

ICC-ES Evaluation Report

ESR-3096

Reissued January 2024

This report also contains:

- LABC Supplement

Subject to renewal January 2025

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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: SIMPSON STRONG-TIE COMPANY INC.</p>  | <p>EVALUATION SUBJECT: SIMPSON STRONG-TIE® CONNECTORS USING SD-SERIES SCREWS</p> |  |
|--|--|---|---|

1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2021, 2018, 2015, 2012, and 2009 [International Building Code® \(IBC\)](#)
- 2021, 2018, 2015, 2012, and 2009 [International Residential Code® \(IRC\)](#)

For evaluation for compliance with codes adopted by [Los Angeles Department of Building and Safety \(LADBS\)](#), see [ESR-3096 LABC and LARC Supplement](#).

Property evaluated:

Structural

2.0 USES

The Simpson Strong-Tie® structural connectors described in this report are used as wood framing connectors in accordance with Section [2304.10.4](#) of the 2021 IBC [Section [2304.10.3](#) of the 2018 and 2015 IBC and Section [2304.9.3](#) of the 2012 and 2009 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 structural connectors described in this report are used as wood-to-wood connections in structural systems that have been designed to transfer loads from their point of origin to load-resisting elements. All connectors are attached to wood using SD-Series screws recognized in ICC-ES evaluation report [ESR-3046](#).

3.1.1 A21 and A23 Series Angles: The A21 and A23 angles are used to transfer lateral loads between wood framing members. They are fabricated from No. 18 gage steel. See [Table 1](#) and [Figure 1](#) for model numbers, dimensions, fastener schedules, allowable loads and a typical installation detail.

3.1.2 A33 and A44 Series Angles: The A33 and A44 angles are used to transfer lateral loads between wood framing members. They are fabricated from No. 12 gage steel. See [Table 2](#) and [Figure 2](#) for model numbers, dimensions, fastener schedules, allowable loads and a typical installation detail.

3.1.3 GA Gusset Angles: The GA1 and GA2 gusset angles are used to transfer lateral loads between wood framing members. They are fabricated from No. 18 gage steel. See [Table 3](#) and [Figure 3](#) for model numbers, dimensions, fastener schedules, allowable loads and a typical installation detail.

3.1.4 L Framing Connectors: The L framing connectors are used to transfer lateral loads between wood framing members. They are fabricated from No. 16 gage steel. See [Table 4](#) and [Figure 4](#) for model numbers, dimensions, fastener schedules, allowable loads and a typical installation detail.

3.1.5 A34 and A35 Framing Angles: The A34 and A35 framing angles are used to transfer lateral and uplift loads between wood framing members. They are fabricated from No. 18 gage steel. The connectors have cutouts on each leg and a prong to aid in installation. See [Table 5](#) and [Figure 5](#) for model numbers, dimensions, fastener schedules, allowable loads and typical installation details.

3.1.6 LTP4 Lateral Tie Plate: The LTP4 lateral tie plate transfers shear force from the wood top plate to wood rim joist or blocking members. It is fabricated from No. 20 gage steel. See [Table 6](#) and [Figure 6](#) for model numbers, dimensions, fastener schedules, allowable loads and typical installation details.

3.1.7 DJT14Z Deck Joist Tie: DJT14Z connector is used to attach joists to posts. It is fabricated from No. 14 gage steel. See [Table 7](#) and [Figure 7](#) for model numbers, dimensions, fastener schedules, allowable loads and a typical installation detail.

3.1.8 Hurricane Ties: Hurricane Ties are designed to tie rafters or joists to wall plates or studs. The H1, H2.5, H2.5A, H5, H8, and H10 are fabricated from 18 gage steel. The H4 is fabricated from 20 gage steel. See [Table 8](#) and [Figure 8](#) for model numbers, dimensions, fastener schedules, allowable loads and typical installation details.

3.1.9 RSP4 Reversible Stud Plate Tie: The RSP4 tie is designed to connect a nominally 2-inch-wide wood stud to either the double top plate or to the mudsill. The locating tabs aid in placing the tie on the double top plates or a single bottom plate. It is fabricated from 20-gage steel. See [Table 9](#) and [Figure 9](#) for model numbers, dimensions, fastener schedules, allowable loads and typical installation details.

3.1.10 AC Series Post Caps: The AC post caps are used in pairs to transfer uplift and in-plane lateral loads between a beam and a post. They are fabricated from 18-gage steel. See [Table 10](#) and [Figure 10](#) for model types, dimensions, fastener schedules and allowable loads.

3.1.11 LCE4 Post Cap: The LCE post cap is used in pairs to transfer uplift and in-plane lateral loads between a beam and a post. It is fabricated from 20-gage steel. See [Table 11](#) and [Figure 11](#) for model numbers, dimensions, fastener schedules, allowable loads and a typical installation detail.

3.1.12 BC and BCS Series Post Caps: The BC and BCS are used to connect a beam to the end of a post. The BC and BCS post caps are designed to be used with beams having a width less than or equal to the post width, and can connect a continuous beam or the end of a beam to a post. The BCS has dome-shaped nail holes through which screws must be installed into the beam at a 45-degree angle. They are fabricated from 18-gage steel. See [Table 12](#) and [Figure 12](#) for model numbers, dimensions, fastener schedules, allowable loads and a typical installation detail.

3.1.13 BCO Series Post Bases: The BCO are used to connect the base of a post to a wood supporting member. They are fabricated from 18-gage steel. See [Table 13](#) and [Figure 13](#) for model numbers, dimensions, fastener schedules, allowable loads and a typical installation detail.

3.1.14 LPC4Z Light Post Cap: The LPC Light Post Cap is used in pairs to transfer uplift and in-plane lateral loads between a beam and a post. It is fabricated from 18-gage steel. See [Table 14](#) and [Figure 14](#) for model numbers, dimensions, fastener schedules, allowable loads and a typical installation detail.

3.1.15 PC and EPC Series Post Caps: The PC and EPC post caps are used to transfer uplift and in-plane lateral loads between a beam and a post. The EPC post caps are designed for end-post connections at the end of a beam. They are fabricated from 12 or 16 gage steel. Model numbers with a "-16" suffix are formed from 16-gage material. See [Table 15](#) and [Figure 15](#) for model numbers, dimensions, fastener schedules, allowable loads and typical installation details.

3.1.16 ABA Post Base Standoff: The ABA post base standoff elevates the post above concrete floors. A standard plate washer must be installed between the nut and the device along the anchor bolt. The ABA44 and ABA44R are fabricated from 16 gage and all other sizes from 14 gage steel. See [Table 16](#) and [Figure 16](#) for model numbers, dimensions, fastener schedules, allowable loads and a typical installation detail.

3.1.17 ABU Series Adjustable Post Base: The ABU adjustable post base connects a wood post to a concrete footing, elevating the base of the post 1 inch (25.4 mm) above the concrete footing. The ABU connector consists of a 16-gage channel, 12-gage standoff base and a 7-gage bearing plate. See [Table 17](#) and [Figure 17](#) for model numbers, dimensions, fastener schedules, allowable loads and a typical installation detail.

3.1.18 LU Series Hangers: The LU series hangers connect a joist to a supporting member such as a ledger or header. The models that support a single ply joist are fabricated from 20 gage steel. See [Table 18](#) and [Figure 18](#) for model numbers, dimensions, fastener schedules and allowable loads.

3.1.19 LUCZ Series Hangers: The LUCZ hangers connect a joist to a supporting member such as a ledger or header. They have concealed flanges to allow for installation near the end of the supporting member. They are fabricated from 18 gage steel. See [Table 19](#) and [Figure 19](#) for model numbers, dimensions, fastener schedules, allowable loads and a typical installation detail.

3.1.20 LUS Series Hangers: The LUS series hangers connect a joist to a supporting member such as a ledger or header. The joist fasteners must be installed at a 45-degree angle through the joist and into the header. They are fabricated from 18 gage steel. See [Table 20](#) and [Figure 20](#) for model numbers, dimensions, fastener schedules and allowable loads.

3.1.21 HUS Series Hangers: The HUS series hangers connect a joist to a supporting member such as a ledger or header. The joist fasteners must be installed at a 45-degree angle through the joist and into the header. They are fabricated from 16 gage steel. See [Table 21](#) and [Figure 21](#) for model numbers, dimensions, fastener schedules and allowable loads.

3.1.22 RR Ridge Rafter Connector: The RR ridge rafter connector supports a nominally 2-inch-wide rafter from a ridge board when the ridge board is a structural support. It is fabricated from 18 gage steel. The RR ridge rafter connector may be used with a rafter having a maximum slope of 7:12 (30 degrees). See [Table 22](#) and [Figure 22](#) for model numbers, dimensions, fastener schedules, allowable loads and a typical installation detail.

3.1.23 MTS Twist Straps: The MTS twist straps are used to connect wood trusses and wood rafters to double wood top plates, beams or studs and resist uplift loads. They are fabricated from 16 gage steel. See [Table 23](#) and [Figure 23](#) for model numbers, dimensions, fastener schedules, allowable loads and typical installation details.

3.1.24 ST Series Straps: The ST9, ST12, ST18, and ST 22 straps are 9 to 21⁵/₈ inches (229 to 549 mm) long and 1¹/₄ inches (31.8 mm) wide. Each strap has unevenly spaced, ¹¹/₆₄-inch-diameter (4.3 mm), prepunched fastener holes. See [Figure 24](#) for a drawing of the ST9, ST12, ST18, and ST 22 tie straps.

The ST292, ST2122, ST2215, ST6215, ST6224, and ST6236 straps are 9⁵/₁₆ to 33¹³/₁₆ inches (236.5 to 858.8 mm) long, and have a constant width of 1¹³/₁₆ inches (46 mm). The total strap width between longitudinal edges is 2¹/₁₆ inches (52.4 mm). Notches are ⁹/₃₂ inch (7.1 mm) deep and are spaced 1³/₄ inches (44.5 mm) on center. Each longitudinal edge of an ST strap has a row of ¹¹/₆₄-inch-diameter (4.3 mm) prepunched fastener holes, spaced 1³/₄ inches (44.5 mm) on center. See [Figure 25](#) for drawings of the ST292, ST2122, ST2215, ST6215, ST6224, and ST6236 tie straps.

The ST2115 strap is 16⁵/₁₆ inches (414.3 mm) long and ³/₄ inch (19.1 mm) wide, and has one row of ¹¹/₆₄-inch-diameter (4.3 mm), prepunched fastener holes, spaced 1⁵/₈ inches (41.3 mm) on center. See [Figure 26](#) for a drawing of the ST2115 tie strap.

See [Table 24](#) for ST Series tie strap dimensions, fastener schedules, and allowable tension loads.

3.1.25 MST Series Straps: The MST Series tie straps are 27 to 37¹/₂ inches long (686 to 953 mm) and 2¹/₁₆ inches (52.4 mm) wide. Each strap has two rows of ¹¹/₆₄-inch-diameter (4.3 mm) prepunched fastener holes spaced 1³/₄ inches (43.7 mm) on center. Additionally, the straps have ⁵/₈-inch-diameter (15.9 mm) prepunched bolt holes spaced 5¹/₄ inches (133.4 mm) on center. See [Figure 27](#) for a drawing of the MST Series tie straps. See [Table 25](#) for strap dimensions, fastener schedules, and allowable tension loads.

3.1.26 LSTA and MSTA Series Straps: The LSTA and MSTA Series tie straps are 9 to 49 inches (229 to 1245 mm) long and 1¹/₄ inches (32 mm) wide. Each strap has one row of staggered ¹¹/₆₄-inch-diameter (4.3 mm) prepunched fastener holes. The MSTA49 has ⁵/₃₂-inch-diameter (4.0 mm) prepunched fastener holes. Longitudinal spacing (pitch) of consecutive holes is 1¹/₂ inches (38 mm), and the transverse distance (gage) between staggered holes is ⁹/₁₆ inch (14.3 mm). For the MSTA49, the longitudinal spacing (pitch) of consecutive holes is 1¹⁷/₃₂ inches (38.9 mm), and the transverse distance (gage) between staggered holes is ¹/₂ inch (12.7 mm). Both ends of every strap (except for the MSTA49) have one fastener hole located between the last two staggered holes. See [Figure 28](#) for a drawing of the LSTA and MSTA Series tie straps. See [Table 26](#) for strap dimensions, fastener schedules, and allowable tension loads.

3.1.27 LSTI Series Straps: The LSTI Series tie straps are either 49 or 73 inches (1244 or 1854 mm) long and 3³/₄ inches (95 mm) wide. Each strap has two rows of staggered ⁵/₃₂-inch diameter (4.0 mm) prepunched fastener holes. Longitudinal spacing (pitch) of consecutive holes in a row is 3 inches (76 mm), and the

transverse distance (gage) between staggered holes in a row is $\frac{3}{8}$ inch (9.5 mm). See [Figure 29](#) for a drawing of the LSTI Series tie straps. See [Table 26](#) for strap dimensions, fastener schedules, and allowable tension loads.

