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BUILDING AND SAFETY
201 NORTH FIGUEROA STREET
LOS ANGELES, CA 90012

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RAYMOND CHAN
EXECUTIVE OFFICER

Simpson Strong-Tie Co., Inc.
260 N. Palm Street
Brea, CA 92821

Attn: Tim Kaucher, P. E.
(800) 999-5099

RESEARCH REPORT: RR 25801
(CSI # 06090)

BASED UPON ICC EVALUATION SERVICE
REPORT NO. ESR-2552

REEVALUATION DUE DATE:

August 1, 2010

Issued Date: August 1, 2009

Code: 2008 LABC

GENERAL APPROVAL - Simpson Strong-Tie Face Mount Hangers for composite lumber and prefabricated wood I-joists.

DETAILS

The above assemblies and/or products are approved when in compliance with the description, use, identification and findings of Report No.ESR-2552 dated February 1, 2008, revised June 2009, of the ICC Evaluation Service, Incorporated.

The parts of Report No.ESR-2552 which are excluded on the attached copy have been removed by the Los Angeles Building Department as not being included in this approval.

The approval is subject to the following conditions:

1. The values shown in this report shall not be used in repair, retrofit and new construction of tilt-up and/or masonry wall anchorage (in tension) for the connection with the horizontal wood diaphragm.
2. Solid blocking shall be required for all joist hangers supporting roof joists having one end twisted more than one-half degree per foot of length relative to the other end, except as specifically noted in the tables.

Simpson Strong-Tie Co., Inc.

Re: Simpson Strong-Tie Top Flange Hangers for sawn lumber.

3. Allowable loads shall not be increased for duration of load, except as specifically noted in the tables.
4. All uplift loads in tables have been increased $\frac{1}{3}$ for earthquake and wind loading. Values must be reduced for normal duration loads.
5. The supported end of joist or beam shall be within $\frac{1}{4}$ -inch from the supporting header.
6. Allowable loads in tables are for the wood fastening devices and its fasteners; the values do not include supporting members. The supporting members shall be checked separately for structural adequacy.
7. Approved products to be used shall be indicated on the approved set of plans.
8. Nails shall be common nails except where otherwise specified. Bolts shall conform to ASTM A307 or better
9. All products involving welding shall be fabricated in the shop of a Los Angeles City licensed fabricator.
10. Test data verifying the properties of the steel, by the mill or by an approved testing agency, shall be obtained for each shipment. The data shall be kept on file and submitted to the Department upon request.
11. All products shall be identified with "Simpson" and the device stock number
12. Except as specified herein, manufacturer's instructions shall be followed.

Simpson Strong-Tie Co., Inc.

Re: Simpson Strong-Tie Top Flange Hangers for sawn lumber.

DISCUSSION

The report is in compliance with 2008 Los Angeles Building Code.

The approval is based on tests and analysis in accordance with the ICC-ES Acceptance Criteria for Joist Hangers and Similar Devices (AC13), dated October 2006 (corrected March 2007).

Addressee to whom this Research Report is issued is responsible for providing copies of it, complete with any attachments indicated, to architects, engineers and builders using items approved herein in design or construction which must be approved by Department of Building and Safety Engineers and Inspectors.

This general approval will remain effective provided the Evaluation Report is maintained valid and unrevised with the issuing organization. Any revisions to the report must be submitted to this Department, with appropriate fee, for review in order to continue the approval of the revised report.

This general approval of an equivalent alternate to the Code is only valid where an engineer and/or inspector of this Department has determined that all conditions of this approval have been met in the project in which it is to be used.

YEUAN CHOU, Chief
Engineering Research Section
201 N. Figueroa St., Room 880
Los Angeles, CA 90012
Phone - 213-202-9812
Fax - 213-202-9942

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Attachment: ICC ES Report No. ESR-2552 (13 Pages)

ICC-ES Evaluation Report

ESR-2552*

Issued February 1, 2008

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

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DIVISION: 06—WOOD AND PLASTICS
Section: 06090—Wood and Plastics Fastenings

REPORT HOLDER:

SIMPSON STRONG-TIE COMPANY, INC.
5956 WEST LAS POSITAS BOULEVARD
PLEASANTON, CALIFORNIA 94588
(800) 925-5099
www.strongtie.com

EVALUATION SUBJECT:

SIMPSON STRONG-TIE FACE-MOUNT HANGERS FOR STRUCTURAL COMPOSITE LUMBER (SCL) AND PREFABRICATED WOOD I-JOISTS (ENGINEERED WOOD PRODUCTS)

1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2006 *International Building Code*® (IBC)
- * ■ ~~2006 *International Residential Code*® (IRC)~~

Property evaluated:

Structural

2.0 USES

The Simpson Strong-Tie face-mount hangers described in this report are used to support structural composite lumber and prefabricated wood I-joists (i.e., engineered wood products) used in wood construction in accordance with Section 2304.9.3 of the IBC. ~~The face-mount hangers 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 Simpson Strong-Tie face-mount hangers described in this report are U-shaped hangers that have prepunched holes for the installation of nails into the face of the supporting wood header or beam or ledger.

3.1.1 IUS Series Hangers: The IUS series hangers are formed from No. 18 gage galvanized steel and are used to support prefabricated wood I-joists exclusively to a supporting wood member. See Table 1A for the IUS series hanger model numbers, hanger dimensions, and required fasteners; and Table 1B for allowable loads. See Figure 1 for a drawing of a typical IUS hanger and a typical IUS hanger installation.

3.1.2 IUT Series Hangers: The IUT series hangers are formed from No. 18 gage galvanized steel and are used to support prefabricated wood I-joists exclusively to a supporting wood member. The IUT series hangers have two steel tabs located at the bottom flange of an installed wood I-joist that are bent over and nailed to the top surface of the bottom flange of a wood I-joist at the jobsite, as shown in Figure 2. See Table 2A for the IUT series hanger model numbers, hanger dimensions, and required fasteners; and Table 2B for allowable loads.

3.1.3 U Series Hangers: The U series hangers are formed from No. 16 gage galvanized steel. The hangers are face-nailed to the supporting wood header, and nailed to the supported structural composite lumber or prefabricated wood I-joists with web stiffeners to accept the required size and number of joist nails shown in Table 3. See Table 3 for the U series hanger model numbers, hanger dimensions, required fasteners, and allowable loads. See Figure 3 for a drawing of a typical U series joist hanger.

3.1.4 HU and HUC Series Hangers: The HU and HUC series hangers are formed from No. 14 gage galvanized steel, and are face-nailed to the supporting wood header/beam and nailed to the supported structural composite lumber or prefabricated wood I-joists with web stiffeners. HU hangers having a seat width (W) equal to or greater than 2⁹/₁₆ inches (65 mm) are available with concealed flanges and are specified with the model designation HUC. See Table 4A for hanger model numbers, hanger dimensions, and required fasteners (minimum and maximum); and Table 4B for allowable loads based on the minimum and maximum nailing schedules shown in Table 4A. The HU and HUC hangers have triangular and round holes in both the U-shaped portion supporting the wood joist and in the flanges attached to the supporting wood header/beam. The minimum allowable loads are achieved by filling only the round holes with the type and size of nails shown in Table 4A, and the maximum allowable loads are achieved by filling all holes (both the round and triangular) with size of nails shown in Table 4A. See Figure 4a and 4b for drawings of typical HU and HUC hangers, and Figure 4c for a drawing of a typical installation of an HU hanger supporting a prefabricated wood I-joist with approved web stiffeners.

3.1.5 HUS and HUSC Series Hangers: The HUS and HUSC series hangers are formed from No. 14 gage galvanized steel. The hangers have prepunched holes for the installation of nails that are driven at a 45-degree angle through the joist and into the header, which is described as double shear nailing in the installation instructions. See Table 5 for HUS series hanger models, hanger dimensions, required

*Revised February 2009

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fasteners, and allowable loads. See Figure 5 for a drawing of a typical HUS hanger.

3.1.6 HHUS Series Hangers: The HHUS series hangers are formed from No. 14 gage galvanized steel. The hangers have pre-punched holes for the installation of nails that are driven at a 45 degree angle through the joist and into the header, which is described as double shear nailing in the installation instructions. See Table 6 for the hanger model numbers, hanger dimensions, required fasteners, and allowable loads. See Figure 6 for a drawing of a typical HHUS hanger.

