



## ICC-ES Evaluation Report ESR-4161

Reissued May 2022

Revised February 2023

This report is subject to renewal May 2024.

**DIVISION: 08 00 00—OPENINGS**  
**Section: 08 95 16—Wall Vents**

### REPORT HOLDER:

JOTO TECHNO CO., LTD.

### EVALUATION SUBJECT:

JOTO-VENT SYSTEM®

### 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)

#### Properties evaluated:

- Ventilation (Under-floor Space)
- Structural

### 2.0 USES

The Joto-Vent System® is used to provide under-floor space continuous perimeter ventilation in accordance with IRC Section R408 and IBC Section 1202.4 [2015 IBC Section 1203.4].

### 3.0 DESCRIPTION

#### 3.1 General:

The Joto-Vent System® consists of two types of the Joto-Vent (Figures 1 and 2) and Airtight Joto-Vent (Figure 3), Joto Reinforcement Block (Figure 4), Joto-Vent Shim Plate (Figure 5) and two types of vent coverings - the Joto Architectural Coverings and the Joto Insect Prevention Strip Coverings (Figure 6 and 7).

#### 3.2 Joto-Vent:

The Joto-Vent (Figures 1 and 2) is made of a composite material consisting of calcium carbonate, plastic, and polyolefin resin. The vent is formed into a honeycomb pattern that forms an air-flow pathway for crawlspace ventilation. The vents provide a net free ventilation area of either 4.81 square inches of ventilation per lineal foot (102 cm<sup>2</sup>/m) for Joto-Vent models KP-L150U, KP-L102U, KP-L120U or 11.03 square inches of ventilation per lineal foot (234 cm<sup>2</sup>/in) for Joto-Vent model JVS-26CV. The Joto

Vent is available in various models and sizes as described in Table 1. The vents may be sawn, as needed, for shorter lengths.

#### 3.3 Airtight Joto-Vent:

The Airtight Joto-Vent (Figure 3) is comprised of the same material as the Joto-Vent. Airtight Joto-vent contains 1/4-inch EPDM foam strips and does not provide an air-flow pathway. The Airtight vents are designed for use in areas where ventilation is not required.

#### 3.4 Joto Reinforcement Block:

The Joto Reinforcement Block is comprised of the same material as the Joto-Vent and consists of two components that interlock to form a solid block (Figure 4). The reinforcing block fits between the openings in the Joto-Vent and is designed to be added to the vent when the applied loads exceed what is allowed for the Joto-Vent as determined by a registered design professional. The Joto Reinforcement Block is available in various models and sizes as described in Table 3.

#### 3.5 Joto-Vent Shim Plate:

The Joto-Vent Shim Plates are 6-inch by 6-inch zinc-coated hot-rolled steel plates (Figure 5). The shim plates are available in 1/16-inch, 1/8-inch and 1/4-inch thicknesses for models XS-S116, XS-S108 and XS-104, respectively. When installed, the shim plates provide level adjustment for concrete foundation or stem walls.

#### 3.6 Vent Coverings:

The Joto Architectural Coverings and Insect Prevention Strip Coverings (Figures 6 and 7) are formed from 55 percent aluminum-zinc alloy-coated steel conforming to ASTM A792 or similar material. The coverings are installed to provide the vent covering required by Section R408.2 of the IRC, Section 1202.4.1 of the 2021 and 2018 IBC, and Section 1203.4.1 of the 2015 IBC.

#### 3.7 Surface burning Characteristics:

The Joto-Vent System® has a flame-spread index of 200 or less when tested in accordance with ASTM E84.

### 4.0 DESIGN AND INSTALLATION

#### 4.1 Design:

Each model of the Joto-Vent and Airtight Joto Vent described in this report provides an allowable bearing area as noted in Table 1. Due to the reduced bearing area, floor

spans and roof spans supported by the Joto-Vent System® must be reduced by the percentage noted in Table 2 for prescriptive applications under the IRC. For engineered systems, the reduced bearing area under the sill plate must be taken into account. See Figure 8 for bearing area layout. The maximum allowable load on the Joto-Vent System® is as noted in Table 2. Each model of the Joto Reinforcement Block provides an allowable bearing and maximum allowable load as noted in Table 3.

#### 4.2 Installation:

The Joto-Vent System® must be installed in accordance with this report and the manufacturer's published installation instructions. A copy of the manufacturer's published installation instructions must be available on the jobsite at all times during installation.

The Joto-Vent is installed between the top of the foundation wall and the bottom of the sill plate. (Figure 9). If needed, Joto-Vent Shim Plates can be installed between the foundation wall or sill plate and the Joto-Vent to provide level adjustment.

For installations in accordance with the prescriptive provisions of the code, anchor bolts must be spaced as defined in Table 4.

#### 5.0 CONDITIONS OF USE

The Joto-Vent 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 The Joto-Vent System® must be installed in accordance with this report, the applicable code and the manufacturer's published installation instructions. In the event of a conflict, the more restrictive requirements govern.
- 5.2 For engineer designed structures, complete plans and calculations demonstrating compliance with this report must be submitted to the code official for approval when required. The calculations and details must be

prepared by a registered design professional where required by the statutes of the jurisdiction in which the project is to be constructed.

- 5.3 Protection against subterranean termites must be provided as specified in IRC Section R318 or IBC Section 2304.12.1.2, as applicable.

- 5.4 For applications under the IBC, the Joto-Vent System® is limited to Type V-B construction.

#### 6.0 EVIDENCE SUBMITTED

Data in accordance with ICC-ES Acceptance Criteria for Under-Floor Space Continuous Perimeter Vents (AC497), dated October 2018 (editorially revised May 2021).

