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

Attn: Tim Kaucher, P.E.
(714) 738-2151

RESEARCH REPORT: RR 25807
(CSI 06090)

BASED UPON ICC EVALUATION SERVICE
REPORT NO. ESR-2549

REEVALUATION DUE DATE:
August 1, 2010
Issued Date: August 1, 2009
Code: 2008 LABC

GENERAL APPROVAL – Simpson Strong-Tie Face-Mount Hangers for wood Framing – U Series Hangers, HU Series Hangers, LUS Series Hangers, HUS Series Hangers, SUR/L Series Hangers, and HSUS/L Series Hangers

DETAILS

The above are approved when in compliance with the description, use, identification and findings of Report No. ESR-2549 dated February 1, 2008, of the ICC Evaluation Service, Incorporated. The Report in its entirety is attached and made part of this general approval.

The parts of Report No. 2549 marked by the asterisks have been removed by the Los Angeles Building Department from this approval.

The approval is subject to the following conditions:

1. Allowable load values in Simpson Catalog Tables are not approved. All allowable values shall be as stated in this report.
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.

RR 25807
Page 1 of 3

Simpson Strong-Tie Co., Inc.

Re: Simpson Strong-Tie Face-Mount Hangers for wood Framing – U Series Hangers, HU Series Hangers, LUS Series Hangers, HUS Series Hangers, SUR/L Series Hangers, and HSUS/L Series Hangers

3. Allowable loads shall not be increased for duration of load, except as specifically noted in the tables.
4. The supported end of joist or beam shall be within ¼-inch from the supporting header.
5. Approved products to be used shall be indicated on the approved set of plans.
6. All uplift loads in tables have been increased for earthquake and wind loading. Values must be reduced for normal duration load.
7. Allowable loads in tables are for the wood fastening devices and its fasteners and do not include supporting members. The supporting members shall be checked separately for structural adequacy.
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.

Simpson Strong-Tie Co., Inc.

Re: Simpson Strong-Tie Face-Mount Hangers for wood Framing – U Series Hangers, HU Series Hangers, LUS Series Hangers, HUS Series Hangers, SUR/L Series Hangers, and HSUS/L Series Hangers

DISCUSSION

This report is in compliance with the 2008 City of Los Angeles Building Code.

The approval is based on tests in accordance with ICC ES (AC 13).

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

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 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
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Attachment: ICC ES Report No. ESR-2549 (10 Pages)

ICC-ES Evaluation Report

ESR-2549*

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 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 FOR
 WOOD FRAMING**

1.0 EVALUATION SCOPE
Compliance with the following codes:

- 2006 *International Building Code*® (IBC)
- * ■ ~~2006 *International Residential Code*® (IRC)~~
- ~~Other Codes (see Section 8.0)~~

Property evaluated:

Structural

2.0 USES

- The Simpson Strong-Tie face-mount hangers described in this report are used as wood framing connectors in accordance with Section 2304.9.3 of the IBC. ~~The products 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 LU Series Hangers:** The LU series hangers are formed from No. 20 gage galvanized steel. See Table 1 for hanger dimensions, required fasteners, and allowable loads; and Figure 1 for a drawing of a typical LU series hanger.~~

3.1.2 U Series Hangers: The U series hangers are formed from No. 16 gage galvanized steel. See Table 2 for the hanger dimensions, required fasteners, and allowable

loads; and Figure 2 for a drawing of a typical U series hanger.

3.1.3 HU/HUC Series Hangers: The HU and HUC series hangers are formed from No. 14 gage galvanized steel. HU hangers having a width 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 3 for the hanger dimensions, required fasteners, and allowable loads; and Figure 3a for a drawing of a typical HU series hanger and Figure 3b for an HUC hanger.

3.1.4 LUS Series Hangers: The LUS series hangers are formed from No. 18 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 4 for the hanger dimensions, required fasteners, and allowable loads; and Figure 4 for a drawing of a typical LUS series hanger.

~~**3.1.5 MUS Joist Hanger:** The MUS series hangers are formed from No. 18 gage galvanized steel. The U-shaped portion of the hangers has prepunched holes for the installation of joist nails that are driven at an angle through the joist and into the header, which is described as double shear nailing in the installation instructions. See Table 5 for the hanger dimensions, required fasteners, and allowable loads; Figure 5 for a drawing of a typical MUS series hanger.~~

3.1.6 HUS Series Hangers: The HUS series hangers are formed from No. 14 gage galvanized steel with the exception of the HUS26, HUS28 and HUS210 hangers, which are formed from No. 16 gage galvanized steel. The hangers have prepunched holes for the installation of joist nails that are driven at an 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 dimensions, required fasteners, and allowable loads; and Figure 6 for a drawing of a typical HUS series hanger.

~~**3.1.7 HHUS Series Hangers:** The HHUS series hangers are formed from No. 14 gage galvanized steel. The hangers have prepunched holes for the installation of joist nails that are driven at an angle through the joist and into the header, which is described as double shear nailing in the installation instructions. See Table 7 for the hanger dimensions, required fasteners, and allowable loads; Figure 7 for a drawing of a typical HHUS series hanger.~~

3.1.8 SUR/L Series Hangers: The SUR/L series hangers are formed from No. 16 gage galvanized steel. SUR and SUL are mirror-image identical hangers, skewed at 45

*Revised June 2009

degrees right and left, respectively. See Table 8 for the hanger dimensions, required fasteners, and allowable loads; and Figure 8 for a drawing of typical SUR/L series hangers.

