Listing and Technical Evaluation Report™

A Duly Authenticated Report from an Approved Agency

Report No: 1811-03

Issue Date: June 17, 2019

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Subject to Renewal: July 1, 2027

QuickTie™ Hanger Series – Joist, Girder, and Truss Hangers (Top Flange and Face Mount)

Trade Secret Report Holder:

QuickTie™ Products, Inc.

Phone: 904-281-0525 Website: quicktieproducts.com

CSI Designations:

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

1 Innovative Products Evaluated[1]

1.1 QuickTie Hanger Series:

- 1.1.1 UL Series – 20-gauge
- 1.1.2 ULU Series – 20-gauge
- 1.1.3 ULP and ULP-IF (Inverted Flange) Series – 18-gauge
- 1.1.4 ULPSSH Series (Slopeable and Skewable) – 18-gauge
- 1.1.5 UM Series – 16-gauge
- 1.1.6 UMH Series – 16-gauge
- 1.1.7 UMSR-L – 16-gauge
- 1.1.8 UHSR-L - 14-gauge
- 1.1.9 UH and UH-IF (Inverted Flange) Series – 14-gauge
- 1.1.10 UHH Series – 14-gauge
- 1.1.11 UHD Series – 12-gauge
- 1.1.12 UDTTR-L Series – 16-gauge
- 1.1.13 THJH Series – 12-gauge
- 1.1.14 TSH and TSH-IF (Inverted Flange) Series – 18-gauge, 16-gauge, and 14-gauge
- 1.1.15 TFLP (Top Flange) Series – 18-gauge
- 1.1.16 TFH (Top Flange) Series – 14-gauge

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2 Product Description and Materials

2.1 The innovative products evaluated in this report are shown in **Figure 1** through **Figure 6**.

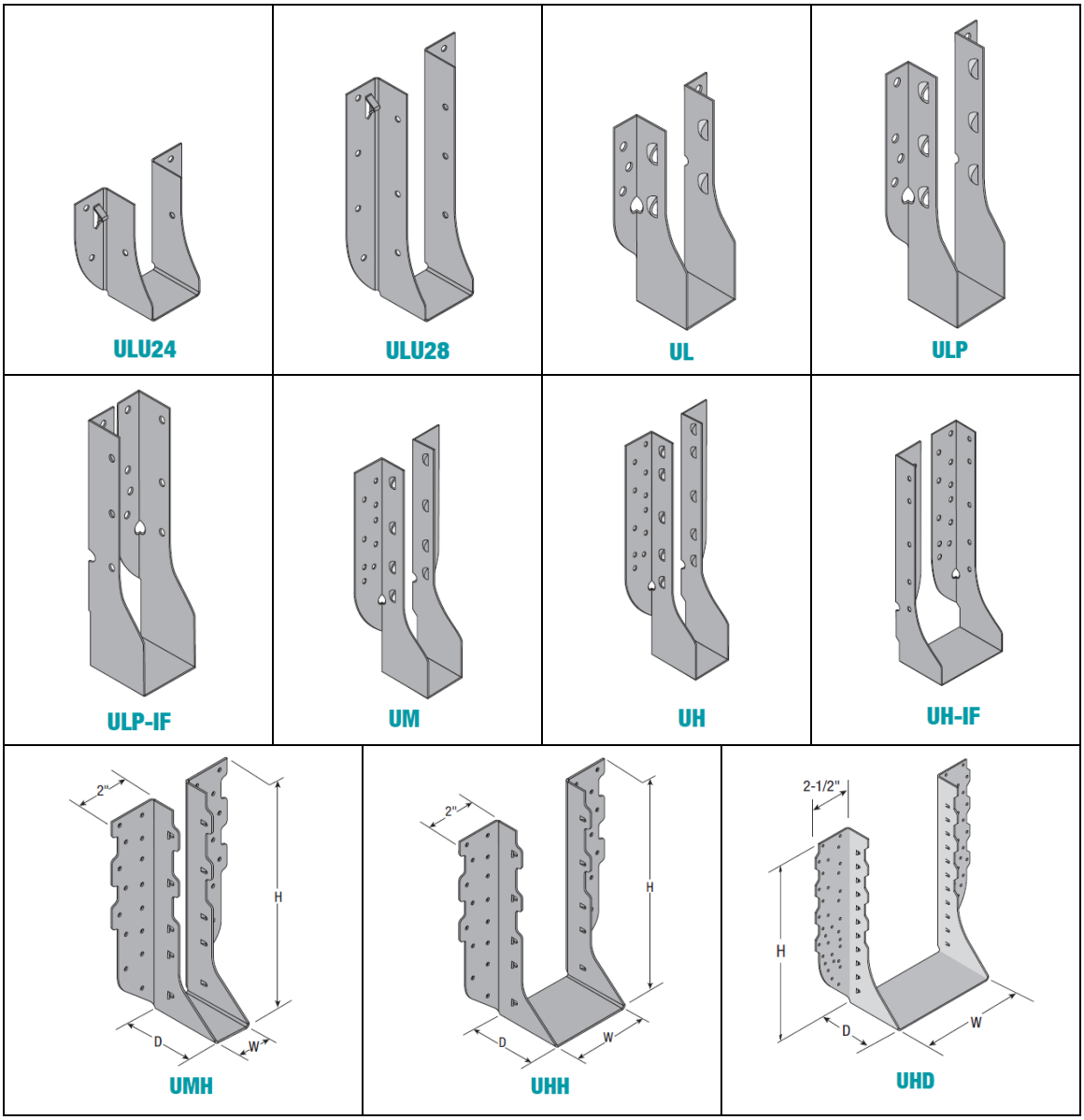


Figure 1. QuickTie Hanger Series

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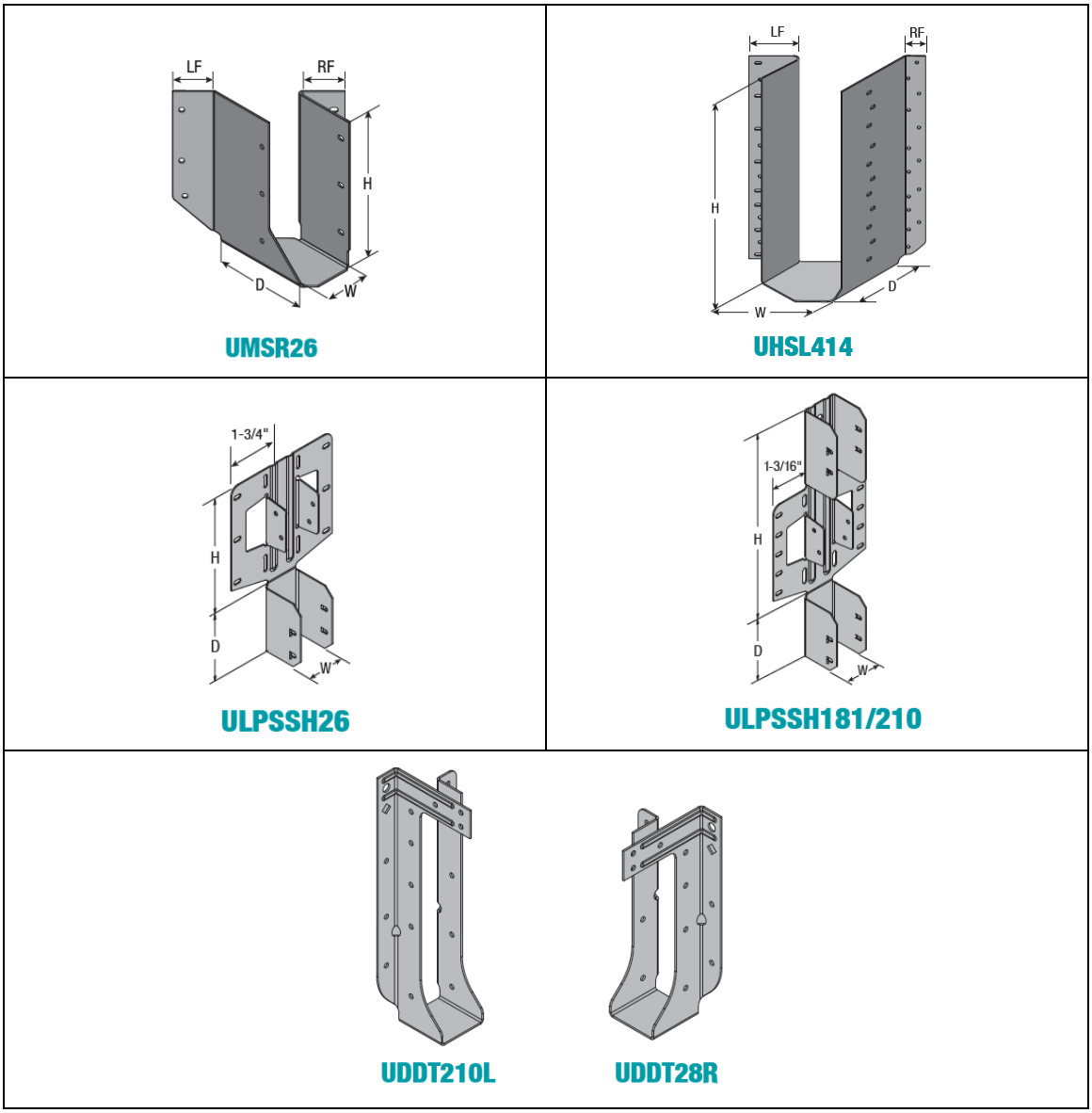


Figure 2. QuickTie Hanger Series – Continued

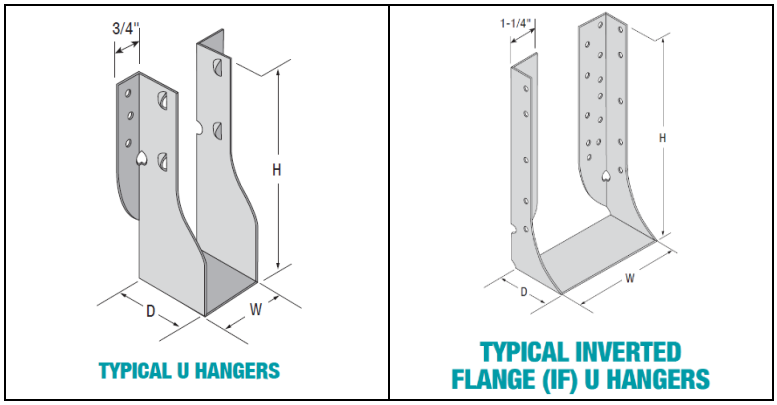


Figure 3. Typical Hanger Configuration

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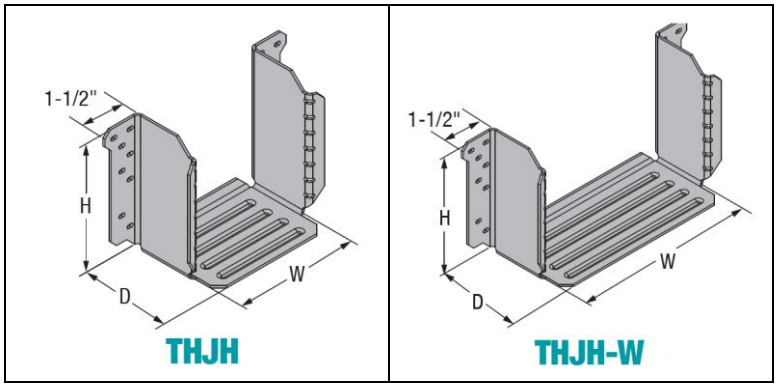


