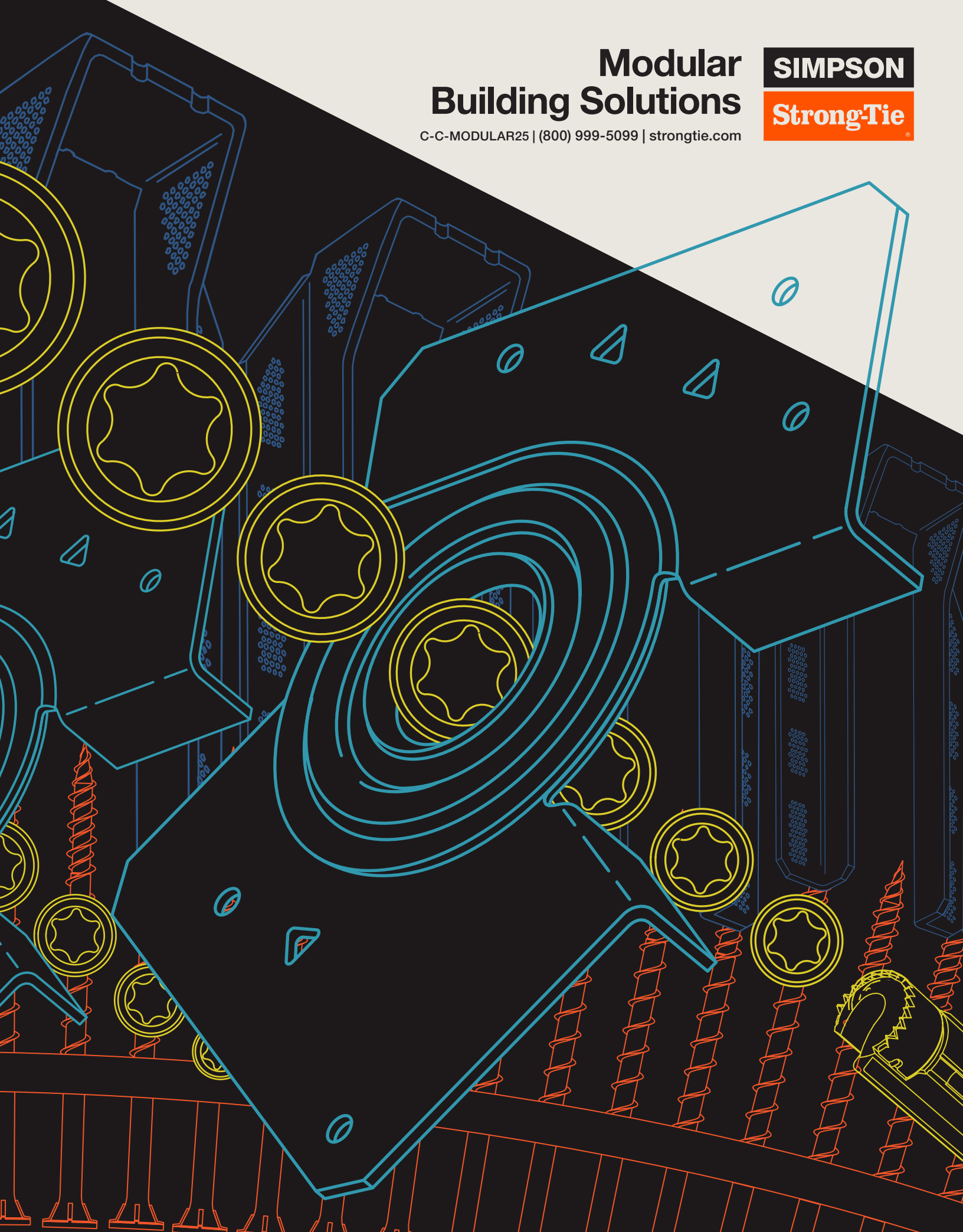


Modular Building Solutions

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Value Engineered

This icon indicates a product that is preferable to similar connectors because of (a) easier installation, (b) higher loads, (c) lower installed cost, or a combination of these features.

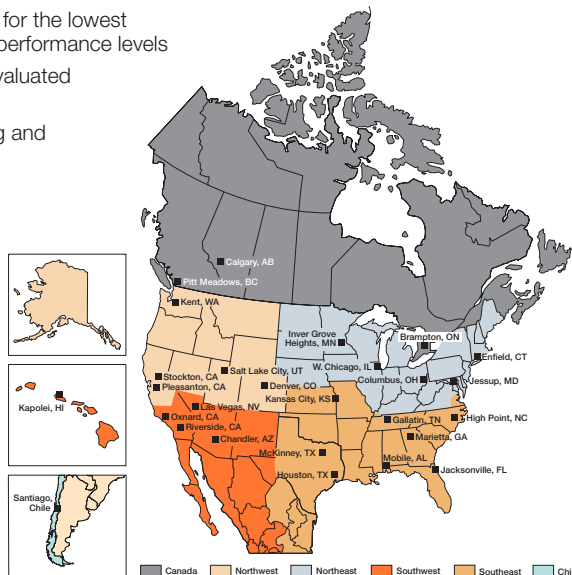
Introduction

Since 1956, Simpson Strong-Tie has focused on creating structural products that help people build safer and stronger homes and buildings. A leader in structural systems research and technology, Simpson Strong Tie is one of the largest suppliers of structural building products in the world. The Simpson Strong-Tie commitment to product development, engineering, testing and training is evident in the consistent quality and delivery of its products and services.

For more information, visit the company's website at strongtie.com.

The Simpson Strong-Tie Company Inc. No-Equal Pledge® includes:

- Quality products value-engineered for the lowest installed cost at the highest-rated performance levels
- The most thoroughly tested and evaluated products in the industry
- Strategically located manufacturing and warehouse facilities
- National code agency listings
- The largest number of patented connectors in the industry
- Global locations with an international sales team
- In-house R&D and tool and die professionals
- In-house product testing and quality control engineers
- Support of industry groups including AISI, AITC, ASTM, ASCE, AWC, AWWA, ACI, AISC, CSI, CFSEI, ICFA, NBMDA, NLBMDA, SBCA, SDI, SETMA, SFA, SFIA, STAFDA, SREA, NFBA, TPI, WDSC, WIJMA, WTCA and local engineering groups



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The Simpson Strong-Tie Quality Policy

We help people build safer structures economically. We do this by designing, engineering and manufacturing No-Equal® structural connectors and other related products that meet or exceed our customers' needs and expectations. Everyone is responsible for product quality and is committed to ensuring the effectiveness of the Quality Management System.

Mike Olosky
Chief Executive Officer



FM 767499

Getting Fast Technical Support

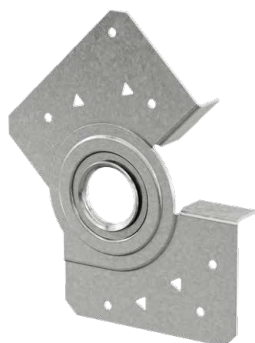
When you call for engineering technical support, having the following information on hand will help us to serve you promptly and efficiently:

- Which Simpson Strong-Tie catalog are you using?
(See the front cover for the catalog number.)
- Which Simpson Strong-Tie product are you using?
- What is your load requirement?
- What is the carried member's width and height?
- What is the supporting member's width and height?
- What is the carried and supporting members' material and application?

You should consult a qualified design professional familiar with all applicable building codes each time you use a Simpson Strong-Tie product.

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New Products



MMHC23 Hinged Roof Connector

The MMHC23 roof connector, latest in our MMHC® line, makes it easy to build a stick-frame roof in the factory that can fold flat during shipping. This connector has been tested and load rated in multiple directions. It can be installed on one or both sides of the roof rafter assembly. The MMHC23 model is a hinge for a 2x3 minimum attic truss knee wall. It has been specifically designed to complement our ATHC attic truss hinge connector.

See pp. 25–27 for more information.



ATHC™ Attic Truss Heel Hinge Connector

The first-of-its-kind ATHC double-hinge connector for truss heels gives builders a new cost-effective option to construct factory-built truss components using EWP floor joists and 2x solid sawn roof rafters. The connector works with 2½"-wide Open Joist and I-joist floor joists that are commonly used for attic trusses. To enable folded components to ship flat for transportation, the ATHC heel height provides a 2½" gap between the top and bottom truss chords that accommodates a 2x3 folded knee brace.

See p. 28–29 for more information.



SCLC™ Stair Cassette Ledger Connector

The SCLC offers a safer and more efficient way to connect preassembled stair cassettes to ledgers. It installs on the ledger in the factory with power-driven or hand-installed nails, and is fastened with Strong-Drive® SDS Heavy-Duty Connector screws on the jobsite once the cassette is securely seated.

See p. 34 for more information.



MASOZ™/MASOPZ™ Mud sill Anchors

The MASOZ mudsill anchor for factory-built, sheathed wall panels provides an effective anchorage method that reduces on-site labor costs. It provides a convenient alternative to traditional cast-in-place anchors and eliminates the need for additional blocking and connectors required by our MASA™ product when used over sheathing.

See p. 35–37 for more information.

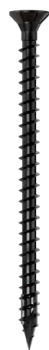
New Products



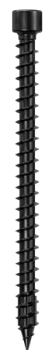
Strong-Drive® SWD® DOUBLE-THREADED™ Screw

The new Strong-Drive SWD Double-Threaded screw is an innovative fastener designed for stealth, strength and speed, and is ideal for securing two wood members together on exterior or interior structural jobs. Available in an assortment of lengths, the SWD screw can be used in a variety of applications such as knee bracing, fastening beam to post, beam to joist, or guardrail to post with ease. The screw features a chisel point for reduced splitting, a smooth and unthreaded mid-shank to secure wood members tight, and a compact head for low visibility.

See p. 38 for more information.



SDCF



SDCFC

Strong-Drive SDCF TIMBER-CF Screw

Strong-Drive SDCFC TIMBER-CFC Screw

The Strong-Drive SDCF Timber-CF and SDCFC Timber-CFC screws are the structural fasteners available in a variety of lengths and are designed for beam reinforcement, wood-to-wood connections and general interior applications. The SDCF large, flat head with underhead nibs ensures clean countersinking and a flush finish. The SDCFC compact cylinder head provides clean countersinking with a reduced footprint.

See p. 57–59 for more information.



Flat-Head



Hex-Head



Trim-Head

TITEN TURBO™ Concrete and Masonry Screw Anchor

The Titen Turbo screw anchor features an innovative Torque Reduction Channel to trap drilling dust where it can't obstruct thread action, significantly reducing binding, stripping, and snapping without compromising strength. The patented reverse thread design enables smooth driving with less torque while providing superior holding power. The Torque Reduction Channel also allows more space for dust to help prevent anchors from bottoming out in smaller-diameter screw holes.

See pp. 88–91 for more information.



EasyFrame™ Automated Marking System

The Simpson Strong-Tie EasyFrame automated marking system is an advanced way for wall panel manufacturers, LBMs and component manufacturers to produce wall, floor or truss assemblies. EasyFrame reduces construction timelines and addresses labor shortages by using automation to optimize materials efficiency and increase cutting accuracy. The EasyFrame saws are designed to save the greatest yield possible out of lumber by managing cut completion activity and constantly optimizing on the fly.

See p. 92–95 for more information.

Code Reports

Product evaluation agencies play an important role in the building industry providing an independent third-party review of architectural and structural products. Evaluations use publicly developed criteria to determine if the product meets the intent of the building code. Building officials can use product evaluation reports, often referred to as “code reports,” to review and approve product use on a project.

The most prominent architectural and structural building product certification companies are ICC Evaluation Service (ICC-ES) and IAPMO Uniform Evaluation Service (IAPMO UES), which are both ANSI-accredited to ISO Guide 65 “General Requirements for Bodies Operating Product Certification Systems” as product certification entities. Simpson Strong-Tie currently maintains more than 60 ICC-ES ESR and IAPMO UES ER reports evaluated to the 2006, 2009, 2012,

2015, 2018, 2021 and 2024 International Building Code (IBC) and International Residential Code (IRC). We continue to submit product information to evaluation agencies in order to update reports or receive additional reports for products in compliance with the latest codes. Simpson Strong-Tie also has reports for the City of Los Angeles, California and the State of Florida.

We have simplified our code references to make this catalog easier to use. You can quickly determine whether a product has a code report by looking in the Code Reference column of the product load tables. A summary of the code references used is in the table below.

To determine which specific code report applies to a product and download a copy of the code report, you can use our Code Report Finder at strongtie.com/codes.

Code Reference	Evaluation Agency	Building Code Coverage
IBC	ICC-ES IAPMO UES	International Building Code (IBC) International Residential Code (IRC)
FL	Florida Statewide Product Approval	Florida Building Code Visit strongtie.com/codes or floridabuilding.org for accurate and up-to-date product approval and evaluation reports.
LA	City of Los Angeles Department of Building Safety	Los Angeles Building Code and Los Angeles Residential Code These products have a City of LA supplement to their ICC-ES or IAPMO UES evaluation reports.
PR	Prescriptive	Products that meet prescriptive or conventional construction requirements.
—	None	No evaluation report listing.

How to Use This Catalog

• New Products

New products are shown with the  symbol. There are also many new sizes within existing model series.



Value Engineered

This icon indicates a product that is preferable to similar connectors because of a) easier installation, b) higher loads, c) lower installed cost, or a combination of these features.