#### 7.0 IDENTIFICATION

- 7.1 The ICC-ES mark of conformity, electronic labeling, or the evaluation report number (ICC-ES ESR-4161) 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 Joto Techno Co., Ltd. Joto-Vent System® Components must be identified by a label bearing the manufacturer's name (Joto Techno Company).

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

**JOTO TECHNO CO., LTD.**  
**14F NISSEI YODOYABASHI EAST**  
**3-3-13 IMABASHI, CHUO-KU**  
**OSAKA, OSAKA 541-0042**  
**JAPAN**  
**+81-6-6786-8601**  
[info@joto.com](mailto:info@joto.com)  
[www.joto.com](http://www.joto.com)

**TABLE 1—JOTO-VENT SYSTEM® MODELS AND DIMENSIONAL PROPERTIES**

JOTO-VENT SYSTEM® COMPONENT	PRODUCT NAME	THICKNESS (in)	WIDTH (in)	LENGTH (ft)	CONTACT AREA (in²/ft)	WEB AREA (in²/ft)	VENTILATION AREA (in²/ft)
Joto-Vent	KP-L150U	0.79	6.0	3.0	26.34	11.84	4.81
	KP-L102U	0.79	4.0	3.0	18.97	8.24	4.81
	KP-L120U	0.79	4.75	3.0	24.84	10.80	4.81
	JVS-26CV	1.53	5.5	3.0	41.28	9.99	11.03
Airtight Joto-Vent	KPK-N140U	0.79	5.5	3.0	36.98	10.41	N/A

For SI: 1 inch = 25.4 mm; 1ft=0.305 m

TABLE 2—JOTO-VENT SYSTEM® DESIGN PROPERTIES

JOTO-VENT SYSTEM® COMPONENT	PRODUCT NAME	REDUCTION FACTOR (%)	MAXIMUM ALLOWABLE LOAD (psi)	MAXIMUM ALLOWABLE LOAD (plf)
Joto-Vent	KP-L150U <sup>1</sup>	60	279	7140
	KP-L102U	55	194	4967
	KP-L120U <sup>2</sup>	62	254	6513
	JVS-26CV <sup>3</sup>	37	117	4812
Airtight Joto-Vent	KPK-N140U <sup>4</sup>	44	235	8703

Notes:

- (1) – The presented % Reduction for the KP-L150U assumes allowable prescriptive loads are for 2x6 stud walls. Where 2x4 stud walls are used, the % Reduction will be 37%. In all cases, the sill plate over the KP-L150U Joto Vent shall not be less than a 2x6.
- (2) – The presented % Reduction for the KP-L120U assumes allowable prescriptive loads for 2x6 stud walls. Where 2x4 stud walls are used, the % Reduction will be 41%. In all cases, the sill plate over the KP-L120U Joto Vent shall not be less than a 2x6.
- (3) – The presented % Reduction for the JVS-26CV assumes prescriptive loads are for 2x6 stud walls. Where 2x4 stud walls are used, the % Reduction will be 2%. In all cases, the sill plate over the JVS-26CV Joto Vent shall not be less than a 2x6.
- (4) – The presented % Reduction for the KPK-N140U assumes allowable prescriptive loads are for 2x6 stud walls. Where 2x4 stud walls are used, the % Reduction will be 12%. In all cases, the sill plate over the KPK-N140U Joto Vent shall not be less than a 2x6.

TABLE 3—JOTO REINFORCEMENT BLOCK DESIGN PROPERTIES

JOTO-REINFORCEMENT BLOCK MODEL NUMBER	CONTACT AREA (in <sup>2</sup> )	MAXIMUM ALLOWABLE LOAD (psi)	MAXIMUM ALLOWABLE LOAD PER BLOCK (lbs)
KP-LRB150	4.84	1131	5470
KP-LRB45	2.84	1131	3208

TABLE 4—MAXIMUM CENTER TO CENTER SPACING OF ANCHOR BOLTS

		¾" Joto Vent		1 ½" Joto Vent	
		Case 1	Case 2	Case 1	Case 2
Anchor Bolt Size (inches)	½	4'-0"	2'-8"	3'-0"	2'-0"
	5/8	6'-0"	4'-0"	4'-0"	3'-0"
	¾	6'-0"	4'-0"	6'-0"	4'-0"

Case 1 – For installation in accordance with the prescriptive provisions of the code.

Case 2 – For structures subject to the IBC, anchor bolts in sill plates of braced wall lines in structures over two stories above grade.