3.1.28 MSTI Series Straps: The MSTI Series tie straps are $2\frac{1}{16}$ inches (52.4 mm) wide and from 26 to 72 inches (660 to 1829 mm) long. Each strap has three rows of $\frac{5}{32}$ -inch-diameter (4.0 mm) prepunched fastener holes spaced 3 inches (76 mm) on center. The holes in adjacent rows are offset by 1 inch (25.4 mm), resulting in one fastener hole per inch of strap. See [Figure 30](#) for a drawing of the MSTI Series tie straps. See [Table 26](#) for strap dimensions, fastener schedules, and allowable tension loads.

3.1.29 MSTC Series Straps: The MSTC Series tie straps are $28\frac{1}{4}$ to $77\frac{3}{4}$ inches (718 to 1975 mm) long and 3 inches (76 mm) wide. The straps have two rows of staggered prepunched fastener holes spaced $1\frac{1}{2}$ inches (38.1 mm), measured from center-to-center of holes. On the screw head side of the strap, the holes are oblong and measure $\frac{13}{64}$ inch wide by $\frac{9}{32}$ inch long (5.1 mm by 7.1 mm), and are chamfered at 120 degrees. On the wood side of the strap, the holes are $\frac{11}{64}$ inch wide by $\frac{1}{4}$ inch long (4.4 mm by 6.4 mm). The long direction of the fastener holes is perpendicular to the length of the strap. See [Figure 31](#) for a drawing of the MSTC Series tie straps. See [Table 26](#) for strap dimensions, fastener schedules, and allowable tension loads.

3.1.30 HTP37Z Tie Strap: The HTP37Z tie strap is 7 inches (178 mm) long and 3 inches (76 mm) wide. The straps have five staggered rows of $\frac{5}{32}$ -inch-diameter (4.0 mm) prepunched fastener holes. See [Figure 32](#) for a drawing of the HTP37Z tie strap. See [Table 27](#) for strap dimension, fastener schedules, and allowable tension loads.

3.1.31 HRS Series Straps: The HRS Series tie straps are 6 to 12 inches (152 – 305 mm) long and $1\frac{3}{8}$ inches (35 mm) wide. The straps have two staggered rows of $\frac{5}{32}$ -inch-diameter (4.0 mm) prepunched fastener holes. See [Figure 33](#) for a drawing of the HRS series strap. See [Table 27](#) for strap dimension, fastener schedules, and allowable tension loads.

3.2 Material:

3.2.1 Steel: The connectors described in this report are manufactured from galvanized steel complying with [ASTM A653](#), SS designation, with grades, minimum yield and tensile strengths and thicknesses as given in [Table 28](#). The connectors have a minimum G90 zinc coating specification in accordance with ASTM A653. Some models are available with a G185 zinc coating specification in accordance with ASTM A653 (denoted by model numbers ending in the letter Z). Some models are available with a batch hot-dipped galvanized coating having a minimum specified coating weight of 2.0 ounces of zinc per square foot of surface area (600 g/m^2), total for both sides in accordance with [ASTM A123](#) (denoted by model numbers ending with the letters HDG). Model numbers noted in this report do not necessarily include the Z or HDG ending, but the information shown applies. The lumber treater or report holder's recommendations shall be followed as regards minimum corrosion resistance and connection capacities of connectors used 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). The thickness of the wood members to which the connectors are attached must be equal to or greater than the length of the fasteners specified in the tables of this report, or as required by wood member design, whichever is greater.

3.2.3 Fasteners: All connectors are attached to wood with SD Series screws described in ESR-3046. See ESR-3046 for guidance for use in treated wood in regard to the SD Series screws.

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 *National Design Specification (NDS) for Wood Construction*[®] and *Supplement*.

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 tension 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.

4.3 Special Inspection:

4.3.1 Main Wind-force-resisting Systems under the IBC: Where required, periodic special inspection must be conducted for components within the main wind-force-resisting system in accordance with Sections [1704.2](#) and [1705.12](#) of the 2021 IBC, Sections [1704.2](#) and [1705.11](#) of the 2018 and 2015 IBC, Sections [1704.2](#) and [1705.10](#) of the 2012 IBC, and Sections [1704](#) and [1706](#) of the 2009 IBC.

4.3.2 Seismic-force-resisting Systems under the IBC: Where required, periodic special inspection must be conducted for components within the seismic-force-resisting system in accordance with Sections [1704.2](#) and [1705.13](#) of the 2021 IBC, Sections [1704.2](#) and [1705.12](#) of the 2018 and 2015 IBC, Sections [1704.2](#) and [1705.11](#) of the 2012 IBC, and Sections [1704](#) and [1707](#) of the 2009 IBC.

4.3.3 Installations under the IRC: Special inspections are normally not required for connectors used in structures regulated under the IRC. However, for components and systems requiring an engineered design in accordance with IRC Section [R301](#), periodic special inspection must be in accordance with Sections 4.3.1 and 4.3.2 of this report.

5.0 CONDITIONS OF USE:

The Simpson Strong-tie connectors 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- or fire-retardant-treated lumber must be in accordance with Section [3.2.3](#) of this report.
- 5.6 The design of anchorage to concrete and the concrete footings is outside the scope of this report.

6.0 EVIDENCE SUBMITTED

- 6.1 Data in accordance with the [ICC-ES Acceptance Criteria for Joist Hangers and Similar Devices \(AC13\)](#), dated October 2018 (editorially revised December 2020).
- 6.2 Structural calculations.
- 6.3 Quality documentation.

7.0 IDENTIFICATION

- 7.1 The products described in this report are identified with a die-stamped label or an adhesive label, indicating the name of the manufacturer (Simpson Strong-Tie), the model number, and the number of an index evaluation report ([ESR-2523](#)) which contains a summary of all the product model numbers in the ICC-ES evaluation reports, listed in that index report, for this manufacturer.

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

SIMPSON STRONG-TIE COMPANY INC.
5956 WEST LAS POSITAS BOULEVARD
PLEASANTON, CALIFORNIA 94588
(800) 999-5099
www.strongtie.com

TABLE 1—A21 AND A23 ANGLES

| MODEL NO. | DIMENSIONS (in) | | | FASTENERS (Quantity-Type) | | ALLOWABLE LOADS (lbs) ^{1,2,3,4} | |
|-----------|-------------------------------|----------------|-------------------------------|---------------------------|----------|--|----------------------|
| | L | W ₁ | W ₂ | | | F ₁ ⁵ | F ₂ |
| | | | | Base | Post | C _D = 1.6 | C _D = 1.6 |
| A21 | 1 ³ / ₈ | 2 | 1 ¹ / ₂ | 2-SD9112 | 2-SD9112 | 430 | 165 |
| A23 | 2 ³ / ₄ | 2 | 1 ¹ / ₂ | 4-SD9112 | 4-SD9112 | 670 | 560 |

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

1. Tabulated allowable loads have been adjusted for a load duration factor, C_D, of 1.6, corresponding to a ten-minute load duration (i.e., wind or earthquake loading), in accordance with the NDS. The allowable loads do not apply to loads of other durations.
2. F₁ and F₂ loads cannot be combined.
3. The tabulated F₁ and F₂ allowable loads are for a single connector. The terminating member must be constrained against rotation for the F₂ load direction when the angle connectors are not used in pairs.
4. When angles are installed on each side of wood member, the minimum member thickness must be 3 inches.
5. The F₁ load direction is that which results in the terminating member bearing on the flange of the connector. Connectors are required on both sides of the terminating member to resist allowable F₁ loads in both directions.

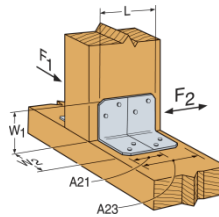


FIGURE 1—A21 AND A23 ANGLE INSTALLATION DETAIL

TABLE 2—A33 AND A44 ANGLES¹

| MODEL NO. | DIMENSIONS (in) | | | FASTENERS (Quantity-Type) | | ALLOWABLE LOADS (lbs) ^{2,3,4,5} | |
|-----------|-------------------------------|--------------------------------|-------------------------------|---------------------------|----------|--|----------------------|
| | L | W ₁ | W ₂ | | | F ₁ ⁶ | F ₂ |
| | | | | Base | Post | C _D = 1.6 | C _D = 1.6 |
| A33 | 1 ¹ / ₂ | 3 | 3 | 4-SD9112 | 4-SD9112 | 830 | 335 |
| A44 | 1 ¹ / ₂ | 4 ⁹ / ₁₆ | 4 ³ / ₈ | 4-SD9112 | 4-SD9112 | 805 | 290 |

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

1. Dimension nomenclature is as follows: L is the width, W₁ is the length of the flange attached to the terminating member, and W₂ is the length of the flange attached to the continuous member.
2. Tabulated allowable loads have been adjusted for a load duration factor, C_D, of 1.6, corresponding to a ten-minute load duration (i.e., wind or earthquake loading), in accordance with the NDS. The allowable loads do not apply to loads of other durations.
3. F₁ and F₂ loads cannot be combined.
4. The tabulated F₁ and F₂ allowable loads are for a single connector. The terminating member must be constrained against rotation for the F₂ load direction when the angle connectors are not used in pairs.
5. When angles are installed on each side of wood member, the minimum member thickness must be 3 inches.
6. The F₁ load direction is that which results in the terminating member bearing on the flange of the connector. Connectors are required on both sides of the terminating member to resist allowable F₁ loads in both directions.

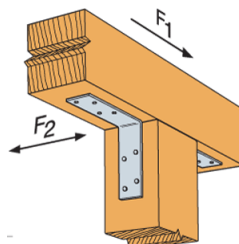


FIGURE 2—A33 AND A44 ANGLE INSTALLATION DETAIL

TABLE 3—GA ANGLES

| MODEL NO. | L (in) | FASTENERS (Quantity-Type) | ALLOWABLE LOADS (lbs) ^{1,2,3,4} | | | | | | | |
|-----------|-------------------------------|---------------------------|--|----------------------|----------------------|----------------------|-----------------------------|----------------------|----------------------|---------------------|
| | | | F ₁ | | | | F ₂ ⁵ | | | |
| | | | C _D =1.0 | C _D =1.15 | C _D =1.25 | C _D = 1.6 | C _D =1.0 | C _D =1.15 | C _D =1.25 | C _D =1.6 |
| GA1 | 2 ³ / ₄ | 4-SD9112 | 340 | 375 | 375 | 375 | 340 | 395 | 430 | 435 |
| GA2 | 3 ¹ / ₄ | 6-SD9112 | 515 | 590 | 640 | 695 | 515 | 590 | 640 | 820 |

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

1. Tabulated allowable loads have been adjusted for load duration factors, C_D, as shown, in accordance with the NDS, and are not permitted to be adjusted for other load durations.
2. F₁ and F₂ loads cannot be combined.
3. The tabulated F₁ and F₂ allowable loads are for a single connector. The terminating member must be constrained against rotation for the F₁ load direction when the angle connectors are not used in pairs.
4. When angles are installed on each side of wood member, the minimum member thickness must be 3 inches.
5. The F₂ load direction is that which results in the terminating member bearing on the flange of the connector. Connectors are required on both sides of the terminating member to resist allowable F₂ loads in both directions.

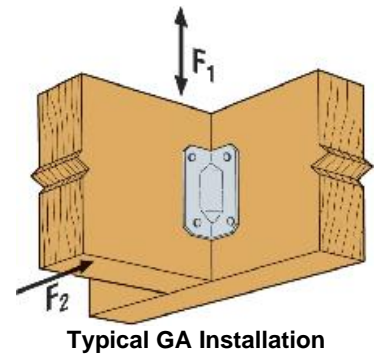
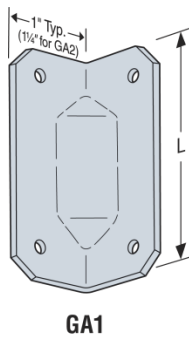


FIGURE 3—GA ANGLE

TABLE 4—L REINFORCING ANGLES

| MODEL NO. | L (in) | FASTENERS (Quantity-Type) | ALLOWABLE LOADS (lbs) ^{1,2,3,4} | | | | | | | |
|-----------|--------|---------------------------|--|----------------------|----------------------|---------------------|-----------------------------|----------------------|----------------------|---------------------|
| | | | F ₁ | | | | F ₂ ⁵ | | | |
| | | | C _D =1.0 | C _D =1.15 | C _D =1.25 | C _D =1.6 | C _D =1.0 | C _D =1.15 | C _D =1.25 | C _D =1.6 |
| L30 | 3 | 4-SD9112 | 290 | 290 | 290 | 290 | 340 | 395 | 430 | 545 |
| L50 | 5 | 6-SD9112 | 515 | 535 | 535 | 535 | 515 | 590 | 640 | 820 |
| L70 | 7 | 8-SD9112 | 685 | 785 | 855 | 1,015 | 685 | 785 | 855 | 1,095 |
| L90 | 9 | 10-SD9112 | 855 | 985 | 1,070 | 1,180 | 855 | 985 | 1,070 | 1,370 |

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

1. Tabulated allowable loads have been adjusted for load duration factors, C_D, as shown, in accordance with the NDS, and are not permitted to be adjusted for other load durations.
2. F₁ and F₂ loads cannot be combined.
3. The tabulated F₁ and F₂ allowable loads are for a single connector. The terminating member must be constrained against rotation for the F₁ load direction when the angle connectors are not used in pairs.
4. When angles are installed on each side of wood member, the minimum member thickness must be 3 inches.
5. The F₂ load direction is that which results in the terminating member bearing on the flange of the connector. Connectors are required on both sides of the terminating member to resist allowable F₂ loads in both directions.

