



X-IE, X-IE-E DATA SHEET

Insulation fastener

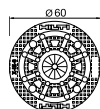


X-IE, X-IE-E Insulation fastener

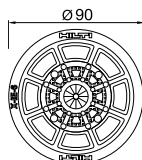
Product data

Dimensions

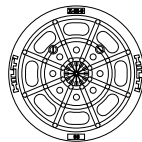
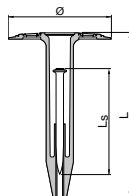
X-IE 6



X-IE 9



HDT 90



General information

Material specifications

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

Recommended fastening tools

DX 460 IE, DX 460 IE XL, DX 5 IE, DX 5 IE XL

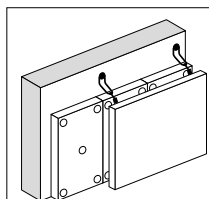
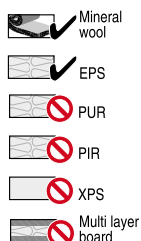
See **X-IE fastener program** in the next pages and **Tools and equipment** chapter for more details.

Approvals

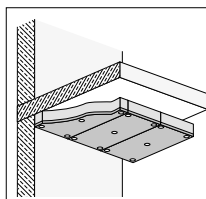
SOCOTEC WX 1530 (France)

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

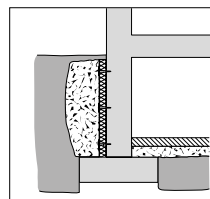
Applications and suitable insulation materials



Insulation behind curtain walls



Insulation in ceilings

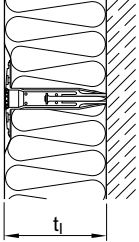


Temporary fixing of insulation of moisture barriers/drainage plates

Barriers: All materials are suitable

Fastener program

Fastener selection



Select Fastener Length $L = t_i$

In general:

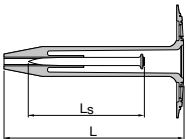
The fastener length L must be equal to the thickness t_i of mineral wool and EPS insulation material, as shown in the drawing above.

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 6-20	X-PX 47	2143956	20
X-IE 6-25	X-PX 47	2041714	25
X-IE 6-30	X-PX 52	2041715	30
X-IE 6-35	X-PX 52	2041716	35
X-IE 6-40	X-PX 52	2041717	40
X-IE 6-50	X-PX 62	2041718	50
X-IE 6-60	X-PX 62	2041719	60
X-IE 6-70	X-PX 62	2041740	70
X-IE 6-75	X-PX 62	2041741	75
X-IE 6-80	X-PX 62	2041742	80
X-IE 6-90	X-PX 62	2041743	90
X-IE 6-100	X-PX 62	2041744	100
X-IE 6-120	X-PX 62	2041745	120
X-IE 6-140	X-PX 62	2041393	140
X-IE 6-150	X-PX 62	2048523	150
X-IE 6-160	X-PX 62	2041394	160
X-IE 6-180	X-PX 62	2041395	180
X-IE 6-200	X-PX 62	2041396	200
X-IE 9-50 BK	X-PX 62	2092034	50
X-IE 9-60 BK	X-PX 62	2041746	60
X-IE 9-80 BK	X-PX 62	2041747	80
X-IE 9-90 BK	X-PX 62	2041748	90
X-IE 9-100 BK	X-PX 62	2041749	100
X-IE 9-120 BK	X-PX 62	2041750	120
X-IE 9-140 BK	X-PH 62	2041751	140
X-IE 9-160 BK	X-PX 62	2041752	160
X-IE 9-180 BK	X-PX 62	2041753	180
X-IE 9-200 BK	X-PX 62	2041754	200
X-IE-E-6-40	X-U 42	2143953	40
X-IE-E-6-50	X-U 42	2075810	50
X-IE-E-6-60	X-U 42	2075813	60
X-IE-E-6-80	X-U 42	2143954	80
X-IE-E-6-100	X-U 42	2075814	100
X-IE-E-6-150	X-U 42	2143955	150

System recommendation

Tool

DX 460 IE, DX 460 IE XL, DX 5 IE, DX 5 IE XL

Cartridge selection and tool energy setting

Cartridge recommendation:

X-IE:	Steel:	6.8/11M yellow or red cartridge
	Concrete	6.8/11M yellow or red cartridge
	Masonry:	6.8/11M yellow or green cartridge
X-IE-E:	Steel:	6.8/11M yellow cartridge
	Concrete	6.8/11M yellow or green cartridge
	Masonry:	6.8/11M green cartridge

Tool energy adjustment by setting tests on site.

Application requirements

Thickness of base material

Concrete:	$h_{\min} = 80 \text{ mm}$
Steel:	$t_{II} \geq 4 \text{ mm}$

Thickness of fastened material

Insulation thickness:

X-IE: $t_I = 20 - 200 \text{ mm}$

X-IE-E: $t_I = 40 - 150 \text{ mm}$

Spacing and edge distances

For setting instructions please inquire at the insulation material supplier.

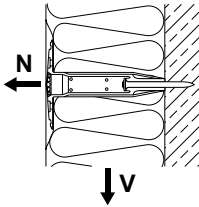
If recommendations from suppliers are not available, please use minimum 3 pcs of X-IE fasteners per insulation material and ≥ 5 pcs of X-IE fasteners per m^2

Application limits

Concrete:	$f_{cc} = 15-35/45^*) \text{ N/mm}^2$	(aggregate size $\leq 32 \text{ mm}$)
Sand-lime masonry:	$f_{cc} = 15-45 \text{ N/mm}^2$	
Clinker brick work:	$f_{cc} = 28-45 \text{ N/mm}^2$	
Steel:	$f_u = 360-540 \text{ N/mm}^2$	($t_{II} = 4-6 \text{ mm}$)

*) for X-IE-E, $f_{cc, \max} = 35 \text{ N/mm}^2$. For X-IE, $f_{cc, \max} = 45 \text{ N/mm}^2$.

Load data



Recommended loads

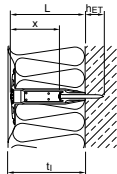
	Insulation thickness t_i [mm]				
	40	50	60-70	75	80-200
X-IE 6, X-IE-E 6	Shear, V_{rec} [N]				
Polystyrol - EPS [30 kg/m ³]	150	250	300	325	350
X-IE 6	Pullover, N_{rec} [N]				
Polystyrol - EPS [30 kg/m ³]	250	290	300	300	300
X-IE-E 6	Pullover, N_{rec} [N]				
Polystyrol - EPS [30 kg/m ³]	-	200	200	-	200
X-IE 9, HDT 90	Pullover, N_{rec} [N]				
Mineral wool [≥ 7.5 kN/m ²]*	-	-	135	135	135
Mineral wool [≥ 15 kN/m ²]*	-	-	250	250	250

*) Tensile Strength σ_{mt} according to DIN EN 1607

When base material properties are questionable, jobsite qualification is necessary

Fastening quality assurance

Fastening inspection



Insulation thickness t_i [mm] for X-IE

40	50	60	70	75	80	90	100	120	140	150	160	180	200
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$h_{ET} = 24-29$ 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

Insulation thickness t_i [mm] for X-IE-E

40	50	60	80	100	150
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$h_{ET} = 19-24$ mm

x_{min} [mm]	13.1	23.1	33.1	53.1	73.5	123.1
x_{max} [mm]	18.1	28.1	38.1	58.1	78.5	128.1