Figure 4. THJH26 and THJH26-W Hangers

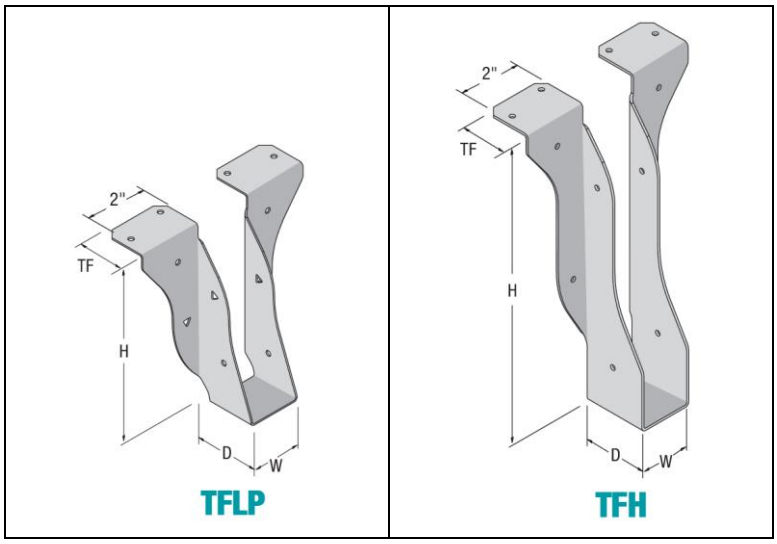


Figure 5. Top Flange TFLP and TFH Hangers

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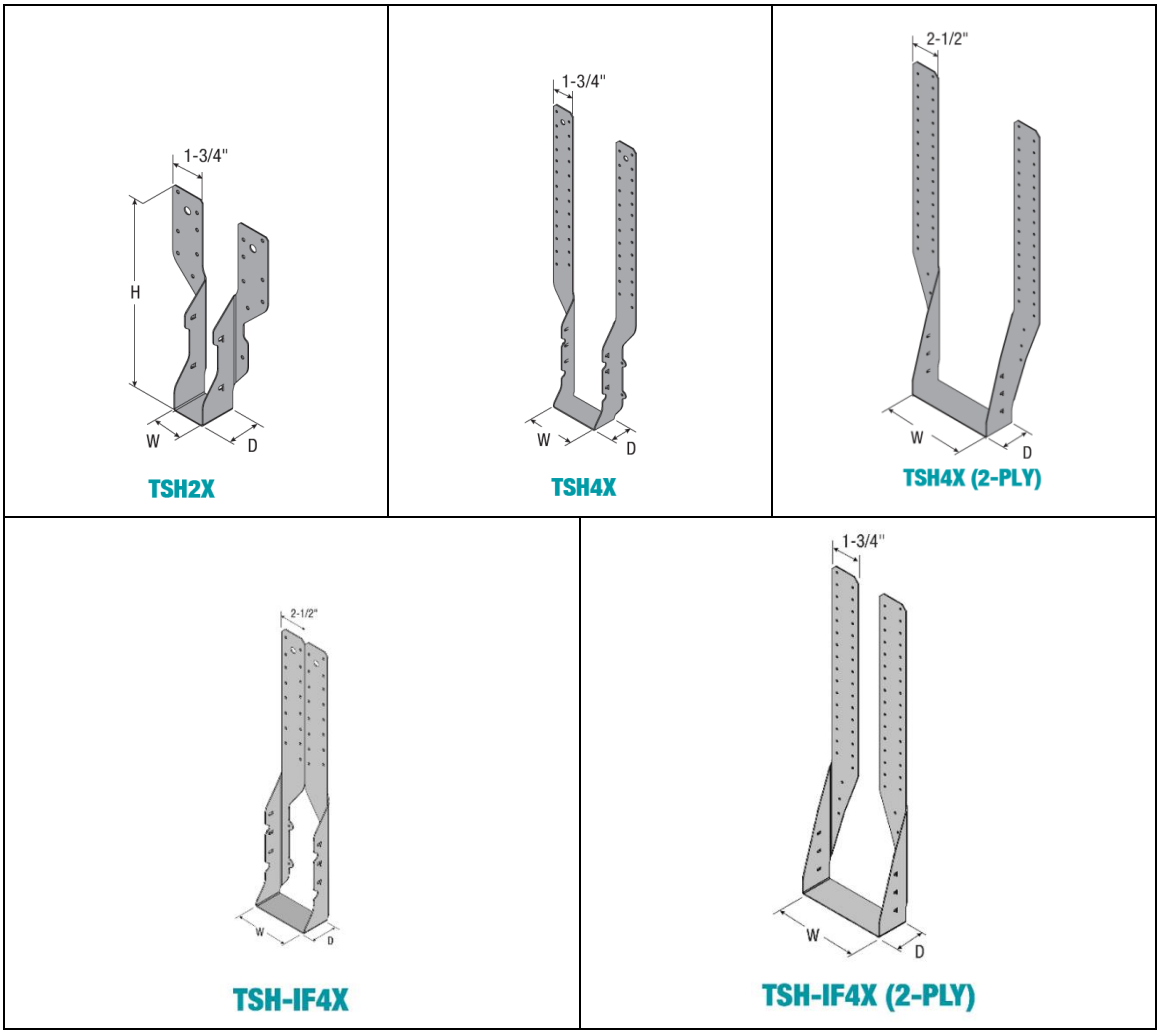


Figure 6. TSH and TSH-IF Hangers

2.1.1 The QuickTie Hanger Series Face Mounts are manufactured from minimum ASTM A653, Structural Steel (SS), Grade 40 (F_u = 55-ksi, F_y = 40-ksi) steel galvanized with a G90 or better zinc coating, with the exception of the following:

2.1.1.1 ULP24, ULP24-2, ULPSSH Series, ULU Series, UMH Series, UMSR-L, UHSR-L, UHH Series, UHD Series, UDTTR-L Series, THJH Series, TSH Series, TFLP, and TFH Series hangers are manufactured from minimum ASTM A653, SS Grade 50 (F_u = 70-ksi, F_y = 50-ksi) steel galvanized with a G90 or better zinc coating.

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2.1.2 The QuickTie Hanger Series are designated as follows:

2.1.2.1 UL Series – 20-gauge (minimum coated thickness = 0.0356")

2.1.2.2 ULU Series – 20-gauge (minimum coated thickness = 0.0356")

2.1.2.3 ULP and ULP-IF Series – 18-gauge (minimum coated thickness = 0.0466")

2.1.2.4 ULPSSH Series – 18-gauge (minimum coated thickness = 0.0466")

2.1.2.5 UM Series – 16-gauge (minimum coated thickness = 0.0575")

2.1.2.6 UMH Series – 16-gauge (minimum coated thickness = 0.0575")

2.1.2.7 UMSR-L Series – 16-gauge (minimum coated thickness = 0.0575")

2.1.2.8 UHSR-L Series – 14-gauge (minimum coated thickness = 0.0705")

2.1.2.9 UH and UH-IF Series – 14-gauge (minimum coated thickness = 0.0705")

2.1.2.10 UHH Series – 14-gauge (minimum coated thickness = 0.0705")

2.1.2.11 UHD Series – 12-gauge (minimum coated thickness = 0.0994")

2.1.2.12 UDTTR-L Series – 16-gauge (minimum coated thickness = 0.0575")

2.1.2.13 THJH26 and THJH26-W – 12-gauge (minimum coated thickness = 0.0994")

2.1.2.14 TSH29, TSH213, TSH218, and TSH413 – 18-gauge (minimum coated thickness = 0.0466")

2.1.2.15 TSH218-2, TSH222-2, TSH418, and TSH422 – 16-gauge (minimum coated thickness = 0.0575")

2.1.2.16 TSH-IF418 and TSH-IF 422 – 16-gauge (minimum coated thickness = 0.0575")

2.1.2.17 TSH426, TSH422-2, and TSH426-2 – 14-gauge (minimum coated thickness = 0.0705")

2.1.2.18 TSH-IF426, TSH-IF422-2, and TSH-IF426-2 – 14-gauge (minimum coated thickness = 0.0705")

2.1.2.19 TFLP26 and TFLP28 – 18-gauge (minimum coated thickness = 0.0466")

2.1.2.20 TFH210 and TFH214 – 14-gauge (minimum coated thickness = 0.0705")

2.2 As needed, review material properties for design in **Section 6** and the regulatory evaluation in **Section 8**.

3 Definitions[2]

3.1 New Materials[3] are defined as building materials, equipment, appliances, systems, or methods of construction, not provided for by prescriptive and/or legislatively adopted regulations, known as alternative materials.[4] The design strength and permissible stresses shall be established by tests[5] and/or engineering analysis.[6]

3.2 Duly authenticated reports[7] and research reports[8] are test reports and related engineering evaluations that are written by an approved agency[9] and/or an approved source.[10]

3.2.1 This report utilizes intellectual property and/or trade secrets to create public domain material properties for commercial end-use.

3.2.1.1 This report protects confidential Intellectual Property and trade secrets under the regulation, 18.US.Code.90, also known as Defend Trade Secrets Act of 2016 (DTSA).[11]

3.3 An approved agency is *"approved"* when it is ANAB ISO/IEC 17065 accredited. DrJ Engineering, LLC (DrJ) is accredited and listed in the ANAB directory.

3.4 An approved source is *"approved"* when a professional engineer (i.e., Registered Design Professional, hereinafter RDP) is properly licensed to transact engineering commerce. The regulatory authority governing approved sources is the state legislature via its professional engineering regulations.[12]

3.5 Testing and/or inspections conducted for this duly authenticated report were performed by an ISO/IEC 17025 accredited testing laboratory, an ISO/IEC 17020 accredited inspection body, and/or a licensed RDP.

3.5.1 The Center for Building Innovation (CBI) is ANAB[13] ISO/IEC 17025 and ISO/IEC 17020 accredited.

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3.6 The regulatory authority shall enforce[14] the specific provisions of each legislatively adopted regulation. If there is a non-conformance, the specific regulatory section and language of the non-conformance shall be provided in writing[15] stating the nonconformance and the path to its cure.

3.7 The regulatory authority shall accept duly authenticated reports from an approved agency and/or an approved source with respect to the quality and manner of use of new materials or assemblies as provided for in regulations regarding the use of alternative materials, designs, or methods of construction.[16]

3.8 ANAB is an International Accreditation Forum (IAF) Multilateral Recognition Arrangement (MLA) signatory. Therefore, recognition of certificates and validation statements issued by conformity assessment bodies accredited by all other signatories of the IAF MLA with the appropriate scope shall be approved.[17] Thus, all ANAB ISO/IEC 17065 duly authenticated reports are approval equivalent,[18] and can be used in any country that is an MLA signatory found at this link: https://iaf.nu/en/recognised-abs/

3.9 Approval equity is a fundamental commercial and legal principle.[19]

4 Applicable Local, State, and Federal Approvals; Standards; Regulations[20]

4.1 *Local, State, and Federal*

4.1.1 Approved in all local jurisdictions pursuant to ISO/IEC 17065 duly authenticated report use, which includes, but is not limited to, the following featured local jurisdictions: Austin, Baltimore, Broward County, Chicago, Clark County, Dade County, Dallas, Detroit, Denver, DuPage County, Fort Worth, Houston, Kansas City, King County, Knoxville, Las Vegas, Los Angeles City, Los Angeles County, Miami, Nashville, New York City, Omaha, Philadelphia, Phoenix, Portland, San Antonio, San Diego, San Jose, San Francisco, Seattle, Sioux Falls, South Holland, St. Louis County, Texas Department of Insurance, and Wichita.[21]

4.1.2 Approved in all state jurisdictions pursuant to ISO/IEC 17065 duly authenticated report use, which includes, but is not limited to, the following featured states: California, Florida, New Jersey, Oregon, New York, Texas, Washington, and Wisconsin.[22]

4.1.3 Approved by the Code of Federal Regulations Manufactured Home Construction: Pursuant to Title 24, Subtitle B, Chapter XX, Part 3282.14[23] and Part 3280[24] pursuant to the use of ISO/IEC 17065 duly authenticated reports.

4.1.4 Approved means complying with the requirements of local, state, or federal legislation.

4.2 *Regulations*

4.2.1 *IBC – 18, 21, 24: International Building Code®*

4.2.2 *IRC – 18, 21, 24: International Residential Code®*

4.2.3 *FBC-B – 20, 23: Florida Building Code[25] – Building (FL3557)*

4.2.4 *FBC-R – 20, 23: Florida Building Code[25] – Residential (FL3557)*

4.2.5 *NCBC – 18, 24: North Carolina Building Code*

4.3 *Standards*

4.3.1 *AISI S100: North American Specification for the Design of Cold-formed Steel Structural Members*

4.3.2 *ANSI/AISC 360: Specification for Structural Steel Buildings*

4.3.3 *ANSI/AWC NDS: National Design Specification (NDS) for Wood Construction*

4.3.4 *ASTM A370: Standard Test Methods and Definitions for Mechanical Testing of Steel Products*

4.3.5 *ASTM A653: Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process*

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4.3.6 *ASTM D7147: Standard Specification for Testing and Establishing Allowable Loads of Joist Hangers*

4.3.7 *ASTM F1575: Standard Test Method for Determining Bending Yield Moment of Nails, Spikes, and Dowel Type Threaded Fasteners*

5 Listed[26]

5.1 Equipment, materials, products, or services included in a List published by a nationally recognized testing laboratory (e.g., CBI), an approved agency (e.g., CBI and DrJ), and/or an approved source (e.g., DrJ), or other organization(s) concerned with product evaluation (e.g., DrJ), that maintains periodic inspection (e.g., CBI) of production of listed equipment or materials, and whose listing states either that the equipment or material meets nationally recognized standards or has been tested and found suitable for use in a specified manner.

6 Tabulated Properties Generated from Nationally Recognized Standards

6.1 *General*

6.1.1 The QuickTie Hanger Series Face Mount and Top Flange Mount Joist Hangers are used to resist gravity loads and uplift loads due to wind in one-ply, two-ply, and three-ply joist assemblies in light-frame wood construction.

6.1.2 The QuickTie Hanger Series Face Mount and Top Flange Mount Joist Hangers are used as wood framing connectors in accordance with IBC Section 2304.10.4[27] and IRC Section R301.1.3.

6.2 *Hanger Design Values*

6.2.1 **Table 2** through **Table 15** list the allowable gravity and uplift loads for U-Hanger connectors with single-ply and multi-ply nominal lumber joists.

6.2.2 **Table 16** through **Table 20** list the allowable gravity and uplift loads for top and face mounted joist hangers with single-ply and multi-ply lumber trusses/rafters/joists.

6.2.3 The design values in **Table 2** through **Table 20** were derived using the applicable adjustment factors in ASTM D7147, per IBC Section 2303.5.

6.2.4 The responsible design professional for the project shall determine which type of U-Hanger is appropriate using Table 2 through Table 20.

6.2.5 *Allowable Load Adjustment Factors for Nail Substitution*

6.2.5.1 For situations where a different nail size is used for the installation of the face-mount hangers than what is stated in their respective tables in this section, adjustment factors are provided in **Table 1**.

6.2.5.1.1 These reduction factors shall be applied to the allowable loads listed for the product.

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Table 1. Allowable Load Adjustment Factors for Optional Nails[1,2,3,4,5,6]

Connector Table Fastener	Replacement Fastener[7]	Load Adjustment Factor		
		Single Shear Connection	Double Shear Connection	
		Gravity/Uplift	Gravity	Uplift
0.131" x 1½"	0.131" x 2½"	1.00	N/A	N/A
	0.148" x 1¼"	1.00	N/A	N/A
	0.148" x 1½"	1.00	N/A	N/A
	0.148" x 2½"	1.00	N/A	N/A
	0.148" x 3¼"	1.00	N/A	N/A
	0.162" x 2½"	1.00	N/A	N/A
	0.162" x 3½"	1.00	N/A	N/A
	SWH915	1.00	N/A	N/A
	SWH925	1.00	N/A	N/A
	SWH1015	1.00	N/A	N/A
	SWH1025	1.00	N/A	N/A
0.131" x 2½"	0.131" x 1½"	0.97	N/A	N/A
	0.148" x 1¼"	1.00	N/A	N/A
	0.148" x 1½"	1.00	N/A	N/A
	0.148" x 2½"	1.00	1.00	1.00
	0.148" x 3¼"	1.00	1.00	1.00
	0.162" x 2½"	1.00	1.00	1.00
	0.162" x 3½"	1.00	1.00	1.00
	SWH915	1.00	N/A	N/A
	SWH925	1.00	1.00	1.00
	SWH1015	1.00	N/A	N/A
	SWH1025	1.00	1.00	1.00
0.148" x 1½"	0.131" x 1½"	0.82	N/A	N/A
	0.131" x 2½"	0.85	N/A	N/A
	0.148" x 1¼"	0.90	N/A	N/A
	0.148" x 2½"	1.00	N/A	N/A
	0.148" x 3¼"	1.00	N/A	N/A
	0.162" x 2½"	1.00	N/A	N/A
	0.162" x 3½"	1.00	N/A	N/A
	SWH915	1.00	N/A	N/A
	SWH925	1.00	N/A	N/A
	SWH1015	1.00	N/A	N/A
	SWH1025	1.00	N/A	N/A

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Table 1. Allowable Load Adjustment Factors for Optional Nails[1,2,3,4,5,6]