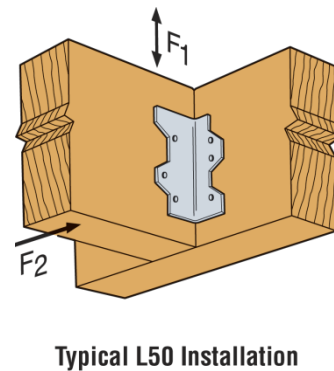
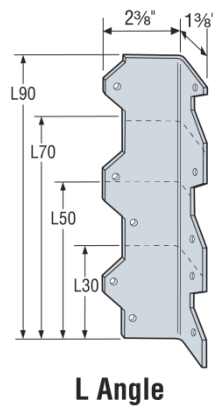


FIGURE 4—L REINFORCING ANGLE

TABLE 5—A34 AND 35 FRAMING CONNECTORS¹

| MODEL NO. | FASTENERS (Quantity-Type) | | DIRECTION OF LOAD | ALLOWABLE LOADS (lbs) ^{2,3,4,5} | | |
|-----------|---------------------------|--------------|-------------------------------|--|----------------------|---|
| | Joist | Header/Plate | | C _D =1.0 | C _D =1.15 | C _D =1.25 C _D =1.6 |
| A34 | 4-SD9112 | 4- SD9112 | F ₁ | 640 | 640 | 640 |
| | 4-SD9112 | 4- SD9112 | F ₂ ⁽⁶⁾ | 495 | 495 | 495 |
| A35 | 6-SD9112 | 6-SD9112 | F ₁ | 695 | 695 | 695 |
| | 6-SD9112 | 6-SD9112 | F ₂ ⁽⁶⁾ | 845 | 845 | 845 |
| | 3-SD9112 | 6-SD9112 | A ₁ | 260 | 295 | 320 |
| | 3-SD9112 | 6-SD9112 | E | 260 | 295 | 320 |
| | 6-SD9112 | 6-SD9112 | A ₂ | 260 | 295 | 320 |
| | 6-SD9112 | 6-SD9112 | C ₂ | 260 | 295 | 315 |
| | 6-SD9112 | 6-SD9112 | D | 150 | 150 | 150 |

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

1. Some illustrations show connections that could cause cross-grain tension or bending of the wood during loading if not reinforced sufficiently. In such cases, mechanical reinforcement should be considered.
2. Tabulated allowable loads have been adjusted for load duration factors, C_D, as shown, in accordance with the NDS, and are not permitted to be adjusted for other load durations.
3. Tabulated allowable loads given for different load directions cannot be combined.
4. The tabulated F₁ and F₂ allowable loads are for a single connector. The terminating member must be constrained against rotation for the F₁ load direction when the angle connectors are not used in pairs.
5. When angles are installed on each side of wood member, the minimum member thickness must be 3 inches.
6. The F₂ load direction is that which results in the terminating member bearing on the flange of the connector. Connectors are required on both sides of the terminating member to resist allowable F₂ loads in both directions.

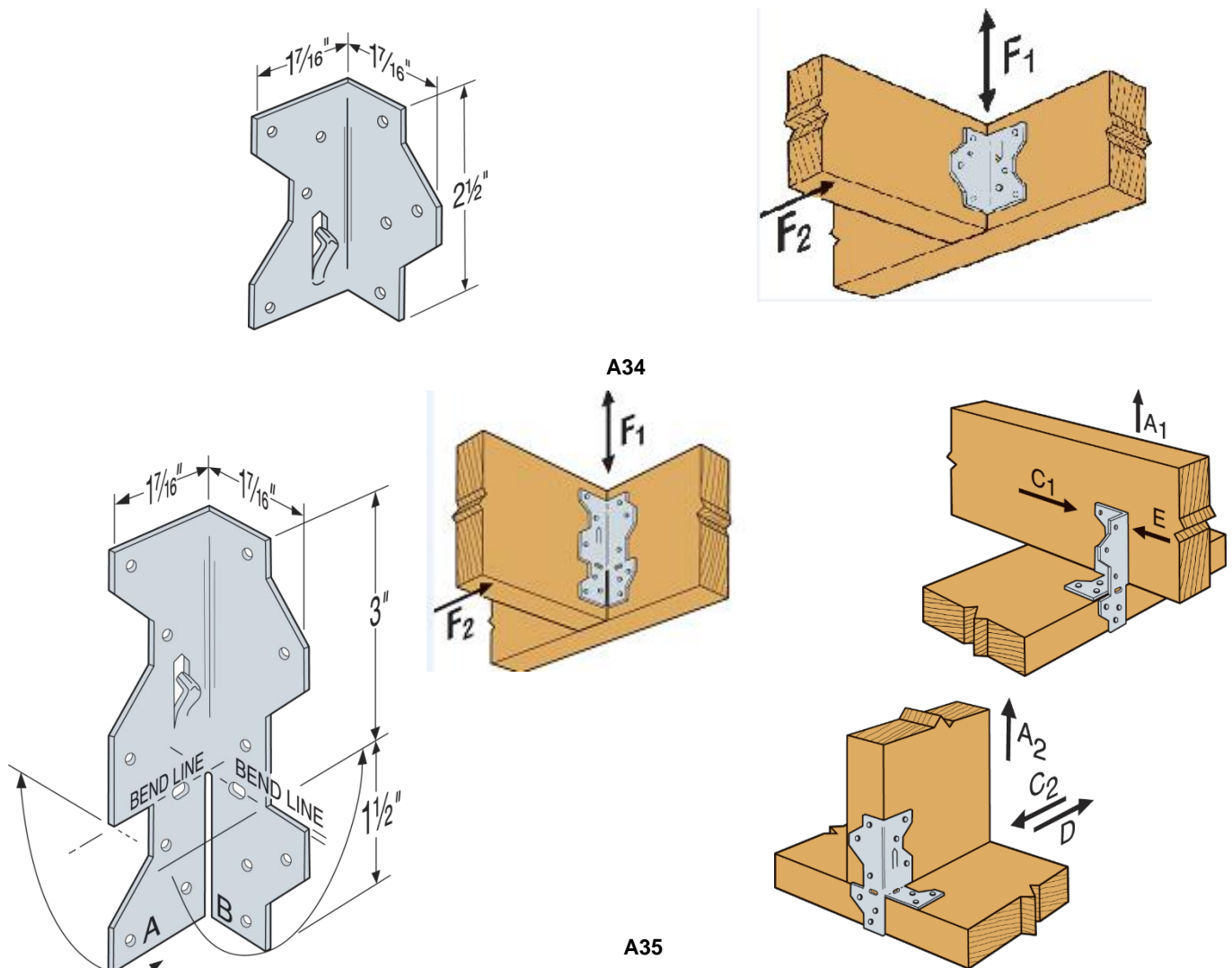


FIGURE 5—A ANGLES

TABLE 6—LTP4 FRAMING CONNECTOR

| MODEL NO. | FASTENERS (Quantity-Type) | | DIRECTION OF LOAD | ALLOWABLE LOADS (lbs) ^{1,2} | | | |
|-----------|---------------------------|--------------------|-------------------|--------------------------------------|----------------------|----------------------|---------------------|
| | Plates | Rim Joist/Blocking | | C _D =1.0 | C _D =1.15 | C _D =1.25 | C _D =1.6 |
| LTP4 | 6 – SD9112 | 6 – SD9112 | G | 910 | 910 | 910 | 910 |
| | 6 – SD9112 | 6 – SD9112 | H | 800 | 800 | 800 | 800 |

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

1. Tabulated allowable loads have been adjusted for load duration factors, C_D, as shown, in accordance with the NDS, and are not permitted to be adjusted for other load durations.
2. The LTP4 may be installed over wood-based structural sheathing (as shown in Figure 6) having a maximum thickness of 1/2 inch without adversely affecting the tabulated loads.

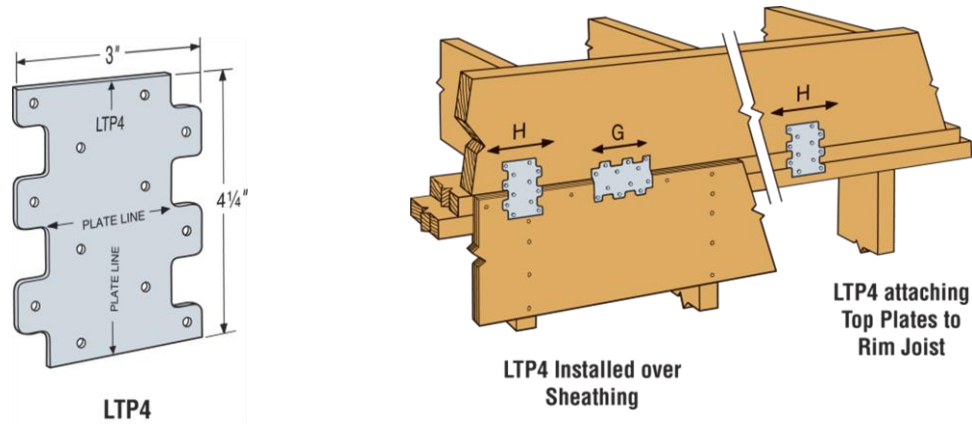


FIGURE 6—LTP4 FRAMING CONNECTOR

TABLE 7—DJTZ DECK JOIST TIE

| MODEL NO. | FASTENERS (Quantity-Type) | ALLOWABLE DOWN LOADS (lbs) | | |
|-----------|---------------------------|----------------------------|----------------------|----------------------|
| | | SCREWS | | |
| | | C _D =1.0 | C _D =1.15 | C _D =1.25 |
| DJT14Z | 8-SD10212 | 1,250 | 1,460 | 1,490 |

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

1. Tabulated allowable loads have been adjusted for load duration factors, C_D, as shown, in accordance with the NDS, and are not permitted to be adjusted for other load durations.
2. The tabulated allowable loads are for a single connector.

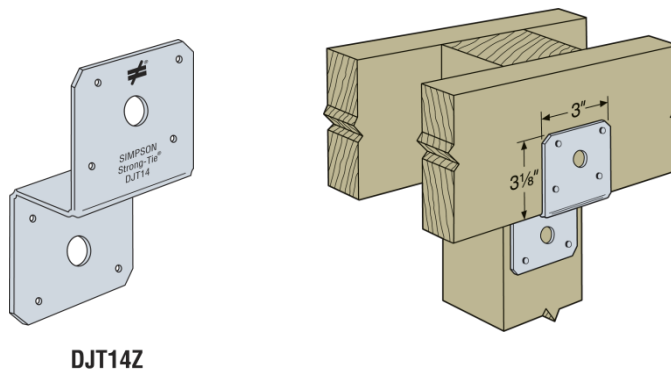


FIGURE 7—DJTZ DECK JOIST TIE

TABLE 8—H-SERIES SEISMIC AND HURRICANE TIES

| MODEL NO. | FASTENERS (Quantity-Type) | | ALLOWABLE LOADS (lbs) ^{1,2,3,4,5} | | |
|-----------|------------------------------|-----------|--|-------------------------------|----------------|
| | | | UPLIFT (C _D =1.6) | LATERAL (C _D =1.6) | |
| | TO RAFTER | TO PLATES | | | F ₁ |
| H1 | 6-SD9112 | 4-SD9112 | 505 | 600 | 390 |
| H2.5 | 5-SD9112 | 5-SD9112 | 480 | 305 | 165 |
| H2.5A | 5-SD9112 | 5-SD9112 | 625 | 450 | 110 |
| H4 | 4-SD9112 | 4-SD9112 | 325 ⁽⁶⁾ | 200 | 135 |
| H5 | 4-SD9112 | 4-SD9112 | 480 | 565 | 235 |
| H8 | 5-SD9112 | 5-SD9112 | 820 ⁽⁷⁾ | 85 | - |
| H10 | 8-SD9112 | 8-SD9112 | 1135 | 840 | 325 |

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

1. Tabulated allowable loads have been adjusted for a load duration factor, C_D, of 1.6, corresponding to a ten-minute load duration (i.e., wind or earthquake loading), in accordance with the NDS. The allowable loads do not apply to loads of other durations.
2. Allowable loads are for one anchor. A minimum rafter thickness of 2½ inches must be used when framing anchors are installed on each side of the joist and on the same side of the plate.
3. Allowable lateral loads in the F₁ direction (parallel to the plate) must not be used to replace diaphragm boundary members or nailing, or replace solid blocking required by code to laterally support the ends of joists or rafters.
4. When cross-grain bending or cross-grain tension cannot be avoided, mechanical reinforcement to all such forces must be provided where required.
5. Tabulated allowable loads given for different load directions cannot be simultaneously combined, i.e., the tie must be subjected to only one direction of load for each loading condition.
6. Maximum allowable uplift load for the H4 stud bottom plate installation is 415 lbs.
7. Maximum allowable uplift load for the H8 stud bottom plate installation is 380 lbs.