3.1.9 HSUR/L Series Hangers: The HSUR/L series hangers are formed from No. 14 gage galvanized steel. SUR and SUL are mirror-image identical hangers, skewed at 45 degrees right and left, respectively. See Table 9 for the hanger dimensions, required fasteners, and allowable loads; and Figure 9 for a drawing of typical HSUR/L series hangers.

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). Minimum 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	0.0445
No. 20	0.0335

For SI: 1 inch = 25.4 mm.

The hangers have a minimum G90 zinc coating specification in accordance with ASTM A 653. 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 members with which the connectors are used must be either sawn 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, beam, or ledger) 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.

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}):

COMMON NAIL SIZE	SHANK DIAMETER (inch)	FASTENER LENGTH (inches)	F_{yb} (psi)
10d × 1½	0.148	1½	90,000
10d	0.148	3	90,000
16d × 2½	0.162	2½	90,000
16d	0.162	3½	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.

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 for wood-framed construction 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 treated 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).

7.0 IDENTIFICATION

The products described in this report are identified with a die-stamped label indicating the name of the manufacturer (Simpson Strong-Tie), 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.

* 8.0 OTHER CODES

* 8.1 Evaluation Scope:

~~In addition to the codes referenced in Section 1.0, the products in this report were evaluated for compliance with the requirements of the following codes:~~

- ~~■ 2003 International Building Code® (2003-IBC)~~
- ~~■ 2003 International Residential Code® (2003-IRC)~~
- ~~■ 2000 International Building Code® (2000-IBC)~~
- ~~■ 2000 International Residential Code® (2000-IRC)~~
- ~~■ 1997 Uniform Building Code™ (UBC)~~

~~The products described in this report comply with, or are suitable alternatives to what is specified in, the codes listed above, subject to the provisions of Sections 8.2 through 8.7.~~

* 8.2 Uses:

~~8.2.1 2003-IBC, 2003-IRC, 2000-IBC, and 2000-IRC: See Section 2.0 of this report.~~

~~8.2.2 UBC: Replace the information in Section 2.0 with the following: Simpson Strong-Tie face-mount hangers are used as wood framing connectors in accordance with Section 2318.4.8 of the UBC.~~

* 8.3 Description:

~~8.3.1 2003-IBC and 2003-IRC: See Section 3.0 of this report.~~

~~8.3.2 2000-IBC and 2000-IRC: See Section 3.0 of this report, except modify Section 3.2.3 of this report to reference Section R323.3 of the IRC.~~

~~8.3.3 UBC: See Section 3.0 of this report, except modify the first sentence in the last paragraph of Section 3.2.3 as follows: Fasteners used in contact with preservative treated or fire retardant treated lumber must, as a minimum, comply with UBC Section 2304.3.~~

* 8.4 Design and Installation: 2003-IBC, 2003-IRC, 2000-IBC, 2000-IRC, and UBC:

~~See Section 4.0 of his report.~~

8.5 Conditions of Use:

* 8.5.1 2003-IBC, 2003-IRC 2000-IBC, and 2000-IRC:

~~The Simpson Strong-Tie products described in this report comply with, or are suitable alternatives to what is specified in, those codes listed in Section 8.0, subject to the same conditions of use indicated in Section 5.0 of this report.~~

8.5.2 UBC: The Simpson Strong-Tie products

~~described in this report comply with, or are suitable alternatives to what is specified in, the UBC, subject to the same conditions of use indicated in Section 5.0 of this report, except the last sentence of Section 5.5 is replaced with the following: Fasteners used in contact with preservative treated or fire retardant treated lumber must, as a minimum, comply with UBC Section 2304.3.~~

* 8.6 Evidence Submitted: 2003-IBC, 2003-IRC 2000-IBC, 2000-IRC, and UBC:

~~See Section 6.0 of this report.~~

* 8.7 Identification: 2003-IBC, 2003-IRC 2000-IBC, 2000-IRC, and UBC:

~~See Section 7.0 of this report.~~

TABLE 1—ALLOWABLE LOADS FOR THE LU SERIES JOIST HANGERS

MODEL No.	DIMENSIONS ¹ (inches)			FASTENERS ² (Quantity-Type)		ALLOWABLE LOADS ^{3,4,5} (lbs)						
	W	H	B	Header ⁵	Joist	Uplift ⁶	Download					
						C _D = 1.33 or = 1.6	C _D = 1.0		C _D = 1.15		C _D = 1.25	
							10d	16d	10d	16d	10d	16d
LU24	1 ⁹ / ₁₆	3 ¹ / ₈	1 ¹ / ₂	4	2-10dx1 ¹ / ₂	245	445	530	510	610	555	665
LU26	1 ⁹ / ₁₆	4 ³ / ₄	1 ¹ / ₂	6	4-10dx1 ¹ / ₂	490	665	800	765	920	830	1,000
LU28	1 ⁹ / ₁₆	6 ³ / ₈	1 ¹ / ₂	8	6-10dx1 ¹ / ₂	735	890	1,065	1,025	1,225	1,110	1,300
LU210	1 ⁹ / ₁₆	7 ¹³ / ₁₆	1 ¹ / ₂	10	6-10dx1 ¹ / ₂	735	1,110	1,330	1,275	1,530	1,390	1,660

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

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

²Refer to Section 3.2.3 of this report for nail sizes and required minimum physical properties.

