



CERTIFICATION



Approved. Sealed. Code Compliant.

Technical Evaluation Report

TER 1811-03

QuickTie™ U-Hanger Series Face
Mount Joist Hangers

QuickTie™ Products, Inc.

Product:

QuickTie™ U-Hanger Series

Issue Date:

June 14, 2019

Revision Date:

October 10, 2020

Subject to Renewal:

July 1, 2021



COMPANY
INFORMATION:

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

1 PRODUCTS EVALUATED¹

- 1.1 QuickTie™ U-Hanger Series
 - 1.1.1 UL Series – 20 gauge (ga.)
 - 1.1.2 ULP & ULP-IF (Inverted Flange) Series – 18 ga.
 - 1.1.3 UM Series – 16 ga.
 - 1.1.4 UH & UH-IF (Inverted Flange) Series – 14 ga.

2 APPLICABLE CODES AND STANDARDS^{2,3}

- 2.1 Codes
 - 2.1.1 *IBC—12, 15, 18: International Building Code®*
 - 2.1.2 *IRC—12, 15, 18: International Residential Code®*
 - 2.1.3 *FBC-B—17, 20: Florida Building Code – Building*
 - 2.1.4 *NCBC—12, 18: North Carolina Building Code*
- 2.2 Standards and Referenced Documents
 - 2.2.1 *AISI S100: North American Specification for the Design of Cold-formed Steel Structural Members*
 - 2.2.2 *ANSI/AISC 360: Specification for Structural Steel Buildings*
 - 2.2.3 *ANSI/AWC NDS: National Design Specification (NDS) for Wood Construction*

¹ Building codes require data from valid research reports be obtained from approved sources. Agencies who are accredited through ISO/IEC 17065 have met the code requirements for approval by the building official. DrJ is an ISO/IEC 17065 ANAB-Accredited Product Certification Body – Accreditation #1131.

Through ANAB accreditation and the IAF MLA, DrJ certification can be used to obtain product approval in any jurisdiction or country that has IAF MLA Members & Signatories to meet the Purpose of the MLA – “certified once, accepted everywhere.”

Building official approval of a licensed registered design professional (RDP) is performed by verifying the RDP and/or their business entity complies with all professional engineering laws of the relevant jurisdiction. Therefore, the work of licensed RDPs is accepted by building officials, except when plan (i.e., peer) review finds an error with respect to a specific section of the code. Where this TER is not approved, the building official responds in writing stating the reasons for disapproval.

For more information on any of these topics or our mission, product evaluation policies, product approval process, and engineering law, visit drjcertification.org or call us at 608-310-6748.

² Unless otherwise noted, all references in this TER are from the 2018 version of the codes and the standards referenced therein (e.g., *ASCE 7, NDS, ASTM*). This material, design, or method of construction also complies with the 2000-2015 versions of the referenced codes and the standards referenced therein.

³ All terms defined in the applicable building codes are italicized.

- 2.2.4 *ASTM A370: Standard Test Methods and Definitions for Mechanical Testing of Steel Products*
- 2.2.5 *ASTM A653: Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process*
- 2.2.6 *ASTM D7147: Standard Specification for Testing and Establishing Allowable Loads of Joist Hangers*
- 2.2.7 *ASTM F1575: Standard Test Method for Determining Bending Yield Moment of Nails*

3 PERFORMANCE EVALUATION

- 3.1 This TER evaluates QuickTie™ U-Hanger Series Face Mount Joist Hangers for the following:
 - 3.1.1 Structural performance of connectors under uplift and gravity load conditions.
 - 3.1.2 Performance for use in buildings of light-frame construction in accordance with the codes listed in Section 2.
- 3.2 Any code compliance issues not specifically addressed in this section are outside the scope of this TER.
- 3.3 Any engineering evaluation conducted for this TER was performed on the dates provided in this TER and within DrJ's professional scope of work.

