Important Information

Limited Warranty

Simpson Strong-Tie Company Inc. warrants products to be free from defects in material or manufacturing. Simpson Strong-Tie Company Inc. products are further warranted for adequacy of design when used in accordance with design limits in this application guide and when properly specified, installed and maintained. This warranty does not apply to uses not in compliance with specific applications and installations set forth in this application guide, or to non-catalog or modified products, or to deterioration due to environmental conditions.

Simpson Strong-Tie® connectors are designed to enable structures to resist the movement, stress and loading that results from impact events such as earthquakes and high-velocity winds. Other Simpson Strong-Tie products are designed to the load capacities and uses listed in this application guide. Properly installed Simpson Strong-Tie products will perform in accordance with the specifications set forth in the applicable Simpson Strong-Tie catalog. Additional performance limitations for specific products may be listed on the applicable catalog pages.

Due to the particular characteristics of potential impact events, the specific design and location of the structure, the building materials used, the quality of construction, and the condition of the soils involved, damage may nonetheless result to a structure and its contents even if the loads resulting from the impact event do not exceed Simpson Strong-Tie catalog specifications and Simpson Strong-Tie connectors are properly installed in accordance with applicable building codes.

All warranty obligations of Simpson Strong-Tie Company Inc. shall be limited, at the discretion of Simpson Strong-Tie Company Inc., to repair or replacement of the defective part. These remedies shall constitute Simpson Strong-Tie Company Inc.’s sole obligation and sole remedy of purchaser under this warranty. In no event will Simpson Strong-Tie Company Inc. be responsible for incidental, consequential, or special loss or damage, however caused.

This warranty is expressly in lieu of all other warranties, expressed or implied, including warranties of merchantability or fitness for a particular purpose, all such other warranties being hereby expressly excluded. This warranty may change periodically – consult our website www.strongtie.com for current information.

Terms and Conditions of Sale

Product Use

Products in this guide are designed and manufactured for the specific purposes shown and should not be used with other connectors not approved by a qualified Designer. Modifications to products or changes in installations should only be made by a qualified Designer. The performance of such modified products or altered installations is the sole responsibility of the Designer.

Indemnity

Customers or Designers modifying products or installations, or designing non-catalog products for fabrication by Simpson Strong-Tie Company Inc., shall, regardless of specific instructions to the user, indemnify, defend and hold harmless Simpson Strong-Tie Company Inc. for any and all claimed loss or damage occasioned in whole or in part by non-catalog or modified products.

Non-Catalog and Modified Products

Consult Simpson Strong-Tie Company Inc. for applications for which there is no catalog product, or for connectors for use in hostile environments, with excessive wood shrinkage, or with abnormal loading or erection requirements.

Non-catalog products must be designed by the customer and will be fabricated by Simpson Strong-Tie in accordance with customer specifications.

Simpson Strong-Tie cannot and does not make any representations regarding the suitability of use or load-carrying capacities of non-catalog products. Simpson Strong-Tie provides no warranty, express or implied, on non-catalog products. F.O.B. Shipping Point unless otherwise specified.

We Are ISO 9001-2008 Registered

Simpson Strong-Tie is an ISO 9001-2008 registered company. ISO 9001-2008 is an internationally recognized quality assurance system that lets our domestic and international customers know they can count on the consistent quality of Simpson Strong-Tie® products and services.
Important Information

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 maximal 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 Strong-Tie 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. Stainless-steel connector loads may be reduced when installed with smooth-shank, stainless-steel nails. Simpson Strong-Tie recommends using ring-shank, stainless-steel nails with stainless-steel connectors.
5. Only bend products that are specifically designed to be bent. For those products that require bending, do not bend more than once.
6. 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 $\frac{1}{8}$" 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 the Simpson Strong-Tie Company Inc. website at 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, 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 – Simpson Strong-Tie® Code Report Finder software;
- 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® CFS Designer™ software;
- Simpson Strong-Tie® Anchor Designer software
- Simpson Strong-Tie® Strong-Wall® Selector software;
- Simpson Strong-Tie® Strong Frame® Selector;
- Simpson Strong-Tie® Fastener Finder; 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 application guide.
Important Information

General Notes

1. Refer to the current Simpson Strong-Tie® Wood Construction Connectors catalog for connector load values, installation, fastener schedules and other important information including Terms and Conditions of Sale and Building Code Evaluation listings.

2. Throughout the guide there are installation drawings showing the load transfer from one element in the structure to another. Additional connections may be required to safely transfer the loads through the structure. It is the Designer’s responsibility to specify and detail all necessary connections to ensure that a continuous load path is provided as required by the building code.

3. U.N.O. allowable connector loads are provided with a 160% load duration increase (for wind) on the calculated capacity of the nails. No further load duration increase is allowed by the building code.

4. Unless otherwise noted, the allowable loads published in this guide are limited to the lowest of the following: average recorded test load at 1/8" deflection; lowest ultimate recorded test load of 3 test specimens divided by 3 (or the average of 6 specimens divided by 3); or the calculated value based on steel, wood bearing, and/or fastener capacity.

5. When multiple connectors are used, they must be installed so fastener locations do not overlap.

6. When a connector is loaded simultaneously in more than one direction, the allowable load must be evaluated as shown here.

For all connectors use the following equation:

Design Uplift/Allowable Uplift + Design Lateral Parallel to Plate / Allowable Lateral Parallel to Plate + Design Lateral Perpendicular to Plate / Allowable Lateral Perpendicular to Plate < 1.0

The three terms in the unity equation are due to the possible directions that exist to generate force on a connector. The number of terms that must be considered for simultaneous loading is at the sole discretion of the Designers and is dependent on their method of calculating wind forces and the utilization of the connector within the structural system.

As an alternative, certain roof-to-wall connectors (embedded truss anchors, pages 18–20, seismic and hurricane ties and twist straps, page 16 – excluding HGA10KT) can be evaluated using the following: the design load in each direction shall not exceed the published allowable load in that direction multiplied by 0.75.

7. 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.

8. Unless otherwise noted, all nails are common nails (refer to page 54).

9. Refer to the Connector-Anchor Selector at www.strongtie.com for anchorage to concrete design.

10. Illustrations showing hurricane ties installed on the outside of the wall are for clarity and assume a minimum overhang of 3 1/2". Installation on the inside of the wall is acceptable (see General Note 12 below). For uplift continuous load path, connections in the same area (e.g., truss-to-plate connector and plate-to-stud connector) must be on same side of the wall.

11. When using wood structural panel sheathing for wind uplift continuous load path, refer to Simpson Strong-Tie technical bulletins T-WLSHEATH and T-HTIECONPATH for further information.

12. When installing hurricane ties on the inside of the wall, special care must be taken to prevent condensation on the inside of the completed structure in cold climates.

13. Unless otherwise noted, loads are in pounds; dimensions are in inches.

14. Truss plates shown may not be manufactured by Simpson Strong-Tie.

15. 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.

16. When connecting DF/SP members to SPF lumber, use SPF allowable loads.

17. Concrete anchorage solutions provided in this catalog are based on applications in uncracked concrete resisting wind and low seismic loads (any structure in Seismic Design Categories A and B and detached one- and two-family dwellings in Seismic Design Category C).

18. Some hurricane ties can be used for bearing enhancement, see T-HTIEBEARING.

19. Twist straps do not have to be wrapped over the truss to achieve the load.