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® TOP-FLANGE HANGERS FOR ENGINEERED WOOD PRODUCTS (EWP) AND GLULAM BEAMS

“2014 Recipient of Prestigious Western States Seismic Policy Council (WSSPC) Award in Excellence”
DIVISION: 06 00 00—WOOD, PLASTICS, AND COMPOSITES
Section: 06 05 23—Wood, Plastic, and Composite Fastenings

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1.0 EVALUATION SCOPE

Compliance with the following codes:

For evaluation for compliance with codes adopted by the Los Angeles Department of Building and Safety (LADBS), see ESR-2615 LABC and LARC Supplement.

Properties evaluated:
Structural

2.0 USES

The Simpson Strong-Tie® EWP top-flange hangers described in this report are used as wood framing connectors in accordance with Section 2304.10.3 of the 2018 and 2015 IBC (Section 2304.9.3 of the 2012, 2009 and 2006 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 EWP top-flange hangers recognized in this report have a U-shaped stirrup that is designed to support wood beams or joists and a top flange angle that is designed to bear onto a supporting wood or steel member. Descriptions of each series recognized in this report are given in Sections 3.1.1 through 3.1.9. A complete list of model numbers recognized within each series is given in ESR-2523. For each specific model number, the dimensions of the intended joist width, height and number of face-to-face joist plies (where applicable) are indicated within the model numbers themselves, using one of the following numbering schemes:

- SERIES W/H or SERIES WH; where “SERIES” is the series designation, “W” is the joist width qualifier, and “H” is the height qualifier.
- SERIES WH-N; where “SERIES” is the series designation, “W” is the width qualifier for each joist ply, “H” is the height qualifier, and “N” is the number of joist plies.
- SERIES W; where “SERIES” is the series designation, and “W” is the joist width qualifier.

3.1.1 GLTV and HGLTV Series Hangers: The GLTV and HGLTV series hangers have a No. 7 gage U-shaped steel stirrup that is factory-welded to a No. 3 gage steel angle that acts as the top flange of the hanger. The HGLTV is similar to the GLTV except that the top flange dimension, nailing schedule and welds are increased. See Table 1 for hanger model numbers, hanger seat width ranges, hanger height ranges, fastener schedules, and allowable loads. See Figure 1 for the dimensions of the welded top flange angle and a drawing of a typical GLTV.

3.1.2 WP Series Hangers: The WP series hangers have a No. 7 gage steel angle top flange and a No. 12 gage steel U-shaped stirrup. See Table 2 for hanger model numbers, hanger seat width ranges, hanger height ranges, required fastener schedules and allowable loads. See Figure 2 for a drawing of a typical WP hanger.

3.1.3 HGLT Series Hangers: The HGLT series hangers have a No. 7 gage steel U-shaped stirrup that is factory-welded to a No. 3 gage steel angle. See Table 3 for hanger model numbers, hanger seat width ranges, hanger height ranges, required fastener schedules and allowable loads. See Figure 3 for a drawing of a HGLT hanger.

3.1.4 GLS and HGLS Series Hangers: The GLS and HGLS series hangers are saddle hangers that have a No. 7 gage steel U-shaped stirrup welded to each side of a No. 3 gage steel channel. The top channel bears onto a carrying beam and the two opposing stirrups support carried beams. The HGLS series hangers also have a steel plate welded to the lower portion of the U-shaped stirrup for additional fasteners installed into the supporting beam. See Table 4 for hanger model numbers, hanger seat width ranges, hanger height ranges, channel width ranges, required fastener schedules, and allowable loads. See Figure 4 for a drawing of a typical HGLS.

3.1.5 EG, MEG, and LEG Series Hangers: The EG, MEG, and LEG series hangers have a No. 7 gage steel...
U-shaped stirrup factory-welded to a No. 3 gage steel angle for the EG model, and to a No. 7 gage steel angle for the MEG and LEG models. See Table 5 for the hanger model numbers, hanger seat width ranges, hanger height ranges, required fastener schedules, and allowable loads. See Figure 8 for a drawing of an EG hanger and MEG and LEG hangers.