4 PRODUCT DESCRIPTION AND MATERIALS

4.1 The products evaluated in this TER are shown in Figure 1 and Figure 2.

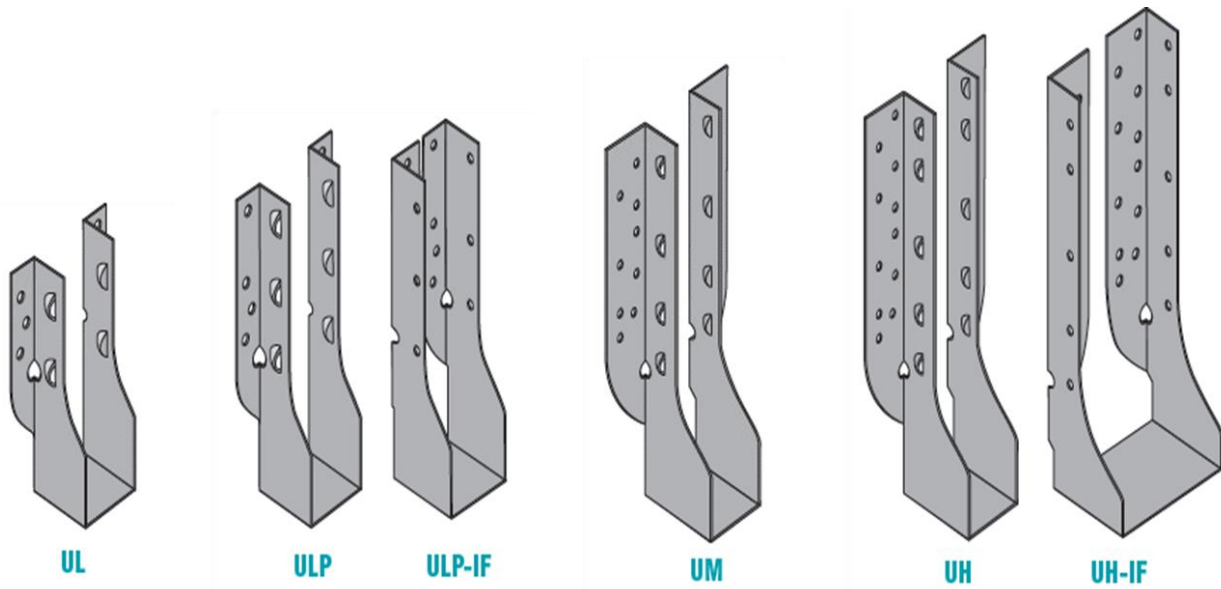


FIGURE 1. UL, ULP, ULP-IF, UM, UH, AND UH-IF HANGERS

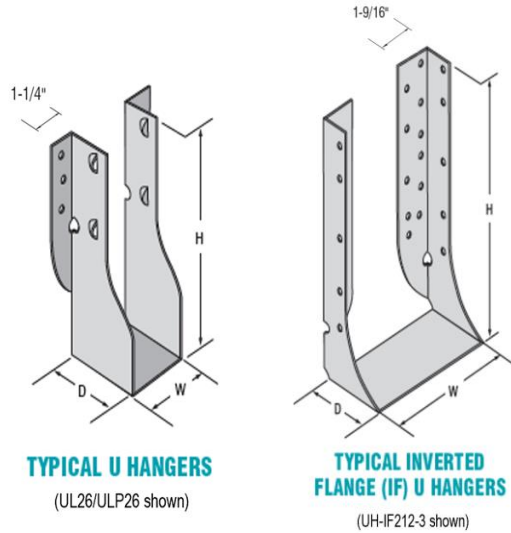


FIGURE 2. TYPICAL HANGER CONFIGURATION

- 4.1.1 QuickTie™ U-Hanger Series Face Mount Joist Hangers are manufactured from minimum ASTM A653, Structural Steel, Grade 40 ($F_u = 55$ ksi, $F_y = 40$ ksi) steel galvanized with a G90 or better zinc coating. The U-Hanger series are designated as follows:
 - 4.1.1.1 UL Series – 20 ga. (minimum coated thickness = 0.0356")
 - 4.1.1.2 ULP & ULP-IF Series – 18 ga. (minimum coated thickness = 0.0466")
 - 4.1.1.3 UM Series – 16 ga. (minimum coated thickness = 0.0575")
 - 4.1.1.4 UH & UH-IF Series – 14 ga. (minimum coated thickness = 0.0705")

5 APPLICATIONS

5.1 General

- 5.1.1 QuickTie™ U-Hanger Series Face Mount Joist Hangers are used to resist gravity loads and uplift loads due to wind in one-, two- and three-ply joist assemblies in light-frame wood construction.
- 5.1.2 QuickTie™ U-Hanger Series Face Mount Joist Hangers are used as wood framing connectors in accordance with IBC Section 2304.10.3 and IRC Section R301.1.3.
- 5.1.3 Where the application exceeds the limitations set forth herein, design shall be permitted in accordance with accepted engineering procedures, experience, and technical judgment.

