SIMP
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CITY OF PORTLAND, MAINE — RESURGAM
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 08/04/14

VPA *Variable Pitch Connectors*

The VPA may be sloped in the field, offering a versatile solution for attaching rafters to the top plate. It will adjust to accommodate slopes between 3:12 and 12:12, making it a complement to the versatile LSSU. This connector eliminates the need for notched rafters, beveled top plates and toe nailing.

MATERIAL: 18 gauge
FINISH: Galvanized
INSTALLATION:
- Use all specified fasteners. See General Notes.

CODES: See page 13 for Code Reference Key Chart.

Joist Width	Model No.	W	Fasteners: Carrying Member	Fasteners: Carried Member	DF/SP Allowable Loads: Uplift (160)	DF/SP: Download	DF/SP: Lateral (160) F_1	DF/SP: Lateral (160) F_2	SPF/HF Allowable Loads: Uplift (160)	SPF/HF: Download	SPF/HF: Lateral (160) F_1	SPF/HF: Lateral (160) F_2	Code Ref.
1½	VPA2	1 9/16	8-10d	2-10dx1½	295	1050	375	250	250	870	325	250	I8, F7, L15
2½	VPA3	2 9/16	9-10d	2-10dx1½	295	1230	375	250	250	1020	325	250	
3½	VPA4	3 9/16	11-10d	2-10dx1½	295	1230	375	250	250	1020	325	250	

1. Uplift loads include an increase for wind or earthquake loading with no further increase allowed; reduce where other loads govern.
2. Loads may not be increased for short-term loading.
3. **NAILS:** 10d = 0.148" dia. x 3" long, 10dx1½ = 0.148" dia. x 1½" long. See page 22-23 for other nail sizes and information.

VPA INSTALLATION SEQUENCE

STEP 1
Install top nails and face PAN nails in "A" flange to outside wall top plate.

STEP 2
Seat rafter with a hammer, adjusting "B" flange to the required pitch.

STEP 3
Install "B" flange nails in the obround nail holes, locking the pitch.

STEP 4
Install 10dx1½" nail into tab nail hole. Hammer nail in at a slight angle to prevent splitting.

HCP *Hip Corner Plates*

The HCP connects a rafter or joist to double top plates at a 45° angle.

MATERIAL: 18 gauge
FINISH: HCP2—galvanized or ZMAX® coating; HCP4Z—ZMAX coating
INSTALLATION:
- Use all specified fasteners. See General Notes.
- Attach HCP to double top plates; birdsmouth not required for table loads.
- Install rafter and complete nailing. Rafter may be sloped to 45°.

CODES: See page 13 for Code Reference Key Chart.

These products are available with additional corrosion protection. Additional products on this page may also be available with this option, check with Simpson Strong-Tie for details.

Member Size	Model No.	Fasteners: To Rafters	Fasteners: To Plates	DF/SP Allowable Loads (160) Uplift	DF/SP (160) F_1	SPF/HF Allowable Loads (160) Uplift	SPF/HF (160) F_1	Code Ref.
2x	HCP2	6-10dx1½	6-10dx1½	645	300	555	260	I8, F7, L15
4x	HCP4Z	8-10d	8-10d	1000	265	860	230	

1. Loads include an increase for wind or earthquake loading with no further increase allowed; reduce where other loads govern.
2. The HCP can be installed on the inside and the outside of the wall with a flat bottom chord truss and achieve twice the load capacity.
3. **NAILS:** 10d = 0.148" dia. x 3" long, 10dx1½ = 0.148" dia. x 1½" long. See page 22-23 for other nail sizes and information.

HCP2
(HCP4Z similar)
U.S. Patent 5,380,115

Typical HCP Installation

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LSU/LSSU *Adjustable Light Slopeable/Skewable U Hangers*

SIMPSON Strong-Tie

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VALUE ENGINEERED

This product is preferable to similar connectors because of a) easier installation, b) higher loads, c) lower installed cost, or a combination of these features.

The LSU and LSSU series of hangers may be sloped and skewed in the field, offering a versatile solution for attaching joists and rafters. These hangers may be sloped up or down and skewed left or right, up to 45°.

MATERIAL: See table

FINISH: Galvanized. Some products available in ZMAX® coating; see Corrosion Information, page 14-15.