Connector Table Fastener	Replacement Fastener[7]	Load Adjustment Factor		
		Single Shear Connection	Double Shear Connection	
		Gravity/Uplift	Gravity	Uplift
0.148" x 2½"	0.131" x 1½"	0.82	N/A	N/A
	0.131" x 2½"	0.85	0.87	0.87
	0.148" x 1¼"	0.90	N/A	N/A
	0.148" x 1½"	1.00	N/A	N/A
	0.148" x 3¼"	1.00	1.00	1.00
	0.162" x 2½"	1.00	1.00	1.00
	0.162" x 3½"	1.00	1.00	1.00
	SWH915	1.00	N/A	N/A
	SWH925	1.00	1.00	1.00
	SWH1015	1.00	N/A	N/A
	SWH1025	1.00	1.00	1.00
0.148" x 3¼"	0.131" x 1½"	0.82	N/A	N/A
	0.131" x 2½"	0.85	0.70	0.70
	0.148" x 1¼"	0.90	N/A	N/A
	0.148" x 1½"	1.00	N/A	N/A
	0.148" x 2½"	1.00	0.81	0.81
	0.162" x 2½"	1.00	0.92	0.92
	0.162" x 3½"	1.00	1.00	1.00
	SWH915	1.00	N/A	N/A
	SWH925	1.00	0.82	0.82
	SWH1015	1.00	N/A	N/A
	SWH1025	1.00	1.00	1.00
0.162" x 2½"	0.131" x 1½"	0.71	N/A	N/A
	0.131" x 2½"	0.73	0.76	0.76
	0.148" x 1¼"	0.77	N/A	N/A
	0.148" x 1½"	0.86	N/A	N/A
	0.148" x 2½"	0.86	0.87	0.87
	0.148" x 3¼"	0.86	0.99	1.00
	0.162" x 3½"	1.00	1.00	1.00
	SWH915	0.90	N/A	N/A
	SWH925	0.96	0.89	0.89
	SWH1015	1.00	N/A	N/A
	SWH1025	1.00	1.00	1.00

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Table 1. Allowable Load Adjustment Factors for Optional Nails[1,2,3,4,5,6]

Connector Table Fastener	Replacement Fastener[7]	Load Adjustment Factor		
		Single Shear Connection	Double Shear Connection	
		Gravity/Uplift	Gravity	Uplift
0.162" x 3½"	0.131" x 1½"	0.71	N/A	N/A
	0.131" x 2½"	0.73	0.58	0.58
	0.148" x 1¼"	0.77	N/A	N/A
	0.148" x 1½"	0.86	N/A	N/A
	0.148" x 2½"	0.86	0.67	0.67
	0.148" x 3¼"	0.86	0.83	0.83
	0.162" x 2½"	1.00	0.77	0.77
	SWH915	0.90	N/A	N/A
	SWH925	0.96	0.68	0.68
	SWH1015	1.00	N/A	N/A
	SWH1025	1.00	0.89	0.89

SI: 1 in = 25.4 mm

1. Allowable load adjustment factors shown in the table are applicable to all products specified in this table, except as noted in **Section 6.3** Table Notes.
2. Some products have been tested specifically with alternative fasteners and have allowable load adjustment factors or reduced capacities published in this report or at quicktieproducts.com. Values published therein may be used in lieu of using this table.
3. This table does not apply to skewed hangers or to hangers modified per allowed options, or to connectors made from steel thicker than 10-gauge.
4. Screws shall not be substituted for nails.
5. Nails and screws may not be combined in the same connection.
6. Nails that are 1½" long may be substituted for the specified fastener into the header only; double-shear fasteners shall be minimum 2½" long.
7. See TER 0910-01 for SWH fastener specifications and reference design loads.

6.3 *Table Notes*

6.3.1 The following notes apply to **Table 2** through **Table 20**:

6.3.1.1 For U-Hangers that have slant nailing, all nails must be driven at an angle (approximately 41º) into the joist and into the header to achieve published load values.

6.3.1.2 Nails designated as 16d shall be 16d common nails (0.162" x 3.5", F_{yb} = 90,000-psi) and 10d shall be 10d common nails (0.148" x 3", F_{yb} = 90,000-psi), unless otherwise noted in these tables.

6.3.1.3 Allowable loads are provided for load duration factors (C_D) of 1.0, 1.15, 1.25, and 1.6.

6.3.1.3.1 Uplift loads have been increased for wind/earthquake load duration (C_D = 1.6). No further increases permitted. Allowable uplift loads shall be reduced where other load conditions govern.

6.3.1.4 Allowable loads labeled *"Floor"* and *"Roof"* represent gravity loads.

6.3.1.5 **Figure 7** and **Figure 8** show the example of installation of typical U-Hangers and Inverted Flange (IF) U-Hangers.

6.3.1.6 **Figure 9** and **Figure 10** show the example of installation of sloped or sloped and skewed ULPSSH Hangers.

6.3.1.7 **Figure 11** shows the example of installation of THJH26 and THJH26-W Hangers.

6.3.1.8 **Figure 12** shows the example of installation of UDTTR-L Hangers.

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6.3.1.9 **Figure 13** shows the example of installation of Top Flange Hangers.

6.3.1.10 **Figure 14** and **Figure 15** show the examples of installation of TSH Hangers.

Table 2. UL Series Hangers – Allowable Gravity and Uplift Loads (lbf)[1]

Part Number UL Series (1-, 2-, and 3-Ply Joists)	Joist Size (in)	Hanger Dimensions (in)			Steel Thickness	Fasteners				SP/DF-L (G = 0.50)				HF/SPF (G = 0.42)			
						Header		Joist		Floor	Roof	Roof	Uplift	Floor	Roof	Roof	Uplift
		Width	Height	Depth		Qty	Size	Qty	Size	1.0	1.15	1.25	1.6	1.0	1.15	1.25	1.6
UL26	2 x 6	1 5/8	5 3/8	1 3/4	20-gauge	6	16d	4	16d	1,215			510	965			440
UL26-2		3 1/8	4 5/8														
UL26-3		4 5/8	3 7/8														
UL28	2 x 8	1 5/8	7 1/8	1 3/4	20-gauge	8	16d	6	16d	1,695	1,855		910	1,400	1,455	1,490	785
UL28-2		3 1/8	6 3/8														
UL28-3		4 5/8	5 5/8														
UL210	2 x 10	1 5/8	9 1/8	1 3/4	20-gauge	10	16d	8	16d	2,175	2,495	2,575	1,315	1,835	1,940	2,010	1,130
UL210-2		3 1/8	8 3/8														
UL210-3		4 5/8	7 5/8														
UL212	2 x 12	1 5/8	10 3/16	1 3/4	20-gauge	10	16d	10	16d	1,570			1,715	1,265			1,475
UL212-2		3 1/8	9 7/16														
UL212-3		4 5/8	8 11/16														

SI: 1 in. = 25.4 mm, 1-lbf = 4.45 N

1. See table notes in **Section 6.3**.

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Table 3. ULU Series Hangers – Allowable Gravity and Uplift Loads (lbf)[1]

Part Number ULU	Joist Size (in)	Hanger Dimensions (in)			Steel Thickness	Fasteners				SP (G=0.55)				DF-L (G=0.50)				HF/SPF (G=0.42)			
						Header		Joist[2]		Floor	Roof	Roof	Uplift	Floor	Roof	Roof	Uplift	Floor	Roof	Roof	Uplift
		Width	Height	Depth		Qty	Size	Qty	Size	1.0	1.15	1.25	1.6	1.0	1.15	1.25	1.6	1.0	1.15	1.25	1.6
Single Shear Connection[3]																					
ULU24	2 x 4	1 5/8	3 1/4	1 5/8	20-gauge	4	16d	2	10d	705	815	885	320	650	750	815	295	560	645	670	255
ULU26	2 x 6	1 5/8	4 3/4	1 5/8		6	16d	4	10d	1,115	1,280	1,395	670	1,025	1,180	1,285	620	885	1,015	1,090	530
ULU28	2 x 8	1 5/8	6 3/8	1 5/8		8	16d	6	10d	1,520	1,745	1,900	1,005	1,400	1,610	1,750	925	1,205	1,385	1,505	795
ULU210	2 x 10	1 5/8	7 3/4	1 5/8		10	16d	6	10d	1,900	2,180	2,375		1,750	2,015	2,190		1,505	1,730	1,880	
Double Shear Connection[3]																					
ULU24E	2 x 4	1 5/8	3 1/4	1 5/8	20-gauge	4	16d	2	16d	820	940	1,025	780	755	865	945	720	625	720	785	615
ULU26E	2 x 6	1 5/8	4 3/4	1 5/8		6	16d	4	16d	1,340	1,535	1,670	1,260	1,235	1,415	1,540	1,165	1,025	1,175	1,280	975
ULU28E	2 x 8	1 5/8	6 3/8	1 5/8		8	16d	6	16d	1,855	2,130	2,315	1,740	1,710	1,965	2,135	1,605	1,420	1,630	1,775	1,330
ULU210E	2 x 10	1 5/8	7 3/4	1 5/8		10	16d	6	16d	2,375	2,725	2,960	1,740	2,190	2,515	2,730	1,605	1,820	2,085	2,270	1,330

SI: 1 in = 25.4 mm, 1-lbf = 4.45 N

1. See table notes in **Section 6.3**.
2. For single shear connection, length of the 10d nails used for the connection between the hanger and the joist shall be 1 1/2".
3. See **Figure 7** and **Figure 8** for Single Shear and Double Shear Installations.

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Table 4. ULP Series Hangers – Allowable Gravity and Uplift Loads (lbf)[1]

Part Number ULP (1-, 2-, and 3-ply Joists)	Joist Size (in)	Hanger Dimensions (in)			Steel Thickness	Fasteners				SP/DF-L (G=0.50)				HF/SPF (G=0.42)			
						Header		Joist		Floor	Roof	Roof	Uplift	Floor	Roof	Roof	Uplift
		Width	Height	Depth		Qty	Size	Qty	Size	1.0	1.15	1.25	1.6	1.0	1.15	1.25	1.6
ULP24	2 x 4	1 5/8	3 1/8	1 3/4	18-gauge	6	10d	2	10d or 10d x 1 1/2	500			380	430			325
ULP24-2		3 1/8															
ULP24		1 5/8					16d			805				580			
ULP24-2		3 1/8															
ULP26	2 x 6	1 5/8	5 3/8	1 3/4	18-gauge	6	16d	4	16d	1,230	1,415	1,435	670	1,065	1,110		580
ULP26R		2	5 1/8														
ULP26-2		3 1/8	4 5/8														
ULP26-3		4 5/8	3 7/8														
ULP36	3 x 6	2 9/16	4 7/8														
ULP46	4 x 6	3 9/16	4 3/8														
ULP28	2 x 8	1 5/8	7 1/8	1 3/4	18-gauge	8	16d	6	16d	1,710	1,955	2,005	1,025	1,450	1,525	1,560	890
ULP28R		2	6 7/8														
ULP28-2		3 1/8	6 3/8														
ULP28-3		4 5/8	5 5/8														
ULP38	3 x 8	2 9/16	6 5/8														
ULP48	4 x 8	3 9/16	6 1/8														
ULP210	2 x 10	1 5/8	9 1/8	1 3/4	18-gauge	10	16d	8	16d	2,190	2,495	2,575	1,375	1,835	1,940	2,010	1,200
ULP210R		2	8 7/8														
ULP210-2		3 1/8	8 3/8														
ULP210-3		4 5/8	7 5/8														
ULP310	3 x 10	2 9/16	8 5/8	1 3/4		10	16d	8	16d								
ULP410	4 x 10	3 9/16	8 1/8														
ULP212	2 x 12	1 5/8	10 3/16	1 3/4	18-gauge	10	16d	10	16d	2,265			1,730	1,825			1,510
ULP212-2		3 1/8	9 7/16														
ULP212-3		4 5/8	8 11/16														
ULP312	3 x 12	2 9/16	9 11/16														
ULP412	4 x 12	3 9/16	9 3/16														

SI: 1 in = 25.4 mm, 1-lbf = 4.45 N

1. See table notes in **Section 6.3**.

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Table 5. ULP-IF Series Hangers – Allowable Gravity and Uplift Loads (lbf)[1]

Part Number ULP-IF (1, 2, and 3-ply Joists)	Joist Size (in)	Hanger Dimensions (in)			Steel Thickness	Fasteners				SP/DF-L (G=0.50)				HF/SPF (G=0.42)			
						Header		Joist		Floor	Roof	Roof	Uplift	Floor	Roof	Roof	Uplift
		Width	Height	Depth		Qty	Size	Qty	Size	1.0	1.15	1.25	1.6	1.0	1.15	1.25	1.6
ULP-IF26	2 x 6	1 5/8	5 3/8	1 3/4	18-gauge	6	16d	4	10d	830	955	1,040	745	715	825	895	640
ULP-IF26-2		3 1/8	4 5/8														
ULP-IF26-3		4 5/8	3 7/8														
ULP-IF28	2 x 8	1 5/8	7 1/8	1 3/4	18-gauge	8	16d	6	10d	1,110	1,275	1,385	930	955	1,100	1,195	805
ULP-IF28-2		3 1/8	6 3/8														
ULP-IF28-3		4 5/8	5 5/8														
ULP-IF210	2 x 10	1 5/8	9 1/8	1 3/4	18-gauge	10	16d	6	10d	1,385	1,590	1,730	1,115	1,195	1,375	1,490	965
ULP-IF210-2		3 1/8	8 3/8														
ULP-IF210-3		4 5/8	7 5/8														

SI: 1 in = 25.4 mm, 1-lbf = 4.45 N

1. See table notes in **Section 6.3**.

Table 6. ULPSSH Series Hangers – Allowable Gravity and Uplift Loads (lbf)[1]

Part Number ULPSSH	Joist Size (in)	Hanger Dimensions (in)			Steel Thickness	Fasteners				SP/DF-L (G=0.50)				HF/SPF (G=0.42)			
						Header		Joist		Floor	Roof	Roof	Uplift	Floor	Roof	Roof	Uplift
		Width	Height	Depth		Qty	Size	Qty	Size	1.0	1.15	1.25	1.6	1.0	1.15	1.25	1.6
Sloped Only Hangers																	
ULPSSH26	2 x 6	1 9/16	5 7/16	3	18-gauge	6	10d	9	10d x 1 1/2	680	780	850	855	585	675	730	740
ULPSSH1.81	1 3/4 x 10	1 13/16	8 3/16	3		10		13		1,185	1,365	1,480	1,270	1,020	1,175	1,280	1,095
ULPSSH210	2 x 10	1 9/16	8 3/16	3		10		13									
Sloped and Skewed Hangers																	
ULPSSH26	2 x 6	1 9/16	5 7/16	3	18-gauge	6	10d	9	10d x 1 1/2	690			530	595			455
ULPSSH1.81	1 3/4 x 10	1 13/16	8 3/16	3		10		13		635			625	545			540
ULPSSH210	2 x 10	1 9/16	8 3/16	3		10		13									

