

ICC-ES Evaluation Report

ESR-4569

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Subject to renewal March 2026


This report also contains:

- **CBC Supplement**

- **LABC Supplement**

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<p>DIVISION: 06 00 00— WOOD, PLASTICS AND COMPOSITES</p> <p>Section: 06 05 23— Wood, Plastic, and Composite Fastenings</p>	<p>REPORT HOLDER: SEKISUI HOUSE, LTD.</p> <p>ADDITIONAL LISTEE: SH RESIDENTIAL HOLDINGS, LLC</p>	<p>EVALUATION SUBJECT: SHAWOOD SMJ POST BASE CONNECTORS</p>	
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1.0 EVALUATION SCOPE

Compliance with the following codes:

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

For evaluation for compliance with codes adopted by the [Los Angeles Department of Building and Safety \(LADBS\)](#), see [ESR-4569 LABC and LARC Supplement](#).

Property evaluated:

- Structural

2.0 USES

The SHAWOOD SMJ post base connectors and the SHAWOOD SMJ Mortise pipe connectors and pipe post brackets described in this evaluation report are used as wood framing connectors in accordance with Section 2304.10.4 of the 2021 IBC and Section 2304.10.3 of the 2018 and 2015 IBC. The connectors and brackets may also be used in structures regulated under the IRC when an engineered design is submitted in accordance with Section R301.1.3 of the IRC.

3.0 DESCRIPTION

3.1 General:

The SHAWOOD SMJ post base connectors and the SHAWOOD SMJ Mortise pipe connectors and pipe post brackets are used to resist uplift and downward forces, as well as lateral tension forces in connections between structural glued-laminated timber (glulam) post and the concrete foundation; glulam beam and post; and glulam post-to-post through glulam beam.

3.1.1 SMJ Post Base Connectors: The SMJ post base connectors are formed by welding the following components together: a nominal ¹/₈-inch thick (3.2 mm actual) vertical steel plate center section having three to five pre-punched holes for installing chamfered dowel pins; a nominal ¹¹/₃₂-inch-thick (9 mm actual) base plate having four pre-punched holes for installation of ½-inch-diameter (12.7 mm) anchor bolts; a nominal ¼-inch-thick (6 mm actual) upper plate having two pre-punched access holes; two L-shaped supports having a nominal ³/₁₆ inch (4.5 mm actual) in thickness installed by welding between the base plate and the upper plate. The spacing between the base plate and upper plate is about 2 inches (50 mm actual) to elevate the wood

post from the concrete foundation or footing. The connectors may have a steel tube welded to the top plate the connectors (Post Base +190 and Post Base +230). See [Table 1](#) for connector dimensions, required number and size of dowel pins and bolts, and allowable design values. [Figure 1](#) depicts SMJ post base connectors and typical installations.

The SMJ post base connectors described in this evaluation report consist of connectors and dowel pins, and are used to connect nominal 4³/₄-inch (120 mm) square wood posts to concrete foundations or footings constructed in accordance with the IBC or IRC, as applicable, by using anchor bolts installed during the cast of concrete pour or after the concrete cured. Anchor bolts and the design of anchorage of bolts in concrete foundations or footings are outside the scope of this evaluation report.

3.1.2 SMJ Mortise Pipe Connectors: The connectors consist of steel pipes and dowel pins, and are manufactured from steel pipes with pre-punched holes to accept the pins. See [Tables 2](#) and [3](#) for connector dimensions, required number and size of pins, and allowable design values. [Figures 2](#) and [3](#) depict the SMJ Mortise pipe connectors and typical installations.

The SMJ Mortise pipe connectors are used in glulam beam to post connections, and glulam post through beam to post connections. The connectors are installed by inserting the pipe portion into pre-drilled hole into the ends of the posts and through beams using the pins driven into the side grain of the wood posts and beams.

