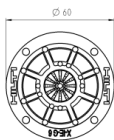


X-IE-G 6 and X-IE-G 9 Insulation fasteners

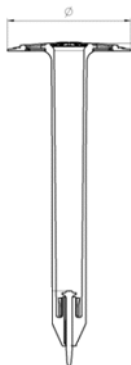
Product Data

Dimensions

X-IE-G 6



X-IE-G 9



General information

Material specifications

Plastic plate: X-IE-G 6 – HDPE, colorless
 X-IE-G 9 – HDPE, black

Nail X-P 36 G3
 Carbon steel shank: HRC 57.5
 Zinc coating: 2 – 13 μm

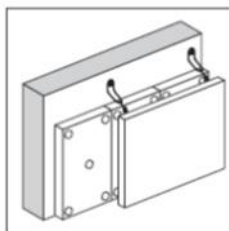
Recommended fastening tools

GX IE, GX IE XL

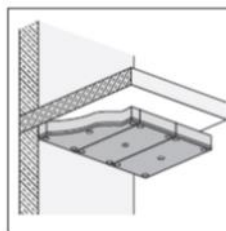
See **X-IE-G fastener program** in the next pages and **Tools and equipment** chapter for more details.

Applications and suitable insulation materials

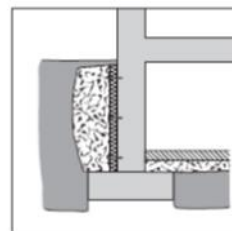
- Mineral wool
- EPS
- XPS
- PIR
- PUR
- Multilayer



Insulation behind curtain walls



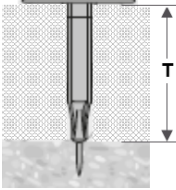
Insulation in ceilings



Temporary fixing of insulation of moisture barriers / drainage plates

Fastener program
X-IE-G 6

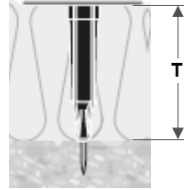
Ø 60mm



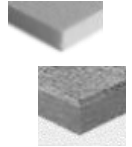
T =
fastenable
insulation
thickness

X-IE-G 9

Ø 90mm



X-IE-G 6: For use with mineral wool, EPS, XPS, PIR, PUR and soft core multilayer boards *



| T (mm) | Designation | Item no. | T (mm) | Designation | Item no. |
|--------|--------------|----------|--------|---------------|----------|
| 25 | X-IE-G 6- 25 | 2192914 | 100 | X-IE-G 6- 100 | 2163816 |
| 30 | X-IE-G 6- 30 | 2163810 | 120 | X-IE-G 6- 120 | 2192917 |
| 40 | X-IE-G 6- 40 | 2163811 | 130 | X-IE-G 6- 130 | 2192918 |
| 50 | X-IE-G 6- 50 | 2163812 | 140 | X-IE-G 6- 140 | 2163817 |
| 60 | X-IE-G 6- 60 | 2163813 | 150 | X-IE-G 6- 150 | 2163818 |
| 70 | X-IE-G 6- 70 | 2163814 | 160 | X-IE-G 6- 160 | 2163819 |
| 75 | X-IE-G 6- 75 | 2192915 | 180 | X-IE-G 6- 180 | 2163820 |
| 80 | X-IE-G 6- 80 | 2163815 | 200 | X-IE-G 6- 200 | 2163821 |
| 90 | X-IE-G 6- 90 | 2192916 | | | |

* Soft core multilayer are boards with hard top layer and mineral wool insulation core

X-IE 9: For use with soft mineral wool



| T (mm) | Designation | Item no. | T (mm) | Designation | Item no. |
|--------|---------------|----------|--------|---------------|----------|
| 40 | X-IE-G 9- 40 | 2172154 | 140 | X-IE-G 9- 140 | 2163823 |
| 50 | X-IE-G 9- 50 | 2172155 | 150 | X-IE-G 9- 150 | 2192919 |
| 60 | X-IE-G 9- 60 | 2172156 | 160 | X-IE-G 9- 160 | 2163824 |
| 80 | X-IE-G 9- 80 | 2172157 | 180 | X-IE-G 9- 180 | 2163825 |
| 100 | X-IE-G 9- 100 | 2172158 | 200 | X-IE-G 9- 200 | 2163826 |
| 120 | X-IE-G 9- 120 | 2172159 | | | |