3.1.7 SUR/L Series Hangers: The SUR/L series hangers are formed from No. 16 gage galvanized steel. The SUR and SUL hangers are identical except they are skewed at 45 degrees to the right (SUR) and the left (SUL), respectively. See Tables 7A for hanger models, hanger dimensions, and required fasteners; and Table 7B for allowable loads. See Figure 7a for a drawing of a typical SUL hanger and Figure 7b for a typical SUR hanger installation.

3.1.8 HSUR/L Series Hangers: The HSUR/L series hangers are formed from No. 14 gage galvanized steel. The HSUR and HSUL hangers are identical except they are skewed at 45 degrees to the right (HSUR) and the left (HSUL), respectively, and are designed to support prefabricated wood I-joists having approved web stiffeners, and structural composite lumber (SCL). See Table 8 for the hanger model numbers, hanger dimensions, required fasteners, and allowable loads. See Figure 8a for a drawing of a typical HSUR hanger, and Figure 8b for a typical HSUR hanger installation.

3.1.9 MIU Series Joist Hangers: The MIU series hangers are formed from No. 16 gage galvanized steel and are used to support prefabricated wood I-joists or other approved wood members. Other approved wood members must be installed in accordance with Section 2308.8.2 of the IBC and Section R502.7 of the IRC. See Table 9 for the MIU series hanger model numbers, hanger dimensions, required fasteners, and allowable loads. See Figure 9a for a drawing of a typical MIU hanger and Figure 9b for a drawing of a typical MIU hanger installation.

3.2 Materials:

3.2.1 Steel: The hangers described in this report are manufactured from galvanized steel complying with ASTM A 653, SS designation, Grade 33, with a minimum yield strength, F_y , of 33,000 psi (227 MPa) and a minimum tensile strength, F_u , of 45,000 psi (310 MPa). Base-metal thicknesses for the hangers in this report are as follows:

NOMINAL THICKNESS (gage)	MINIMUM BASE-METAL THICKNESS (inch)
No. 14	0.0685
No. 16	0.0555
No. 18	0.0444

For SI: 1 inch = 25.4 mm.

The galvanized zinc coating conforms to ASTM A 924 and ASTM A 653 with a G90 designation. Some models (designated with a model number ending with Z) are available with a G185 zinc coating specification in accordance with ASTM A 653. Some models (designated with a model number ending with HDG) are available with a hot-dip galvanization, also known as “batch” galvanization, in accordance with ASTM A 123, with a minimum specified coating weight of 2.0 ounces of zinc per square foot of surface area (600 g/m²), total for both sides. Model numbers in this report do not include the Z or HDG ending, but the information shown applies. The lumber treater or holder of this report (Simpson Strong-Tie Company) should be contacted for

recommendations on minimum corrosion resistance of steel connectors in contact with the specific proprietary preservative treated or fire retardant treated lumber.

3.2.2 Wood: Wood headers/beams which the connectors are face nailed to, must be either sawn lumber, glued-laminated lumber, or engineered lumber having a minimum specific gravity of 0.50 (minimum equivalent specific gravity of 0.50 for engineered lumber), and having a maximum moisture content of 19 percent (16 percent for engineered lumber) except as noted in Section 4.1. The thickness of the supporting wood member (header) must be equal to or greater than the length of the fasteners specified in the tables in this report, or as required by wood member design, whichever is greater.

Supported wood members that are prefabricated wood I-joists or SCL must be recognized in a current evaluation report, which will specify the allowable shear capacity and allowable reactions at supports for the proprietary engineered wood lumber. When required, web stiffeners for prefabricated wood I-joists must comply with specifications noted in the applicable evaluation report for the I-joists. The hangers described in this evaluation report may support I-joists having a current ICC-ES evaluation report. The evaluation report for the prefabricated wood I-joist must specify a minimum bearing length that is equal to or greater than the hanger bearing length. For installation with engineered wood members, minimum allowable nail spacing and end and edge distances, as specified in the applicable evaluation report for the engineered wood product, must be met.

3.2.3 Fasteners: Nails used for hangers described in this report must comply with ASTM F 1667 and have the following minimum fastener dimensions and bending yield strengths (F_{yb}):

FASTENERS	SHANK DIAMETER (inches)	NAIL LENGTH (inches)	F_{yb} (psi)
10d x 1 1/2	0.148	1 1/2	90,000
10d	0.148	3	90,000
16d x 2 1/2	0.162	2 1/2	90,000
16d	0.162	3 1/2	90,000

For SI: 1 inch = 25.4 mm, 1 psi = 6.895 kPa.

Fasteners used in contact with preservative treated or fire retardant treated lumber must comply with IBC Section 2304.9.5 or IRC Section R319.3, as applicable. The lumber treater or this report holder (Simpson Strong-Tie Company) should be contacted for recommendations on minimum corrosion resistance of fasteners and connection capacities of fasteners used with the specific proprietary preservative treated or fire retardant treated lumber.

4.0 DESIGN AND INSTALLATION

4.1 Design:

The tabulated allowable loads shown in this report are based on allowable stress design (ASD) and include the load duration factor, C_D , corresponding with the applicable loads in accordance with the NDS.

Tabulated allowable loads apply to products connected to wood used under dry conditions and where sustained temperatures are 100°F (37.8°C) or less. When products are installed to wood having a moisture content greater than 19 percent (16 percent for engineered wood products), or where wet service is expected, the allowable loads must be adjusted by the wet service factor, C_M , specified in the NDS. When connectors are installed in wood that will experience sustained exposure to temperatures exceeding 100°F (37.8°C), the

allowable loads in this report must be adjusted by the temperature factor, C_t , specified in the NDS.

Connected wood members must be analyzed for load-carrying capacity at the connection in accordance with the NDS and the evaluation report for the engineered wood products.

4.2 Installation:

Installation of the connectors 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.

5.0 CONDITIONS OF USE

The Simpson Strong-Tie face-mount hangers 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 must be manufactured, identified and installed in accordance with this report and the manufacturer's published installation instructions. A copy of the 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 report.
- 5.5** Use of connectors with preservative or fire retardant treated lumber must be in accordance with Section 3.2.1 of this report. Use of fasteners with preservative treated or fire retardant treated lumber must be in accordance with Section 3.2.3 of this report.

6.0 EVIDENCE SUBMITTED

Data in accordance with the ICC-ES Acceptance Criteria for Joist Hangers and Similar Devices (AC13), dated October 2006 (corrected March 2007; Editorially revised April 2008).

7.0 IDENTIFICATION

The products described in this report are identified with a stamp or label bearing the Simpson Strong-Tie Company name, the model number, and the number of an index evaluation report ([ESR-2523](#)) that is used as an identifier for the products recognized in this report.

TABLE 1A—APPLICABLE MODEL NUMBERS FOR THE IUS SERIES I-JOIST HANGERS¹

MODEL NO.	DIMENSIONS ² (inches)			COMMON NAILS (Quantity-Size)		MODEL NO.	DIMENSIONS ² (inches)			COMMON NAILS (Quantity-Size)	
	W	H	B	Header	Joist		W	H	B	Header	Joist
IUS1.56/9.5	1 ⁵ / ₈	9 ¹ / ₂	2	8-10d	—	IUS2.37/14 (max)	2 ⁷ / ₁₆	14	2	14-10d	—
IUS1.56/11.88		11 ⁷ / ₈		10-10d	—	IUS2.37/16 (min)		16		14-10d	—
IUS1.81/9.5	1 ⁷ / ₈	9 ¹ / ₂	2	8-10d	—	IUS2.37/16 (max)		2 ⁵ / ₈		9 ¹ / ₂	2
IUS1.81/11.88		11 ⁷ / ₈		10-10d	—	IUS2.56/9.5	11 ⁷ / ₈		8-10d	—	
IUS1.81/14 (min)		14		12-10d	—	IUS2.56/11.88	14		10-10d	—	
IUS1.81/14 (max)				14-10d	—	IUS2.56/14 (min)	16		12-10d	—	
IUS2.06/9.5				8-10d	—	IUS2.56/14 (max)			14-10d	—	
IUS2.06/11.88	2 ¹ / ₄	11 ⁷ / ₈	2	10-10d	—	IUS2.56/16 (min)	3 ⁵ / ₈	14	2	14-10d	—
IUS2.06/14 (min)		12-10d		—	IUS2.56/16 (max)	16-10d		—			
IUS2.06/14 (max)		14-10d		—	IUS3.56/9.5	9 ¹ / ₂		10-10d		—	
IUS2.06/16 (min)		16		14-10d	—	IUS3.56/11.88		11 ⁷ / ₈		12-10d	—
IUS2.06/16 (max)				16-10d	—	IUS3.56/14 (min)		14		12-10d	—
IUS2.37/11.88	2 ⁷ / ₁₆	11 ⁷ / ₈	2	10-10d	—	IUS3.56/14 (max)	16		14-10d	—	
IUS2.37/14 (min)		14		12-10d	—	IUS3.56/16 (min)			14-10d	—	
—		—		—	—	IUS3.56/16 (max)		16-10d	—		

For SI: 1 inch = 25.4 mm.