3.1.3 SMJ Mortise Pipe Post Brackets: The brackets are fabricated by welding SMJ Mortise pipe connectors to steel plates with pre-punched holes accepting pins. See [Table 3](#) for bracket dimensions, required number and size of pins, and allowable design values. [Figure 4](#) depicts the SMJ Mortise pipe post brackets and typical installations.

The SMJ Mortise pipe post brackets consist of Mortise pipes welded to steel plates and pins. The brackets can be installed using one or two to connect posts to beams. When one bracket is used, the pipe portion is installed through the beam into the post above the beam and the plate portion is installed into the post below the beam. When two brackets are used as a pair and installed inline, the pipe portion of bracket is installed into beam and connected to each other, while the plate portion is installed into post above and below of the beam.

3.2 Materials:

3.2.1 Steel: The SMJ post base connectors described in this evaluation report are formed from carbon galvanized steel, having a minimum tensile yield strength, F_y , of 35,535 psi (245 MPa) and a minimum tensile strength, F_u , of 58,015 psi (400 MPa). The connectors have a proprietary corrosion resistance coating complying with the specifications in the manufacturer's Quality Documentation.

The steel pipes for SMJ Mortise pipe connectors and pipe post brackets are fabricated from galvanized steel, having a minimum tensile yield strength, F_y , of 34,085 psi (235 MPa) and a minimum tensile strength, F_u , of 58,015 psi (400 MPa). The steel plate used with pipe post brackets is produced from galvanized steel, having a minimum tensile yield strength, F_y , of 35,535 psi (245 MPa) and a minimum tensile strength, F_u , of 58,015 psi (400 MPa). The connectors and brackets have corrosion resistance coatings complying with the specifications in the manufacturer's Quality Control Documentation.

3.2.2 Wood: Glulam beam and post members with which the connectors are used must be manufactured in accordance with IBC Section 2303.1.3, using sawn lumber having a minimum specific gravity of 0.42, as specified in Table 4F of the NDS for Norway Spruce, and are used for dry service conditions where the service moisture content is less than 16 percent, as in most covered structures, except as noted in Section 4.1. The sawn lumber grade, glulam layup combinations and grades must comply with the specifications in the manufacturer's Quality Control Documentation. The sizes of the supporting and supported glulam members must be as those specified in [Tables 1](#) through [4](#) of this evaluation report.

3.2.3 Fasteners: The dowel pins, either Ø12x119 (0.47 x 4.69 in.) or Ø16x119 (0.63 x 4.09 in.) are used to install the connectors and brackets described in this evaluation report. The dowel pins are manufactured from carbon steel wire, having a minimum tensile yield strength, F_y , of 47,850 psi (330 MPa) and a minimum tensile strength, F_u , of 60,900 psi (420 MPa), and other specifications, such as corrosion resistance coating requirements, in the manufacturer's Quality Control Documentation.

4.0 DESIGN AND INSTALLATION

4.1 Design:

The tabulated allowable loads shown in the [Tables 1](#) through [4](#) of this evaluation report are based on Allowable Stress Design (ASD) and include the load duration factor, C_D , for the corresponding with the applicable loads in accordance with the *National Design Specification[®] for Wood Construction* (NDS) and its Supplement.

The tabulated allowable loads apply to glulam posts and beams used under dry conditions and where sustained temperatures are 100°F (37.8°C) or less. When connectors and brackets are installed to glulam posts and beams having a moisture content greater than 16 percent, or where wet service is expected, the allowable loads must be adjusted by the applicable wet service factor, C_M , specified for lateral loads for dowel-type fasteners in the NDS. When connectors and brackets are installed in glulam posts and beams that will experience sustained exposure to temperatures exceeding 100°F (37.8°C), the allowable loads in this report must be adjusted by the applicable temperature factor, C_t , specified in the NDS. Both supporting and supported structural glulam members must be analyzed for load-carrying capacity at the connection in accordance with the NDS.

4.2 Installation:

Installation of the SHAWOOD SMJ post base connectors and SHAWOOD SMJ Mortise pipe connectors and pipe post brackets must be in accordance with this evaluation 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.

