



## ICC-ES Evaluation Report

### ESR-3927

Issued February 2022

*This report is subject to renewal February 2023.*

#### DIVISION: 05 00 00—METALS

##### Section: 05 05 23—Metal Fastenings

#### DIVISION: 09 00 00—FINISHES

##### Section: 09 22 16.23—Fasteners

#### REPORT HOLDER:

**BLUE POINT FASTENING, INC.  
dba BLUEPOINT FASTENERS**

#### EVALUATION SUBJECT:

#### BLUE POINT FASTENERS EYE LAG SCREWS

#### 1.0 EVALUATION SCOPE

##### Compliance with the following codes:

- 2021, 2018 and 2015 *International Building Code®* (IBC)
- 2021, 2018 and 2015 *International Residential Code®* (IRC)

For evaluation for compliance with codes adopted by Los Angeles Department of Building and Safety (LADBS), see [ESR-3927 LABC and LARC Supplement](#)

For evaluation for compliance with codes adopted by the California Office of Statewide Health Planning and Development (OSHPD) and Division of State Architects (DSA), see [ESR-3927 CBC and CRC Supplement](#).

##### Property evaluated:

Structural

#### 2.0 USES

Blue Point Fasteners eye lag screws are used to provide a means of attaching steel wire to supporting materials for installation of suspended ceiling systems complying with IBC Section 808.1. The EL75SD, EL75SDZ and EL200SD screws are intended to be installed through the underside of unfilled (bare) steel deck. The EL100DSD screw is intended to be installed through steel material with a minimum thickness of  $\frac{3}{16}$  inch (4.8 mm), such as the bottom flange of a steel beam or an open web joist. The fasteners may be used where an engineered design is submitted in accordance with IRC Section R301.1.3.

#### 3.0 DESCRIPTION

##### 3.1 General:

The Blue Point Fasteners eye lag screws have a self-drilling point and a self-tapping threaded shank below a washer-like collar. The threaded portion is nominally  $\frac{1}{4}$  inch (6.4 mm) in

diameter with 14 threads per inch (1.8 mm thread pitch). Above the collar, the smooth, straight shank transitions to a flattened portion with an eye for attaching the ceiling wire. See Figure 1. See Table 1 for screw dimensions, drilling capacities and coatings.

##### 3.2 Screw Material:

The Blue Point Fasteners eye lag screws are manufactured from carbon steel wire complying with ASTM A510, Grade 1022, that is heat-treated to obtain a Rockwell C case hardness of 51 to 56 and a Rockwell C core hardness of 32 to 40.

##### 3.3 Supporting Material:

The supporting steel must comply with Section A3.1 of AISI S100.

The EL75SD, EL75SDZ and EL200SD screws have been evaluated for installation into cold-formed steel deck panels, which must have a minimum specified tensile strength of 45 ksi (310 MPa). The deck panels must have a minimum rib (flute) width of  $1\frac{1}{2}$  inches (38 mm) and a thickness within the range addressed in Table 3.

The EL100DSD screws have been evaluated for installation into structural steel with a minimum tensile strength of 58 ksi (400 MPa).

#### 4.0 DESIGN AND INSTALLATION

##### 4.1 Design:

The available fastener shear and tension strengths are shown in Table 2. The available pull-out strengths are shown in Table 3. The stress increases and load reductions described in 2021 IBC Section 1605.2 (2018 and 2015 IBC Section 1605.3.2) are not allowed. No adjustments for duration of load are allowed. The capacity of the ceiling wires used with the eye lag fasteners must be considered in the connection design. For screws installed into unsupported steel beams or joists, the local effect of the eccentric load must be considered in the design.

##### 4.2 Installation:

The Blue Point Fasteners eye lag screws must be installed in accordance with this report and the manufacturer's published installation instructions. A copy of these instructions must be available on the jobsite at all times during installation.

The screws and ceiling wire must be installed vertically to ensure that the tension load is applied along the axis of the screw. The screws may be installed into the upper or lower flutes of the steel deck material or into the structural steel shape, as applicable. The screws must be installed

perpendicular to the supporting steel material using a screw driving tool recommended by the report holder. When using a pole tool, the installation speed must not exceed 200 rpm. When using a variable-speed drill, the speed must not exceed 1,900 rpm.

Screws installed into steel deck must be spaced a minimum of  $\frac{3}{4}$  inch (19.1 mm) on center along the length of the panel and must be installed a minimum of  $\frac{3}{4}$  inch (19.1 mm) from the deck web. Screws installed into a structural steel shape must be spaced a minimum of  $\frac{3}{4}$  inch (19.1 mm) on center and must be a minimum of  $\frac{3}{4}$  inch (19.1 mm) from the edge of the steel. After installation, a minimum of three threads must protrude through the steel deck panel or steel shape, as applicable.

