

# ICC-ES Evaluation Report

**ESR-1508**

Effective Date July 1, 2011

This report is subject to re-examination in two years.

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**DIVISION: 23 00 00—MECHANICAL**  
**Section: 23 33 46.13—Hangers and Supports****REPORT HOLDER:****DUCT SADDLE, LLC**  
**1828 CAROL SUE AVENUE**  
**GRETNA, LOUISIANA 70056**  
**(504) 392-1833****EVALUATION SUBJECT:****DUCT SADDLE MODELS DS456, DS712, and DS1420****1.0 EVALUATION SCOPE****Compliance with the following codes:**

- # 2012, 2009 and 2006 *International Mechanical Code*® (IMC)
- # 20012, 2009 and 2006 *International Residential Code*® (IRC)

**Property evaluated:**

Physical properties

**2.0 USES**

Duct Saddle is an HVAC duct support or suspension system used to support insulated Class 1 flexible ducts, up to 20 inches (508 mm) in diameter, functioning in heating and cooling systems under Chapter 6 of the IMC and Chapter 16 of the IRC.

**3.0 DESCRIPTION**

Duct Saddle is designed to support or suspend flexible air duct above the ceiling insulation and is composed of two distinct parts, the saddle and the support pole (see Figure 1). Both the saddle and the support pole are fabricated from 24 gage, galvanized, ASTM A 653 steel with a minimum base-metal thickness of 0.023 inch (0.584 mm). The saddle is a 6-inch-wide (152.4 mm) "C" shaped section into which the duct is placed. Duct loads are transferred from the saddle to the structure through a support pole. The support pole consists of a 17-inch-long (431.8 mm), 1½-inch-wide-by-1¼-inch-deep (25.4 by 19.05 mm) channel. The support channel is factory-riveted to a tab which allows the saddle to rotate to align with the duct. The other end of the support pole is then attached to wood-framing members elevating the saddle and the supported duct, as desired. The support pole can be attached to wood support members either above or below the duct, with a maximum installed deviation from vertical

of 20 degrees. A 6-inch-wide (152.4 mm), 0.013-inch-thick (0.33 mm) collar snaps into prepunched holes and grooves in the saddle to hold the duct when the support channel is attached from above. Duct Saddle is manufactured in three models to support the various diameters of flexible air duct: Model DS 456 supports ducts from 4 to 6 inches (101.6 to 152.4 mm) in diameter, Model DS 712 supports ducts from 7 to 12 inches (177.8 by 304.8 mm) in diameter and Model DS 1420 supports ducts from 14 to 20 inches (355.6 by 508 mm) in diameter.

**4.0 INSTALLATION**

Duct Saddle supports must be placed a maximum of 4 feet (1219 mm) on center. The support channel length can be adjusted by field-cutting. Where fastened to nominally 2-inch-wide (50.8 mm) ceiling joists or roof rafters with two #8 sheet metal screws, each a minimum of 0.75 inch (19 mm) long, spaced 2 inches (50.8 mm) apart, the maximum support weights are noted in Table 1.

**5.0 CONDITIONS OF USE**

The Duct Saddle supports 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 duct system must be sized in accordance with the applicable code.
- 5.2** The flexible duct must conform to Chapter 6 of the IMC or Chapter 16 of the IRC, as applicable, and must be installed in accordance with the manufacturer's installation instructions, except as modified herein. Where conflicts exist between the manufacturer's published installation instructions and this report, the instructions in this report must govern.
- 5.3** Resistance to seismic forces must be determined for duct supports and provided to the code official for approval. The calculations must be performed by a registered design professional. The calculated seismic forces must be less than the allowable loads shown in Table 1.

## 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 Categories C, D, E, or F that weigh 5 pounds per linear foot or

less regardless of the Importance Factor ( $I_p$ ) value.

d. When located in Seismic Design Categories A, B, C, D, E or F, and the Importance Factor ( $I_p$ ) = 1.0.

5.4 Connection of the support pole to the structure and the structure's ability to transfer the imposed load are beyond the scope of this report.

5.5 Use of Duct Saddle supports in exterior applications is beyond the scope of this report.

**6.0 EVIDENCE SUBMITTED**

Data in accordance with the ICC-ES Acceptance Criteria for HVAC Duct Supports (AC284), dated April 2007.

**7.0 IDENTIFICATION**

Each Duct Saddle bears a label displaying the name of the report holder (Duct Saddle LLC), the date of manufacture, and the evaluation report number (ESR-1508).

