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# DSA

DIVISION OF THE STATE ARCHITECT  
OFFICE OF REGULATION SERVICES

SPECIAL PROJECTS SECTION

**PRODUCT ACCEPTANCE NUMBER: PA-079**

**PRODUCT TYPE:** Connector for Suspended Ceiling Hanger & Splay Wire

**ACCEPTANCE DATE:** March 12, 1998

**COMPANY NAME:** Doc's Marketing Corporation  
5158 Goldman Avenue, Unit A  
Moorpark, CA 93021

**PRODUCT NAME:** I-Lag™ Brand Eye Lag Screws

**CODE REFERENCES:** 1995 Title 24, Part 2, Section 1630A.2, Section 2501A,  
DSA IR 47-4

**DISCUSSION:**

I-Lag Brand Eye Lag Screws are intended for use as suspended ceiling fasteners. Three screw types, 750 SD, 150 SD and 150 WS, are fabricated from 1018 steel. The I-Lag fasteners are acceptable for use on public school, state-owned or state-leased essential services buildings and California Community College projects. The acceptance has been based on a review of test data, ICBO Evaluation Service, Inc. Evaluation Report ER-5367, and the manufactures quality control procedures and manual.

The fasteners shall be identified by one of two methods as shown on attached sheet.

The fasteners may be installed in wood, steel or light-gauge steel framing members. In steel framing, the fasteners shall protrude at least three threads beyond the face of the member, while in wood, the screws shall be fully embedded. See the ICBO ER-5367 for information pertaining to methods of installation.

The fasteners consist of a threaded portion below a ½ inch diameter washer and a flattened eyelet portion above the washer. The shank below the washer is 0.19 inch diameter and is increased to 0.21 inches above the washer. All threads are fabricated in accordance with the Society of Automobile Engineers, Inc. Standard J78, Revised August 1996.

The 750 SD fastener is a 2" long self-tapping self-drilling screw intended for use into metal framing. The 150 SP fastener is a 2 ¾" long sharp point screw intended for installation into wood or metal framing. The 750 SD and 150 SP fasteners are heat treated for hardness and plated with zinc-type-II yellow chromate.

The 150 WS is a sharp point wood screw with the same dimensions and threads as the 150 SP. The 150 WS is not heat treated and is either zinc-type I plated (silver) or is not plated (dull gray).

I-Lag Brand Eye Lag Screws are subject to the following limitations:

1. Installation of hanger and splay wires shall conform with Section 2501A.5, Part 2, Title 24, California Code of Regulations (CCR).

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 State of California – Department of General Services – Pete Wilson, Governor

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2. Allowable Tension Loads shall be as indicated in the following table:

Fastener	Direction of Applied Load on Fastener <sup>1</sup>	Allowable Tension Loads in Metal Framing, lbs. <sup>2,5</sup>				Allowable Tension and Shear Loads in Wood Framing, lbs. <sup>2,4</sup>
		16 ga.	18 ga.	20 ga.	22 ga <sup>3</sup>	
750 SD	Tension	340	250	170	135	
	45°	340	250	170	135	
150 SD	Tension				180	245
	45°				180	155
	Shear					75
150 WS	Tension					270
	45°					140
	Shear					75

Footnotes:

1. See attached sheet for direction of load applied on fastener.
2. A factor of safety of 2 ½ for steel and 4 for wood has been applied to allowable loads.
3. Use of metal deck lighter than 20 ga. requires compliance with Section 2204A.2, Title 24, Part 2, CCR.
4. Wood material values are based on a specific gravity of 0.46 and a minimum thickness of 1 ½”.
5. For metal deck 20 ga. or lighter, the maximum weight of ceiling system shall be limited to 2.5 psf. For 18 ga. metal deck, the maximum weight of ceiling system shall be limited to 4 psf. For 16 ga. metal deck, the maximum weight of ceiling system shall be limited to 6 psf.

3. Quality Control Testing of Installation

- a) For vertical hanger wires, one out of ten wires must be field tested for 200 lbs. tension.
- b) For diagonal splay wires, one out of two wires must be field tested to two times the allowable 45 tension value listed in Item 2 in the direction of the diagonal.
- c) All tension test shall be performed by an LEA approved testing agency and reports shall be sent to the Inspector of Record for the project. Test reports shall list testing method, metal deck gauge, number of tests performed, and physical condition of screws and metal deck after testing. Permanent set or displacement of screw after testing shall be considered failure.
- d) Alternative Testing Requirements for Plant Fabricated Relocatable Buildings:

Where suspended ceiling systems are installed into metal joist roof framing, the testing requirements may be relaxed due to the consistency in fabrication, quality control procedures and inspection services. These modified testing requirements are dependent upon the consistency of the test results obtained by the In-Plant Inspector of Record. This alternate procedure will need to be followed for each new Inspector as follows:

The inspection may be performed by the In-Plant Inspector of Record and need not be performed by an LEA testing agency. The first ten buildings shall be tested and reported in accordance with Items 3a) through 3c) above. As long as no failures occur, then the procedure may be modified as follows for all subsequent buildings inspected by that inspector:

- Tension test two randomly selected vertical hanger wires to 200 lbs. at each building module.
- Tension test two randomly selected diagonal splay wires at each building module to two times the allowable 45 tension value listed in item 2 in the direction of the diagonal.
- If any fastener fails, all fasteners shall be tested for the entire building. Testing shall then revert back to the original procedure of items 3a) through 3c) for 10 consecutive buildings. If no additional failures occur, then the alternate procedure may resume. If additional failures do occur, then testing will be required on all anchors until authorized by DSA. Successful results shall be indicated on the Final Verified Report. Deficient test results shall be reported to DSA per item 3c) above.

Changes to the product without DSA concurrence will void this acceptance. The acceptance of this product is contingent on continued acceptable performance and is subject to re-examination in two years.

If you have any questions regarding this product, please contact me at (916) 327-9699.

James P. Hackett  
District Structural Engineer

cc:  
Forrest Dockery, Doc's Marketing Corporation  
Alan Williams, Principal, Structural Safety Policy  
DSA Area Offices  
Terrence Fong, Office of Statewide Health Planning and Development