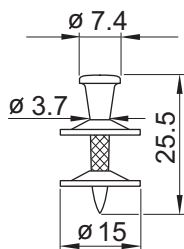


X-ENP 2K Siding and Decking Nail

Product data

Dimensions



General information

Material specifications

Carbon steel shank:	HRC 55.5
Zinc coating:	8–16 µm

Recommended fastening tools

DX 76 PTR with X-76-F-15-PTR fastener guide DX 76 MX with X-76-FN15 fastener guide	Single nail: X-ENP 2K-20 L15
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DX 76 PTR. DX 76 MX	Collated nails: X-ENP 2K-20 L15 MX (green magazine strip)
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See **Tools and equipment** for more details.

Approvals

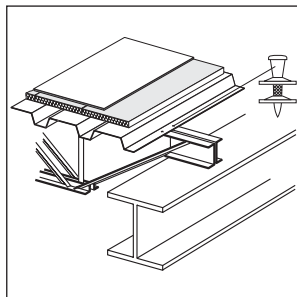
BUtgb (Belgium), ABS, 13/0172
(Hilti-DX-DoPo003),
LR 97/00077



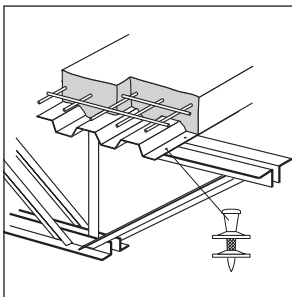
Note: technical data presented in these approvals and design guidelines reflect specific local conditions and may differ from those published in this handbook.

Applications

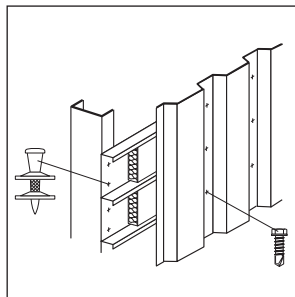
Examples



Roof and floor decking



Roof and floor decking



Wall liners

Load data

Characteristic loads

Overlap Sheeting thickness t_l [mm]	3 mm $\leq t_{ll} < 4$ mm			4 mm $\leq t_{ll} \leq 6$ mm		
	V_{Rk} [kN]	N_{Rk} [kN]	Types of conn.	V_{Rk} [kN]	N_{Rk} [kN]	Types of conn.
0.75	4.70	6.00	a, c	4.70	6.30	a, b, c, d
0.88	5.40	6.00	a, c	5.40	7.20	a, (b)*, c, d,
1.00	6.00	6.00	a, c	6.00	8.00	a, (b)*, c, d
1.13	–	–	–	7.00	8.40	a, c
1.25	–	–	–	8.00	8.80	a, c
1.50	–	–	–	8.60	8.80	a

* Fastening type (b) covered for 5 mm $\leq t_{ll} < 6$ mm, if N_{Rk} is reduced to 6.6 kN

Fastening type (b) fully covered for $t_{ll} = 6$ mm

For a, b, c, d please refer to **Application requirements, Sheet thicknesses and overlap types**

Design

Design shear and tension resistance V_{Rd} and N_{Rd}

$$V_{Rd} = V_{Rk} / \gamma_M \quad N_{Rd} = \alpha_{cycl} V_{Rk} / \gamma_M \text{ with } \alpha_{cycl} = 1.0 \text{ for all sheeting thickness } t_l$$

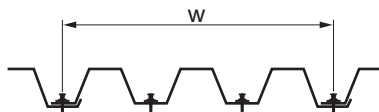
α_{cycl} considers the effect of repeated wind loads

$\gamma_M = 1.25$ in the absence of national regulations

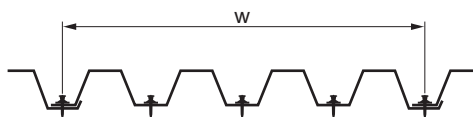
Characteristic tension resistances N_{Rk} [kN/m] and shear resistances V_{Rk} [kN/m] per unit length, taking the effect of thermal constraints into account

