



Most Widely Accepted and Trusted

# ICC-ES Listing Report

# ESL-1007

ICC-ES | (800) 423-6587 | (562) 699-0543 | www.icc-es.org

Reissued 07/2018

This listing is subject to renewal 07/2019.

DIVISION: 13 00 00—SPECIAL CONSTRUCTION, SECTION: 13 48 53—MANUFACTURED SEISMIC CONTROL COMPONENTS

DIVISION: 13 00 00—SPECIAL CONSTRUCTION, SECTION: 13 48 63—FABRICATED SEISMIC CONTROL ASSEMBLIES

DIVISION: 22 00 00—PLUMBING, SECTION: 22 05 48—VIBRATION AND SEISMIC CONTROLS FOR PLUMBING PIPING AND EQUIPMENT

DIVISION: 23 00 00—HEATING, VENTILATING AND AIR-CONDITIONING (HVAC), SECTION: 23 05 48—VIBRATION AND SEISMIC CONTROLS FOR HVAC

DIVISION: 25 00 00—INTEGRATED AUTOMATION, SECTION: 25 05 48—VIBRATION AND SEISMIC CONTROLS FOR INTEGRATED AUTOMATION

DIVISION: 26 00 00—ELECTRICAL, SECTION: 26 05 48—VIBRATION AND SEISMIC CONTROLS FOR ELECTRICAL SYSTEMS

DIVISION: 27 00 00—COMMUNICATIONS, SECTION: 27 05 48—VIBRATION AND SEISMIC CONTROLS FOR COMMUNICATIONS SYSTEMS

DIVISION: 28 00 00—ELECTRONIC SAFETY AND SECURITY, SECTION: 28 05 48—VIBRATION AND SEISMIC CONTROLS FOR ELECTRONIC SAFETY AND SECURITY

## REPORT HOLDER:

**LOOS & CO., INC.**

## EVALUATION SUBJECT:

**SEISMIC WIRE ROPE/CABLE™ BRACING SYSTEM COMPONENTS  
(SEE TABLES 1 THROUGH 4)**



Look for the trusted marks of Conformity!

*“2014 Recipient of Prestigious Western States Seismic Policy Council (WSSPC) Award in Excellence”*



A Subsidiary of

*ICC-ES Evaluation Listing Reports are not to be construed as representing aesthetics or any other attributes not specifically addressed, nor are they to be construed as an endorsement of the subject of the report or a recommendation for its use. There is no warranty by ICC Evaluation Service, LLC, express or implied, as to any finding or other matter in this report, or as to any product covered by the report.*



# ICC-ES Listing Report

**ESL-1007**

Reissued July 2018

This listing is subject to renewal July 2019.

[www.icc-es.org](http://www.icc-es.org) | (800) 423-6587 | (562) 699-0543

A Subsidiary of the International Code Council®

**CSI:**

DIVISION: 13 00 00—SPECIAL CONSTRUCTION  
Section: 13 48 53—Manufactured Seismic Control Components  
Section: 13 48 63—Fabricated Seismic Control Assemblies

DIVISION: 22 00 00—PLUMBING  
Section: 22 05 48—Vibration and Seismic Controls for Plumbing Piping and Equipment

DIVISION: 23 00 00—HEATING, VENTILATING, AND AIR-CONDITIONING (HVAC)  
Section: 23 05 48—Vibration and Seismic Controls for HVAC

DIVISION: 25 00 00—INTEGRATED AUTOMATION  
Section: 25 05 48 — Vibration and Seismic Controls for Integrated Automation

DIVISION: 26 00 00—ELECTRICAL  
Section: 26 05 48—Vibration and Seismic Controls for Electrical Systems

DIVISION: 27 00 00—COMMUNICATIONS  
Section: 27 05 48—Vibration and Seismic Controls for Communications Systems

DIVISION: 28 00 00—ELECTRONIC SAFETY AND SECURITY  
Section: 28 05 48—Vibration and Seismic Controls for Electronic Safety and Security

## Product Certification System:

The ICC-ES product certification system includes evaluating reports of tests of standard manufactured product, prepared by accredited testing laboratories and provided by the listee, to verify compliance with applicable codes and standards. The system also involves factory inspections, and assessment and surveillance of the listee's quality system.