Fastener program

X-IE 6: For use with stiff core multilayer boards *



| T (mm) | Designation | Item no. | T (mm) | Designation | Item no. |
|--------|--------------|----------|--------|---------------|----------|
| 31 | X-IE-G 6- 40 | 2163811 | 76 | X-IE-G 6- 80 | 2163815 |
| 36 | X-IE-G 6- 40 | 2163811 | 86 | X-IE-G 6- 90 | 2192916 |
| 46 | X-IE-G 6- 50 | 2163812 | 91 | X-IE-G 6- 100 | 2163816 |
| 56 | X-IE-G 6- 60 | 2163813 | 96 | X-IE-G 6- 100 | 2163816 |
| 66 | X-IE-G 6- 70 | 2163814 | 116 | X-IE-G 6- 120 | 2192917 |
| 71 | X-IE-G 6- 75 | 2192915 | | | |

Must pre-drill holes of \varnothing 20 mm



- * Stiff core multilayer are boards with hard top layer and insulation core of EPS, XPS, PIR, PUR

Notes

Maximum allowable insulation compressive strength 500 kN/m²
 Maximum insulation board thickness tolerance +/- 3mm

Mineral wool, soft mineral wool: For intermediate thicknesses, not covered, use next shorter fastener.

Example: for mineral wool insulation thickness 110 mm, use X-IE-G 6-100

EPS, XPS, PIR, PUR: For intermediate thicknesses, not covered, use next longer fastener.

Example: for PIR insulation thickness 110 mm, use X-IE-G 6-120

Multilayer: For sizes not covered with above portfolio, please contact Hilti

System recommendation

Tool: GX-IE , GX-IE XL. Gas can: GC52

Application limits

Thickness of base material

Concrete thickness ≥ 80 mm

Base material

| | | |
|-------------------------|------------------------------------|-------------------------------|
| Concrete | $f_{cc} = 15-45$ N/mm ² | (aggregate size ≤ 32 mm) |
| Solid sand-lime masonry | $f_b = 15-45$ N/mm ² | |
| Clinker brick | $f_b = 28-45$ N/mm ² | |

Insulation

| | |
|--|-----------------------|
| Insulation thickness | 25 – 200 mm |
| Insulation max compressive strength | 500 kN/m ² |
| Insulation board thickness tolerance (max) | +/- 3mm |

Spacing and edge distance

For number and spacing of fasteners, please inquire at the insulation supplier.

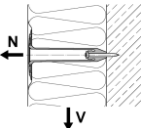
If recommendations from suppliers are not available, use minimum

Mineral wool and mineral wool based insulation: 5 fasteners per m²

EPS, XPS, PIR, PUR insulation: 4 fasteners per m²

Performance Data (Base material: concrete)

Recommended loads

|  | Tension N_{rec} [kN] | Shear V_{rec} [kN] | Estimated stick rate |
|---|---------------------------|-------------------------|-------------------------|
| Soft concrete | 0.1 | 0.1 | Up to 90% |

Conditions

- All visible setting failures must be replaced with a new fastening, not in the same hole
- Soft concrete up to $f_{cc} = 45$ N/mm²
- When base material properties are questionable, jobsite qualification is necessary

Thermal efficiency Point thermal transmittance χ [W/K]

| | | |
|-------------------------------|---------------|----------------|
| Basement perimeter insulation | 60 mm: | $\chi = 0.003$ |
| | 70 – 100mm: | $\chi = 0.002$ |
| | 120 – 200 mm: | $\chi = 0.001$ |
| Curtain wall insulation | 60 – 90 mm: | $\chi = 0.002$ |
| | 100 – 200mm: | $\chi = 0.001$ |