3.1.6 ITS, MIT, and HIT Series Joint Hangers: The ITS, MIT and HIT series joint hangers are used to connect prefabricated wood I-joists to a supporting wood beam. The ITS series joint hangers are die-formed from 18 gage galvanized steel, and have two large prongs at the seat that are used to resist uplift forces. The MIT and HIT series joint hangers are die-formed from No. 16 gage galvanized steel, and include 45-degree-angle nail openings, for attachment of the joist flange to the hanger. See Table 6 for model numbers, hanger seat width ranges, hanger height ranges, required fastener schedules and allowable loads. See Figure 6 for drawings of typical ITS, MIT and HIT hangers.

3.1.7 HB and BA Series Hangers: The BA series joint hangers are formed from No. 14 gage minimum thickness galvanized steel. The HB series joint hangers are formed from No. 10 gage galvanized steel. See Table 7 for model numbers, hanger seat width ranges, hanger height ranges, required fastener schedules, and allowable loads. See Figure 7 for drawings of HB and BA series hangers and typical installations.

3.1.8 EGQ Series Hangers: The EGQ series hangers have a No. 7 gage steel U-shaped stirrup that is factory-welded to a No. 3 gage steel angle that acts as the top flange of the hanger. The hangers are installed using Simpson Strong-Drive SDS series wood screws (SDS), which are recognized under ESR-2236. See Table 8 for model numbers, hanger dimensions, fastener schedules, and allowable loads. See Figure 8 for a drawing of the EGQ hanger and a typical installation.

3.1.9 HWP and HWPH Series Hangers: The HWP series hangers have a No. 7 gage steel angle top flange and a No. 12 gage steel U-shaped stirrup welded to the top flange. The HWPH series hanger have a No. 3 gage steel angel top flange and a No. 7 gage steel U-shaped stirrup welded to the top flange. See Table 9 for hanger model number, hanger seat width ranges, hanger height ranges, required fastener schedules and allowable loads. See Figure 9 for typical HWP and HWPH hangers and a drawing of a typical installation of an HWPH hanger.

Materials:

3.1.10 Steel: The ITS, MIT, HIT, BA and HB series hangers described in this report are manufactured from galvanized steel complying with ASTM A653, SS designation Grade 33, with a minimum yield strength, $F_y$, of 33,000 psi (227 MPa) and a minimum ultimate tensile strength, $F_u$, of 45,000 psi (310 MPa). The remaining hangers described in this report are manufactured from ungalvanized steel complying with ASTM A1011, 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 52,000 psi (359 MPa). The minimum base-metal thicknesses for the hangers in this report are as follows:

<table>
<thead>
<tr>
<th>NOMINAL THICKNESS (gage)</th>
<th>MINIMUM BASE-METAL THICKNESS (inch)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 3</td>
<td>0.2285</td>
</tr>
<tr>
<td>No. 7</td>
<td>0.1705</td>
</tr>
<tr>
<td>No. 10</td>
<td>0.1275</td>
</tr>
<tr>
<td>No. 12</td>
<td>0.0975</td>
</tr>
<tr>
<td>No. 14</td>
<td>0.0685</td>
</tr>
<tr>
<td>No. 16</td>
<td>0.0555</td>
</tr>
<tr>
<td>No. 18</td>
<td>0.0445</td>
</tr>
</tbody>
</table>

For SI: 1 inch = 25.4 mm.

The hangers manufactured from galvanized steel have a minimum G90 zinc coating specification in accordance with ASTM A924 and ASTM A653. The hangers manufactured from ungalvanized steel have either a painted or powder coated finish. Some models (designated with a model number ending with Z) are available with a G185 zinc coating specification in accordance with ASTM A653. Some models (designated with a model number ending with HDG) are available with a batch hot-dipped galvanized coating 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, in accordance with ASTM A123. Model numbers in this report do not include the Z or HDG ending, but the information shown applies. The lumber treatment manufacturer or the report holder (Simpson Strong-Tie Company) should be contacted for recommendations on minimum corrosion resistance protection of steel connectors in contact with the specific proprietary preservative-treated or fire-retardant treated lumber.