³Tabulated allowable loads must be selected based on duration of load as permitted by the applicable building code.

⁴LU Series hangers provide torsional resistance, which 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).

⁵The 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 "10d" or "16d" columns.

⁶Allowable 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.

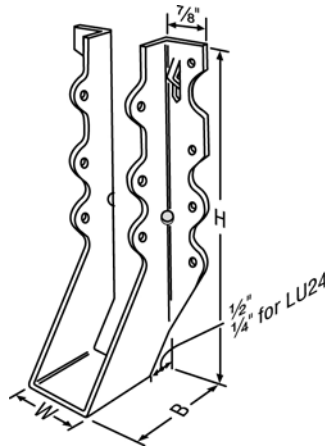


FIGURE 1—LU SERIES HANGER

TABLE 2—ALLOWABLE LOADS FOR THE U SERIES JOIST HANGERS

MODEL No.	DIMENSIONS ¹ (inches)			FASTENERS ² (Quantity- Type)		ALLOWABLE LOADS ^{3,4,5} (lbs)						
						Uplift ⁶		Download				
	W	H	B	Header ⁵	Joist	C _D = 1.33 or = 1.6	C _D = 1.0		C _D = 1.15		C _D = 1.25	
							10d	16d	10d	16d	10d	16d
U24	1 ⁹ / ₁₆	3 ¹ / ₈	2	4	2-10dx1 ¹ / ₂	240	445	530	510	610	555	665
U26	1 ⁹ / ₁₆	4 ³ / ₄	2	6	4-10dx1 ¹ / ₂	480	665	800	765	920	830	1,000
U210	1 ⁹ / ₁₆	7 ¹³ / ₁₆	2	10	6-10dx1 ¹ / ₂	720	1,110	1,330	1,275	1,530	1,390	1,660
U214	1 ⁹ / ₁₆	10	2	12	8-10dx1 ¹ / ₂	960	1,330	1,595	1,530	1,835	1,665	1,995
U34	2 ⁹ / ₁₆	3 ³ / ₈	2	4	2-10dx1 ¹ / ₂	240	445	530	510	610	555	665
U36	2 ⁹ / ₁₆	5 ³ / ₈	2	8	4-10dx1 ¹ / ₂	480	890	1,065	1,025	1,225	1,110	1,330
U310	2 ⁹ / ₁₆	8 ⁷ / ₈	2	14	6-10dx1 ¹ / ₂	720	1,555	1,860	1,790	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	2,450	2,220	2,660
U44	3 ⁹ / ₁₆	2 ⁷ / ₈	2	4	2-10d	295	445	530	510	610	555	665
U46	3 ⁹ / ₁₆	4 ⁷ / ₈	2	8	4-10d	590	890	1,065	1,025	1,225	1,110	1,330
U410	3 ⁹ / ₁₆	8 ³ / ₈	2	14	6-10d	890	1,555	1,860	1,790	2,140	1,940	2,330
U414	3 ⁹ / ₁₆	10	2	16	6-10d	890	1,775	2,130	2,040	2,450	2,220	2,660
U24-2	3 ¹ / ₈	3	2	4	2-10d	295	445	530	510	610	555	665
U26-2	3 ¹ / ₈	5	2	8	4-10d	590	890	1,065	1,025	1,225	1,110	1,330
U210-2	3 ¹ / ₈	8 ¹ / ₂	2	14	6-10d	890	1,555	1,860	1,790	2,140	1,940	2,330
U66	5 ¹ / ₂	5	2	8	4-10d	590	890	1,065	1,025	1,225	1,110	1,330
U610	5 ¹ / ₂	8 ¹ / ₂	2	14	6-10d	890	1,555	1,860	1,790	2,140	1,940	2,330
U210-3	5 ¹ / ₂	7 ³ / ₄	2	14	6-10d	890	1,555	1,860	1,790	2,140	1,940	2,330
* U24R	2 ¹ / ₁₆	3 ⁵ / ₈	2	4	2-10dx1 ¹ / ₂	240	445	530	510	610	555	665
* U26R	2 ¹ / ₁₆	5 ⁵ / ₈	2	8	4-10dx1 ¹ / ₂	480	890	1,065	1,025	1,225	1,110	1,330
* U210R	2 ¹ / ₁₆	9 ¹ / ₈	2	14	6-10dx1 ¹ / ₂	720	1,555	1,860	1,790	2,140	1,940	2,330
* U44R	4 ¹ / ₁₆	2 ⁵ / ₈	2	4	2-16d	355	445	530	510	610	555	665
* U46R	4 ¹ / ₁₆	4 ⁵ / ₈	2	8	4-16d	710	890	1,065	1,025	1,225	1,110	1,330
* U410R	4 ¹ / ₁₆	8 ¹ / ₈	2	14	6-16d	1,065	1,555	1,860	1,790	2,140	1,940	2,330
* U66R	6	5	2	8	4-16d	710	890	1,065	1,025	1,225	1,110	1,330
* U610R	6	8 ¹ / ₂	2	14	6-16d	1,065	1,555	1,860	1,790	2,140	1,940	2,330

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

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

²Refer to Section 3.2.3 of this report for nail sizes and required minimum physical properties

³Tabulated allowable loads must be selected based on duration of load as permitted by the applicable building code.