The SHAWOOD SMJ post base connectors, SHAWOOD SMJ Mortise pipe connectors and pipe post brackets, and pins used in contact with the preservative-treated or fire-retardant treated lumber must comply with IBC Sections 2303.1.9 and 2303.2, and IRC Section R317.3. The lumber treater or the holder of this report (Sekisui House, Ltd), or both should be contacted for recommendations on minimum corrosion resistance protection of steel connectors in contact with the specific proprietary preservative-treated or fire-retardant treated lumber

5.0 CONDITIONS OF USE:

The SHAWOOD SMJ post base connectors and SHAWOOD SMJ Mortise pipe connectors and pipe post brackets 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 connectors, brackets, and glulam post and beam members must be manufactured, identified and installed in accordance with applicable codes, this evaluation report and the manufacturer's published installation instructions. A copy of the published installation instructions must be available at the jobsite at all times during installation.
- 5.2 Calculations showing compliance with this report must be submitted to the code official. The calculations 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 Adjustment factors noted in Section 4.1 and the applicable codes must be considered, where applicable.
- 5.4 Connected wood members and fasteners must comply, respectively, with Sections 3.2.2 and 3.2.3 of this evaluation report.
- 5.5 Use of the connectors and brackets described in this evaluation report with preservative treated or fire retardant treated lumber must be in accordance with Section 4.2 of this evaluation report. Use of fasteners with preservative treated or fire retardant treated lumber must be in accordance with Section 4.2 of this evaluation report.
- 5.6 Anchor bolts used to install the post base connectors to concrete foundation or footing must be designed by a registered design professional to the satisfaction of building official and installed in accordance with the applicable provisions in the applicable codes
- 5.7 Design of the concrete foundation or footing, and the anchorage of the post base to concrete foundation or footing using anchor bolts must be in accordance with the applicable provisions of the codes by a registered design professional to the satisfaction of building official in the applicable codes.
- 5.8 The connectors, brackets and pins, described in this report, are manufactured under a quality program with inspections by ICC-ES.

6.0 EVIDENCE SUBMITTED

Data in accordance with the [ICC-ES Acceptance Criteria for Joist Hangers and Similar Devices \(AC13\)](#), dated October 2018 (Editorially revised December 2020).

7.0 IDENTIFICATION

- 7.1 Each SHAWOOD SMJ post base connectors, SHAWOOD SMJ Mortise pipe connectors and pipe post brackets described in this report must be identified with a die-stamped label indicating the name of the report

holder's name (Sekisui House, Ltd), or the name of listee (SH Residential Holdings, LLC), the model designation, and the ICC-ES evaluation report number (ESR-4569).

The cartons of SHAWOOD SMJ Mortise pipe connectors, SHAWOOD SMJ Mortise pipe connectors and pipe post brackets, and pins shall bear a label indicating the name of the report holder (Sekisui House, Ltd), or the name of the listee (SH Residential Holdings, LLC), the model designation and lot number, the pin size, and the evaluation report ([ESR-4569](#)).

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

SEKISUI HOUSE, LTD.
TOWER EAST, UMEDA SKY BUILDING, 1-1-88, OYODONAKA
KITA-KU, OSAKA
JAPAN
www.sekisuihouse.co.jp
kokusai@sekisuihouse.co.jp
+81 6 6440 3723

7.3 The additional listee's contact information is the following:

SH RESIDENTIAL HOLDINGS, LLC
460 W 50 N, SUITE 250
SALT LAKE CITY, UTAH 84101
shawood.com
info@shawood.com
+1 801 869 3950

