



The following pages are an excerpt from the North American Product Technical Guide, Volume 1: Direct Fastening Technical Guide, Edition 24.

Please refer to the publication in its entirety for complete details on this product including data development, base materials, general suitability, installation, corrosion, and product specifications.

[Direct Fastening Technical Guide, Edition 24](#)

To consult directly with a team member regarding our direct fastening products, contact Hilti's team of technical support specialists between the hours of 7:00am - 5:00pm CST.

US: 877-749-6337 or HNATechnicalServices@hilti.com

CA: 1-800-363-4458 ext. 6 or CATechnicalServices@hilti.com

3.2.19 X-IE INSULATION/SOFT MATERIAL ATTACHMENT FASTENERS

3.2.19.1 PRODUCT DESCRIPTION

The X-IE 6 insulation fastener is a unique fastener designed for the attachment of a wide range of insulation materials to concrete, masonry, or steel base materials. The product is recommended for use with materials such as mineral wool, EPS, XPS, PIR, PUR, and multilayer boards. The fastener is pushed through the insulation until it touches the base material and then it is fastened in place with a Hilti powder-actuated tool. The X-IE 6 fastener can fasten insulation panels ranging in thickness from 3/4" through 7-7/8".

The X-SW soft washer with pre-mounted powder-actuated fastener is designed for attaching thin membranes or panels to concrete base materials. The washers are 30mm and 60mm in diameter with nail lengths of 1-1/2", 1-7/8" and 2-1/2". These fasteners are installed using a Hilti powder-actuated tool.

3.2.19.1 Product description

3.2.19.2 Material specifications

3.2.19.3 Technical data

3.2.19.4 Installation instructions

3.2.19.5 Ordering information



X-IE 6



X-SW

3.2.19.2 MATERIAL SPECIFICATIONS

Fastener designation	Powder-actuated fastener material	Powder-actuated fastener plating ¹	Washer material ²
X-IE 6	Carbon Steel	5 µm Zinc	Plastic
X-SW	Carbon Steel	5 µm Zinc	Plastic

¹ ASTM B633, SC1, Type III. Reference Section 2.3.3.1 for more information.

² Due to potential embrittlement degradation of fastener plastic, exposure to UV light should be limited to less than 90 days.

3.2.19.3 TECHNICAL DATA

Recommended loads for X-IE 6 Fasteners ^{1,2}

Base Material	Tension lb (kN)	Shear lb (kN)
Concrete ³	90 (0.4)	90 (0.4)
CMU Masonry Walls ⁴	45 (0.2)	45 (0.2)
Solid Brick	45 (0.2)	45 (0.2)
Steel ⁵	135 (0.6)	135 (0.6)

1 The tabulated allowable load values are for the X-IE 6 fasteners only. For pull-over of the insulation material under tension, please consult insulation material supplier.

2 Multiple fasteners are recommended for any attachment.

3 Based on attachment to concrete ($f'_c = 2000 \text{ psi} - 6500 \text{ psi}$).

4 Wall must be fully grouted.

5 Based on attachment to 1/8" or 1/4" thick steel ($F_y = 36 \text{ to } 50 \text{ ksi}$).

Allowable loads for X-SW Fasteners ^{1,2,3}

Description	Tension lb (kN)	Shear lb (kN)
X-SW	65 (0.30)	65 (0.30)

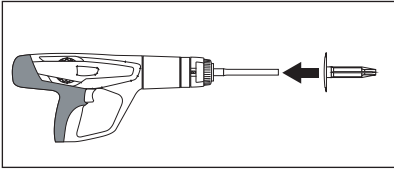
1 Multiple fasteners are recommended for any attachment.

2 Loads valid for fastener strength. Fastened material must be considered separately.

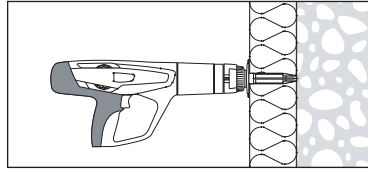
3 Based on attachment to concrete ($f'_c \geq 4000 \text{ psi}$).

3.2.19.4 INSTALLATION INSTRUCTIONS*

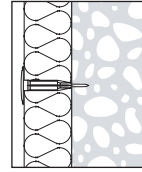
Installation instructions for X-IE 6 Insulation Fasteners



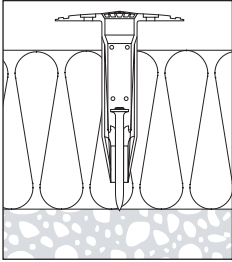
1. Load X-IE 6 on powder-actuated tool.



