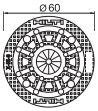
X-IE Wall Insulation Fastener

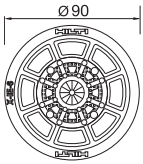
Product data

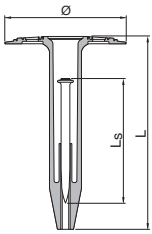
Dimensions

X-IE 6



X-IE 9





HDT 90

General information

Material specifications

Plate:		X-IE 6 – HDPE, colourless
		X-IE 9 – HDPE, black (BK)
Nail:	Carbon steel shank:	HRC 58
	Zinc coating:	5–20 µm

Recommended fastening tools

DX 460 IE and DX 460 IE XL

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

Approvals

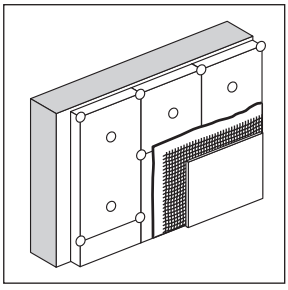
SOCOTEC WX 1530 (France)

Comment: European Technical Approvals for the fasteners **XI-FV** (ETA-03/0004, DOP no. Hilti-DX-DOP-002) and **SX-FV** (ETA-03/0005) for use in ETICS are available.

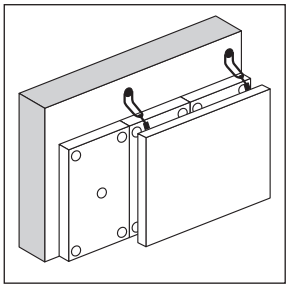
For more information please contact Hilti.

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

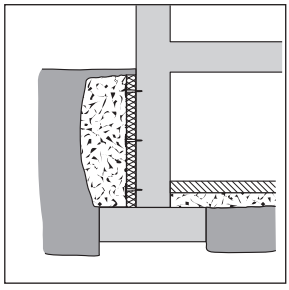
Applications



Composite thermal insulation



Insulation behind curtain walls



Moisture barriers / drainage plates

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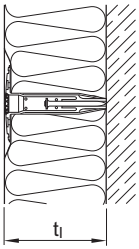
Fastener program

Fastener selection

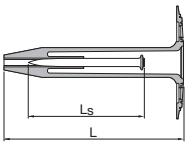


Select Fastener Length **L = t_I**

In general:
The fastener length **L** must be equal to the thickness **t_I** of mineral wool and EPS insulation material, as shown in the drawing above.

Exceptions:
For mineral wool of intermediate thicknesses use next shorter X-IE.
Not for use with PUR, PIR, XPS, Multi layer boards or similar hard material not listed on this page.

Note:
For soft mineral wool use X-IE 9. Or X-IE 6 with HDT 90 / HDT 90 BK.



Designation	Fastener X-PH Ls	Item no.	Insulation thickness t_I [mm]
X-IE 6-25	**X-PH 47**	2041714	25
X-IE 6-30	**X-PH 52**	2041715	30
X-IE 6-35	**X-PH 52**	2041716	35
X-IE 6-40	**X-PH 52**	2041717	40
X-IE 6-50	**X-PH 62**	2041718	50
X-IE 6-60	**X-PH 62**	2041719	60
X-IE 6-70	**X-PH 62**	2041740	70
X-IE 6-75	**X-PH 62**	2041741	75
X-IE 6-80	**X-PH 62**	2041742	80
X-IE 6-90	**X-PH 62**	2041743	90
X-IE 6-100	**X-PH 62**	2041744	100
X-IE 6-120	**X-PH 62**	2041745	120
X-IE 6-140	**X-PH 62**	2041393	140
X-IE 6-150	**X-PH 62**	2048523	150
X-IE 6-160	**X-PH 62**	2041394	160
X-IE 6-180	**X-PH 62**	2041395	180
X-IE 6-200	**X-PH 62**	2041396	200
X-IE 9-60 BK	**X-PH 62**	2041746	60
X-IE 9-80 BK	**X-PH 62**	2041747	80
X-IE 9-90 BK	**X-PH 62**	2041748	90
X-IE 9-100 BK	**X-PH 62**	2041749	100
X-IE 9-120 BK	**X-PH 62**	2041750	120
X-IE 9-140 BK	**X-PH 62**	2041751	140
X-IE 9-160 BK	**X-PH 62**	2041752	160
X-IE 9-180 BK	**X-PH 62**	2041753	180
X-IE 9-200 BK	**X-PH 62**	2041754	200

System recommendation

Tool

DX 460 IE and DX 460 IE XL

Cartridge selection and tool energy setting

Cartridge recommendation:	Steel:	**6.8/11M yellow** or **red** cartridge
	Concrete	**6.8/11M yellow** or **red** cartridge
	Masonry:	**6.8/11M yellow** or **green** cartridge

Tool energy adjustment by setting tests on site.

