

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 product.
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 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 require bending, do not bend more than once.

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;
- 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;
- Simpson Strong-Tie Autocad menu;
- Simpson Strong-Tie Strong-Wall® Selector 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 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"x2½"), 10d (0.148"x3"), and 16d (0.162"x3½") specify common nails that meet the requirements of ASTM F1667. When a shorter nail is specified, it will be noted (*for example 8dx1½*). Refer to Simpson Strong-Tie 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 product.
- 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 _L	Specific Gravity
Douglas Fir-Larch (DF)	625 psi	0.50
Southern Pine (SP)	565 psi	0.55
Spruce-Pine-Fir (SPF)	425 psi	0.42
Hem Fir (HF)	405 psi	0.43
Glulam	560 psi	0.50
LVL (DF/SP)	750 psi	0.50
LSL (E = 1.3x10 ⁶)	680 psi	0.50
LSL (E ≥ 1.5x10 ⁶)	880 psi	0.50
Parallam® PSL	750 psi	0.50
- g. 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.; SSTB, SWAB and SSWAB is ASTM F1554 Grade 36. SSWAB-HS is ASTM A449.
- h. 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.
- i. 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).
- j. 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 Strong-Tie manufactures products to fit common dry lumber dimensions. If you need a connector with dimensions other than those listed in this catalog, Simpson Strong-Tie may be able to vary connector dimensions; contact Simpson Strong-Tie. 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.*)
- k. 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.
- l. Some model configurations may differ from those shown in this catalog. Contact Simpson Strong-Tie for details.
- m. 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.

IMPORTANT INFORMATION & GENERAL NOTES

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 fasteners must be installed according to the instructions in this catalog. Incorrect fastener quantity, size, placement, type, material, or finish may cause the product to fail.
 - 16d fasteners are common nails (0.162" dia. x 3½" long) and cannot be replaced with 16d sinkers (0.148" dia. x 3¼" long) for full load value unless otherwise specified.
 - Unless otherwise noted screws may not be used to replace nails in connectors unless approved and recommended by the Designer/Engineer of Record. Unless stated otherwise, Simpson Strong-Tie cannot and does not make any representations regarding the suitability of use or load-carrying capacities of connectors with screws replacing nails.
 - When using stainless-steel connectors, use stainless-steel fasteners. When using ZMAX®/HDG galvanized connectors, use fasteners galvanized per ASTM A153.
- b. Fill all fastener holes as specified in the installation instructions for that product.
- c. Do not overdrive nails. Overdriven nails reduce shear capacity.
- d. Use the materials specified in the installation instructions. Substitution of or failure to use specified materials may cause the product to fail.
- e. Do not add fastener holes or otherwise modify Simpson Strong-Tie Company Inc. products. The performance of modified products may be substantially weakened. Simpson Strong-Tie will not warrant or guarantee the performance of such modified products.
- f. Install products in the position specified in the catalog.
- g. Do not alter installation procedures from those set forth in this catalog.
- h. Bolt holes shall be at least a minimum of ½" and no more than a maximum of ¼" larger than the bolt diameter (*per the 2005 NDS, section 11.1.2. and AISI NASPEC, section E3a if applicable*).
- i. Install all specified fasteners before loading the product.
- j. Use proper safety equipment.
- k. 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 Strong-Tie® connectors cannot be welded.
- l. Pneumatic or powder-actuated fasteners may deflect and injure the operator or others. Pneumatic nail tools may be used to install connectors, provided the correct quantity and type of nails (*length and diameter*) are properly installed in the nail holes. Tools with nail hole-locating mechanisms should be used. Follow the manufacturer's instructions and use the appropriate safety equipment. Overdriving nails may reduce allowable loads. Contact Simpson Strong-Tie. Powder-actuated fasteners should not be used to install connectors.
- m. For holdowns, anchor bolt nuts should be finger-tight plus ⅓ to ½ turn with a hand wrench, with consideration given to possible future wood shrinkage. Care should be taken to not over-torque the nut. Impact wrenches should not be used as they may preload the holdown.
- n. For cold-formed steel applications, all screws shall be installed in accordance with the screw manufacturer's recommendations. All screws shall penetrate and protrude through the joined materials a minimum of 3 full exposed threads per AISI Standard for Cold Formed Steel Framing – General Provisions, section D1.3, if applicable.

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 licensed/certified building design professional, a licensed professional engineer, or a 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. Simpson Strong-Tie 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 Engineer/Designer of Record should evaluate and give written approval for substitution prior to installation."
- e. Simpson Strong-Tie will provide upon request code testing data on all products that have been code tested.
- f. For cold-formed steel applications, as a minimum all screws must comply with Society of Automotive Engineers (SAE) Standard J78, Steel Self Drilling Tapping Screws, and must have a Type II coating in accordance with ASTM B 633, Electrodeposited Coatings of Zinc on Iron and Steel. Screw strength shall be calculated in accordance with 2001 AISI NASPEC Section E4, if applicable, or shall be based on the manufacturer's design capacity determined from testing.
- g. 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 Strong-Tie products do not require special inspection.

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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 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 & 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.

STRONG-WALL® SELECTOR SOFTWARE

Now Simpson Strong-Tie has a tool that helps design professionals select an appropriate Wood or Steel Strong-Wall® shearwall system!

OPTIMIZED SOLUTION

Provides the most cost effective Strong-Wall solution based on the input shear load.

MANUAL SOLUTION

Allows designers to choose which type and number of walls meet their requirements.

- ◆ Easy to use software – free of charge!
- ◆ Finds lowest cost solution
- ◆ Provides actual drift and uplift values
- ◆ Includes new wall-bracing solutions
- ◆ Provides solutions for different model Codes
- ◆ Includes new anchorage solutions
- ◆ Saves, exports, and prints solutions
- ◆ Software updates automatically

You can download the Strong-Wall Selector Software at www.strongtie.com.

