

ICC-ES Evaluation Report

ESR-4742

Reissued September 2024

Revised October 2024

Subject to renewal September 2026


This report also contains:

- [County of LA Supplement](#)

- [CA Supplement](#)

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| <p>DIVISION: 23 00 00— HEATING, VENTILATING AND AIR CONDITIONING (HVAC)</p> <p>Section: 23 05 29— Hangers and Supports for HVAC Piping and Equipment</p> | <p>REPORT HOLDER: DMI COMPANIES</p> | <p>EVALUATION SUBJECT: DUCTMATE CABLE SHARK CABLE HANGING SYSTEM</p> |  |
|--|---|--|---|

1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2021, 2018, and 2015 [International Building Code® \(IBC\)](#)
- 2021, 2018, and 2015 [International Residential Code® \(IRC\)](#)
- 2021, 2018, and 2015 [International Mechanical Code® \(IMC\)](#)
- 2021, 2018, and 2015 [Uniform Mechanical Code® \(UMC\)](#)

Properties evaluated:

- Structural

2.0 USES

The Ductmate Cable Shark Cable Hanging System is an HVAC duct support or suspension system used to resist static tension loads with wire rope and a wire clamping device; the system is used to support duct work functioning in heating and cooling systems in accordance with IRC Section M1601 and IMC Section 603, which are referenced in IBC Section 2801.

The Ductmate Cable Shark Cable Hanging System may also be used to support ducts functioning in heating and cooling systems in accordance with UMC Section 603.

3.0 DESCRIPTION

3.1 General:

The Ductmate Cable Shark Cable Hanging System consists of Cable Shark Cable and the Cable Shark device. The Cables Shark cable is available in two series: Cable Shark Cable 125 (CSW125) and Cable Shark Cable 250 (CSW250). The Cable Shark device comes in two series: Cable Shark 125 (CS125) and Cable Shark 250 (CS250). The Cable Shark CS125 is to be used with the Cable Shark Cable CSW125; and the Cable Shark CS250 is to be used with the Cable Shark Cable CSW250.

3.2 Components:

3.2.1 Cable Shark Cable - CSW125: The CSW125 cable consists of ASTM A1023 0.098-inch (2.5 mm) diameter, 7x7 strand construction, and comes in a galvanized zinc coated finish in either spools of 500 ft (152.4 m) or 1,000 ft (304.8 m) lengths or in pre-cut lengths ranging from 5 ft (1.52 m) to 20 ft (6.10 m).

3.2.2 Cable Shark Cable - CSW250: The CSW250 cable consists of ASTM A1023 0.158-inch (4 mm) diameter, 7x7 strand construction, and comes in a galvanized zinc coated finish in either spools of 500 ft (152.4 m) or 1,000 ft (304.8 m) lengths or in pre-cut lengths ranging from 5 ft (1.82 m) to 20 ft (6.10 m).

3.2.3 Cable Shark 125 (CS125) Device: The CS125 consists of the following components: 1.25 inch wide by 1.35 inch long by 0.63 thick (31.8 mm by 34.3 mm by 15.9 mm) zinc-cast ZAMAK 3 housing, with two serrated hybrid low alloy FLN-4205-175HT steel wedges, two ASTM A228 zinc coated steel springs, and two ZAMAK 3 zinc-casted end caps.

3.2.4 Cable Shark 250 (CS250) Device: The CS250 consists of the following components: 1.47 inch wide by 1.78 inch long by 0.63 thick (37.3 mm by 45.2 mm by 15.9 mm) zinc-cast ZAMAK 3 housing, with two serrated hybrid low alloy FLN-4205-175HT steel wedges, two ASTM A228 zinc coated steel spring, and two ZAMAK 3 zinc-casted end caps.

4.0 DESIGN AND INSTALLATION

4.1 Design:

The maximum allowable static tension load for a single suspension Cable Shark 125 with Cable Shark Cable 125 is 125 pounds (56.7 kg); and the maximum allowable static tension load for a single suspension Cable Shark 250 with Cable Shark Cable 250 is 250 pounds (113.4 kg).

4.2 Installation:

Installation of the Cable Shark Cable Hanging System must be in accordance with this report, the approved plans and the manufacturer's printed installation instructions. The manufacturer's printed installation instructions must always be available at the jobsite during installation.

The type of hanging method depends on the application. For round ductwork, the Single Point Saddle, Standard Horseshoe, Spread Horseshoe, and Standard Loop configurations may be used. For rectangular and oval ductwork, only the Standard Horseshoe or Spread Horseshoe configurations may be used. See [Figure 1](#) for duct work shapes. All rigid metal ducts (round and rectangular) must be constructed in accordance with the SMACNA requirements.