1. Model numbers ending with (min) refer to nails installed into only round holes of the hanger, and the model numbers ending with (max) refer to nails installed into both round and triangle holes of the hanger.
2. Refer to Figure 1a (this page) for definitions of hanger nomenclature (W, H, B).

TABLE 1B—ALLOWABLE LOADS FOR THE IUS SERIES I-JOIST HANGERS

MODEL NO.	DIMENSIONS ¹ (inches)			COMMON NAILS (Quantity-Size)		ALLOWABLE LOADS ² (lbs)			
	W	H	B	Header	Joist	Uplift ^{3,4}		Download	
						C _D = 1.6	C _D = 1.0	C _D = 1.15	C _D = 1.25
IUS	1 ⁵ / ₈ (min) to 2 ⁵ / ₈ (max)	9 ¹ / ₂ (min) to 16 (max)	2	8-10d	—	75	935	1,075	1,170
				10-10d	—	75	1,170	1,345	1,465
				12-10d	—	75	1,405	1,615	1,755
				14-10d	—	75	1,640	1,885	1,980
				16-10d	—	75	1,870	1,980	1,980
IUS	2 ⁷ / ₁₆ (min) to 3 ⁵ / ₈ (max)	9 ¹ / ₂ (min) to 16 (max)	2	10-10d	—	75	1,170	1,345	1,465
				12-10d	—	75	1,405	1,615	1,725
				14-10d	—	75	1,640	1,725	1,725
				16-10d	—	75	1,725	1,725	1,725

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

1. Refer to Figure 1a (this page) for definitions of hanger nomenclature (W, H, B).
2. Tabulated allowable loads must be selected based on duration of load as permitted by the applicable building code.
3. The uplift loads have been increased for wind or earthquake loading with no further increase allowed. The allowable uplift loads must be reduced when other load durations govern.
4. Additional uplift capacity is available when installing 2-10dx1¹/₂-inch-long nails through the triangular holes that are pre-punched in the U-shaped portion of the hanger and into the stiffened web of the prefabricated wood I-joist. When these additional nails are used, the maximum allowable uplift load is 300 lbs (C_D = 1.6).



FIGURE 1a—TYPICAL IUS HANGER

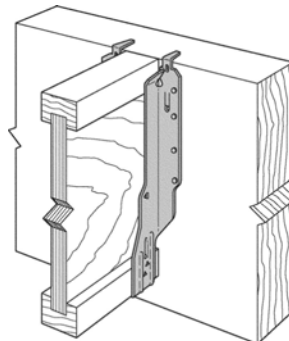


FIGURE 1b—TYPICAL IUS HANGER INSTALLATION (Supported Wood I-joist without Web Stiffeners)

TABLE 2A—IUT SERIES HANGERS FOR WOOD I-JOISTS

MODEL NO.	DIMENSIONS ¹ (inches)			FASTENERS (Quantity-Type)		MODEL NO.	DIMENSIONS ¹ (inches)			FASTENERS (Quantity-Type)	
	W	H	B	Header			W	H	B	Header	
IUT29	1 ⁹ / ₁₆	9	2	8-10dx1 ¹ / ₂		IUT3510	2 ³ / ₈	9	2	8-10dx1 ¹ / ₂	
IUT211		11 ¹ / ₈		10-10dx1 ¹ / ₂		IUT3512		11 ¹ / ₈		10-10dx1 ¹ / ₂	
IUT214		13 ³ / ₄		14-10dx1 ¹ / ₂		IUT3514		13 ³ / ₄		14-10dx1 ¹ / ₂	
IUT1.68/9	1 ¹¹ / ₁₆	9 ³ / ₄	2	8-10dx1 ¹ / ₂		IUT310	2 ⁹ / ₁₆	9 ¹ / ₈	2	8-10dx1 ¹ / ₂	
IUT1.68/11		11 ¹ / ₄		10-10dx1 ¹ / ₂		IUT312		11 ¹ / ₄		10-10dx1 ¹ / ₂	
IUT1.68/14		13 ³ / ₁₆		14-10dx1 ¹ / ₂		IUT314		13 ¹³ / ₁₆		14-10dx1 ¹ / ₂	
IUT9	1 ¹³ / ₁₆	9	2	8-10dx1 ¹ / ₂		IUT410	3 ⁹ / ₁₆	9 ¹ / ₄	2	8-10dx1 ¹ / ₂	
IUT11		11 ¹ / ₈		10-10dx1 ¹ / ₂		IUT412		11 ¹ / ₄		10-10dx1 ¹ / ₂	
IUT14		13 ³ / ₄		14-10dx1 ¹ / ₂		IUT414		13 ³ / ₄		14-10dx1 ¹ / ₂	
IUT2.06/9	2 ¹ / ₈	9 ³ / ₁₆	2	8-10dx1 ¹ / ₂		(This section of the table is intentionally blank)					
IUT2.06/11		11 ³ / ₁₆		10-10dx1 ¹ / ₂							
IUT2.06/14		13 ³ / ₁₆		14-10dx1 ¹ / ₂							

For SI: 1 inch = 25.4 mm.

1. Refer to Figure 2a (this page) for definitions of hanger nomenclature (W, H, B).

TABLE 2B—ALLOWABLE LOADS FOR THE IUT SERIES WOOD I-JOIST HANGERS

MODEL NO.	DIMENSIONS ¹ (inches)			FASTENERS (Quantity-Type)		ALLOWABLE LOADS ² (lbs)			
	W	H	B	Header	Joist ³	Uplift ⁴			
						Download			
						C _D = 1.6	C _D = 1.0	C _D = 1.15	C _D = 1.25
IUT	1 ⁹ / ₁₆ (min) to 3 ⁹ / ₁₆ (max)	6 ⁷ / ₈ (min) to 13 ¹³ / ₁₆ (min)	2	8-10dx1 ¹ / ₂	2-10dx1 ¹ / ₂	245	730	835	910
				10-10dx1 ¹ / ₂	2-10dx1 ¹ / ₂	245	910	1,045	1,140
				14-10dx1 ¹ / ₂	2-10dx1 ¹ / ₂	245	1,275	1,465	1,590

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

1. Refer to Figure 2a (this page) for definitions of hanger nomenclature (W, H, B).
2. Tabulated allowable loads must be selected based on duration of load as permitted by the applicable building code.
3. The bend-tabs are bent over and nailed into the top surface of the I-joist bottom chord when web stiffeners are not used, or remain unbent and are nailed directly into the web stiffeners of the wood I-joist.
4. The uplift loads have been increased for wind or earthquake loading with no further increase allowed. The allowable uplift loads must be reduced when other load durations govern.