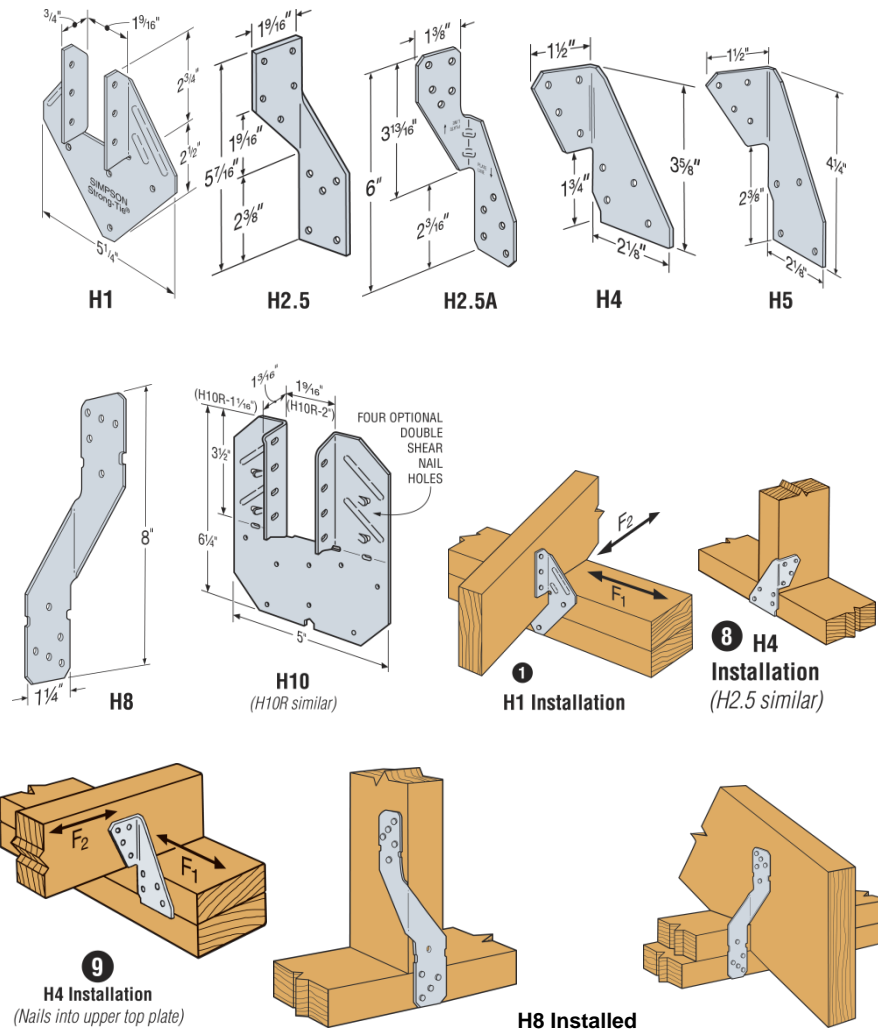


FIGURE 8—H-SERIES SEISMIC AND HURRICANE TIES

TABLE 9—RSP STUD PLATE TIE

| MODEL NO. | DIMENSIONS (in) | | FASTENERS (Quantity-Type) | | ALLOWABLE UPLIFT LOADS (lbs) C _D =1.6 | ALLOWABLE LOADS (lbs) ^{1,2,3} | |
|-----------|-----------------|-------|---------------------------|----------|---|--|---------------------------------------|
| | W | L | STUD | PLATE | | F ₁ C _D =1.6 | F ₂ C _D =1.6 |
| RSP4(1) | 2 1/8 | 4 1/2 | 4-SD9112 | 4-SD9112 | 520 | 205 | 190 |
| RSP4(2) | | | 4-SD9112 | 4-SD9112 | | 275 | 255 |

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

1. Tabulated allowable loads have been adjusted for a load duration factor, C_D, of 1.6, corresponding to a ten-minute load duration (i.e., wind or earthquake loading), in accordance with the NDS. The allowable loads do not apply to loads of other durations.
2. F₁ and F₂ loads cannot be combined.
3. The F₁ load direction is parallel to the plate, and the F₂ load direction is perpendicular to the plate.

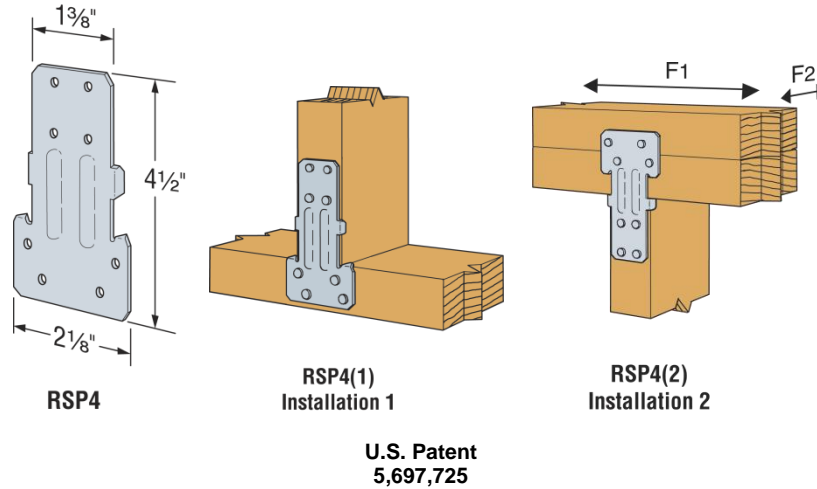


FIGURE 9—RSP STUD PLATE TIES

TABLE 10—AC SERIES POST CAPS

| MODEL NO. ¹ | DIMENSIONS (in) | | FASTENERS (Quantity-Type) | | ALLOWABLE LOADS ^{2,3,4,5,6} | |
|------------------------|-----------------|-------|---------------------------|--------------|--------------------------------------|--------------------------------|
| | W | L | Beam | Post | Uplift C _D =1.6 | Lateral C _D =1.6 |
| AC4 MAX | 3 9/16 | 6 1/2 | 14 – SD10112 | 14 – SD10112 | 2,740 | 1,485 |
| AC4R MAX | 4 | 7 | 14 – SD10112 | 14 – SD10112 | 2,740 | 1,485 |
| AC6 MAX | 5 1/2 | 8 1/2 | 14 – SD10112 | 14 – SD10112 | 2,920 | 2,125 |
| AC6R MAX | 6 | 9 | 14 – SD10112 | 14 – SD10112 | 2,920 | 2,125 |

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

1. "MAX" suffix to the model number indicates that both round and triangular holes must be filled with the quantity of screws specified.
2. Tabulated allowable loads have been adjusted for a load duration factor, C_D, of 1.6, corresponding to a ten-minute load duration (i.e., wind or earthquake loading), in accordance with the NDS. The allowable loads do not apply to loads of other durations.
3. Tabulated allowable loads are for a pair of connectors, with one connector installed on each side of the beam.
4. Tabulated allowable loads apply only to cases in which the beam is continuous through the connector.
5. Tabulated uplift and lateral loads cannot be combined.
6. Allowable lateral loads are for loads applied parallel to the length of the beam.

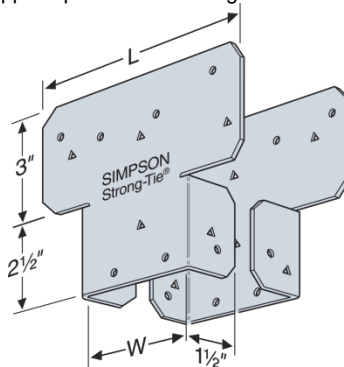


FIGURE 10—AC SERIES

TABLE 11—LCE4 POST CAP

| MODEL NO. | FASTENERS (Quantity-Type) | | ALLOWABLE LOADS (lbs) ^{1,2,3} | |
|-----------|------------------------------|------------|--|------------------------------|
| | Beam | Post | Uplift | Lateral ⁴ |
| LCE4 | 14-SD10112 | 10-SD10112 | C _D =1.6 1,860 | C _D =1.6 1,355 |

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

1. Tabulated allowable loads have been adjusted for a load duration factor, C_D, of 1.6, corresponding to a ten-minute load duration (i.e., wind or earthquake loading), in accordance with the NDS. The allowable loads do not apply to loads of other durations.
2. Tabulated allowable loads are for a pair of connectors, with one connector installed on each side of the beam.
3. Tabulated uplift and lateral loads cannot be combined.
4. Allowable lateral loads are for loads applied parallel to the length of the beam.

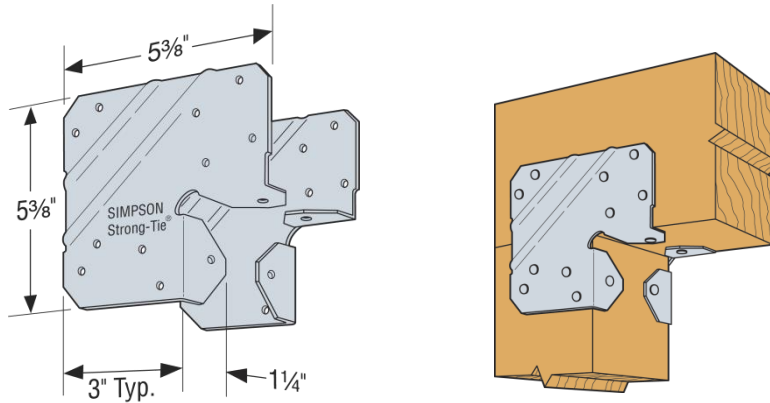


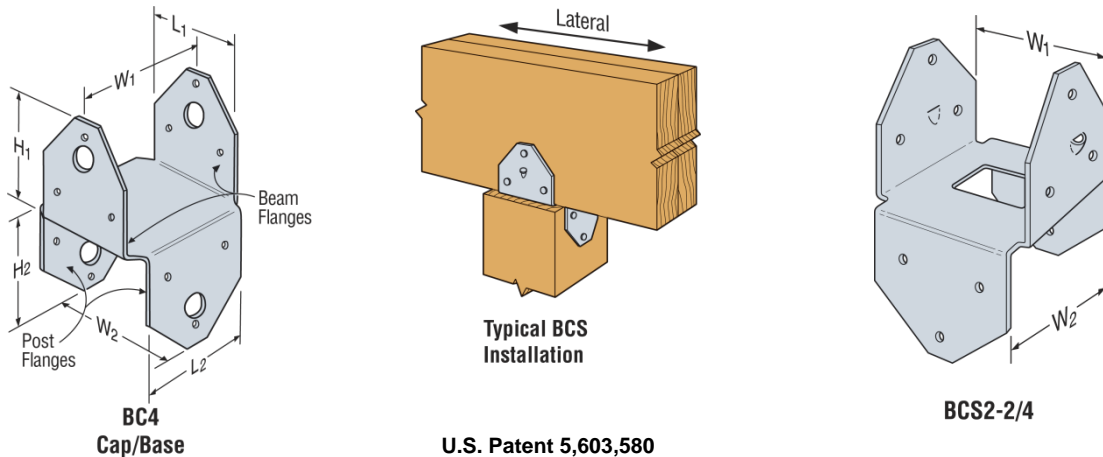
FIGURE 11—LCE4 POST CAP

TABLE 12—BC AND BCS SERIES POST CAPS¹

| MODEL NO. | DIMENSIONS (in) | | | | | | FASTENERS (Quantity-Type) | | ALLOWABLE LOADS ^{2,3,4} (lbs) | |
|---------------------------|--------------------------------|--------------------------------|-------------------------------|-------------------------------|---------------------------------|---------------------------------|---------------------------|-------------|--|----------------------|
| | W ₁ | W ₂ | L ₁ | L ₂ | H ₁ | H ₂ | Beam Flange | Post Flange | Uplift | Lateral ⁵ |
| | | | | | | | | | C _D =1.6 | C _D =1.6 |
| BC4 | 3 ⁹ / ₁₆ | 3 ⁹ / ₁₆ | 2 ⁷ / ₈ | 2 ⁷ / ₈ | 3 | 3 | 6-SD10112 | 6-SD10112 | 705 | 1,075 |
| BCS2-2/4 ^(6,7) | 3 ¹ / ₈ | 3 ⁹ / ₁₆ | 2 ⁷ / ₈ | 2 ⁷ / ₈ | 2 ¹⁵ / ₁₆ | 2 ¹⁵ / ₁₆ | 8-SD9212 | 6-SD9212 | 840 | 1,115 |

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

1. The BC and BCS post caps must be used with wood beams having a width less than or equal to the width of the supporting post.
2. Tabulated allowable loads have been adjusted for a load duration factor, C_D, of 1.6, corresponding to a ten-minute load duration (i.e., wind or earthquake loading), in accordance with the NDS. The allowable loads do not apply to loads of other durations.
3. Tabulated allowable loads apply only to cases in which the beam is continuous through the connector.
4. Tabulated uplift and lateral loads cannot be combined.
5. Allowable lateral loads are for loads applied parallel to the length of the beam.
6. The BCS2-2/4 post cap is designed for the connection of double 2x's to a nominally 4-inch-wide post.
7. The BCS has slanted fastener holes for screws that must be installed into the beam at a 45-degree angle and penetrate into the end grain of the supporting post.