The Cable Shark 125 (CS125), when used in the Standard Loop configuration, is limited to round duct diameters 10 inches (254 mm) or less. The Cable Shark 250 (CS250), when used in the Standard Loop configuration, is limited to round duct diameters 18 inches (457.2 mm) or less. See [Figures 2](#) through [5](#) for configurations. When used on round duct diameters greater than 10 inches (254 mm) for the Cable Shark 125 (CS125) or greater than 18 inches (456.2 mm) for the Cable Shark 250, the CS125 or CS250 must be placed at a distance of $\frac{1}{2}$ the diameter of the duct above the duct, see [Figure 6](#) for details.

See [Table 1](#) for maximum allowable non-vertical static tension loads based on Cable Shark devices (CS125 or CS250) using either hanging method configuration: Single Point Saddle or Spread Horseshoe.

4.3 Special Inspection for Seismic Resistance:

Periodic special inspection for seismic resistance is required in accordance with IBC Section 1705.13.6 (2018 and 2015 IBC Section 1705.12.6), as applicable. The special inspector must make periodic inspections during installation of duct work and their duct supports; and must be present as often as required in accordance with the "statement of special inspection".

5.0 CONDITIONS OF USE:

The Ductmate Cable Shark Cable Hanging System 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** Installation of the Ductmate Cable Shark Cable Hanging System must be in accordance with this report, the approved plans and the manufacturer's printed installation instructions. In the event of a conflict between this report and the manufacturer's printed installation instructions, the more restrictive requirement governs.
- 5.2** The duct work system and construction must comply with IRC Section M1601, IMC Section 603, and UMC Section 603.
- 5.3** Special Inspection for seismic resistance must be provided in accordance with Section 4.3.
- 5.4** Seismic forces in accordance with IBC Chapter 16 shall be calculated for duct supports and provided to the code official for approval, with the following exceptions:
 - a. When located in Seismic Design Category A or B regardless of the Importance Factor (I_p) value.
 - b. When located in Seismic Design Category C, if the Importance Factor (I_p) = 1.0.

- c. When located in Seismic Design Category C, D, E or F, ducts that weigh 5 pounds per linear foot or less are exempt, regardless of the Importance Factor (I_p) value.
- d. When Importance Factor (I_p) = 1.0 and either of the following:
 1. HVAC ducts are suspended from 12 inches (305 mm) or less in length from the top of the duct to the supporting structure.
 2. HVAC ducts having a cross-sectional area of less than 6 square feet (0.557 m²).

The calculations must be performed by a registered design professional. The calculated seismic forces must be less than the allowable loads as noted in Section 4.1 and [Table 1](#).

- 5.5 Connection of the wire rope to the supporting structure and the structure's ability to transfer the imposed loads are outside the scope of this report.
- 5.6 Use of the Ductmate Cable Shark Cable Hanging System in exterior applications is outside the scope of this report.
- 5.7 The Ductmate Cable Shark Cable Hanging System is manufactured under an approved quality control program with inspections by ICC-ES.

6.0 EVIDENCE SUBMITTED

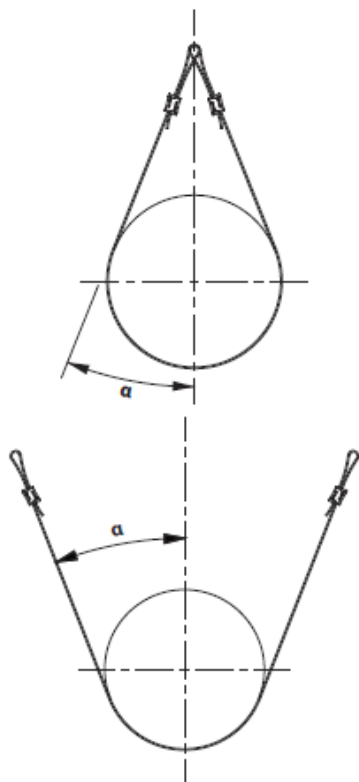
Data in accordance with the [ICC-ES Acceptance Criteria for HVAC Duct Supports \(AC284\)](#), dated April 2007 (editorially revised August 2021).