FIGURE 2a—IUT JOIST HANGER

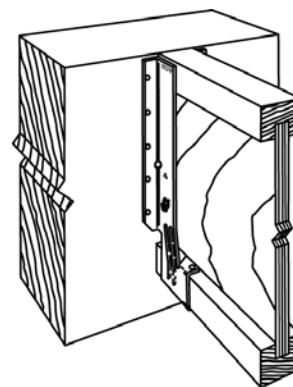


FIGURE 2b—TYPICAL IUT HANGER INSTALLATION
(See Footnote 3 to Table 2B)

TABLE 3—ALLOWABLE LOADS FOR THE U SERIES JOIST HANGERS

MODEL NO.	DIMENSIONS ¹ (inches)			FASTENERS (Quantity-Type)		ALLOWABLE LOADS ^{2,3,4} (lbs)						
						Uplift ⁵ C _D = 1.6	Download					
	W	H	B	Header ⁴	Joist		C _D = 1.0		C _D = 1.15		C _D = 1.25	
							10d	16d	10d	16d	10d	16d
U14	1 ¹³ / ₁₆	10 ¹ / ₄	2	14	6-10dx1 ¹ / ₂	720	–	1,860	–	2,140	–	2,330
U310	2 ⁹ / ₁₆	8 ⁷ / ₈	2	14	6-10dx1 ¹ / ₂	720	1,555	1,860	1,785	2,140	1,940	2,330
U314	2 ⁹ / ₁₆	10 ¹ / ₂	2	16	6-10dx1 ¹ / ₂	720	1,775	2,130	2,040	2,445	2,220	2,660
U3510/14	2 ⁵ / ₁₆	9	2	14	6-10dx1 ¹ / ₂	720	–	1,860	–	2,140	–	2,330
U3516/20	2 ⁵ / ₁₆	10 ⁹ / ₁₆	2	16	6-10dx1 ¹ / ₂	720	–	2,130	–	2,445	–	2,660
U410	3 ⁹ / ₁₆	8 ³ / ₈	2	14	6-10d	890	1,555	1,860	1,785	2,140	1,940	2,330
U414	3 ⁹ / ₁₆	10	2	16	6-10d	890	1,775	2,130	2,040	2,445	2,220	2,660
U3510-2	4 ³ / ₄	8 ³ / ₄	2	14	6-10d	890	–	1,860	–	2,140	–	2,330
U3512-2	4 ³ / ₄	11 ¹ / ₄	2	16	6-10d	890	–	2,130	–	2,445	–	2,660
U610	5 ¹ / ₂	8 ¹ / ₂	2	14	6-10d	890	1,555	1,860	1,785	2,140	1,940	2,330

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

1. Refer to Figure 3 (this page) for definitions of hanger nomenclature (W, H, B).
2. Tabulated allowable loads must be selected based on duration of load as permitted by the applicable building code.
3. U series hangers provide a torsional resistance up to a maximum joist depth of 32 inches, where torsional resistance is defined as a moment of not less than 75 pounds (334 N) times the depth of the joist at which the lateral movement of the top or bottom of the joist with respect to its vertical position is 0.125 inch (3.2 mm).
4. The quantity of 10d or 16d common nails specified in the “Header” column under “Fasteners” is required to achieve the tabulated allowable loads shown in the Allowable Download columns entitled 10d or 16d.
5. Allowable uplift loads are for hangers installed with either 10d or 16d common nails into the supporting header/beam, and have been increased for wind or earthquake loading with no further increase allowed. The allowable uplift loads must be reduced when other load durations govern.

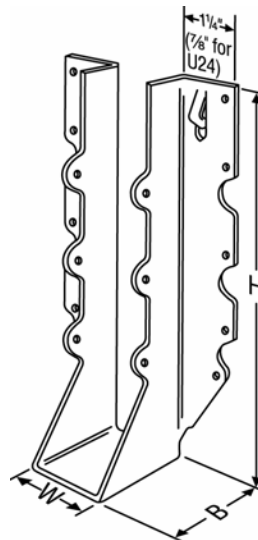


FIGURE 3—U SERIES JOIST HANGER

TABLE 4A—APPLICABLE MODEL NUMBERS FOR THE HU/HUC SERIES JOIST HANGERS

MODEL NO.	DIMENSIONS ¹ (inches)			FASTENERS ² (Minimum Quantity-Type)		FASTENERS ² (Maximum Quantity-Type)	
	W	H	B	Header	Joist	Header	Joist
HU1.81/5	1 ¹³ / ₁₆	5 ³ / ₈	2 ¹ / ₂	—	—	16-16d	6-10dx1 ¹ / ₂
HU7		6 ¹¹ / ₁₆		—	—	18-16d	8-10dx1 ¹ / ₂
HU9		9 ⁵ / ₁₆		—	—	24-16d	10-10dx1 ¹ / ₂
HU11		11 ¹ / ₁₆		—	—	30-16d	10-10dx1 ¹ / ₂
HU14		14		—	—	36-16d	14-10dx1 ¹ / ₂
HU2.1/9	2 ¹ / ₈	9	2 ¹ / ₂	14-16d	6-10dx1 ¹ / ₂	—	—
HU2.1/11		11		16-16d	6-10dx1 ¹ / ₂	—	—
HU359	2 ³ / ₈	8 ¹⁵ / ₁₆	2 ¹ / ₂	14-16d	6-10dx1 ¹ / ₂	18-16d	10-10dx1 ¹ / ₂
HU3511		11 ¹ / ₁₆		16-16d	6-10dx1 ¹ / ₂	22-16d	10-10dx1 ¹ / ₂
HU3514		13 ¹ / ₂		18-16d	8-10dx1 ¹ / ₂	24-16d	12-10dx1 ¹ / ₂
HU3516/22		14 ¹ / ₄		20-16d	8-10dx1 ¹ / ₂	—	—
HU3524/30		18		18-16d	8-10dx1 ¹ / ₂	24-16d	14-10dx1 ¹ / ₂
HU310	2 ⁹ / ₁₆	8 ⁷ / ₈	2 ¹ / ₂	14-16d	6-10dx1 ¹ / ₂	—	—
HU312		10 ⁹ / ₈		16-16d	6-10dx1 ¹ / ₂	—	—
HU314		12 ³ / ₈		18-16d	8-10dx1 ¹ / ₂	—	—
HU316		14 ¹ / ₈		20-16d	8-10dx1 ¹ / ₂	—	—
HU2.75/10	2 ³ / ₄	9	2 ¹ / ₂	14-16d	6-10dx1 ¹ / ₂	18-16d	10-10dx1 ¹ / ₂
HU2.75/12		10 ³ / ₄		16-16d	6-10dx1 ¹ / ₂	22-16d	10-10dx1 ¹ / ₂
HU2.75/14		13		18-16d	8-10dx1 ¹ / ₂	24-16d	14-10dx1 ¹ / ₂
HU2.75/16		14 ¹ / ₁₆		20-16d	8-10dx1 ¹ / ₂	26-16d	14-10dx1 ¹ / ₂
HU410	3 ⁹ / ₁₆	8 ⁵ / ₈	2 ¹ / ₂	14-16d	6-10d	18-16d	10-10d
HU412		10 ¹ / ₂		16-16d	6-10d	22-16d	10-10d
HU414		12 ⁵ / ₈		18-16d	8-10d	24-16d	12-10d
HU416		13 ⁵ / ₈		20-16d	8-10d	26-16d	12-10d
HU4.12/9	4 ¹ / ₈	8 ⁵ / ₈	2 ¹ / ₂	14-16d	6-10d	18-16d	10-10d
HU4.12/11		10 ⁵ / ₁₆		16-16d	6-10d	22-16d	10-10d
HU4.28/9	4 ⁹ / ₃₂	9	2 ¹ / ₂	18-16d	8-10d	—	—
HU4.75/9	4 ³ / ₄	9	2 ¹ / ₂	18-16d	8-10d	—	—
HU3514-2		13 ¹ / ₄		18-16d	8-10d	—	—
HU3516-2		15 ¹ / ₄		20-16d	8-10d	26-16d	12-10d
HU3520-2		19 ¹ / ₄		20-16d	8-10d	26-16d	12-10d
HU310-2		8 ⁷ / ₈		14-16d	6-10d	—	—
HU312-2	5 ¹ / ₈	10 ⁵ / ₈	2 ¹ / ₂	16-16d	6-10d	—	—
HU314-2		12 ⁵ / ₈		18-16d	8-10d	—	—
HU610	5 ¹ / ₂	7 ⁵ / ₈	2 ¹ / ₂	14-16d	6-16d	18-16d	8-16d
HU612		9 ³ / ₈		16-16d	6-16d	22-16d	8-16d
HU614		11 ⁵ / ₈		18-16d	8-16d	24-16d	12-16d
HU616		12 ¹¹ / ₁₆		20-16d	8-16d	26-16d	12-16d
HU410-2	7 ¹ / ₈	9 ¹ / ₈	2 ¹ / ₂	14-16d	6-16d	18-16d	8-16d
HU412-2		11 ¹ / ₈		16-16d	6-16d	22-16d	8-16d
HU414-2		13 ¹ / ₈		20-16d	8-16d	26-16d	12-16d

For SI: 1 inch = 25.4 mm.

