



The following pages are an excerpt from the North American Product Technical Guide, Volume 1: Direct Fastening Technical Guide, Edition 22.

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 22](#)

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.

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3.3.3 EYE LAG CEILING FASTENING HANGER

3.3.3.1 PRODUCT DESCRIPTION

The Hilti eye lag ceiling fastening hanger system is a cost effective and efficient means of supporting direct and indirect hung suspended lay-in panel ceilings. The eye lag ceiling hanger is manufactured from a hardened zinc electroplated mild carbon steel and is designed for attachment of suspended ceiling hanger wires into wood and sheet steel base materials. Each hanger is provided with a 0.177" pre-punched hole for attachment of ceiling wires. The EL S and EL SD versions are manufactured with steel washers to provide stability during installation into steel base materials.

3.3.3.2 MATERIAL SPECIFICATIONS

Fastener designation	Fastener material	Base material	Fastener pating ¹
1/4" EL WS	Carbon steel	Wood	8 µm zinc
1/4" EL S	Carbon steel	Steel deck 20 - 25 gauge and wood	8 µm zinc
1/4" EL SD	Carbon steel	Steel deck 16 - 22 gauge	8 µm zinc

¹ Zinc plated per EN/ISO 4042 A3F. Reference Section 2.3.3.1 for more information.

3.3.3.3 TECHNICAL DATA

Allowable loads for Hilti Eye Lag Ceiling Fastening Hanger installed in wood^{1,3,4,5}

Fastener description	Wood ⁴	
	Tension lb (kN)	45-degree ² lb (kN)
1/4" x 3" EL WS	260 (1.15)	185 (0.82)
1/4" x 2-3/4" EL S		135 (0.60)

- The tabulated allowable load values are for the Eye Lag screws only, using a safety factor of 3.0 per ICC-ES AC233 and AC118. Ceiling wires or other attachments must be investigated in accordance with accepted design criteria.
- Oblique load applied 45-Degrees from the longitudinal axis of the fastener.
- Based on minimum 1-1/2" Eye Lag screw penetration into the wood member. For fasteners with integrated washer, fastener should be driven so that washer is in contact with base material.
- Based on testing in wood with minimum specific gravity of 0.50. For wood members with different specific gravity measurements, refer to Section 11 of the National Design Specification for Wood Construction.
- For edge, end distance and spacing requirements, refer to Table 11.5.1E of the National Design Specification for Wood Construction.

Allowable loads for Hilti Eye Lag Ceiling Fastening Hanger installed in sheet steel^{1,2,3}

Fastener description	Steel thickness, ga. (in.)									
	25 (0.021)		22 (0.030)		20 (0.036)		18 (0.048)		16 (0.060)	
	Tension (lb) (kN)	45-degree ⁴ (lb) (kN)	Tension (lb) (kN)	45-degree ⁴ (lb) (kN)	Tension (lb) (kN)	45-degree ⁴ (lb) (kN)	Tension (lb) (kN)	45-degree ⁴ (lb) (kN)	Tension (lb) (kN)	45-degree ⁴ (lb) (kN)
1/4" x 2-3/4" EL S	60 (0.26)	70 (0.31)	110 (0.49)	150 (0.67)	150 (0.67)	230 (1.02)	—	—	—	—
1/4" x 2" EL SD	—	—	75 (0.33)	100 (0.44)	115 (0.51)	140 (0.62)	165 (0.73)	225 (1.00)	215 (0.96)	235 (1.04)
1/4" x 3" EL SD	—	—								

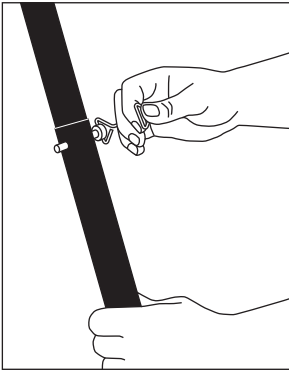
- The tabulated allowable load values are for the Eye Lag screws only, using a safety factor of 3.0 per ICC-ES AC233 and AC118. Ceiling wires or other attachments must be investigated in accordance with accepted design criteria.
- Values are based on ASTM A653 grade steel having a minimum yield strength of $F_y = 33$ ksi.
- Based on minimum three full threads penetration through the sheet steel member.
- Oblique angle load applied 45-Degrees from the longitudinal axis of the fastener.

Warning: Because of the potential for delayed hydrogen assisted stress corrosion cracking, many hardened steel fasteners are not recommended for use with dissimilar metals or chemically treated wood when moisture may be present or in corrosive environments. For further information, contact Hilti Technical Support at 1-877-749-6337.

