



X-M6, X-W6, X-M8, M10, W10 DATA SHEET

**Threaded stud for fastening
to concrete**



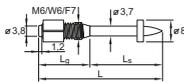
X-M6, X-W6, X-M8, M10, W10

Threaded stud for fastening to concrete

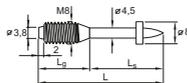
Product data

Dimensions

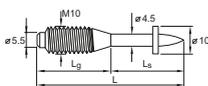
X-M6/W6 ____ FP8



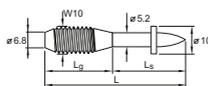
X-M8 ____ P8



M10-24-32 P10



W10 ____ P10



Material specifications

Carbon steel shank: HRC 53.5

Zinc coating: 5–20 μm

Recommended fastening tools

DX 6, DX 5, DX 460, DX 351, DX 36, DX 2,
DX E72, DX 76, DX 76 PTR, DX 600 N



- See fastener program in the next pages.

Approvals

ICC (USA): X-W6, W10

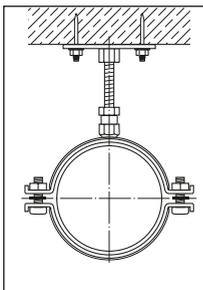
UL, FM: W10



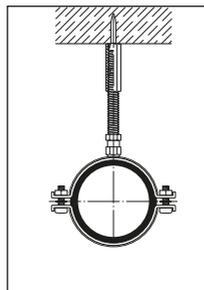
- Not all information presented in this product data sheet might be subject to approval / certificate content. Please refer to approval/certificate for further information.

Applications

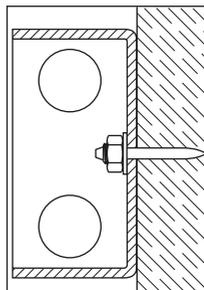
Examples



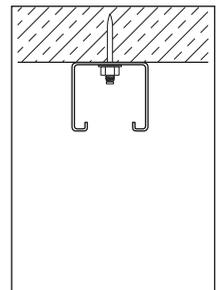
Plates for pipe rings



Hangings with threaded couplers



Electrical boxes



Miscellaneous attachments

Performance data

Recommended resistance

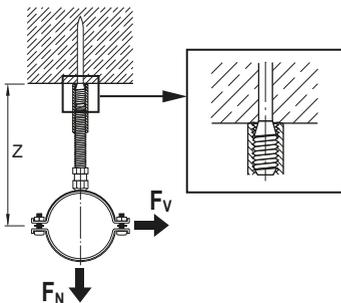
Designation	Shank diameter d_s	Bending moment M_{rec}
X-M6/W6	3.7 mm	5.0 Nm
X-M8, M10	4.5 mm	9.0 Nm
W10	5.2 mm	14.0 Nm

Recommended resistance for X-M6/W6, X-M8, M10, W10

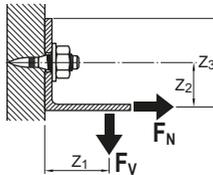
$N_{rec} = V_{rec} =$	0.4 kN for $h_{ET} \geq 27$ mm
$N_{rec} = V_{rec} =$	0.3 kN for $h_{ET} \geq 22$ mm
$N_{rec} = V_{rec} =$	0.2 kN for $h_{ET} \geq 18$ mm

Arrangements to prevent moment on shank

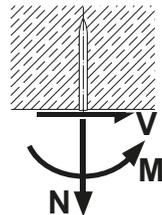
Coupler tight against concrete


Non-symmetric arrangement

- Moment on fastened part
- Prying effect must be considered in determining loads acting on fastener


Conditions

- Minimum 5 fastenings per fastened unit (normal weight concrete)
- All visible failures must be replaced.
- With lightweight concrete base material and greater loading may be possible, please contact Hilti.
- Predominantly static loading.
- Observance of all application limitations and recommendations.
- The recommended loads in the table refer to the resistance of the individual fastening and may not be the same as the loads F_N and F_V acting on the fastened part.



Note: If relevant, prying forces need to be considered in design, see example. Moment acting on fastener shank only in case of a gap between base and fastened material.



- For more details in relation to base material properties, please refer to the chapter **Fastener selection guide** in the Direct Fastening Manual (DFTM).

Application recommendation

Base material thickness

$h_{\min} = 80 \text{ mm}$ ($d_{\text{nom}} = 3.7 \text{ mm}$)

$h_{\min} = 100 \text{ mm}$ ($d_{\text{nom}} \geq 4.5 \text{ mm}$)

Fastened material thickness

M6: $t_l \leq L_g - t_{\text{washer}} - t_{\text{nut}} \cong \text{up to } 15 \text{ mm}$

W6: $t_l \leq L_g - t_{\text{washer}} - t_{\text{nut}} \cong \text{up to } 33 \text{ mm}$

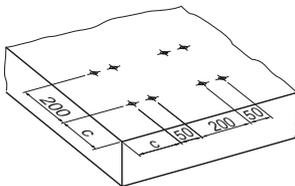
M8: $t_l \leq L_g - t_{\text{washer}} - t_{\text{nut}} \cong \text{up to } 15 \text{ mm}$