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

3.1.12 Fasteners: The type, size and number of fasteners used to install the hangers described in this report must comply with the fastener schedules specified in Tables 1 through 9. Simpson Strong-Drive SDS screws used for hangers described in this report, at a minimum, must comply with ASTM A36 or ASTM A307 and must have a minimum bending yield strength ($F_{yb}$) of 45,000 psi. Common nails used for hangers described in this report must comply with ASTM F1667 and have the following minimum fastener dimensions and bending yield strengths ($F_{yb}$):
<table>
<thead>
<tr>
<th>FASTENER</th>
<th>SHANK DIAMETER (inches)</th>
<th>FASTENER LENGTH (inches)</th>
<th>$F_{pe}$ (psi)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10d x 1 1/2</td>
<td>0.148</td>
<td>1 1/2</td>
<td>90,000</td>
</tr>
<tr>
<td>10d</td>
<td>0.148</td>
<td>3</td>
<td>90,000</td>
</tr>
<tr>
<td>16d x 2 1/2</td>
<td>0.162</td>
<td>2 1/2</td>
<td>90,000</td>
</tr>
<tr>
<td>16d</td>
<td>0.162</td>
<td>3 1/2</td>
<td>90,000</td>
</tr>
<tr>
<td>N54A 1</td>
<td>0.250</td>
<td>2 1/2</td>
<td>70,000</td>
</tr>
</tbody>
</table>

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

1N54A is a designation for proprietary annular ring shank nails supplied by Simpson Strong-Tie Company with the hangers described in Tables 3 and 4 of this report.

Fasteners used in contact with preservative treated or fire retardant treated lumber must comply with Section 2304.10.8 of the 2018 and 2015 IBC (Section 2304.9.5 of the 2012, 2009 and 2006 IBC), Section R317.3 of the 2018, 2015, 2012 and 2009 IRC, or, Section R319.3 of the 2006 IRC, or ESR-2236, as applicable. The lumber treatment manufacturer or this report holder (Simpson Strong-Tie Company) should be contacted for recommendations on minimum corrosion resistance protection 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 ANSI/AWC National Design Specification® for Wood Construction (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, $C_M$, for dowel-type fasteners (NDS Section 11.3.3) for uplift loads, and as required for the product-specific adjustment (NDS Supplement or a current ICC-ES Evaluation Report) for compression perpendicular to grain for download. 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: Periodic special inspection must be conducted in accordance with the applicable sections of 2018 and 2015 IBC Section 1705.11, 2012 IBC Section 1705.10, 2009 IBC Section 1706 or 2006 IBC Section 1704 when the connectors described in this report are used as components of the main wind-force-resisting system on structures in areas listed in Section 1705.11 of the 2018 and 2015 IBC, Section 1705.10 of the 2012 IBC, Section 1706.1 of the 2009 IBC or Section 1705.4 of the 2006 IBC. Special inspection requirements do not apply to structures, or portions thereof, that qualify for the exceptions under Sections 1704.2 and 1705.11.1 of the 2018 and 2015 IBC, Sections 1704.2 or 1705.10.1 of the 2012 IBC, Section 1704.1 or 1706.2 of the 2009 IBC; or Section 1704.1 of the 2006 IBC.

4.3.2 Seismic-force-resisting Systems Under the IBC: Periodic special inspection must be conducted in accordance with the applicable parts of Section 1705.12 of the 2018 and 2015 IBC, Section 1705.11 of the 2012 IBC, or Section 1707 of the 2009 and 2006 IBC, when the connectors described in this report are used as components of a seismic-force-resisting system for a structure in Seismic Design Category C, D, E or F. Special inspection requirements do not apply to structures, or portions thereof, that qualify for the exceptions under Section 1704.2 or 1705.11 of the 2012 IBC; or Section 1704.1, 1707.3 or 1707.4 of the 2009 IBC; or Section 1704.1 or 1707.3 of the 2006 IBC.

4.3.3 Installations Under the IRC: For installations under the IRC, special inspections are normally not required. However, for an engineered design where calculations are required to be signed by a registered design professional, periodic special inspection requirements and exemptions are as stated in Sections 4.3.1 and 4.3.2 of this report, as applicable, for installations under the IRC.

5.0 CONDITIONS OF USE

The Simpson Strong-Tie EWP top-flange hangers described in this report comply with, or are suitable alternatives to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

5.1 The connectors must be manufactured, identified and installed in accordance with this report and the manufacturer’s published installation instructions. A copy of the instructions must be available at the jobsite at all times during installation.

5.2 Calculations showing compliance with this report must be submitted to the code official. The calculations must be prepared by a registered design professional where required by the statutes of the jurisdiction in which the project is to be constructed.