Ceiling wire shall comply with and be installed in accordance with ASTM C636, referenced in IBC Section 808.1.1.1.

## 5.0 CONDITIONS OF USE

The Blue Point Fasteners eye lag screws described in this report comply with, or are suitable alternatives to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

- 5.1 The fasteners are manufactured and identified in accordance with this report.
- 5.2 Fastener installation complies with this report and the manufacturer's published installation instructions. In the event of conflict between this report and the published instructions, this report governs.
- 5.3 Use of the screws to attach bracing wire to the supports is outside the scope of this report.
- 5.4 The available strengths shown in this report apply to the fasteners and their connection to the supporting

steel only. Adequacy of the steel deck or structural steel shape to support the suspended loads must be justified to the satisfaction of the code official.

5.5 Calculations demonstrating that the applied loads are less than the available strengths described in this report must be submitted to the code official for approval. The calculations must be prepared by a registered design professional where required by the statutes of the jurisdiction in which the project is to be constructed.

5.6 Use of the fasteners is limited to dry, interior locations.

5.7 The screws are manufactured under a quality control program with inspections by ICC-ES.

## 6.0 EVIDENCE SUBMITTED

Data in accordance with the ICC-ES Acceptance Criteria for Self-drilling Tapping Screws Used to Attach Miscellaneous Building Materials to Steel Base Material (AC500), dated October 2017 (editorially revised January 2021).

## 7.0 IDENTIFICATION

7.1 The Blue Point Fasteners eye lag screws are marked on the collar by a raised ring, as shown in Figure 2. The packaging is labeled with the fastener type (eye lag), part number, report holder name (Blue Point Fasteners) and evaluation report number (ESR-3927).

7.2 The report holder contact information is the following:

**BLUE POINT FASTENING, INC.,  
dba BLUE POINT FASTENERS  
14728 YORBA COURT  
CHINO, CALIFORNIA 91710  
(877) 779-2583  
[www.bpfasteners.com](http://www.bpfasteners.com)**

TABLE 1—BLUE POINT FASTENERS EYE LAG SCREWS

PART NUMBER	NOMINAL FASTENER SIZE (dia-tpi)	NOMINAL DIAMETER (in.)	LENGTH FROM UNDERSIDE OF COLLAR TO TIP (in.)	FASTENER "HEAD" LENGTH <sup>1</sup> (in.)	EYE DIAMETER (in.)	COLLAR DIAMETER (in.)	DRILL POINT	MAXIMUM DRILLING CAPACITY (in.)	COATING
EL75SD	$\frac{1}{4}$ -14	0.250	$\frac{3}{4}$	$1\frac{1}{4}$	0.197	0.492	#3	0.060	Yellow Zinc
EL75SDZ			$\frac{3}{4}$	$1\frac{1}{4}$					White Zinc
EL200SD			2	$1\frac{1}{4}$					Yellow Zinc
EL100DSD	$\frac{1}{4}$ -14	0.250	1	$1\frac{1}{4}$	0.197	0.492	#4	0.250	Blue Ruspert

For SI: 1 inch = 25.4 mm.

<sup>1</sup>Length from the underside of the collar to edge of the eye end of the fastener.

TABLE 2 — BLUE POINT FASTENERS EYE LAG SCREW FASTENER SHEAR AND TENSION STRENGTHS (lbf)

FASTENER TYPE	NOMINAL FASTENER SIZE	NOMINAL STRENGTH		ALLOWABLE STRENGTH (ASD)		DESIGN STRENGTH (LRFD)	
		Tension, $P_{ts}$	Shear, $P_{ss}$	Tension, $(P_{ts}/\Omega)$	Shear, $(P_{ss}/\Omega)$	Tension, $(\Phi P_{ts})$	Shear, $(\Phi P_{ss})$
EL75SD EL75SDZ EL200SD	$\frac{1}{4}$ -14	2,790	3,065	930	1,020	1,395	1,535
EL100DSD	$\frac{1}{4}$ -14	2,970	3,090	990	1,030	1,485	1,545

For SI: 1 inch = 25.4 mm, 1 lbf = 4.45 N.

TABLE 3—AVAILABLE PULL-OUT STRENGTHS FOR BLUE POINT FASTENERS EYE LAG SCREWS (lbf)<sup>1</sup>

FASTENER TYPE	DESIGN BASE METAL THICKNESS (inch)					
	0.028	0.036	0.047	0.060	$\frac{3}{16}$ (2)	$\frac{1}{4}$ (2)
Allowable Strength (ASD)						
EL75SD EL75SDZ EL200SD	98	128	215	215	—	—
EL100DSD	—	—	—	—	495	544
Design Strength (LRFD)						
EL75SD EL75SDZ EL200SD	156	192	343	343	—	—
EL100DSD	—	—	—	—	791	870

For SI: 1 inch = 25.4 mm, 1 lbf = 4.45 N, 1 ksi = 6.89 MPa.