Extra Corrosion Protection

The teal arrow icon identifies products that are available with additional corrosion protection (ZMAX®, hot-dip galvanized or double-barrier coating). The SS teal arrow icon identifies products also available in stainless steel. Other products may also be available with additional protection; contact Simpson Strong-Tie for options. The end of the product name will indicate what type of extra corrosion protection is provided (Z = ZMAX, HDG = hot-dip galvanized or SS = stainless steel). Stainless products may need to be manufactured upon ordering. See pp. 10–13 for information on corrosion, and visit our website strongtie.com/info for more technical information on this topic.



Strong-Drive® SD Connector Screw Compatible

This icon identifies products approved for installation with Simpson Strong-Tie Strong-Drive SD Connector screw. See p. 50 for more information or visit our SD screw compatibility reference at strongtie.com/sd.

How We Determine Allowable Loads

Allowable loads in this catalog are determined by calculations and test criteria established by industry, such as ICC-ES Acceptance Criteria, IAPMO UES Evaluation Criteria and ASTM test standards.

Connectors are typically evaluated in accordance with ICC-ES AC13 — Acceptance Criteria for Joist Hangers and Similar Devices. Evaluation is based on a minimum of three static load tests in wood assemblies. The published allowable load is the lower of the tested ultimate with a safety factor of 3, load at 1/8" deflection or the NDS fastener calculation limits.

Holdowns and tension ties are tested in accordance with ICC-ES AC155 — Acceptance Criteria for Hold-Downs (Tie-Downs) Attached to Wood Members. Allowable loads are based on the lower of three static load tests with a safety factor, deflection limits or NDS fastener calculation limits. Static load tests include holdown testing on steel jigs and wood assembly tests.

Cast-in-place concrete products are tested in accordance with ICC-ES AC398 — Cast-in-Place, Cold-Formed Steel Connectors in Concrete for Light-Frame Construction or AC399 — Cast-in-Place Proprietary Bolts in Concrete for Light-Frame Construction. Threaded fasteners are evaluated per AC233 — Alternate Dowel-Type Threaded Fasteners.

Where a test standard is unavailable, testing is conducted per sound engineering principles. Some tests include only portions of a product, such as purlin anchor tests, wherein only the embedded hook is tested, not the nailed or bolted section of the strap, which is calculated. Testing to determine allowable loads in this catalog is not done on connection systems in buildings. Testing is conducted under the supervision of an independent laboratory.

For detailed information regarding how Simpson Strong-Tie tests specific products, contact Simpson Strong-Tie.

Load Table Explanation

Model No.:

This is the Simpson Strong-Tie product name.

No. of Nail Grids:

If applicable, some modular products have nailing grids that accommodate power-driven nails.

No. of Nails per Grid:

Indicates the number of nails required in each nailing grid.

Allowable Design Loads:

The maximum load that a connection is designed to provide. There may be multiple design loads acting in different directions (up, down, lateral, perpendicular, etc.) imposed on a connection.

Code Ref.:

See p. 8 for the Code Reference Key Chart, to determine which code reports include this product.

Uplift

Down

Model No.	Dimensions (in.)		Header Nailing Grids		Nail Quantity		Allowable Loads (lb.)		Code Ref.
	W	H	No. of Grids	0.131" x 1 1/2" or 0.148" x 1 1/2"		Uplift (160)	Download (100)		
				Nails in Each Grid	Header			Joist	
MMLU26	1 9/16	4 3/4	4	1	4	2	95	330	IBC, FL, LA
				2	8			655	
				3	12			955	
MMLU26-2	3 1/8	5 5/8	4	1	4	2	95	240	
				2	8			555	
				3	12			870	
MMLU28	1 9/16	6 3/8	6	1	6	2	95	500	
				2	12			955	
MMLU28-2	3 1/8	7 1/8	6	1	6	2	95	395	
				2	12			870	
				3	18			1,340	
MMLU210	1 9/16	7 13/16	8	1	8	2	95	510	
				2	16			1,215	
MMLUI211	1 9/16	11 5/8	10	1	10	2 ⁴	95 ⁴	705	
				2	20			1,215	
MMLUI39	2 9/16	9 1/8	8	1	8	2 ⁴	95 ⁴	510	
				2	16			1,295	

Dimensions W, H:

This shows the product dimensions (width and height in this case) referenced in the product drawing.

Nail Quantity:

Total number of nails required at each member.

Product Drawing:

Provides a graphic presentation of the product with dimensional information (often cross-referenced to the table).

Corrosion Information

Understanding the Corrosion Issue

Metal connectors, fasteners and anchors can corrode and lose carrying capacity when installed in corrosive environments or when installed in contact with corrosive materials. The many variables present in a building environment make it impossible to predict accurately whether, or when, corrosion will begin to reach a critical level. This relative uncertainty makes it crucial that specifiers and users be knowledgeable about the potential risks and select a product suitable for the intended use. When there is any uncertainty about the possible corrosion risks of any installation, a qualified professional should be consulted. Because of the risks posed by corrosion, periodic inspections should be performed by a qualified engineer or qualified inspector and maintenance performed accordingly.

It's common to see some corrosion in outdoor applications. Even stainless steel can corrode. The presence of some corrosion does not mean that load capacity has been affected or that failure is imminent. If significant

corrosion is apparent or suspected, then the wood, fasteners, anchors, and connectors should be inspected by a qualified engineer or qualified inspector. Replacement of affected components may be appropriate.

Because of the many variables involved, Simpson Strong-Tie cannot provide estimates of the service life of connectors, anchors, and fasteners. We suggest that all users and specifiers obtain recommendations on corrosion from the suppliers of the materials that will be used with Simpson Strong-Tie products, in particular, treated wood or concrete. We have attempted to provide basic knowledge on the subject here, and have additional information in our technical bulletins on the topic (strongtie.com/info). The Simpson Strong-Tie website should always be consulted for the latest information.

Corrosion Conditions

Corrosion can result from many combinations of environmental conditions, materials, construction design, and other factors, and no single guideline addresses all corrosion possibilities. Nevertheless, important corrosion information can be obtained from the American Wood Protection Association (AWPA), the International Building Code (IBC), International Residential Code (IRC), and local building codes. The following discussion provides general guidelines and approaches for the selection of Simpson Strong-Tie products for various construction conditions, but is not intended to supersede the guidelines of the AWPA, IBC, IRC, or local building codes.

Corrosion issues for Simpson Strong-Tie products generally fall into five categories:

1. Environmental and Construction Factors

Many environments and materials can cause corrosion, including ocean salt air, condensation, duration of wetness, fire retardants, fumes, fertilizers, chlorides, sulfates, preservative-treated wood, deicing salts, dissimilar metals, soils, and more. Designers must take all of these factors into account when deciding which Simpson Strong-Tie products to use with which corrosion-resistant coatings or materials.

The design, quality of construction, and misinstallation can directly affect the corrosion resistance of products. A product intended and installed for use in dry-service environment may corrode if the structure design or building materials allow moisture intrusion, or expose the product to corrosive conditions, such as moisture or chemicals contained in the construction materials, soils, or atmospheres.

2. Chemically Treated Lumber

Some wood-preservative or fire-retardant chemicals or chemical retention levels create increased risk of corrosion and are corrosive to steel connectors and fasteners. For example, testing by Simpson Strong-Tie has shown that ACQ-Type D is more corrosive than Copper Azole, Micronized Copper Azole, or CCA-C. At the same time, other tests have shown that inorganic boron treatment chemicals, specifically SBX-DOT, are less corrosive than CCA-C.

Because different chemical treatments of wood have different corrosion effects, it's important to understand the relationship between the wood treatment chemicals and the coatings and base metals of Simpson Strong-Tie products.

The preservative-treated wood supplier should provide all of the pertinent information about the treated wood product. The information should include the AWPA Use Category Designation, wood species group, wood treatment chemical, and chemical retention. See building code requirements and appropriate evaluation reports for corrosion effects of wood treatment chemicals and for fastener corrosion resistance recommendations.

With Fire-Retardant (FRT) Wood, the 2015 and 2018 IBC Section 2304.10.5, 2021 IBC Section 2304.10.6, and 2015, 2018 and 2021 IRC Section R317.3.4 refer to the manufacturers for fastener corrosion requirements. In the absence of recommendations from the FRT manufacturer, the building codes require fasteners to be hot-dip

galvanized, stainless steel, silicon bronze or copper. Simpson Strong-Tie further requires that the fastener is compatible with the metal connector hardware. Fastener shear and withdrawal allowable loads may be reduced in FRT lumber. Refer to the FRT manufacturer's evaluation report for potential reduction factors.

3. Dissimilar Metals and Galvanic Corrosion

Galvanic corrosion occurs when two electrochemically dissimilar metals contact each other in the presence of an electrolyte (such as water) that acts as a conductive path for metal ions to move from the more anodic to the more cathodic metal. Good detailing practice, including the following, can help reduce the possibility of galvanic corrosion of fasteners and connectors:

- Use fasteners or anchors and connectors with similar electrochemical properties
- Use insulating materials to separate dissimilar metals
- Ensure that the fastener or anchor is the cathode when dissimilar connector metals are present
- Prevent exposure to and pooling of electrolytes

Galvanic Series of Metals

Corroded End (Anode)
Magnesium, Magnesium alloys, Zinc
Aluminum 1100, Cadmium, Aluminum 2024-T4, Iron and Steel
Lead, Tin, Nickel (active), Inconel Ni-Cr alloy (active), Hastelloy alloy C (active)
Brasses, Copper, Cu-Ni alloys, Monel
Nickel (passive)
304 stainless steel (passive), 316 stainless steel (passive), Hastelloy alloy C (passive)
Silver, Titanium, Graphite, Gold, Platinum
Protected End (Cathode)

If you are uncertain about the galvanic corrosion potential of any installation, always consult with a corrosion expert. See the product pages for particular parts for more information regarding what coating systems are recommended or required for use with the parts in question.

4. Hydrogen-Assisted Stress Corrosion Cracking

Some hardened fasteners may experience premature failure from hydrogen-assisted stress-corrosion cracking if exposed to moisture. These fasteners are recommended for use only in dry-service conditions.

5. Indoor Swimming Pools

Indoor swimming pool environments are extremely corrosive to steel products. And some stainless steel is highly susceptible to stress corrosion cracking (SCC) under sustained loads in this environment. SCC can result in sudden failures. Instead of stainless steel, it is advised to use a duplex coated, post-hot-dip galvanized or ZMAX® coated low carbon steel for any load bearing components used in swimming pool environments. Regular maintenance is strongly advised. See strongtie.com/corrosion for additional information.

Corrosion Information

Guidelines for Selecting Materials and Coatings

In the discussion and charts of this section, Simpson Strong-Tie presents a three-step system to determine which product coatings and base metals to use in a range of corrosion conditions. These are general guidelines that may not consider all relevant application criteria. Refer to product-specific information for additional guidance.

Simpson Strong-Tie evaluated the AWWA Use Categories (See AWWA U1-16) and ICC-ES AC257 Exposure Conditions and developed a set of corrosion resistance recommendations. These recommendations

address the coating systems and materials used by Simpson Strong-Tie for fastener, connector, and anchor products. Although the AWWA Use Categories and ICC-ES AC257 Exposure Conditions specifically address treated-wood applications and some common corrosion agents, Simpson Strong-Tie believes that its recommendations may be applied more generally to other application conditions, insofar as the service environments discussed are similar. You should consult with a corrosion engineer concerning the application where advisable.

Step 1 of 3 — Evaluate The Corrosion Conditions

- **Dry Service:** Generally INTERIOR applications including wall and ceiling cavities, and in raised floor applications in enclosed buildings that have been designed to prevent condensation and exposure to other sources of moisture. Prolonged periods of wetness during construction should also be considered, as this may constitute a Wet Service or Elevated Service condition. Dry Service is typical of AWWA UC1 and UC2 for wood treatment and AC257 Exposure Condition 1. Keep in mind that dry-service environment may contain airborne salts. AC257 Exposure Condition 2 reflects the presence of airborne salt in a dry-service environment and corrosion hazard to exposed metal surfaces. It does not include effects of treatment chemicals. This condition is generally considered in Elevated and Uncertain assessments.
- **Wet Service:** Generally EXTERIOR construction in conditions other than elevated service. These include Exterior Protected and Exposed and General Use Ground Contact as described by AWWA UC4A. The AWWA U1 standard classifies exterior above-ground treatments as Use Categories UC3 (A and B) depending on moisture run-off; and for exterior ground-contact levels of protection, it has Use Categories UC4 (A-C). ICC-ES AC257 considers the exterior exposure to be limited by the presence of treatment chemicals, and corrosion accelerators. In general, the AC257 Exposure Condition 1 includes AWWA Use Categories UC1 (interior/dry) and UC2 (interior/damp), while Exposure Condition 3 is a surrogate to UC3A, 3B, and 4A (exterior, above-ground and ground-contact, general use). The ICC-ES AC257 Exposure Conditions 2 and 4 are exposures that are salt environments.
- **Elevated Service:** Includes fumes, fertilizers, soil, some preservative-treated wood (AWPA UC4B and UC4C), industrial-zone atmospheres, acid rain, salt air, and other corrosive elements.
- **Uncertain:** Unknown exposure, materials, or treatment chemicals.
- **Ocean/Water Front Service:** Marine environments that include airborne chlorides, salt air, and some salt splash. Environments with de-icing salts are included.