1. Refer to Figures 4a and 4b (this page) for definitions of hanger nomenclature (W, H, B).
2. The Fastener column with “minimum quantity” refers to hangers installed with the designated type of nails into only round pre-punched holes of the hanger, and the Fastener column with “maximum quantity” refers to HU series and HUC series hangers installed with the designated type of nails into both round and triangle pre-punched holes of the hanger. The hanger size and fastener quantity are used to determine allowable loads noted in Table 4B.

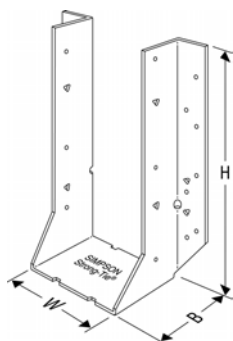


FIGURE 4a—HU SERIES HANGERS

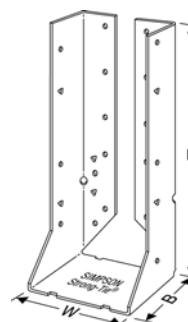


FIGURE 4b—HUC SERIES HANGERS

TABLE 4B—ALLOWABLE LOADS FOR THE HU AND HUC SERIES JOIST HANGERS¹

MODEL NO.	DIMENSIONS ² (inches)			FASTENERS (Quantity-Type)		ALLOWABLE LOADS ^{3,4} (lbs)			
	W	H	B	Header	Joist	Uplift ⁵	Download		
						C _D = 1.6	C _D = 1.0	C _D = 1.15	C _D = 1.25
HU1.81/5	1 ¹³ / ₁₆	5 ³ / ₈	2 ¹ / ₂	16-16d	6-10dx1 ¹ / ₂	720	2,145	2,465	2,680
HU7		6 ¹¹ / ₁₆		18-16d	8-10dx1 ¹ / ₂	960	2,145	2,465	2,680
HU9		9 ⁵ / ₁₆		24-16d	10-10dx1 ¹ / ₂	1,200	3,090	3,220	3,310
HU11		11 ¹ / ₁₆		30-16d	10-10dx1 ¹ / ₂	1,200	3,090	3,220	3,310
HU14		14		36-16d	14-10dx1 ¹ / ₂	1,680	3,450	3,635	3,760
HU/HUC (with minimum nailing—see Table 4A)	2 ¹ / ₈ (min) to 7 ¹ / ₈ (max)	7 ⁵ / ₈ (min) to 9 ¹ / ₈ (max)	2 ¹ / ₂	14-16d	6-10dx1 ¹ / ₂	720	1,875	2,155	2,345
					6-10d	905	1,875	2,155	2,345
					6-16d	1,070	1,875	2,155	2,345
	2 ¹ / ₈ (min) to 7 ¹ / ₈ (max)	9 ³ / ₈ (min) to 11 ¹ / ₈ (max)	2 ¹ / ₂	16-16d	6-10dx1 ¹ / ₂	720	2,145	2,465	2,680
					6-10d	905	2,145	2,465	2,680
					6-16d	1,070	2,145	2,465	2,680
	1 ¹³ / ₁₆ (min) to 5 ¹ / ₂ (max)	9 (min) to 13 ¹ / ₂ (max)	2 ¹ / ₂	18-16d	6-10dx1 ¹ / ₂	720	2,410	2,770	3,015
					8-10dx1 ¹ / ₂	960	2,410	2,770	3,015
					8-10d	1,205	2,410	2,770	3,015
					8-16d	1,430	2,410	2,770	3,015
	2 ³ / ₈ (min) to 7 ¹ / ₈ (max)	9 ³ / ₈ (min) to 12 ¹¹ / ₁₆ (max)	2 ¹ / ₂	20-16d	8-10dx1 ¹ / ₂	960	2,680	3,080	3,350
					8-10d	1,205	2,680	3,080	3,350
8-16d					1,430	2,680	3,080	3,350	
HU/HUC (with maximum nailing—see Table 4A)	2 ¹ / ₈ (min) to 7 ¹ / ₈ (max)	7 ⁵ / ₈ (min) to 9 ¹ / ₈ (max)	2 ¹ / ₂	18-16d	10-10dx1 ¹ / ₂	1,200	2,410	2,770	3,015
					10-10d	1,505	2,410	2,770	3,015
					8-16d	1,430	2,410	2,770	3,015
	2 ¹ / ₈ (min) to 7 ¹ / ₈ (max)	9 ³ / ₈ (min) to 11 ¹ / ₈ (max)	2 ¹ / ₂	22-16d	10-10dx1 ¹ / ₂	1,200	2,950	3,390	3,685
					10-10d	1,505	2,950	3,390	3,685
					8-16d	1,430	2,950	3,390	3,685
	2 ³ / ₄ (min) to 5 ¹ / ₂ (max)	9 (min) to 18 (max)	2 ¹ / ₂	24-16d	10-10dx1 ¹ / ₂	1,200	3,215	3,700	4,020
					12-10dx1 ¹ / ₂	1,440	3,215	3,700	4,020
					14-10dx1 ¹ / ₂	1,680	3,215	3,700	4,020
2 ³ / ₈ (min) to 7 ¹ / ₈ (max)	9 ³ / ₈ (min) to 19 ¹ / ₄ (max)	2 ¹ / ₂	26-16d	10-10dx1 ¹ / ₂	1,200	3,485	4,005	4,355	
				12-10d	1,810	3,485	4,005	4,355	
				12-16d	2,145	3,485	4,005	4,355	

For SI: 1 inch = 25.4 mm, 1 psi = 6.89 kPa, 1 lbf = 4.45 N.

- HU hanger series with widths (W) equal to or greater than 2⁹/₁₆ inches (65 mm) are available with concealed flanges and are specified as HUC hanger series.
- Refer to Figures 4a and 4b (previous page) for definitions of hanger nomenclature (W, H, B).
- Tabulated allowable loads must be selected based on duration of load as permitted by the applicable building code.
- HU series and HUC series hangers provide a torsional resistance up to a maximum joist depth of 30 inches, where torsional resistance is defined as a moment of not less than 75 pounds (334 N) times the depth of the joist at which the lateral movement of the top or bottom of the joist with respect to its vertical position is 0.125 inch (3.2 mm).
- The uplift loads have been increased for wind or earthquake loading with no further increase allowed. The allowable uplift loads must be reduced when other load durations govern.

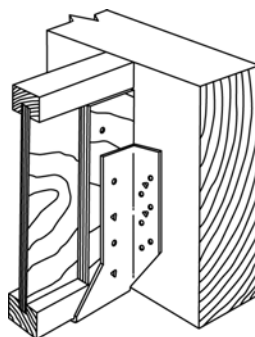


FIGURE 4c—TYPICAL HU HANGER INSTALLATION

TABLE 5—ALLOWABLE LOADS FOR THE HUS SERIES JOIST HANGERS

MODEL NO.	DIMENSIONS ¹ (inches)			FASTENERS (Quantity-Type)		ALLOWABLE LOADS ² (lbs)			
	W	H	B	Header	Joist ³	Uplift ⁴	Download		
						C _D = 1.6	C _D = 1.0	C _D = 1.15	C _D = 1.25
HUS46	3 ⁹ / ₁₆	5	2	4-16d	4-16d	1,080	1,005	1,155	1,255
HUS48	3 ⁹ / ₁₆	6 ¹⁵ / ₁₆	2	6-16d	6-16d	1,550	1,505	1,730	1,885
HUS410	3 ⁹ / ₁₆	8 ¹⁵ / ₁₆	2	8-16d	8-16d	2,160	2,010	2,310	2,510
HUS412	3 ⁹ / ₁₆	10 ¹ / ₂	2	10-16d	10-16d	2,700	2,510	2,885	3,140

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

1. Refer to Figure 5 (this page) for definitions of hanger nomenclature (W, H, B).
2. Tabulated allowable load capacities must be selected based on duration of load as permitted by the applicable building code.
3. Joist nails must be driven at a 45 degree angle through the joist into the header/beam (double shear nailing) to achieve the tabulated loads.
4. The uplift loads have been increased for wind or earthquake loading with no further increase allowed. The allowable uplift loads must be reduced when other load durations govern.