Application requirements

Thickness of base material

Concrete: h_{min} **= 80 mm**

Steel: $t_{II} \geq 4$ **mm**

Thickness of fastened material

Insulation thickness: t_I = 25–200 mm

Spacing and edge distances

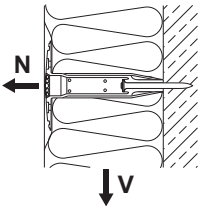
For setting instructions please inquire at the insulation material supplier.

If recommendations from suppliers are not available, please use minimum 3 pcs of X-IE fasteners per insulation material and ≥ 5 pcs of X-IE fasteners per m²

Application limits

Concrete:	f_{cc} = 15–45 N/mm²	(aggregate size ≤ 32 mm)
Sand-lime masonry:	f_{cc} = 15–45 N/mm²	
Clinker brick work:	f_{cc} = 28–45 N/mm²	
Steel:	f_u = 360–540 N/mm²	(t_{II} = 4–6 mm)

Load data



Recommended loads

	Insulation thickness t_I [mm]				
	40	50	60–70	75	80–200
X-IE 6	Shear, V_{rec} [N]				
Polystyrol - EPS [30 kg/m³]	150	250	300	325	350
X-IE 6	Pullover, N_{rec} [N]				
Polystyrol - EPS [30 kg/m³]	250	290	300	300	300
X-IE 9, HDT 90	Pullover, N_{rec} [N]				
Mineral wool [≥ 7.5 kN/m²]*	–	–	135	135	135
Mineral wool [≥ 15 kN/m²]*	–	–	250	250	250

*) Tensile Strength σ_{mt} according to DIN EN 1607
When base material properties are questionable, jobsite qualification is necessary

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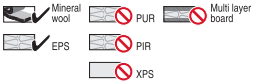
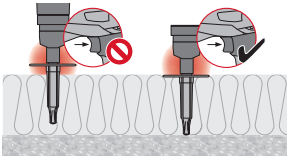
Fastening quality assurance

Installation

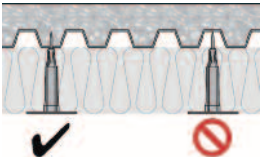
1. Insulation material suitability.



2. Load the X-IE on the tool and push the X-IE all the way into the insulation.

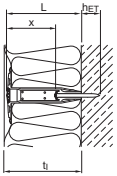


3. Fasten the X-IE into the rib of the composite deck only NOT the trough.



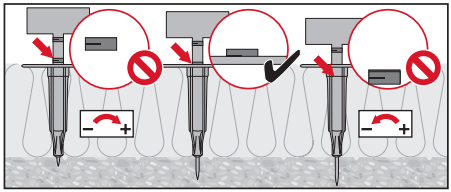
Important: This description of the installation process is only for illustration purposes. The installation must always follow the instructions for use provided with the product.

Fastening inspection

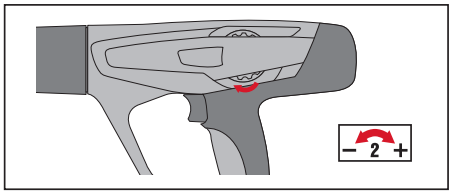


	Insulation thickness t_I [mm]													
	40	50	60	70	75	80	90	100	120	140	150	160	180	200
h_{ET} = 24–29 mm														
x_{min} [mm]	9	9	19	29	34	39	49	59	79	99	109	119	139	159
x_{max} [mm]	14	14	24	34	39	44	54	64	84	104	114	124	144	164

Check with the gauge immediately after fastening



Adjust the power setting if required



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These are abbreviated instructions which may vary by application.
ALWAYS review/follow the instructions accompanying the product.