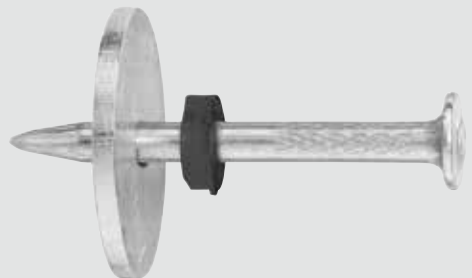




# X-C DATA SHEET

**Nail for fastening to concrete  
and sand lime masonry**

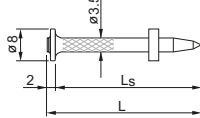


# X-C Nail for fastening to concrete and sand lime masonry

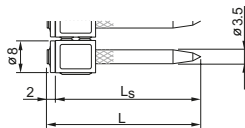
## Product data

### Dimensions

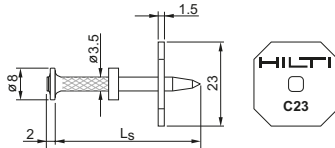
X-C \_\_ P8



X-C \_\_ MX



X-C \_\_ P8S23



### General information

#### Material specifications

Carbon steel shank: HRC 56.5  
HRC 58 \*)

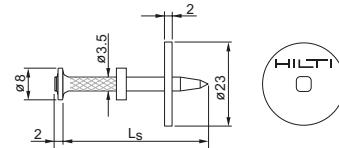
Zinc coating: 5–20 μm

\*) X-C 82, 97 and 117 P8 ( $d_{nom} = 3.7$  mm)

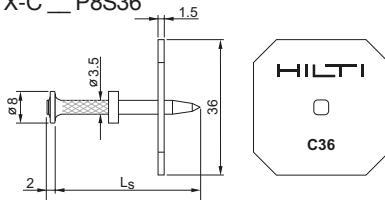
#### Recommended fastening tools

See **X-C fastener program** in the next pages and **Tools and equipment** chapter for more details.

X-C \_\_ P8S23T (for tunneling applications)

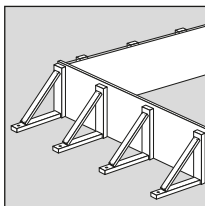


X-C \_\_ P8S36

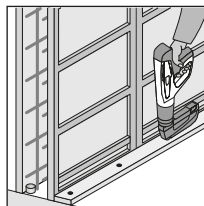


## Applications

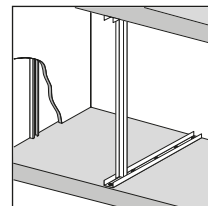
### Examples



**Conventional Formwork**



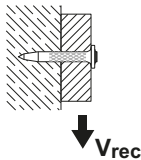
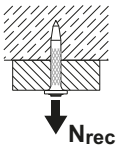
**System Formwork**



**Drywall track to concrete**

## Load data

### Recommended loads



Fastening wood to concrete:

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

Fastenings to sandlime masonry:

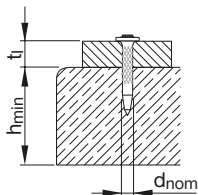
$N_{rec} = V_{rec} = 0.4 \text{ kN}$  for  $h_{ET} \geq 27 \text{ mm}$

### Design conditions:

- For safety relevant fastenings sufficient redundancy of the entire system is required: minimum 5 fastenings per fastened unit.
- All visible failures must be replaced.
- Valid for concrete with strength of  $f_{cc} < 45 \text{ N/mm}^2$ .
- Valid for predominantly static loading.
- Failure of the fastened material is not considered in recommended loads.
- To limit penetration of nail in soft material and to increase pullover load, use nails with washers.

## Application requirements

### Thickness of base and fastened material

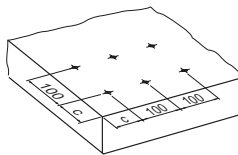


#### Concrete

$h_{min} = 80 \text{ mm}$

$t_1 \leq 50.0 \text{ mm}$

### Edge distance and fastener spacing



Edge distance:

Spacing:

$c \geq 70 \text{ mm}$

$s \geq 100 \text{ mm}$

### Corrosion information

The intended use for safety relevant and permanent applications only comprises fastenings which are not directly exposed to external weather conditions or moist atmospheres.

## Fastener selection and system recommendation

### Fastener selection

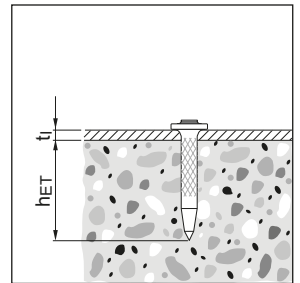
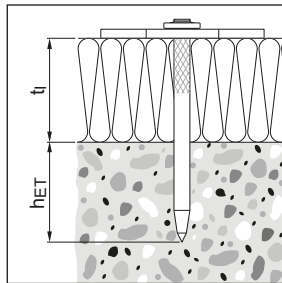
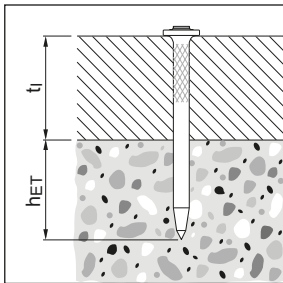
Required nail shank length:

$$L_S = h_{ET} + t_i \text{ [mm]}$$

Recommendation:

Concrete  $h_{ET} = 22 \text{ mm}$

Sandlime masonry  $h_{ET} = 27 \text{ mm}$



In case flush fastenings are required:

$$L_S = h_{ET} + t_i - 5 \text{ [mm]}$$

## Fastener program

Nails					Tools							Key applications
Fastener description	Item no.		Specifica-tion		DX 460 MX, DX 5 MX	DX 460 F8, DX 5 F8	DX 2, DX 36	DX E72	DX 351 MX	DX 351 F8	DX 35	
	Packs of 1000 pcs	Packs of 100 pcs	L <sub>s</sub> (mm)	d <sub>nom</sub> (mm)								
X-C 22 P8	2091378	2091377	22	3.5	■	■	■			■	■	Thin metal part to concrete
X-C 27 P8	2091380	2091379	27	3.5	■	■	■			■	■	Thin metal part to concrete
X-C 32 P8	2091382	2091381	32	3.5	■	■	■			■	■	Thin metal part to concrete
X-C 37 P8	2091384	2091383	37	3.5	■	■	■			■	■	Thin metal part to concrete
X-C 42 P8	2091386	2091385	42	3.5	■	■	■			■		Soft mat / Wood on concrete
X-C 47 P8	2091388	2091387	47	3.5	■	■	■			■	■	Soft mat / Wood on concrete
X-C 52 P8	2091390	2091389	52	3.5	■	■	■					Wood on concrete
X-C 62 P8	2091392	2091391	62	3.5	■	■	■					Wood on concrete
X-C 72 P8		2091393	72	3.5	■	■	■					Wood on concrete
X-C 82 P8		360930	82	3.7	■	■	■					Wood on concrete (with pre-hammering)
X-C 97 P8		360931	97	3.7	■	■	■					Wood on concrete (with pre-hammering)
X-C 117 P8		360933	117	3.7	■	■	■					Wood on concrete (with pre-hammering)
X-C 20 THP	2091373	2091372	20	3.5	■	■	■			■	■	Thin metal part to concrete
X-C 22 P8 S15TH		2091410	22	3.5	■	■	■					Thin metal part to concrete
X-C 22 P8TH	2091374	2091375	22	3.5	■	■	■			■	■	Thin metal part to concrete
X-C 27 P8TH		2091376	27	3.5	■	■	■			■	■	Thin metal part to concrete
X-C 27 P8S23	2091396	2091395	27	3.5	■	■	■			■	■	High pull-over strength on concrete
X-C 32 P8S23	2091399	2091397	32	3.5	■	■	■			■	■	High pull-over strength on concrete
X-C 37 P8S23	2091401	2091400	37	3.5	■	■	■			■	■	High pull-over strength on concrete
X-C 42 P8S23	2091404	2091403	42	3.5	■	■	■			■		High pull-over strength on concrete
X-C 47 P8S23	2091406	2091405	47	3.5	■	■	■			■		High pull-over strength on concrete
X-C 37 P8S36	2091407		37	3.5	■	■	■			■	■	High pull-over strength on concrete
X-C 52 P8S36	2091408		52	3.5	■	■	■			■		High pull-over strength on concrete
X-C 62 P8S36	2091409		62	3.5	■	■	■					High pull-over strength on concrete
X-C 32 P8S23T	2091398		32	3.5	■	■	■					Tunneling applications
X-C 37 P8S23T	2091402		37	3.5	■	■	■					Tunneling applications

■ recommended

■ feasible

Nails				Tools							Key applications	
Fastener description	Item no.		Specifica-tion		DX 460 MX, DX 5 MX	DX 460 F8, DX 5 F8	DX 2, DX 36	DX E72	DX 351 MX	DX 351 F8		DX 35
	Packs of 1000 pcs	Packs of 100 pcs	L <sub>s</sub> (mm)	d <sub>nom</sub> (mm)								
<b>X-C 20 MX</b>	2091264	2091265	20	3.5	■				■			Thin metal part to concrete
<b>X-C 27 MX</b>	2091266	2091267	27	3.5	■				■			Thin metal part to concrete
<b>X-C 32 MX</b>	2091268	2091269	32	3.5	■							Thin metal part to concrete
<b>X-C 37 MX</b>	2091360	2091361	37	3.5	■							Thin metal part to concrete
<b>X-C 42 MX</b>	2091362	2091363	42	3.5	■							Soft material / Wood on concrete
<b>X-C 47 MX</b>	2091364	2091365	47	3.5	■							Soft material / Wood on concrete
<b>X-C 52 MX</b>	2091366	2091367	52	3.5	■							Wood on Concrete
<b>X-C 62 MX</b>	2091368	2091369	62	3.5	■							Wood on Concrete
<b>X-C 72 MX</b>	2091370	2091371	72	3.5	■							Wood on Concrete

MX: collated nails for magazine

■ recommended

**Cartridge recommendation:**

Green concrete: **6.8/11M green**

Normal concrete: **6.8/11M yellow**

Old/high strength concrete: **6.8/11M red**

Sandlime masonry: **6.8/11M green**

Tool energy adjustment by setting tests on site.