5.3 Adjustment factors noted in Section 4.1 and the applicable codes must be considered, where applicable.

5.4 Connected wood members and fasteners must comply, respectively, with Sections 3.1.11 and 3.1.12 of this report.

5.5 Use of connectors with preservative- or fire retardant-treated lumber must be in accordance with Section 3.1.10 of this report. Use of fasteners with preservative- or fire retardant-treated lumber must be in accordance with Section 3.1.12 of this report.

5.6 Factory welded hangers are manufactured under a quality-control program with inspections by ICC-ES.

6.0 EVIDENCE SUBMITTED

Data in accordance with the ICC-ES Acceptance Criteria for Joist Hangers and Similar Devices (AC13), dated March 2018.
7.0 IDENTIFICATION

7.1 The products described in this report are identified with a die-stamped or adhesive 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.

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) 925-5099
www.strongtie.com

### TABLE 1—ALLOWABLE LOADS FOR THE GLTV/HGLTV SERIES HANGERS

<table>
<thead>
<tr>
<th>SERIES ¹</th>
<th>HANGER DIMENSIONS ¹ (inches)</th>
<th>FASTENERS (Quantity-Type)</th>
<th>ALLOWABLE LOADS²,³,⁴ (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>W</td>
<td>H</td>
<td>B</td>
</tr>
<tr>
<td>GLTV</td>
<td>3³/₁₄ - 7¹/₆</td>
<td>11 - 32</td>
<td>5</td>
</tr>
<tr>
<td>HGLTV</td>
<td>3³/₁₄ - 7¹/₆</td>
<td>14 - 33</td>
<td>6</td>
</tr>
</tbody>
</table>

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

¹Refer to Figure 1 for definitions of hanger dimension nomenclature (W, H). The “B” dimension is the length of the hanger seat, measured perpendicular to the “W” dimension. Refer to ESR-2523 for a complete list of all GLTV and HGLTV model numbers. See Section 3.1 for a description of model numbering schemes, as they relate to intended joist dimensions and number of joist plies.

²Tabulated allowable load capacities must be selected based on duration of load as permitted by the applicable building code. The allowable 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.

³The allowable loads are based on the use of Douglas fir-larch header members with an allowable compression perpendicular-to-grain, F₁⊥ of 625 psi, and structural composite lumber joists with an F₁∥ of 750 psi. When the hangers are supported by header members having an F₁⊥ of less than 625 psi and/or are used to support joists having an F₁∥ of less than 750 psi, it must be verified that the combination of bearing capacity and joist nail capacity is adequate.

⁴Uplift loads are not applicable to hanger heights, H, greater than 32 inches.

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![HGLTV Hanger](image)

**FIGURE 1—HGLTV AND GLTV SERIES HANGERS**

### TABLE 2—ALLOWABLE LOADS FOR THE WP SERIES HANGERS

<table>
<thead>
<tr>
<th>SERIES ¹</th>
<th>HANGER DIMENSIONS ¹ (inches)</th>
<th>FASTENERS (Quantity-Type)</th>
<th>ALLOWABLE LOADS²,³,⁴ (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>W</td>
<td>H</td>
<td>B</td>
</tr>
<tr>
<td>WP</td>
<td>3³/₁₆ - 5¹/₂</td>
<td>9¹/₄ - 32</td>
<td>2¹/₂ - 6</td>
</tr>
<tr>
<td></td>
<td>3³/₁₆ - 7¹/₆</td>
<td>9¹/₄ - 32</td>
<td>2¹/₂ - 6</td>
</tr>
</tbody>
</table>

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

¹Refer to Figure 2 for definitions of hanger dimension nomenclature (W, H, B). Refer to ESR-2523 for a complete list of all W model numbers. See Section 3.1 for a description of model numbering schemes, as they relate to intended joist dimensions and number of joist plies.

²Tabulated allowable loads must be selected based on duration of load as permitted by the applicable building code.

³The allowable loads are based on the use of Douglas fir-larch header members with an allowable compression perpendicular-to-grain, F₁⊥ of 625 psi, and structural composite lumber joists with an F₁∥ of 625 psi. When the hangers are supported by header members having an F₁⊥ of...
less than 625 psi and/or are used to support joists having an $F_{c \perp}$ of less than 625 psi, it must be verified that the combination of bearing capacity and joist nail capacity is adequate.

For welding to steel headers use $\frac{3}{16}$-inch-thick (root) by $1\frac{1}{2}$-inch-long fillet welds for WP models. Field welds shall be constructed and inspected in accordance with the applicable code.