**Products:** Seismic Wire Rope/Cable™ Bracing System Components (See Tables 1 through 4)

**Listee:** LOOS & CO., INC.

**Evaluation:** The tension-only (Cable Type) Seismic Sway Brace Assemblies and components listed in Tables 5 through 14, when applied in accordance with the manufacturer's instructions, conform to the following standards:

- ASCE/SEI 19-10, Structural Applications of Steel Cables for Buildings, American Society of Civil Engineers/Structural Engineering Institute.
- ASTM A1023-09 (Table 9), Standard Specification for Stranded Carbon Steel Wire Ropes for General Purposes, ASTM International.

**Findings:** Seismic Wire Rope/Cable™ Bracing meets the requirements for tension-only bracing systems using the requirements of ASCE/SEI 19-10, as referenced in the following section of the applicable code edition:

2012 *International Building Code*® (IBC)  
Applicable Section: 2208.1

## Identification:

1. Each component of the Seismic Wire Rope/Cable™ Bracing is identified with a label indicating the manufacturer's name and address, the product name, the part number of the component, the ICC-ES Listing Report Number (ESL-1007), and when applicable, the ICC-ES Listing Mark.

- The report holder's contact information is the following:

LOOS & CO., INC.  
 901 INDUSTRIAL BOULEVARD  
 NAPLES, FLORIDA 34104  
 (800) 321-5667  
[www.loosseismicbracing.com](http://www.loosseismicbracing.com)

**Installation:** The system must be installed in accordance with the Loos & Co., Inc., installation instructions.

**Conditions of Listing:**

- This listing report addresses only those findings noted above.
- Approval of the products' use is the sole responsibility of the local code official.
- This listing report applies only to the materials tested and as submitted for review by ICC-ES.
- Use the load combinations of ASCE/SEI 19 as modified by Section 2208.2 of the 2012 *International Building Code*<sup>®</sup>. The breaking strength must be higher than 1.5xT<sub>3</sub> and 1.5xT<sub>4</sub>.
- Steel cables must be color-coded as indicated in Tables 5 through 14, for field identification.
- All components of the cable assembly must be able to develop the minimum breaking strength of the steel cables as required in ASTM A1023, Table 9.

**TABLE 1—STRUCTURAL ATTACHMENT FITTING SERIES**

FITTING	SIZE
Structural Attachment Fitting (SAF)	SAF-1/4, SAF-3/8, SAF-1/2, SAF-5/8, SAF-3/4, SAF-7/8, SAF-1, SAF-1 1/4
Structural Attachment Fitting Retrofit (SAFR)	SAFR-1/4, SAFR-3/8, SAFR-1/2, SAFR-5/8
Structural Attachment Fitting 2 Way (SAF2)	SAF2-1/4, SAF2-3/8, SAF2-1/2, SAF2-5/8, SAF2-3/4, SAF2-7/8
Structural Attachment Fitting 2 Way Retrofit (SAF2-R)	SAF2-1/4 R, SAF2-3/8 R, SAF2-1/2 R, SAF2-5/8 R



STRUCTURAL ATTACHMENT FITTING (SAF)



STRUCTURAL ATTACHMENT FITTING RETROFIT (SAFR)



STRUCTURAL ATTACHMENT FITTING 2 WAY (SAF2)



STRUCTURAL ATTACHMENT FITTING 2 WAY RETROFIT (SAF2R)

**TABLE 2—OVAL SLEEVES**

COMPONENT NUMBER	REFERENCE CABLE DIAMETER (inch)
SL2-3P	<sup>3</sup> / <sub>32</sub>
SL2-4P	<sup>1</sup> / <sub>8</sub>
SL2-6P	<sup>3</sup> / <sub>16</sub>
SL2-8P	<sup>1</sup> / <sub>4</sub>

For SI: 1 inch = 25.4 mm.



OVAL SLEEVE

TABLE 3—LOW PRY FITTINGS

Component Number	Hole Diameter (inch)
LPF-1/4	0.260
LPF-3/8	0.415
LPF-1/2	0.525
LPF-5/8	0.660
LPF-3/4	0.798

For SI: 1 inch = 25.4 mm.