M10: $t_l \leq L_g - t_{\text{washer}} - t_{\text{nut}} \cong \text{up to } 19 \text{ mm}$

W10: $t_l \leq L_g - t_{\text{washer}} - t_{\text{nut}} \cong \text{up to } 25 \text{ mm}$

Fastener positioning in base material

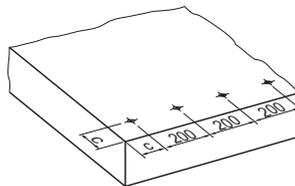
Pairs



Reinforced * Non-reinforced

c 100 mm 150 mm

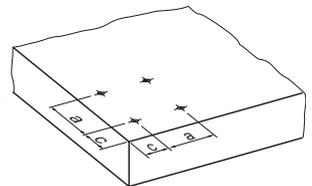
Row along edge



Reinforced * Non-reinforced

c 80 mm 150 mm

General (e.g. group of fasteners)



Reinforced * Non-reinforced

c 80 mm 150 mm
a 80 mm 100 mm

* Minimum $\varnothing 6$ reinforcing steel continuous along all edges and around all corners. Edge bars must be enclosed by stirrups.

Fastener shank length recommendation

Required thread length

$L_g \geq t_l + t_{\text{washer}} + t_{\text{nut}}$ [mm]

Corrosion information

- The intended use only comprises fastenings which are not directly exposed to external weather conditions or moist atmospheres.
- For more details, please refer to following technical document: Hilti Corrosion Handbook.

System recommendation

- For more details, please refer to the chapter **Accessories and consumables compatibility** in the Direct Fastening Technology Manual (DFTM).

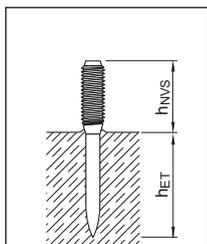
Cartridge recommendation

Base material	Cartridge color (tool power level)	
		Tool type: DX 6 F8
	Cartridge type: 6.8/11 M	Cartridge type: 6.8/11 M
Soft/medium concrete	titanium ■ (2-6)	yellow ■, red ■
Tough concrete	titanium ■ (4-8)	yellow ■, red ■

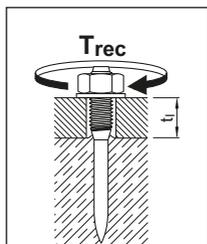
Cartridge recommendation

Base material	Cartridge color (tool power level)	
		Tool type: DX 76, DX 76 PTR
	Cartridge type: 6.8/18 M	Cartridge type: 6.8/11
Soft/medium concrete	yellow ■, red ■	yellow ■, red ■
Tough concrete	yellow ■, red ■	yellow ■, red ■

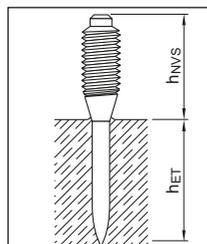
- Tool power level adjustment by setting tests on site.
- Start tool energy selection with lowest recommended tool power level.
- Correct according requirement from chapter quality assurance.

Quality assurance
Fastening inspection
X-M6 / W6
Penetration depth


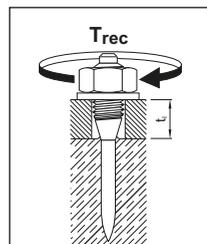
$$h_{NVS} = L_g \pm 2$$

Tightening torque


$$T_{rec} \leq 4 \text{ Nm}$$

X-M8, M10, W10
Penetration depth


$$h_{NVS} = L_g \pm 2$$

Tightening torque


$$T_{rec} \leq 6 \text{ Nm}$$

Fastener program

Fasteners					Tool
Group ¹⁾	Designation	Item no.	Standard threading ²⁾ L _g [mm]	Standard shank lengths ²⁾ L _S [mm]	Designation
M6	X-M6-20-27FP8	306079	20	27	DX 6, DX 5, DX 460, DX 351, DX 36, DX 2, DX E72
W6	X-W6-20-22FP8	306073	20	22	DX 6, DX 5, DX 460, DX 351, DX 36, DX 2, DX E72
	X-W6-20-27FP8	306074	20	27	DX 6, DX 5, DX 460, DX 351, DX 36, DX 2, DX E72
	X-W6-38-27FP8	306075	38	27	DX 6, DX 5, DX 460, DX 36, DX 2, DX E72
M8	X-M8-15-27P8	306092	18	27	DX 6, DX 5, DX 460, DX 36, DX 2, DX E72
	X-M8-15-42P8	306094	18	42	DX 6, DX 5, DX 460, DX 36, DX 2, DX E72
	X-M8-20-32P8	306096	23	32	DX 6, DX 5, DX 460, DX 36, DX 2, DX E72
M10	M10-24-32P10	26413	27	32	DX 76, DX 76 PTR
W10	W10-30-27P10	26472	30	27	DX 600 N
	W10-30-32P10	26473	30	32	DX 600 N
	W10-30-42P10	26476	30	42	DX 600 N

¹⁾ Type threading: M = metric; W6, W10 = Whitworth 1/4"; 3/8"

²⁾ Standard threading and shank lengths. Other lengths and combinations available on special order.