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FIGURE 12—BC AND BCS SERIES

TABLE 13—BCO SERIES POST BASES

| MODEL NO. | NOMINAL POST SIZE | FASTENERS (Quantity-Type) | | Allowable Uplift Loads ^{1,2} (lbs) (C _D =1.6) | |
|-----------|-------------------|---------------------------|-------------|---|----------------------|
| | | Post Flange | Base Bottom | Uplift | Lateral ³ |
| BC40 | 4x | 6-SD10112 | 4-SD10112 | 805 | 770 |
| BC60 | 6x | 6-SD10112 | 4-SD10112 | 680 | 920 |

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

1. Tabulated allowable loads have been adjusted for a load duration factor, C_D, of 1.6, corresponding to a ten-minute load duration (i.e., wind or earthquake loading), in accordance with the NDS. The allowable loads do not apply to loads of other durations.
2. Tabulated uplift and lateral loads cannot be combined.
3. Allowable lateral loads are for loads applied perpendicular to the flanges of the connector.

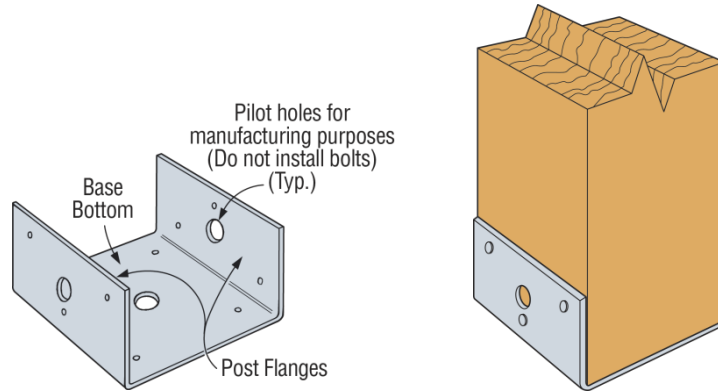


FIGURE 13—BCO SERIES

TABLE 14—LPC SERIES LIGHT POST CAP¹

| MODEL NO. | FASTENERS (Quantity-Type) | | ALLOWABLE LOADS (lbs.) ^{2,3,4,5} | |
|-----------|---------------------------|----------|---|---|
| | Beam | Post | Uplift C _D =1.6 | Lateral ⁶ C _D =1.6 |
| LPC4Z | 8-SD9112 | 8-SD9112 | 695 | 830 |

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

1. The LPC post cap must be used with wood beams having a width less than or equal to the width of the supporting post.
2. Tabulated allowable loads have been adjusted for a load duration factor, C_D, of 1.6, corresponding to a ten-minute load duration (i.e., wind or earthquake loading), in accordance with the NDS. The allowable loads do not apply to loads of other durations.
3. Tabulated allowable loads are for a pair of connectors, with one connector installed on each side of the beam.
4. Tabulated allowable loads apply only to cases in which the beam is continuous through the connector.
5. Tabulated uplift and lateral loads cannot be combined.
6. Allowable lateral loads are for loads applied parallel to the length of the beam.

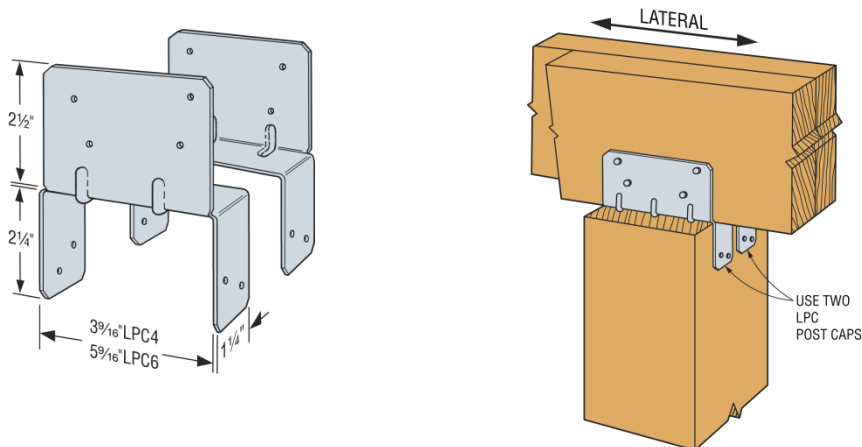


FIGURE 14—LPC SERIES

TABLE 15—PC AND EPC SERIES POST CAPS

| MODEL NO. | POST SIZE | DIMENSIONS (in) | | | | | FASTENERS ¹ (Quantity per Flange - Type) | | | ALLOWABLE LOADS ^{2,3,4} (lbs) | | | |
|-----------|-----------|--------------------------------|--------------------------------|-------------------------------|----|-------------------------------|--|---------------------|-----------------|--|-------|----------------------|-------|
| | | W1 | W2 | L1 | L2 | L3 | SURFACES | | | UPLIFT | | LATERAL ⁵ | |
| | | | | | | | Post Flange | Beam Flange PC | Beam Flange EPC | PC | EPC | PC | EPC |
| | | C _D =1.6 | | C _D =1.6 | | C _D =1.6 | | C _D =1.6 | | | | | |
| PC44-16 | 4x4 | 3 ⁹ / ₁₆ | 3 ⁹ / ₁₆ | 2 ⁵ / ₈ | 11 | 7 ³ / ₈ | 4-SD10112 | 6-SD10112 | 4-SD10112 | 730 | 890 | 1,260 | 1,105 |
| PC44 | 4x4 | 3 ⁹ / ₁₆ | 3 ⁹ / ₁₆ | 2 ⁵ / ₈ | 11 | 7 ³ / ₈ | 4-SD10112 | 6-SD10112 | 4-SD10112 | 1,930 | 1,150 | 1,600 | 1,785 |

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

1. The tabulated fastener quantity is the number of screws required in each flange of the PC or EPC connector.
2. Tabulated allowable loads have been adjusted for a load duration factor, C_D, of 1.6, corresponding to a ten-minute load duration (i.e., wind or earthquake loading), in accordance with the NDS. The allowable loads do not apply to loads of other durations.
3. Tabulated allowable loads for the PC series post cap apply only to cases in which the beam is continuous through the connector.
4. Tabulated uplift and lateral loads cannot be combined.
5. Allowable lateral loads are for loads applied parallel to the length of the beam.

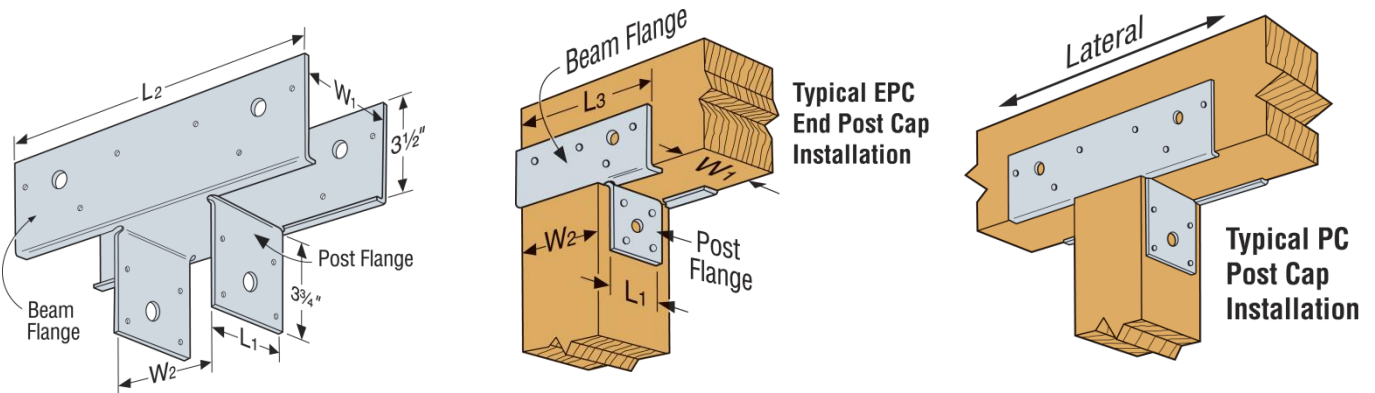


FIGURE 15—PC AND EPC SERIES

TABLE 16—ABA ADJUSTABLE POST BASE

| MODEL NO. | DIMENSIONS (inches) | | | FASTENERS (Quantity-Size/Type) | | ALLOWABLE LOADS (lbs) ^{1,2} | |
|-----------|--------------------------------|--------------------------------|---------------------------------|-----------------------------------|-----------|--------------------------------------|--|
| | W | L | H | ANCHOR DIAMETER (inches) | POST | UPLIFT C _D =1.6 | DOWNLOADS C _D =1.0, C _D =1.15, C _D =1.25 |
| ABA44 | 3 ⁹ / ₁₆ | 3 ¹ / ₈ | 3 ¹ / ₁₆ | 1/2 | 6-SD9112 | 610 | 6,000 |
| ABA44R | 4 ¹ / ₁₆ | 3 ¹ / ₈ | 2 ¹³ / ₁₆ | 1/2 | 6-SD9112 | 610 | 8,000 |
| ABA46 | 3 ⁹ / ₁₆ | 5 ³ / ₁₆ | 3 ¹ / ₈ | 5/8 | 8-SD10112 | 940 | 9,435 |
| ABA46R | 4 ¹ / ₁₆ | 5 ³ / ₁₆ | 2 ⁷ / ₈ | 5/8 | 8-SD10112 | 940 | 12,000 |
| ABA66 | 5 ¹ / ₂ | 5 ¹ / ₄ | 3 ¹ / ₈ | 5/8 | 8-SD10112 | 970 | 10,665 |
| ABA66R | 6 | 5 ³ / ₁₆ | 2 ⁷ / ₈ | 5/8 | 8-SD10112 | 970 | 12,665 |

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

1. Tabulated allowable loads have been adjusted for load duration factors, C_D, as shown, in accordance with the NDS, and are not permitted to be adjusted for other load durations.
2. Anchor bolts and concrete footings must be capable of resisting all loads and forces transferred from the post base connector.

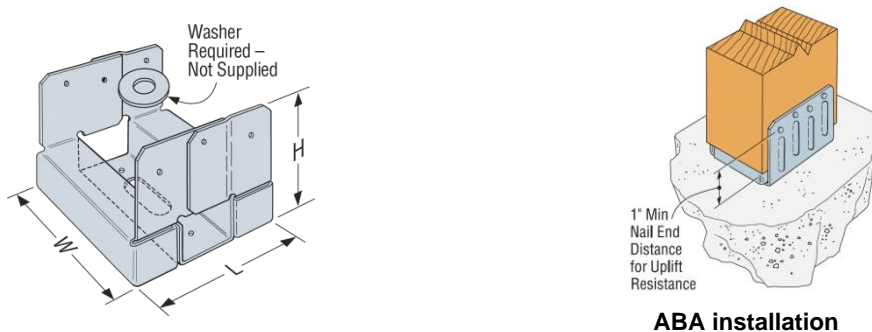


FIGURE 16—ABA ADJUSTABLE POST BASE

TABLE 17—ABU ADJUSTABLE POST BASE

| MODEL NO. | DIMENSIONS (inches) | | | FASTENERS (Quantity-Type / Size) | | ALLOWABLE LOADS ^{1,2} (lbs) | |
|-----------|--------------------------------|---|-------------------------------|----------------------------------|--------------------------|--------------------------------------|--|
| | W | L | H | Post | Anchor Diameter (inches) | Uplift C _D =1.6 | Download C _D =1.0, C _D =1.15, C _D =1.25 |
| ABU44 | 3 ⁹ / ₁₆ | 3 | 5 ¹ / ₂ | 12-SD10112 | 5/8 | 2,140 | 6,665 |

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

1. Tabulated allowable loads have been adjusted for load duration factors, C_D, as shown, in accordance with the NDS, and are not permitted to be adjusted for other load durations.
2. Anchor bolts and concrete footings must be capable of resisting all loads and forces transferred from the post base connector.