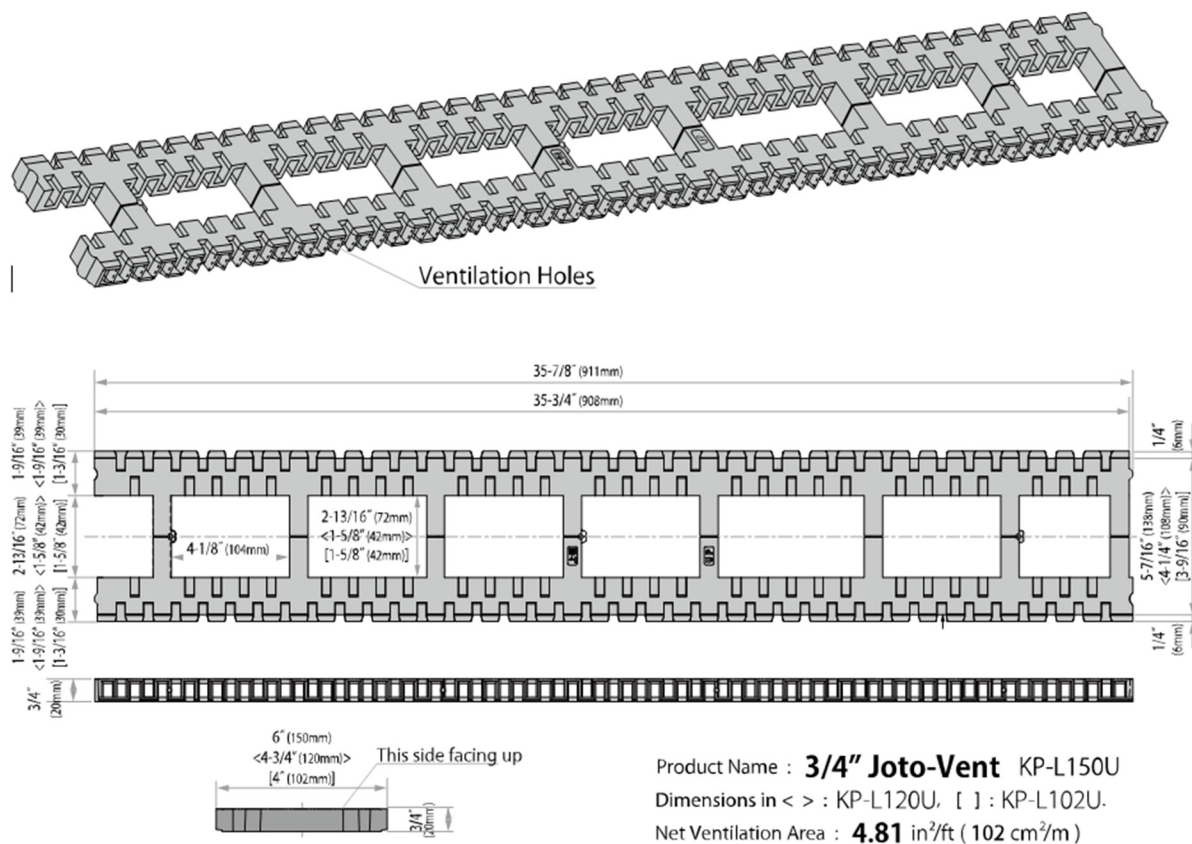


FIGURE 1—JOTO-VENT (KP-L150U, KP-L120U, KP-L102U)

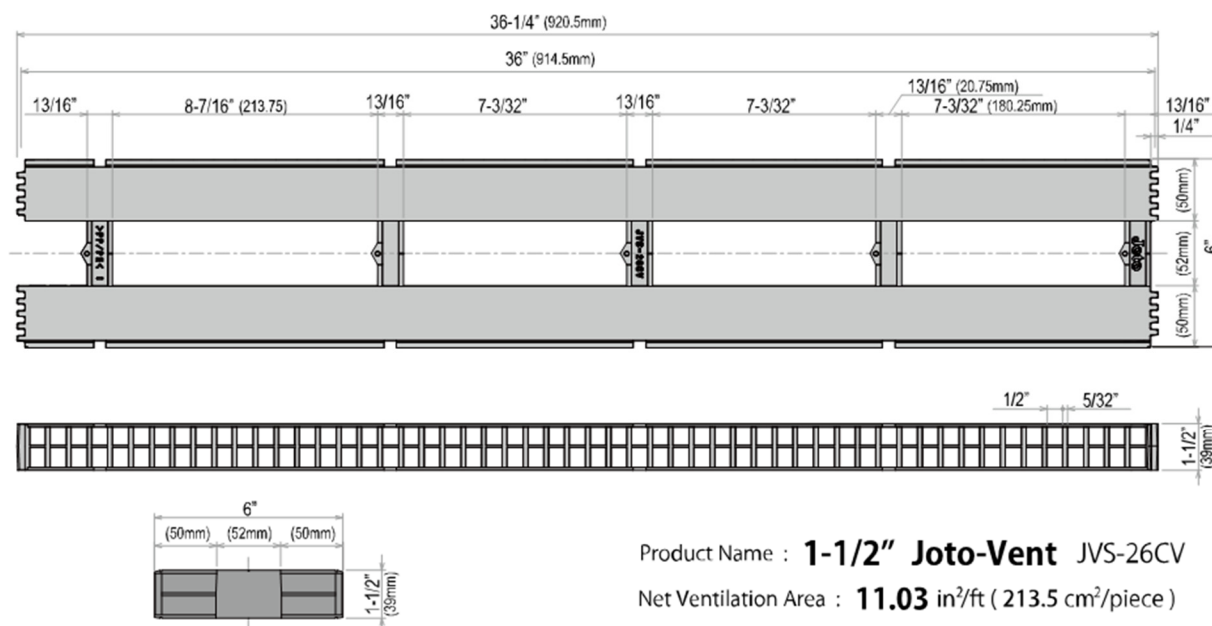


FIGURE 2—JOTO-VENT (JVS-26CV)