Low Pry Fitting (LPF)

TABLE 4—STAKE EYE AND CABLE ASSEMBLIES

STAKE-EYE PART NUMBER	CONFIGURATION
EY8-251-3P	1
EY8-376-3P	2
EY8-260-4P	1
EY8-376-4P	2
EY8-501-4P	2
EY8-505-6P	2
EY8-375-6P	2
EY8-625-8P	2



CONFIGURATION 1



CONFIGURATION 2

STAKE-EYE CONFIGURATION

**TABLE 5—STRUCTURAL ATTACHMENT FITTING (SAF) AND CABLE ASSEMBLY**  
(Fitting Mounted 0° to 90° from Line of Tension)

Cable Color Code	Nominal Cable Diameter (Inch)	Cable Construction	Cable End Fittings	Breaking Strength (lbf)
Green	3/16	7x19	SAF-5/8, SAF-3/4, SAF-7/8, SAF-1, AND SAF-1-1/4; and Oval Sleeve	4200
Orange	1/8	7x7	SAF-1/4, SAF-3/8, SAF-1/2, SAF-5/8, SAF-3/4, SAF-7/8, SAF-1, and SAF-1-1/4; and Oval Sleeve	1700
Gold	3/32	7x7	SAF-1/4, SAF-3/8, SAF-1/2, SAF-5/8, SAF-3/4, SAF-7/8, SAF-1, and SAF-1-1/4; and Oval Sleeve	920

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

**TABLE 6—STRUCTURAL ATTACHMENT FITTING (SAF2) AND CABLE ASSEMBLY**  
(Fitting Mounted 0° to 90° from Line of Tension)

Cable Color Code	Nominal Cable Diameter (Inch)	Cable Construction	Cable End Fittings	Breaking Strength (lbf)
Green	3/16	7x19	SAF2-5/8, SAF2-3/4, and SAF2-7/8; and Oval Sleeve	4200
Orange	1/8	7x7	SAF2-1/4, SAF2-3/8, SA2F-1/2, SAF2-5/8, SAF2-3/4, and SAF2-7/8; and Oval Sleeve	1700
Gold	3/32	7x7	SAF2-1/4, SAF2-3/8, SAF2-1/2, SAF2-5/8, SAF2-3/4, and SAF2-7/8; and Oval Sleeve	920

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

**TABLE 7—STRUCTURAL ATTACHMENT FITTING RETROFIT (SAFR) AND CABLE ASSEMBLY**  
(Fitting Mounted 0° to 90° from Line of Tension)

Cable Color Code	Nominal Cable Diameter (Inch)	Cable Construction	Cable End Fittings	Breaking Strength (lbf)
Orange	1/8	7x7	SAFR-1/4, SAFR-3/8, SAFR-1/2, and SAFR-5/8; and Oval Sleeve	1700
Gold	3/32	7x7	SAFR-1/4, SAFR-3/8, SAFR-1/2, and SAFR-5/8; and Oval Sleeve	920

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

**TABLE 8—STRUCTURAL ATTACHMENT FITTING RETROFIT 2 (SAF2-R) AND CABLE ASSEMBLY**  
(Fitting Mounted 0° to 90° from Line of Tension)

Cable Color Code	Nominal Cable Diameter (Inch)	Cable Construction	Cable End Fittings	Breaking Strength (lbf)
Orange	1/8	7x7	SAF2-1/4R, SAF2-3/8R, SAF2-1/2R, and SAF2-5/8R; and Oval Sleeve	1700
Gold	3/32	7x7	SAF2-1/4R, SAF2-3/8R, SAF2-1/2R, and SAF2-5/8R; and Oval Sleeve	920