Step 2 of 3 — Determine Your Corrosion Resistance Classification

Corrosion Resistance Classifications

Environment	Material to Be Fastened						
	Untreated Wood or Other Material	Preservative-Treated Wood					FRT Wood
		SBX-DOT Zinc Borate	Chemical Retention ≤ AWWA, UC4A	Chemical Retention > AWWA, UC4A	ACZA	Other or Uncertain	
Dry Service	Low	Low	Low	High	Medium	High	Medium
Wet Service	Medium	N/A	Medium	High	High	High	High
Elevated Service	High	N/A	Severe	Severe	High	Severe	N/A
Uncertain	High	High	High	Severe	High	Severe	Severe
Ocean/Water Front	Severe	N/A	Severe	Severe	Severe	Severe	N/A

Additional Considerations

1. Always consider the importance of the connection as well as the cost of maintenance and replacement.
2. If the information about treatment chemicals in an application is incomplete, or if there is any uncertainty as to the service environment of any application, Simpson Strong-Tie recommends the use of a Type 300 Series stainless steel. Simpson Strong-Tie has evaluated the corrosion effects of various formulations of wood treatment chemicals ACZA, ACQ, CCA, MCA, CA, and salt as corrosion accelerators. Simpson Strong-Tie has not evaluated all formulations and retentions of the named wood treatment chemicals other than to use coatings and materials in the severe category. Manufacturers may independently provide test results or other product information. Simpson Strong-Tie expresses no opinion regarding such information.
3. Type 316/305/304 stainless-steel products are recommended where preservative-treated wood used in ground contact has a chemical retention level greater than those for AWWA UC4A; CA-C, 0.15 pcf (pounds per cubic foot); CA-B, 0.21 pcf; micronized CA-C, 0.14 pcf; micronized CA-B, 0.15 pcf; ACQ-Type D (or C), 0.40 pcf. When wood treated with micronized CA-C and micronized CA-B with treatment retentions up to UC4B is in dry service, hot-dip galvanized fasteners and connectors may be suitable.
4. Mechanical galvanizations C3 and N2000 should not be used in conditions that would be more corrosive than AWWA UC3A (exterior, above ground, rapid water run off).
5. Some chemically treated wood may have chemical retentions greater than specification, particularly near the surface, making it potentially more corrosive than chemically treated wood with lower retentions. If this condition is suspected, use Type 316/305/304 stainless-steel, silicon bronze, or copper fasteners.
6. Some woods, such as cedars, redwood, and oak, contain water-soluble tannins and are susceptible to staining when in contact with metal connectors and fasteners. Applying a quality finish to all surfaces of the wood prior to installation can help reduce staining.
7. Anchors, fasteners and connectors in contact with FRT lumber shall be hot-dip galvanized or stainless steel, unless recommended otherwise by the FRT manufacturer. Many FRT manufacturers permit low-corrosion-resistant connector and fastener coatings for dry-service conditions.
8. Simpson Strong-Tie does not recommend painting stainless-steel anchors, fasteners or connectors. Imperfections or damage to the paint can facilitate collection of dirt and water that can degrade or block the passive formation of the protective chromium oxide film. When this happens, crevice corrosion can initiate and eventually become visible as a brown stain or red rust. Painting usually does not improve the corrosion resistance of stainless steel.

Corrosion Information

Guidelines for Selecting Materials and Coatings (cont.)

Step 3 of 3 — Match Your Corrosion Resistance Classification to the Coatings and Materials Available

Not all products are available in all finishes. Contact Simpson Strong-Tie for product availability, ordering information and lead times.

Coatings and Materials Available for Connectors

Level of Corrosion Resistance	Coating or Material	Description	
Connectors			Fastener Material or Finish
Low	Gray or Black Paint	Organic paint intended to protect the product while it is warehoused and in transit to the jobsite.	Bright, Hot-Dip Galvanized, Mechanically Galvanized, or Double-Barrier Coating
	Powder Coating	Baked-on paint finish that is more durable than standard paint.	
	Galvanized	Standard (G90) zinc-galvanized coating containing 0.90 oz. of zinc per square foot of surface area (per ASTM A653) total for both sides.	
Medium		Galvanized (G185) 1.85 oz. of zinc per square foot of surface area (hot-dip galvanized per ASTM A653) total for both sides. Products with a powder-coat finish over a ZMAX® base have the same level of corrosion resistance.	Hot-Dip Galvanized, Mechanically Galvanized, or Double-Barrier Coating <i>* Bright fasteners may be used with ZMAX or HDG connectors where low corrosion resistance is allowed.</i>
		Products are hot-dip galvanized after fabrication (14 ga. and thicker). The coating weight increases with material thickness. The minimum average coating weight is 2.0 oz./ft. ² (per ASTM A123) total for both sides. Anchor bolts are hot-dip galvanized per ASTM F2329.	
High/Severe		Type 316 stainless steel is a nickel-chromium austenitic grade of stainless steel with 2–3% molybdenum. Type 316 stainless steel is not hardened by heat treatment and is inherently nonmagnetic. It provides a level of corrosion protection suitable for severe environments, especially environments with chlorides.	Type 316 Stainless Steel

Dry Service



Wet Service



Elevated Service / Severe



Corrosion Information

Guidelines for Selecting Materials and Coatings (cont.)

Step 3 of 3 — Match Your Corrosion Resistance Classification to the Coatings and Materials Available (cont.)

Not all products are available in all finishes. Contact Simpson Strong-Tie for product availability, ordering information and lead times.

Coatings and Materials Available for Fasteners

Level of Corrosion Resistance	Coating or Material	Description	
Fasteners			Applicable Products
Low	Bright	No surface coating.	Nails
	Electrocoating (E-coat)	Electrocoating uses an electrical current to deposit the coating material onto the fastener. After application, the coating is oven cured. Electrocoat is intended for dry service, low-corrosion applications and is suitable for use with FRT in medium-corrosion, dry-service applications.	Strong-Drive® SDWF FLOOR-TO-FLOOR, SDW™ TRUSS-PLY, SDW EWP-PLY, SDWV SOLE-TO-RIM Screws and SDCF TIMBER-CF Screw
	Clear, Yellow and Bright-Blue Zinc	Zinc coatings applied by electrogalvanizing processes to fasteners that are used in dry service and with no environmental or material corrosion hazard.	Strong -Drive SDHR COMBO-HEAD Screw and SD8 Wafer Head Screw
Medium	Zinc Plating with Baked-On Ceramic Coating	A baked ceramic barrier coating applied over top of electroplated zinc provides increased protection in mildly corrosive environments.	Titen Turbo™ Concrete and Masonry Screw
	 HOT-DIP GALVANIZED® ASTM A153, Class D	Hot-dip galvanized fasteners 3/8" and smaller in diameter in accordance with ASTM A153, Class D. Hot-dip galvanized fasteners are compliant with the 2015, 2018, 2021 and 2024 IRC and IBC.	Strong-Drive SCN CONNECTOR Nail
	Type 410 Stainless Steel with Protective Top Coat	Type 410 stainless steel is a low-carbon martensitic grade of stainless steel that can be hardened and is inherently magnetic. This material provides corrosion resistance in mild atmospheres and many mild chemical environments.	Titen® Stainless-Steel Concrete and Masonry Screw
	Mechanically Galvanized Coating, ASTM B695	Simpson Strong-Tie Strong-Drive SD Connector screws are manufactured with a mechanically applied zinc coating in accordance with ASTM B695, Class 55, with a supplemental overcoat. Titen HD® Mechanically Galvanized anchors comply with ASTM B695, Class 65. These fasteners are compatible with painted and zinc-coated (G90 and ZMAX®) connectors and are recognized in evaluation reports that can be found on strongtie.com .	Strong-Drive SD CONNECTOR Screw Titen HD Mechanically Galvanized
	Double-Barrier Coating	Simpson Strong-Tie Strong-Drive SDS Heavy-Duty Connector screws and Outdoor Accents® structural wood screws are manufactured with double-barrier coating that provides a level of corrosion protection equaling that provided by HDG coating and are recognized in evaluation reports that can be found on strongtie.com .	Strong-Drive SDS HEAVY-DUTY CONNECTOR Screw and SWD® DOUBLE-THREADED™ Screw Outdoor Accents Connector Screw and Structural Wood Screw
High	 Types 304 and 305 Stainless Steels	Types 304 and 305 stainless steels are nickel-chromium austenitic grades of stainless steel. Types 304 and 305 stainless steels are not hardened by heat treatment and are inherently nonmagnetic. They provide very good corrosion resistance and are suitable for use in many corrosive environments. Fasteners made from Types 304 and 305 stainless steels are compliant with the 2018, 2021 and 2024 IBC and IRC.	Deck-Drive™ DCU COMPOSITE Screw Full Round Head Ring-Shank Nail Smooth-Shank Roofing Nail 15-Gauge Finishing Nail Collated Staples
Severe	 HOT-DIP GALVANIZED® ASTM A153, Class C	Simpson Strong-Tie Strong-Drive Timber-Hex screws are hot-dip galvanized in accordance with ASTM A153, Class C. These hot-dip galvanized fasteners have a minimum average of 1.25 oz./ft. ² of zinc coating and are compliant with the 2015, 2018, 2021 and 2024 IRC (R317.3) and IBC.	Strong-Drive SDWH TIMBER-HEX HDG Screw
	 316 Type 316 Stainless Steel	Type 316 stainless steel is a nickel-chromium austenitic grade of stainless steel with 2–3% molybdenum. It provides a level of corrosion protection suitable for severe environments, especially environments with chlorides. Type 316 stainless-steel fasteners are compliant with the 2015, 2018, 2021 and 2024 IRC and IBC.	Strong-Drive SCNR™ CONNECTOR Nail, SDS HEAVY-DUTY CONNECTOR Screw, SD CONNECTOR SS Screw and SDWS™ TIMBER SS Screw

Important Information and 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 products and achieve maximal allowable design load, the products must be properly installed and used in accordance with the corrosion information, installation instructions and design limits provided by Simpson Strong-Tie. To ensure proper installation and use, designers and installers must carefully read the following General Notes, General Instructions for the Installer, General Instructions for the Designer and Corrosion Information, 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. Read and follow all instructions and warnings on our website, in this and any other applicable catalog, in the *Installer's Pocket Guide* and all other Simpson Strong-Tie publications. If any instructions or warnings are unclear, do not use the product and contact Simpson Strong-Tie.
3. Install all required fasteners per installation instructions provided by Simpson Strong-Tie: (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 power 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 (such as strap-type holdowns, straight-end twist straps, etc.), do not bend more than one full cycle.

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.

6. Wear head, skin, eye and ear protection when installing the products or visiting a jobsite.

Failure to follow fully all of the notes and instructions provided by Simpson Strong-Tie 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 provides no warranty for any products that have been modified, improperly installed or not used in accordance with the information set forth in this catalog or on our website.

Important Information

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 must consult the Simpson Strong-Tie website at strongtie.com each time a product is used to obtain additional design and installation information.

Simpson Strong-Tie Limited Warranty

For the Limited Warranty that applies to Simpson Strong-Tie products, please consult strongtie.com/limited-warranties. See p. 96 for the Limited Warranty in effect when this catalog was first published. To obtain a copy of the current Limited Warranty, contact us at limited_warranty@strongtie.com, (800) 999-5099 or Simpson Strong-Tie Company Inc., 5956 West Las Positas Boulevard, Pleasanton, CA 94588.

The Limited Warranty contains important disclaimers, limitations and exclusions, and applies only if the products have been properly specified, installed, maintained, and used in accordance with the design limits and the structural, technical, and environmental specifications in the Simpson Strong-Tie Documentation. All future purchases of Simpson Strong-Tie products are subject to the terms of the Limited Warranty in effect as of the purchase date.

Although products are designed for a wide variety of uses, Simpson Strong-Tie assumes no liability for confirming that any product is appropriate for an intended use, and each intended use of a product must be reviewed and approved by qualified professionals. Each product is designed for the load capacities and uses listed in the Simpson Strong-Tie Documentation, subject to the limitations and other information set forth therein. Due to the particular characteristics of potential impact events such as earthquakes and high velocity winds, the specific design and location of the structure, the building materials used, the quality of construction, or the condition of the soils or substrates 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's specifications and the products are properly installed in accordance with applicable building codes, laws, rules and regulations.

Terms and 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 licensed/certified building design professional, a licensed professional engineer or licensed architect ("designer"). You should review our website and consult a qualified designer familiar with all applicable building codes each time you use a Simpson Strong-Tie product.

Indemnity

Any designer or other person who modifies any products, changes any installation procedures or designs any 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 such products.

Non-Catalog and Modified Products

Modifications to products or changes in installation procedures should

only be made by a qualified professional designer. The performance of such modified products or altered installation procedures is the sole responsibility of the designer. Any person modifying Simpson Strong-Tie products must provide the installer with specific instructions on the modified products' specifications, installation and use.

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 a qualified designer and will be fabricated by Simpson Strong-Tie in accordance with customer specifications.

Any modified, special order or non-catalog products, or any products that are not installed strictly in accordance with Simpson Strong-Tie installation procedures, are provided "AS IS" and without any representation or warranty of any kind.