SI: 1 in = 25.4 mm, 1-lbf = 4.45 N

1. See table notes in **Section 6.3**.

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Table 7. UM Series Hangers – Allowable Gravity and Uplift Loads (lbf)[1]

Part Number UM (1, 2, and 3-ply Joists)	Joist Size (in)	Hanger Dimensions (in)			Steel Thickness	Fasteners				SP/DF-L (G=0.50)				HF/SPF (G=0.42)			
						Header		Joist		Floor	Roof	Roof	Uplift	Floor	Roof	Roof	Uplift
		Width	Height	Depth		Qty	Size	Qty	Size	1.0	1.15	1.25	1.6	1.0	1.15	1.25	1.6
UM26	2 x 6	1 5/8	5 3/8	2 1/4	16-gauge	6	16d	6	16d	1,445	1,540		600	1,245			525
UM26R		2	5 3/16														
UM26-2		3 1/8	4 5/8														
UM26-3		4 5/8	3 7/8														
UM36	3 x 6	2 9/16	4 7/8														
UM46	4 x 6	3 9/16	4 3/8														
UM46R	4 x 6	4	4 3/16														
UM28	2 x 8	1 5/8	7 1/8	2 1/4	16-gauge	12	16d	6	16d	1,885	1,930			1,625			
UM28R		2	6 15/16														
UM28-2		3 1/8	6 3/8														
UM28-3		4 5/8	5 5/8														
UM38	3 x 8	2 9/16	6 5/8														
UM48	4 x 8	3 9/16	6 1/8														
UM48R	4 x 8	4	5 15/16														
UM210	2 x 10	1 5/8	9 1/8	2 1/4	16-gauge	18	16d	8	16d	2,320			1,065	2,005			925
UM210R		2	8 15/16														
UM210-2		3 1/8	8 3/8														
UM210-3		4 5/8	7 5/8														
UM310	3 x 10	2 9/16	8 5/8														
UM410	4 x 10	3 9/16	8 1/8														
UM410R	4 x 10	4	7 15/16														
UM212	2 x 12	1 5/8	10 3/16	2 1/4	16-gauge	22	16d	10	16d	1,930			1,530	1,535			1,325
UM212-2		3 1/8	9 7/16														
UM212-3		4 5/8	8 11/16														
UM312	3 x 12	2 9/16	9 11/16														
UM412	4 x 12	3 9/16	9 3/16	2 1/4		22	16d	10	16d								
UM412R	4 x 12	4	9														

SI: 1 in = 25.4 mm, 1-lbf = 4.45 N

1. See table notes in **Section 6.3**.

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Table 8. UMSR-L Series Hangers – Allowable Gravity and Uplift Loads (lbf)[1]

Part Number UMSR-L	Hanger Dimensions (in)			Steel Thickness	Fasteners				SP/DF-L (G=0.50)				HF/SPF (G=0.42)			
					Header		Joist		Floor	Roof	Roof	Uplift	Floor	Roof	Roof	Uplift
	Width	Height	Depth		Qty	Size	Qty	Size	1.0	1.15	1.25	1.6	1.0	1.15	1.25	1.6
UMSR-L24	1 9/16	3 1/2	2	16-gauge	4	16d	4	10d x 1 1/2	575	660		395	495	520		340
UMSR-L26	1 9/16	5	2		6	16d	6	10d x 1 1/2	865	995	1,080	700	745	820		605
UMSR-L210	1 9/16	8 3/16	2		10	16d	10	10d x 1 1/2	1,440	1,660	1,795	990	1,240	1,415	1,420	850
UMSR-L214	1 9/16	10	2		12	16d	12	16d	1,730	1,990	2,160	2,340	1,490	1,715	1,865	2,020
UMSR-L26-2	3 1/8	4 15/16	2 5/8		8	16d	4	16d	1,190	1,370	1,490	955	1,030	1,185	1,285	825
UMSR-L210-2	3 1/8	9 1/4	2 5/8		14	16d	6	16d	1,935	2,225	2,420	1,430	1,675	1,925	2,085	1,235
UMSR-L46	3 9/16	4 1/4	2 5/8		8	16d	4	16d	1,190	1,370	1,490	955	1,030	1,185	1,285	825
UMSR-L410	3 9/16	8 1/2	2 5/8	16-gauge	14	16d	6	16d	1,935	2,225	2,420	1,430	1,675	1,925	2,085	1,235
UMSR-L414[2]	3 9/16	12 1/2	2 5/8		18	16d	8	16d	2,680	3,080	3,350	1,905	2,315	2,660	2,880	1,645
UMSR-L2.56-9	2 9/16	8 13/16	3 3/16		14	16d	2	10d	1,935	2,225	2,420	475	1,675	1,925	2,085	410
UMSR-L2.56-11	2 9/16	11 3/16	3 3/16		16	16d	2	10d	2,310	2,655	2,885		1,995	2,295	2,485	410

SI: 1 in = 25.4 mm, 1-lbf = 4.45 N

1. See table notes in **Section 6.3**.
2. Install the joist with a miter-cut end and double shear nails.

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Table 9. UHSR-L Series Hangers – Allowable Gravity and Uplift Loads (lbf)[1]

Part Number UHSR-L	Hanger Dimensions (in)			Steel Thickness	Fasteners				SP/DF-L (G=0.50)				HF/SPF (G=0.42)			
					Header		Joist		Floor	Roof	Roof	Uplift	Floor	Roof	Roof	Uplift
	Width	Height	Depth		Qty	Size	Qty	Size	1.0	1.15	1.25	1.6	1.0	1.15	1.25	1.6
UHSR-L26-2	3 1/8	4 15/16	2 7/16	14-gauge	12	16d	4	16d	1,785	1,965		955	1,545	1,550		825
UHSR-L210-2	3 1/8	8 11/16	2 7/16		20	16d	6	16d	2,975	3,425	3,720	1,430	2,575	2,960	3,210	1,235
UHSR-L214-2[2]	3 1/8	12 11/16	2 7/16		26	16d	8	16d	3,870	4,450	4,835	1,905	3,345	3,845	3,955	1,645
UHSR-L46	3 9/16	4 3/4	2 7/16		12	16d	4	16d	1,785	1,965	1,965	955	1,545	1,550		825
UHSR-L410	3 9/16	8 1/2	2 7/16		20	16d	6	16d	2,975	3,425	3,720	1,430	2,575	2,960	3,210	1,235
UHSR-L414[2]	3 9/16	12 1/2	2 7/16		26	16d	8	16d	3,870	4,450	4,835	1,905	3,345	3,845	3,955	1,645

SI: 1 in = 25.4 mm, 1-lbf = 4.45 N

1. See table notes in **Section 6.3**.
2. Install the joist with a miter-cut end and double shear nails.

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Table 10. UH Series Hangers – Allowable Gravity and Uplift Loads (lbf)[1]

Part Number UH (1, 2, and 3-ply Joists)	Joist Size (in)	Hanger Dimensions (in)			Steel Thickness	Fasteners				SP/DF-L (G=0.50)				HF/SPF (G=0.42)			
						Header		Joist		Floor	Roof	Roof	Uplift	Floor	Roof	Roof	Uplift
		Width	Height	Depth		Qty	Size	Qty	Size	1.0	1.15	1.25	1.6	1.0	1.15	1.25	1.6
UH26	2 x 6	1 5/8	5 3/8	2 1/4	14-gauge	6	16d	6	16d	1,465	1,540		1,170	1,205			1,015
UH26-2		3 1/8	4 5/8														
UH26-3		4 5/8	3 7/8														
UH36	3 x 6	2 9/16	4 7/8														
UH46	4 x 6	3 9/16	4 3/8														
UH28	2 x 8	1 5/8	7 1/8	2 1/4	14-gauge	12	16d	6	16d	1,900	1,960	1,985	1,380	1,495	1,525	1,550	1,195
UH28-2		3 1/8	6 3/8														
UH28-3		4 5/8	5 5/8														
UH38	3 x 8	2 9/16	6 5/8														
UH48	4 x 8	3 9/16	6 1/8														
UH210	2 x 10	1 5/8	9 1/8	2 1/4	14-gauge	18	16d	8	16d	2,265	2,375	2,425	1,565	1,780	1,850	1,890	1,365
UH210-2		3 1/8	8 3/8														
UH210-3		4 5/8	7 5/8														
UH310	3 x 10	2 9/16	8 5/8														
UH410	4 x 10	3 9/16	8 1/8														
UH212	2 x 12	1 5/8	10 3/16	2 1/4	14-gauge	22	16d	10	16d	3,060	3,210	3,310	1,975	2,355	2,490	2,575	1,720
UH212-2		3 1/8	9 7/16														
UH212-3		4 5/8	8 11/16														
UH312	3 x 12	2 9/16	9 11/16														
UH412	4 x 12	3 9/16	9 3/16														

SI: 1 in = 25.4 mm, 1-lbf = 4.45 N

1. See table notes in **Section 6.3**.

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Table 11. UH-IF Series Hangers – Allowable Gravity and Uplift Loads (lbf)[1]

Part Number UH-IF (1, 2, and 3-ply Joists)	Joist Size (in)	Hanger Dimensions (in)			Steel Thickness	Fasteners				SP/DF-L (G=0.50)				HF/SPF (G=0.42)			
						Header		Joist		Floor	Roof	Roof	Uplift	Floor	Roof	Roof	Uplift
		Width	Height	Depth		Qty	Size	Qty	Size	1.0	1.15	1.25	1.6	1.0	1.15	1.25	1.6
UH-IF26-2	2 x 6	3 1/8	4 5/8	2 1/4	14-gauge	12	16d	6	10d	1,835	2,070	2,225	1,170	1,580	1,780	1,920	1,015
UH-IF26-3		4 5/8	3 7/8														
UH-IF36	3 x 6	2 9/16	4 7/8														
UH-IF46	4 x 6	3 9/16	4 3/8														
UH-IF28-2	2 x 8	3 1/8	6 3/8	2 1/4		14	16d	6	10d	2,140	2,415	2,595	1,170	1,845	2,075	2,240	1,015
UH-IF28-3		4 5/8	5 5/8														
UH-IF38	3 x 8	2 9/16	6 5/8														
UH-IF48	4 x 8	3 9/16	6 1/8														
UH-IF210-2	2 x 10	3 1/8	8 3/8	2 1/4		18	16d	10	10d	2,755	3,105	3,340	1,950	2,370	2,670	2,875	1,690
UH-IF210-3		4 5/8	7 5/8														
UH-IF310	3 x 10	2 9/16	8 5/8														
UH-IF410	4 x 10	3 9/16	8 1/8														
UH-IF212-2	2 x 12	3 1/8	9 7/16	2 1/4		22	16d	10	10d	3,365	3,795	4,080	1,950	2,895	3,265	3,515	1,690
UH-IF212-3		4 5/8	8 11/16														
UH-IF312	3 x 12	2 9/16	9 11/16														
UH-IF412	4 x 12	3 9/16	9 3/16														

SI: 1 in = 25.4 mm, 1-lbf = 4.45 N

1. See table notes in **Section 6.3**.

Table 12. UMH Series Hangers – Allowable Gravity and Uplift Loads (lbf)[1]

Part Number UMH	Joist Size (in)	Hanger Dimensions (in)			Steel Thickness	Fasteners				SP (G=0.55)				DF-L (G=0.50)				HF/SPF (G=0.42)			
						Header		Joist		Floor	Roof	Roof	Uplift	Floor	Roof	Roof	Uplift	Floor	Roof	Roof	Uplift
		Width	Height	Depth		Qty	Size	Qty	Size	1.0	1.15	1.25	1.6	1.0	1.15	1.25	1.6	1.0	1.15	1.25	1.6
UMH26	2 x 6	1 5/8	5 3/8	3	16-gauge	14	16d	8	16d	3,050	3,505	3,610	1,440	2,820	3,245	3,525	1,395	2,440	2,805	3,050	1,215
UMH28	2 x 8	1 5/8	7	3		22	16d	10	16d	4,895	5,125	5,175	2,075	4,780	4,995	5,135	1,950	3,315	3,770	3,895	1,690
UMH210	2 x 10	1 5/8	9	3		30	16d	12	16d	6,740			2,710	6,740			2,505	4,190	4,735		2,160

SI: 1 in = 25.4 mm, 1-lbf = 4.45 N

1. See table notes in **Section 6.3**.

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Table 13. UHH Series Hangers – Allowable Gravity and Uplift Loads (lbf)[1]

Part Number UHH (1, 2, 3, and 4-ply Joists)	Joist Size (in)	Hanger Dimensions (in)			Steel Thickness	Fasteners				SP (G=0.55)				DF-L (G=0.50)				HF/SPF (G=0.42)			
						Header		Joist		Floor	Roof	Roof	Uplift	Floor	Roof	Roof	Uplift	Floor	Roof	Roof	Uplift
		Width	Height	Depth		Qty	Size	Qty	Size	1.0	1.15	1.25	1.6	1.0	1.15	1.25	1.6	1.0	1.15	1.25	1.6
UHH26-2	2 x 6	3 5/16	5 3/8	3	14-gauge	14	16d	6	16d	2,905	3,340	3,630	1,745	2,685	3,090	3,360	1,615	2,325	2,675	2,905	1,395
UHH28-2	2 x 8	3 5/16	7 1/4	3		22	16d	8	16d	4,950	5,170	5,315	2,535	4,840	5,045	5,180	2,345	3,185	3,360	3,475	2,025
UHH210-2	2 x 10	3 5/16	9 3/16	3		30	16d	10	16d	6,995			3,320	6,995			3,070	4,040			2,655
UHH210-3		4 15/16	8 7/8			30	16d	10	16d	5,910	6,800	6,985	3,460	5,470	6,290	6,475	3,215	4,825	5,420		2,800
UHH210-4		6 1/8	8 7/8			30	16d	10	16d												
UHH46	4 x 6	3 5/8	5 1/8	3		14	16d	6	16d	2,905	3,340	3,630	1,745	2,685	3,090	3,360	1,615	2,325	2,675	2,905	1,395
UHH48	4 x 8	3 5/8	7 1/8	3		22	16d	8	16d	4,950	5,170	5,315	2,535	4,840	5,045	5,180	2,345	3,185	3,360	3,475	2,025
UHH410	4 x 10	3 5/8	9	3		30	16d	10	16d	6,995			3,320	6,995			3,070	4,040			2,655
UHH610	6 x 10	5 1/2	9	3		30	16d	10	16d	5,910	6,800	6,975	3,460	5,470	6,290	6,630	3,215	4,825	5,535		2,850
UHH7210	2 x 10	7 1/4	9	3 5/16		30	16d	10	16d												