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

**TABLE 9—LOW PRY FITTING (LPF) AND CABLE ASSEMBLY**  
(Fitting Mounting 0° to 90° from Line of Tension)

Cable Color Code	Nominal Cable Diameter (Inch)	Cable Construction	Cable End Fittings	Breaking Strength (lbf)
Orange	1/8	7x7	LPF-1/4, LPF-3/8, LPF-1/2, LPF-5/8, and LPF-3/4; and Oval Sleeve	1700
Gold	3/32	7x7	LPF-1/4, LPF-3/8, LPF-1/2, LPF-5/8, and LPF-3/4; and Oval Sleeve	920

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

**TABLE 10—BENT (45°) STAKE EYE AND CABLE ASSEMBLY WITH STAKE EYE**  
(Mounted 0° to 90° from Line of Tension)

Cable Color Code	Nominal Cable Diameter (Inch)	Cable Construction	Cable End Fittings	Breaking Strength (lbf)
Orange	1/8	7x7	EY8-260-4P	1700
Gold	3/32	7x7	EY8-251-3P, EY8-376-3P	920

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

**TABLE 11—BENT (45°) STAKE EYE AND CABLE ASSEMBLY WITH STAKE EYE**  
(Mounted 0° to 60° from Line of Tension)

Cable Color Code	Nominal Cable Diameter (Inch)	Cable Construction	Cable End Fittings	Breaking Strength (lbf)
Green	<sup>3</sup> / <sub>16</sub>	7x19	EY8-375-6P, EY8-505-6P	4200
Orange	<sup>1</sup> / <sub>8</sub>	7x7	EY8-260-4P, EY8-376-4P, EY8-501-4P	1700
Gold	<sup>3</sup> / <sub>32</sub>	7x7	EY8-251-3P, EY8-376-3P	920

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

**TABLE 12—STRAIGHT STAKE EYE AND CABLE ASSEMBLY WITH STAKE EYE**  
(Mounted In Line with Tension - 0° angle)

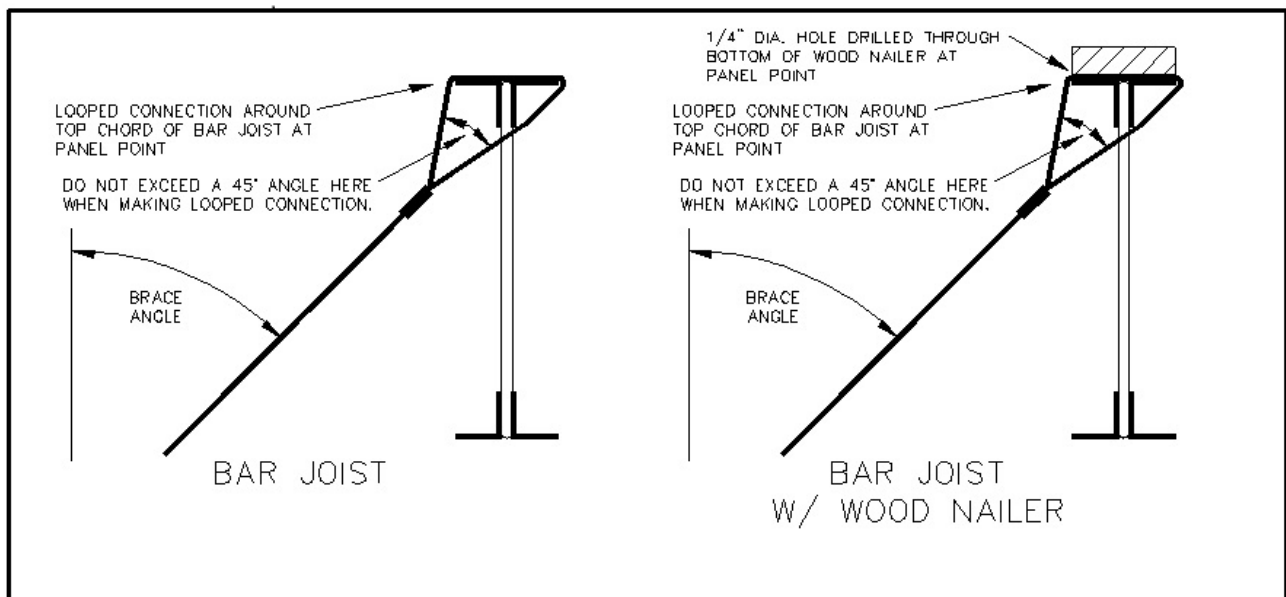
Cable Color Code	Nominal Cable Diameter (Inch)	Cable Construction	Cable End Fittings	Breaking Strength (lbf)
Black	<sup>1</sup> / <sub>4</sub>	7x19	EY8-625-8P	7000
Green	<sup>3</sup> / <sub>16</sub>	7x19	EY8-375-6P, EY8-505-6P	4200
Orange	<sup>1</sup> / <sub>8</sub>	7x7	EY8-260-4P, EY8-376-4P, EY8-501-4P	1700
Gold	<sup>3</sup> / <sub>32</sub>	7x7	EY8-251-3P, EY8-376-3P	920