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

Refer to Figure 3 for definitions of hanger dimension nomenclature (W, H, B, L). Refer to ESR-2523 for a complete list of all HGLT model numbers. See Section 3.1 for a description of model numbering schemes, as they relate to intended joist dimensions and number of joist plies.

The H dimension must be specified. Tabulated uplift values are applicable to a maximum H of 28 $\frac{1}{2}$”.

N54A fasteners are annular ring shank nails (0.250-inch dia. x 2 $\frac{1}{2}$-inch long) and are supplied with the hangers.

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

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

The allowable loads are based on the use of Douglas fir-Larch header material with an allowable $F_{c \perp}$ of 625 psi and Douglas fir-Larch glulam joist material with an allowable $F_{c \perp}$ of 650 psi. For alternate joist material, verify that the combination of bearing capacity and joist nails is adequate.

The connectors provide a torsional resistance up to a maximum joist depth of 32 inches, where torsional resistance is defined as a moment of not less than 75 pounds (334 N) times the depth of the joist at which the lateral movement of the top or bottom of the joist with respect to the vertical position of the joist is 0.125 inch (3.2 mm).

The HGLT may be attached to steel headers by $\frac{1}{4}$-inch-thick (root) by $2\frac{1}{2}$-inch-long fillet welds located at each end of the header angle to obtain the lesser of the values tabulated for the HGLT or 12,000 pounds maximum. Field welds shall be constructed and inspected in accordance with the applicable code.

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

### Table 3—Allowable Loads for the HGLT Series Hangers

<table>
<thead>
<tr>
<th>SERIES</th>
<th>HANGER DIMENSIONS (inches)</th>
<th>FASTENERS (Quantity-Type)</th>
<th>ALLOWABLE LOADS (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>W</td>
<td>H</td>
<td>B</td>
</tr>
<tr>
<td>HGLT</td>
<td>$3\frac{1}{4}$ - $8\frac{7}{8}$</td>
<td>$7\frac{1}{2} - 32$</td>
<td>6</td>
</tr>
</tbody>
</table>

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

Refer to Figure 3 for definitions of hanger dimension nomenclature (W, H, B, L). Refer to ESR-2523 for a complete list of all HGLT model numbers. See Section 3.1 for a description of model numbering schemes, as they relate to intended joist dimensions and number of joist plies.

The H dimension must be specified. Tabulated uplift values are applicable to a maximum H of 28 $\frac{1}{2}$”.

N54A fasteners are annular ring shank nails (0.250-inch dia. x 2 $\frac{1}{2}$-inch long) and are supplied with the hangers.

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

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

The allowable loads are based on the use of Douglas fir-Larch header material with an allowable $F_{c \perp}$ of 625 psi and Douglas fir-Larch glulam joist material with an allowable $F_{c \perp}$ of 650 psi. For alternate joist material, verify that the combination of bearing capacity and joist nails is adequate.

The connectors provide a torsional resistance up to a maximum joist depth of 32 inches, where torsional resistance is defined as a moment of not less than 75 pounds (334 N) times the depth of the joist at which the lateral movement of the top or bottom of the joist with respect to the vertical position of the joist is 0.125 inch (3.2 mm).

The HGLT may be attached to steel headers by $\frac{1}{4}$-inch-thick (root) by $2\frac{1}{2}$-inch-long fillet welds located at each end of the header angle to obtain the lesser of the values tabulated for the HGLT or 12,000 pounds maximum. Field welds shall be constructed and inspected in accordance with the applicable code.
TABLE 4—ALLOWABLE LOADS FOR THE GLS AND HGLS SERIES HANGERS

<table>
<thead>
<tr>
<th>SERIES ¹</th>
<th>HANGER DIMENSIONS ¹ (inches)</th>
<th>FASTENERS ⁴ (Quantity-Type)</th>
<th>ALLOWABLE LOADS ⁵,⁷,⁸ (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>W₁, W₂</td>
<td>H₁, H₂ ²</td>
<td>B</td>
</tr>
<tr>
<td>GLS</td>
<td>3¹/₄</td>
<td>8¹/₂ - 28</td>
<td>5</td>
</tr>
<tr>
<td>GLS</td>
<td>5¹/₄ – 6⁷/₈</td>
<td>8¹/₂ - 28</td>
<td>5</td>
</tr>
<tr>
<td>HGLS</td>
<td>5¹/₄ – 8⁷/₈</td>
<td>10¹/₂ - 28</td>
<td>6</td>
</tr>
</tbody>
</table>

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

¹Refer to Figure 4 for definitions of hanger dimension nomenclature (W, H, B, L, S). Refer to ESR-2523 for a complete list of all GLS and HGLS model numbers. See Section 3.1 for a description of model numbering schemes, as they relate to intended joist dimensions and number of joist plies.