SI: 1 in = 25.4 mm, 1-lbf = 4.45 N

1. See table notes in **Section 6.3**.

Table 14. UHD Series Hangers – Allowable Gravity and Uplift Loads (lbf)[1]

Part Number UHD Series	Hanger Dimensions (in)			Steel Thickness	Fasteners				SP[1,2]				DF-L[1,2]				HF/SPF[1,2]			
					Header		Joist		Floor	Roof	Roof	Uplift	Floor	Roof	Roof	Uplift	Floor	Roof	Roof	Uplift
	Width	Height	Depth		Qty	Size	Qty	Size	1.0	1.15	1.25	1.6	1.0	1.15	1.25	1.6	1.0	1.15	1.25	1.6
UHD26-4	6 9/16	5 7/16	4	12-gauge	20	16d	8	16d	5,010	5,765	6,265	2,595	4,460	5,130	5,575	2,475	4,060	4,670	5,075	2,170
UHD46	3 5/8	4 7/16																		
UHD26-2	3 5/16	5 7/16																		
UHD26-3	4 15/16	5 1/2																		
UHD26	1 5/8	5 3/8	5																	
UHD28	1 5/8	7 1/8	5	12-gauge	36	16d	12	16d	9,375	9,665	9,855	3,550	8,180	8,440	8,610	3,330	6,850	7,505	7,660	2,905
UHD28-2	3 5/16	7 3/16	4																	
UHD28-3	4 15/16	7 1/4																		
UHD28-4	6 9/16	7 3/16																		
UHD48	3 5/8	7 1/16																		
UHD558	5 1/2	6 15/16																		

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Table 14. UHD Series Hangers – Allowable Gravity and Uplift Loads (lbf)[1]

Part Number UHD Series	Hanger Dimensions (in)			Steel Thickness	Fasteners				SP[1,2]				DF-L[1,2]				HF/SPF[1,2]			
					Header		Joist		Floor	Roof	Roof	Uplift	Floor	Roof	Roof	Uplift	Floor	Roof	Roof	Uplift
	Width	Height	Depth		Qty	Size	Qty	Size	1.0	1.15	1.25	1.6	1.0	1.15	1.25	1.6	1.0	1.15	1.25	1.6
UHD210	1 5/8	9 1/8	5	12-gauge	46	16d	16	16d	12,100			4,500	10,505			4,180	8,590	9,275		3,640
UHD210-2	3 5/16	9 3/16	4																	
UHD210-3	4 15/16	9 1/4																		
UHD210-4	6 9/16	9 3/16																		
UHD3210	3 1/4	8 5/8																		
UHD410	3 5/8	9 1/16																		
UHD7310	7 3/8	8 9/16																		
UHD5510	5 1/2	8 15/16																		
UHD5210	5 1/4	9 1/16																		
UHD6810	6 7/8	8 13/16																		
UHD7210	7 1/4	8 5/8																		
UHD212-3	4 15/16	10 3/4	4	12-gauge	56	16d	20	16d	13,000			5,090	11,570			4,655	9,730	10,070		3,955
UHD212-4	6 9/16	10 5/8																		
UHD7312	7 3/8	10 9/16																		
UHD5512	5 1/2	10 1/2																		
UHD5212	5 1/4	10 9/16																		
UHD6812	6 7/8	10 13/16																		
UHD7212	7 1/4	10 5/8																		
UHD3212	3 1/4	10 5/8																		
UHD414-2	7 3/8	12 9/16	4	12-gauge	66	16d	22	16d	13,895			5,385	12,635			4,895	10,865			4,110
UHD214-3	4 15/16	12 3/4																		
UHD214-4	6 9/16	12 5/8																		
UHD414	3 5/8	12 7/16																		
UHD7314	7 3/8	12 9/16																		
UHD5514	5 1/2	12 1/2																		
UHD6814	6 7/8	12 13/16																		
UHD7214	7 1/4	12 5/8																		

SI: 1 in = 25.4 mm, 1-lbf = 4.45 N

1. See table notes in **Section 6.3**.

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Table 15. UDTTR-L Series Hangers – Allowable Gravity, Uplift, Tension, and Combined Loads (lbf)[1,3,4]

Part Number	Joist	Hanger Dimensions (in)			Steel Thickness	Header Fasteners	Joist Fasteners	Tension Arm Fasteners	Allowable Loads (lbf)									
									SP/DF-L (G = 0.50)					HF/SPF (G = 0.42)				
									Gravity	Uplift	Tension	Combined[2]		Gravity	Uplift	Tension	Combined[2]	
		Width	Height	Depth								Gravity + Tension	Uplift + Tension				Gravity + Tension	Uplift + Tension
									1.25	1.6	1.6	1.25	1.60	1.25	1.6	1.6	1.25	1.60
UDTT 26R-L	2x6	1 5/8	5	1 3/4	16-gauge	(1) SWH45 (3) 0.162" x 3.5"	(5) 0.148" x 1.5"	(3) 0.148" x 1.5"	1,030	1,185	990	915	1,015	955	1,090	855	865	950
UDTT 28R-L	2x8	1 5/8	7	1 3/4		(1) SWH45 (5) 0.162" x 3.5"	(7) 0.148" x 1.5"	(3) 0.148" x 1.5"	1,395	1,655	1,095	1,170	1,370	1,270	1,490	1,070	1,080	1,245
UDTT 210R-L	2x10	1 5/8	9	1 3/4		(1) SWH45 (7) 0.162" x 3.5"	(9) 0.148" x 1.5"	(3) 0.148" x 1.5"	1,765	2,120	1,095	1,460	1,765	1,585	1,895	1,095	1,320	1,570
UDTT 212R-L	2x12	1 5/8	10 1/2	1 3/4		(1) SWH45 (9) 0.162" x 3.5"	(11) 0.148" x 1.5"	(3) 0.148" x 1.5"	2,130	2,590	1,095	1,770	2,180	1,905	2,300	1,095	1,575	1,920

SI: 1 in = 25.4 mm, 1-lbf = 4.45 N

1. See table notes in **Section 6.3**.
2. Tabulated combined-load values are the allowable values for gravity/uplift based on an applied tension load of 750 lb.
3. Load duration factors applicable to wood connection design are C_D = 1.25 for the tabulated gravity-load condition and C_D = 1.6 for the tabulated uplift-load and tension-load condition. For combined loading, the applicable load duration factor, C_D, corresponds to the shortest-duration load in the applicable load direction.
4. Tabulated loads shall not be further increased.

Table 16. THJH26 and THJH26-W Series Hangers – Allowable Gravity and Uplift Loads (lbf)[1,2,3]

Part Number THJH (1 & 2-ply Joists)	Joist Size (in)	Hanger Dimensions (in)			Steel Thickness	Fasteners				SP/DF-L (G=0.50)				HF/SPF (G=0.42)			
						Header		Joist		Floor	Roof	Roof	Uplift	Floor	Roof	Roof	Uplift
		Width	Height	Depth		Qty	Size	Qty	Size	1.0	1.15	1.25	1.6	1.0	1.15	1.25	1.6
THJH26	2 x 6	5 1/8	5 3/8	3 1/2	12-gauge	16	10d Common	14	10d x 1 1/2	2,255	2,435		1,425	1,960	2,120		1,235
THJH26-W	(2) 2 x 6	8 1/8	5 3/8	3 1/2					10d Common		2,590	2,710	1,675	1,950			1,455

SI: 1 in = 25.4 mm, 1-lbf = 4.45 N

1. See table notes in **Section 6.3**.
2. Allowable loads are the combined allowable loads of the hip and jack members: sixty-five percent (65%) of the load shall be distributed by the hip member and thirty-five percent (35%) of the load shall be distributed to the jack.
3. Allowable loads applicable for hip skews up to 45°.

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Table 17. TSH Series Hangers (Top Mounted) – Allowable Gravity and Uplift Loads (lbf)[1,2]

Part Number TSH (1, 2, and 3-ply Joists)	Hanger Dimensions (in)			Steel Thickness	Fasteners					SP (G=0.55)				DF-L (G=0.50)				HF/SPF (G=0.42)			
					Header			Joist		Floor	Roof	Roof	Uplift	Floor	Roof	Roof	Uplift	Floor	Roof	Roof	Uplift
					Qty																
	Width	Height	Depth		Face	Top	Size	Qty	Size	1.0	1.15	1.25	1.6	1.0	1.15	1.25	1.6	1.0	1.15	1.25	1.6
TSH29	1 5/8	9 11/16	1 3/4	18-gauge	6	4	10d	4	10d	2,345	2,695	2,875	1,155	2,025	2,325	2,530	1,070	1,505	1,735	1,885	925
TSH213	1 5/8	13 5/16	1 3/4		6	4	10d	4	10d	2,435	2,800	2,985	1,000	2,110	2,420	2,635	930	1,580	1,820	1,975	805
TSH218	1 5/8	17 3/16	1 3/4		6	4	10d	6	10d	2,520	2,900	3,090	840	2,190	2,515	2,735	785	1,650	1,900	2,065	680
TSH218-2	3-1/8	17 11/16	1 3/4	16-gauge	6	4	16d	6	16d	4,625	4,745		2,835	3,990	4,585	4,665	2,690	2,965	3,410	3,705	2,325
TSH222-2	3-1/8	22 3/16	1 3/4		6	4	16d	6	16d												
TSH413	3 5/8	13 5/16	1 3/4	18-gauge	6	4	16d	4	16d	3,115			1,140	2,875			1,060	1,315	1,510	1,640	920
TSH418 / TSH-IF418	3 5/8	17 1/2	1 3/4	16-gauge	6	4	10d	6	10d	3,800			1,785	3,525			1,650	2,345	2,555	2,620	1,430
					6	4	16d	6	16d	4,490			2,445	3,970			2,260	3,000	3,595		1,950
TSH422 / TSH-IF422	3 5/8	22	1 3/4		6	4	16d	6	16d										3,595		1,950
TSH422-2 / TSH-IF 422-2	7 1/4	22 11/16	2 1/2	14-gauge	8	4	16d	6	16d	4,055			2,390	3,830			2,210	3,315			1,910
TSH426 / TSH-IF426	3 5/8	26	1 3/4		8	4	16d	6	16d	4,645			2,420	4,350			2,245	3,375	3,765		1,955
TSH426-2 / TSH-IF 426-2	7 1/4	26 1/16	2 1/2		8	4	16d	6	16d	4,055			2,390	3,830			2,210	3,315			1,910

SI: 1 in = 25.4 mm, 1-lbf = 4.45 N

1. See table notes in **Section 6.3**.
2. Straps shall be field-formed over the header 2" minimum (2 7/16" minimum for the TSH29). Minimum fastener edge distance shall be 1/4".

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Table 18. TSH Series Hangers (Face Mounted) – Allowable Gravity and Uplift Loads (lbf)[1]

Part Number TSH (1, 2, and 3-ply Joists)	Hanger Dimensions (in)			Steel Thickness	Fasteners				SP (G=0.55)				DF-L (G=0.50)				HF/SPF (G=0.42)			
					Header		Joist		Floor	Roof	Roof	Uplift	Floor	Roof	Roof	Uplift	Floor	Roof	Roof	Uplift
	Width	Height	Depth		Qty	Size	Qty	Size	1.0	1.15	1.25	1.6	1.0	1.15	1.25	1.6	1.0	1.15	1.25	1.6
TSH29	1 5/8	9 11/16	1 3/4	18-gauge	16	10d	4	10d	2,115			1,155	1,910			1,070	1,455			925
TSH213	1 5/8	13 5/16	1 3/4		14	10d	4	10d				1,005	1,930			930	1,480	1,570		805
TSH218	1 5/8	17 3/16	1 3/4		18	10d	4	10d				850	1,950			790	1,505	1,680		685
TSH218-2	3-1/8	17 11/16	1 3/4	16-gauge	22	16d	6	16d	4,100	4,715	5,120	2,835	3,790	4,355	4,735	2,710	2,965	3,410	3,705	2,335
TSH222-2	3-1/8	22 3/16	1 3/4		22	16d	6	16d												
TSH413	3 5/8	13 5/16	1 3/4	18-gauge	14	16d	4	16d	2,160	2,485	2,700	1,145	1,995	2,295	2,495	1,065	1,720	1,980	2,150	925
TSH418 / TSH-IF 418	3 5/8	17 1/2	1 3/4	16-gauge	22	10d	6	10d	4,100	4,715	5,120	2,440	3,275	3,770	4,095	1,950	3,030	3,480	3,785	1,800	2,620	3,010	3,275	1,555
					22	16d	6	16d												
TSH422 / TSH-IF 422	3 5/8	22	1 3/4		22	16d	6	16d					3,790	4,355	4,735	2,255	3,330	3,765	4,095	1,945
TSH422-2 /TSH-IF 422-2	7 1/4	22 11/16	2 1/2	14-gauge	30	16d	6	16d	5,190			2,400	4,800			2,220	4,150			1,920
TSH426 / TSH-IF 426	3 5/8	26	1 3/4		30	16d	6	16d	4,990			2,435	4,555	4,615		2,260	3,375	3,880	3,990	1,970
TSH426-2 /TSH-IF 426-2	7 1/4	26 1/16	2 1/2		38	16d	6	16d	5,190			2,400	4,800			2,220	4,150			1,920

SI: 1 in = 25.4 mm, 1-lbf = 4.45 N

1. See table notes in **Section 6.3**.

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Table 19. TSH and TSH-IF Series Nailers – Allowable Gravity Loads (lbf)[1]

