

# IMPORTANT INFORMATION & GENERAL NOTES

## 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, Pocket Installers Guide or any other Simpson publications.
3. Install all required components per installation instructions provided by Simpson Strong-Tie Company Inc.: a) use proper fastener type; b) use proper fastener quantity; c) ensure screws are completely driven.

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](http://www.strongtie.com) to obtain additional design and installation information, including:

- Information on workshops Simpson 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 connector selector software;
- Simpson Autocad menu;
- Simpson Strong-Wall® Selector software;
- Simpson 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.

## GENERAL NOTES

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

- a. Simpson Strong-Tie Company Inc. reserves the right to change specifications, designs, and models without notice or liability for such changes.
- b. Steel used for each Simpson product is individually selected based on the product's steel specifications, including strength, thickness, formability, finish, and weldability. Contact factory for steel information on specific products.
- c. Unless otherwise noted, dimensions are in inches, loads are in pounds.
- d. Do Not Overload. Do not exceed catalog allowable loads, which would jeopardize the connection.
- e. 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. 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 tightening.
- f. Built-up lumber (*multiple members*) must be fastened together to act as one unit to resist the applied load. This must be determined by the Designer.

## GENERAL INSTRUCTIONS FOR THE INSTALLER

These general instructions for the installer are provided to ensure proper selection and installation of Simpson Strong-Tie Company Inc. products and must be followed carefully. These general instructions are in addition to the specific installation instructions and notes provided for each particular product, all of which should be consulted prior to and during installation of Simpson Strong-Tie Company Inc. products.

- a. All specified connectors must be installed according to the instructions in this catalog. Incorrect connection quantity, size, placement, or type may cause the connection to fail.
- b. Use the materials specified in the installation instructions. Substitution of or failure to use specified materials may cause the connection to fail.
- c. Do not add fastener holes or otherwise modify Simpson Strong-Tie Company Inc. products. The performance of modified products may be substantially weakened. Simpson will not warrant or guarantee the performance of such modified products.
- d. Install products in the position specified in the catalog.
- e. Do not alter installation procedures from those set forth in this catalog.
- f. Some hardened fasteners may have premature failure if exposed to moisture. These fasteners are recommended to be used in dry interior applications.
- g. Use proper safety equipment.
- h. Welding galvanized steel may produce harmful fumes; follow proper welding procedures and safety precautions. Welding should be in accordance with A.W.S. (*American Welding Society*) standards. Unless otherwise noted Simpson connectors cannot be welded.
- i. The installer shall cut Strong-Rod™ or threaded rod to length as required.
- j. Shearwall sheathing shall not have vertical joints at any of the specified compression members except at the shearwall perimeter.
- k. See page 35 for shearwall edge nailing details.
- l. When installing hex nuts or Isolator Nuts on the Strong-Rod, make the nut snug on the bearing plate and tighten an additional ½ turn.

## GENERAL INSTRUCTIONS FOR THE DESIGNER

These general instructions for the designer are provided to ensure proper selection and installation of Simpson Strong-Tie Company Inc. products and must be followed carefully. These general instructions are in addition to the specific design and installation instructions and notes provided for each particular product, all of which should be consulted prior to and during the design process.

- a. The term "Designer" used throughout this catalog is intended to mean a qualified licensed professional engineer, or a qualified licensed architect.
- b. All connected members and related elements shall be designed by the Designer.
- c. All installations should be designed only in accordance with the allowable load values set forth in this catalog.
- d. The Designer is responsible for verifying that all design loads do not exceed the allowable loads listed for each component in the restraint system. This includes, but is not limited to, the cumulative tension, incremental bearing, concrete anchorage, and wood framing members. The design of these elements must be performed to the satisfaction of the building official.
- e. Anchor Tiedown System (ATS) capacities listed in the catalog tables are provided based on the 9th and 13th edition AISC Allowable Stress Design (ASD). The capacities listed in the CTDS runs are based on the 9th edition ASD.
- f. The Designer is responsible for verifying that the building drift is within acceptable limitations and code limitations.
- g. Stock run components are designed for 4" nominal wall widths. Alternate ATS components are available that may be more economical. These components are specific to demand loads and/or 6" nominal wall widths. These configurations require the use of the ATS Selector Software. Visit [www.strongtie.com](http://www.strongtie.com) to download a free copy.

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## GENERAL INSTRUCTIONS FOR THE DESIGNER (continued)

- h. Studs, posts and blocking details shall be specified by the Designer and are not shipped with the Anchor Tiedown System. See tables on pages 35–41 for compression member allowable capacities, design assumptions and general notes.
- i. In some cases tension anchorage solutions may be designed and provided by Simpson for ATS based on the rod tensile capacity at the first floor. Alternate anchor bolt solutions may be provided by the Designer. Foundation and reinforcement design shall be specified by the Designer. If anchorage is designed by others, contact Simpson to coordinate connecting components for the 1st level.
- j. Simpson strongly recommends the following addition to construction drawings and specifications: “Simpson Strong-Tie® connectors are specifically required to meet the structural calculations of plan. Before substituting another brand, confirm load capacity based on reliable published testing data or calculations. The Designer should evaluate and give written approval for substitution prior to installation.”
- k. ATS is designed to be installed floor by floor as the structure is built. Installation in this manner, with shearwalls, will provide a lateral force resisting system during construction.
- l. The allowable loads published in this catalog are for use when utilizing the traditional Allowable Stress Design methodology. A method for using Load and Resistance Factor Design (LRFD) for wood has been published in AF&PA/ASCE 16.
- m. See pages 19–20 for a design example and guide for the Designer.
- n. 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. Some steels have poor weldability and a tendency to crack when welded. Cracked steel will not carry load and must be replaced.
- o. Refer to adjacent table for applicability of load duration factor and applicable  $\frac{1}{3}$  steel stress increase.
- p. Local and/or regional building codes may require meeting special conditions. Building codes often require special inspection of anchors installed in concrete and masonry. For compliance with these requirements, it is necessary to contact the local and/or regional building authority. Except where mandated by code, Simpson’s products do not require special inspection.

### Applicability of Load Duration Factor, $\frac{1}{3}$ Steel Stress Increase Table, and Steel Code Reference

Code	Load Combination	Cd (Wood) Allowed	$\frac{1}{3}$ Stress Increase (Steel) Allowed	AISC Edition
ASCE 7-2002 ASCE 7-2005	Basic	Yes	No	2002–9th Ed. 2005–13th Ed.
2000 International Building Code	Basic	Yes	No	9th Ed.
	Alternate	Yes	Yes	
2003/2006 International Building Code	Basic	Yes	No	2003–9th Ed.
	Alternate	Yes	No	2006–13th Ed.
1997 Uniform Building Code	Basic	Yes	No	9th Ed.
	Alternate	Yes	Yes	
2004 Florida Building Code	Basic	Yes	No	9th Ed.
	Alternate	Yes	No	

## LIMITED WARRANTY

Simpson Strong-Tie Company Inc. warrants catalog 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 catalog 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 catalog, 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 catalog. Properly-installed Simpson Strong-Tie products will perform in accordance with the specifications set forth in the applicable Simpson 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 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](http://www.strongtie.com) for current information.**

## TERMS & CONDITIONS OF SALE

### PRODUCT USE

Products in this catalog 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.