²The H dimension must be specified.

³SPEC = The header (carrying beam) dimensions must be specified by the registered design professional.

⁴N54A fasteners are annular ring Shank nails (0.250-inch dia. x 2¹/₂-inch long) and are supplied with the hangers. Tabulated fastener quantities reflect the number of fasteners that must be used on each side of the header (carrying beam).

⁵Tabulated allowable loads must be selected based on duration of load as permitted by the applicable building code.

⁶The 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.

⁷The allowable loads are based on the use of Douglas fir glued-laminated material with an allowable compression perpendicular-to-grain stress, \( F_{c\perp} \), of 650 psi. For alternate joist material, verify that the combination of bearing capacity and joist nails is adequate.

⁸Allowable loads are per supported member (carried beam).

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

¹Refer to Figure 4 for definitions of hanger dimension nomenclature (W, H, B, L, S). Refer to ESR-2523 for a complete list of all GLS and HGLS model numbers. See Section 3.1 for a description of model numbering schemes, as they relate to intended joist dimensions and number of joist plies.

²The H dimension must be specified.

³SPEC = The header (carrying beam) dimensions must be specified by the registered design professional.

⁴N54A fasteners are annular ring Shank nails (0.250-inch dia. x 2¹/₂-inch long) and are supplied with the hangers. Tabulated fastener quantities reflect the number of fasteners that must be used on each side of the header (carrying beam).

⁵Tabulated allowable loads must be selected based on duration of load as permitted by the applicable building code.

⁶The 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.

⁷The allowable loads are based on the use of Douglas fir glued-laminated material with an allowable compression perpendicular-to-grain stress, \( F_{c\perp} \), of 650 psi. For alternate joist material, verify that the combination of bearing capacity and joist nails is adequate.

⁸Allowable loads are per supported member (carried beam).
TABLE 5—ALLOWABLE LOADS FOR THE EG, MEG AND LEG SERIES HANGERS

<table>
<thead>
<tr>
<th>SERIES</th>
<th>HANGER DIMENSIONS1 (inches)</th>
<th>FASTENERS (Quantity-Bolt Diameter)</th>
<th>ALLOWABLE LOADS2,3,4,5 (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>W</td>
<td>H</td>
<td>B</td>
</tr>
<tr>
<td>LEG</td>
<td>3 1/4 - 6 1/8</td>
<td>9 - 32</td>
<td>6</td>
</tr>
<tr>
<td>MEG</td>
<td>5 1/4 - 6 1/8</td>
<td>9 - 32</td>
<td>6</td>
</tr>
<tr>
<td>EG5</td>
<td>5 1/4</td>
<td>11 - 32</td>
<td>6</td>
</tr>
<tr>
<td>EG7</td>
<td>6 7/8</td>
<td>11 - 32</td>
<td>6</td>
</tr>
<tr>
<td>EG9</td>
<td>8 7/8</td>
<td>11 - 32</td>
<td>6</td>
</tr>
</tbody>
</table>

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

1 Refer to Figure 5 for definitions of hanger dimension nomenclature (W, H, B, L, TF). Refer to ESR-2523 for a complete list of all EG, MEG and LEG model numbers. See Section 3.1 for a description of model numbering schemes, as they relate to intended joist dimensions and number of joist plies.

2 Tabulated loads require the use of a minimum 5 1/8-inch-wide header (carrying member).

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

4 The allowable loads are based on the use of Douglas fir-Larch header material with an allowable Fₐₗ of 625 psi and Douglas fir-Larch glulam joist material with an allowable Fₑ of 650 psi. For alternate joist material, verify that the combination of bearing capacity and joist nails is adequate.