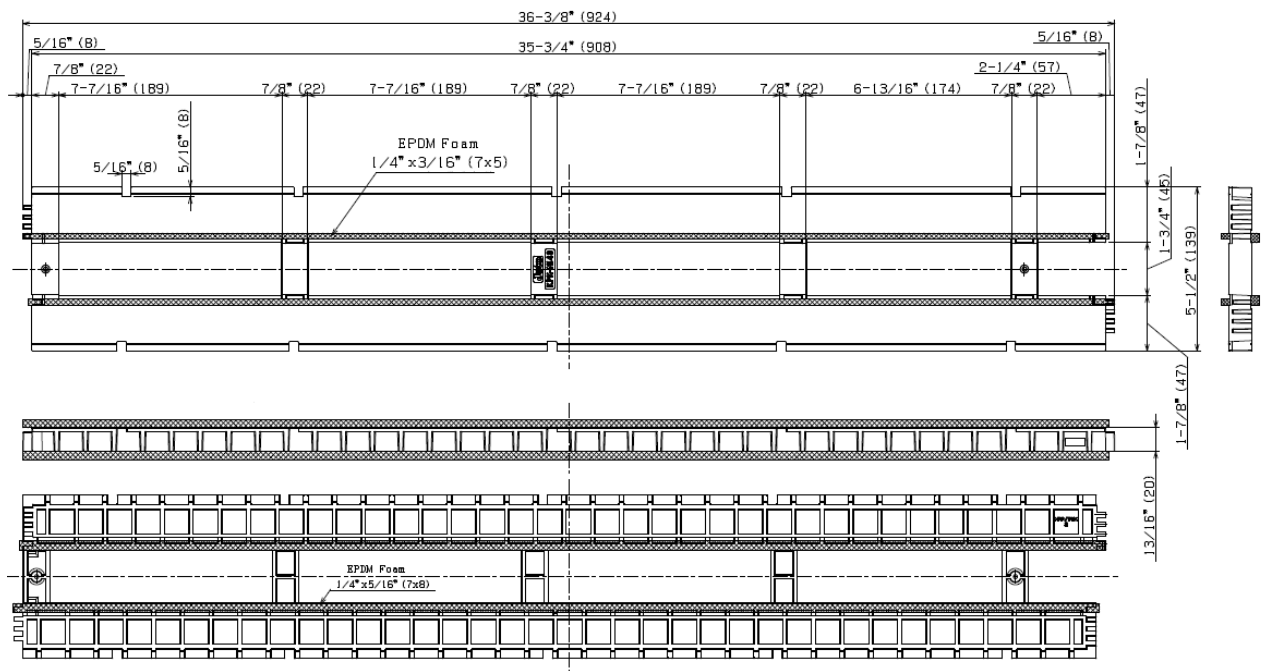


FIGURE 3—AIRTIGHT JOTO-VENT (KPK-N140U)

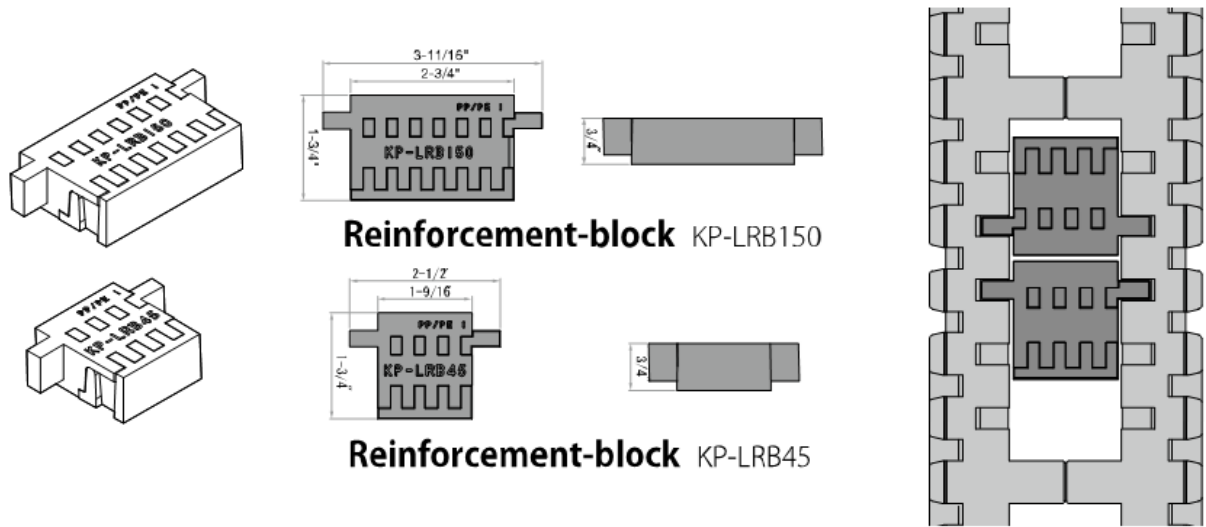
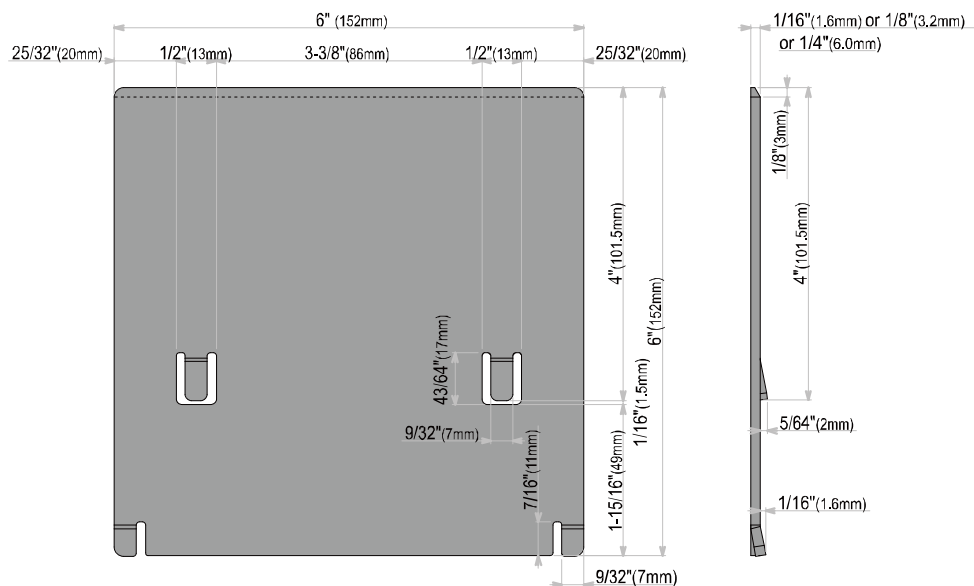