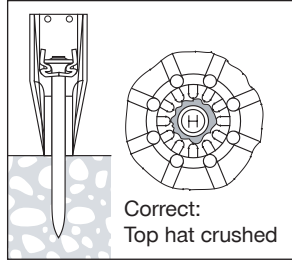
2. Push the X-IE 6 all the way into the insulation. Fastener tip must touch base material.



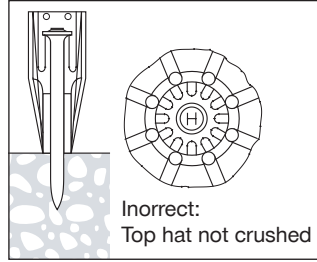
3. Make the fastening.



4. Verify successful fastening. Remove if not clamped tight to insulation.



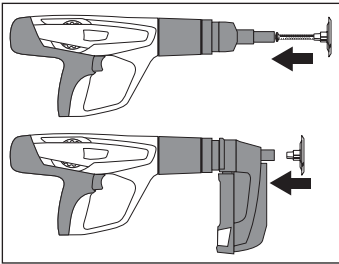
Correct:
Top hat crushed



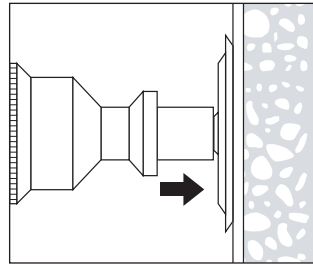
Inorrect:
Top hat not crushed

5. Visual check immediately after fastening.

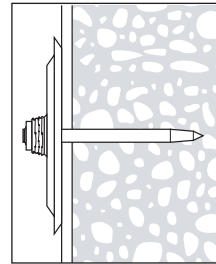
Installation instructions for X-SW Fasteners



1. Load X-SW on powder-actuated tool.



2. Press the X-SW against the surface.



3. Make the fastening.

* Installation Instructions For Use (IFU) are included with each product package. They can also be viewed or downloaded online at www.hilti.com. Because of the possibility of changes, always verify that downloaded IFU are current when used. Proper installation is critical to achieve full performance. Training is available on request. Contact Hilti Technical Services for applications and conditions not addressed in the IFU.

3.2.19.5 ORDERING INFORMATION

X-IE

Description	Shank length in. (mm)	Shank Ø in. (mm)	Insulation material thickness in. (mm)	Washer color
X-IE 6-20	1-7/16 (36)	0.177 (4.5)	3/4 (20)	White
X-IE 6-25	1-7/8 (47)	0.177 (4.5)	1 (25)	White
X-IE 6-35	1-7/8 (47)	0.177 (4.5)	1-3/8 (35)	White
X-IE 6-40	2-1/2 (62)	0.177 (4.5)	1-1/2 (4)	White
X-IE 6-50	2-1/2 (62)	0.177 (4.5)	2 (50)	White
X-IE 6-60	2-1/2 (62)	0.177 (4.5)	2-3/8 (60)	White
X-IE 6-70	2-1/2 (62)	0.177 (4.5)	2-3/4 (70)	White
X-IE 6-75	2-1/2 (62)	0.177 (4.5)	3 (75)	White
X-IE 6-80	2-1/2 (62)	0.177 (4.5)	3-1/8 (80)	White
X-IE 6-100	2-1/2 (62)	0.177 (4.5)	4 (100)	White
X-IE 6-120	2-1/2 (62)	0.177 (4.5)	4-3/4 (120)	White
X-IE 6-140	2-1/2 (62)	0.177 (4.5)	5-1/2 (140)	White
X-IE 6-150	2-1/2 (62)	0.177 (4.5)	5-7/8 (150)	White
X-IE 6-160	2-1/2 (62)	0.177 (4.5)	6-1/4 (160)	White
X-IE 6-180	2-1/2 (62)	0.177 (4.5)	7-1/8 (180)	White
X-IE 6-200	2-1/2 (62)	0.177 (4.5)	7-7/8 (200)	White

X-SW

Description	Shank length in. (mm)	Shank Ø in. (mm)	Washer Ø in. (mm)	Washer color
X-SW 30 C-37	1-1/2 (37)	0.138 (3.5)	1-3/16 (30)	Gray
X-SW 30 C-37	1-1/2 (37)	0.138 (3.5)	1-3/16 (30)	Gray
X-SW 30 W C-37	1-1/2 (37)	0.138 (3.5)	1-3/16 (30)	White
X-SW 30 C-62	2-1/2 (62)	0.138 (3.5)	1-3/16 (30)	Gray
X-SW 60 C-37	1-1/2 (37)	0.138 (3.5)	2-3/8 (60)	Gray
X-SW 60 C-47	1-7/8 (47)	0.138 (3.5)	2-3/8 (60)	Gray
X-SW 60 C-62	2-1/2 (62)	0.138 (3.5)	2-3/8 (60)	Gray