⁴U Series hangers provide torsional resistance, which 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 the vertical position of the joist is 0.125 inch (3.2 mm).

⁵The 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 "10d" or "16d" columns.

⁶Allowable 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.

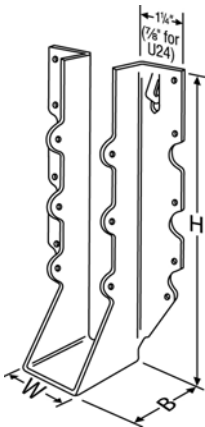


FIGURE 2—U SERIES HANGER
(See Table 2—above)

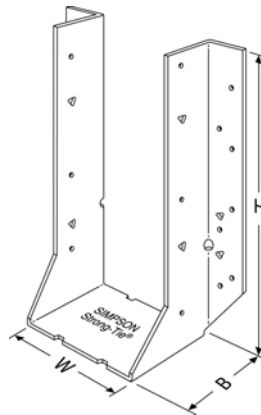


FIGURE 3a—HU SERIES HANGER
(See Table 3—Next Page)

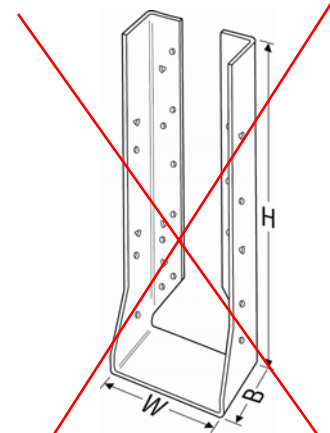


FIGURE 3b—HUC SERIES HANGER
(See Table 3, Footnote 3—Next Page)