INSTALLATION:

- Use all specified fasteners. See General Notes.
- Attach the sloped joist at both ends so that the horizontal force developed by the slope is fully supported by the supporting members.
- To see an installation video on this product, visit ***www.strongtie.com***.

CODES: See page 13 for Code Reference Key Chart.

LSU26

LSSU410
(LSSU210-2 similar)

LSSU28

LSU and LSSU INSTALLATION SEQUENCE

(For Skewed or Sloped/Skewed Applications)

STEP 1
Nail hanger to slope-cut carried member, installing seat nail first. No bevel necessary for skewed installation. Install joist nails at 45° angle.

STEP 2
Skew flange from 0-45°. Bend other flange back along centerline of slots until it meets the header. Bend one time only.

STEP 3
Attach hanger to the carrying member, acute angle side first *(see footnote 4)*. Install nails at an angle.

These products are available with additional corrosion protection. Additional products on this page may also be available with this option, check with Simpson Strong-Tie for details.

Joist Width	Model No.	Ga	Dimensions W	Dimensions H	Dimensions A	Fasteners Face	Fasteners Joist	DF/SP Uplift[2] (160)	DF/SP Floor (100)	DF/SP Snow (115)	DF/SP Roof (125)	SPF/HF Uplift[2] (160)	SPF/HF Floor (100)	SPF/HF Snow (115)	SPF/HF Roof (125)	Code Ref.
Sloped Only Hangers																
1½	LSU26	18	1 9/16	4⅞	1½	6-10d	5-10dx1½	535	695	810	865	415	600	695	745	I8, F7, L15
1½	LSSU28	18	1 9/16	7⅛	1½	10-10d	5-10dx1½	535	1110	1275	1390	415	960	1105	1200	
1½	LSSU210	18	1 9/16	8½	1⅝	10-10d	7-10dx1½	875	1110	1275	1390	625	960	1105	1200	
2½	LSSUH310	16	2 9/16	8½	3⅛	18-16d	12-10dx1½	1150	2295	2295	2295	990	1930	1930	1930	170
3	LSSU210-2	16	3⅛	8⅞	2⅞	18-16d	12-10dx1½	1150	2430	2795	3035	990	2160	2485	2700	I8, F7, L15
3½	LSSU410	16	3 9/16	8½	2⅝	18-16d	12-10dx1½	1150	2430	2795	3035	990	2160	2485	2700	
Skewed Hangers or Sloped and Skewed																
1½	LSU26	18	1 9/16	4⅞	1½	6-10d	5-10dx1½	535	695	810	865	415	600	695	745	I8, F7, L15
1½	LSSU28	18	1 9/16	7⅛	1½	9-10d	5-10dx1½	450	885	885	885	415	765	765	765	
1½	LSSU210	18	1 9/16	8½	1⅝	9-10d	7-10dx1½	785	995	1145	1205	625	860	995	1050	
2½	LSSUH310	16	2 9/16	8½	3⅛	14-16d	12-10dx1½	1150	1600	1600	1600	990	1385	1385	1385	170
3	LSSU210-2	16	3⅛	8½	2⅞	14-16d	12-10dx1½	1150	1625	1625	1625	990	1365	1365	1365	I8, F7, L15
3½	LSSU410	16	3 9/16	8½	2⅝	14-16d	12-10dx1½	1150	1625	1625	1625	990	1365	1365	1365	

1. Roof loads are 125% of floor loads unless limited by other criteria.
2. Uplift loads include an increase for wind or earthquake loading with no further increase allowed; reduce when other loads govern.
3. Truss chord cross-grain tension may limit allowable loads in accordance with ANSI/TPI 1-2007. Simpson Strong-Tie® Connector Selector™ Software includes the evaluation of cross-grain tension in its hanger allowable loads. For additional information, contact Simpson Strong-Tie.
4. For skewed LSSU hangers, the inner most face fasteners on the acute angle side are not installed.
5. Do not substitute 10dx1½" nails for face nails on slope and skew combinations or skewed only LSU and LSSU.
6. **NAILS:** 16d = 0.162" dia. x 3½" long, 10d = 0.148" dia. x 3" long, 10dx1½ = 0.148" dia. x 1½" long. See page 22-23 for other nail sizes and information.