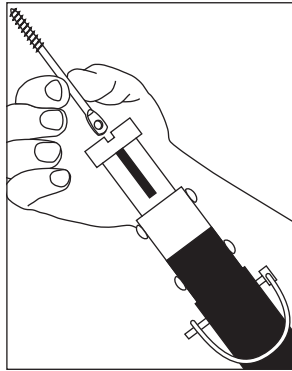
3.3.3.1	Product description
3.3.3.2	Material specifications
3.3.3.3	Technical data
3.3.3.4	Installation instructions
3.3.3.5	Ordering information



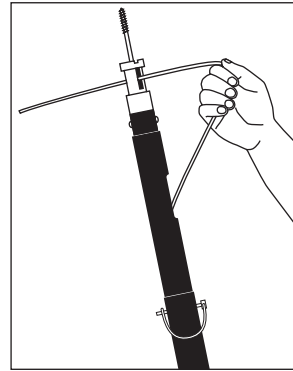
3.3.3.4 INSTALLATION INSTRUCTIONS*



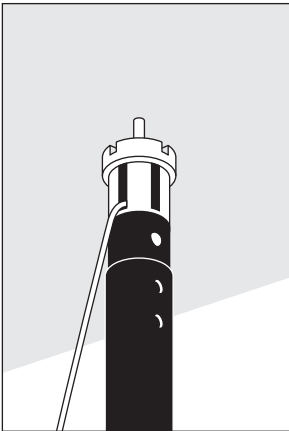
1. Adjust the telescoping tubes to the proper lengths.



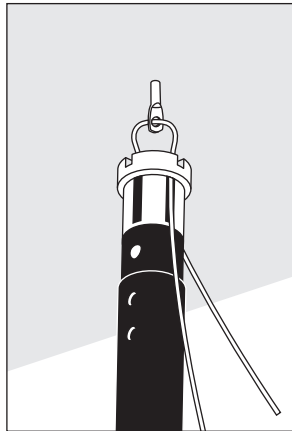
2. Insert the Eye Lag screw into top slot.



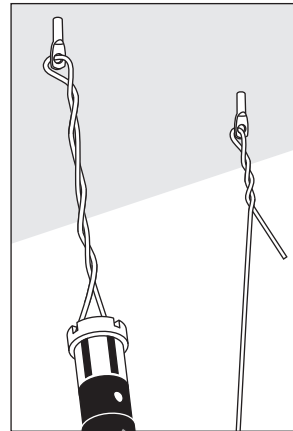
3. Insert wire into side of slot through the eyelet in the Eye Lag screw. Then bend the wire end down. Provide adequate length of wire to properly develop the required number of loops after twisting.



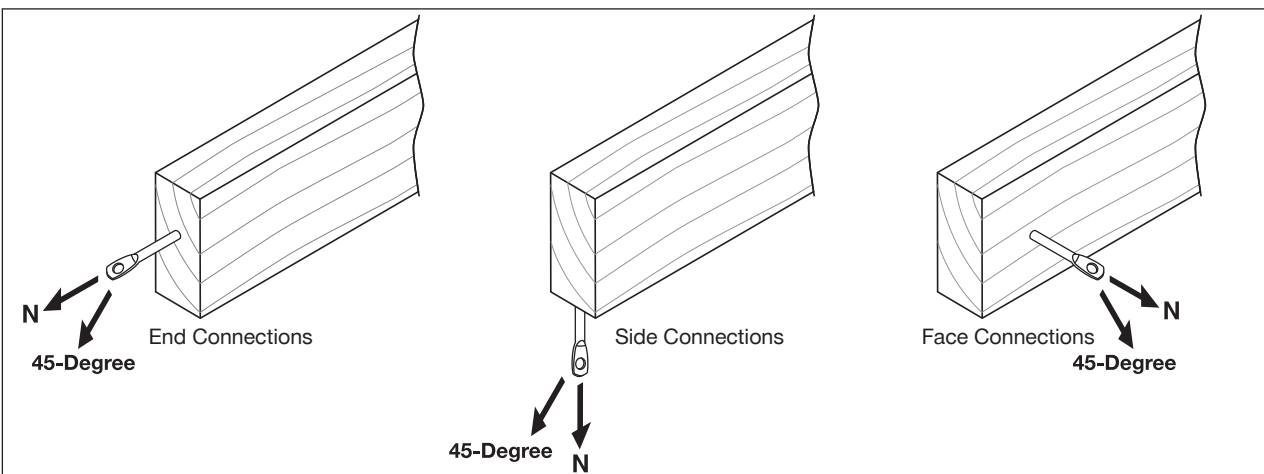
4. Raise tool against the ceiling, rotate the pole tool until the Eye Lag screw is at least 1-1/2" into the wood base material (embedment varies for steel base material - refer to Section 3.3.3.3 for additional details). **CAUTION:** In steel base material, stop turning before washer contacts base material to avoid stripping of the base steel.