7.0 IDENTIFICATION

- 7.1 The ICC-ES mark of conformity, electronic labeling, or the evaluation report number (ICC-ES ESR-4742) along with the name, registered trademark, or registered logo of the report holder must be included in the product label.
- 7.2 In addition, the product labeling must include the components associated with the Ductmate Cable Shark Cable Hanging System (CSW125, CSW250, CS125 and CS250), and the manufacturing date. The evaluation report number (ICC-ES ESR-4742) may be used in lieu of the mark of conformity.
- 7.3 The report holder's contact information is the following:

DMI COMPANIES
210 FIFTH STREET
CHARLEROI, PENNSYLVANIA 15022
(800) 245-3188
www.dmicompanies.com

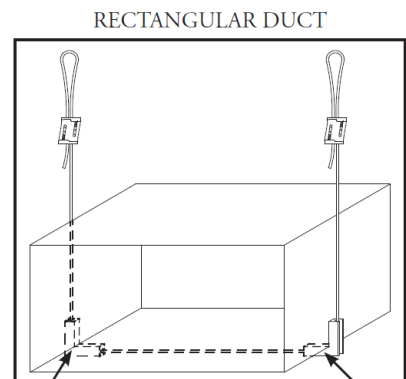
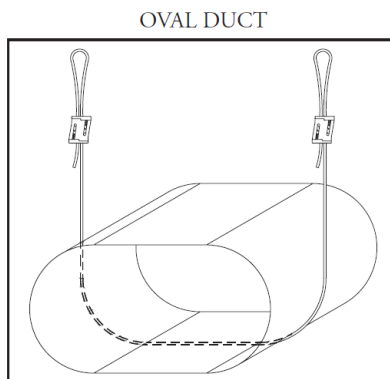
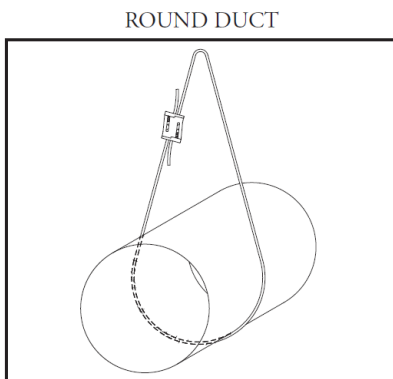
**TABLE 1—HANGING METHODS – SINGLE POINT SADDLE AND SPREAD HORSESHOE CONFIGURATIONS
MAXIMUM ALLOWABLE STATIC TENSION LOADS BASED ON ANGLE**



| ANGLE (α) | CS125 MAXIMUM LOAD (lbs) ¹ | CS250 MAXIMUM LOAD (lbs) ¹ |
|-----------|---------------------------------------|---------------------------------------|
| 0 | 250 | 500 |
| 5 | 250 | 500 |
| 10 | 250 | 500 |
| 15 | 250 | 500 |
| 20 | 250 | 500 |
| 25 | 250 | 500 |
| 30 | 250 | 480 |
| 35 | 241 | 454 |
| 40 | 226 | 425 |
| 45 | 208 | 392 |
| 50 | 189 | 356 |
| 55 | 169 | 318 |
| 60 | 147 | 277 |

For SI: 1 lb = 4.45 N

¹Loads are valid for dual suspension points if CS125 or CS250 devices are used.



Rectangular Duct Corner Saddles
Part No. HFCCS

The Corner Saddle is designed to eliminate abrasion of rectangular ductwork with the use of a Cable Shark Cable hanging system.