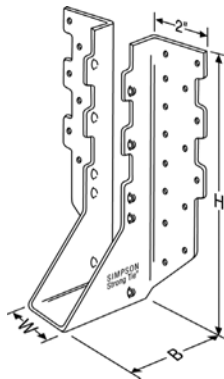


FIGURE 5—HUS JOIST HANGER (see Table 5)

TABLE 6—ALLOWABLE LOADS FOR THE HHUS SERIES JOIST HANGERS

MODEL NO.	DIMENSIONS ¹ (inches)			FASTENERS (Quantity-Type)		ALLOWABLE LOADS ^{2,3} (lbs)			
	W	H	B	Header	Joist ⁴	Uplift ⁵	Download		
						C _D = 1.6	C _D = 1.0	C _D = 1.15	C _D = 1.25
HHUS46	3 ⁵ / ₈	5 ¹ / ₈	3	14-16d	6-16d	1,550	2,580	2,965	3,225
HHUS48	3 ⁵ / ₈	7	3	22-16d	8-16d	2,000	3,885	4,465	4,855
HHUS410	3 ⁵ / ₈	9	3	30-16d	10-16d	2,855	5,190	5,900	5,900

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

1. Refer to Figure 6 (this page) for definitions of hanger nomenclature (W, H, B).
2. Tabulated allowable loads must be selected based on duration of load as permitted by the applicable building code.
3. HHUS hangers provide a torsional resistance up to a maximum joist depth of 11 inches, where torsional resistance is defined as a moment of not less than 75 pounds (334 N) times the depth of the joist at which the lateral movement of the top or bottom of the joist with respect to its vertical position is 0.125 inch (3.2 mm).
4. Joist nails must be driven at a 45 degree angle through the joist into the header/beam (double shear nailing) to achieve the tabulated loads.
5. The uplift loads have been increased for wind or earthquake loading with no further increase allowed. The allowable uplift loads must be reduced when other load durations govern.

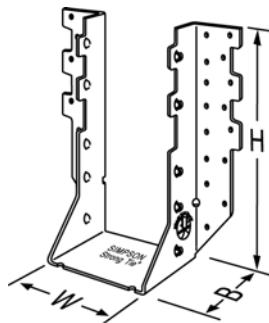


FIGURE 6—HHUS JOIST HANGER (see Table 6)

TABLE 7A—ALLOWABLE LOADS FOR THE SUR/SUL/SURI/SULI SERIES JOIST HANGERS

MODEL NO.	DIMENSIONS ¹ (inches)					FASTENERS (Quantity-Type)		ALLOWABLE LOADS ² (lbs)			
	W	H	B	A1	A2	Header	Joist	Uplift ³		Download	
								C _D = 1.6	C _D = 1.0	C _D = 1.15	C _D = 1.25
SURI/LI2.06/9	2 ¹ / ₁₆	9	2 ⁷ / ₈	1 ¹¹ / ₁₆	1 ³ / ₄	14-16d	6-10dx1½	720	1,860	2,140	2,330
SURI/LI3510/12	2 ⁵ / ₁₆	9	2 ⁷ / ₈	1 ¹¹ / ₁₆	1 ³ / ₄	14-16d	6-10dx1½	720	1,860	2,140	2,330
SURI/LI3514/20	2 ⁵ / ₁₆	13	2 ⁷ / ₈	1 ¹¹ / ₁₆	1 ³ / ₄	18-16d	8-10dx1½	960	2,395	2,500	2,500
SUR/L310	2 ⁹ / ₁₆	8 ¹⁵ / ₁₆	2 ⁵ / ₈	1½	2	14-16d	6-10dx1½	720	1,860	2,140	2,330
SUR/L314	2 ⁹ / ₁₆	13	2 ⁵ / ₈	1½	2	18-16d	8-10dx1½	960	2,395	2,500	2,500
SUR/L410	3 ⁹ / ₁₆	8½	2 ⁵ / ₈	1	2 ³ / ₈	14-16d	6-16dx2½	1,065	1,860	2,140	2,330
SUR/L414	3 ⁹ / ₁₆	8½	2½	1	2 ³ / ₈	18-16d	8-16dx2½	1,420	2,395	2,500	2,500

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

1. Refer to Figure 7 (this page) for definitions of hanger nomenclature (W, H, B, A1, A2).
2. Tabulated allowable loads must be selected based on duration of load as permitted by the applicable building code.
3. The uplift loads have been increased for wind or earthquake loading with no further increase allowed. The allowable uplift loads must be reduced when other load durations govern.

TABLE 7B—ALLOWABLE LOADS FOR THE SUR/SUL/SURI/SULI SERIES JOIST HANGERS¹

MODEL NO.	DIMENSIONS ² (inches)					FASTENERS (Quantity-Type)		ALLOWABLE LOADS ³ (lbs)			
	W	H	B	A ₁	A ₂	Header	Joist	Uplift ⁴		Download	
								C _D = 1.6	C _D = 1.0	C _D = 1.15	C _D = 1.25
SUR/L SURI/LI	1½	8 ¹ / ₈	2	1	1¼	14-16d	6-10dx1½	720	1,860	2,140	2,330
	(min)	(min)	(min)	(min)	(min)	14-16d	6-16dx2½	1,065	1,860	2,140	2,330
	to	to	to	to	to	18-16d	8-10dx1½	960	2,395	2,500	2,500
	3 ⁹ / ₁₆	13	3 ¹ / ₁₆	1 ¹¹ / ₁₆	2 ³ / ₈	18-16d	8-16dx2½	1,420	2,395	2,500	2,500
	(max)	(max)	(max)	(max)	(max)						

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

1. SUR/L Hangers are available for non-standard joist sizes provided the requested width (W) is within the range defined above.
2. Refer to Figure 7a (this page) for definitions of hanger nomenclature (W, H, B, A1, A2).
3. Tabulated allowable loads must be selected based on duration of load as permitted by the applicable building code.
4. The uplift loads have been increased for wind or earthquake loading with no further increase allowed. The allowable uplift loads must be reduced when other load durations govern.

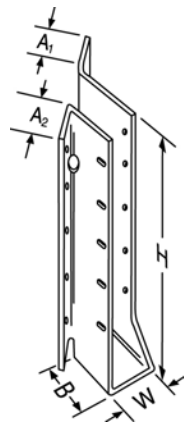


FIGURE 7a—SUL SERIES JOIST HANGER

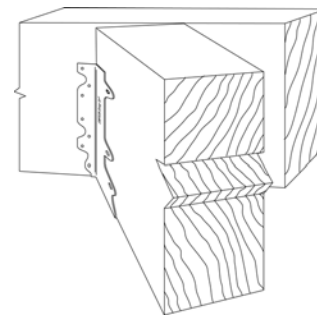


FIGURE 7b—TYPICAL SUR HANGER INSTALLATION

TABLE 8—ALLOWABLE LOADS FOR THE HSUR/HSUL SERIES JOIST HANGERS

MODEL NO.	DIMENSIONS ¹ (inches)					FASTENERS (Quantity-Type)		ALLOWABLE LOADS ^{2,3} (lbs)			
	W	H	B	A ₁	A ₂	Header	Joist	Uplift ⁴			
								Download			
								C _D = 1.6	C _D = 1.0	C _D = 1.15	C _D = 1.25
HSUR/L46	3 ⁹ / ₁₆	4 ³ / ₄	2 ⁷ / ₁₆	1	2 ³ / ₁₆	12-16d	4-16d	715	1,610	1,850	2,000
HSUR/L410	3 ⁹ / ₁₆	8 ¹ / ₂	2 ⁷ / ₁₆	1	2 ³ / ₁₆	20-16d	6-16d	1,070	2,680	3,080	3,350
HSUR/L414	3 ⁹ / ₁₆	12 ¹ / ₂	2 ⁷ / ₁₆	1	2 ³ / ₁₆	26-16d	8-16d	1,430	3,485	4,010	4,355

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

1. Refer to Figure 8a (this page) for definitions of hanger nomenclature (W, H, B, A₁, A₂).
2. Tabulated allowable loads must be selected based on duration of load as permitted by the applicable building code.
3. When I-joists are the supported member as shown in Figure 8b, each I-joist must have web stiffeners installed in accordance with the I-joist manufacturer's evaluation report, and the minimum required quantity of 16d common nails specified in the column entitled FASTENERS must be nailed directly into the top and bottom flange and web stiffeners of the I-joist.
4. The uplift loads have been increased for wind or earthquake loading with no further increase allowed. The allowable uplift loads must be reduced when other load durations govern.