TABLE 3—ALLOWABLE LOADS FOR THE HU/HUC SERIES JOIST HANGERS

MODEL NO.	HANGER DIMENSIONS ¹ (inches)			FASTENERS ² (Quantity-Type)		ALLOWABLE LOADS (lbs) ^{3,4,5}			
	W	H	B	Header	Joist	Uplift ⁶	Download		
						C _D = 1.33 or = 1.6	C _D = 1.0	C _D = 1.15	C _D = 1.25
HU26	1 ⁹ / ₁₆	3 ¹ / ₁₆	2 ¼	4-16d	2-10dx1 ¹ / ₂	240	535	615	670
HU28	1 ⁹ / ₁₆	5¼	2 ¼	6-16d	4-10dx1 ¹ / ₂	480	805	925	1,005
HU210	1 ⁹ / ₁₆	7 ¹ / ₈	2 ¼	8-16d	4-10dx1 ¹ / ₂	480	1,070	1,230	1,340
HU212	1 ⁹ / ₁₆	9	2 ¼	10-16d	6-10dx1 ¹ / ₂	720	1,340	1,540	1,675
HU214	1 ⁹ / ₁₆	10 ¹ / ₈	2 ¼	12-16d	6-10dx1 ¹ / ₂	720	1,610	1,850	2,010
HU34	2 ⁹ / ₁₆	3 ³ / ₈	2 ½	4-16d	2-10dx1 ¹ / ₂	240	535	615	670
HU36	2 ⁹ / ₁₆	5 ³ / ₈	2 ½	8-16d	4-10dx1 ¹ / ₂	480	1,070	1,230	1,340
HU38	2 ⁹ / ₁₆	7 ¹ / ₈	2 ½	10-16d	4-10dx1 ¹ / ₂	480	1,340	1,540	1,675
HU310	2 ⁹ / ₁₆	8 ⁷ / ₈	2 ½	14-16d	6-10dx1 ¹ / ₂	720	1,875	2,155	2,345
HU312	2 ⁹ / ₁₆	10 ⁵ / ₈	2 ½	16-16d	6-10dx1 ¹ / ₂	720	2,145	2,465	2,680
HU314	2 ⁹ / ₁₆	12 ³ / ₈	2 ½	18-16d	8-10dx1 ¹ / ₂	960	2,410	2,770	3,015
HU316	2 ⁹ / ₁₆	14 ¹ / ₈	2 ½	20-16d	8-10dx1 ¹ / ₂	960	2,680	3,080	3,350
HU44	3 ⁹ / ₁₆	2 ⁷ / ₈	2 ½	4-16d	2-10d	300	535	615	670
HU46	3 ⁹ / ₁₆	5 ⁷ / ₁₆	2 ½	8-16d	4-10d	605	1,070	1,230	1,340
HU48	3 ⁹ / ₁₆	6 ¹³ / ₁₆	2 ½	10-16d	4-10d	605	1,340	1,540	1,675
HU410	3 ⁹ / ₁₆	8 ⁵ / ₈	2 ½	14-16d	6-10d	905	1,875	2,155	2,345
HU412	3 ⁹ / ₁₆	10 ⁵ / ₁₆	2 ½	16-16d	6-10d	905	2,145	2,465	2,680
HU414	3 ⁹ / ₁₆	12 ⁵ / ₈	2 ½	18-16d	8-10d	1,205	2,410	2,770	3,015
HU416	3 ⁹ / ₁₆	13 ⁵ / ₈	2 ½	20-16d	8-10d	1,205	2,680	3,080	3,350
HU66	5½	4 ⁷ / ₁₆	2 ½	8-16d	4-16d	715	1,070	1,230	1,340
HU68	5½	5 ¹³ / ₁₆	2 ½	10-16d	4-16d	715	1,340	1,540	1,675
HU610	5½	7 ⁵ / ₈	2 ½	14-16d	6-16d	1,070	1,875	2,155	2,345
HU612	5½	9 ³ / ₈	2 ½	16-16d	6-16d	1,070	2,145	2,465	2,680
HU614	5½	11 ⁵ / ₈	2 ½	18-16d	8-16d	1,430	2,410	2,770	3,015
HU616	5½	12 ¹¹ / ₁₆	2 ½	20-16d	8-16d	1,430	2,680	3,080	3,350
HU24-2	3 ¹ / ₈	3 ¹ / ₁₆	2 ½	4-16d	2-10d	300	535	615	670
HU26-2	3 ¹ / ₈	5 ³ / ₈	2 ½	8-16d	4-10d	605	1,070	1,230	1,340
HU28-2	3 ¹ / ₈	7	2 ½	10-16d	4-10d	605	1,340	1,540	1,675
HU210-2	3 ¹ / ₈	8 ¹³ / ₁₆	2 ½	14-16d	6-10d	905	1,875	2,155	2,345
HU212-2	3 ¹ / ₈	10 ⁹ / ₁₆	2 ½	16-16d	6-10d	905	2,145	2,465	2,680
HU214-2	3 ¹ / ₈	12 ¹³ / ₁₆	2 ½	18-16d	8-10d	1,205	2,410	2,770	3,015
HU216-2	3 ¹ / ₈	13 ⁷ / ₈	2 ½	20-16d	8-10d	1,205	2,410	2,680	2,770
HU310-2	5 ¹ / ₈	8 ⁷ / ₈	2 ½	14-16d	6-10d	905	1,875	2,155	2,345
HU312-2	5 ¹ / ₈	10 ⁵ / ₈	2 ½	16-16d	6-10d	905	2,145	2,770	2,680
HU314-2	5 ¹ / ₈	12 ⁵ / ₈	2 ½	18-16d	8-10d	1,205	2,410	2,770	3,015
HU210-3	4 ¹¹ / ₁₆	8 ⁹ / ₁₆	2 ½	14-16d	6-10d	905	1,875	2,155	2,345
HU212-3	4 ¹¹ / ₁₆	10 ⁵ / ₁₆	2 ½	16-16d	6-10d	905	2,145	2,465	2,680
HU214-3	4 ¹¹ / ₁₆	12 ¹ / ₁₆	2 ½	18-16d	8-10d	1,205	2,410	2,770	3,015
HU216-3	4 ¹¹ / ₁₆	13 ⁷ / ₈	2 ½	20-16d	8-10d	1,205	2,410	2,680	2,770

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

¹Refer to Figures 3a and 3b (previous page) for definitions of hanger nomenclature (W, H, B).

²Refer to Section 3.2.3 of this report for nail sizes and required minimum physical properties

~~³HU series hangers with widths (W) equal to or greater than 2 ⁹/₁₆ inches (65 mm) are available with header flanges turned in (concealed) and are identified with the model designation HUC#. See Figure 3b (previous page).~~

⁴Tabulated allowable loads must be selected based on duration of load as permitted by the applicable building code.

⁵HU Series hangers provide torsional resistance, which 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 the vertical position of the joist is 0.125 inch (3.2 mm).

⁶Allowable 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 4—ALLOWABLE LOADS FOR THE LUS SERIES JOIST HANGERS

