

ICC-ES Evaluation Report

ESR-5208

Issued December 2024

This report also contains:


- [CA Supplement](#)

Subject to renewal December 2025

- [FL Supplement](#)

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<p>DIVISION: 07 00 00- THERMAL AND MOISTURE PROTECTION</p> <p>Section: 07 65 00 – Flexible Flashing</p>	<p>REPORT HOLDER: K2 SYSTEMS, LLC</p>	<p>EVALUATION SUBJECT: MINIRAIL COMP, SPLICE FOOT X, SPLICE FOOT XL, MULTIMOUNT AND K2 CONDUIT CLAMP KIT</p>	
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1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2021 and 2018 [International Building Code® \(IBC\)](#)
- 2021 and 2018 [International Residential Code® \(IRC\)](#)

Property evaluated:

- Durability
- Water Resistance

2.0 USES

The MiniRail Comp, Splice Foot X, Splice Foot XL, MultiMount and K2 Conduit Clamp Kit are solar photovoltaic mounting system used as flashing at roof penetrations which result during installation of the bracket on the roof structures of roofs covered with asphalt shingles.

3.0 DESCRIPTION

3.1 MiniRail Comp:

The MiniRail Comp is composed of metal bracket, #14 x 3" x 5/16" screws and butyl tape used to seal penetrations created during installation. The MiniRail Comp bracket is made from aluminum. The screws are made from stainless steel having a hex head, and installed with a 18-8 stainless steel washer and an EPDM Shore A 77 rubber washer. The butyl tape is a butyl-based rubber and has a nominal thickness of 3/16" (4.8 mm). See [Figure 1](#) for an assembly of components.

3.2 Splice Foot X:

The Splice Foot is composed of a metal bracket, M5 x 60 screws and butyl tape used to seal penetrations created during installation. The Splice Foot X bracket is made from aluminum. The screws are made from 18-8 stainless steel having a hex head, and installed with a 18-8 stainless steel washer and an EPDM Shore A 77 rubber washer. The butyl tape is a butyl-based rubber and has a nominal thickness of 3/16" (4.8 mm). See [Figure 2](#) for an assembly of components.

3.3 Splice Foot XL:

The Splice Foot XL is composed of a metal bracket, #14 x 3" x 5/16" screws and butyl tape used to seal penetrations created during installation. The Splice Foot XL bracket is made from aluminum. The screws are

made from stainless steel having a hex head, and installed with a 18-8 stainless steel washer and an EPDM Shore A 77 rubber washer. The butyl tape is a butyl-based rubber and has a nominal thickness of $\frac{3}{16}$ " (4.8 mm). See [Figure 3](#) for an assembly of components.

3.4 MultiMount:

The MultiMount is composed of a metal bracket, #14 x 3" x $\frac{5}{16}$ " screws and butyl tape used to seal penetrations created during installation. The MultiMount bracket is made from aluminum. The screws are made from stainless steel having a hex head, and installed with a 18-8 stainless steel washer and an EPDM Shore A 77 rubber washer. The butyl tape is a butyl-based rubber and has a nominal thickness of $\frac{1}{8}$ " (3.2 mm). See [Figure 4](#) for diagram of mount and butyl.

3.5 K2 Conduit Clamp:

The K2 Conduit Clamp is composed of a metal bracket, #14 x 3" x $\frac{5}{16}$ " screw and butyl tap used to seal penetration created during installation. The K2 Conduit Clamp is made from stainless steel. The screw is made from stainless steel having a hex head, and installed with a 18-8 stainless steel washer and an EPDM Shore A 77 rubber washer. The butyl tape is a butyl-based rubber and has a nominal thickness of $\frac{3}{32}$ " (2.4 mm). See [Figure 5](#) for an assembly of components.

4.0 INSTALLATION

The installation of the MiniRail Comp, Splice Foot X, Splice Foot XL, MultiMount and K2 Conduit Clamp Kit solar photovoltaic mounting systems must comply with this report and the manufacturer's published installation instructions. The manufacturer's installation instructions must be available at the jobsite at all times during installation.

The mounting bracket must be installed over the roof covering at the determined location. The Butyl Tape is placed beneath the bracket and over the roof covering. The screws are then used to fasten the bracket to the roof. The MiniRail Comp, Splice Foot X, Splice Foot XL, MultiMount and K2 Conduit Clamp Kit with Ever Seal solar photovoltaic mounting systems have been evaluated to be installed on roofs covered with asphalt shingles with a minimum slope of 2:12 (17 percent) and the maximum slope of 12:12 (100 percent).

5.0 CONDITIONS OF USE:

The MiniRail Comp, Splice Foot X, Splice Foot XL, MultiMount and K2 Conduit Clamp Kit with Ever Seal solar photovoltaic mounting systems described in this report comply with, or are suitable alternatives to what is specified in the code indicated in Section 1.0 of this report, subject to the following conditions:

- 5.1 The MiniRail Comp, Splice Foot X, Splice Foot XL, MultiMount and K2 Conduit Clamp Kit with Ever Seal solar photovoltaic mounting systems must be installed in accordance with this report and the manufacturer's published installation instructions. In the event of a conflict between this report and the manufacturer's published installation instructions, this report governs.
- 5.2 The structural capacity of the MiniRail Comp, Splice Foot X, Splice Foot XL, MultiMount and K2 Conduit Clamp Kit mounting brackets and their connection to the roof is outside the scope of this report and must be determined by a registered design professional to the satisfaction of the code official.
- 5.3 The MiniRail Comp, Splice Foot X, Splice Foot XL, MultiMount and K2 Conduit Clamp Kit solar photovoltaic mounting systems are manufactured under a quality control program with inspections by ICC-ES.