TABLE 1—ALLOWABLE LOADS FOR SHAWOOD SMJ POST BASE CONNECTORS^{1,2,3,4}

MODEL DESIGNATION		DIMENSIONS			FASTENERS					ALLOWABLE LOAD (lbf)			
					Bolt ⁶		Pin			Gravity (CD = 1.0)	Uplift (CD = 1.6)	Lateral F ₁ (CD = 1.6)	Lateral F ₂ (CD = 1.6)
		Qty.	Size	Qty.	Size								
			Di.		Di.	L							
(in.)	(in.)	(in.)	(in.)	(in.)	(in.)								
Typical Post Base	Base	4.72	4.72	1.97	2	1/2	3	0.47	4.69	26,185	5,240	3,840	790
	Vertical Plate	0.13 ⁵	4.72	3.94									
Post Base (+190)	Base	4.72	4.72	9.45	2	1/2	3	0.47	4.69	22,555	5,155	3,690	790
	Vertical Plate	0.13 ⁵	4.72	3.94									
Post Base (+230)	Base	4.72	4.72	11.0	2	1/2	3	0.47	4.69	20,425	5,590	3,015	790
	Vertical Plate	0.13 ⁵	4.72	3.94									

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

- ¹The tabulated allowable downloads, or gravity loads, may not be increased for the short-term loading and must not exceed the post capacity.
- ²The tabulated allowable uplift and lateral loads have been increased for wind and earthquake load with no further increase allowed. Reduce where other loads govern.
- ³Post bases do not provide adequate resistances to prevent posts from rotating about the base and therefore are not for non-braced or non-top-supported installations.
- ⁴The cross-sectional dimensions of the post are nominally 4³/₄ by 4³/₄ inches.
- ⁵Thickness of the vertical plate.
- ⁶The anchor bolts and the design of anchor bolts in concrete foundations or footings are outside the scope of this evaluation report and are not part of the package of the post base connector.

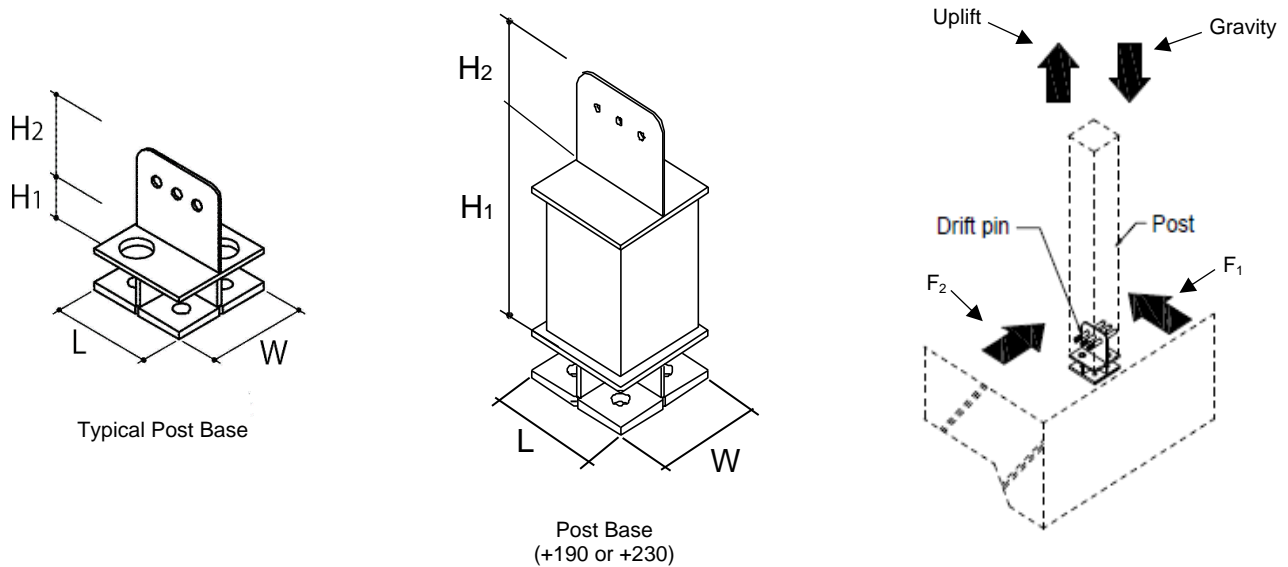


FIGURE 1—SHAWOOD SMJ POST BASE CONNECTORS AND INSTALLATION (TYP)