MODEL NO.	DIMENSIONS ¹ (inches)			COMMON NAILS ² (Quantity-Type)		ALLOWABLE LOADS ^{3,4} (lbs)			
	W	H	B	Header	Joist ⁵	Uplift ⁶	Download		
						C_D = 1.33 or = 1.6	C _D = 1.0	C _D = 1.15	C _D = 1.25 *
* LUS24	1⁹/₁₆	3¹/₈	1³/₄	4-10d	2-10d	465	640	735	800
* LUS26	1⁹/₁₆	4³/₄	1³/₄	4-10d	4-10d	930	830	955	1,040
* LUS28	1⁹/₁₆	6⁵/₈	1³/₄	6-10d	4-10d	930	1,055	1,215	1,320
* LUS210	1⁹/₁₆	7¹³/₁₆	1³/₄	8-10d	4-10d	930	1,275	1,465	1,595
LUS24-2	3 ¹ / ₈	3 ¹ / ₈	2	4-16d	2-16d	440	765	880	960
LUS26-2	3 ¹ / ₈	4 ¹⁵ / ₁₆	2	4-16d	4-16d	1,140	1,000	1,150	1,250
LUS28-2	3 ¹ / ₈	7	2	6-16d	4-16d	1,140	1,265	1,455	1,585
LUS210-2	3 ¹ / ₈	8 ¹⁵ / ₁₆	2	8-16d	6-16d	1,710	1,765	2,030	2,210
LUS214-2	3 ¹ / ₈	10 ¹⁵ / ₁₆	2	10-16d	6-16d	1,710	2,030	2,335	2,540
LUS44	3 ⁹ / ₁₆	3	2	4-16d	2-16d	440	765	880	960
LUS46	3 ⁹ / ₁₆	4 ³ / ₄	2	4-16d	4-16d	1,140	1,000	1,150	1,250
LUS48	3 ⁹ / ₁₆	6 ³ / ₄	2	6-16d	4-16d	1,140	1,265	1,455	1,585
LUS410	3 ⁹ / ₁₆	8 ³ / ₄	2	8-16d	6-16d	1,710	1,765	2,030	2,210
LUS414	3 ⁹ / ₁₆	10 ³ / ₄	2	10-16d	6-16d	1,710	2,030	2,335	2,540

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

¹Refer to Figure 4 (this page) for definitions of hanger nomenclature (W, H, B).

²Refer to Section 3.2.3 of this report for nail sizes and required minimum physical properties.

³Tabulated allowable loads must be selected based on duration of load as permitted by the applicable building code.

⁴When LUS Series hangers support joists, they provide torsional resistance, which 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 the vertical position of the joist is 0.125 inch (3.2 mm).

⁵Joist nails must be driven at a 45 degree angle through the joist into the header/beam (double shear nailing) to achieve the tabulated loads.

⁶Allowable uplift loads have been increased for wind or earthquake loading with no further increase is allowed. The allowable uplift loads must be reduced when other load durations govern.

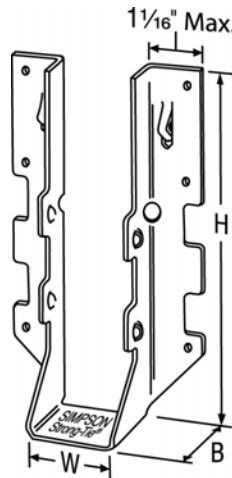


FIGURE 4—LUS SERIES HANGER

TABLE 5—ALLOWABLE LOADS FOR THE MUS SERIES HANGERS

MODEL NO.	DIMENSIONS ¹ (inches)			COMMON NAILS ² (Quantity-Type)		ALLOWABLE LOADS ^{3,4} (lbs)			
	W	H	B	Header	Joist ⁵	Uplift ⁶	Download		
						C _D = 1.33 or = 1.6	C _D = 1.0	C _D = 1.15	C _D = 1.25
MUS26	1 ⁹ / ₁₆	5 ³ / ₁₆	2	6-10d	6-10d	1,090	1,310	1,505	1,640
MUS28	1 ⁹ / ₁₆	6 ³ / ₄	2	8-10d	8-10d	1,555	1,750	2,010	2,185

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

¹Refer to Figure 5 (this page) for definitions of hanger nomenclature (W, H, B).

²Refer to Section 3.2.3 of this report for nail sizes and required minimum physical properties.

³Tabulated allowable loads must be selected based on duration of load as permitted by the applicable building code.

⁴When MUS series hangers support solid-sawn joists, they provide torsional resistance, which 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 the vertical position of the joist is 0.125 inch (3.2 mm).

⁵Joist nails must be driven at a 45 degree angle through the joist into the header/beam (double shear nailing) to achieve the tabulated loads.

⁶Allowable uplift loads have been increased for wind or earthquake loading with no further increase is allowed. The allowable uplift loads must be reduced when other load durations govern.

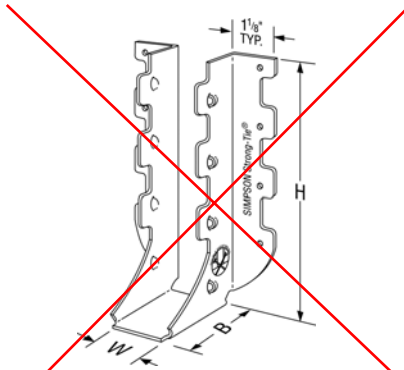


FIGURE 5—MUS HANGER (see Table 5)

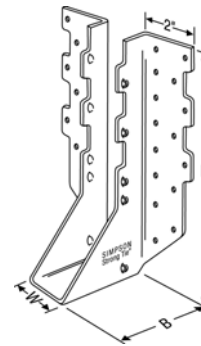


FIGURE 6—HUS SERIES HANGER (see Table 6)