5.2 Hanger Design Values

- 5.2.1 Table 1 through Table 6 give the allowable gravity and uplift loads for U-Hanger connectors with one-ply, two-ply, and three-ply lumber.
- 5.2.2 The design values in Table 1 through Table 6 were derived using the applicable adjustment factors in ASTM D7147 per IBC Section 2303.5.
- 5.2.3 The responsible design professional (RDP) for project shall determine which type of U-Hanger is appropriate using Table 1 through Table 6.

5.3 Table Notes

- 5.3.1 The following notes apply to Table 1 through Table 6:
 - 5.3.1.1 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).
 - 5.3.1.2 Allowable loads are provided for load duration factors (C_D) of 1.0, 1.15, 1.25, and 1.6.



5.3.1.3 Allowable loads labeled “Floor” and “Roof” represent gravity loads.

5.3.1.4 Figure 3 and Figure 4 in Section 6 show the installation views of typical U Hangers and Inverted Flange (IF) U Hangers.

TABLE 1. UL SERIES HANGER – ALLOWABLE GRAVITY AND UPLIFT LOADS (LBF)

| Part No. UL Series (1-, 2-, 3- ply joists) | Joist Size (in.) | Hanger Dimensions | | | Steel Thick. | Fasteners | | | | SP/DF-L (G=0.50) | | | | HF/SPF (G=0.42) | | | |
|---|---------------------|-------------------------------|---------------------------------|-------------------------------|--------------|-----------|------|-------|------|------------------|-------|-------|--------|-----------------|-------|-------|--------|
| | | Width, W (in.) | Height, H (in.) | Depth, W (in.) | | Header | | Joist | | Floor | Roof | Roof | Uplift | Floor | Roof | Roof | Uplift |
| | | | | | | Qty. | Size | Qty. | Size | 1.0 | 1.15 | 1.25 | 1.6 | 1.0 | 1.15 | 1.25 | 1.6 |
| UL26 | 2x6 | 1 ⁵ / ₈ | 5 ³ / ₈ | 1 ³ / ₄ | 20 ga. | 6 | 16d | 4 | 16d | 1,215 | 1,215 | 1,215 | 510 | 965 | 965 | 965 | 440 |
| UL26-2 | | 3 ¹ / ₈ | 4 ⁵ / ₈ | | | | | | | | | | | | | | |
| UL26-3 | | 4 ⁵ / ₈ | 3 ⁷ / ₈ | | | | | | | | | | | | | | |
| UL28 | 2x8 | 1 ⁵ / ₈ | 7 ¹ / ₈ | 1 ³ / ₄ | 20 ga. | 8 | 16d | 6 | 16d | 1,695 | 1,855 | 1,895 | 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 | 2x10 | 1 ⁵ / ₈ | 9 ¹ / ₈ | 1 ³ / ₄ | 20 ga. | 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 | 2x12 | 1 ⁵ / ₈ | 10 ³ / ₁₆ | 1 ³ / ₄ | 20 ga. | 10 | 16d | 10 | 16d | 1,570 | 1,570 | 1,570 | 1,715 | 1,265 | 1,265 | 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. See notes in Section 5.3.1.



TABLE 2. ULP SERIES HANGERS – ALLOWABLE GRAVITY AND UPLIFT LOADS (LBF)