Part No. TSH (1, 2, and 3-ply Joists)	Steel Thickness	Nailer[3]	Fasteners						Allowable Gravity Loads[2] (lbf)	
			Top Nailing		Face Nailing[4]		Joist Nailing			
			Qty	Size	Qty	Size	Qty	Size	DF/SP	SPF/HF
TSH218-2 / TSH222-2	16-gauge	2x	4	0.148" x 1 1/2"	2	0.148" x 1 1/2"	6	0.148" x 1 1/2"	1,595	1,375
			4	0.148" x 1 1/2"	2	0.162" x 3 1/2"	6	0.148" x 3"	1,690	1,460
		(2) 2x	4	0.148" x 3"	2	0.148" x 3"	6	0.148" x 3"	1,830	1,580
		4x	4	0.162" x 3 1/2"	2	0.162" x 3 1/2"	6	0.148" x 3"	2,605	2,250
TSH418 / TSH-IF418 or TSH422 / TSH-IF422	16-gauge	2x	4	0.148" x 1 1/2"	2	0.148" x 1 1/2"	6	0.148" x 1 1/2"	1,595	1,375
			4	0.148" x 1 1/2"	2	0.162" x 3 1/2"	6	0.162" x 3 1/2"	1,690	1,460
		(2) 2x	4	0.148" x 3"	2	0.148" x 3"	6	0.148" x 3"	1,830	1,580
		4x	4	0.162" x 3 1/2"	2	0.162" x 3 1/2"	6	0.162" x 3 1/2"	2,605	2,250
TSH426 / TSH-IF426	14-gauge	2x	4	0.148" x 1 1/2"	2	0.148" x 1 1/2"	6	0.148" x 1 1/2"	1,845	1,590
			4	0.148" x 1 1/2"	2	0.162" x 3 1/2"	6	0.162" x 3 1/2"	1,955	1,685
		(2) 2x	4	0.148" x 3"	2	0.148" x 3"	6	0.148" x 3"	2,155	1,855
		4x	4	0.162" x 3 1/2"	4	0.162" x 3 1/2"	6	0.162" x 3 1/2"	2,900	2,505
TSH422-2 / TSH-IF 422-2 or TSH426-2 / TSH-IF 426-2	14-gauge	2x	4	0.148" x 1 1/2"	2	0.148" x 1 1/2"	6	0.148" x 1 1/2"	1,845	1,590
			8	0.148" x 1 1/2"	2	0.162" x 3 1/2"	6	0.162" x 3 1/2"	2,960	2,555
		(2) 2x	4	0.148" x 3"	4	0.148" x 3"	6	0.148" x 3"	2,285	1,970
		4x	4	0.162" x 3 1/2"	4	0.162" x 3 1/2"	6	0.162" x 3 1/2"	3,395	2,930

SI: 1 in. = 25.4 mm, 1 lbf = 4.45 N

1. See notes in **Section 6.3**. Refer to **Table 17** and **Table 18** for hanger dimensions.
2. Load Duration Factor - 1.25. Further increases to allowable loads not permitted.
3. Attachment of nailer to supporting member shall be designed by an RDP.
4. Straps shall be field-formed over the header 2" minimum. Fastener edge distance shall be 1/4" minimum.

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Table 20. TFLP and TFH Series Hangers – Allowable Gravity and Uplift Loads (lbf)[1]

Part Number TFLP	Joist Size (in)	Hanger Dimensions (in)				Steel Thickness	Fasteners				SP/DF-L (G=0.50)				HF/SPF (G=0.42)			
							Header		Joist		Floor	Roof	Roof	Uplift	Floor	Roof	Roof	Uplift
		Width	Height	Depth	TF[2]		Qty	Size	Qty	Size	1.0	1.15	1.25	1.6	1.0	1.15	1.25	1.6
TFLP26	2 x 6	1 9/16	5 3/8	1 1/2	1 5/16	18-gauge	6	16d	2	10d x 1 1/2	1,245			230	945			165
TFLP28	2 x 8		7 1/4	1 1/2	1 5/16													225
TFH210	2 x 10		9 3/16	2	1 7/16	14-gauge	8		4		1,535			380	1,165			285
TFH212	2 x 12		11 1/8															
TFH214	2 x 14		13 1/8															

SI: 1 in = 25.4 mm, 1-lbf = 4.45 N

1. See table notes in **Section 6.3**.
2. TF = Top Flange

6.4 Alternative techniques shall be permitted in accordance with accepted engineering practice and experience. These provisions for the use of alternative materials, designs, and methods of construction are not intended to prevent the installation of any material or to prohibit any design or method of construction not specifically prescribed herein. This includes, but is not limited to, the following areas of engineering: mechanics of materials, structures, building science, and fire science.

7 Certified Performance[28]

7.1 All construction methods shall conform to accepted engineering practices to ensure durable, livable, and safe construction and shall demonstrate acceptable workmanship reflecting journeyman quality of work of the various trades.[29]

7.2 The strength and rigidity of the component parts and/or the integrated structure shall be determined by engineering analysis or by suitable load tests to simulate the actual loads and conditions of application that occur.[30]

8 Regulatory Evaluation and Accepted Engineering Practice

8.1 QuickTie Hanger Series complies with the following legislatively adopted regulations and/or accepted engineering practice for the following reasons:

8.1.1 The QuickTie Hanger Series Face Mount and Top Flange Mount Joist Hangers were evaluated for the following:

8.1.1.1 Structural performance of connectors under uplift and gravity load conditions.

8.1.1.2 Performance for use in buildings of light-frame construction in accordance with the codes listed in **Section 4**.

8.2 Any building code, regulation and/or accepted engineering evaluations (e.g., research reports, duly authenticated reports, etc.) that are conducted for this Listing were performed by DrJ, which is an ISO/IEC 17065 accredited certification body and a professional engineering company operated by RDP or approved sources. DrJ is qualified[31] to practice product and regulatory compliance services within its scope of accreditation and engineering expertise,[32] respectively.

8.3 Engineering evaluations are conducted with DrJ's ANAB accredited ICS code scope of expertise, which is also its areas of professional engineering competence.

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9 Installation

9.1 Installation shall comply with the approved construction documents, the manufacturer installation instructions, this report, and the applicable building code.

9.2 In the event of a conflict between the manufacturer installation instructions and this report, contact the manufacturer for counsel on the proper installation method.

9.3 *Installation Procedure*

9.3.1 Hangers shall be attached to wood members with the appropriate quantity and size of fasteners, as shown in **Table 2** through **Table 20**.

9.3.2 A copy of the manufacturer published installation instructions shall be available at all times on the jobsite during installation.

9.3.3 Installation examples are shown in **Figure 7** through **Figure 15**.

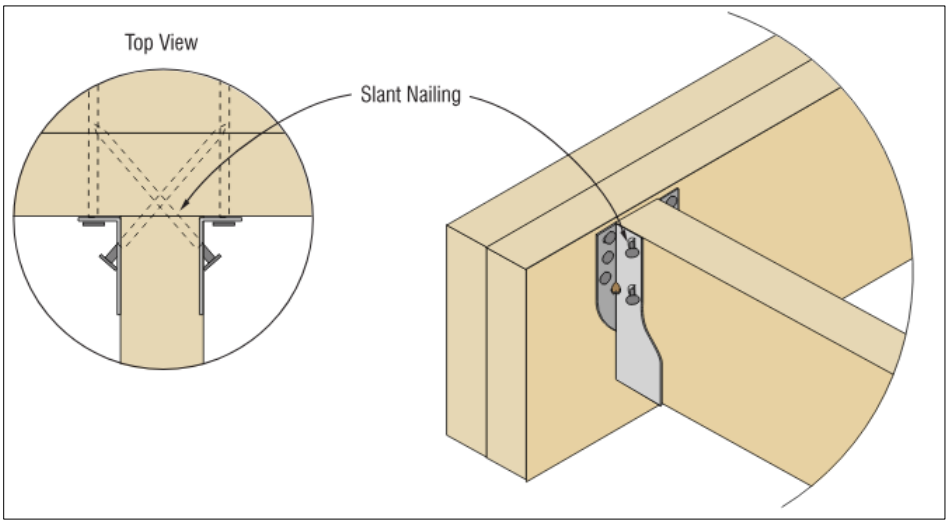


Figure 7. Installation View of U-Hangers (Double Shear)

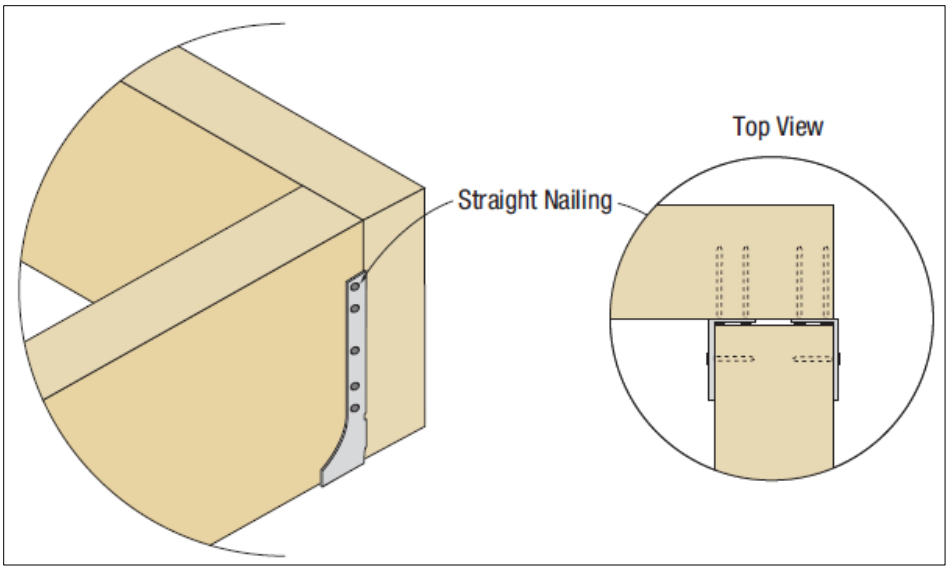


Figure 8. Installation Views of Inverted Flange (IF) U-Hangers (Single Shear)

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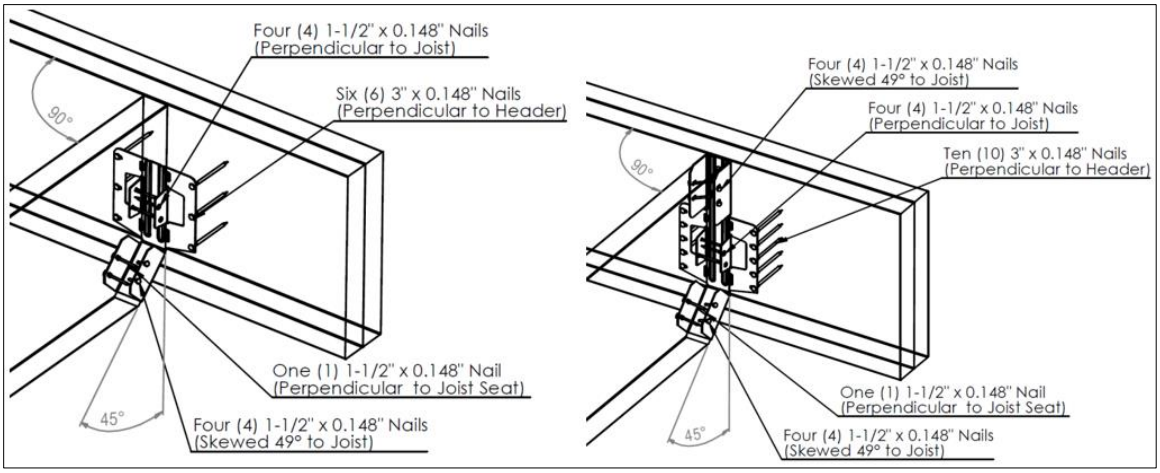


Figure 9. Installation Views of ULPSSH26 (Left) and ULPSSH210 (Right) – Sloped Only

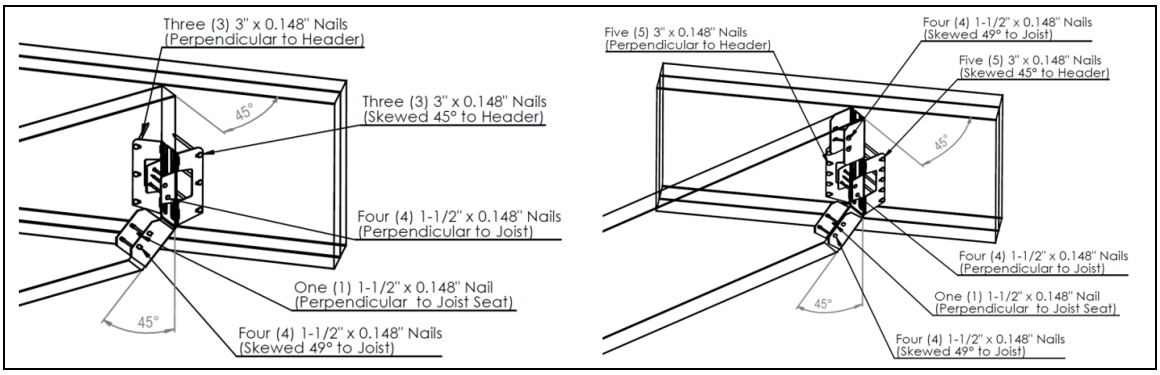


Figure 10. Installation Views of ULPSSH26 (Top) and ULPSSH210 (Bottom) – Sloped and Skewed