TABLE 2—SHAWOOD SMJ MORTISE PIPE CONNECTORS FOR POST-TO-POST THROUGH BEAM CONNECTIONS

MODEL DESIGNATION	DIMENSIONS		PINS IN POST			PINS IN BEAM			CROSS-SECTIONAL DIMENSIONS FOR WOOD MEMBER				ALLOWABLE LOAD (lbf)
	Dia.	Length	Qty.	Size		Qty.	Size		Post		Beam		Tension/Uplift ¹ (CD = 1.6)
	∅	L		Dia.	L		Dia.	L	Width	Depth	Width	Depth	
	(in.)	(in.)											
SMJ150	1.25	11.42	1	0.47	4.69	2	0.63	4.69	4.72	4.72	4.72	5.91	
SMJ210	1.25	13.78	1	0.47	4.69	3	0.63	4.69	4.72	4.72	4.72	8.27	1,410
		17.72	2	0.47	4.69	3	0.63	4.69	4.72	4.72	4.72	8.27	2,210
SMJ270	1.25	16.14	1	0.47	4.69	4	0.63	4.69	4.72	4.72	4.72	10.63	1,410
		20.08	2	0.47	4.69	4	0.63	4.69	4.72	4.72	4.72	10.63	2,820
SMJ330	1.25	18.50	1	0.47	4.69	5	0.63	4.69	4.72	4.72	4.72	12.99	1,410
		22.44	2	0.47	4.69	5	0.63	4.69	4.72	4.72	4.72	12.99	2,820
SMJ390	1.25	20.87	1	0.47	4.69	6	0.63	4.69	4.72	4.72	4.72	15.35	1,410
		24.80	2	0.47	4.69	6	0.63	4.69	4.72	4.72	4.72	15.35	2,820
SMJ450	1.25	23.23	1	0.47	4.69	7	0.63	4.69	4.72	4.72	4.72	17.72	1,410
		27.17	2	0.47	4.69	7	0.63	4.69	4.72	4.72	4.72	17.72	2,820

For SI: 1 in. = 25.4 mm, 1 lbf = 4.448 N

¹The allowable tension and uplift loads have been increased for wind and earthquake load with no further increase allowed. Reduce where other load durations govern.

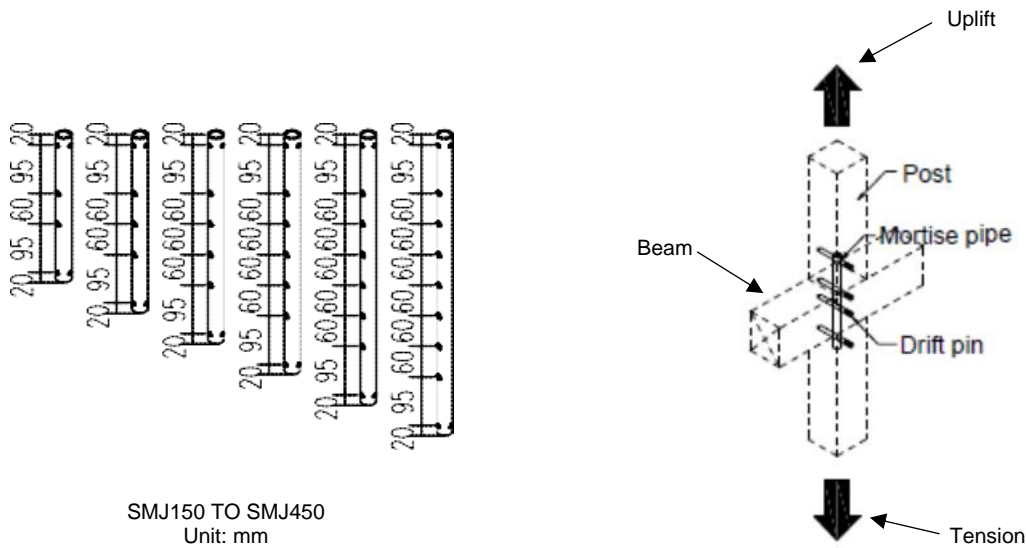


FIGURE 2—SHAWOOD SMJ MORTISE PIPE CONNECTORS AND POST-TO-POST THROUGH BEAM CONNECTION INSTALLATION (TYP)