N_{Rk} and V_{Rk} characteristic shear and tension resistance

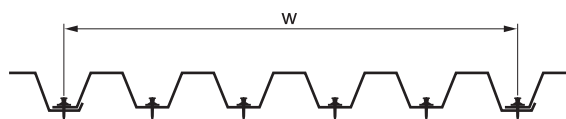
w ... width of the panel sheet



$$n_{Rk} = 0.9 \cdot 2 \cdot N_{Rk} / W \quad v_{Rk} = 2 \cdot V_{Rk} / W$$

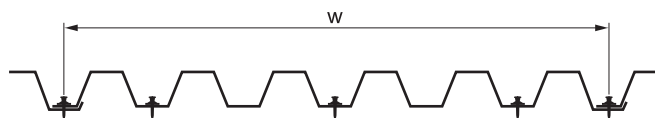


$$n_{Rk} = 0.9 \cdot 3 \cdot N_{Rk} / W \quad v_{Rk} = 3 \cdot V_{Rk} / W$$



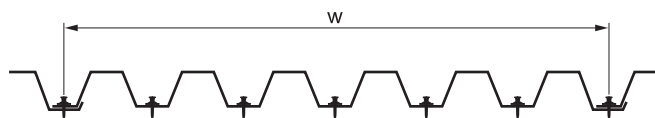
$$n_{Rk} = 0.9 \cdot 4 \cdot N_{Rk} / W$$

$$v_{Rk} = 4 \cdot V_{Rk} / W$$



$$n_{Rk} = 0.9 \cdot 5 \cdot N_{Rk} / W$$

$$v_{Rk} = 5 \cdot V_{Rk} / W$$



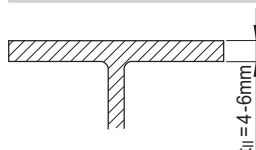
$$n_{Rk} = 3 \cdot N_{Rk} / W$$

$$v_{Rk} = 3 \cdot V_{Rk} / W$$

The same characteristic resistances can also be applied along supports at end-overlaps, if connection type “d” is not covered in the load table.

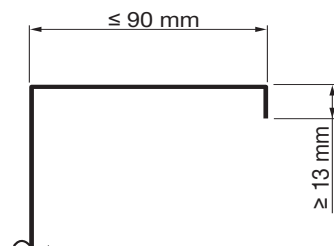
Application requirements

Thickness of base material



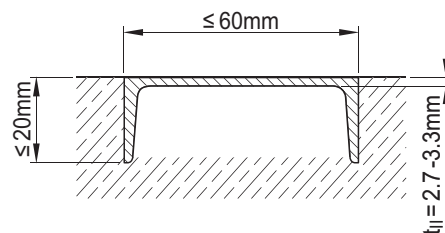
$t_{II} = 4.0\text{--}8.0$ mm for general shapes

Fastening to cold-formed C- and Z-sections with a thickness from 2.9 to 4.0 mm



Fastening to U-shape concrete inlays with a nominal thickness t_{II} of 3 mm.

$t_{II} = 3.0 \pm 0.3$ mm

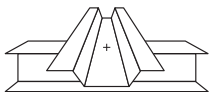


Grade: \geq S320 GD according to EN 10346

Sheet thicknesses and overlap types

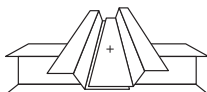
Type (a)

single



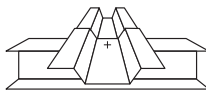
Type (b)

side lap



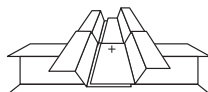
Type (c)

end overlap



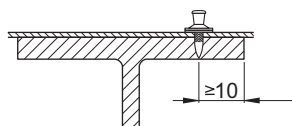
Type (d)

side lap and end overlap

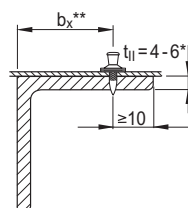


Edge distances (mm)

Rolled I or wide flange shapes



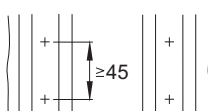
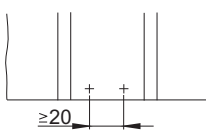
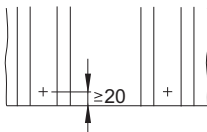
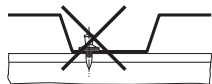
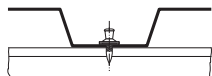
Angles



* For $t_{l1} = 3$ to 4 mm, restrictions on application. See approval or contact Hilti.