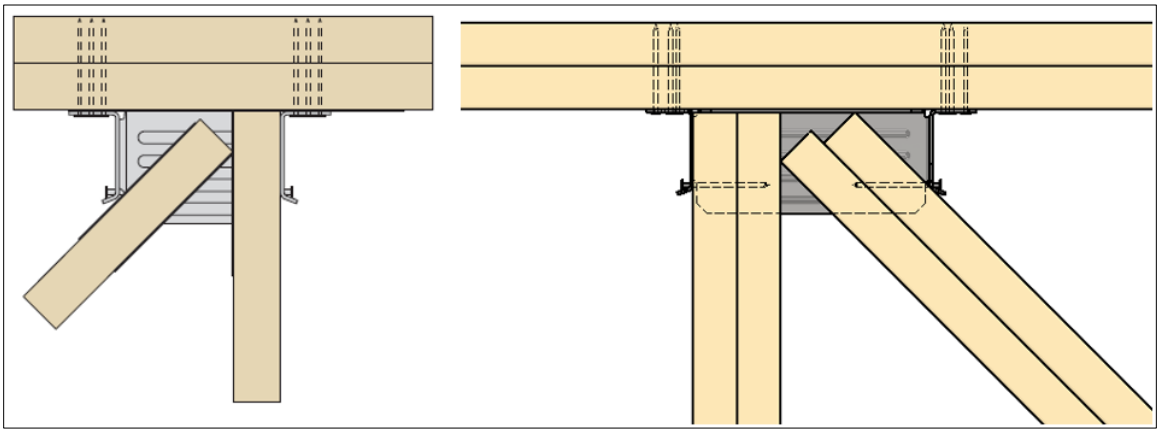


Figure 11. Installation Views of THJH26 and THJH26-W Hangers

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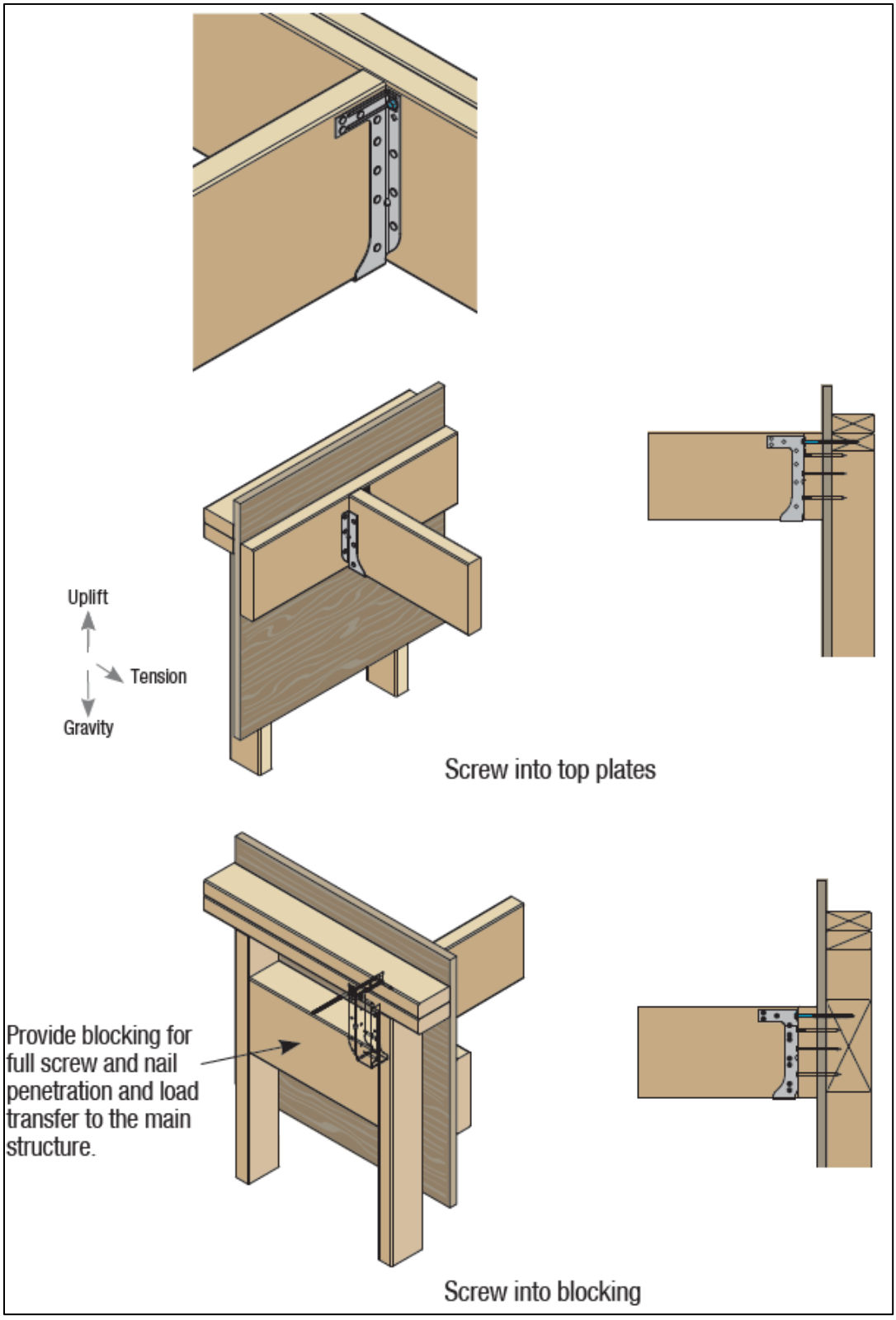


Figure 12. Installation Views of Deck Tension Tie (UDTTR-L)

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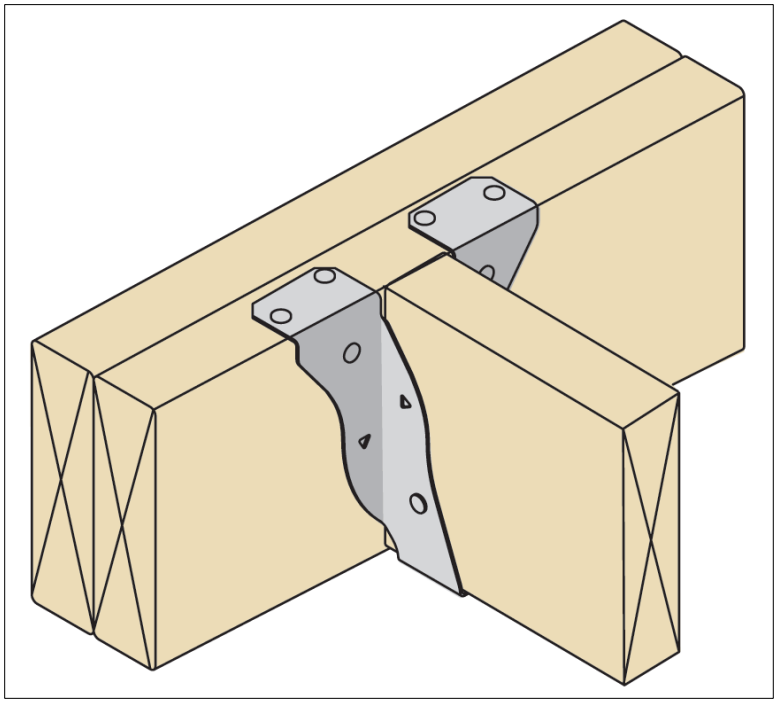


Figure 13. Installation View of Top Flange Hangers (TFLP and TFH)

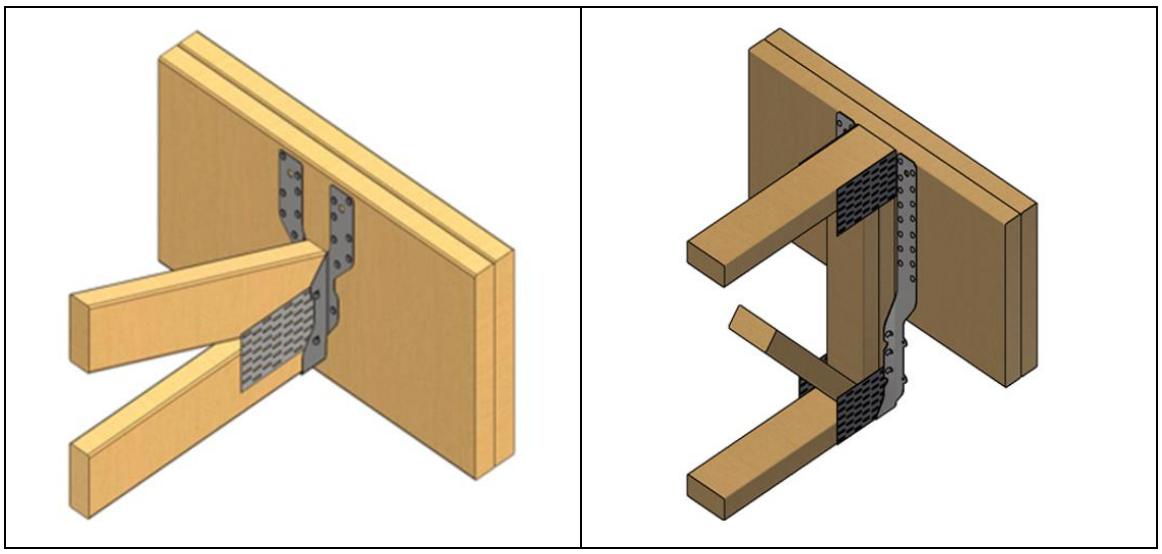


Figure 14. Installation View of Face Mounted Flange Hangers (TSH)

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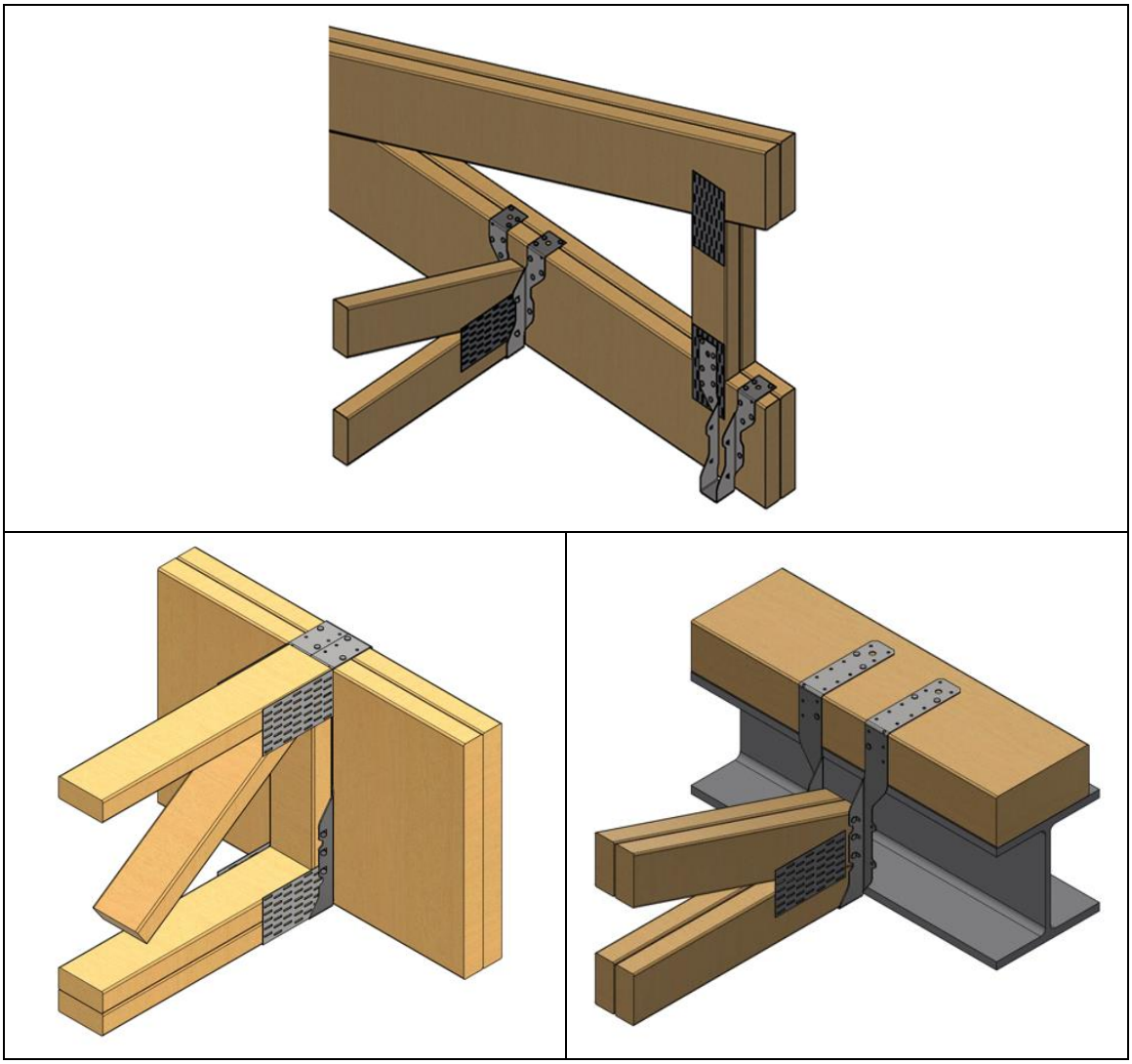


Figure 15. Installation View of Top Mounted Flange Hangers (TSH)

10 Substantiating Data

10.1 Testing has been performed under the supervision of a professional engineer and/or under the requirements of ISO/IEC 17025 as follows:

10.1.1 Bending yield testing in accordance with ASTM F1575

10.1.2 Tensile strength testing in accordance with ASTM A370

10.1.3 Gravity and uplift load testing in accordance with ASTM D7147

10.2 Information contained herein may include the result of testing and/or data analysis by sources that are approved agencies, approved sources, and/or an RDP. Accuracy of external test data and resulting analysis is relied upon.

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10.3 Where applicable, testing and/or engineering analysis are based upon provisions that have been codified into law through state or local adoption of regulations and standards. The developers of these regulations and standards are responsible for the reliability of published content. DrJ's engineering practice may use a regulation-adopted provision as the control. A regulation-endorsed control versus a simulation of the conditions of application to occur establishes a new material as being equivalent to the regulatory provision in terms of quality, strength, effectiveness, fire resistance, durability, and safety.

10.4 The accuracy of the provisions provided herein may be reliant upon the published properties of raw materials, which are defined by the grade mark, grade stamp, mill certificate, or duly authenticated reports from approved agencies and/or approved sources provided by the supplier. These are presumed to be minimum properties and relied upon to be accurate. The reliability of DrJ's engineering practice, as contained in this duly authenticated report, may be dependent upon published design properties by others.

10.5 *Testing and Engineering Analysis*

10.5.1 The strength, rigidity, and/or general performance of component parts and/or the integrated structure are determined by suitable tests that simulate the actual conditions of application that occur and/or by accepted engineering practice and experience.[33]

10.6 Where additional condition of use and/or regulatory compliance information is required, please search for QuickTie Hanger Series on the DrJ Certification website.

11 Findings

11.1 As outlined in **Section 6**, the QuickTie Hanger Series has performance characteristics that were tested and/or meet applicable regulations. In addition, they are suitable for use pursuant to its specified purpose.

11.2 When used and installed in accordance with this duly authenticated report and the manufacturer installation instructions, QuickTie Hanger Series shall be approved for the following applications:

11.2.1 Use as described in this report in conformance to the codes listed in **Section 4**.

11.2.2 Where the design values listed in **Table 2** through **Table 20** meet the requirements of the building design.

11.3 Unless exempt by state statute, when the QuickTie Hanger Series is to be used as a structural and/or building envelope component in the design of a specific building, the design shall be performed by an RDP.

11.4 Any application specific issues not addressed herein can be engineered by an RDP. Assistance with engineering is available from QuickTie Products, Inc.

11.5 IBC Section 104.2.3[34] (IRC Section R104.2.2[35] and IFC Section 104.2.3[36] are similar) in pertinent part state:

> **104.2.3 Alternative Materials, Design and Methods of Construction and Equipment.** The provisions of this code are not intended to prevent the installation of any material or to prohibit any design or method of construction not specifically prescribed by this code, provided that any such alternative is not specifically prohibited by this code and has been approved.