TABLE 3—SHAWOOD SMJ MORTISE PIPE CONNECTORS FOR POST-TO-BEAM CONNECTIONS

MODEL DESIGNATION	DIMENSIONS		PINS IN POST			PINS IN BEAM			CROSS-SECTIONAL DIMENSIONS FOR WOOD MEMBER				ALLOWABLE LOAD (lbf)
	Dia.	Length	Qty.	Size		Qty.	Size		Post		Beam		Uplift ¹ (CD = 1.6)
	∅	L		Dia.	L		Dia.	L	Width	Depth	Width	Depth	
	(in.)	(in.)		(in.)			(in.)		(in.)		(in.)		
SMJ150	1.25	7.68	1	0.47	4.69	2	0.63	4.69	4.72	4.72	4.72	5.91	
	1.25	9.65	2	0.47	4.69	2	0.63	4.69	4.72	4.72	4.72	5.91	1,475
SMJ210	1.25	12.00	2	0.47	4.69	3	0.63	4.69	4.72	4.72	4.72	8.27	2,210
SMJ270	1.25	14.37	2	0.47	4.69	4	0.63	4.69	4.72	4.72	4.72	10.63	2,820
SMJ330	1.25	16.73	2	0.47	4.69	5	0.63	4.69	4.72	4.72	4.72	12.99	2,820
SMJ390	1.25	19.10	2	0.47	4.69	6	0.63	4.69	4.72	4.72	4.72	15.35	2,820
SMJ450	1.25	21.46	2	0.47	4.69	7	0.63	4.69	4.72	4.72	4.72	17.72	2,820

For SI: 1 in. = 25.4 mm, 1 lbf = 4.448 N

¹The allowable tension and uplift loads have been increased for wind and earthquake load with no further increase allowed. Reduce where other load durations govern.

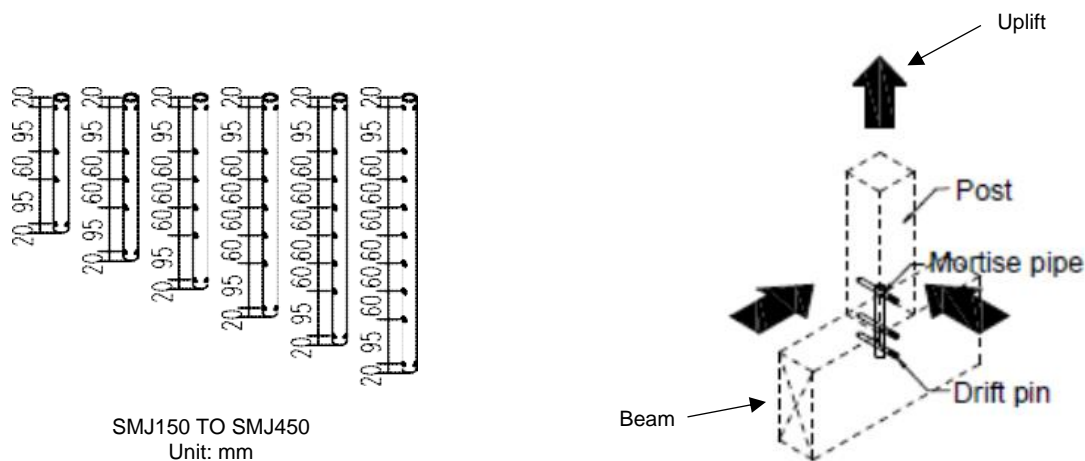


FIGURE 3—SHAWOOD SMJ MORTISE PIPE CONNECTORS POST-TO-BEAM CONNECTION AND INSTALLATION (TYP)