5 Uplift loads for these hangers are beyond the scope of this report.

FIGURE 5—EG, MEG AND LEG SERIES HANGERS

TABLE 6—ALLOWABLE LOADS FOR THE ITS, MIT AND HIT HANGER SERIES MODELS

<table>
<thead>
<tr>
<th>SERIES</th>
<th>HANGER DIMENSIONS1 (inches)</th>
<th>FASTENERS (Quantity-Type)</th>
<th>ALLOWABLE LOADS2,4 (lbs)</th>
<th>Uplift3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>W</td>
<td>H</td>
<td>B</td>
<td>T F</td>
</tr>
<tr>
<td>ITS</td>
<td>1 1/8 to 3 1/2</td>
<td>9 1/4 to 16</td>
<td>2</td>
<td>1 1/8</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MIT</td>
<td>1 1/8 to 5 1/2</td>
<td>9 1/4 to 24</td>
<td>2 1/2</td>
<td>2 5/8</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HIT</td>
<td>2 2/8 to 3 7/8</td>
<td>18 to 26</td>
<td>3</td>
<td>2 3/8 to 3</td>
</tr>
</tbody>
</table>

For SI: 1 inch = 25.4 mm, 1 pound = 4.45 N.
Refer to Figure 6 (this page) for definitions of hanger nomenclature (W, H, B, TF). Refer to ESR-2523 for a complete list of all ITS, MIT and HIT model numbers. See Section 3.1 for a description of model numbering schemes, as they relate to intended joist dimensions and number of joist plies.

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

The allowable 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, except for those associated with the ITS which need not be reduced when other load durations govern.

The allowable loads are based on the use of Douglas fir-Larch material with an allowable $F_{cc}$ of 625 psi. For alternate joist material, verify that the combination of bearing capacity and joist nails (MIT and HIT only) is adequate.

### Figure 6—ITS, MIT and HIT Hangers

### Table 7—Allowable Loads for BA and HB Series Joist Hangers

<table>
<thead>
<tr>
<th>SERIES</th>
<th>HANGER DIMENSIONS (inches)</th>
<th>FASTENERS (Quantity-Type)</th>
<th>ALLOWABLE LOADS$^{2,4,6}$ (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Top</td>
<td>Face</td>
</tr>
<tr>
<td>BA</td>
<td>$1^{15/16} - 7/8$ 7/8 - &lt;11</td>
<td>3</td>
<td>2/4</td>
</tr>
<tr>
<td></td>
<td>$1^{15/16} - 7/8$ 11 - 30</td>
<td>3</td>
<td>2/4</td>
</tr>
<tr>
<td></td>
<td>$1^{15/16} - 7/8$ 7/8 - 30</td>
<td>3</td>
<td>2/4</td>
</tr>
<tr>
<td>HB</td>
<td>$1^{3/4} - 2^{1/2}$ 8 - 30</td>
<td>3</td>
<td>3/4</td>
</tr>
<tr>
<td></td>
<td>$3^{15/16} - 7/2$ 8 - 30</td>
<td>3</td>
<td>3/4</td>
</tr>
</tbody>
</table>

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

1 Refer to Figure 7 (this page) for definitions of hanger nomenclature (W, H, B, TF). Refer to ESR-2523 for a complete list of all BA and HB model numbers. See Section 3.1 for a description of model numbering schemes, as they relate to intended joist dimensions and number of joist plies.

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

3 The allowable 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, except for those associated with the ITS which need not be reduced when other load durations govern.

4 The allowable loads are based on the use of Douglas fir-Larch header material with an allowable $F_{cc}$ of 625 psi. For alternate header material, verify that the combination of bearing capacity and joist nails is adequate.

5 Table assumes joists with $F_{cc}$ of 750 psi. For other joists, verify that the combination of bearing capacity and joist nails is adequate.

6 Web stiffeners are required when more than two joist nails are used.
FIGURE 7—BA AND HB SERIES HANGERS

TABLE 8—ALLOWABLE LOADS FOR EGQ SERIES GIRDER HANGERS

<table>
<thead>
<tr>
<th>MODEL NUMBER</th>
<th>HANGER DIMENSIONS (inches)</th>
<th>FASTENERS (Quantity-Type)</th>
<th>ALLOWABLE LOADS² (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>W</td>
<td>H¹</td>
<td>B</td>
</tr>
<tr>
<td>EGQ</td>
<td>3⁵⁄₈ - 7¹⁄₄</td>
<td>11¹⁄₄ - 32</td>
<td>6</td>
</tr>
</tbody>
</table>

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

¹Refer to Figure 8 (this page) for definitions of hanger nomenclature (W, H, B, TF). Refer to ESR-2523 for a complete list of all EGQ model numbers. See Section 3.1 for a description of model numbering schemes, as they relate to intended joist dimensions and number of joist plies.