<sup>1</sup>Unless otherwise noted, values are based on installation into steel having a minimum tensile strength,  $F_u$ , of 45 ksi.

<sup>2</sup>Steel must have a minimum tensile strength of 58 ksi.

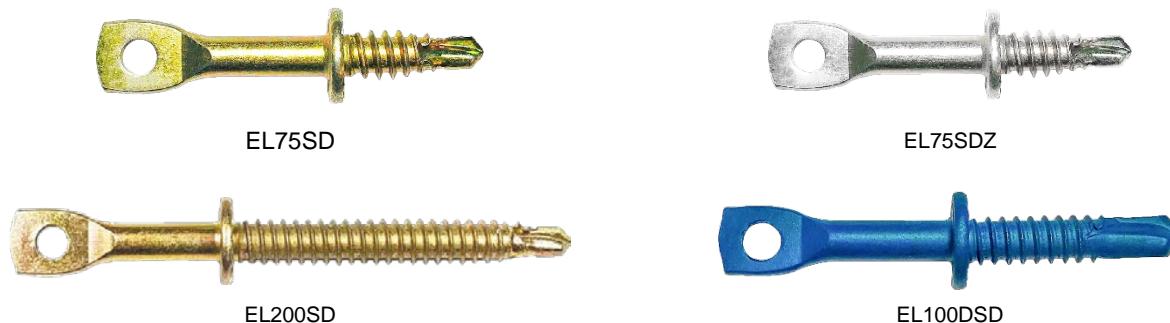


FIGURE 1—BLUE POINT FASTENERS EYE LAG SCREWS



FIGURE 2—COLLAR MARKINGS FOR BLUE POINT FASTENERS EYE LAG SCREWS



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## ICC-ES Evaluation Report

## ESR-3927 LABC and LARC Supplement

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DIVISION: 05 00 00—METALS

Section: 05 05 23—Metal Fastenings

DIVISION: 09 00 00—FINISHES

Section: 09 22 16.23—Fasteners

REPORT HOLDER:

BLUE POINT FASTENING, INC. dba BLUEPOINT FASTENERS

EVALUATION SUBJECT:

BLUE POINT FASTENERS EYE LAG SCREWS

### 1.0 REPORT PURPOSE AND SCOPE

Purpose:

The purpose of this evaluation report supplement is to indicate that Blue Point Fasteners eye lag screws, described in ICC-ES evaluation report [ESR-3927](#), have also been evaluated for compliance with the codes noted below as adopted by the Los Angeles Department of Building and Safety (LADBS).

Applicable code editions:

- 2020 City of Los Angeles Building Code (LABC)
- 2020 City of Los Angeles Residential Code (LARC)

### 2.0 CONCLUSIONS

The Blue Point Fasteners eye lag screws, described in Sections 2.0 through 7.0 of the evaluation report [ESR-3927](#), comply with the LABC Chapters 8 and 22, and the LARC, and are subject to the conditions of use described in this supplement.

### 3.0 CONDITIONS OF USE

The Blue Point Fasteners eye lag screws described in this evaluation report supplement must comply with all of the following conditions:

- All applicable sections in the evaluation report [ESR-3927](#).
- The design, installation, conditions of use and identification of the Blue Point Fasteners eye lag screw are in accordance with the 2018 *International Building Code®* (IBC) provisions noted in the evaluation report [ESR-3927](#).
- The design, installation and inspection are in accordance with additional requirements of LABC Chapters 16 and 17, as applicable.
- Under the LARC, an engineered design in accordance with LARC Section R301.1.3 must be submitted.

This supplement expires concurrently with the evaluation report, issued February 2022.



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## ICC-ES Evaluation Report

## ESR-3927 CBC and CRC Supplement

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REPORT HOLDER:

BLUE POINT FASTENING, INC. dba BLUEPOINT FASTENERS

EVALUATION SUBJECT:

BLUE POINT FASTENERS EYE LAG SCREWS

### 1.0 REPORT PURPOSE AND SCOPE

Purpose:

The purpose of this evaluation report supplement is to indicate that Blue Point Fasteners eye lag screws, described in ICC-ES evaluation report ESR-3927, have also been evaluated for compliance with the codes noted below.

Applicable code editions:

- 2019 California Building Code (CBC)

For evaluation of applicable chapters adopted by the California Office of Statewide Health Planning and Development (OSHPD) and Division of State Architect (DSA), see Sections 2.1.1 and 2.1.2 below.