TABLE 4—SHAWOOD SMJ MORTISE PIPE POST BRACKETS FOR POST-TO-BEAM CONNECTORS

MODEL DESIGNATION	DIMENSIONS				PINS IN POST			PINS IN BEAM			CROSS-SECTIONAL DIMENSIONS FOR WOOD MEMBER				ALLOWABLE LOAD (lbf)
	Pipe		Plate		Qty.	Size		Qty.	Size		Post		Beam		Tension/Uplift ¹ (C _D = 1.6)
	∅	L	W	H		Dia.	L		Dia.	L	Width	Depth	Width	Depth	
	(in.)					(in.)			(in.)		(in.)		(in.)		
SMJ270	1.25	9.65	4.72	5.91	4	0.47	4.69	4	0.63	4.69	4.72	4.72	4.72	10.63	
SMJ330	1.25	12.00	4.72	5.91	4	0.47	4.69	5	0.63	4.69	4.72	4.72	4.72	12.99	3,690
SMJ390	1.25	14.37	4.72	5.91	4	0.47	4.69	6	0.63	4.69	4.72	4.72	4.72	15.35	4,425
SMJ450	1.25	16.73	4.72	5.91	4	0.47	4.69	7	0.63	4.69	4.72	4.72	4.72	17.72	4,725

For SI: 1 inch = 25.4 mm, 1 lbf = 4.448 N

¹The allowable tension and uplift loads have been increased for wind and earthquake load with no further increase allowed. Reduce where other load durations govern.

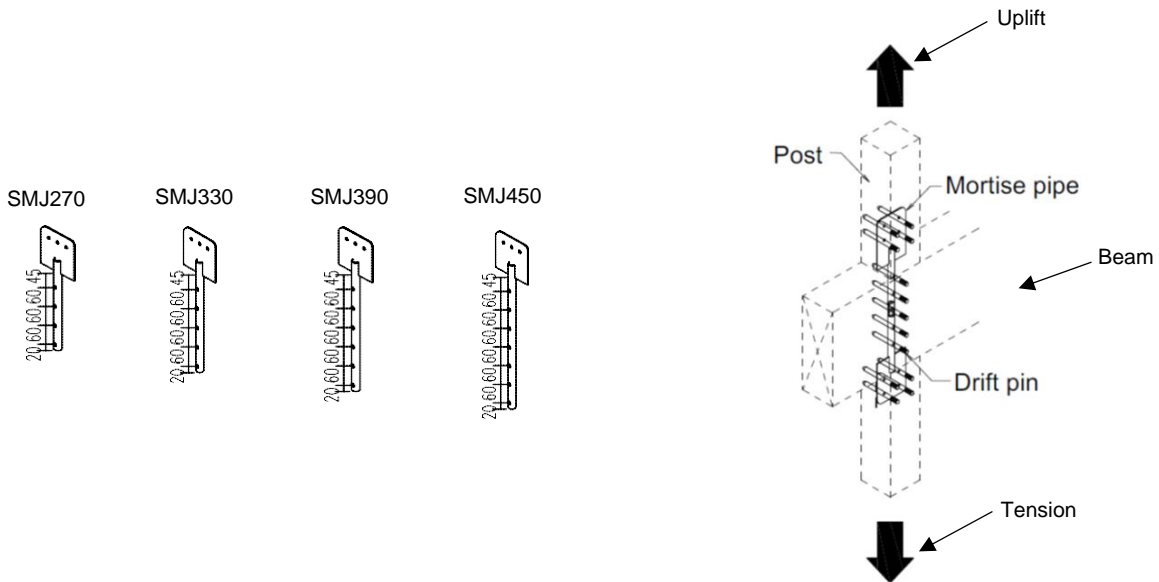


FIGURE 4—SHAWOOD SMJ MORTISE PIPE POST BRACKETS AND INSTALLATION (TYP)

DIVISION: 06 00 00—WOOD, PLASTICS AND COMPOSITES
Section: 06 05 23—Wood, Plastic, and Composite Fastenings

REPORT HOLDER:

SEKISUI HOUSE, LTD.