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

**TABLE 13—CABLE LOOP ON BAR JOIST**  
(In Line with Tension - 0° angle)

Cable Color Code	Nominal Cable Diameter (Inch)	Cable Construction	Cable End Fittings	Breaking Strength (lbf)
Black	<sup>1</sup> / <sub>4</sub>	7x19	Cable Loop with Oval Sleeve	7000
Green	<sup>3</sup> / <sub>16</sub>	7x19	Cable Loop with Oval Sleeve	4200
Orange	<sup>1</sup> / <sub>8</sub>	7x7	Cable Loop with Oval Sleeve	1700
Gold	<sup>3</sup> / <sub>32</sub>	7x7	Cable Loop with Oval Sleeve	920

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



**BAR JOIST LOOP**

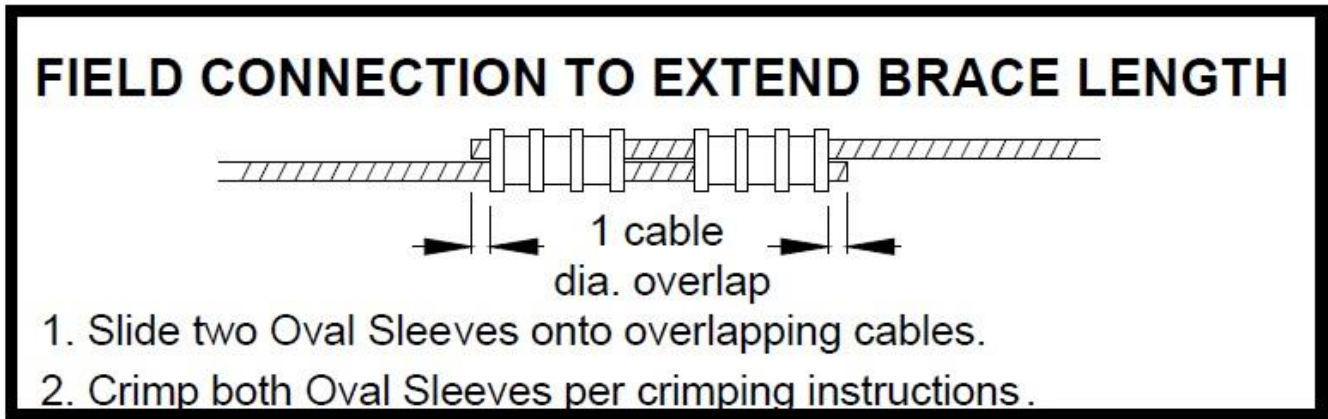
**TABLE 14—CABLE SPLICE WITH OVAL SLEEVES**  
(In Line with Tension [0° angle])

Cable Color Code	Nominal Cable Diameter (Inch)	Cable Construction	Cable End Fittings	Breaking Strength (lbf)
Black	$\frac{1}{4}$	7x19	SL2-8P Oval Sleeves <sup>1</sup>	7000
Green	$\frac{3}{16}$	7x19	SL2-6P Oval Sleeves <sup>1</sup>	4200
Orange	$\frac{1}{8}$	7x7	SL2-4P Oval Sleeves <sup>1</sup>	1700
Gold	$\frac{3}{32}$	7x7	SL2-3P Oval Sleeves <sup>1</sup>	920

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

Note:

<sup>1</sup>Two Oval Sleeves are required.



CABLE SPLICE