Important Information and General Notes

General Notes

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

- Simpson Strong-Tie reserves the right to change specifications, designs and models without notice or liability for such changes. Allowable loads can change for various reasons including, but not limited to, building code updates, new test standards, calculation methods, and product modifications. Refer to **strongtie.com** or Simpson Strong-Tie software for the most up-to-date information.
- 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.
- Unless otherwise noted, dimensions are in inches, loads are in pounds.
- Unless otherwise noted, welds, screws, bolts and nails may not be combined to achieve highest load value. 0.131" x 2½", 0.148" x 3" and 0.162" x 3½" specify common nails that meet the requirements of ASTM F1667. When a shorter nail is specified, it will be noted (for example 0.131" x 1½"). Nails shall be concentric, full round head nails complying with ASTM F1667. Refer to Simpson Strong-Tie Nailing Guide, NDS (National Design Specification) and ASTM F1667 (American Society of Testing and Materials) for more nail info.
- Do not overload. Do not exceed catalog allowable loads.
- 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. Allowable loads for alternate species may be determined as outlined in Simpson Strong-Tie engineering letter L-ALTSPECIES at **strongtie.com**. This chart shows specific gravity and perpendicular-to-grain compression capacities for the different wood species:

Species	Fc _⊥	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
Spruce-pine-fir south (SPF-S)	335 psi	0.36
Western Cedar	425 psi	0.36
Glulam	650 psi	0.50
LVL (DF/SP)	750 psi	0.50
LSL (E = 1.3 x 10 ⁶)	680 psi	0.50
LSL (E ≥ 1.5 x 10 ⁶)	880 psi	0.50
Parallam PSL	625 psi	0.50
- Simpson Strong-Tie Company 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 ⅝", ¾" and 1" will be 11 ga. (0.120"), 7 ga. (0.179") and 3 ga. (0.239"), respectively. The minimum yield and tensile strengths are 33 ksi and 52 ksi, respectively.
- All references to bolts are for structural quality through bolts (not lag screws or carriage bolts) equal to or better than ASTM Standard A307, Grade A. Nuts shall be ASTM A563, Grade A or better, unless noted otherwise.
- 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.
- 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 0.75 of the nail diameter (2015/2018 NDS 12.1.5.3; 2024 NDS 12.1.6.2). Use a ⅝" bit for Strong-Drive® SDS Heavy-Duty Connector screws and a ⅜" bit for Strong-Drive SD9/SD10 Connector screws.
- 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. (Reference ICC-ES ESR-2320 for information on Take Up Devices.)
- 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.
- Built-up lumber (multiple plies) must be fastened together to act as one unit to resist the applied load (fastening of the members together does not include the connector fasteners). This must be determined by the designer.
- Some model configurations may differ from those shown in this catalog. Contact Simpson Strong-Tie for details.
- 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 nonmodified hanger, and adjust as indicated. Gauge may vary from that specified depending on the manufacturing process used. Simpson Strong-Tie will calculate the net height for a sloped seat. The customer must provide the H1 joist height before slope.
- Truss plates shown are the responsibility of the truss designer.
- 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 the current Simpson Strong-Tie *Wood Construction Connectors* catalog at **strongtie.com** for hangers that may be welded.
- 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 in accordance with 2015/2018/2024 NDS Appendix L. Some products require SAE narrow washers (N) to fit in a tight space and are noted accordingly.
- To achieve tabulated values for embedded concrete/masonry products, full consolidation of concrete or grout is required whether mounted to the form prior to the pour or wet set.

Important Information and 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 connection to fail. Prior to using a particular fastener, please consult Connector Fastener types on the current *Wood Construction Connectors* catalog at **strongtie.com**
 - Larger-diameter fasteners may be substituted for smaller-diameter fasteners in connectors provided the larger fastener does not cause splitting in the wood member and the connector holes are not enlarged.
 - Simpson Strong-Tie Strong Drive® SD Connector screws are available for use with our connectors. They are designed to replace nails in certain products. See p. 50 for information. Screws not manufactured by Simpson Strong-Tie are not supported in our products.
- b. Fill all fastener holes as specified in the installation instructions for that product. See the current *Wood Construction Connectors* catalog at **strongtie.com** for requirements of the various shapes of fastener holes.
- c. Do not overdrive nails. Overdriven nails reduce shear capacity. See the current *Wood Construction Connectors* catalog at **strongtie.com** for additional information.
- d. Products shall be installed for the use specified. Use the materials specified in the installation instructions. Substitution of or failure to use specified materials may cause the connection to fail. Do not alter installation procedures from those set forth in this catalog. See Terms and Conditions of Sale.
- e. Unless a connector is specifically designed for power-driven fasteners that don't have prepunched holes, 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. 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.
- g. The proper use of certain products requires that the product be bent. For those products, installers must not bend the product more than one time (one full cycle).
- h. Bolt holes shall be at least a minimum of $\frac{1}{32}$ " and no more than a maximum of $\frac{1}{16}$ " larger than the bolt diameter (per the 2015/2018/2024 NDS, Section 12.1.3.2 and AISI S100, Table J3, if applicable).
- i. Install all specified fasteners before loading the connection.
- j. Some hardened fasteners may have premature failure if exposed to moisture. These fasteners are recommended to be used in dry interior applications.
- k. Use proper safety equipment.
- l. Welding shall be in accordance with American Welding Society AWS D1.1 or D1.3, as applicable. Allowable loads for welded connections require electrodes with minimum tensile strength of 70 ksi. Welding galvanized steel may produce harmful fumes; follow proper welding procedures and precautions. Unless otherwise noted, Simpson Strong-Tie connectors cannot be welded.
- m. Pneumatic or power-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. Nails shall be concentric, full round head nails complying with ASTM F1667. Connectors with tool embossments or tools with nail hole-locating mechanisms should be used. MASOZ™ mudsill anchor works with several manufacturers' full round-head pneumatic framing tools. Visit **strongtie.com/masoz** for additional information. Follow the manufacturer's instructions and use the appropriate safety equipment. Contact Simpson Strong-Tie. Power-actuated fasteners should not be used to install connectors, unless noted otherwise. Reference the current Simpson Strong-Tie *Wood Construction Connectors* catalog at **strongtie.com** for hanger installation with powder-actuated fasteners.
- n. Joist shall bear completely on the connector seat and the gap between the joist end and abutting material, such as the adjacent header or any hanger section between the header and the joist, shall not exceed $\frac{1}{8}$ " per ICC-ES AC13 test standards (unless specifically noted otherwise).
- o. Fasteners are permitted to be installed through metal truss plates when approved by the Truss Designer in accordance with ANSI/TPI 1-2014/2022, Section 7.5.3.4 and 8.9.2. Installation of Simpson Strong-Tie Strong-Drive SDS Heavy-Duty Connector screws through metal connector plates requires the plates to be predrilled using a maximum of a $\frac{5}{32}$ " bit. Do not drive nails through the truss plate on the opposite side of single-ply trusses which could force the plate off the truss.
- p. Nuts shall be installed such that the end of the threaded rod or bolt is at least flush with the top of the nut.
- q. When installing hurricane ties on the inside of the wall special considerations must be taken to prevent condensation on the inside of the completed structure in cold climates.
- r. Unless otherwise noted, connectors shown in this catalog have been designed to be installed at the time the framing members are installed. Contact Simpson Strong-Tie for retrofit suitability of specific connectors including those manufactured in accordance with the hanger options section of this catalog.

Important Information and General Notes

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. See p. 9 for allowable load information.
- e. For connections with simultaneous loads, see p. 22.
- f. Loads are based on the 2015/2018/2024 NDS and AISI S100 if applicable, unless otherwise specified. Other code agencies may use different allowable loads.
- g. Unless otherwise noted, loads include Load Duration, Group Action and Toe-Nail factors from the NDS as applicable. The application of additional adjustment factors shall be by the designer. Duration of load adjustments as specified by the code are as follows:
 “PERMANENT” — 90% of the design load.
 “FLOOR” and “DOWN” (100) — no increase for duration of load.
 “SNOW” (115) — 115% of design load for two month duration of load.
 “ROOF LOAD” (125) — 125% of design load for seven day duration of load.
 “EARTHQUAKE / WIND / UPLIFT” (160) — 160% of design load for earthquake/wind loading.
- h. Unless otherwise noted, wood shear is not considered in the loads given; reduce allowable loads when wood shear is limiting.
- i. 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.”
- j. Verify that the dimensions of the supporting member are sufficient to receive the specified fasteners, and develop the top flange bearing length.
- k. Some catalog illustrations show connections that could cause cross-grain tension or bending of the wood during loading if not sufficiently reinforced. In this case, mechanical reinforcement should be considered.
- l. The allowable loads published in this catalog are for use when utilizing the traditional Allowable Stress Design methodology. A method for converting allowable stress design values to Load and Resistance Factor Design (LRFD) is given in the 2015/2018/2024 NDS, Appendix N. A method for using LRFD for cold-formed steel has also been published in the AISI S100-16. When designing with LRFD, reference lateral resistances must be used. Contact Simpson Strong-Tie for reference lateral resistances of products listed in this catalog.
- m. For joist hangers, Simpson Strong-Tie recommends the hanger height shall be at least 60% of joist height for stability against rotation while under construction prior to sheathing install.
- n. 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 AISI S100 Section J4, if applicable, or shall be based on the manufacturer's design capacity determined from testing.
- o. 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.
- p. Throughout the catalog 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.
- q. Top flange hanger allowable loads are typically based on testing with solid headers. Load reductions may apply when using headers comprised of multiple plies of dimensioned lumber or SCL. See technical bulletin T-C-MPLYHEADR at strongtie.com for more information.
- r. For connections involving members with different specific gravities, use the allowable load corresponding to the lowest specific gravity in the connection, unless noted otherwise.
- s. Welding shall be in accordance with American Welding Society AWS D1.1 or D1.3, as applicable. Allowable loads for welded connections require electrodes with minimum tensile strength of 70 ksi. Welding galvanized steel may produce harmful fumes; follow proper welding procedures and precautions. Unless otherwise noted, Simpson Strong-Tie connectors cannot be welded.

Important Information and General Notes

Conversion Charts

Metric Conversion

Imperial	Metric
1 in.	25.40 mm
1 ft.	0.3048 m
1 lb.	4.448 N
1 Kip	4.448 kN
1 psi	6,895 Pa

Bolt Diameter

in.	mm
3/8	9.5
1/2	12.7
5/8	15.9
3/4	19.1
7/8	22.2
1	25.4

If Common Rafter Roof Pitch is ...

Rise/Run	Slope
1:12	5°
2:12	10°
3:12	14°
4:12	18°
5:12	23°
6:12	27°
7:12	30°
8:12	34°
9:12	37°
10:12	40°
11:12	42°
12:12	45°

Then Hip/Valley Rafter Roof Pitch becomes ...

Rise/Run	Slope
1:17	3°
2:17	7°
3:17	10°
4:17	13°
5:17	16°
6:17	19°
7:17	22°
8:17	25°
9:17	28°
10:17	30°
11:17	33°
12:17	35°

1. Use these Roof Pitch to Hip/Valley Rafter Roof Pitch conversion tables only for hip/valley rafters that are skewed 45° right or left. All other skews will cause the slope to change from that listed.

US Standard Steel Gauge Equivalents in Nominal Dimensions

Ga.	Minimum Thickness (mil)	Approximate Dimensions		Thickness of Steel Sheets (in.)		
		in.	mm	Uncoated Steel	Galvanized Steel (G90)	ZMAX® (G185)
3	229	1/4	6	0.239	—	—
7	171	3/16	4.5	0.179	0.186	—
8	155	11/64	4.3	0.164	0.168	0.170
10	118	9/64	3.5	0.134	0.138	0.140
11	111	1/8	3.1	0.120	0.123	0.125
12	97	7/64	2.7	0.105	0.108	0.110
14	68	5/64	2	0.075	0.078	0.080
16	54	1/16	1.6	0.060	0.063	0.065
18	43	3/64	1.3	0.048	0.052	0.054
20	33	1/32	1	0.036	0.040	0.042
22	27	1/32	1	0.030	0.033	0.035

1. Steel thickness may vary according to industry mill standards.

MMLU

Face-Mount Hangers for Factory-Built Structures

The MMLU series provides installation versatility for factory-built structures. Nailing grids in the MMLU hangers replace traditional nail holes, allowing for faster installation of power-driven nails. Each hanger provides multiple nailing pattern options to enable value engineering for different loads.

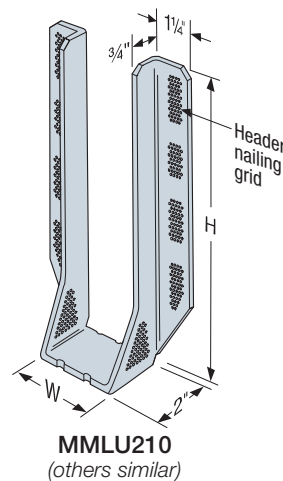
Material: MMLU26-2, MMLU28-2 — 18 gauge,
all others — 20 gauge

Finish: Galvanized

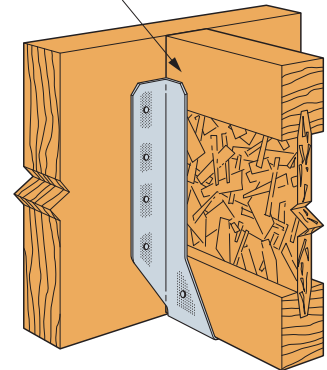
Installation:

- Nails must be installed with a powered nail tool. Face protection is required. To reduce ricochet, install nails straight through the nailing grid. Follow all safety instructions for the nail tool.
- Adjust the nail tool pressure so nail heads are flush with the hanger and are not overdriven causing the MMLU steel to dimple.
- Install at least one 0.131" x 1½" or 0.148" x 1½" nail into each nailing grid.
- Install additional nails in accordance with the MMLU Installation and Load Table for increased capacity. Each header nailing grid must contain the same quantity of nails.
- The minimum vertical center-to-center spacing of nails in the same nailing grid is ½" and must not split the wood header.
- The MMLU height (H) must equal or exceed 60% of the joist height to provide joist rotation resistance. If H is less than 60% of the joist height, provide lateral restraint to the top of the joist by other means, such as blocking, end nailing or Simpson Strong-Tie® A34 framing angles above the hanger.
- I-joist web stiffeners or floor truss end vertical webs must be installed in the carried member when the hanger side flanges do not support the I-joist top flange or floor truss top chord.