EVALUATION SUBJECT:

SHAWOOD SMJ POST BASE CONNECTORS
SHAWOOD SMJ MORTISE PIPE CONNECTORS AND PIPE POST BRACKETS

1.0 REPORT PURPOSE AND SCOPE**Purpose:**

The purpose of this evaluation report supplement is to indicate that SHAWOOD SMJ post base connectors, SHAWOOD SMJ Mortise pipe connectors and pipe post brackets, described in ICC-ES evaluation report [ESR-4569](#), have also been evaluated for compliance with the codes noted below as adopted by the Los Angeles Department of Building and Safety (LADBS).

Applicable code editions:

- 2023 *City of Los Angeles Building Code* (LABC)
- 2023 *City of Los Angeles Residential Code* (LARC)

2.0 CONCLUSIONS

The SHAWOOD SMJ post base connectors, SHAWOOD SMJ Mortise pipe connectors and pipe post brackets, described in Sections 2.0 through 7.0 of the evaluation report [ESR-4569](#), comply with the LABC Chapter 23, and the LARC, and are subject to the conditions of use described in this evaluation report supplement.

3.0 CONDITIONS OF USE

The SHAWOOD SMJ Post Base Connectors, SHAWOOD SMJ Mortise pipe connectors and pipe post brackets, described in this evaluation report supplement must comply with all of the following conditions:

- All applicable sections in the evaluation report [ESR-4569](#).
- The design, installation, conditions of use and identification are in accordance with the 2021 *International Building Code*® (IBC) provisions noted in the evaluation report [ESR-4569](#).
- The design, installation and inspection are in accordance with additional requirements of LABC Chapters 16 and 17, as applicable.
- Under the LARC, an engineered design in accordance with LARC Section R301.1.3 must be submitted.

This evaluation report supplement expires concurrently with the evaluation report [ESR-4569](#), reissued March 2024 and revised July 2024.

DIVISION: 06 00 00—WOOD, PLASTICS AND COMPOSITES
Section: 06 05 23—Wood, Plastic, and Composite Fastenings

REPORT HOLDER:

SEKISUI HOUSE, LTD.

EVALUATION SUBJECT:

SHAWOOD SMJ POST BASE CONNECTORS
SHAWOOD SMJ MORTISE PIPE CONNECTORS AND PIPE POST BRACKETS

1.0 REPORT PURPOSE AND SCOPE**Purpose:**

The purpose of this evaluation report supplement is to indicate that SHAWOOD SMJ post base connectors, SHAWOOD SMJ Mortise pipe connectors and pipe post brackets, described in ICC-ES evaluation report ESR-4569, have 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)

2.0 CONCLUSIONS**2.1 CBC:**

The SHAWOOD SMJ post base connectors, SHAWOOD SMJ Mortise pipe connectors and pipe post brackets, described in Sections 2.0 through 7.0 of the evaluation report ESR-4569, comply with CBC Chapters 23, provided the design and installation are in accordance with the 2021 *International Building Code*® (IBC) provisions, noted in the evaluation report ESR-4569 and the additional requirements of CBC Chapter 16 and 17, as applicable.

2.1.1 OSHPD: The applicable OSHPD Sections and Chapters of the CBC are beyond the scope of this evaluation report supplement.

2.1.2 DSA: The applicable DSA Sections and Chapters of the CBC are beyond the scope of this evaluation report supplement.

2.2 CRC:

The SHAWOOD SMJ post base connectors, SHAWOOD SMJ Mortise pipe connectors and PIPE post brackets, described in Sections 2.0 through 7.0 of the evaluation report ESR-4569, comply with CRC Chapter 3, provided the design and installation are in accordance with the 2021 *International Residential Code*® (IRC) provisions noted in the evaluation report ESR-4569.

This evaluation report supplement expires concurrently with the evaluation report ESR-4569, reissued March 2024, revised July 2024.