SIMPSON Strong-Tie

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FACE MOUNT HANGERS U/HU/HUC/HUCQ *I-Joist & Structural Composite Lumber Hangers*

See Hanger tables on pages 102-106. See Hanger Options on pages 215-224 for hanger modifications, which may result in reduced loads.

U—The standard U hanger provides flexibility of joist to header installation. Versatile fastener selection with tested allowable loads.

HU/HUC—Most models have triangle and round holes. To achieve maximum loads, fill both round and triangle holes with common nails. These heavy-duty connectors are designed for schools and other structures requiring additional strength, longevity and safety factors.

HUCQ—Features concealed flanges so it can be installed close to the end of the supporting beam or on a post. They install with Simpson Strong-Tie® Strong-Drive® screws (SDS) *(supplied with the hanger)* for high capacity and ease of installation.

MATERIAL: See tables on pages 102-106.

FINISH: Galvanized

INSTALLATION: • Use all specified fasteners. See General Notes.

- HU/HUC—can be installed filling round holes only, or filling round and triangle holes for maximum values.
- HUCQ—When using structural composite lumber columns, the capacities shown in the tables are for fasteners applied to the wide face of the column.
- Web Stiffeners are required for all I-joists used with these hangers.
- For installation to masonry or concrete, see page 161.
- HU/HUC hangers can be welded to a steel member. Allowable loads are the lesser of the values in the Hanger tables on pages 102-106 or the weld capacity – refer to technical bulletin T-HUHUC-W *(see page 231 for details)*.

OPTIONS: • HU hangers available with the header flanges turned in for 2 5/16" and larger widths, with no load reduction—order HUC hanger.

- See Hanger Options on pages 216-217 for sloped and/or skewed U/HU models, and HUC *(concealed flange)* models.
- See also HUS series.
- HUCQ cannot be modified.

Model configurations may differ from those shown. Some HU models do not have triangle holes. Contact Simpson Strong-Tie for details.

HU410

Typical HU7 Installation

HUC412 Concealed Flanges

Typical HU7 Installation

HUCQ

Typical HUCQ Installed on End of a Beam

FACE MOUNT HANGERS HUS/HHUS/HGUS *Double Shear SCL Hangers*

See Hanger tables on pages 105-106. See Hanger Options on pages 215-224 for hanger modifications, which may result in reduced loads.

These hangers are designed for applications where higher loads are needed *(also see HUC and HUCQ)*.

All hangers in this series have double shear nailing. This patented innovation distributes the load through two points on each joist nail for greater strength. It also allows the use of fewer nails, faster installation, and the use of common nails for all connections. *(Do not bend or remove tabs)*

MATERIAL: See tables, pages 105-106.

FINISH: Galvanized. Some products available in stainless steel or ZMAX®; see Corrosion Information, page 14-15.

INSTALLATION • Use all specified fasteners. See General Notes.

- Do not use double shear hangers with I-joists.
- Nails must be driven at an angle through the joist or truss into the header to achieve the table loads.
- Not designed for welded or nailer applications.
- 16d sinkers (0.148" dia. x 3¼" long) may be used where 10d commons are specified with no reduction in load. Where 16d commons are specified, 10d commons or 16d sinkers (0.148" dia. x 3¼" long) may be used at 0.85 of the table load.
- With 3x carrying members, use 16dx2½" *(Simpson Strong-Tie® N16)* nails into the header and 16d commons into the joist with no load reduction. With 2x carrying members, use 10dx1½" nails into the header and 10d commons into the joist, and reduce the load to 0.64 of the table value.

OPTIONS: • HUS hangers available with the header flanges turned in for 3½" wide joist only, with no load reduction. See HUSC Concealed Flange illustration.

- Concealed flanges are not available for HGUS, HUS1.81/10 and HHUS.
- See Hanger Options, pages 215-224, for sloped and/or skewed HHUS and HGUS models.
- Other sizes available; contact Simpson Strong-Tie for details.

HHUS410

HUS410

2" for 2x's
1 7/16" for 4x's

HUSC Concealed Flanges *(not available for HHUS, HGUS and HUS1.81/10)*

HGUS46

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