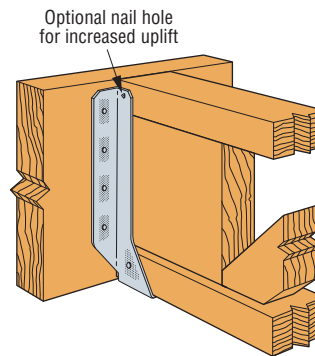
Codes: See p. 8 for Code Reference Key Chart



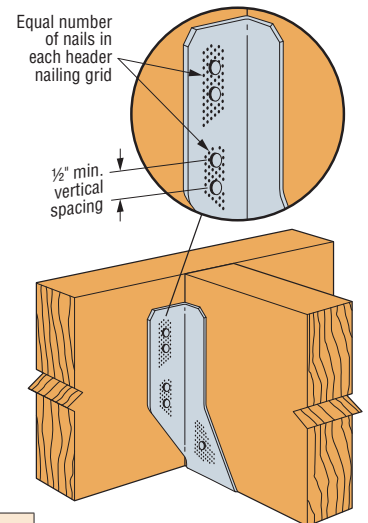
Web stiffeners required when joist top flange is not laterally supported by MMLU



MMLU210 Installation with an I-Joist



MMLUI39 Installation with an Open Web Joist



Typical MMLU26 Installation

MMLU Installation and Load Table

Model No.	Dimensions (in.)		Header Nailing Grids		Nail Quantity		Allowable Loads (lb.)		Code Ref.
			0.131" x 1 ½" or 0.148" x 1 ½"						
	W	H	No. of Grids	Nails in Each Grid	Header	Joist	Uplift (160)	Download (100)	
MMLU26	1⅞	4¾	4	1	4	2	95	330	IBC, FL, LA
				2	8			655	
				3	12			955	
MMLU26-2	3⅞	5⅞	4	1	4	2	95	240	
				2	8			555	
				3	12			870	
MMLU28	1⅞	6⅞	6	1	6	2	95	500	
				2	12			955	
MMLU28-2	3⅞	7⅞	6	1	6	2	95	395	
				2	12			870	
				3	18			1,340	
MMLU210	1⅞	7⅞	8	1	8	2	95	510	
				2	16			1,215	
MMLUI211	1⅞	11⅞	10	1	10	2 ⁴	95 ⁴	705	
				2	20			1,215	
MMLUI39	2⅞	9⅞	8	1	8	2 ⁴	95 ⁴	510	
				2	16			1,295	

- Connectors must be installed with 0.131" x 1½" or 0.148" x 1½" nails.
- Loads apply to DF, SP, HF and SPF lumber species.
- Tabulated values are based on a load duration factor (C_D) of 1.0 with no further increase allowed.
- Install two nails in the optional triangle holes for an increased allowable uplift load of 330 lb. (C_D = 1.0) or 445 lb. (C_D = 1.6) for the MMLU211, MMLUI39 and MMLUI311.

H2.5A/H2.5T/H10A/MMH8/RST-3

Roof Tiedowns

The versatile line of hurricane tie connectors provides uplift resistance for roof trusses and rafters for factory-built structures. The nailing grids in the MMH8 replace traditional nail holes allowing for faster installation of power-driven nails. The MMH8 nailing grids also permit multiple nailing pattern options to enable value engineering for different load levels. Connectors have been evaluated with and without $\frac{5}{8}$ " bearing strips.

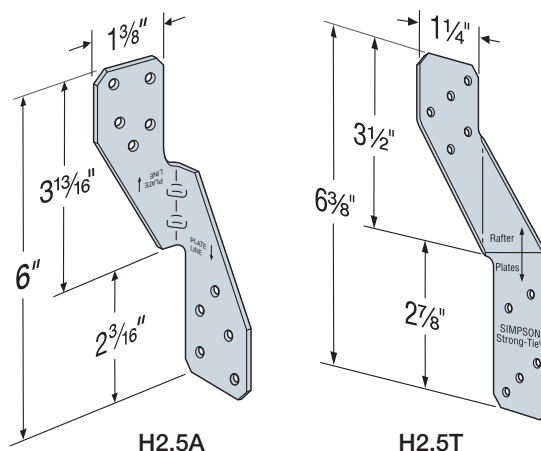
Material: 18 gauge

Finish: Galvanized

Installation:

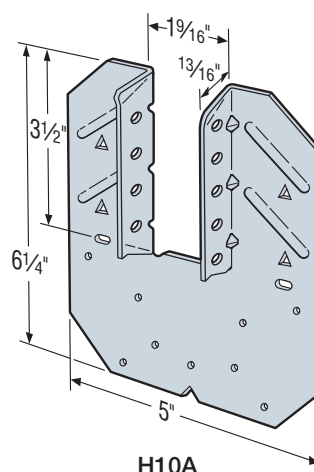
- Use all specified fasteners; see General Notes.
- H2.5T ties are shipped in equal quantities of right and left versions.
- For connections to the wide face of the stud, RST-3 ties can be bent at the perforated strap portion of the connector. Bend only once.
- Hurricane ties do not replace solid blocking.
- When installing ties on plated trusses (on the side opposite the truss plate) do not fasten through the truss plate from behind. This can force the truss plate off of the truss and compromise truss performance.
- MMH8 nails must be installed with a power nailer. Full face and eye protection is required. Extreme caution is required when driving nails through the MMH8. To prevent ricochet, drive nails straight through the nailing grid. Follow all safety instructions for the nail tool. Adjust the nail drive by setting the depth-of-drive on the nailer tool so that nail heads are driven into contact with the hanger. Do not over-drive nails, which are indicated by the tops of the nail heads driven below the top surface of the metal connector.
- MMH8 nails must have a minimum $\frac{1}{2}$ " center-to-center spacing in the same nailing grid and not split the wood. The square nailing grid must contain a minimum of three nails, and a maximum of five nails. In order for the $\frac{1}{2}$ " spacing requirement to be met with five nails in the square nailing grid, nails shall be positioned at the four corners of the grid, with the fifth nail positioned in the center of the grid.

Codes: Testing performed in accordance with ICC-ES AC-13. See p. 8 for Code Reference Key Chart

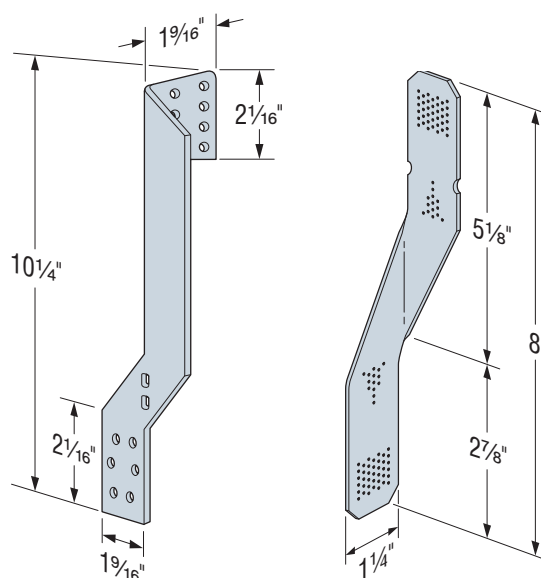


H2.5A

H2.5T



H10A



RST-3

MMH8

H2.5A/H2.5T/H10A/MMH8/RST-3

Roof Tiedowns (cont.)

These products are available with additional corrosion protection. For more information, see pp. 10–13.

SD Many of these products are approved for installation with the Strong-Drive® SD Connector screw. See strongtie.com/sd for more information.

SPF/HF Roof Uplift Connector Installation and Allowable Load Table

Model No.	Fasteners (in.)			SPF/HF Allowable Loads (lb.)						Code Ref.
	To Rafter	To Plates	To Studs	No Bearing Strip			5/8" Bearing Strip			
				Uplift (160)	Lateral (160)		Uplift (160)	Lateral (160)		
					F ₁	F ₂		F ₁	F ₂	
H2.5A	(3) 0.131 x 1 1/2	(3) 0.131 x 1 1/2	—	165	50	—	165	50	—	IBC, FL, LA
	(5) 0.131 x 1 1/2	(5) 0.131 x 1 1/2	—	540	110	110	275	110	95	
	(5) SD #9 x 1 1/2	(5) SD #9 x 1 1/2	—	540	385	95	520	135	95	
H2.5T	(3) 0.131 x 1 1/2	(3) 0.131 x 1 1/2	—	210	90	—	190	90	—	
	(5) 0.131 x 1 1/2	(5) 0.131 x 1 1/2	—	475	90	70	315	90	70	
	(5) SD #9 x 1 1/2	(5) SD #9 x 1 1/2	—	515	90	80	350	90	80	
H10A	(9) 0.131 x 1 1/2	(9) 0.131 x 1 1/2	—	715	390	285	—	—	—	
MMH8	(3) 0.131 x 1 1/2	(3) 0.131 x 1 1/2	—	170	—	—	170	—	—	
	(5) 0.131 x 1 1/2	(5) 0.131 x 1 1/2	—	285	55	—	285	55	—	
	(6) 0.131 x 1 1/2	(6) 0.131 x 1 1/2	—	410	65	—	410	65	—	
RST-3 into wide face of stud	(7) 0.131 x 1 1/2	—	(6) 0.131 x 1 1/2	345	—	65	345	—	65	—
	(7) SD #9 x 1 1/2	—	(6) SD #9 x 1 1/2	520	—	75	340	—	75	
RST-3 into narrow face of stud	(7) 0.131 x 1 1/2	—	(6) 0.131 x 1 1/2	325	—	65	305	—	65	
	(7) SD #9 x 1 1/2	—	(6) SD #9 x 1 1/2	400	—	70	400	—	70	

1. Loads have been increased for wind or earthquake loading with no further increase allowed; reduce where other loads govern.

2. Allowable loads are for one connector. A minimum rafter thickness of 2 1/2" must be used when connectors are used on each side of the rafter and on the same side of the plate (*exception: connectors installed such that fasteners on opposite side do not interfere*).

3. Allowable loads in the F₁ direction are not intended to replace diaphragm boundary members and do not account for possible cross-grain bending of the truss or rafter members.

4. When cross-grain bending or cross-grain tension cannot be avoided in the members, mechanical reinforcement to resist such forces shall be considered by the designer.

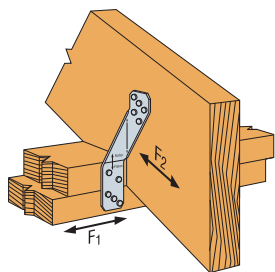
5. Connector installation on the outside of the wall is acceptable, provided a minimum 3 1/2" overhang. For a Continuous Uplift Load Path, connections in the same area (i.e., truss-to-plate connector and plate-to-stud connector) must be on the same side of the wall.

6. **Fasteners:** Nail dimensions are listed diameter by length. 0.148" x 1 1/2" nails may be substituted for nails shown at table loads.

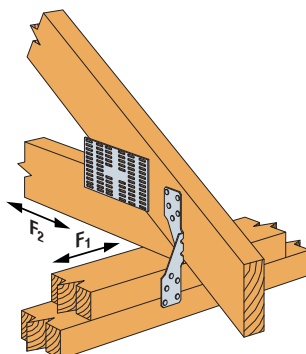
7. **Screws:** Strong-Drive SD Connector Screw #9 x 1 1/2" (model SD9112) = 0.131" dia. x 1 1/2" long.

H2.5A/H2.5T/H10A/MMH8/RST-3

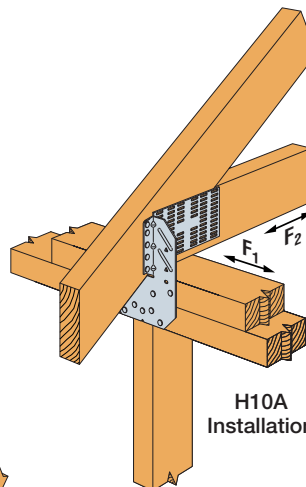
Roof Tiedowns (cont.)