| Part No. ULP (1-, 2-, 3- ply Joists) | Joist Size (in.) | Hanger Dimensions | | | Steel Thick. | Fasteners | | | | SP/DF-L (G=0.50) | | | | HF/SPF (G=0.42) | | | | |
|---|------------------------|--------------------------------|---------------------------------|-------------------------------|-----------------|-----------|------|-------|------|------------------|-------|-------|--------|-----------------|-------|-------|--------|--|
| | | Width, W (in.) | Height, H (in.) | Depth | | Header | | Joist | | Floor | Roof | Roof | Uplift | Floor | Roof | Roof | Uplift | |
| | | | | | | Qty. | Size | Qty. | Size | 1.0 | 1.15 | 1.25 | 1.6 | 1.0 | 1.15 | 1.25 | 1.6 | |
| ULP26 | 2x6 | 1 ⁵ / ₈ | 5 ³ / ₈ | 1 ³ / ₄ | 18 ga. | 6 | 16d | 4 | 16d | 1,230 | 1,415 | 1,435 | 670 | 1,065 | 1,110 | 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 | 3x6 | 2 ⁹ / ₁₆ | 4 ⁷ / ₈ | | | | | | | | | | | | | | | |
| ULP46 | 4x6 | 3 ⁹ / ₁₆ | 4 ³ / ₈ | | | | | | | | | | | | | | | |
| ULP28 | 2x8 | 1 ⁵ / ₈ | 7 ¹ / ₈ | 1 ³ / ₄ | 18 ga. | 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 | 3x8 | 2 ⁹ / ₁₆ | 6 ⁵ / ₈ | | | | | | | | | | | | | | | |
| ULP48 | 4x8 | 3 ⁹ / ₁₆ | 6 ¹ / ₈ | | | | | | | | | | | | | | | |
| ULP210 | 2x10 | 1 ⁵ / ₈ | 9 ¹ / ₈ | 1 ³ / ₄ | 18 ga. | 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 | 3x10 | 2 ⁹ / ₁₆ | 8 ⁵ / ₈ | | | | | | | | | | | | | | | |
| ULP410 | 4x10 | 3 ⁹ / ₁₆ | 8 ¹ / ₈ | | | | | | | | | | | | | | | |
| ULP212 | 2x12 | 1 ⁵ / ₈ | 10 ³ / ₁₆ | 1 ³ / ₄ | 18 ga. | 10 | 16d | 10 | 16d | 2,265 | 2,265 | 2,265 | 1,730 | 1,825 | 1,825 | 1,825 | 1,510 | |
| ULP212-2 | | 3 ¹ / ₈ | 9 ⁷ / ₁₆ | | | | | | | | | | | | | | | |
| ULP212-3 | | 4 ⁵ / ₈ | 8 ¹¹ / ₁₆ | | | | | | | | | | | | | | | |
| ULP312 | 3x12 | 2 ⁹ / ₁₆ | 9 ¹¹ / ₁₆ | | | | | | | | | | | | | | | |
| ULP412 | 4x12 | 3 ⁹ / ₁₆ | 9 ³ / ₁₆ | | | | | | | | | | | | | | | |

SI: 1 in. = 25.4 mm
 1. See notes in Section 5.3.1.



TABLE 3. ULP-IF SERIES HANGERS – ALLOWABLE GRAVITY AND UPLIFT LOADS (LBF)

| Part No. ULP (1-, 2-, 3- ply Joists) | Joist Size (in.) | Hanger Dimensions | | | Steel Thick. | Fasteners | | | | SP/DF-L (G=0.50) | | | | HF/SPF (G=0.42) | | | |
|---|---------------------|-------------------------------|-------------------------------|-------------------------------|--------------|-----------|------|-------|------|------------------|-------|-------|--------|-----------------|-------|-------|--------|
| | | Width, W (in.) | Height, H (in.) | Depth | | Header | | Joist | | Floor | Roof | Roof | Uplift | Floor | Roof | Roof | Uplift |
| | | | | | | Qty. | Size | Qty. | Size | 1.0 | 1.15 | 1.25 | 1.6 | 1.0 | 1.15 | 1.25 | 1.6 |
| ULP-IF26 | 2x6 | 1 ⁵ / ₈ | 5 ³ / ₈ | 1 ³ / ₄ | 18 ga. | 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 | 2x8 | 1 ⁵ / ₈ | 7 ¹ / ₈ | 1 ³ / ₄ | 18 ga. | 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 | 2x10 | 1 ⁵ / ₈ | 9 ¹ / ₈ | 1 ³ / ₄ | 18 ga. | 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. See notes in Section 5.3.1.



TABLE 4. UM SERIES HANGER – ALLOWABLE GRAVITY AND UPLIFT LOADS (LBF)