TABLE 6—ALLOWABLE LOADS FOR THE HUS SERIES HANGERS

MODEL NO.	DIMENSIONS ¹ (inches)			COMMON NAILS ² (Quantity-Type)		ALLOWABLE LOADS ^{3,4} (lbs)			
	W	H	B	Header	Joist ⁵	Uplift ⁶	Download		
						C _D = 1.33 or = 1.6	C _D = 1.0	C _D = 1.15	C _D = 1.25
HUS26	1 ⁵ / ₈	5 ³ / ₈	3	14-16d	6-16d	1,550	2,565	2,950	3,205
HUS28	1 ⁵ / ₈	7 ¹ / ₁₆	3	22-16d	8-16d	2,000	3,585	3,700	3,775
HUS210	1 ⁵ / ₈	9 ¹ / ₁₆	3	30-16d	10-16d	2,845	3,775	3,920	4,020
HUS46	3 ⁹ / ₁₆	4 ⁵ / ₁₆	2	4-16d	4-16d	1,080	1,005	1,115	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 ³ / ₄	2	10-16d	10-16d	2,700	2,510	2,885	3,140
HUS26-2	3 ¹ / ₈	5 ³ / ₁₆	2	4-16d	4-16d	1,080	1,005	1,115	1,255
HUS28-2	3 ¹ / ₈	7 ³ / ₁₆	2	6-16d	6-16d	1,550	1,505	1,730	1,885
HUS210-2	3 ¹ / ₈	9 ³ / ₁₆	2	8-16d	8-16d	2,160	2,010	2,310	2,510
HUS212-2	3 ¹ / ₈	11	2	10-16d	10-16d	2,560	2,510	2,885	3,140

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

¹Refer to Figure 6 (this page) for definitions of hanger nomenclature (W, H, B).

²Refer to Section 3.2.3 of this report for nail sizes and required minimum physical properties.

³Tabulated allowable loads must be selected based on duration of load as permitted by the applicable building code.

⁴Where HUS series hangers support solid-sawn joists, they provide torsional resistance, which 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 the vertical position of the joist is 0.125 inch (3.2 mm).

⁵Joist nails must be driven at a 45 degree angle through the joist into the header/beam (double shear nailing) to achieve the tabulated loads.

⁶Allowable uplift loads have been increased for wind or earthquake loading with no further increase is allowed. The allowable uplift loads must be reduced when other load durations govern.

TABLE 7—ALLOWABLE LOADS FOR THE HHUS SERIES HANGERS

MODEL NO.	DIMENSIONS ¹ (inches)			COMMON NAILS ² (Quantity-Type)		ALLOWABLE LOADS ^{3,4} (lbs)			
	W	H	B	Header	Joist ⁵	Uplift ⁶	Download		
						C _D = 1.33 or = 1.6	C _D = 1.0	C _D = 1.15	C _D = 1.25
HHUS26-2	3 ⁵ / ₁₆	5 ⁷ / ₁₆	3	14-16d	6-16d	1,550	2,580	2,965	3,225
HHUS28-2	3 ⁵ / ₁₆	7 ¹ / ₂	3	22-16d	8-16d	2,000	3,885	4,470	4,855
HHUS210-2	3 ⁵ / ₁₆	9 ¹ / ₈	3	30-16d	10-16d	2,855	5,190	5,900	5,900
HHUS46	3 ⁵ / ₈	5 ¹ / ₄	3	14-16d	6-16d	1,550	2,580	2,965	3,224
HHUS48	3 ⁵ / ₈	7 ¹ / ₈	3	22-16d	8-16d	2,000	3,885	4,470	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.

¹Refer to Figure 7 (this page) for definitions of hanger nomenclature (W, H, B).

²Refer to Section 3.2.3 of this report for nail sizes and required minimum physical properties.

³Tabulated allowable loads must be selected based on duration of load as permitted by the applicable building code.

⁴Where HUS series hangers support solid-sawn joists having a maximum depth of 11 inches, they provide torsional resistance, which 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 the vertical position of the joist is 0.125 inch (3.2 mm).

⁵Joist nails must be driven at a 45 degree angle through the joist into the header/beam to achieve the tabulated loads.

⁶Allowable uplift loads have been increased for wind or earthquake loading with no further increase is allowed. The allowable uplift loads must be reduced when other load durations govern.

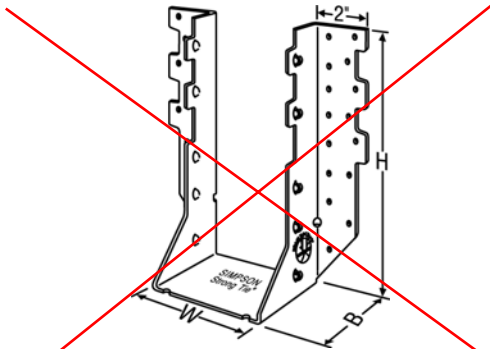


FIGURE 7—HHUS SERIS HANGER (see Table 7)

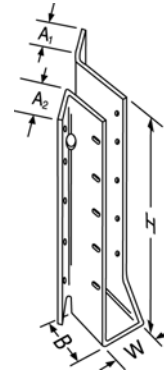


FIGURE 8—SUR/L SERIES HANGER (see Table 8)