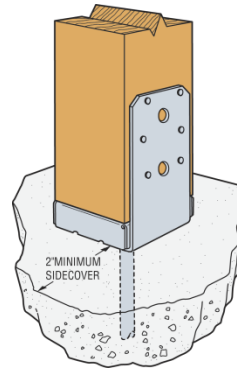
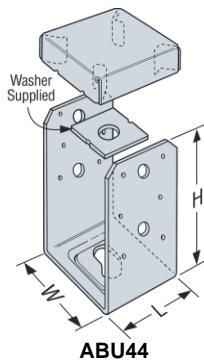


FIGURE 17—ABU44 POST BASE

TABLE 18—LU SERIES JOIST HANGERS

| MODEL No. | DIMENSIONS (inches) | | | FASTENERS (Quantity-Type) | | ALLOWABLE LOADS ^{1,2} (lbs) | | | |
|-----------|--------------------------------|---------------------------------|-------------------------------|---------------------------|----------|--------------------------------------|---------------------|----------------------|----------------------|
| | W | H | B | Header | Joist | Uplift | Download | | |
| | | | | | | C _D =1.6 | C _D =1.0 | C _D =1.15 | C _D =1.25 |
| LU24 | 1 ⁹ / ₁₆ | 3 ¹ / ₈ | 1 ¹ / ₂ | 4-SD9112 | 2-SD9112 | 340 | 685 | 725 | 725 |
| LU26 | 1 ⁹ / ₁₆ | 4 ³ / ₄ | 1 ¹ / ₂ | 6-SD9112 | 4-SD9112 | 915 | 1,025 | 1,030 | 1,030 |
| LU28 | 1 ⁹ / ₁₆ | 6 ³ / ₈ | 1 ¹ / ₂ | 8-SD9112 | 6-SD9112 | 995 | 1,370 | 1,380 | 1,380 |
| LU210 | 1 ⁹ / ₁₆ | 7 ¹³ / ₁₆ | 1 ¹ / ₂ | 10-SD9112 | 6-SD9112 | 1,150 | 1,710 | 1,965 | 2,010 |

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

1. Tabulated allowable loads have been adjusted for load duration factors, C_D, as shown, in accordance with the NDS, and are not permitted to be adjusted for other load durations.
2. LU series hangers provide torsional resistance, which is defined as a moment of not less than 75 pounds 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 height, H, of the joist hanger must be at least 60 percent of the height of the joist unless additional lateral restraint is provided, as designed by others.

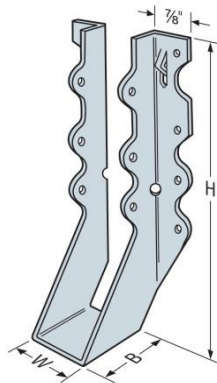


FIGURE 18—LU JOIST HANGER

TABLE 19—LUCZ SERIES JOIST HANGERS

| MODEL No. | DIMENSIONS (inches) | | FASTENERS (Quantity-Type) | | ALLOWABLE LOADS ^{1,2} (lbs) | | | |
|-----------|--------------------------------|-------------------------------|---------------------------|-----------|--------------------------------------|---------------------|----------------------|----------------------|
| | W | H | Header | Joist | Uplift | Download | | |
| | | | | | C _D =1.6 | C _D =1.0 | C _D =1.15 | C _D =1.25 |
| LUC26Z | 1 ⁹ / ₁₆ | 4 ³ / ₄ | 6-SD9112 | 4-SD9112 | 865 | 1,025 | 1,180 | 1,285 |
| | | | 6-SD10112 | 4-SD10112 | 915 | 1,040 | 1,195 | 1,300 |
| LUC210Z | 1 ⁹ / ₁₆ | 7 ³ / ₄ | 10-SD9112 | 6-SD9112 | 1,605 | 1,710 | 1,965 | 2,030 |
| | | | 10-SD10112 | 6-SD10112 | 1,580 | 1,730 | 1,990 | 2,165 |

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

1. Tabulated allowable loads have been adjusted for load duration factors, C_D, as shown, in accordance with the NDS, and are not permitted to be adjusted for other load durations.
2. LUCZ series hangers provide torsional resistance, which is defined as a moment of not less than 75 pounds 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 height, H, of the joist hanger must be at least 60 percent of the height of the joist unless additional lateral restraint is provided, as designed by others.

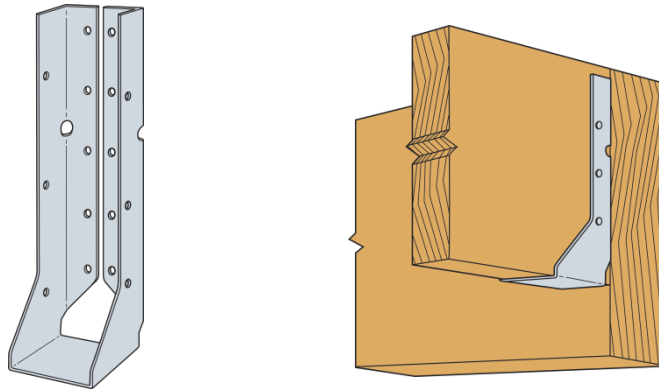


FIGURE 19—LUCZ SERIES HANGER

TABLE 20—LUS SERIES JOIST HANGERS¹

| MODEL NO. | DIMENSIONS (inches) | | | FASTENERS (Quantity-Type) | | ALLOWABLE LOADS ^{2,3} (lbs) | | | |
|-----------|--------------------------------|---------------------------------|-------------------------------|---------------------------|--------------------|--------------------------------------|---------------------|----------------------|----------------------|
| | W | H | B | Header | Joist ⁴ | Uplift | Download | | |
| | | | | | | C _D =1.6 | C _D =1.0 | C _D =1.15 | C _D =1.25 |
| LUS24 | 1 ⁹ / ₁₆ | 3 ¹ / ₈ | 1 ³ / ₄ | 4-SD9212 | 2-SD9212 | 490 | 895 | 895 | 895 |
| | | | | 4-SD9112 | 2-SD9212 | 490 | 840 | 895 | 895 |
| LUS26 | 1 ⁹ / ₁₆ | 4 ³ / ₄ | 1 ³ / ₄ | 4-SD9212 | 4-SD9212 | 1,180 | 1,110 | 1,270 | 1,385 |
| | | | | 4-SD9112 | 4-SD9212 | 1,180 | 990 | 1,140 | 1,240 |
| LUS28 | 1 ⁹ / ₁₆ | 6 ⁵ / ₈ | 1 ³ / ₄ | 6-SD9212 | 4-SD9212 | 1,310 | 1,510 | 1,610 | 1,610 |
| | | | | 6-SD9112 | 4-SD9212 | 1,310 | 1,335 | 1,530 | 1,610 |
| LUS210 | 1 ⁹ / ₁₆ | 7 ¹³ / ₁₆ | 1 ³ / ₄ | 8-SD9212 | 4-SD9212 | 1,240 | 1,910 | 2,125 | 2,125 |
| | | | | 8-SD9112 | 4-SD9212 | 1,240 | 1,675 | 1,925 | 2,095 |
| LUS24-2 | 3 ¹ / ₈ | 3 ¹ / ₈ | 2 | 4-SD10212 | 2-SD10212 | 530 | 1,035 | 1,190 | 1,295 |
| | | | | 4-SD10112 | 2-SD10212 | 530 | 860 | 990 | 1,075 |
| LUS26-2 | 3 ¹ / ₈ | 4 ⁷ / ₈ | 2 | 4-SD10212 | 4-SD10212 | 1,075 | 1,205 | 1,385 | 1,505 |
| | | | | 4-SD10112 | 4-SD10212 | 1,075 | 1,030 | 1,185 | 1,285 |
| LUS28-2 | 3 ¹ / ₈ | 7 | 2 | 6-SD10212 | 4-SD10212 | 1,200 | 1,640 | 1,885 | 2,050 |
| | | | | 6-SD10112 | 4-SD10212 | 1,200 | 1,375 | 1,580 | 1,720 |
| LUS210-2 | 3 ¹ / ₈ | 9 | 2 | 8-SD10212 | 6-SD10212 | 1,800 | 2,240 | 2,580 | 2,800 |
| | | | | 8-SD10112 | 6-SD10212 | 1,800 | 1,890 | 2,175 | 2,360 |

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

1. The LUS24, LUS26, LUS28 and LUS210 are designed for use with nominal 2x lumber. The suffix "-2" to certain model numbers designates that these hangers are designed for built-up joists consisting of two nominal 2x members.
2. Tabulated allowable loads have been adjusted for load duration factors, C_D, as shown, in accordance with the NDS, and are not permitted to be adjusted for other load durations.
3. LUS series hangers provide torsional resistance, which is defined as a moment of not less than 75 pounds 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 height, H, of the joist hanger must be at least 60 percent of the height of the joist unless additional lateral restraint is provided, as designed by others.
4. Joist screws must be installed at a 45-degree angle through the joist and into the header/beam to achieve the tabulated loads.

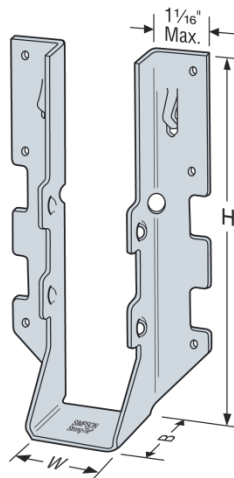


FIGURE 20—LUS HANGER

TABLE 21—HUS SERIES JOIST HANGERS

| MODEL NO. | DIMENSIONS (inches) | | | FASTENERS (Quantity-Type) | | ALLOWABLE LOADS ^{1,2} (lbs) | | | |
|-----------|-------------------------------|-------------------------------|---|---------------------------|--------------------|--------------------------------------|---------------------|----------------------|----------------------|
| | W | H | B | Header | Joist ³ | Uplift | Download | | |
| | | | | | | C _D = 1.6 | C _D =1.0 | C _D =1.15 | C _D =1.25 |
| HUS26 | 1 ⁵ / ₈ | 5 ³ / ₈ | 3 | 14-SD10212 | 6-SD10212 | 1,100 | 3,040 | 3,125 | 3,125 |
| HUS28 | 1 ⁵ / ₈ | 7 | 3 | 22-SD10212 | 8-SD10212 | 2,135 | 3,880 | 3,880 | 3,880 |

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

1. Tabulated allowable loads have been adjusted for load duration factors, C_D, as shown, in accordance with the NDS, and are not permitted to be adjusted for other load durations.
2. LUS series hangers provide torsional resistance, which is defined as a moment of not less than 75 pounds 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 height, H, of the joist hanger must be at least 60 percent of the height of the joist unless additional lateral restraint is provided, as designed by others.
3. Joist screws must be installed at a 45-degree angle through the joist and into the header/beam to achieve the tabulated loads.

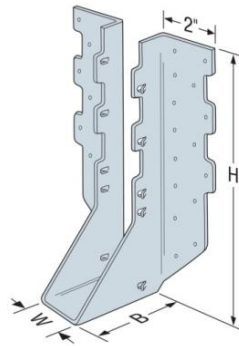


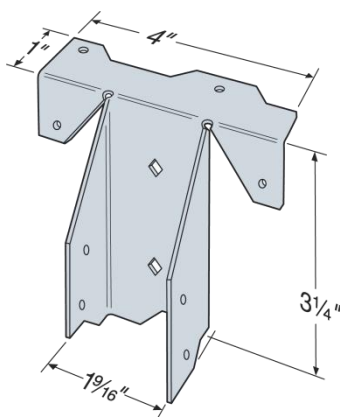
FIGURE 21—HUS HANGER

TABLE 22—ALLOWABLE LOADS FOR THE RR RIDGE RAFTER CONNECTOR

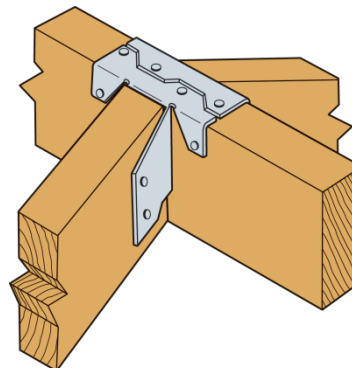
| MODEL NO. | FASTENERS (Quantity – Size) | | ALLOWABLE LOADS (lbs) | | | |
|-----------|-----------------------------|------------|-----------------------|----------------------|-----------------------|-----------------------|
| | Header | Joist | Uplift | Download | | |
| | | | C _D = 1.6 | C _D = 1.0 | C _D = 1.15 | C _D = 1.25 |
| RR | 4 – SD9112 | 4 – SD9112 | 205 | 475 | 475 | 475 |

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

1. Tabulated allowable loads have been adjusted for load duration factors, C_D, as shown, in accordance with the NDS, and are not permitted to be adjusted for other load durations.
2. RR series hangers provide torsional resistance, which is defined as a moment of not less than 75 pounds 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 height, H, of the joist hanger must be at least 60 percent of the height of the joist unless additional lateral restraint is provided, as designed by others.



RR



RR Installed

FIGURE 22—RR CONNECTOR

TABLE 23—ALLOWABLE LOADS FOR MTS TWIST STRAPS

| MODEL NO. | LENGTH (in) | FASTENERS ^{1,3} (Quantity-Type) | ALLOWABLE UPLIFT LOADS ² (lbs) |
|-----------|-------------|---|--|
| | | | C _D =1.6 |
| MTS12 | 12 | 14-SD9112 | 870 |
| MTS16 | 16 | 14-SD9112 | 870 |
| MTS20 | 20 | 14-SD9112 | 940 |

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

1. Half of the fasteners must be installed into each member to achieve the tabulated allowable uplift loads.
2. Tabulated allowable loads have been adjusted for a load duration factor, C_D, of 1.6, corresponding to a ten-minute load duration (i.e., wind or earthquake loading), in accordance with the NDS. The allowable loads do not apply to loads of other durations.
3. The MTS twist straps have more fastener holes than the minimum quantity of screws specified in the table.