6.0 EVIDENCE SUBMITTED

- 6.1 Report of tests for rain test data in accordance with Section 4.1 of the [Acceptance Criteria for Roof Flashing for Pipe Penetrations \(AC286\)](#), dated October 2012 (editorially revised September 2021).
- 6.2 Report of tests in accordance with ASTM D1970 Section 7.5 Thermal Stability; Section 7.9 Capability to Seal around Nail.
- 6.3 Report of tests for thermal cycling in accordance with Section 4.5.4 of the [ICC-ES Acceptance Criteria for Membrane Roof-covering Systems \(AC75\)](#), dated July 2010 (editorially revised April 2021).
- 6.4 Quality Documentation in accordance with the [ICC-ES Acceptance Criteria for Quality Documentation \(AC10\)](#) dated November 2021.
- 6.5 Report holder's published installation instructions.

7.0 IDENTIFICATION

- 7.1 The ICC-ES mark of conformity, electronic labeling, or the evaluation report number (ICC-ES ESR-5208) 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 MiniRail Comp, Splice Foot X, Splice Foot XL, MultiMount and K2 Conduit Clamp Kit solar photovoltaic mounting systems are identified with a label bearing the report holder's name (K2 Systems, LLC), the product name or designation, and the evaluation report number (ESR-5208).
- 7.3 The report holder's contact information is the following:

K2 SYSTEMS, LLC
4665 NORTH AVENUE, SUITE G & I
OCEANSIDE, CALIFORNIA 92056
(760) 301-5300
k2-systems.com/en-us/
info@k2-systems.com



FIGURE 1—MiniRail Comp



FIGURE 2—Splice Foot X

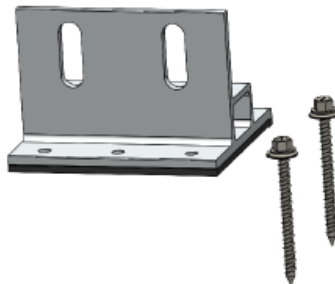


FIGURE 3—Splice Foot XL

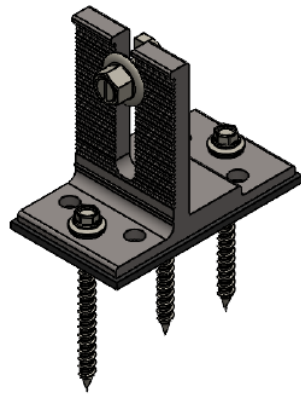


FIGURE 4—Multi Mount



FIGURE 5—K2 Conduit Clamp

DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION

Section: 07 65 00—Flexible Flashing

REPORT HOLDER:

K2 SYSTEMS, LLC

EVALUATION SUBJECT:

MINIRAIL COMP, SPLICE FOOT X, SPLICE FOOT XL, MULTIMOUNT AND K2 CONDUIT CLAMP KIT

1.0 REPORT PURPOSE AND SCOPE

Purpose:

The purpose of this evaluation report supplement is to indicate that MiniRail Comp, Splice Foot X, Splice Foot XL, MultiMount and K2 Conduit Clamp Kit, described in ICC-ES evaluation report ESR-5208, have also been evaluated for compliance with the code(s) noted below.

Applicable code edition(s):

- 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 Division of State Architect (DSA), see Sections 2.1.1 and 2.1.2 below.

- 2022 California Residential Code (CRC)

2.0 CONCLUSIONS

2.1 CBC:

The MiniRail Comp, Splice Foot X, Splice Foot XL, MultiMount and K2 Conduit Clamp Kit, described in Sections 2.0 through 7.0 of the evaluation report ESR-5208, complies with CBC Chapter 15, 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 Chapter 16, 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 MiniRail Comp, Splice Foot X, Splice Foot XL, MultiMount and K2 Conduit Clamp Kit, described in Sections 2.0 through 7.0 of the evaluation report ESR-5208, complies with CRC Chapters 9, provided the design and installation are in accordance with the 2021 *International Residential Code*® (IRC) provisions noted in the evaluation report.

This supplement expires concurrently with the evaluation report, issued December 2024.

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Applicable code editions:

- 2023 Florida Building Code—Building
- 2023 Florida Building Code—Residential

2.0 CONCLUSIONS

The MiniRail Comp, Flex Foot, Splice Foot X, Splice Foot XL, MultiMount and K2 Conduit Clamp Kit, described in Sections 2.0 through 7.0 of ICC-ES evaluation report ESR-5208, complies with the *Florida Building Code—Building* and *Florida Building Code—Residential*. The design requirements must be determined in accordance with the *Florida Building Code—Building* or the *Florida Building Code—Residential*, as applicable. The installation requirements noted in ICC-ES evaluation report ESR-5208 for the 2021 *International Building Code*® meet the requirements of the *Florida Building Code—Building* or the *Florida Building Code—Residential*, as applicable, with the following conditions:

- Equipment or structures attached to the MiniRail Comp, Splice Foot X, Splice Foot XL, MultiMount and K2 Conduit Clamp Kit are outside the scope of this supplement

Use of the MiniRail Comp, Splice Foot X, Splice Foot XL, MultiMount and K2 Conduit Clamp Kit for compliance with the High-Velocity Hurricane Zone provisions of the *Florida Building Code—Building* and the *Florida Building Code—Residential* has not been evaluated, and is outside the scope of this supplemental report.

For products falling under Florida Rule 61G20-3, verification that the report holder's quality assurance program is audited by a quality assurance entity approved by the Florida Building Commission for the type of inspections being conducted is the responsibility of an approved validation entity (or the code official when the report holder does not possess an approval by the Commission).

This supplement expires concurrently with the evaluation report, issued December 2024.