FIGURE 4—JOTO REINFORCEMENT BLOCK

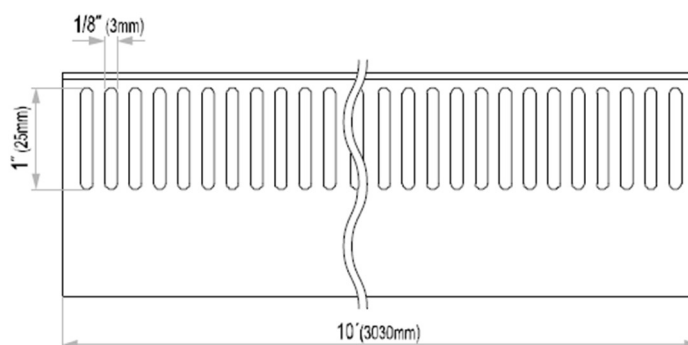
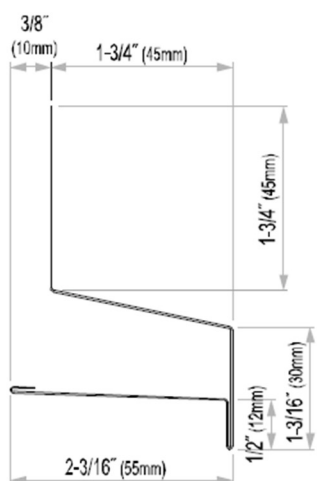


Product Name : **Joto-Vent Shim Plate**

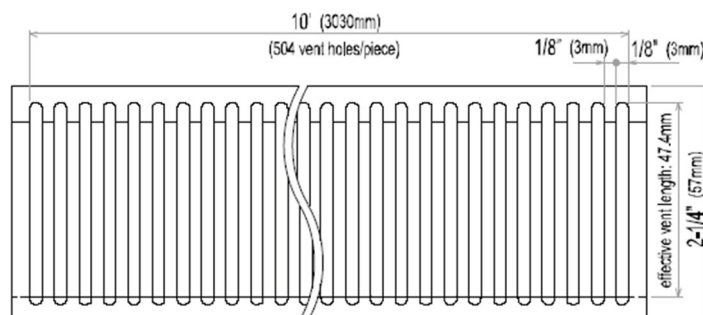
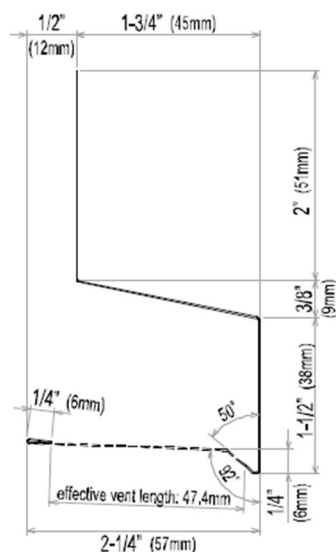
for JVS-26CV