5. Lower the tool about 2" from base material surface as shown.



6. Rotate the tool again to twist the wire. The pole tool may be turned by hand or by using a 1/2" variable speed drill. **CAUTION:** If using drill, do not grip pole tightly with hand, but allow it to turn loosely. Reference Figures 2 and 3 for typical wire tying requirements.



Connection Locations for Wood Applications

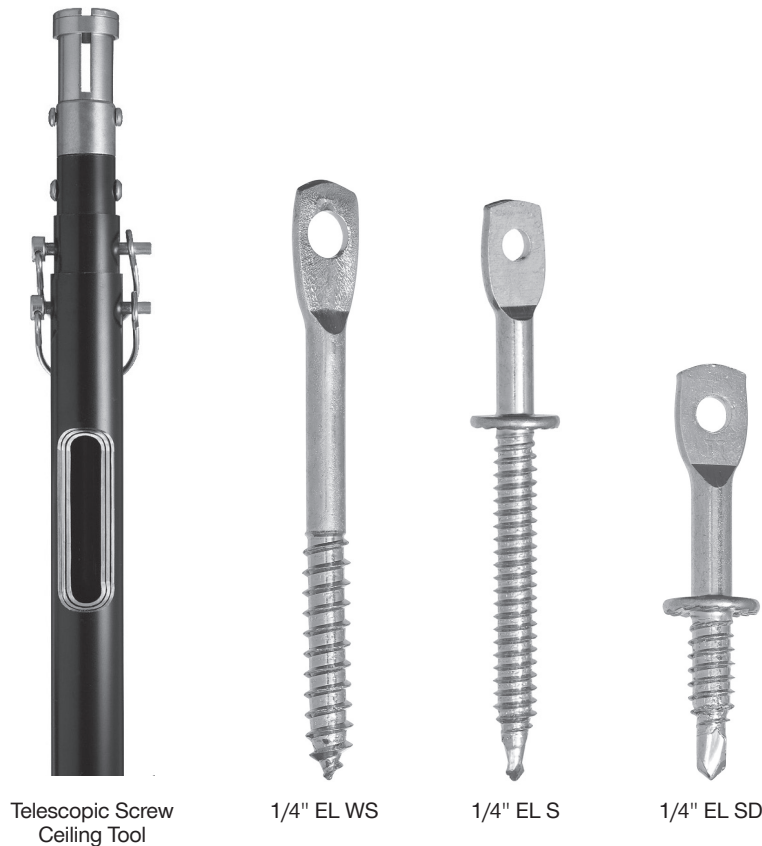
* These are abbreviated instructions which may vary by application. **ALWAYS** review/follow the instructions accompanying the product.

3.3.3.5 ORDERING INFORMATION

Eye lag ceiling fastening hanger

Fastener Description	Shank Ø in. (mm)	Fastener length in. (mm)	Base material	Quantity
Eye Lag screw - 1/4 x 3" wood screw zinc (EL WS)	1/4 (6.3)	3 (76)	Wood	100 pcs
Eye Lag Screw - 1/4" x 4" wood screw zinc (EL WS)	1/4 (6.3)	4 (102)	Wood	100 pcs
Eye Lag screw - 1/4 x 2-3/4" sharp zinc (EL S)	1/4 (6.3)	2-3/4 (70)	Sheet Steel 20-25 ga. and Wood	100 pcs
Eye Lag screw - 1/4 x 2" self drilling zinc (EL SD)	1/4 (6.3)	2 (51)	Sheet Steel 16-22 ga.	100 pcs
Eye Lag screw - 1/4 x 3" self drilling zinc (EL SD)	1/4 (6.3)	3 (76)	Sheet Steel 16-22 ga.	100 pcs

Pole tool description	Notes	Quantity
Telescopic screw ceiling tool - SF PT 4' - 12'	The pole tool can be used either by hand or with a 1/2" variable speed drill.	1 pcs
Telescopic screw ceiling tool - SF PT 8' - 24'	The pole tool can be used either by hand or with a 1/2" variable speed drill.	1 pcs



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