $s_{1,\min}$, $s_{2,\min}$ [mm]	100

Performance data

Single point loads

Designation	Hanger type	Characteristic resistance under tension load	Recommended tension load
		N_{Rk} [kN]	N_{rec} [kN]
X-DKH 48 P8S15	Eyelet	1.2	0.57
X-DKH 48 P8S15	Nonius	1.2	0.57

System loads

Maximum allowable ceiling weight [kN/m²]

**Hanger spacing
b [mm]**

Carrying channel/ spacing a [mm]		500	600	700	800	900	1000	1100	1200
	500	1.60	1.33	1.14	1.00	0.88	0.80	0.72	0.66
600	1.33	1.11	0.95	0.83	0.74	0.66	0.60	0.55	
700	1.14	0.95	0.81	0.71	0.63	0.57	0.51	0.47	
800	1.00	0.83	0.71	0.62	0.55	0.50	0.45	0.41	
900	0.88	0.74	0.63	0.55	0.49	0.44	0.40	0.37	
1000	0.80	0.66	0.57	0.50	0.44	0.40	0.36	0.33	
1100	0.72	0.60	0.51	0.45	0.40	0.36	0.33	0.30	
1200	0.66	0.55	0.47	0.41	0.37	0.33	0.30	0.27	



- Allowable ceilings weights are calculated based on a maximum recommended hanger load of 0.4 kN.
- The eccentric load introduction into the fastener is already considered in these load values.
- Fastening of redundant non-structural components (details see ETA-22/0587).
- The characteristic tension resistance for the nail itself amounts to $N_{Rk} = 2.0$ kN (see ETA-22/0587).

Stick rate estimation

	Designation	Soft/standard concrete	Tough concrete
	X-DKH 48 P8S15	100 %	100 %



- 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.

System recommendation

System recommendation for fastening collated nails with powder-actuated tools

Designation	Powder-actuated tool		
	DX 6 F8	DX 5 F8	DX 460 F8
X-DKH 48 P8S15	■	■	■

■ = recommended □ = feasible

Cartridge recommendation

Base material	Cartridge color (tool power level)	
	Tool type: DX 6 F8	Tool type: DX 5 F8, DX 460 F8
	Cartridge type: 6.8/11 M10 for DX 6	Cartridge type: 6.8/11 M10
Soft/standard concrete	titanium ■ (4-7)	yellow ■, red ■
Tough concrete	titanium ■ (6-8), black ■ (7-8)	red ■, black ■

- Tool power level adjustment by setting tests on site (see chapter quality assurance).
- For more details, please refer to the chapter Accessories and consumables compatibility in the Direct Fastening Technology Manual (DFTM).

Installation recommendation

Pre-drilling

	Base material	Concrete
	Concrete class	C20/25 – C50/60
	Nominal diameter of drill bit [mm]	5
	Cutting diameter of drill bit d_{cut} [mm]	5.4
	Depth of pre-drilling [mm]	23
	Drill bit	TX-C 5/23, TX-C 5/23B

Quality assurance

Fastening inspection

Hanger type	Designation	Fastener stand-off h_{NHS} [mm]
	X-DKH 48 P8S15	8-9
Eyelet	X-DKH 48 P8S15	4-7
	X-DKH 48 P8S15	4-7
Nonius		



- Visible setting failures must be replaced with a new fastener, not in the same hole.
- These are abbreviated instructions which may vary by application. Always review/ follow the instructions accompanying the product.

Fastener program

Item no. and description

Designation	Item no	Description
X-DKH 48 P8S15	40514	Hybrid fastener