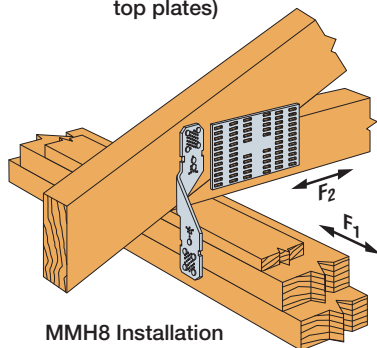
H2.5T Installation
(nails into both
top plates)



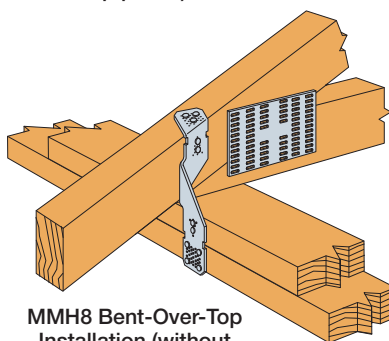
H2.5A Installation
(no bearing strip
above top plates)



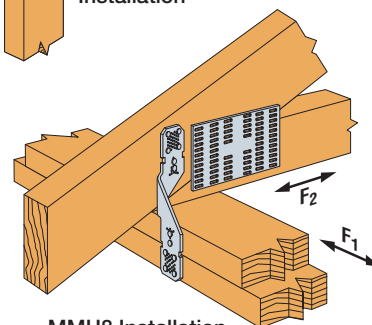
H10A
Installation



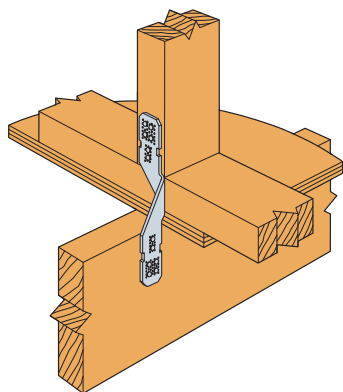
MMH8 Installation
($\frac{5}{8}$ " bearing strip
above top plate)



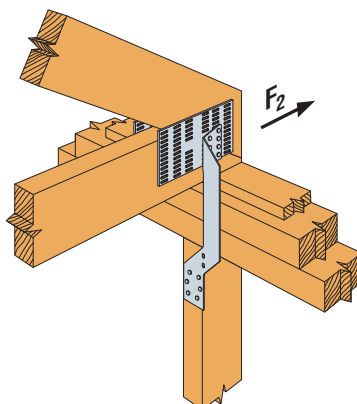
MMH8 Bent-Over-Top
Installation (without
 $\frac{5}{8}$ " bearing strip)



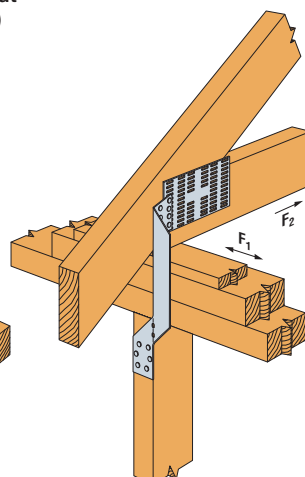
MMH8 Installation
(without $\frac{5}{8}$ "
bearing strip)



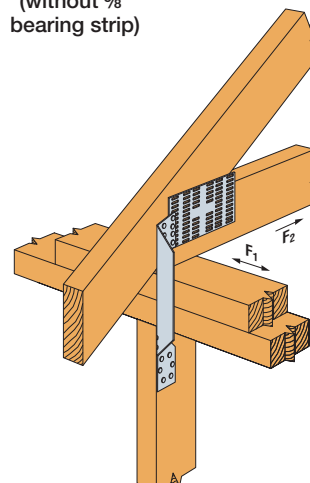
MMH8 Knee Wall
Installation



RST-3 Installation
to Inside Narrow Face of Stud
($\frac{5}{8}$ " bearing strip above top plate)



RST-3 Installation
to Narrow Face of Stud
($\frac{5}{8}$ " bearing strip above top plate)



RST-3 Installation
to Wide Face of Stud
(without $\frac{5}{8}$ " bearing strip)

When a connector is loaded simultaneously in more than one direction, the allowable load must be evaluated as option 1 or 2.

Option 1: Unity Equation

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 designer and is dependent on their method of calculating wind forces and the utilization of the connector within the structural system.

Option 2: 75% Rule

As an alternative, roof-to-wall connectors on pp. 20–23 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.

LTS

Twist Strap

Twist straps provide a tension connection between two wood members. They resist uplift at the heel of a truss economically. LTS straps have a 2" bend section that eliminates interference at the transition points between the two members.

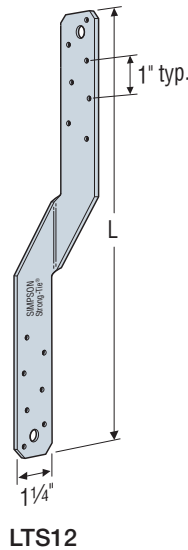
Material: 18 gauge

Finish: Galvanized. Some products available in stainless steel; see Corrosion Information, pp. 10–13.

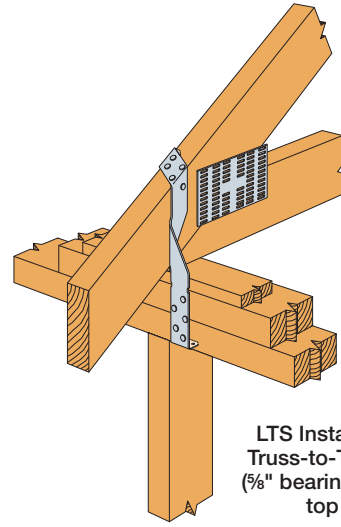
Installation:

- Use all specified fasteners; see General Notes.
- LTS straps are available with the bend reversed. Specify "-REV" after the model number, such as LTS16-REV.

Codes: See p. 8 for Code Reference Key Chart



LTS12



LTS Installation As a Truss-to-Top Plate Tie (5/8" bearing strip above top plate).

These products are available with additional corrosion protection. For more information, see pp. 10–13.

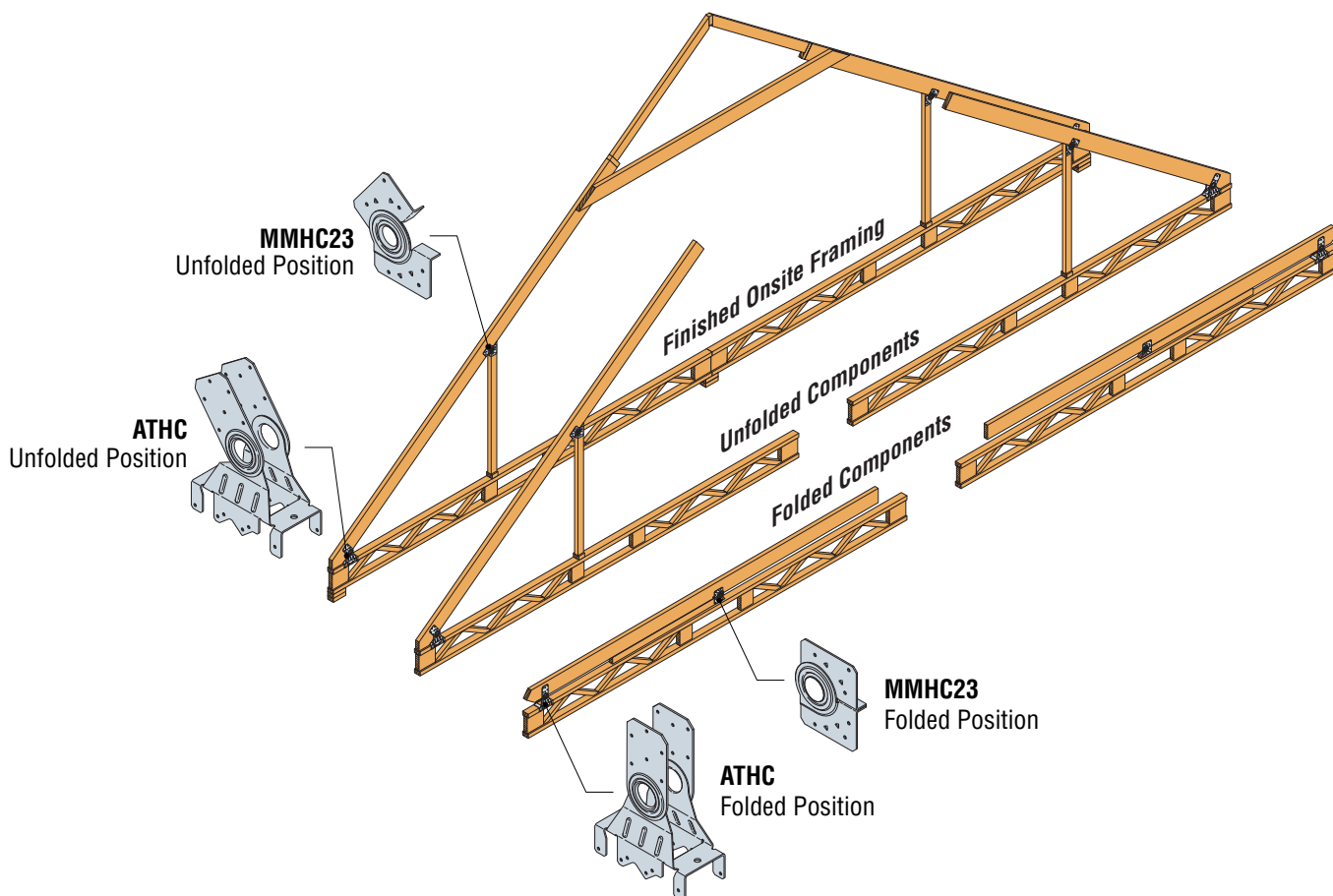
Model No.	Strap Length (in.)	Total Quantity of Fasteners ¹		Allowable Uplift Loads (160) ^{2,3} (lb.)				Code Ref.
		When Installed with 0.148" x 3" Nails	When Installed with 0.148" x 1 ½" Nails	DF/SP		SPF/HF		
				When Installed with 0.148" x 3" Nails	When Installed with 0.148" x 1 ½" Nails	When Installed with 0.148" x 3" Nails	When Installed with 0.148" x 1 ½" Nails	
				CD = 1.6	CD = 1.6	CD = 1.6	CD = 1.6	
LTS12	12	12	12	660	645	570	515	IBC, FL, LA
LTS16	16							
LTS20	20							

1. Loads have been increased for wind or earthquake loading with no further increase allowed; reduce where other loads govern.
2. LTS12 thru LTS20 have additional nail holes.
3. Install half of the fasteners on each end of strap to achieve full loads.
4. All straps have the twist in the center of the strap.
5. Twist straps do not have to be wrapped over the truss to achieve the load.
6. May be installed on the inside face of the stud.
7. Allowable lateral loads are $F_1 = 75$ lb. and $F_2 = 125$ lb. when the following installation requirements are met. The first seven nail holes each side of the bend must be filled with 0.148" x 1 1/2" minimum nails. All additional fasteners may be installed in any remaining strap holes.
8. For simultaneous loads in more than one direction, the connector must be evaluated using either the Unity Equation or the 75% Rule, as described in General Notes (note e) p. 17 and on p. 22.
9. **Fasteners:** Nail dimensions are listed diameter by length.

Roof Component Solutions

Unfold the Secret to Smarter Hinged Roof Components

The new ATHC™ (see pp. 28–29) and MMHC23 (see pp. 25–27) hinge connectors are designed to streamline the production, transportation and assembly of folding roof components. These innovative solutions eliminate the need for truss plates or expensive truss equipment, making your process easier, faster and more efficient.



ATHC



MMHC23

MMHC®

Hinged Roof Connector

The innovative MMHC hinged roof connector makes it easy to build a stick-frame roof in the factory that can fold flat during shipping. This connector has been tested and load rated in multiple directions. It can be installed on one or both sides of the roof rafter assembly. The new MMHC23 is a smaller, more cost-effective version of the MMHC that is used for 2x3 knee wall hinges.

Features:

- Innovative hinge rotates easily from open position to folded.
- The offset nail pattern allows for installation on both sides.
- Connector tabs make it intuitive to position before nailing.
- Nails in place for easy installation. No bolts required. (No measuring or predrilling saves installers time.)

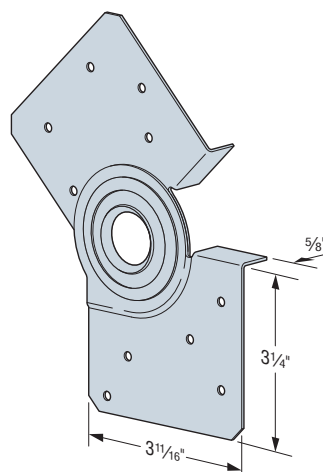
Material: 18 gauge

Finish: G90 galvanized

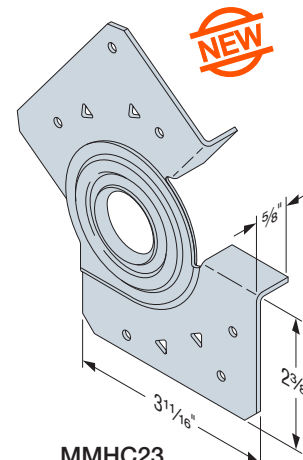
Installation:

- MMHC — Minimum 2x6 roof rafter and ceiling joist; minimum 2x4 knee wall stud.
- MMHC23 — Minimum 2x3 knee wall stud. This product is not load rated for top chord to bottom chord heel applications.
- Arrange members in installed position.
- Open connector to same position.
- Place on wood members using tabs as a guide.
- Install with specified nails.
- Adjust members for shipping purposes, then reopen at jobsite.
- MMHC does not replace solid blocking.