FIGURE 1—DUCT WORK SHAPES USED WITH DUCTMATE CABLE SHARK CABLE HANGING SYSTEM

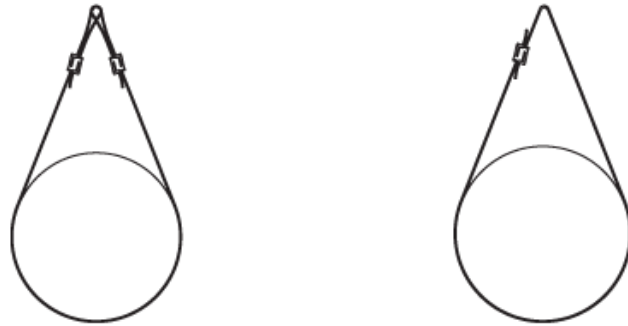


FIGURE 2—HANGING METHOD – SINGLE POINT SADDLE CONFIGURATION

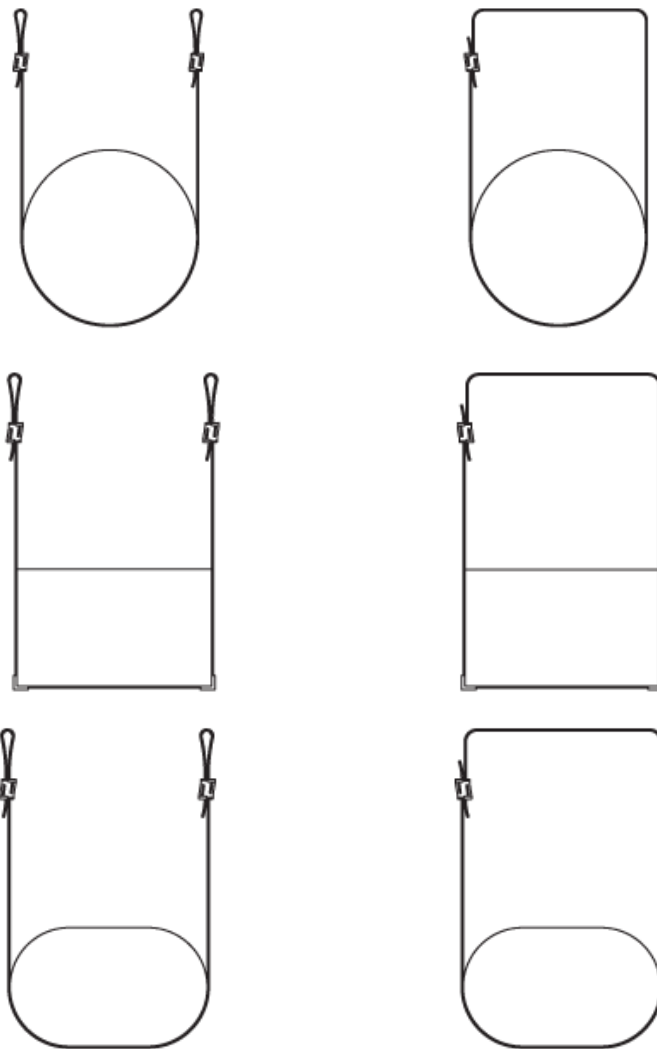


FIGURE 3—HANGING METHOD – STANDARD HORSESHOE CONFIGURATION

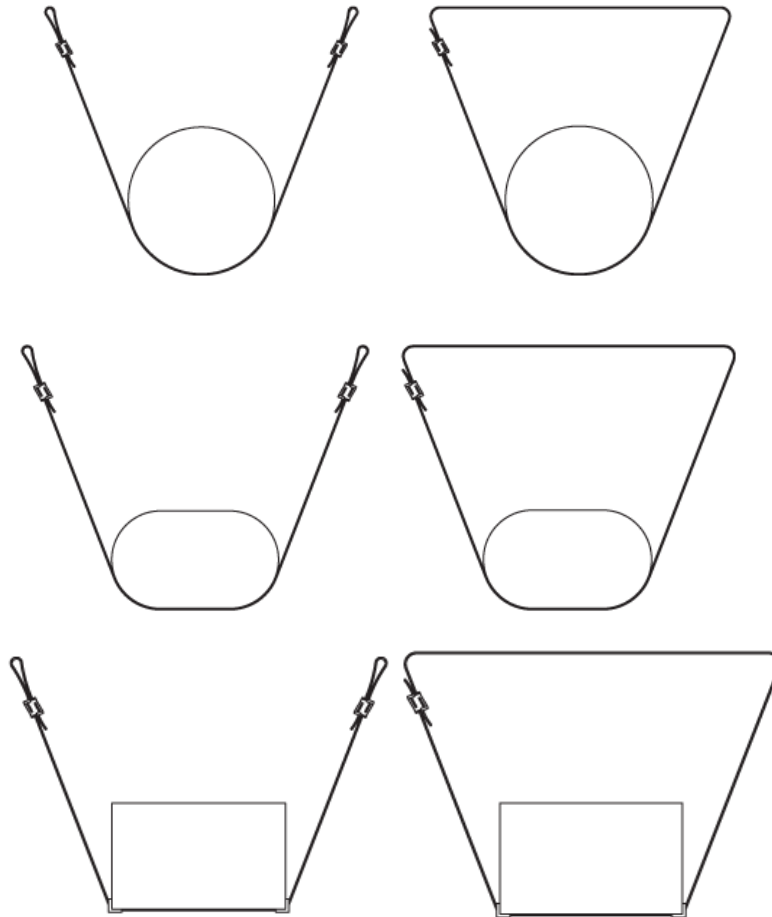


FIGURE 4—HANGING METHOD – SPREAD HORSESHOE CONFIGURATION



FIGURE 5—HANGING METHOD – STANDARD LOOP CONFIGURATION

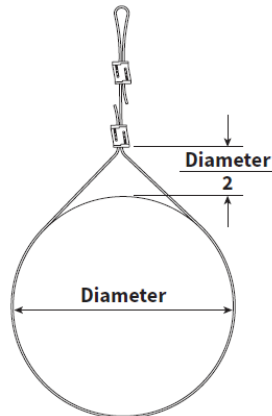


FIGURE 6—CABLE SHARK 125 (CS125) OR CABLE SHARK 250 (CS250) DEVICE LOCATION WHEN INSTALLED IN STANDARD LOOP CONFIGURATION

