

WARNING

Simpson Strong-Tie Company Inc. structural connectors, anchors, and other products are designed and tested to provide specified design loads. To obtain optimal performance from Simpson Strong-Tie Company Inc. products and achieve maximum allowable design load, the products must be properly installed and used in accordance with the installation instructions and design limits provided by Simpson Strong-Tie Company Inc. To ensure proper installation and use, designers and installers must carefully read the following [General Notes](#), [General Instructions For The Installer](#) and [General Instructions For The Designer](#), as well as consult the applicable catalog pages for specific product installation instructions and notes.

Proper product installation requires careful attention to all notes and instructions, including these basic rules:

1. Be familiar with the application and correct use of the connector.
2. Follow all installation instructions provided in the applicable catalog, website, [Installer's Pocket Guide](#) or any other Simpson publications.
3. Install all required fasteners per installation instructions provided by Simpson Strong-Tie Company Inc.: a) use proper fastener type; b) use proper fastener quantity; c) fill all fastener holes; d) do not overdrive or underdrive nails, including when using gun nailers; and e) ensure screws are completely driven.
4. Only bend products that are specifically designed to be bent. For those products that required bending, do not bend more than once.
5. Cut joists to the correct length, do not "short-cut". The gap between the end of the joist and the header material should be no greater than 1/8" unless otherwise noted.

In addition to following the basic rules provided above as well as all notes, warnings and instructions provided in the catalog, installers, designers, engineers and consumers should consult this website (www.strongtie.com) to obtain additional design and installation information, including:

- Instructional builder/contractor training kits containing an instructional video, an instructor guide and a student guide in both English and Spanish;
- [Installer's Pocket Guide \(S-INSTALL\)](#) which is designed specifically for installers and uses detailed graphics and minimal text in both English and Spanish to explain visually how to install many key products;
- Information on [workshops](#) Simpson Strong-Tie conducts at various training centers throughout the country;
- Product specific [installation videos](#);
- [Specialty catalogs](#);
- [Code reports](#);
- Technical [fliers](#) and [bulletins](#);
- Master format specifications;
- [Material safety data sheets](#);
- [Corrosion information](#);
- [Connector selection guides for engineered wood products \(by manufacturer\)](#)
- [Simpson Strong-Tie Connector Selector® software](#);
- [Simpson Strong-Tie® AutoCAD® Menu](#);
- [Simpson Strong-Tie Strong-Wall® Selector software](#);
- [Simpson Strong-Tie Anchor Tiedown System Selector](#) and anchor related software; and
- Answers to [frequently asked questions](#) and technical topics.

Failure to follow fully all of the notes and instructions provided by Simpson Strong-Tie Company Inc. may result in improper installation of products. Improperly installed products may not perform to the specifications set forth in this catalog and may reduce a structure's ability to resist the movement, stress, and loading that occurs from gravity loads as well as impact events such as earthquakes and high velocity winds.

Simpson Strong-Tie Company, Inc. does not guarantee the performance or safety of products that are modified, improperly installed or not used in accordance with the design and load limits set forth in this catalog.

AutoCAD® is a registered trademark of Autodesk, Inc.

These notes are provided to ensure proper installation of Simpson Strong-Tie® Company, Inc. products and must be followed fully.

- a. Simpson Strong-Tie Co., Inc. reserves the right to change specifications, designs, and models without notice or liability for such changes.
- b. Steel used for each Simpson Strong-Tie product is individually selected based on the product's steel specifications, including strength, thickness, formability, finish, and weldability. Contact Simpson Strong-Tie for steel information on specific products.
- c. Unless otherwise noted, dimensions are in inches, loads are in pounds.
- d. Unless otherwise noted, welds, screws, bolts and nails may not be combined to achieve highest load value. 8d (0.131"x2 1/2"), 10d (0.148"x3"), and 16d (0.162"x3 1/2") specify common nails that meet the requirements of ASTM F1667. When a shorter nail is specified, it will be noted (for example 8dx1 1/2). Refer to Simpson's Nailing Guide, NDS (National Design Specification) and ASTM F1667 (American Society of Testing and Materials) for more nail info.
- e. Do Not Overload. Do not exceed catalog allowable loads, which would jeopardize the connection.
- f. Unless otherwise noted, allowable loads are for Douglas Fir-Larch under continuously dry conditions. Allowable loads for other species or conditions must be adjusted according to the code. In many cases, Simpson Strong-Tie code reports will indicate loads derived from Doug Fir header material only. However under ICC-ES AC13, loads for Douglas Fir are the same as LVL, LSL, PSL, Glulam's and Southern Pine, since the specific gravity of these wood species fall within the specific gravity range of the AC13 criteria. The section from the AC13 criteria indicating the range of specific gravity reads as follows:
3.2.3 The species of lumber used shall have a specific gravity not greater than 0.55 as determined in accordance with the NDS. This chart shows specific gravity for the different wood species:

Species	Fc _⊥	Specific Gravity
Douglas Fir-Larch (DFL)	625 psi	0.50
Southern Pine (SP)	565 psi	0.55
Spruce-Pine-Fir (SPF)	425 psi	0.42
Hem Fir	405 psi	0.43
Glulam	560 psi	0.50
LVL (DF/SP)	750 psi	0.50
TimberStrand® (LSL) (E=1.3x10 ⁶)	680 psi	0.50
TimberStrand® (LSL) (E≥1.5x10 ⁶)	880 psi	0.50
Parallam® (PSL)	750 psi	0.50

- g. Simpson Strong-Tie Co., Inc. will manufacture non-catalog products provided prior approval is obtained and an engineering drawing is included with the order. Steel specified on the drawings as 1/8", 3/16", and 1/4" will be 11 gauge (0.120"), 7 ga (0.179"), and 3 gauge (0.239"), respectively. The minimum yield and tensile strengths are 33 ksi and 52 ksi, respectively.
- h. All references to bolts or machine bolts (MBs) are for structural quality through bolts (not lag screws or carriage bolts) equal to or better than ASTM Standard A307, Grade A.
- i. Unless otherwise noted, bending steel in the field may cause fractures at the bend line. Fractured steel will not carry load and must be replaced.
- j. A fastener that splits the wood will not take the design load. Evaluate splits to determine if the connection will perform as required. Dry wood may split more easily and should be evaluated as required. If wood tends to split, consider pre-boring holes with diameters not exceeding .75 of the nail diameter (2005 NDS 11.1.5.3) or use a 5/32" bit for SDS screws.
- k. Wood shrinks and expands as it loses and gains moisture, particularly perpendicular to its grain. Take wood shrinkage into account when designing and installing connections. Simpson manufactures products to fit common dry lumber dimensions. If you need a connector with dimensions other than those listed in this catalog, Simpson may be able to vary connector dimensions; contact Simpson. The effects of wood shrinkage are increased in multiple lumber connections, such as floor-to-floor installations. This may result in the vertical rod nuts becoming loose, requiring post-installation tightening. (Contact Simpson Strong-Tie for information on Takeup Devices.)
- l. Top flange hangers may cause unevenness. Possible remedies should be evaluated by a professional and include using a face mount hanger, and routing the beam or cutting the subfloor to accommodate the top flange thickness.
- m. Built-up lumber (multiple members) must be fastened together to act as one unit to resist the applied load

- (excluding the connector fasteners). This must be determined by the designer/engineer of record.
- n. Some model configurations may differ from those shown in this catalog. Contact Simpson Strong-Tie for details.
 - o. Hanger Options – some combinations of hanger options are not available. In some cases, combinations of these options may not be installable. Horizontal loads induced by sloped joists must be resisted by other members in the structural system. A qualified Designer must always evaluate each connection, including carried and carrying member limitations, before specifying the product. Fill all fastener holes with fastener types specified in the tables, unless otherwise noted. Hanger configurations, height, and fastener schedules may vary from the tables depending on joist size, skew and slope. See the allowable table load for the non-modified hanger, and adjust as indicated. Gauge may vary from that specified depending on the manufacturing process used.
 - p. Simpson Strong-Tie will calculate the net height for a sloped seat. The customer must provide the H1 joist height before slope.
 - q. Truss plates shown are not manufactured by Simpson Strong-Tie.
 - r. Do not weld products listed in this catalog unless this publication specifically identifies a product as acceptable for welding, or unless specific approval for welding is provided in writing by Simpson Strong-Tie. Some steels have poor weldability and a tendency to crack when welded. Cracked steel will not carry load and must be replaced. See Simpson's Hanger Options Matrix and Hanger Option General Notes for hangers that may be welded.
 - s. Unless noted otherwise, all references to standard cut washers refer to Type A plain washers (W) conforming to the dimensions shown in ASME B18.22.1 for the appropriate rod size. Some products require SAE narrow washers (N) to fit in a tight space and are noted accordingly