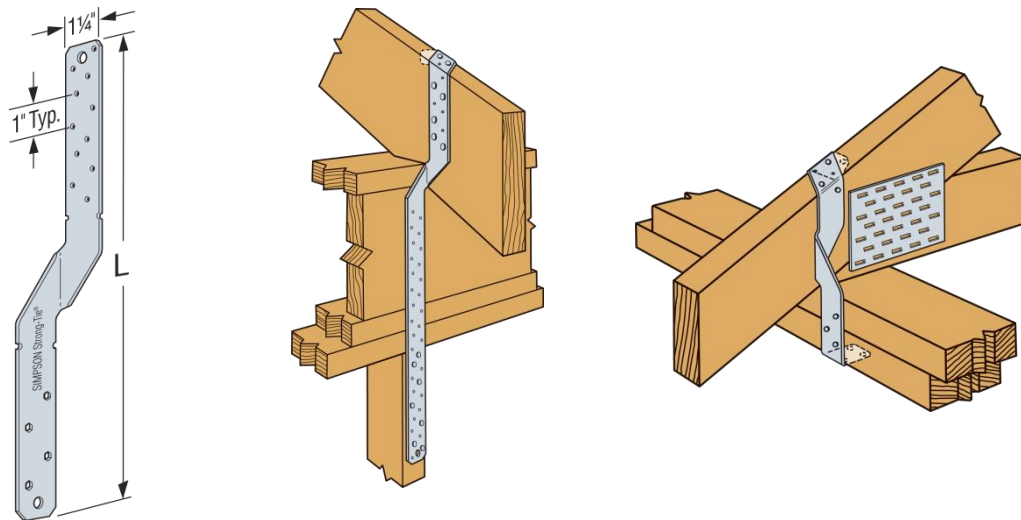


FIGURE 23—MTS TWIST STRAP AND TYPICAL INSTALLATIONS

TABLE 24—ALLOWABLE LOADS FOR ST STRAPS

| MODEL SERIES | MODEL NO. | THE STRAP PROPERTIES | | | | FASTENERS (Total Quantity-Type) | ALLOWABLE TENSION LOADS (lbs) |
|--------------|-----------|--------------------------------|----------------------------------|---------------------------|---------------------------|------------------------------------|----------------------------------|
| | | Thickness (Gage No.) | Length (in.) | Min. F _y (ksi) | Min. F _u (ksi) | | C _D =1.6 |
| ST | ST292 | 20 | 9 ⁵ / ₁₆ | 33 | 45 | 12-SD10112 | 1,215 |
| | ST2122 | 20 | 12 ¹³ / ₁₆ | 40 | 55 | 12-SD10112 | 1,480 |
| | ST2115 | 20 | 16 ⁵ / ₁₆ | 50 | 65 | 6-SD10112 | 660 |
| | ST2215 | 20 | 16 ⁵ / ₁₆ | 50 | 65 | 14-SD10112 | 1,750 |
| | ST6215 | 16 | 16 ⁵ / ₁₆ | 33 | 45 | 16-SD10112 | 2,010 |
| | ST6224 | 16 | 23 ⁵ / ₁₆ | 40 | 55 | 20-SD10112 | 2,460 |
| | ST6236 | 14 | 33 ¹³ / ₁₆ | 50 | 65 | 28-SD10112 | 3,590 |
| | ST9 | 16 | 9 | 33 | 45 | 8-SD10112 | 1,105 |
| | ST12 | 16 | 11 ⁵ / ₈ | 33 | 45 | 10-SD10112 | 1,385 |
| | ST18 | 16 | 17 ³ / ₄ | 33 | 45 | 12-SD10112 | 1,420 |
| ST22 | 16 | 21 ⁵ / ₈ | 33 | 45 | 20-SD10112 | 1,420 | |

For SI: 1 inch = 25.4 mm, 1 lbf = 4.45 N, 1 ksi = 6.895 MPa.

1. Half of the fasteners must be installed into each member to achieve the tabulated allowable uplift loads.
2. Tabulated allowable loads have been adjusted for a load duration factor, C_D, of 1.6, corresponding to a ten-minute load duration (i.e., wind or earthquake loading), in accordance with the NDS. The allowable loads do not apply to loads of other durations.

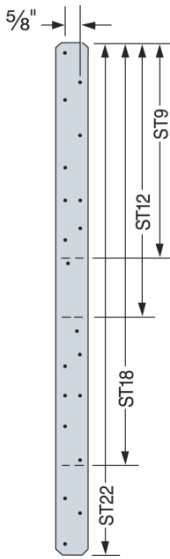


FIGURE 24—ST STRAPS

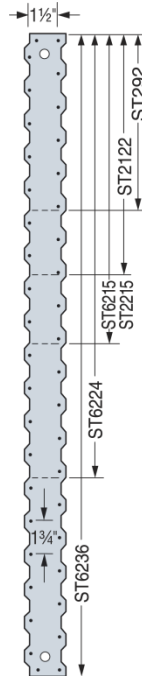


FIGURE 25—ST STRAPS

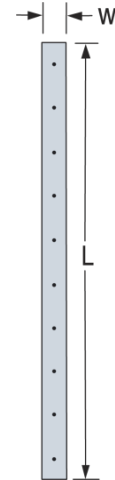


FIGURE 26—ST2115

TABLE 25—MST STRAPS

| MODEL SERIES | MODEL NO. | THE STRAP PROPERTIES | | | | FASTENERS ¹ (Quantity-Type) | ALLOWABLE TENSION LOADS ² (lbs) |
|--------------|-----------|----------------------|--------------|------------------|------------------|---|---|
| | | Thick. (Gage No.) | Length (in.) | Min. F_y (ksi) | Min. F_u (ksi) | Screws | $C_D=1.6$ |
| MST | MST27 | 12 | 27 | 40 | 55 | 30-SD10112 | 4,150 |
| | MST37 | 12 | 37 1/2 | 40 | 55 | 40-SD10112 | 5,070 |

For SI: 1 inch = 25.4 mm, 1 lbf = 4.45 N, 1 ksi = 6.895 MPa.

- Half of the fasteners must be installed into each member to achieve the tabulated allowable uplift loads.
- Tabulated allowable loads have been adjusted for a load duration factor, C_D , of 1.6, corresponding to a ten-minute load duration (i.e., wind or earthquake loading), in accordance with the NDS. The allowable loads do not apply to loads of other durations.

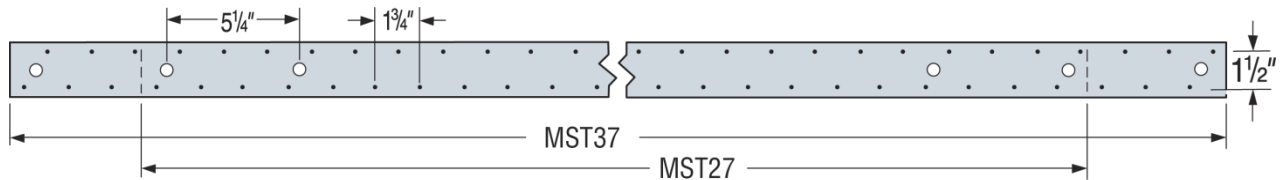


FIGURE 27—MST STRAPS

TABLE 26—LSTA, MSTA, LSTI, AND MSTI SERIES TIE STRAPS¹

| MODEL SERIES | MODEL NO. | THE STRAP PROPERTIES | | | | FASTENERS ² (Total Quantity-Type) | ALLOWABLE TENSION LOADS ³ (lbs) |
|--------------|-----------|----------------------|-------------------|------------------|------------------|---|--|
| | | Thickness (Gage No.) | Length (in.) | Min. F_y (ksi) | Min. F_u (ksi) | | $C_D=1.6$ |
| LSTA | LSTA9 | 20 | 9 | 50 | 65 | 8-SD9112 | 1,095 |
| | LSTA12 | 20 | 12 | 50 | 65 | 10-SD9112 | 1,235 |
| | LSTA15 | 20 | 15 | 50 | 65 | 12-SD9112 | 1,235 |
| | LSTA18 | 20 | 18 | 50 | 65 | 14-SD9112 | 1,235 |
| | LSTA21 | 20 | 21 | 50 | 65 | 14-SD9112 | 1,235 |
| | LSTA24 | 20 | 24 | 50 | 65 | 14-SD9112 | 1,235 |
| | LSTA30 | 18 | 30 | 50 | 65 | 14-SD9112 | 1,640 |
| MSTA | MSTA9 | 18 | 9 | 50 | 65 | 8-SD9112 | 1,095 |
| | MSTA12 | 18 | 12 | 50 | 65 | 10-SD9112 | 1,370 |
| | MSTA15 | 18 | 15 | 50 | 65 | 12-SD9112 | 1,640 |
| | MSTA18 | 18 | 18 | 50 | 65 | 14-SD9112 | 1,640 |
| | MSTA21 | 18 | 21 | 50 | 65 | 14-SD9112 | 1,640 |
| | MSTA24 | 18 | 24 | 50 | 65 | 14-SD9112 | 1,640 |
| | MSTA30 | 16 | 30 | 50 | 65 | 16-SD9112 | 2,050 |
| LSTI | LSTI49 | 18 | 49 | 40 | 55 | 32-SD9112 | 4,205 |
| | LSTI73 | 18 | 73 | 40 | 55 | 32-SD9112 | 4,205 |
| MSTI | MSTI26 | 12 | 26 | 40 | 55 | 26-SD9112 | 3,555 |
| | MSTI36 | 12 | 36 | 40 | 55 | 36-SD9112 | 4,925 |
| | MSTI48 | 12 | 48 | 40 | 55 | 38-SD9112 | 5,070 |
| | MSTI60 | 12 | 60 | 40 | 55 | 38-SD9112 | 5,070 |
| | MSTI72 | 12 | 72 | 40 | 55 | 60-SD9112 | 5,070 |
| MSTC | MSTC28 | 16 | 28 ^{1/4} | 50 | 65 | 36-SD9112 | 4,735 |
| | MSTC40 | 16 | 40 ^{1/4} | 50 | 65 | 46-SD9112 | 4,735 |
| | MSTC52 | 16 | 52 ^{1/4} | 50 | 65 | 42-SD9112 | 4,735 |
| | MSTC66 | 14 | 65 ^{3/4} | 50 | 65 | 44-SD9112 | 5,850 |
| | MSTC78 | 14 | 77 ^{3/4} | 50 | 65 | 44-SD9112 | 5,850 |

For SI: 1 inch = 25.4 mm, 1 lbf = 4.45 N, 1 ksi = 6.895 MPa.

1. Refer to Figures 28, 29, 30 and 31 (following page) for diagrams depicting the LSTA/MSTA, LSTI, MSTI and MSTC straps, respectively.
2. Half of the fasteners must be installed into each member to achieve the tabulated allowable uplift loads.
3. Tabulated allowable loads have been adjusted for a load duration factor, C_D , of 1.6, corresponding to a ten-minute load duration (i.e., wind or earthquake loading), in accordance with the NDS. The allowable loads do not apply to loads of other durations.

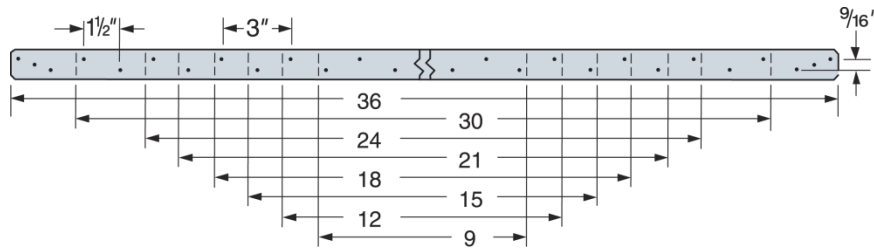


FIGURE 28—LSTA/MSTA STRAPS

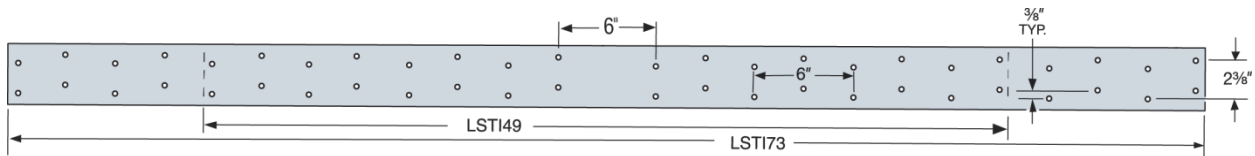


FIGURE 29—LSTI STRAPS

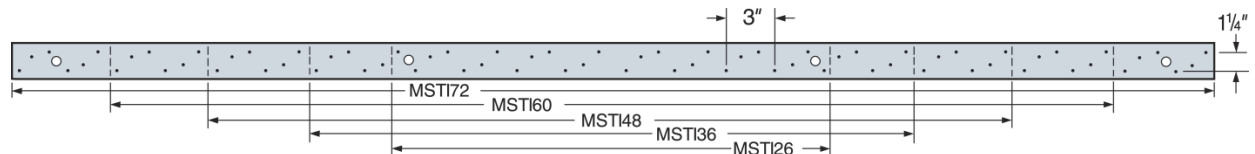


FIGURE 30—MSTI STRAPS

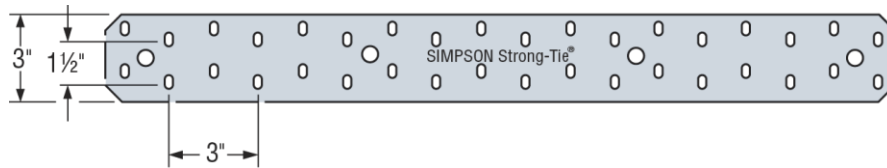


FIGURE 31—MSTC28, OTHER MODELS SIMILAR

TABLE 27—HTP37Z TIE STRAP

| MODEL SERIES | MODEL NO. | THE STRAP PROPERTIES | | | | FASTENERS (Total Quantity-Type) | ALLOWABLE TENSION LOADS (lbs) |
|--------------|-----------|-------------------------|--------------|------------------|------------------|------------------------------------|-------------------------------|
| | | Thickness (Gage No.) | Length (in.) | Min. F_v (ksi) | Min. F_u (ksi) | | $C_D=1.6$ |
| HTP | HTP37Z | 16 | 7 | 33 | 45 | 20-SD9112 | 2,735 |
| HRS | HRS6 | 12 | 6 | 33 | 45 | 6-SD9112 | 820 |
| | HRS8 | 12 | 8 | 33 | 45 | 10-SD9112 | 1,370 |
| | HRS12 | 12 | 12 | 33 | 45 | 14-SD9112 | 1,915 |

For SI: 1 inch = 25.4 mm, 1 lbf = 4.45 N, 1 ksi = 6.895 MPa.