** Maximum recommended $b_x \leq 8 \times t_{l1}$ however, jobsite verification advisable.

Trapezoidal profiles



Centre fastenings in ribs

Clearance to end of sheet

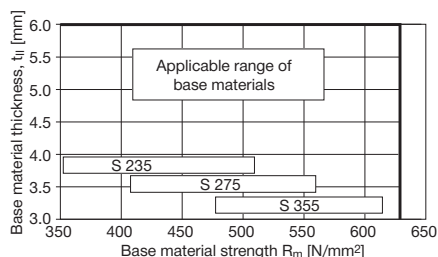
Double fastenings

Note:
Reduce tensile resistance per fastener to $0.7 N_{rec}$.

Corrosion information

The intended use only comprises fastenings which are not directly exposed to external weather conditions or moist atmospheres. For further detailed information on corrosion see corresponding chapter in **Direct Fastening Principles and Technique** section.

Application limits

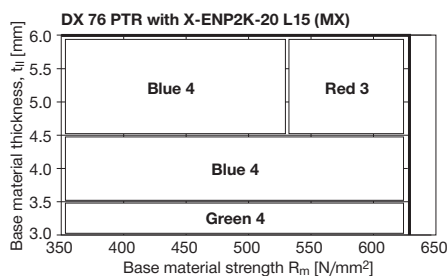


Fastener selection and system recommendation

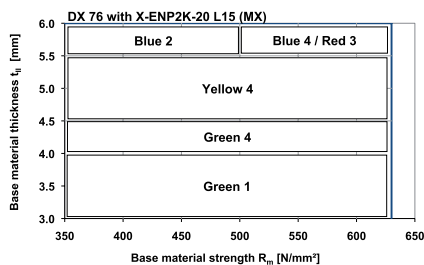
Fasteners	Designation	Item no.	Tools	Fastener guide
			Designation	Designation
Single nail:	X-ENP 2K-20 L15	385133	DX 76 PTR	X-76-F-15-PTR
			DX 76 MX	X-76-FN15
Collated nails:	X-ENP 2K-20 L15 MX	385134	DX 76 PTR	
			DX 76 MX	
Piston:	X-76-P-ENP2K-PTR		DX 76 PTR	
	X-76-P-ENP2K		DX 76 MX	

Cartridge selection and tool energy setting

DX 76 PTR



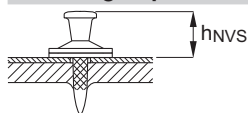
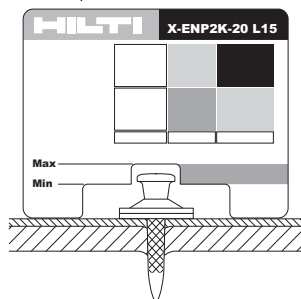
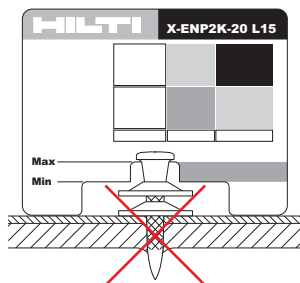
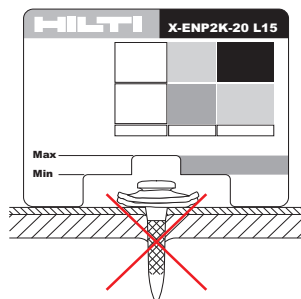
DX 76



Fine adjustment by installation tests on site.

Fastening quality assurance

Fastening inspection

 $h_{NVS} = 7-11 \text{ mm}$  $h_{NVS} = 7-11 \text{ mm}$  $h_{NVS} > 11 \text{ mm}$  $h_{NVS} < 7 \text{ mm}$