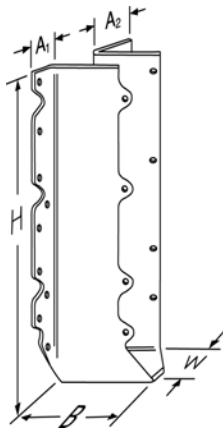


FIGURE 8a—HSUR JOIST HANGER

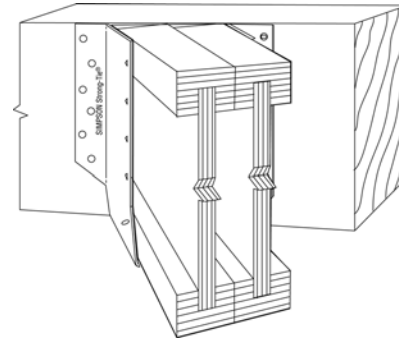


FIGURE 8b—TYPICAL HSUR JOIST HANGER INSTALLATION (Web Stiffeners not shown for Clarity—See Footnote 3 to Table 8)

TABLE 9—ALLOWABLE LOADS FOR THE MIU SERIES JOIST HANGERS

MODEL NO.	DIMENSIONS ¹ (in.)		FASTENERS ^{2,3,4}		ALLOWABLE LOADS (lbs) ^{5,6,7,8}			
	W	H	Header	Joist	Download		Uplift	
					C _D = 1.0	C _D = 1.15	C _D = 1.25	C _D = 1.6
MIU1.56/7	1 ⁹ / ₁₆	6 ¹⁵ / ₁₆	10-16d	4-10dx1 ¹ / ₂	1,440	1,630	1,760	555
MIU1.56/9		8 ¹⁵ / ₁₆	16-16d	6-10dx1 ¹ / ₂	2,305	2,610	2,645	975
MIU1.56/11		11 ¹ / ₁₆	20-16d	6-10dx1 ¹ / ₂	2,590	2,620	2,645	975
MIU1.56/14		13 ⁷ / ₁₆	22-16d	6-10dx1 ¹ / ₂	2,590	2,620	2,645	975
MIU1.81/7 ⁽⁸⁾	1 ¹³ / ₁₆	6 ¹⁵ / ₁₆	10-16d	4-10dx1 ¹ / ₂	1,440 ⁽⁸⁾	1,630 ⁽⁸⁾	1,760 ⁽⁸⁾	555
MIU1.81/9 ⁽⁸⁾		8 ¹³ / ₁₆	16-16d	6-10dx1 ¹ / ₂	2,305 ⁽⁸⁾	2,610 ⁽⁸⁾	2,815 ⁽⁸⁾	975
MIU1.81/11 ⁽⁸⁾		11 ¹ / ₁₆	20-16d	6-10dx1 ¹ / ₂	2,880 ⁽⁸⁾	3,135 ⁽⁸⁾	3,135 ⁽⁸⁾	975
MIU1.81/14 ⁽⁸⁾		13 ⁵ / ₁₆	22-16d	6-10dx1 ¹ / ₂	3,170 ⁽⁸⁾	3,555 ⁽⁸⁾	3,580 ⁽⁸⁾	975
MIU1.81/16 ⁽⁸⁾		15 ⁵ / ₁₆	24-16d	6-10dx1 ¹ / ₂	3,455 ⁽⁸⁾	3,555 ⁽⁸⁾	3,580 ⁽⁸⁾	975
MIU1.81/18 ⁽⁸⁾		17 ⁵ / ₁₆	26-16d	6-10dx1 ¹ / ₂	3,525 ⁽⁸⁾	3,555 ⁽⁸⁾	3,580 ⁽⁸⁾	975
MIU2.1/11	2 ¹ / ₈	11 ¹ / ₁₆	20-16d	6-10dx1 ¹ / ₂	2,880	3,135	3,135	975
MIU2.37/7	2 ³ / ₈	6 ¹⁵ / ₁₆	10-16d	4-10dx1 ¹ / ₂	1,440	1,630	1,760	555
MIU2.37/9		9	16-16d	6-10dx1 ¹ / ₂	2,305	2,610	2,815	975
MIU2.37/11		11 ¹ / ₁₆	20-16d	6-10dx1 ¹ / ₂	2,880	3,135	3,135	975
MIU2.37/14		13 ¹ / ₂	22-16d	6-10dx1 ¹ / ₂	3,170	3,585	3,870	975
MIU2.37/16		15 ¹ / ₂	24-16d	6-10dx1 ¹ / ₂	3,455	3,890	3,915	975
MIU2.37/18		17 ¹ / ₂	26-16d	6-10dx1 ¹ / ₂	3,745	3,890	3,915	975
MIU2.37/20		19 ¹ / ₂	28-16d	6-10dx1 ¹ / ₂	3,855	3,890	3,915	975
MIU2.56/9	2 ⁹ / ₁₆	8 ¹⁵ / ₁₆	16-16d	6-10dx1 ¹ / ₂	2,305	2,610	2,815	975
MIU2.56/11		11 ¹ / ₁₆	20-16d	6-10dx1 ¹ / ₂	2,880	3,135	3,135	975
MIU2.56/13		12 ¹ / ₄	20-16d	6-10dx1 ¹ / ₂	2,880	3,135	3,135	975
MIU2.56/14		13 ⁷ / ₁₆	22-16d	6-10dx1 ¹ / ₂	3,170	3,585	3,870	975
MIU2.56/16		15 ⁷ / ₁₆	24-16d	6-10dx1 ¹ / ₂	3,455	3,910	4,045	975
MIU2.56/18		17 ⁷ / ₁₆	26-16d	6-10dx1 ¹ / ₂	3,745	4,045	4,045	975
MIU2.56/20		19 ⁷ / ₁₆	28-16d	6-10dx1 ¹ / ₂	4,030	4,045	4,045	975
MIU3.12/9	3 ¹ / ₈	9 ¹ / ₁₆	16-16d	6-10dx1 ¹ / ₂	2,305	2,610	2,815	975
MIU3.12/11		11 ¹ / ₈	20-16d	6-10dx1 ¹ / ₂	2,880	3,135	3,135	975
MIU3.56/9	3 ⁹ / ₁₆	8 ¹³ / ₁₆	16-16d	6-10dx1 ¹ / ₂	2,305	2,610	2,815	975
MIU3.56/11		11 ¹ / ₈	20-16d	6-10dx1 ¹ / ₂	2,880	3,135	3,135	975
MIU3.56/14		13 ⁵ / ₁₆	22-16d	6-10dx1 ¹ / ₂	3,170	3,585	3,870	975
MIU3.56/16		15 ⁵ / ₁₆	24-16d	6-10dx1 ¹ / ₂	3,455	3,910	4,045	975
MIU3.56/18		17 ⁵ / ₁₆	26-16d	6-10dx1 ¹ / ₂	3,745	4,045	4,045	975
MIU3.56/20		19 ⁵ / ₁₆	28-16d	6-10dx1 ¹ / ₂	4,030	4,045	4,045	975
MIU4.12/9	4 ¹ / ₈	9 ¹ / ₁₆	16-16d	6-10dx1 ¹ / ₂	2,305	2,610	2,815	975
MIU4.12/11		11 ¹ / ₈	20-16d	6-10dx1 ¹ / ₂	2,880	3,135	3,135	975
MIU4.12/14		13 ⁹ / ₁₆	22-16d	6-10dx1 ¹ / ₂	3,170	3,585	3,870	975
MIU4.12/16		15 ⁹ / ₁₆	24-16d	6-10dx1 ¹ / ₂	3,455	3,910	4,045	975
MIU4.28/9	4 ⁹ / ₃₂	9	16-16d	6-10dx1 ¹ / ₂	2,305	2,610	2,815	975
MIU4.28/11		11 ¹ / ₈	20-16d	6-10dx1 ¹ / ₂	2,880	3,135	3,135	975
MIU4.28/14		13 ¹ / ₂	22-16d	6-10dx1 ¹ / ₂	3,170	3,585	3,870	975
MIU4.28/16		15 ¹ / ₂	24-16d	6-10dx1 ¹ / ₂	3,455	3,910	4,045	975

