



X-HSN 24 DATA SHEET

Diaphragm decking nail

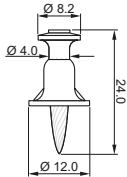


X-HSN 24 Diaphragm decking nail

Product data

Dimensions

X-HSN 24



Material specifications

Carbon steel shank:	HRC 55.5
Zinc coating:	5–13 μm

Application conditions

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.

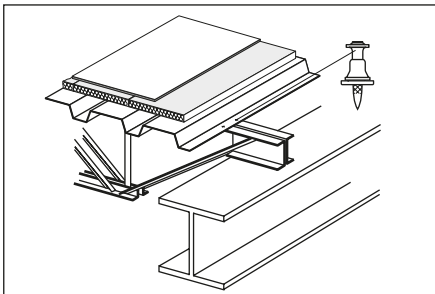
Approvals and certificates

FM, SDI, UL, ICC, ABS, LR

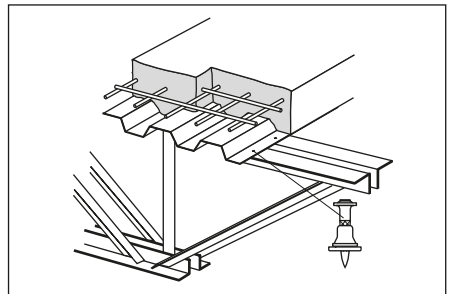
- Not all information presented in this product data sheet might be subject to approval/certificate content. Please refer to approval/certificate for further information.

Applications

Examples



Roof decking (diaphragm design)



Floor decking (diaphragm design)

Performance data

Design data for use in the USA – Diaphragm strength

Approvals provide load tables or calculation procedures for determination of the allowable strength (in lbs/ft or kN/m) of a steel deck diaphragm. The allowable diaphragm strength depends on the type, strength and thickness of the decking, the span of the decking, the type and pattern of the deck to frame fasteners (X-HSN24) and the type and spacing of the sidelap connectors (e.g. Hilti sidelap connectors S-SLC 01 and S-SLC 02).

For more details it is referred to the technical literature of Hilti North America (“Steel Deck Fastening Systems” Hilti North America Product Technical Guide) and the “Decking Design Center” offered on the website www.us.hilti.com as well as the respective approvals.

Recommended loads

Sheeting thickness t_f		Tension load N_{rec}		Shear bearing load V_{rec}	
[Gauge]	[mm]	[lb]	[mm]	[lb]	[mm]
16	1.52	435	1.95	975	4.29
18	1.21	435	1.95	785	3.45
20	0.91	435	1.95	600	2.64
22	0.76	435	1.95	500	2.20



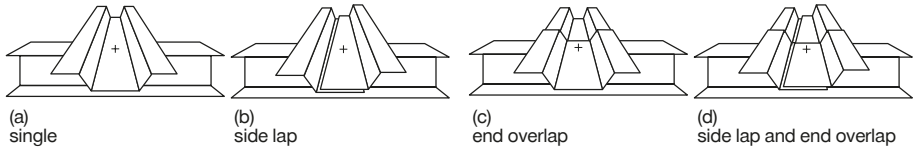
- Valid for steel sheet with a minimum tensile strength of 45 ksi (310 N/mm²). Values refer to failure controlled by the single sheet metal attached.
- For intermediate sheet thicknesses, linear interpolation is allowed.
- Recommended tension loads include a safety factor 3.0 applied to mean pullover resistance or a safety factor 5.0 applied to the mean value of pullout resistance. All values summarized in the table are controlled by pull-out from 1/8" base material thickness.
- Recommended shear loads include safety factor 3.0 applied to mean shear resistance Q_f .

Design data for use in Europe

Currently, the X-HSN 24 fasteners are only used in North America. Therefore, no design data is published evaluated in strict compliance with the provisions for European Technical Approvals.

Application recommendation

Fastened material properties



As part of a steel deck diaphragm, all four fastening types (a), (b), (c) and (d) are executed with the X-HSN 24. The sheet metal thickness typically varies between 22 Gauge (0.76 mm) and 16 Gauge (1.52 mm).

Dependent on the base material thickness and the frame fastener pattern, restrictions on the use of thicker decking might apply. For corresponding details of these provisions, it is referred to the quoted technical literature published by Hilti North America. This literature also contains details with respect to fastener patterns, spacings and edge distance adequately addressing the specifics of the diaphragm components used in the North American market.

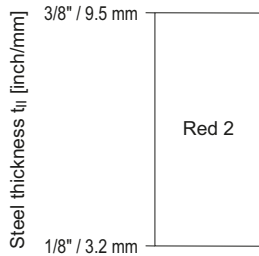
Base material properties

Fastener	Fastening tool	Base material thickness		Ultimate tensile strength	
		[inch]	[mm]	[ksi]	[N/mm ²]
X-HSN 24	DX 860-HSN	1/8"–5/16"	3.2–8.0	58–91	400–630
	DX 9-HSN	5/16"–3/8"	8.0–9.5	58–68	400–470

System recommendation

Cartridge and tool recommendation

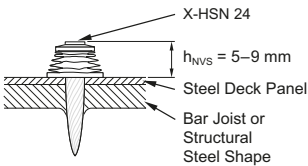
Designation	Tools	Cartridge
X-HSN 24	DX 860-HSN, DX 9-HSN	6.8/11 M40, red



- Fine adjustment by installation tests on site.
- For more details, please refer to the chapter **Accessories and consumables compatibility** in the Direct Fastening Technology Manual (DFTM).

Quality assurance

Fastening inspection



Ordering information

Item no. and description

Designation	Item no.	Description
X-HSN 24	2042971	Metal deck fasteners (collated)