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ESR-3368

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Issued 04/2015
This report is subject to renewal 04/2016.

DIVISION: 05 00 00—METALS
SECTION: 05 40 00—COLD-FORMED METAL FRAMING
SECTION: 05 41 00—STRUCTURAL METAL STUD FRAMING

REPORT HOLDER:

CLEMCO-ELITE STANDARD SYSTEMS

8768 HELLMAN AVENUE
RANCHO CUCAMONGA, CALIFORNIA 91730-4418

EVALUATION SUBJECT:

CLEMCO-ELITE $3^{5}/_{8}$" DISPLAY STUD

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ICC-ES Evaluation Report

ESR-3368

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DIVISION: 05 00 00—METALS
Section: 05 40 00—Cold-Formed Metal Framing
Section: 05 41 00—Structural Metal Stud Framing

REPORT HOLDER:

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(909) 483-0141
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EVALUATION SUBJECT:

CLEMCO-ELITE 3 5/8″ DISPLAY STUD

1.0 EVALUATION SCOPE

Compliance with the following codes:

2012, 2009, and 2006 *International Building Code®* (IBC)

Property evaluated:

Structural

2.0 USES

The Clemco-Elite 3 5/8" Display Stud is used for framing of interior partitions supporting shelving and other merchandise display apparatuses.

3.0 DESCRIPTION

The 18 mil thick Clemco-Elite 3 5/8" Display Stud is cold-formed from steel with a design base steel thickness of 0.0188 inch (0.478 mm) complying with ASTM A653 SS Grade 33. The Clemco-Elite 3 5/8" Display Stud has a G60 galvanized coating.

The Clemco-Elite 3 5/8" Display Stud consists of two individual studs assembled back-to-back to form a double stud assembly. The studs are connected to each other with web crimps at 24-inch (610 mm) intervals. The Clemco-Elite 3 5/8" Display Stud is manufactured with and without punch-outs. When provided, the punch-outs are 1 1/2-inches-wide-by-2 1/4-inches-long (38.1 mm by 57.15 mm) spaced 24 inches (610 mm) on center along the centerline of the member, with a minimum distance of 10 inches (254 mm) from the end of the member to the near edges of the punch-out.

See Figure 1 for dimensions.

4.0 DESIGN AND INSTALLATION

The back-to-back Clemco-Elite 3 5/8" Display Stud must have adequate strength to resist the loads to which it is subjected to, but not less than a horizontal load of 5 psf (0.240 kN/m^2) as required by IBC Section 1607.13 (1607.14 for the 2012 IBC). When subjected to combinations of loads, such as bending, shear, web crippling, and axial load, the appropriate interaction equations must be checked. Design properties along with installation details are listed in Table 1.

5.0 CONDITIONS OF USE

The Clemco-Elite 3 5/8" Display Stud described in this report complies with, or is a suitable alternative to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

5.1 Minimum uncoated base-metal thickness of the cold-formed steel members as delivered to the jobsite must be at least 95 percent of the design base-metal thickness.

5.2 Installation must be in accordance with the code, the approved construction documents and this report. If there is a conflict between the construction documents submitted for approval and this report, this report governs. The approved construction documents must be available at the jobsite at all times during installation.

5.3 Complete construction documents and calculations verifying compliance with this report must be submitted to the code official for each project at the time of permit application. The design calculations and construction documents must be prepared and sealed by a registered design professional where required by the statutes of the jurisdiction in which the project is to be constructed.

5.4 The connections/attachments of supported shelving and other merchandise display apparatuses to the back-to-back Clemco-Elite 3 5/8" Display Stud are outside the scope of this report.

6.0 EVIDENCE SUBMITTED

Data in accordance with ICC-ES Acceptance Criteria for Cold-formed Steel Framing Members (AC46), dated June 2012 (editorially revised August 2013).

7.0 IDENTIFICATION

Each Clemco-Elite 3 5/8" Display Stud must have: a legible label, stamp or embossment at a maximum of 48 inches (1219 mm) on center indicating the manufacturer's name (Clemco-Elite Standard Systems); the evaluation report number (ESR-3368); the acronym "ICC-ES"; an 18 mil (0.0179 inch) minimum base-metal thickness (uncoated); and a minimum specified yield strength of 33 ksi and galvanization coating grade of 60.