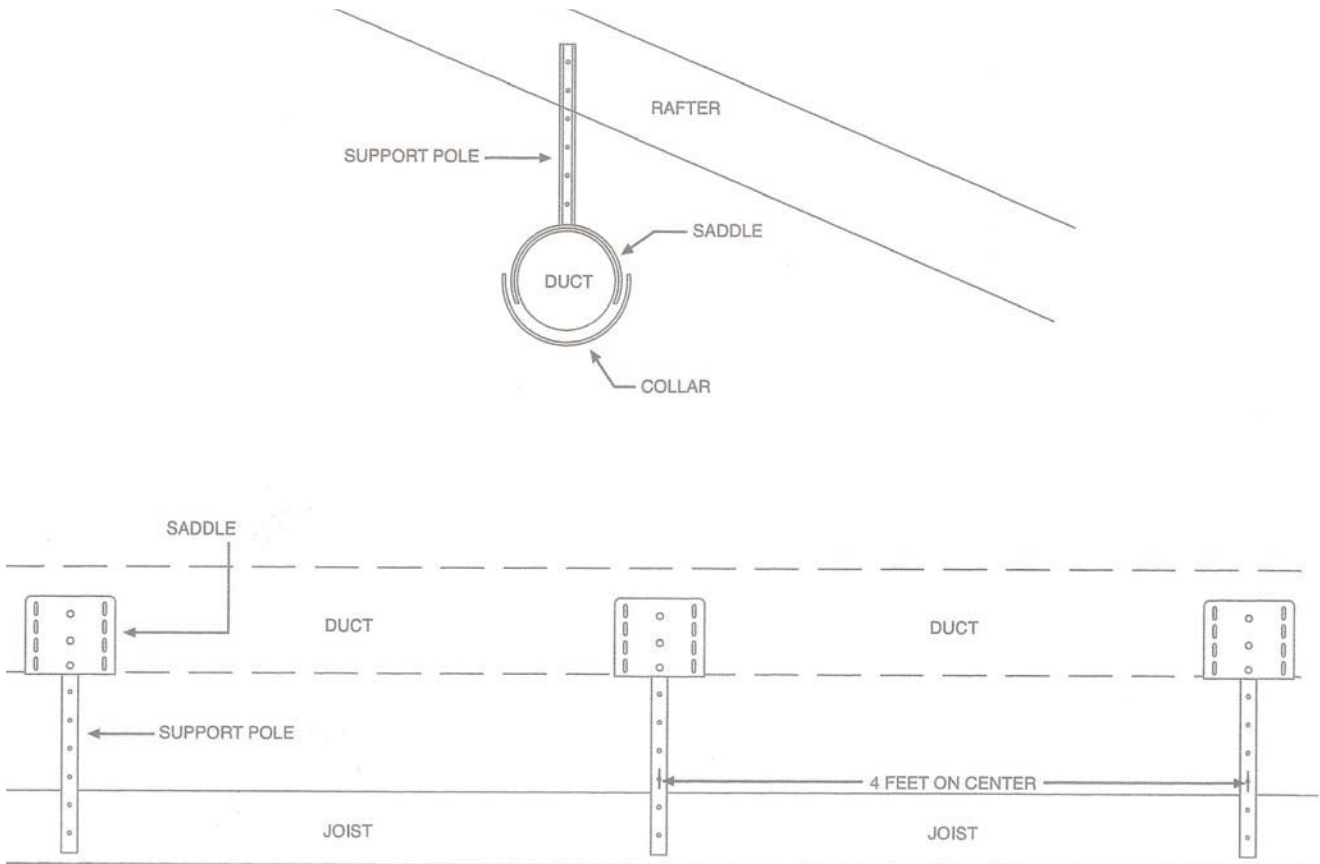
**TABLE 1—MAXIMUM LOAD CAPACITY<sup>1</sup>**

TYPE OF LOAD FOR TYPE OF INSTALLATION	ANGLE FROM VERTICAL (degrees)				
	0° Vertical	5°	10°	15°	20°
Compressive load capacity (pounds) <sup>2</sup>	251	250	247	242	236
Tension load capacity (pounds) <sup>3</sup>	96	95	94	92	90

<sup>1</sup>Loads shown reflect a safety factor of 3.

<sup>2</sup>Where installed connected to ceiling joist - the duct load is transferred down through the support pole to the ceiling joists.

<sup>3</sup>Where installed connected to roof rafters - the duct load is transferred upward and into the structure from above.



**FIGURE 1—DUCT SADDLE**