1. Half of the fasteners must be installed into each member to achieve the tabulated allowable uplift loads.
2. Tabulated allowable loads have been adjusted for a load duration factor, C_D , of 1.6, corresponding to a ten-minute load duration (i.e., wind or earthquake loading), in accordance with the NDS. The allowable loads do not apply to loads of other durations.

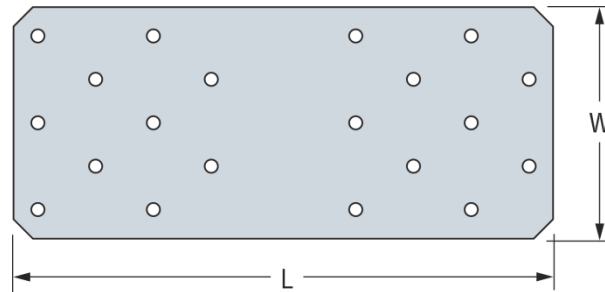


FIGURE 32—HTP37Z STRAP

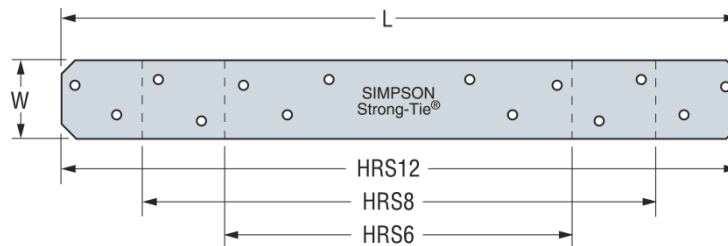


FIGURE 33—HRS STRAP

**TABLE 28—STEEL SPECIFICATIONS, GRADES, MINIMUM TENSILE AND YIELD STRENGTHS,
AND BASE METAL THICKNESS**

| MODEL | GAGE NO. | SPECIFICATION | F _y (ksi) | F _u (ksi) | BASE METAL THICKNESS (in.) |
|------------------|----------|--------------------|----------------------|----------------------|----------------------------|
| A21 | 18 | A-653 SS GR 33 | 33 | 45 | 0.0445 |
| A23 | 18 | A-653 SS GR 33 | 33 | 45 | 0.0445 |
| A33 | 12 | A-653 SS GR 33 | 33 | 45 | 0.0975 |
| A44 | 12 | A-653 SS GR 33 | 33 | 45 | 0.0975 |
| GA Series | 18 | A-653 SS GR 33 | 33 | 45 | 0.0445 |
| L Series | 16 | A-653 SS GR 33 | 33 | 45 | 0.0555 |
| A34 | 18 | A-653 SS GR 33 | 33 | 45 | 0.0445 |
| A35 | 18 | A-653 SS GR 33 | 33 | 45 | 0.0445 |
| LTP4 | 20 | A-653 SS GR 33 | 33 | 45 | 0.0335 |
| DJT14Z | 14 | A-653 SS GR 33 | 33 | 45 | 0.0685 |
| H1 | 18 | A-653 SS GR 33 | 33 | 45 | 0.0445 |
| H2.5 | 18 | A-653 SS GR 33 | 33 | 45 | 0.0445 |
| H2.5A | 18 | A-653 SS GR 40 | 40 | 55 | 0.0445 |
| H4 | 20 | A-653 SS GR 33 | 33 | 45 | 0.0335 |
| H5 | 18 | A-653 SS GR 33 | 33 | 45 | 0.0445 |
| H8 | 18 | A-653 SS GR 40 | 40 | 55 | 0.0445 |
| H10 | 18 | A-653 SS GR 33 | 33 | 45 | 0.0445 |
| RSP4 | 20 | A-653 SS GR 33 | 33 | 45 | 0.0335 |
| AC Series | 18 | A-653 SS GR 33 | 33 | 45 | 0.0445 |
| LCE4 | 20 | A-653 SS GR 40 | 40 | 55 | 0.0335 |
| BC4 | 18 | A-653 SS GR 33 | 33 | 45 | 0.0445 |
| BCS2-2/4 | 18 | A-653 SS GR 33 | 33 | 45 | 0.0445 |
| BCO Series | 18 | A-653 SS GR 33 | 33 | 45 | 0.0445 |
| LPC4Z | 18 | A-653 SS GR 33 | 33 | 45 | 0.0445 |
| PC44-16 | 16 | A-653 SS GR 33 | 33 | 45 | 0.0555 |
| PC44 | 12 | A-653 SS GR 33 | 33 | 45 | 0.0975 |
| EPC44-16 | 16 | A-653 SS GR 33 | 33 | 45 | 0.0555 |
| EPC44 | 12 | A-653 SS GR 33 | 33 | 45 | 0.0975 |
| ABA44/44R | 16 | A-653 SS GR 33 | 33 | 45 | 0.0555 |
| ABA Series | 14 | A-653 SS GR 33 | 33 | 45 | 0.0685 |
| ABU44 Base | 12 | A-653 SS GR 33 | 33 | 45 | 0.0975 |
| ABU44 Plate | 7 | A-653 SS GR 33 | 33 | 45 | 0.1715 |
| LU Single Series | 20 | A-653 SS GR 33 | 33 | 45 | 0.0335 |
| LUCZ Series | 18 | A-653 SS GR 33 | 33 | 45 | 0.0445 |
| LUS Series | 18 | A-653 SS GR 33 | 33 | 45 | 0.0445 |
| HUS Series | 16 | A-653 SS GR 33 | 33 | 45 | 0.0555 |
| RR | 18 | A-653 SS GR 33 | 33 | 45 | 0.0445 |
| MTS Series | 16 | A-653 SS GR 33 | 33 | 45 | 0.0555 |
| ST292 | 20 | A-653 SS GR 33 | 33 | 45 | 0.0335 |
| ST2122 | 20 | A-653 SS GR 40 | 40 | 55 | 0.0335 |
| ST2115 | 20 | A-653 SS GR 50 CL1 | 50 | 65 | 0.0335 |
| ST2215 | 20 | A-653 SS GR 50 CL1 | 50 | 65 | 0.0335 |
| ST6215 | 16 | A-653 SS GR 33 | 33 | 45 | 0.0555 |
| ST6224 | 16 | A-653 SS GR 40 | 40 | 55 | 0.0555 |
| ST6236 | 14 | A-653 SS GR 50 CL1 | 50 | 65 | 0.0685 |
| ST9 | 16 | A-653 SS GR 33 | 33 | 45 | 0.0555 |
| ST12 | 16 | A-653 SS GR 33 | 33 | 45 | 0.0555 |
| ST18 | 16 | A-653 SS GR 33 | 33 | 45 | 0.0555 |
| ST22 | 16 | A-653 SS GR 33 | 33 | 45 | 0.0555 |
| MST27 | 12 | A-653 SS GR 40 | 40 | 55 | 0.0975 |
| MST37 | 12 | A-653 SS GR 40 | 40 | 55 | 0.0975 |

For SI: 1 inch = 25.4 mm, 1 ksi = 6.895 MPa.

TABLE 28 (CONTINUED)—STEEL SPECIFICATIONS, GRADES, MINIMUM TENSILE AND YIELD STRENGTHS, AND BASE METAL THICKNESS

| MODEL | GAGE NO. | SPECIFICATION | F _y (ksi) | F _u (ksi) | BASE METAL THICKNESS (in.) |
|-------------|----------|--------------------|----------------------|----------------------|----------------------------|
| LSTA9 | 20 | A-653 SS GR 50 CL1 | 50 | 65 | 0.0335 |
| LSTA12 | 20 | A-653 SS GR 50 CL1 | 50 | 65 | 0.0335 |
| LSTA15 | 20 | A-653 SS GR 50 CL1 | 50 | 65 | 0.0335 |
| LSTA18 | 20 | A-653 SS GR 50 CL1 | 50 | 65 | 0.0335 |
| LSTA21 | 20 | A-653 SS GR 50 CL1 | 50 | 65 | 0.0335 |
| LSTA24 | 20 | A-653 SS GR 50 CL1 | 50 | 65 | 0.0335 |
| LSTA30 | 18 | A-653 SS GR 50 CL1 | 50 | 65 | 0.0445 |
| LSTA36 | 18 | A-653 SS GR 50 CL1 | 50 | 65 | 0.0445 |
| MSTA9 | 18 | A-653 SS GR 50 CL1 | 50 | 65 | 0.0445 |
| MSTA12 | 18 | A-653 SS GR 50 CL1 | 50 | 65 | 0.0445 |
| MSTA15 | 18 | A-653 SS GR 50 CL1 | 50 | 65 | 0.0445 |
| MSTA18 | 18 | A-653 SS GR 50 CL1 | 50 | 65 | 0.0445 |
| MSTA21 | 18 | A-653 SS GR 50 CL1 | 50 | 65 | 0.0445 |
| MSTA24 | 18 | A-653 SS GR 50 CL1 | 50 | 65 | 0.0445 |
| MSTA30 | 16 | A-653 SS GR 50 CL1 | 50 | 65 | 0.0555 |
| MSTA36 | 16 | A-653 SS GR 50 CL1 | 50 | 65 | 0.0555 |
| MSTA49 | 16 | A-653 SS GR 50 CL1 | 50 | 65 | 0.0555 |
| LSTI Series | 18 | A-653 SS GR 40 | 40 | 55 | 0.0445 |
| MSTI Series | 12 | A-653 SS GR 40 | 40 | 55 | 0.0975 |
| MSTC28 | 16 | A-653 SS GR 50 CL1 | 50 | 65 | 0.0555 |
| MSTC40 | 16 | A-653 SS GR 50 CL1 | 50 | 65 | 0.0555 |
| MSTC52 | 16 | A-653 SS GR 50 CL1 | 50 | 65 | 0.0555 |
| MSTC66 | 14 | A-653 SS GR 50 CL1 | 50 | 65 | 0.0685 |
| MSTC78 | 14 | A-653 SS GR 50 CL1 | 50 | 65 | 0.0685 |
| HTP37Z | 16 | A-653 SS GR 33 | 33 | 45 | 0.0555 |
| HRS | 12 | A-653 SS GR 33 | 33 | 45 | 0.0975 |

For **SI**: 1 inch = 25.4 mm, 1 ksi = 6.895 MPa.

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

REPORT HOLDER:

SIMPSON STRONG-TIE COMPANY INC.

EVALUATION SUBJECT:

SIMPSON STRONG-TIE® CONNECTORS USING SD-SERIES SCREWS

1.0 REPORT PURPOSE AND SCOPE**Purpose:**

The purpose of this evaluation report supplement is to indicate that Simpson Strong-Tie® connectors used as wood framing connectors, described in ICC-ES evaluation report [ESR-3096](#), 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 Simpson Strong-Tie® connectors used as wood framing connectors, described in Sections 2.0 through 7.0 of the evaluation report [ESR-3096](#), comply with the LABC Chapter 23, and the LARC, and are subject to the conditions of use described in this supplement.

3.0 CONDITIONS OF USE

The Simpson Strong-Tie connectors used as wood framing connectors, described in this evaluation report supplement, must comply with all of the following conditions:

- All applicable sections in the evaluation report [ESR-3096](#).
- The design, installation, conditions of use and labeling are in accordance with the 2021 *International Building Code*® (2018 IBC) provisions noted in the evaluation report [ESR-3096](#).
- 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 supplement expires concurrently with the evaluation report, reissued January 2024.