Please refer to next page for continuation of Table 9.

TABLE 9—ALLOWABLE LOADS FOR THE MIU SERIES JOIST HANGERS (continued)

MODEL NO.	DIMENSIONS ¹ (in.)		FASTENERS ^{2,3,4}		ALLOWABLE LOADS (lbs) ^{5,6,7,8}			
					Download		Uplift	
	W	H	Header	Joist	C _D = 1.0	C _D = 1.15	C _D = 1.25	C _D = 1.6
MIU4.75/9	4 ^{3/4}	9	16-16d	6-10dx1 ^{1/2}	1,440	1,630	1,760	555
MIU4.75/11		11 ^{1/16}	20-16d	6-10dx1 ^{1/2}	2,305	2,610	2,815	975
MIU4.75/14		13 ^{1/2}	22-16d	6-10dx1 ^{1/2}	2,880	3,135	3,135	975
MIU4.75/16		15 ^{1/2}	24-16d	6-10dx1 ^{1/2}	3,170	3,555	3,580	975
MIU4.75/18		17 ^{1/2}	26-16d	6-10dx1 ^{1/2}	3,455	3,555	3,580	975
MIU4.75/20		19 ^{1/2}	28-16d	6-10dx1 ^{1/2}	3,525	3,555	3,580	975
MIU5.12/7	5 ^{1/8}	6 ^{15/16}	10-16d	4-10dx1 ^{1/2}	1,440	1,630	1,760	555
MIU5.12/9		8 ^{13/16}	16-16d	6-10dx1 ^{1/2}	2,305	2,610	2,815	975
MIU5.12/11		11 ^{1/8}	20-16d	6-10dx1 ^{1/2}	2,880	3,135	3,135	975
MIU5.12/14		13 ^{5/16}	22-16d	6-10dx1 ^{1/2}	3,170	3,585	3,870	975
MIU5.12/16		15 ^{5/16}	24-16d	6-10dx1 ^{1/2}	3,455	3,910	4,045	975
MIU5.12/18		17 ^{5/16}	26-16d	6-10dx1 ^{1/2}	3,745	4,045	4,045	975
MIU5.12/20		19 ^{5/16}	28-16d	6-10dx1 ^{1/2}	4,030	4,045	4,045	975

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

1. Refer to Figure 9a (this page) for definitions of hanger nomenclature (W and H); hanger seat depth nomenclature (B) shown in Figure 9a is equal to 2^{1/2} inches for all MIU series hangers.
2. Fasteners must comply with Section 3.2.3 of this report.
3. Total amount of joist nails specified in the table must be installed to resist tabulated uplift loads. Minimum of two 10dx1^{1/2}-inch long common nails must be installed at a 45 degree angle into the bottom flange of the prefabricated wood I-joist, as shown in the detail in Figure 9b (on this page), to resist tabulated download values. These nails are designated as PAN nails.
4. Web stiffeners must be installed on wood I-joists, with the following exception: An alternate reduced uplift capacity of 230 lbs. can be obtained without using web stiffeners and all of the specified joist nails indicated in the table by installing two angled PAN nails at the hanger seat into the bottom flange of the wood I-joist as shown in the detail in Figure 9b (on this page).
5. Tabulated allowable values are connection strength or test values, whichever is more restrictive. Connection strength is derived by multiplying the number of nails by the minimum value from the yield mode equations in Tables 11.3.1 A and 11.3.1 B from the NDS-05 where the side member (i.e., the joist hanger) dowel bearing strength, F_{ds} , is equal to $2.2(F_u/C_D)$, where C_D equals 1.0, 1.15, 1.25, 1.33 or 1.6 as shown in the table; and where F_u equals 45 ksi, the minimum specified tensile strength of the steel used to fabricate the MIU series hangers. The tabulated loads governed by connection strength have been multiplied by the load duration factor, C_D , noted in the table and must not be adjusted for other load durations.
6. Tabulated downloads are based on the requirement that the supported wood I-joist bears fully on the hanger seat depth (B) of 2^{1/2} inches.
7. Joist and header must be sawn lumber having a minimum specific gravity of 0.50 (such as Douglas fir–larch or southern yellow pine) or engineered wood lumber having an equivalent minimum specific gravity of 0.50.
8. Bearing capacity of the supported wood I-joist must be minimum $F_{c\perp} = 625$ psi, except for wood I-joists supported by the MIU1.81/xx series hangers, the bottom flange material of the supported I-joist member must have a minimum bearing capacity of $F_{c\perp} = 750$ psi.

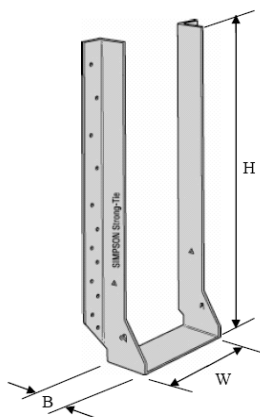


FIGURE 9a—MIU JOIST HANGER

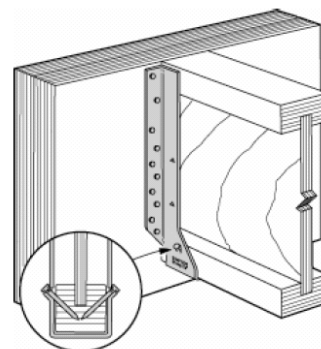


FIGURE 9b—TYPICAL MIU JOIST HANGER INSTALLATION
(Web stiffeners not shown for clarity—See Footnotes 3 and 4 to Table 9)

ICC-ES Evaluation Report**ESR-2552 Supplement**

Issued February 1, 2008

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DIVISION: 06—WOOD AND PLASTIC**Section: 06090—Wood and Plastic Fastenings****REPORT HOLDER:**

SIMPSON STRONG-TIE COMPANY, INC.
5956 WEST LAS POSITAS BOULEVARD
PLEASANTON, CALIFORNIA 94588
(800) 925-5099
www.strongtie.com

EVALUATION SUBJECT:**SIMPSON STRONG-TIE FACE-MOUNT HANGERS SUPPORTING STRUCTURAL COMPOSITE LUMBER (SCL) AND PREFABRICATED WOOD I-JOISTS (ENGINEERED WOOD PRODUCTS)****1.0 EVALUATION SCOPE****Compliance with the following code:**2004 *Florida Building Code—Building***Property evaluated:**

Structural

2.0 PURPOSE OF THIS SUPPLEMENT

This supplement is issued to indicate that the Simpson Strong-Tie face-mount hangers for SCL and engineered wood products described in the master report comply with the 2004 *Florida Building Code—Building*, when designed and installed in accordance with the master evaluation report.

Use of the Simpson Strong-Tie face-mount hangers for SCL and engineered wood products described in the master evaluation report, for compliance with the High Velocity Hurricane Zone Provisions of the 2004 *Florida Building Code—Building*, has not been evaluated, and is outside the scope of this supplement.

This supplement expires concurrently with the master evaluation report issued on February 1, 2008.