1/16":XS-S116 1/8":XS-S108 1/4":XS-S104

**FIGURE 5—JOTO-VENT SHIM PLATE**



Product Name : **Architectural Covering**  
for 3/4" WACF-U45



Product Name : **Architectural Covering**  
for 1-1/2" JAC-2-10

**FIGURE 6—JOTO ARCHITECTURAL COVERINGSS**

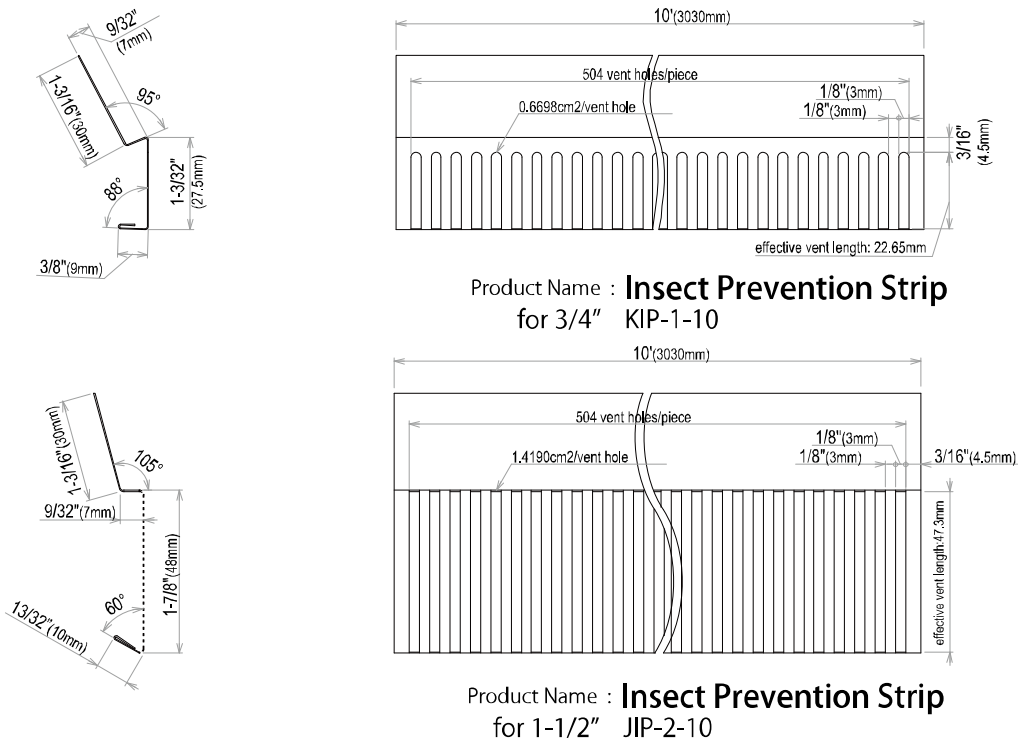


FIGURE 7—JOTO INSECT PREVENTION STRIP COVERINGS



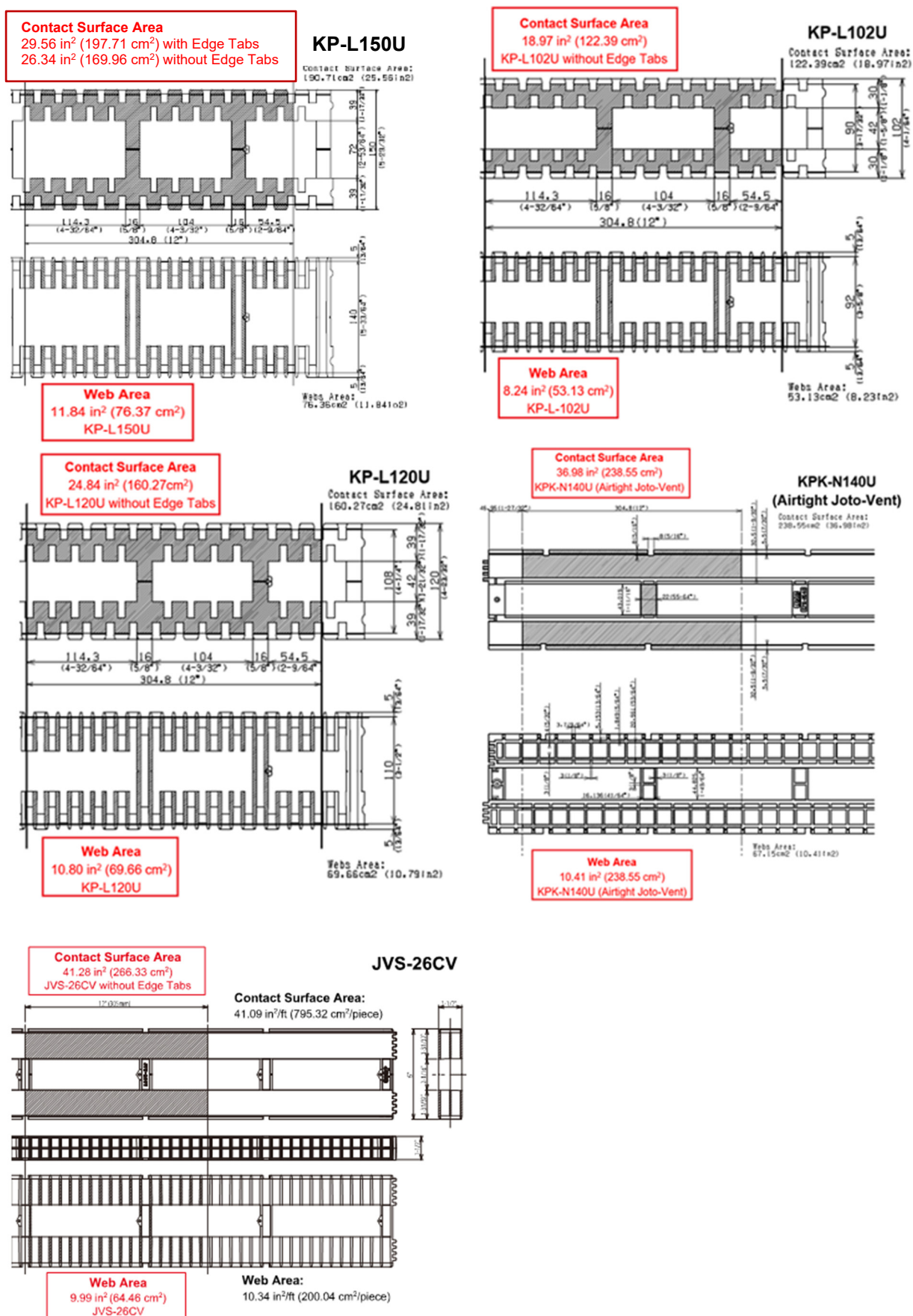
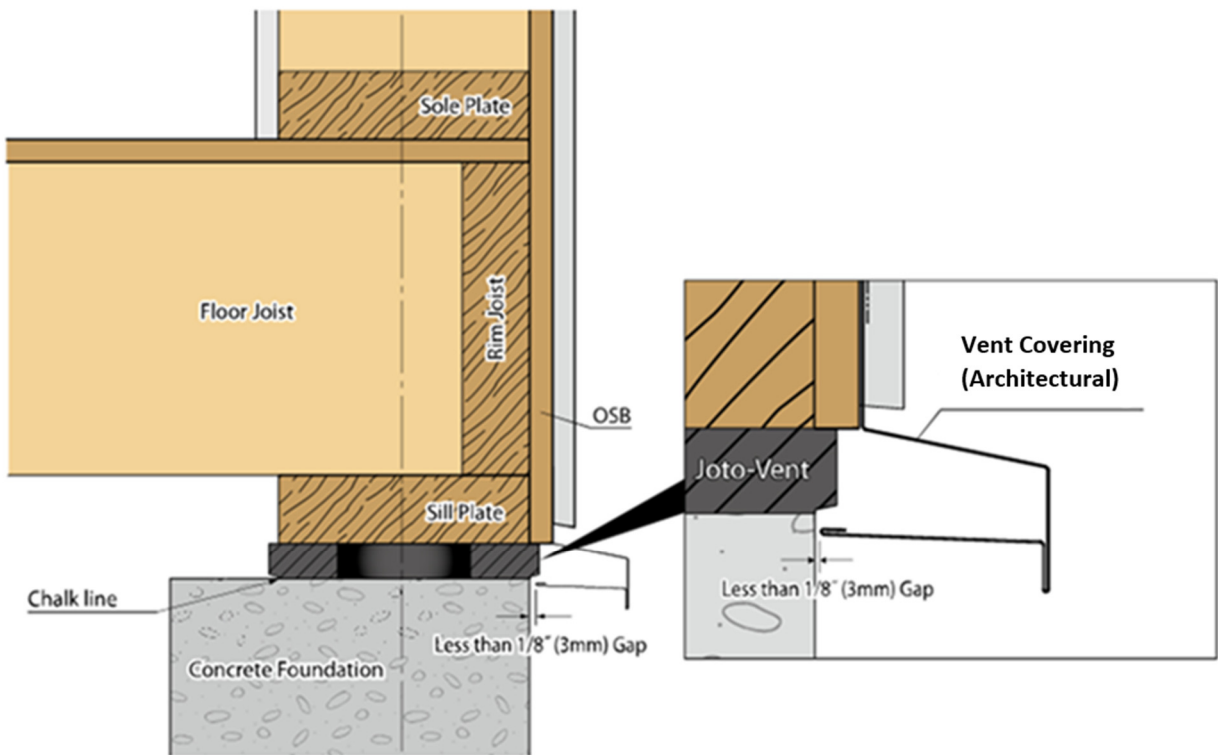
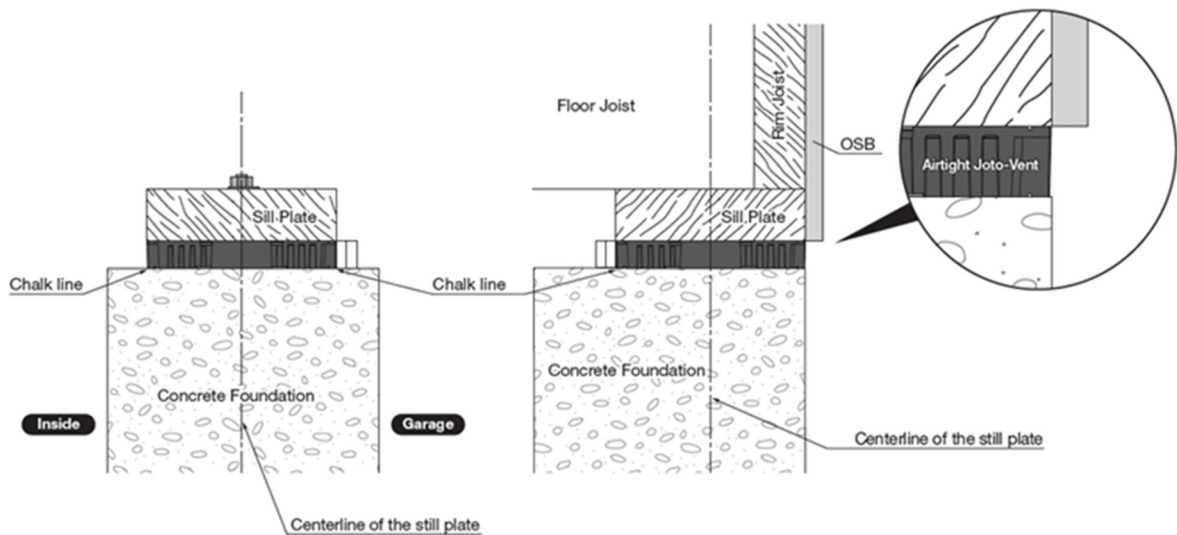