| Part No. ULP (1-, 2-, 3- ply Joists) | Joist Size (in.) | Hanger Dimensions | | | Steel Thick. | Fasteners | | | | SP/DF-L (G=0.50) | | | | HF/SPF (G=0.42) | | | | |
|---|---------------------|--------------------------------|---------------------------------|-------------------------------|--------------|-----------|------|-------|------|------------------|-------|-------|--------|-----------------|-------|-------|--------|--|
| | | Width, W (in.) | Height, H (in.) | Depth | | Header | | Joist | | Floor | Roof | Roof | Uplift | Floor | Roof | Roof | Uplift | |
| | | | | | | Qty. | Size | Qty. | Size | 1.0 | 1.15 | 1.25 | 1.6 | 1.0 | 1.15 | 1.25 | 1.6 | |
| UM26 | 2x6 | 1 ⁵ / ₈ | 5 ³ / ₈ | 2 ¹ / ₄ | 16 ga. | 6 | 16d | 6 | 16d | 1,445 | 1,540 | 1,540 | 600 | 1,245 | 1,245 | 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 | 3x6 | 2 ⁹ / ₁₆ | 4 ⁷ / ₈ | | | | | | | | | | | | | | | |
| UM46 | 4x6 | 3 ⁹ / ₁₆ | 4 ³ / ₈ | | | | | | | | | | | | | | | |
| UM46R | 4x6 | 4 | 4 ³ / ₁₆ | | | | | | | | | | | | | | | |
| UM28 | 2x8 | 1 ⁵ / ₈ | 7 ¹ / ₈ | 2 ¹ / ₄ | 16 ga. | 12 | 16d | 6 | 16d | 1,885 | 1,930 | 1,930 | 600 | 1,625 | 1,625 | 1,625 | 525 | |
| UM28R | | 2 | 6 ¹⁵ / ₁₆ | | | | | | | | | | | | | | | |
| UM28-2 | | 3 ¹ / ₈ | 6 ³ / ₈ | | | | | | | | | | | | | | | |
| UM28-3 | | 4 ⁵ / ₈ | 5 ⁵ / ₈ | | | | | | | | | | | | | | | |
| UM38 | 3x8 | 2 ⁹ / ₁₆ | 6 ⁵ / ₈ | | | | | | | | | | | | | | | |
| UM48 | 4x8 | 3 ⁹ / ₁₆ | 6 ¹ / ₈ | | | | | | | | | | | | | | | |
| UM48R | 4x8 | 4 | 5 ¹⁵ / ₁₆ | | | | | | | | | | | | | | | |
| UM210 | 2x10 | 1 ⁵ / ₈ | 9 ¹ / ₈ | 2 ¹ / ₄ | 16 ga. | 18 | 16d | 8 | 16d | 2,320 | 2,320 | 2,320 | 1,065 | 2,005 | 2,005 | 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 | 3x10 | 2 ⁹ / ₁₆ | 8 ⁵ / ₈ | | | | | | | | | | | | | | | |
| UM410 | 4x10 | 3 ⁹ / ₁₆ | 8 ¹ / ₈ | | | | | | | | | | | | | | | |
| UM410R | 4x10 | 4 | 7 ¹⁵ / ₁₆ | | | | | | | | | | | | | | | |
| UM212 | 2x12 | 1 ⁵ / ₈ | 10 ³ / ₁₆ | 2 ¹ / ₄ | 16 ga. | 22 | 16d | 10 | 16d | 1,930 | 1,930 | 1,930 | 1,530 | 1,535 | 1,535 | 1,535 | 1,325 | |
| UM212-2 | | 3 ¹ / ₈ | 9 ⁷ / ₁₆ | | | | | | | | | | | | | | | |
| UM212-3 | | 4 ⁵ / ₈ | 8 ¹¹ / ₁₆ | | | | | | | | | | | | | | | |
| UM312 | 3x12 | 2 ⁹ / ₁₆ | 9 ¹¹ / ₁₆ | | | | | | | | | | | | | | | |
| UM412 | 4x12 | 3 ⁹ / ₁₆ | 9 ³ / ₁₆ | | | | | | | | | | | | | | | |
| UM412R | 4x12 | 4 | 9 | | | | | | | | | | | | | | | |

SI: 1 in. = 25.4 mm
 1. See notes in Section 5.3.1.