DIVISION: 23 00 00—HEATING, VENTILATING AND AIR CONDITIONING (HVAC)

Section: 23 05 29—Hangers and Supports for HVAC Piping and Equipment

REPORT HOLDER:

DMI COMPANIES

EVALUATION SUBJECT:

DUCTMATE CABLE SHARK CABLE HANGING SYSTEM

1.0 REPORT PURPOSE AND SCOPE

Purpose:

The purpose of this evaluation report supplement is to indicate that the Ductmate Cable Shark Cable Hanging System, described in ICC-ES evaluation report [ESR-4742](#), has also been evaluated for compliance with the codes noted below as adopted by the Los Angeles County Public Works.

Applicable code editions:

- 2023 County of Los Angeles Building Code ([LACBC](#))
- 2023 County of Los Angeles Residential Code ([LACRC](#))
- 2023 County of Los Angeles Mechanical Code ([LACMC](#))

2.0 CONCLUSIONS

The Ductmate Cable Shark Cable Hanging System, described in Sections 2.0 through 7.0 of the evaluation report [ESR-4742](#), complies with the LACBC, LACRC and LACMC, and is subject to the conditions of use described in this supplement.

3.0 CONDITIONS OF USE

The Ductmate Cable Shark Cable Hanging System described in this evaluation report supplement must comply with all of the following conditions:

- All applicable sections in the evaluation report [ESR-4742](#).
- The design, installation, conditions of use and identification of the Ductmate Cable Shark Cable Hanging System are in accordance with the 2021 *International Building Code*® (IBC), 2021 *International Residential Code*® (IRC) provisions and 2021 *Uniform Mechanical Code*® (UMC) provisions, as applicable, noted in the evaluation report [ESR-4742](#)
- The design, installation and inspection are in accordance with additional requirements of LACBC Chapters 16, 17 and 28, 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, reissued September 2024 and revised October 2024.

DIVISION: 23 00 00—HEATING, VENTILATING, AND AIR CONDITIONING (HVAC)

Section: 23 05 29—Hangars and Supports for HVAC Piping and Equipment

REPORT HOLDER:

DMI COMPANIES

EVALUATION SUBJECT:

DUCTMATE CABLE SHARK CABLE HANGING SYSTEM

1.0 REPORT PURPOSE AND SCOPE

Purpose:

The purpose of this evaluation report supplement is to indicate that Ductmate Cable Shark cable hanging system, described in ICC-ES evaluation report ESR-4272, has also been evaluated for compliance with the codes noted below.

Applicable code editions:

- 2022 California Building Code (CBC)

For evaluation of applicable Chapters adopted by the California Office of Statewide Health Planning and Development (OSHPD) AKA: California Department of Health Care Access and Information (HCAI) and the Division of State Architect (DSA), see Sections 2.1.1 and 2.1.2 below.

- 2022 California Residential Code (CRC)
- 2022 California Mechanical Code (CMC)

2.0 CONCLUSIONS

2.1 CBC:

The Ductmate Cable Shark cable hanging system, described in Sections 2.0 through 7.0 of the evaluation report ESR-4272, complies with CBC Chapter 28, provided the design and installation are in accordance with the 2021 *International Building Code*® (IBC) provisions noted in the evaluation report and the additional requirements of CBC Chapters 16, 17 and 28, as applicable.

2.1.1 OSHPD:

The applicable OSHPD Sections and Chapters of the CBC are beyond the scope of this supplement.

2.1.2 DSA:

The applicable DSA Sections and Chapters of the CBC are beyond the scope of this supplement.

2.2 CRC:

The Ductmate Cable Shark cable hanging system, described in Sections 2.0 through 7.0 of the evaluation report ESR-4272, complies with CRC, provided the design and installation are in accordance with the 2021 *International Residential Code*® (IRC) provisions noted in the evaluation report.

2.3 CMC:

The Ductmate Cable Shark cable hanging system, described in Sections 2.0 through 7.0 of the evaluation report ESR-4272, complies with CMC, provided the design and installation are in accordance with the 2021 *Uniform Mechanical Code*® (UMC) provisions noted in the evaluation report.

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