11.6 **Approved:**[37] Building regulations require that the building official shall accept duly authenticated reports.[38]

11.6.1 An approved agency is *"approved"* when it is ANAB ISO/IEC 17065 accredited.

11.6.2 An approved source is *"approved"* when an RDP is properly licensed to transact engineering commerce.

11.6.3 Federal law, Title 18 US Code Section 242, requires that, where the alternative product, material, service, design, assembly, and/or method of construction is not approved, the building official shall respond in writing, stating the reasons why the alternative was not approved. Denial without written reason deprives a protected right to free and fair competition in the marketplace.

11.7 DrJ is a licensed engineering company, employs licensed RDPs and is an ANAB Accredited Product Certification Body – Accreditation #1131.

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11.8 Through the IAF Multilateral Arrangement (MLA), this duly authenticated report can be used to obtain product approval in any jurisdiction or country because all ANAB ISO/IEC 17065 duly authenticated reports are equivalent.[39]

12 Conditions of Use

12.1 As defined in **Section 6**, where material and/or engineering mechanics properties are created for load resisting design purposes, the resistance to the applied load shall not exceed the ability of the defined properties to resist those loads using the principles of accepted engineering practice.

12.2 Calculations showing compliance with this report must be submitted to the code official. The calculations must be prepared by an RDP.

12.3 When required by adopted legislation and enforced by the building official, also known as the Authority Having Jurisdiction (AHJ) in which the project is to be constructed:

12.3.1 Any calculations incorporated into the construction documents shall conform to accepted engineering practice and, when prepared by an approved source, shall be approved when signed and sealed.

12.3.2 This report and the installation instructions shall be submitted at the time of permit application.

12.3.3 At a minimum, these innovative products shall be installed per **Section 9**.

12.3.4 The review of this report by the AHJ shall comply with IBC Section 104.2.3.2 and IBC Section 105.3.1.

12.3.5 These innovative products have an internal quality control program and a third party quality assurance program in accordance with IBC Section 104.7.2, IBC Section 110.4, IBC Section 1703, IRC Section R104.7.2, and IRC Section R109.2.

12.3.6 The application of these innovative products in the context of this report is dependent upon the accuracy of the construction documents, implementation of installation instructions, inspection as required by IBC Section 110.3, IRC Section R109.2, and any other regulatory requirements that may apply.

12.4 The approval of this report by the AHJ shall comply with IBC Section 1707.1, where legislation states in part, *"the building official shall make, or cause to be made, the necessary tests and investigations; or the building official shall accept duly authenticated reports from approved agencies in respect to the quality and manner of use of new materials or assemblies as provided for in Section 104.2.3,"* all of IBC Section 104, and IBC Section 105.3.

12.5 Design loads shall be determined in accordance with the regulations adopted by the jurisdiction in which the project is to be constructed and/or by the building designer (i.e., owner or RDP).

12.6 The actual design, suitability, and use of this report for any particular building, is the responsibility of the owner or the authorized agent of the owner.

13 Identification

13.1 The QuickTie Hanger Series, as listed in **Section 1.1**, are identified by a label on the board or packaging material bearing the manufacturer name, product name, this report number, and other information to confirm code compliance.

13.2 Additional technical information can be found at quicktieproducts.com.

14 Review Schedule

14.1 This report is subject to periodic review and revision. For the latest version, visit drjcertification.org.

14.2 For information on the status of this report, please contact DrJ Certification.

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Issue Date: July 1, 2021
Supplement Revision Date: June 15, 2026
Subject to Renewal: July 1, 2027

FBC Supplement to Report Number 1811-03

REPORT HOLDER: QuickTie™ Products, Inc.

1 Evaluation Subject

1.1 QuickTie Hanger Series:

1.1.1 UL Series – 20-gauge
1.1.2 ULU Series – 20-gauge
1.1.3 ULP and ULP-IF (Inverted Flange) Series – 18-gauge
1.1.4 ULPSSH Series (Slopeable and Skewable) – 18-gauge
1.1.5 UM Series – 16-gauge
1.1.6 UMH Series – 16-gauge
1.1.7 UMSR-L – 16-gauge
1.1.8 UHSR-L - 14-gauge
1.1.9 UH and UH-IF (Inverted Flange) Series – 14-gauge
1.1.10 UHH Series – 14-gauge
1.1.11 UHD Series – 12-gauge
1.1.12 UDTT Series – 16-gauge
1.1.13 THJH Series – 12-gauge
1.1.14 TSH and TSH-IF (Inverted Flange) Series – 18-gauge, 16-gauge, and 14-gauge
1.1.15 TFLP (Top Flange) Series – 18-gauge
1.1.16 TFH (Top Flange) Series – 14-gauge

2 Purpose and Scope

2.1 Purpose

2.1.1 The purpose of this Report Supplement is to show the QuickTie Hanger Series, recognized in Report Number 1811-03, has also been evaluated for compliance with the codes listed below as adopted by the Florida Building Commission.

2.2 *Applicable Code Editions*

2.2.1 *FBC-B – 20, 23: Florida Building Code – Building (FL3557)*
2.2.2 *FBC-R – 20, 23: Florida Building Code – Residential (FL3557)*

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3 Conclusions

3.1 The QuickTie Hanger Series, described in Report Number 1811-03, complies with the FBC-B and FBC-R and is subject to the conditions of use described in this supplement.

3.2 Where there are variations between the IBC and IRC and the FBC-B and FBC-R applicable to this report, they are listed here:

3.2.1 FBC-B Section 104 is reserved.

3.2.2 FBC-B Section 110.4 is reserved and replaces IBC Section 110.4.

3.2.3 FBC-B Section 104.6 is reserved and replaces IBC Section 104.4.

3.2.4 FBC-B Section 104.11 replaces IBC Section 104.2.3 and Section 104.2.3.2.

3.2.5 FBC-B Section 105.3 replaces IBC Section 105.3.

3.2.6 FBC-B Section 105.3.1 replaces IBC Section 105.3.1.

3.2.7 FBC-B Section 110.3 replaces IBC Section 110.3.

3.2.8 FBC-B Section 1707.1 replaces IBC Section 1707.1.

3.2.9 FBC-B Section 2303.5 replaces IBC Section 2303.5.

3.2.10 FBC-B Section 2304.10.3 replaces IBC Section 2304.10.4.

3.2.11 FBC-B Section 2306.1 replaces IBC Section 2306.1.

3.2.12 FBC-B Section 2306.3 replaces IBC Section 2306.3.

3.2.13 FBC-R Section R104 and Section R109 are reserved.

3.2.14 FBC-R Section R301.1.3 replaces IRC Section R301.1.3.

4 Conditions of Use

4.1 The QuickTie Hanger Series, described in Report Number 1811-03, must comply with all of the following conditions:

4.1.1 All applicable sections in Report Number 1811-03.

4.1.2 The design, installation, and inspections are in accordance with additional requirements of FBC-B Chapter 16 and Chapter 17, as applicable.

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Notes

1 For more information, visit drjcertification.org or call us at 608-310-6748.

2 Capitalized terms and responsibilities are defined pursuant to the applicable building code, applicable reference standards, the latest edition of TPI 1, the NDS, AISI S202, US professional engineering law, Canadian building code, Canada professional engineering law, Qualtim External Appendix A: Definitions/Commentary, Qualtim External Appendix B: Project/Deliverables, Qualtim External Appendix C: Intellectual Property and Trade Secrets, definitions created within Design Drawings and/or definitions within Reference Sheets. Beyond this, terms not defined shall have ordinarily accepted meanings as the context implies. Words used in the present tense include the future; words stated in the masculine gender include the feminine and neuter; the singular number includes the plural and the plural, the singular.

3 https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1702

4 Alternative Materials, Design and Methods of Construction and Equipment: The provisions of any regulation code are not intended to prevent the installation of any material or to prohibit any design or method of construction not specifically prescribed by a regulation. Please review https://www.justice.gov/atr/mission and https://up.codes/viewer/mississippi/ibc-2024/chapter/1/scope-and-administration#104.2.3

5 https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1706.2:~:text=the%20design%20strengths%20and%20permissible%20stresses%20shall%20be%20established%20by%20tests

6 The design strengths and permissible stresses of any structural material shall conform to the specifications and methods of design of accepted engineering practice. https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1706.1:~:text=Conformance%20to%20Standards-,The%20design%20strengths%20and%20permissible%20stresses,-of%20any%20structural

7 https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1707.1:~:text=the%20building%20official%20shall%20make%2C%20or%20cause%20to%20be%20made%2C%20the%20necessary%20tests%20and%20investigations%3B%20or%20the%20building%20official%20shall%20accept%20duly%20authenticated%20reports%20from%20approved%20agencies%20in%20respect%20to%20the%20quality%20and%20manner%20of%20use%20of%20new%20materials%20or%20assemblies%20as%20provided%20for%20in%20Section%20104.2.3.

8 https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1703.4.2

9 https://up.codes/viewer/mississippi/ibc-2024/chapter/2/definitions#approved_agency

10 https://up.codes/viewer/mississippi/ibc-2024/chapter/2/definitions#approved_source

11 https://www.law.cornell.edu/uscode/text/18/1832 (b) Any organization that commits any offense described in subsection (a) shall be fined not more than the greater of $5,000,000 or 3 times the value of the stolen trade secret to the organization, including expenses for research and design and other costs of reproducing the trade secret that the organization has thereby avoided. The federal government and each state have a public records act. To follow DTSA and comply state public records and trade secret legislation requires approval through ANAB ISO/IEC 17065 accredited certification bodies or approved sources. For more information, please review this website: Intellectual Property and Trade Secrets.

12 https://www.nspe.org/resources/issues-and-advocacy/professional-policies-and-position-statements/regulation-professional AND https://apassociation.org/list-of-engineering-boards-in-each-state-archive/

13 https://www.cbitest.com/accreditation/

14 https://up.codes/viewer/mississippi/ibc-2024/chapter/1/scope-and-administration#104.1:~:text=directed%20to%20enforce%20the%20provisions%20of%20this%20code

15 https://up.codes/viewer/mississippi/ibc-2024/chapter/1/scope-and-administration#104.2.3 AND https://up.codes/viewer/mississippi/ibc-2024/chapter/1/scope-and-administration#105.3.1

16 https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1707.1

17 https://iaf.nu/en/about-iaf-mla/#:~:text=Once%20an%20accreditation%20body%20is%20a%20signatory%20of%20the%20IAF%20MLA%2C%20it%20is%20required%20to%20recognise%20certificates%20and%20validation%20and%20verification%20statements%20issued%20by%20conformity%20assessment%20bodies%20accredited%20by%20all%20other%20signatories%20of%20the%20IAF%20MLA%2C%20with%20the%20appropriate%20scope

18 True for all ANAB accredited product evaluation agencies and all International Trade Agreements.

19 https://www.justice.gov/crt/deprivation-rights-under-color-law AND https://www.justice.gov/atr/mission

20 Unless otherwise noted, the links referenced herein use un-amended versions of the 2024 International Code Council (ICC) 2024 International Code Council (ICC) model codes as foundation references. Mississippi versions of the IBC 2024 and the IRC 2024 are un-amended. This material, product, design, service and/or method of construction also complies with the 2000-2012 versions of the referenced codes and the standards referenced therein. As pertinent to this technical and code compliance evaluation, CBI and/or DrJ staff have reviewed any state or local regulatory amendments to assure this report is in compliance.

21 See Adoptions by Publisher for the latest adoption of a non-amended or amended model code by the local jurisdiction. https://up.codes/codes/general

22 See Adoptions by Publisher for the latest adoption of a non-amended or amended model code by state. https://up.codes/codes/general

23 https://www.ecfr.gov/current/title-24/subtitle-B/chapter-XX/part-3282/subpart-A/section-3282.14

24 https://www.ecfr.gov/current/title-24/subtitle-B/chapter-XX/part-3280

25 All references to the FBC-B and FBC-R are the same as the 2024 IBC and 2024 IRC unless otherwise noted in the Florida Supplement at the end of this report.

26 https://www.ecfr.gov/current/title-24/subtitle-B/chapter-XX/part-3280#p-3280.2(Listed%20or%20certified); https://up.codes/viewer/mississippi/ibc-2024/chapter/2/definitions#listed AND https://up.codes/viewer/mississippi/ibc-2024/chapter/2/definitions#labeled

27 2018 IBC Section 2304.10.3

28 https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1703.4

29 https://www.ecfr.gov/current/title-24/subtitle-B/chapter-XX/part-3280#:~:text=All%20construction%20methods%20shall%20be%20in%20conformance%20with%20accepted%20engineering%20practices%20to%20insure%20durable%2C%20livable%2C%20and%20safe%20housing%20and%20shall%20demonstrate%20acceptable%20workmanship%20reflecting%20journeyman%20quality%20of%20work%20of%20the%20various%20trades

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[30] https://www.ecfr.gov/current/title-24/subtitle-B/chapter-XX/part-3280#:~:text=The%20strength%20and%20rigidity%20of%20the%20component%20parts%20and/or%20the%20integrated%20structure%20shall%20be%20determined%20by%20engineering%20analysis%20or%20by%20suitable%20load%20tests%20to%20simulate%20the%20actual%20loads%20and%20conditions%20of%20application%20that%20occur

[31] Qualification is performed by a legislatively defined Accreditation Body. ANSI National Accreditation Board (ANAB) is the largest independent accreditation body in North America and provides services in more than 75 countries. DrJ is an ANAB accredited product certification body.

[32] https://anabpd.ansi.org/Accreditation/product-certification/AllDirectoryDetails?prgID=1&orgID=2125&statusID=4#:~:text=Bill%20Payment%20Date-,Accredited%20Scopes,-13%20ENVIRONMENT.%20HEALTH

[33] See Code of Federal Regulations (CFR) Title 24 Subtitle B Chapter XX Part 3280 for definition: https://www.ecfr.gov/current/title-24/subtitle-B/chapter-XX/part-3280

[34] 2021 IBC Section 104.11

[35] 2021 IRC Section R104.11

[36] 2018: https://up.codes/viewer/wyoming/ifc-2018/chapter/1/scope-and-administration#104.9 AND 2021: https://up.codes/viewer/wyoming/ibc-2021/chapter/1/scope-and-administration#104.11

[37] Approved is an adjective that modifies the noun after it. For example, Approved Agency means that the Agency is accepted officially as being suitable in a particular situation. This example conforms to IBC/IRC/IFC Section 201.4 (https://up.codes/viewer/mississippi/ibc-2024/chapter/2/definitions#201.4) where the building code authorizes sentences to have an ordinarily accepted meaning such as the context implies.

[38] https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1707.1

[39] Multilateral approval is true for all ANAB accredited product evaluation agencies and all International Trade Agreements.

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