TABLE 5. UH SERIES HANGERS – ALLOWABLE GRAVITY AND UPLIFT LOADS (LBF)

| Part No. ULP (1-, 2-, 3- ply Joists) | Joist Size (in.) | Hanger Dimensions | | | Steel Thick. | Fasteners | | | | SP/DF-L (G=0.50) | | | | HF/SPF (G=0.42) | | | |
|---|---------------------|--------------------------------|---------------------------------|-------------------------------|--------------|-----------|------|-------|------|------------------|-------|-------|--------|-----------------|-------|-------|--------|
| | | Width, W (in.) | Height, H (in.) | Depth | | Header | | Joist | | Floor | Roof | Roof | Uplift | Floor | Roof | Roof | Uplift |
| | | | | | | Qty. | Size | Qty. | Size | 1.0 | 1.15 | 1.25 | 1.6 | 1.0 | 1.15 | 1.25 | 1.6 |
| UH26 | 2x6 | 1 ⁵ / ₈ | 5 ³ / ₈ | 2 ¹ / ₄ | 14 ga. | 6 | 16d | 6 | 16d | 1,465 | 1,540 | 1,540 | 1,155 | 1,205 | 1,205 | 1,205 | 1,005 |
| UH26-2 | | 3 ¹ / ₈ | 4 ⁵ / ₈ | | | | | | | | | | | | | | |
| UH26-3 | | 4 ⁵ / ₈ | 3 ⁷ / ₈ | | | | | | | | | | | | | | |
| UH36 | | 3x6 | 2 ⁹ / ₁₆ | | | | | | | | | | | | | | |
| UH46 | 4x6 | 3 ⁹ / ₁₆ | 4 ³ / ₈ | | | | | | | | | | | | | | |
| UH28 | 2x8 | 1 ⁵ / ₈ | 7 ¹ / ₈ | 2 ¹ / ₄ | 14 ga. | 12 | 16d | 6 | 16d | 1,865 | 1,960 | 1,985 | 1,155 | 1,495 | 1,525 | 1,550 | 1,005 |
| UH28-2 | | 3 ¹ / ₈ | 6 ³ / ₈ | | | | | | | | | | | | | | |
| UH28-3 | | 4 ⁵ / ₈ | 5 ⁵ / ₈ | | | | | | | | | | | | | | |
| UH38 | | 3x8 | 2 ⁹ / ₁₆ | | | | | | | | | | | | | | |
| UH48 | 4x8 | 3 ⁹ / ₁₆ | 6 ¹ / ₈ | | | | | | | | | | | | | | |
| UH210 | 2x10 | 1 ⁵ / ₈ | 9 ¹ / ₈ | 2 ¹ / ₄ | 14 ga. | 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 | | 3x10 | 2 ⁹ / ₁₆ | | | | | | | | | | | | | | |
| UH410 | 4x10 | 3 ⁹ / ₁₆ | 8 ¹ / ₈ | | | | | | | | | | | | | | |
| UH212 | 2x12 | 1 ⁵ / ₈ | 10 ³ / ₁₆ | 2 ¹ / ₄ | 14 ga. | 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 | | 3x12 | 2 ⁹ / ₁₆ | | | | | | | | | | | | | | |
| UH412 | 4x12 | 3 ⁹ / ₁₆ | 9 ³ / ₁₆ | | | | | | | | | | | | | | |

SI: 1 in. = 25.4 mm

1. See notes in Section 5.3.1.

TABLE 6. UH-IF SERIES HANGERS – ALLOWABLE GRAVITY AND UPLIFT LOADS (LBF)