FIGURE 8—JOTO-VENT SYSTEM® BEARING AREA



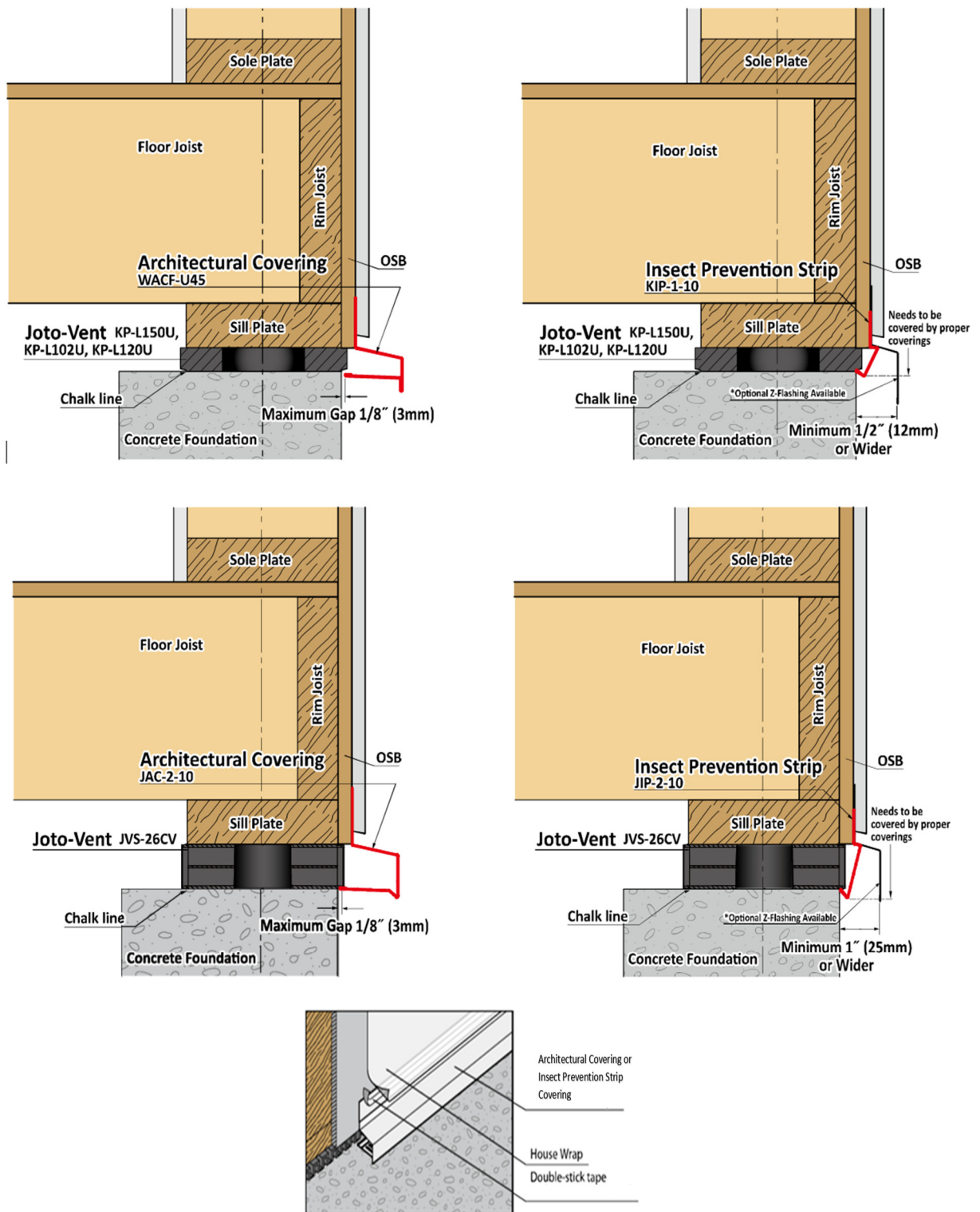


**JOTO-VENT INSTALLATION DETAILS**



**AIRTIGHT JOTO-VENT INSTALLATION DETAILS**

**FIGURE 9—JOTO-VENT SYSTEM® INSTALLATION DETAILS**



## ARCHITECTURAL AND INSECT PREVENTION STRIP COVERINGS INSTALLATION DETAILS

FIGURE 10—JOTO-VENT SYSTEM® INSTALLATION DETAILS (Continued)

# ICC-ES Evaluation Report

# ESR-4161 CBC and CRC Supplement

Reissued May 2022

Revised February 2023

This report is subject to renewal May 2024.

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

A Subsidiary of the International Code Council®

**DIVISION: 08 00 00—OPENINGS**

**Section: 08 95 16—Wall Vents**

## REPORT HOLDER:

JOTO TECHNO CO., LTD.

## EVALUATION SUBJECT:

JOTO-VENT SYSTEM®

## 1.0 REPORT PURPOSE AND SCOPE

### Purpose:

The purpose of this evaluation report supplement is to indicate that Joto-Vent System®, described in ICC-ES evaluation report ESR-4161, has also been evaluated for compliance with the codes noted below.

### Applicable code editions:

- 2019 *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.

- 2019 *California Residential Code* (CRC)

## 2.0 CONCLUSIONS

### 2.1 CBC:

The Joto-Vent System®, described in Sections 2.0 through 7.0 of the evaluation report ESR-4161, complies with CBC Chapter 12, provided the design and installation are in accordance with the 2018 *International Building Code*® (IBC) provisions noted in the evaluation report and the additional requirements of CBC Chapters 12 and 23, as applicable.

The Joto-Vent System® (with the exception of 1½-inch Joto-Vent JVS-26CV, Architectural Covering JAC-2-10, Insect Prevention Strip Coverings KIP-1-10 and JIP-2-10) may be used in the exterior design and construction of new buildings located in a Fire Hazard Severity Zone within State Responsibility Areas or any Wildland-Urban Interface Fire Area, provided installation is in accordance with the 2018 *International Building Code*® (IBC) provisions noted in the evaluation report and the additional requirements of CBC Sections 701A.3 and 706A. The Joto-Vent System® (with the exception of 1½-inch Joto-Vent JVS-26CV, Architectural Covering JAC-2-10, Insect Prevention Strip Coverings KIP-1-10 and JIP-2-10) complies with the performance requirements of ASTM E2886, as described in ICC-ES listing report ESL-1274, in accordance with Item 1 of CBC Section 706A.2 and may be used in the exterior design and construction of new buildings located in a Fire Hazard Severity Zone within State Responsibility Areas or any Wildland-Urban Interface Fire Area.

#### 2.1.1 OSHPD:

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

#### 2.1.2 DSA:

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

### 2.2 CRC:

The Joto-Vent System®, described in Sections 2.0 through 7.0 of the evaluation report ESR-4161, complies with CRC Chapter 4, provided the design and installation are in accordance with the 2018 *International Residential Code*® (IRC) provisions noted in the evaluation report and the additional requirements of CRC Chapters 3 and 4, as applicable.

The Joto-Vent System® (with the exception of 1½-inch Joto-Vent JVS-26CV, Architectural Covering JAC-2-10, Insect Prevention Strip Coverings KIP-1-10 and JIP-2-10) may be used in the exterior design and construction of new buildings located in a Fire-Hazard Severity Zone within State Responsibility Areas or any Wild-Urban Interface Fire Area, provided installation is in accordance with the 2018 *International Residential Code*® (IRC) provisions noted in the evaluation report and the additional requirements of CRC Sections R337.1.3 and R337.6.2. The Joto-Vent System® (with the exception of 1½-inch Joto-Vent JVS-26CV, Architectural Covering JAC-2-10, Insect Prevention Strip Coverings KIP-1-10 and JIP-2-10) complies with the performance requirements of ASTM E2886, as described in ICC-ES listing report ESL-1274, in accordance with Item 1 of CRC Section R337.6.2 and may be used in the exterior design and construction of new buildings located in a Fire Hazard Severity Zone within State Responsibility Areas or any Wildland-Urban Interface Fire Area.

The Joto-Vent products described in this supplement have not been evaluated for compliance with the *International Wildland-Urban Interface Code* (IWUIC).

This supplement expires concurrently with the evaluation report, reissued May 2022 and revised February 2023.