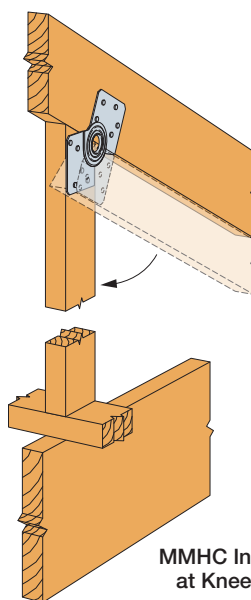
Codes: Testing performed in accordance with ICC-ES AC-13. See p. 8 for Code Reference Key Chart.



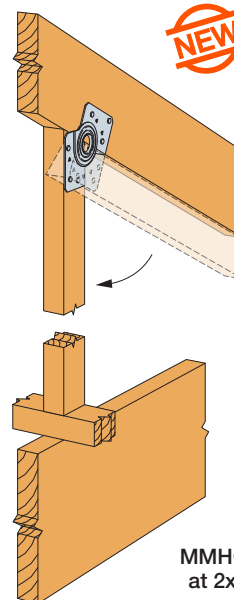
MMHC
US Patent 11,131,088



MMHC23
US Patent 11,131,088



**MMHC Installed
at Knee Wall**



**MMHC23 Installed
at 2x3 Knee Wall**

Allowable Loads for Knee Wall Application

Model No.	Roof Pitch	Connector Quantity	Knee Wall Member	Fasteners per Member (in.)	Allowable Loads (lb.)				Code Ref.
					DF/SP		SPF/HF		
					Download (115/125/160)	Uplift (160)	Download (115/125/160)	Uplift (160)	
MMHC	3:12 – 12:12	1	2x4 min.	(5) 0.148 x 1 ½	1,145	385	1,010	330	IBC, FL, LA
MMHC23 (Min.)	3:12 – 12:12	1	2x3 min.	(3) 0.148 x 1 ½	715	185	625	160	
		2	2x3 min.	(6) 0.148 x 1 ½	1,250	410	1,125	370	
MMHC23 (Max.)	3:12 – 12:12	1	2x3 min.	(5) 0.148 x 1 ½	1,235	335	1,090	295	
		2	2x3 min.	(10) 0.148 x 1 ½	1,950	600	1,755	530	

1. All installations assume single-ply 2x members with minimum 2x4 for the MMHC and 2x3 minimum for the MMHC23.
2. Applications with double-ply 2x members are allowed and will achieve twice the published load of the single one-sided installation.
3. When Simpson Strong-Tie Strong-Drive® SD Connector Screw #10 x 1 1/2" screws are substituted for 0.148" x 1 1/2" nails, double MMHC23 (max.) installation uplift capacities can be increased to 970 lbf and 835 lbf for DF/SP and SPF/HF capacities, respectively.
4. **Fasteners:** Nail dimensions are listed diameter by length.

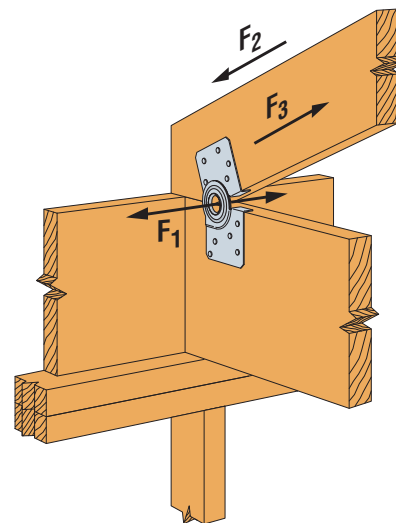
MMHC®

Hinged Roof Connector (cont.)

Allowable Loads for Single-Ply Rafter to Ceiling Joist

Model No.	Roof Pitch	Connector Quantity	Fasteners per Member	Allowable Load (lb.)								Code Ref.
				DF				SPF/HF				
			0.148" x 1½" Nails	F ₁ (160)	F ₂	F ₃	Uplift (160)	F ₁ (160)	F ₂	F ₃	Uplift (160)	
				(115/125/160)		(115/125/160)						
MMHC	3:12	1	5	95	485	485	480	95	415	415	470	IBC, FL, LA
		2	10	215	955	955	870	215	825	825	770	
	12:12	1	5	65	560	455	525	65	530	400	480	
		2	10	140	1,215	845	940	140	1,150	725	855	

1. All installations assume at minimum a single-ply 2x member.
2. Double-ply applications with two-sided installation will achieve twice the published load for the one-sided installation.
3. Linear interpolation of the loads is allowed for roof pitches between 3:12 and 12:12.
4. **Fasteners:** Nail dimensions are listed diameter by length.

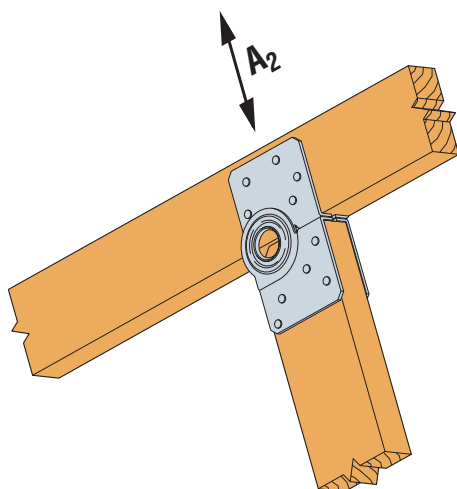


MMHC Installed at Heel

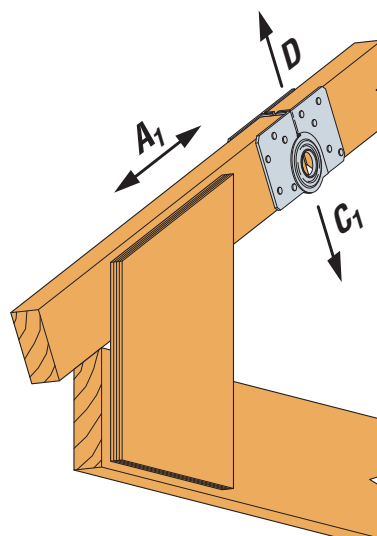
Allowable Loads for Alternate Installations

Model No.	Type of Connection	Direction of Load	Connector Quantity	Rafter/Knee Brace	Fasteners per Connector (in.)	SPF/HF Allowable Loads (lb.)
						(100/115/125/160)
MMHC	1	A ₂	2	Single-ply 2x	(10) 0.131 x 1 1/2	600
		A ₁				505
	2	C ₁				325
		D				365

1. All applications assume a double-sided MMHC application that uses two connectors per connection.
2. All installations assume at minimum a single-ply 2x member.
3. **Fasteners:** Nail dimensions are listed diameter by length.



1 MMHC Knee-Brace Connection



2 MMHC Rafter Connection

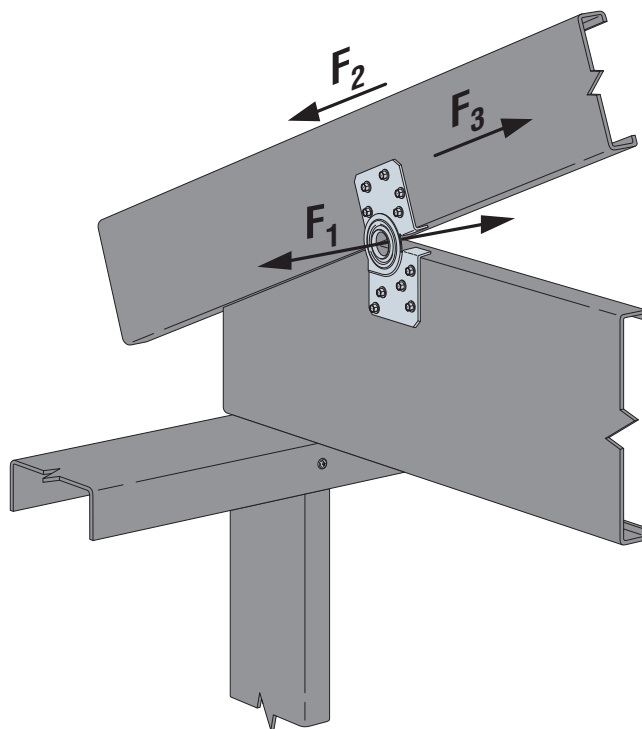
MMHC®

Hinged Roof Connector (cont.)

Allowable Loads for Single CFS Rafter to Ceiling Joist

Model No.	Roof Pitch	Rafter: Self-Drilling Screws	Ceiling Joist: Self-Drilling Screws	Allowable Load (lb.)			
				F ₁ (160)	F ₂	F ₃	Uplift (160)
					(115/125/160)		
MMHC	3:12	(5) #10	(5) #10	95	565	475	480
	12:12	(5) #10	(5) #10	65	505	455	525

1. Linear interpolation of loads allowed for roof pitches between 3:12 and 12:12.
2. #10 screws shall comply with ASTM C1513 and shall have a minimum allowable shear of 265 lb. and a minimum allowable pull-out of 110 lb. as calculated per AISI S-100.
3. Minimum rafter thickness = 54 mil (16 gauge).
4. Minimum ceiling joist thickness = 68 mil (14 gauge).
5. Loads are based on cold-formed steel members having a minimum yield strength, F_y , of 50 ksi and tensile strength, F_u , of 65 ksi.
6. Designer to check web crippling for download.
7. Steel-to-steel connector screws must comply with ASTM C1513.



Typical MMHC Installation
on CFS Framing

ATHC™

Attic Truss Heel Hinge Connector

The new first-of-its-kind ATHC double-hinge connector for truss heels gives builders a new cost-effective option to construct factory-built truss components using EWP floor joists and 2x solid sawn roof rafters. The connector works with 2½"-wide Open Joist and I-joist floor joists that are commonly used for attic trusses. To enable folded components to ship flat for transportation, the ATHC heel height provides a 2½" gap between the top and bottom truss chords that accommodates a 2x3 folded knee brace. The ATHC heel height provides a 2½" gap between the top and bottom truss chords that accommodates a 2x3 folded knee brace.

Features:

- One-piece design simplifies hinge placement and provides installation efficiencies over other two-piece hinge alternatives
- Works with 2½"-wide Open Joist and I-joist floor joists to reduce the need for intermediate truss webs
- Accommodates a range of roof pitches between 5:12 and 12:12
- A folded ATHC provides a space to accommodate a folded 2x3 knee brace so that components ship flat for transportation
- Eliminates the need for conventional metal-plate-connected roof trusses

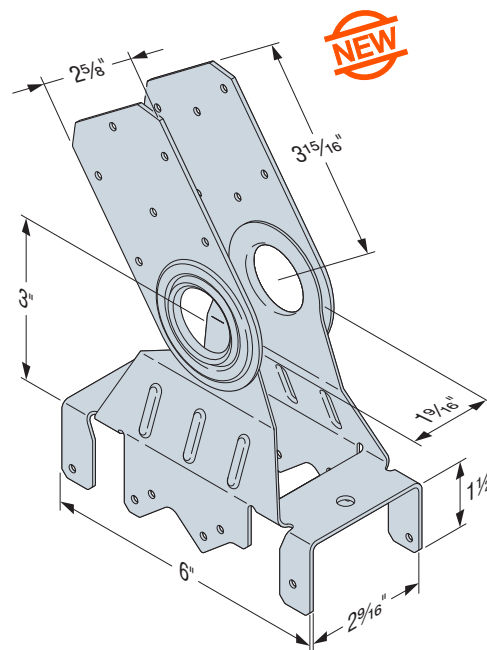
Material: 16 gauge

Finish: G90 galvanized

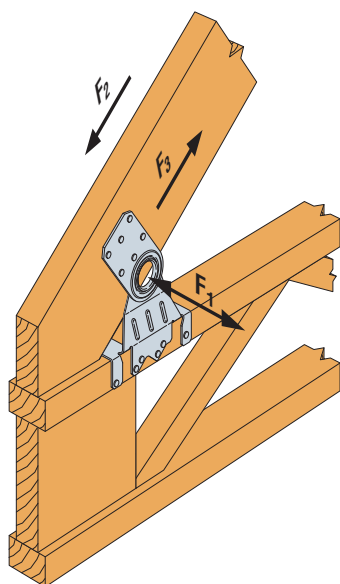
Installation:

- Use all specified fasteners; see General Notes
- Minimum 2x6 roof rafter, 2½"-wide Open Joist or I-joist floor joists, and 2x3 knee brace
- Utilizing a jig, arrange cut-to-length members and position ATHC in the open or folded position as desired
- Fold components for transportation, then unfold at the jobsite

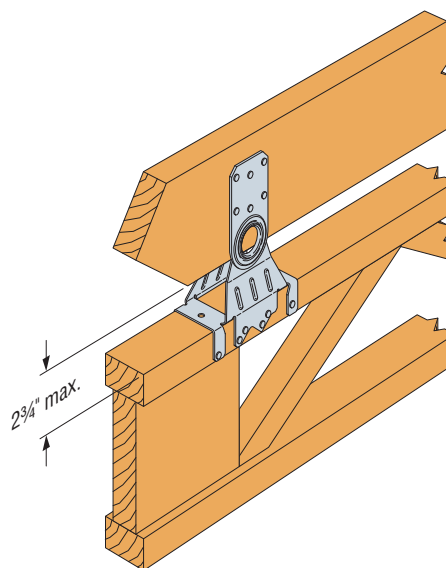
Codes: See p. 8 for Code Reference Key Chart



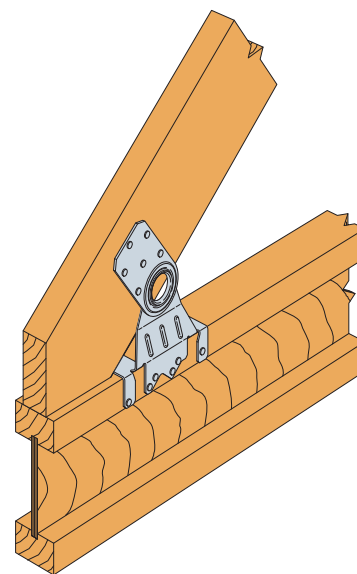
ATHC
US Patent 11,131,088



**ATHC Installation on
Open Joist Bottom Chord —
Unfolded Position**



**ATHC Installation on
Open Joist Bottom Chord —
Folded Position**
(I-joist bottom chord similar)



**ATHC Installation on
I-joist Bottom Chord —
Unfolded Position**

ATHC™

Attic Truss Heel Hinge Connector (cont.)