²Tabulated allowable loads must be selected based on duration of load as permitted by the applicable building code.

³Header height must be at least 11¹⁄₄".

⁴The “H” dimension must be specified.

⁵The 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.

⁶The allowable loads are based on the use of Douglas fir-Larch header material with an allowable Fₚ₀ of 625 psi and structural composite lumber joists with an allowable Fₚ₀ of 750 psi. For alternate joist material, verify that the combination of bearing capacity and joist nails is adequate.

FIGURE 8—EGQ SERIES HANGERS
TABLE 9—ALLOWABLE LOADS FOR HWP AND HWPH SERIES HANGERS

<table>
<thead>
<tr>
<th>Model Number</th>
<th>HANGER DIMENSIONS¹ (inches)</th>
<th>FASTENERS (Quantity-Type)</th>
<th>ALLOWABLE LOADS²,³,⁴,⁵,⁶ (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>W</td>
<td>H</td>
<td>B</td>
</tr>
<tr>
<td>HWP</td>
<td>1 9/16 - 5 5/8</td>
<td>5 3/8 - 15 11/16</td>
<td>3 - 5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>15 3/4 - 28</td>
<td></td>
</tr>
<tr>
<td>HWPH</td>
<td>1 9/16 - 7 1/8</td>
<td>5 3/8 - 15 11/16</td>
<td>3 1/4 - 6 1/4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>15 3/4 - 32</td>
<td></td>
</tr>
</tbody>
</table>

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

¹Refer to Figure 9 for definitions of hanger dimension nomenclature (W, H, B). Refer to ESR-2523 for a complete list of all HWP and HPWH model numbers. See Section 3.1 for a description of model numbering schemes, as they relate to intended joist dimensions and number of joist plies.

²Tabulated allowable loads must be selected based on duration of load as permitted by the applicable building code.

³The uplift loads have been increased for wind or earthquake loading with no further increase allowed. Reduce loads when other load durations govern.

⁴The allowable loads are based on the use of Douglas fir-larch header members with an allowable compression perpendicular-to-grain, F_{c⊥}, of 625 psi, and structural composite lumber joists with an F_{c⊥} of 750 psi. When the hangers are supported by header members having an F_{c⊥} of less than 625 psi and/or are used to support joists having an F_{c⊥} of less than 750 psi, it must be verified that the combination of bearing capacity and joist nail capacity is adequate.

⁵For welding to steel headers use 3/16-inch thick (root) by 1 1/2-inch-long fillet welds for HWP models, and 1/4-inch thick (root) by 1 1/2-inch-long fillet welds for HWPH models. Field welds shall be constructed and inspected in accordance with the applicable code.

⁶The HWP and HWPH hangers provide a torsional resistance up to a maximum joist depth of 16 inches for the HWP series and 22 inches for the HWPH series, where torsional resistance is defined as a moment of not less than 75 pounds (334 N) times the depth of the joist at which the lateral movement of the top or bottom of the joist with respect to the vertical position of the joist is 0.125 inch (3.2 mm).
1.0 REPORT PURPOSE AND SCOPE

Purpose:
The purpose of this evaluation report supplement is to indicate that Simpson Strong-Tie® EWP top-flange hangers used as wood framing connectors, described in ICC-ES master evaluation report ESR-2615, 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:
- 2017 City of Los Angeles Building Code (LABC)
- 2017 City of Los Angeles Residential Code (LARC)

2.0 CONCLUSIONS

The Simpson Strong-Tie® EWP top-flange hangers used as wood framing connectors, described in Sections 2.0 through 7.0 of the master evaluation report ESR-2615, comply with LABC Chapter 23, and the LARC, and are subjected to the conditions of use described in this supplement.

3.0 CONDITIONS OF USE

The Simpson Strong-Tie® EWP top-flange hangers used as wood framing connectors, described in this evaluation report supplement must comply with all of the following conditions:
- All applicable sections in the master evaluation report ESR-2615.
- The design, installation, conditions of use and labeling are in accordance with the 2015 International Building Code® (2015 IBC) provisions noted in the master evaluation report ESR-2615.
- 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 master report, reissued December 2018 and revised March 2019.