| Part No. ULP (1-, 2-, 3- ply Joists) | Joist Size (in.) | Hanger Dimensions | | | Steel Thick. | Fasteners | | | | SP/DF-L (G=0.50) | | | | HF/SPF (G=0.42) | | | |
|---|------------------------|--------------------------------|---------------------------------|-------------------------------|-----------------|-----------|------|-------|------|------------------|-------|-------|--------|-----------------|-------|-------|--------|
| | | Width, W (in.) | Height, H (in.) | Depth | | Header | | Joist | | Floor | Roof | Roof | Uplift | Floor | Roof | Roof | Uplift |
| | | | | | | Qty. | Size | Qty. | Size | 1.0 | 1.15 | 1.25 | 1.6 | 1.0 | 1.15 | 1.25 | 1.6 |
| UH-IF26-2 | 2x6 | 3 ¹ / ₈ | 4 ⁵ / ₈ | 2 ¹ / ₄ | 14 ga. | 6 | 16d | 6 | 10d | 865 | 995 | 1,080 | 1,170 | 750 | 860 | 935 | 1,015 |
| UH-IF26-3 | | 4 ⁵ / ₈ | 3 ⁷ / ₈ | | | | | | | | | | | | | | |
| UH-IF36 | 3x6 | 2 ⁹ / ₁₆ | 4 ⁷ / ₈ | | | | | | | | | | | | | | |
| UH-IF46 | 4x6 | 3 ⁹ / ₁₆ | 4 ³ / ₈ | | | | | | | | | | | | | | |
| UH-IF28-2 | 2x8 | 3 ¹ / ₈ | 6 ³ / ₈ | 2 ¹ / ₄ | 14 ga. | 12 | 16d | 6 | 10d | 1,635 | 1,775 | 1,830 | 1,170 | 1,345 | 1,470 | 1,555 | 1,015 |
| UH-IF28-3 | | 4 ⁵ / ₈ | 5 ⁵ / ₈ | | | | | | | | | | | | | | |
| UH-IF38 | 3x8 | 2 ⁹ / ₁₆ | 6 ⁵ / ₈ | | | | | | | | | | | | | | |
| UH-IF48 | 4x8 | 3 ⁹ / ₁₆ | 6 ¹ / ₈ | | | | | | | | | | | | | | |
| UH-IF210-2 | 2x10 | 3 ¹ / ₈ | 8 ³ / ₈ | 2 ¹ / ₄ | 14 ga. | 18 | 16d | 8 | 10d | 2,400 | 2,555 | 2,585 | 1,560 | 1,945 | 2,085 | 2,180 | 1,355 |
| UH-IF210-3 | | 4 ⁵ / ₈ | 7 ⁵ / ₈ | | | | | | | | | | | | | | |
| UH-IF310 | 3x10 | 2 ⁹ / ₁₆ | 8 ⁵ / ₈ | | | | | | | | | | | | | | |
| UH-IF410 | 4x10 | 3 ⁹ / ₁₆ | 8 ¹ / ₈ | | | | | | | | | | | | | | |
| UH-IF212-2 | 2x12 | 3 ¹ / ₈ | 9 ⁷ / ₁₆ | 2 ¹ / ₄ | 14 ga. | 22 | 16d | 10 | 10d | 3,170 | 3,335 | 3,335 | 1,950 | 2,540 | 2,695 | 2,800 | 1,690 |
| UH-IF212-3 | | 4 ⁵ / ₈ | 8 ¹¹ / ₁₆ | | | | | | | | | | | | | | |
| UH-IF312 | 3x12 | 2 ⁹ / ₁₆ | 9 ¹¹ / ₁₆ | | | | | | | | | | | | | | |
| UH-IF412 | 4x12 | 3 ⁹ / ₁₆ | 9 ³ / ₁₆ | | | | | | | | | | | | | | |

SI: 1 in. = 25.4 mm
 1. See notes in Section 5.3.1.

6 INSTALLATION

- 6.1 Installation shall comply with the manufacturer's installation instructions and this TER. In the event of a conflict between the manufacturer's installation instructions and this TER, the more restrictive shall govern.
- 6.2 A copy of the manufacturer's published installation instructions shall be available at all times on the jobsite during installation.
- 6.3 Installation examples are shown in Figure 3 and Figure 4.