TABLE 1—BACK-TO-BACK CLEMCO ELITE $3^5/_8$″ DISPLAY STUD DESIGN PROPERTIES[1-5]

DESIGN BASE-METAL THICKNESS	MINIMUM BASE-METAL THICKNESS	WEIGHT	GROSS AREA (A_g)	GROSS MOMENT OF INERTIA (I_x)	MOMENT OF INERTIA FOR DEFLECTION (I_d)	ALLOWABLE MOMENT (M_{nx}/Ω_b)	ALLOWABLE BUCKLING MOMENT (M_{nx}/Ω_b)	ALLOWABLE SHEAR (V_{nx}/Ω_v)	ALLOWABLE WEB CRIPPLING (P_{nx}/Ω_w)	ALLOWABLE AXIAL STRENGTH (P_n/Ω_b) based on the following heights			
										8'-0"	12'-0"	16'-0"	20'-0"
inch	inch	lbf/ft	in^2	in^4	in^4	ft-lbf	ft-lbf	lbf	lbf	lbf	lbf	lbf	lbf
0.0188	0.0179	0.98	0.283	0.564	0.564	420	300	280	100	1,400	1,250	1,050	850

For **SI:** 1 inch = 25.4 mm, 1 lbf/ft. = 1.488 kg/m, 1 ft-lbf = x N-M

1. All of the allowable values are based on yield strength of 33 ksi.
2. All of the allowable values are based on punch-outs in the web.
3. The allowable moment and allowable buckling moment are based on the continuously braced flanges.
4. The allowable web crippling is based on end one-flange loading with fasteners at supports. The bearing width at supports must be a minimum of 1 inch.
5. The allowable axial strengths are based on y-axis bracing and torsional bracing at 48 inches on center and x-axis bracing at the ends of the member.

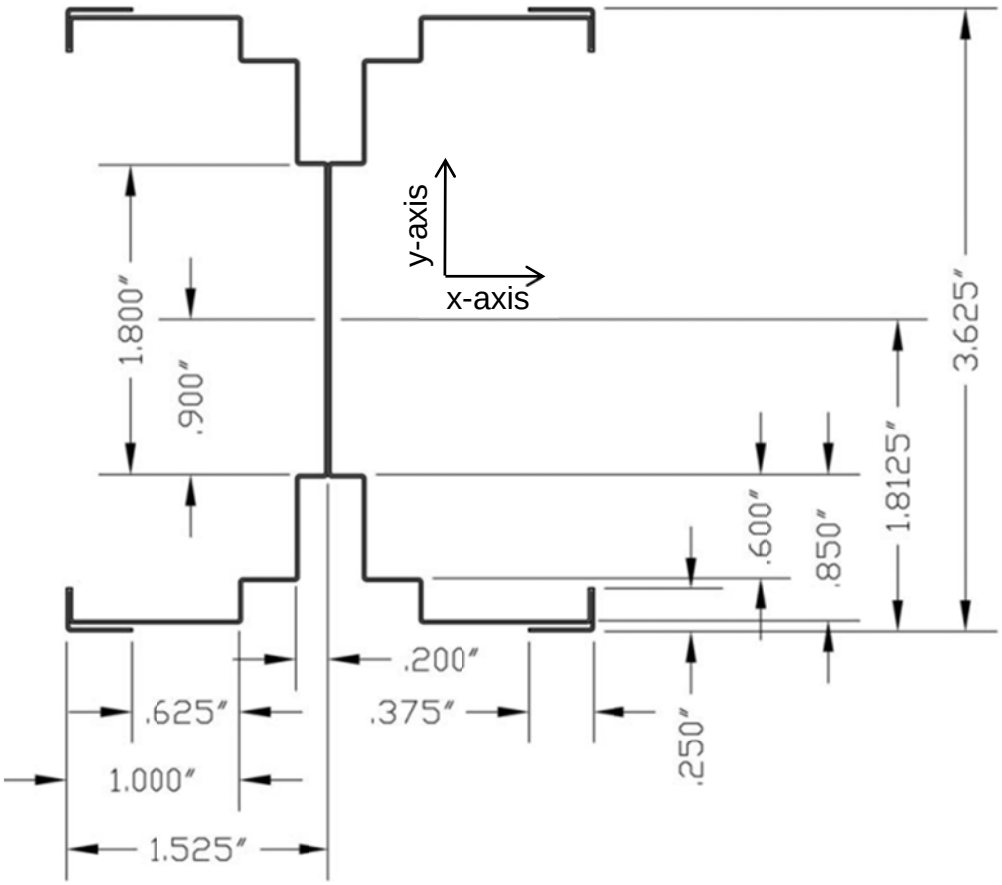

FIGURE 1—BACK-TO-BACK CLEMCO ELITE $3^5/_8$″ DISPLAY STUD