TABLE 8—ALLOWABLE LOADS FOR THE SUR/SUL SERIES JOIST HANGERS

MODEL NO.	DIMENSIONS ¹ (inches)					FASTENERS ² (Quantity-Type)		ALLOWABLE LOADS ^{3,4} (lbs)			
	W	H	B	A1	A2	Header	Joist	Uplift ⁵	Download		
								C _D = 1.33 or = 1.6	C _D = 1.0	C _D = 1.15	C _D = 1.25
SUR/L24	1 ⁹ / ₁₆	3 ¹ / ₁₆	2	1 ¹ / ₈	1 ¹ / ₄	4-16d	4-10dx1 ¹ / ₂	450	530	610	665
SUR/L26	1 ⁹ / ₁₆	5	2	1 ¹ / ₈	1 ¹ / ₄	6-16d	6-10dx1 ¹ / ₂	720	800	960	1,000
SUR/L26-2	3 ¹ / ₈	4 ¹⁵ / ₁₆	2 ⁵ / ₈	1 ¹ / ₂	2 ³ / ₈	8-16d	4-16dx1 ¹ / ₂	710	1,065	1,225	1,330
SUR/L210	1 ⁹ / ₁₆	8 ³ / ₁₆	2	1 ¹ / ₈	1 ¹ / ₄	10-16d	10-10dx1 ¹ / ₂	1,200	1,330	1,530	1,660
SUR/L214	1 ⁹ / ₁₆	10	2	1 ¹ / ₈	1 ¹ / ₄	12-16d	12-10dx1 ¹ / ₂	1,440	1,595	1,835	1,995
SUR/L210-2	3 ¹ / ₈	8 ¹¹ / ₁₆	2 ⁵ / ₈	1 ¹ / ₂	2 ³ / ₈	14-16d	6-16dx2 ¹ / ₂	1,065	1,860	2,140	2,330
SUR/L414	3 ⁹ / ₁₆	12 ¹ / ₂	2 ⁵ / ₈	1	2 ³ / ₈	18-16d	8-16dx2 ¹ / ₂	1,420	2,395	2,500	2,500

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

¹Refer to Figure 8 (this page) for definitions of hanger nomenclature (W, H, B). These hangers have a 45° skew.

²Refer to Section 3.2.3 of this report for nail sizes and required minimum physical properties.

³Tabulated allowable loads must be selected based on duration of load as permitted by the applicable building code.

⁴Where SUR/L series hangers support solid-sawn joists, they provide torsional resistance, which 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 the vertical position of the joist is 0.125 inch (3.2 mm).

⁵Allowable uplift loads have been increased for wind or earthquake loading with no further increase is allowed. The allowable uplift loads must be reduced when other load durations govern.

TABLE 9—ALLOWABLE LOADS FOR THE HSUR/HSUL SERIES JOIST HANGERS

MODEL NO.	DIMENSIONS ¹ (inches)					FASTENERS ² (Quantity- Type)		ALLOWABLE LOADS ^{3,4} (lbs)				
	W	H	B	A1	A2	Header	Joist	Uplift ⁵		Download		
								C_D = 1.33 or = 1.6		C _D = 1.0	C _D = 1.15	C _D = 1.25 *
HSUR/L26-2	3 ¹ / ₈	4 ¹⁵ / ₁₆	2 ⁷ / ₁₆	1 ¹ / ₄	2 ³ / ₁₆	12-16d	4-16dx2 ¹ / ₂	715		1,610	1,850	2,000
HSUR/L210-2	3 ¹ / ₈	8 ¹¹ / ₁₆	2 ⁷ / ₁₆	1 ¹ / ₄	2 ³ / ₁₆	20-16d	6-16dx2 ¹ / ₂	1,070		2,680	3,080	3,350
HSUR/L214-2	3 ¹ / ₈	12 ¹¹ / ₁₆	2 ⁷ / ₁₆	1 ¹ / ₄	2 ³ / ₁₆	26-16d	8-16dx2 ¹ / ₂	1,430		3,485	4,005	4,355
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	4,005	4,355

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

¹Refer to Figure 9 (this page) for definitions of hanger nomenclature (W, H, B). These hangers have a 45° skew.

²Refer to Section 3.2.3 of this report for nail sizes and required minimum physical properties.

³Tabulated allowable loads must be selected based on duration of load as permitted by the applicable building code.

⁴Where HSUR/L series hangers support solid-sawn joists, they provide torsional resistance, which 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 the vertical position of the joist is 0.125 inch (3.2 mm).

⁵Allowable uplift loads have been increased for wind or earthquake loading with no further increase is allowed. The allowable uplift loads must be reduced when other load durations govern.

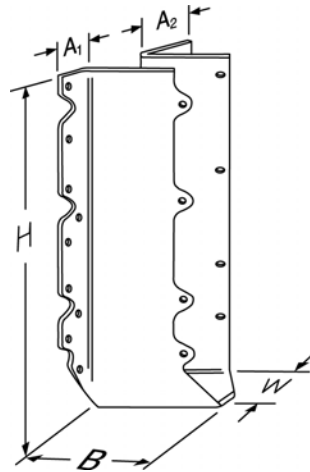


FIGURE 9—HSUR/L SERIES HANGER