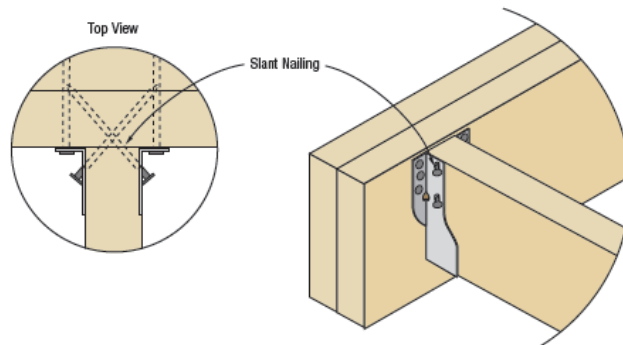


FIGURE 3. INSTALLATION VIEW OF U HANGERS

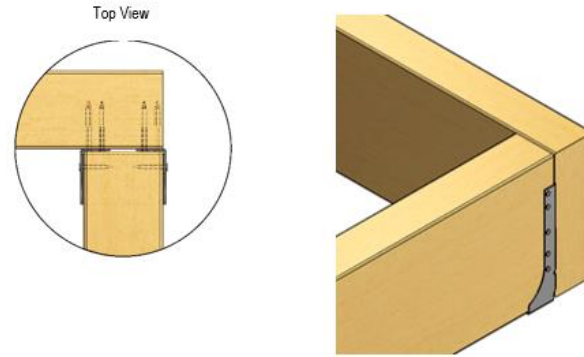


FIGURE 4. INSTALLATION VIEWS OF INVERTED FLANGE (IF) U HANGERS

7 TEST ENGINEERING SUBSTANTIATING DATA

- 7.1 Bending yield testing in accordance with *ASTM F1575* performed by Structural Building Components Research Institute (SBCRI)
- 7.2 Tensile strength testing in accordance with *ASTM A370* performed by SBCRI
- 7.3 Gravity and uplift load testing in accordance with *ASTM D7147* performed by SBCRI
- 7.4 Some information contained herein is the result of testing and/or data analysis by other sources which conform to IBC Section 1703 and relevant professional engineering law. DrJ relies on accurate data from these sources to perform engineering analysis. DrJ has reviewed and found the data provided by other professional sources to be credible.
- 7.5 Where appropriate, DrJ's analysis is based on design values that have been codified into law through codes and standards (e.g., *IBC*, *IRC*, *NDS®*, and *SDPWS*). This includes review of code provisions and any related test data that aids in comparative analysis or provides support for equivalency to an intended end-use application. Where the accuracy of design values provided herein is reliant upon the published properties of commodity materials (e.g., lumber, steel, and concrete), DrJ relies upon the grade mark, stamp, and/or design values provided by raw material suppliers to be accurate and conforming to the mechanical properties defined in the relevant material standard.



8 FINDINGS

- 8.1 When used and installed in accordance with this TER and the manufacturer's installation instructions, the product(s) listed in Section 1.1 are approved for the following:
- 8.1.1 Based on data and engineering analysis, QuickTie™ U-Hanger Series Face Mount Joist Hangers as described in this TER conform to the codes listed in Section 2.
 - 8.1.2 QuickTie™ U-Hanger Series Face Mount Joist Hangers are approved for use where the design values listed in Table 1 through Table 6 meet the requirements of the building design.
- 8.2 IBC Section 104.11 (IRC Section R104.11 and IFC Section 104.9 are similar) states:
- 104.11 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 has been *approved*. An alternative material, design or method of construction shall be *approved* where the *building official* finds that the proposed design is satisfactory and complies with the intent of the provisions of this code, and that the material, method or work offered is, for the purpose intended, not less than the equivalent of that prescribed in this code...Where the alternative material, design or method of construction is not *approved*, the *building official* shall respond in writing, stating the reasons the alternative was not *approved*.
- 8.3 This product has been evaluated in the context of the codes listed in Section 2 and is compliant with all known state and local building codes. Where there are known variations in state or local codes applicable to this TER, they are listed here.
- 8.3.1 No known variations

9 CONDITIONS OF USE

- 9.1 Calculations showing compliance with this TER must be submitted to the code official. The calculations must be prepared by a RDP.
- 9.2 Where required by the building official, also known as the authority having jurisdiction (AHJ) in which the project is to be constructed, this TER and the installation instructions shall be submitted at the time of permit application.
- 9.3 Any generally accepted engineering calculations needed to show compliance with this TER shall be submitted to the AHJ for review and approval.
- 9.4 Design loads shall be determined in accordance with the building code adopted by the jurisdiction in which the project is to be constructed and/or by the Building Designer (e.g., owner or registered design professional).
- 9.5 At a minimum, this product shall be installed per Section 6 of this TER.
- 9.6 This product is manufactured under a third-party quality control program in accordance with IBC Section 104.4 and 110.4 and IRC Section R104.4 and R109.2.
- 9.7 The actual design, suitability, and use of this TER, for any particular building, is the responsibility of the owner or the owner's authorized agent. Therefore, the TER shall be reviewed for code compliance by the building official for acceptance.
- 9.8 The use of this TER is dependent on the manufacturer's in-plant QC, the ISO/IEC 17020 third-party quality assurance program and procedures, proper installation per the manufacturer's instructions, the building official's inspection, and any other code requirements that may apply to demonstrate and verify compliance with the applicable building code.



10 IDENTIFICATION

- 10.1 The product(s) listed in Section 1.1 are identified by a label on the board or packaging material bearing the manufacturer's name, product name, TER number, and other information to confirm code compliance.
- 10.2 Additional technical information can be found at quicktieproducts.com.

11 REVIEW SCHEDULE

- 11.1 This TER is subject to periodic review and revision. For the most recent version of this TER, visit drjcertification.org.
- 11.2 For information on the current status of this TER, contact DrJ Certification.