- 2019 California Residential Code (CRC)

### 2.0 CONCLUSIONS

2.1 CBC:

The Blue Point Fasteners eye lag screws, described in Sections 2.0 through 7.0 of the evaluation report ESR-3927, comply with CBC Chapter 22, provided the design and installation are in accordance with the 2018 *International Building Code*® (IBC) provisions noted in the evaluation report and the additional requirements of CBC Chapters 8, 16, 17 and 22 as applicable.

2.1.1 OSHPD:

The Blue Point Fasteners eye lag screws, described in Sections 2.0 through 7.0 of the evaluation report ESR-3927, comply with CBC amended Chapter 22, and Chapter 22A, provided the design and installation are in accordance with the 2018 *International Building Code*® (IBC) provisions noted in the evaluation report and the additional requirements in Chapter 8 [OSHPD 1, 1R, 2, 4 and 5], amended Chapter 16 [OSHPD 1R, 2, 3 and 5], Chapter 16A [OSHPD 1 and 4], amended Chapter 17 [OSHPD 1R, 2 and 5], Chapter 17A [OSHPD 1 and 4], amended Chapter 22 [OSHPD 1R, 2 and 5] and Chapter 22A [OSHPD 1 and 4] as applicable.

2.1.2 DSA:

The Blue Point Fasteners eye lag screws, described in Sections 2.0 through 7.0 of the evaluation report ESR-3927, comply with CBC amended Chapter 22, and Chapter 22A, provided the design and installation are in accordance with the 2018 *International Building Code*® (IBC) provisions noted in the evaluation report and the additional requirements in Chapter 8 [DSA-SS and DSA-SS/CC], amended Chapter 16 [DSA-SS/CC], Chapter 16A [DSA/SS], Chapter 17A [DSA-SS and DSA-SS/CC], Chapter 22 [DSA-SS/CC] and Chapter 22A [DSA-SS], as applicable.

2.2 CRC:

The Blue Point Fasteners eye lag screws, described in Sections 2.0 through 7.0 of the evaluation report ESR-3927, comply with CRC Chapter 3, provided the design and installation are in accordance with the 2018 *International Residential Code*® (IRC) provisions noted in the evaluation report and the additional requirements of CRC Chapter 3, as applicable.

This supplement expires concurrently with the evaluation report, issued February 2022.

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The purpose of this evaluation report supplement is to indicate that Blue Point Fasteners eye lag screws, described in ICC-ES evaluation report ESR-3927, have also been evaluated for compliance with the Chicago Construction Codes (Title 14 of the Chicago Municipal Code) as noted below.

**Applicable code editions:**

- 2019 Chicago Building Code (Title 14B)

**2.0 CONCLUSIONS**

The Blue Point Fasteners eye lag screws, described in Sections 2.0 through 7.0 of the evaluation report ESR-3927, comply with Title 14B, and are subject to the conditions of use described in this supplement.

**3.0 CONDITIONS OF USE**

The Blue Point Fasteners eye lag screws described in this evaluation report supplement must comply with all of the following conditions:

- All applicable sections in the evaluation report ESR-3927.
- The design, installation, conditions of use and identification of the Blue Point Fasteners eye lag screws are in accordance with the 2018 *International Building Code*® (IBC) provisions noted in the evaluation report ESR-3927.
- The design, installation and inspection are in accordance with additional requirements of Chapters 16 and 17 of Title 14B, as applicable.

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The purpose of this evaluation report supplement is to indicate that Blue Point Fasteners eye lag screws, addressed in ICC-ES evaluation report ESR-3927, have also been evaluated for compliance with the codes noted below.

**Applicable code editions:**

- 2020 Florida Building Code—Building
- 2020 Florida Building Code—Residential

**2.0 CONCLUSIONS**

The Blue Point Fasteners eye lag screws, described in Sections 2.0 through 7.0 of ICC-ES evaluation report ESR-3927, comply with the *Florida Building Code—Building* and the *Florida Building Code—Residential*. The design requirements must be determined in accordance with the *Florida Building Code—Building*. The installation requirements noted in ICC-ES evaluation report ESR-3927 for the 2018 *International Building Code*® meet the requirements of the *Florida Building Code—Building* or the *Florida Building Code—Residential*, as applicable.

Use of the Blue Point Fasteners eye lag screws has also been found to be in compliance with the High-Velocity Hurricane Zone provisions of the *Florida Building Code—Building* and *Florida Building Code—Residential*.

For products falling under Florida Rule 61G20-3, verification that the report holder's quality assurance program is audited by a quality assurance entity approved by the Florida Building Commission for the type of inspections being conducted is the responsibility of an approved validation entity (or the code official when the report holder does not possess an approval by the Commission).

This supplement expires concurrently with the evaluation report, issued February 2022.