Allowable Loads for Roof Rafter to Floor Joist

Model No.	Roof Pitch	Connector Quantity'	Member		Fasteners per Member	Allowable Load (lb.)								Code Ref.
						DF/SP				SPF/HF				
			Rafter	Floor Joist	0.148" x 1 ½"	F ₁	F ₂	F ₃	Uplift	F ₁	F ₂	F ₃	Uplift	
						(160)	(115/125/160)		(160)	(160)	(115/125/160)		(160)	
ATHC	5:12	1	2x	3x	12	100	730	755	800	100	635	650	740	IBC, FL, LA
	12:12	1	2x	3x	12	100	1,065	965	800	100	920	835	740	

1. All installations assume a single-ply 2x rafter member.

2. Optional SDWC® Installation 1 (see detail below), F₂ 5:12 allowable loads can be increased to 820 lb. and 735 lb. for DF/SP and SPF/HF, respectively.

F₂ 12:12 allowable loads can be increased to 1,190 lb. and 1,060 lb. for DF/SP and SPF/HF, respectively.

3. Optional SDWC Installation 2 (see detail below), F₂ 5:12 allowable loads can be increased to 975 lb. and 840 lb. for DF/SP and SPF/HF, respectively.

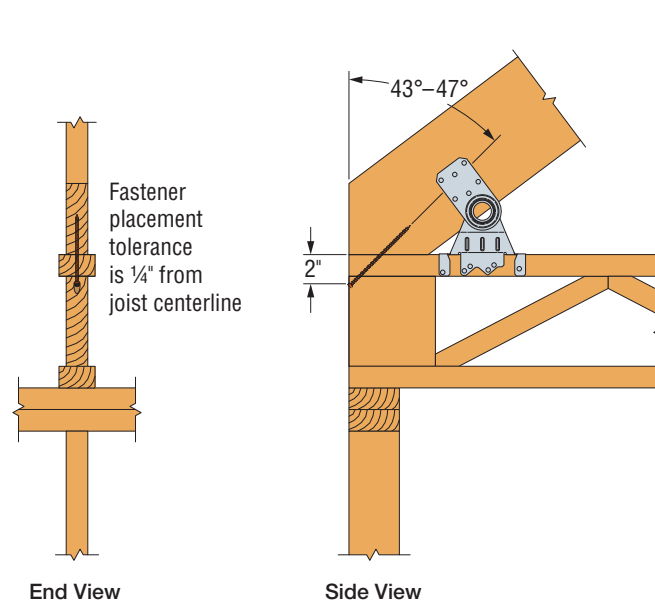
F₂ 12:12 allowable loads can be increased to 1,385 lb. and 1,185 lb. for DF/SP and SPF/HF, respectively.

4. Linear interpolation of the loads is allowed for roof pitches between 5:12 and 12:12.

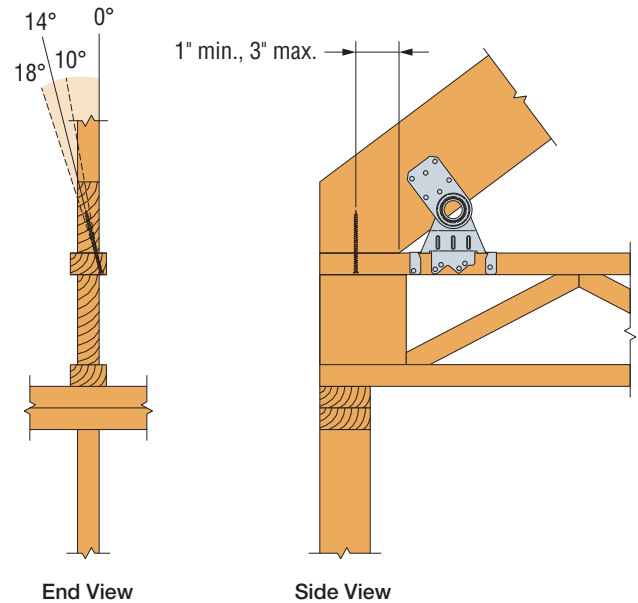
5. Table loads are applicable to installation on 3x (2½" wide) solid sawn floor joists with a depth of 1½" or greater.

6. **Fasteners:** Nail dimensions are listed diameter by length.

SDWC15600 = 0.152" shank diameter x 6" long Strong-Drive® SDWC Truss Screw.



Optional SDWC Installation 1
on Open Joist Bottom Chord



Optional SDWC Installation 2
on Open Joist Bottom Chord
(I-joist bottom chord similar)

BC

Post Base

The BC series offers dual-purpose post cap/base for light cap or base connectors.

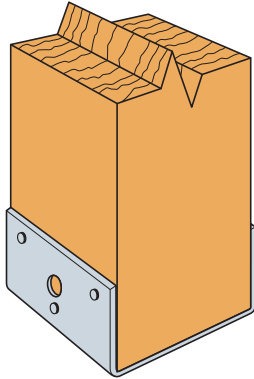
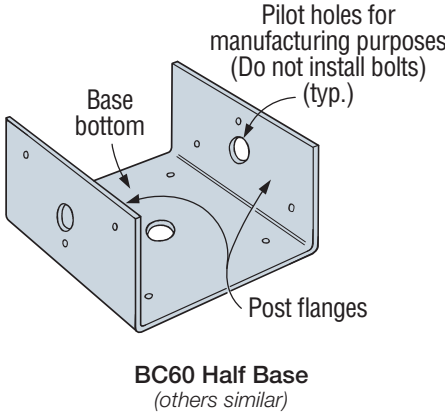
Material: 18 gauge

Finish: Galvanized. Some products available in ZMAX® coating and stainless steel.

Installation:

- Use all specified fasteners
- Do not install bolts into pilot holes
- Post bases do not provide adequate resistance to prevent members from rotating about the base and therefore are not recommended for non-top-supported installations (such as fences or unbraced carports)
- To tie multiple 2x members together, the designer must determine the fasteners required to join members to act as one unit without splitting the wood

Codes: Testing performed in accordance with ICC-ES AC-13. See p. 8 for Code Reference Key Chart



These products are available with additional corrosion protection. For more information, see pp. 10–13.

SD Many of these products are approved for installation with the Strong-Drive® SD Connector screw. See strongtie.com/sd for more information.

Model No.	Dimensions (in.)			Fasteners (in.)		DF/SP Allowable Load (lb.)		Code Ref.
	W	L	H	Post Flange	Base Bottom	Uplift (160)	Lateral (160)	
SS BC40	3 ⁹ / ₁₆	3 ¹ / ₄	2 ¹ / ₄	(6) 0.162 x 3 ¹ / ₂	(4) 0.162 x 3 ¹ / ₂	510	735	—
BC40R	4	4	3	(6) 0.162 x 3 ¹ / ₂	(4) 0.162 x 3 ¹ / ₂	510	735	
BC460	5 ¹ / ₂	3 ⁹ / ₁₆	3	(6) 0.162 x 3 ¹ / ₂	(4) 0.162 x 3 ¹ / ₂	450	735	
BC60	5 ¹ / ₂	5 ¹ / ₂	3	(6) 0.162 x 3 ¹ / ₂	(4) 0.162 x 3 ¹ / ₂	450	735	
BC60R	6	6	3	(6) 0.162 x 3 ¹ / ₂	(4) 0.162 x 3 ¹ / ₂	450	735	
BC80	7 ¹ / ₂	7 ¹ / ₂	4	(6) 0.162 x 3 ¹ / ₂	(4) 0.162 x 3 ¹ / ₂	450	735	
BC80R	8	8	4	(6) 0.162 x 3 ¹ / ₂	(4) 0.162 x 3 ¹ / ₂	450	735	

1. Allowable loads have been increased for wind or earthquake with no further increase allowed; reduce where other loads govern.
2. Structural composite lumber columns have sides that show either the wide face or the edges of the lumber strands/veneers. Values in the tables reflect installation into the wide face. See technical bulletin T-C-SCLCLM at strongtie.com for values on the narrow face (edge).
3. Base allowable loads assumes nails have full penetration into supporting member. Loads do not apply to end grain post installations.
4. 0.131" x 1 1/2" nails may be used instead of the specified 0.162" x 3 1/2" nails at 0.83 of the table load.
5. **Fasteners:** Nail dimensions are listed diameter by length.

LSTA/MSTA

Strap Ties

LSTA and MSTA straps are designed to transfer tension loads in a wide variety of applications on the edge of 2x members, and have a nailing pattern that reduces the potential for splitting.

Finish: Galvanized. Some products are available in stainless steel or ZMAX® coating; see Corrosion Information, pp. 10–13.

Installation:

- Use all specified fasteners; see General Notes

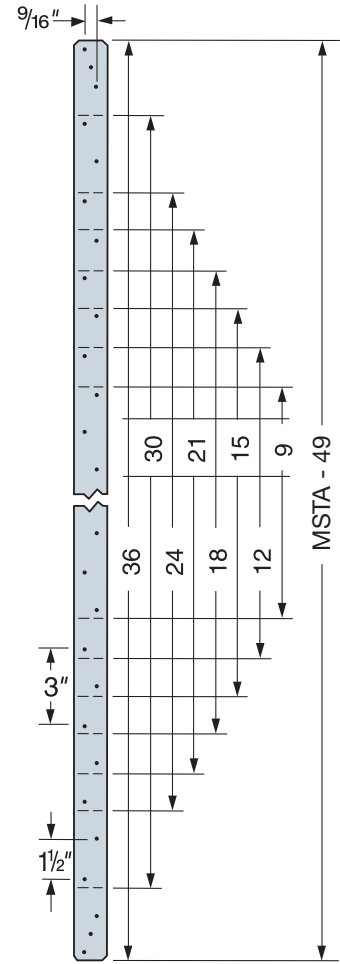
Codes: See p. 8 for Code Reference Key Chart

These products are available with additional corrosion protection. For more information, see pp. 10–13.

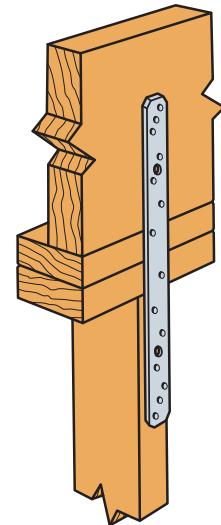
SD Many of these products are approved for installation with the Strong-Drive® SD Connector screw. See strongtie.com/sd for more information.

Model No.	Ga.	Dimensions (in.)		Fasteners (Total) (in.)	Allowable Tension Load (lb.)		Code Ref.
		W	L		DF/SP	SPF/HF	
					(160)	(160)	
LSTA9	20	1 ¼	9	(8) 0.148 x 2 ½	740	635	IBC, FL, LA
LSTA12		1 ¼	12	(10) 0.148 x 2 ½	925	795	
LSTA15		1 ¼	15	(12) 0.148 x 2 ½	1,110	955	
LSTA18		1 ¼	18	(14) 0.148 x 2 ½	1,235	1,110	
LSTA21		1 ¼	21	(16) 0.148 x 2 ½	1,235	1,235	
LSTA24		1 ¼	24	(18) 0.148 x 2 ½	1,235	1,235	
LSTA30	18	1 ¼	30	(22) 0.148 x 2 ½	1,640	1,640	
LSTA36		1 ¼	36	(24) 0.148 x 2 ½	1,640	1,640	
MSTA9		1 ¼	9	(8) 0.148 x 2 ½	750	650	
SS MSTA12		1 ¼	12	(10) 0.148 x 2 ½	940	810	
MSTA15		1 ¼	15	(12) 0.148 x 2 ½	1,130	970	
SS MSTA18		1 ¼	18	(14) 0.148 x 2 ½	1,315	1,135	
MSTA21		1 ¼	21	(16) 0.148 x 2 ½	1,505	1,295	
SS MSTA24		1 ¼	24	(18) 0.148 x 2 ½	1,640	1,460	
MSTA30		1 ¼	30	(22) 0.148 x 2 ½	2,050	1,825	
SS MSTA36		1 ¼	36	(26) 0.148 x 2 ½	2,050	2,050	
MSTA49	16	1 ¼	49	(26) 0.148 x 2 ½	2,020	2,020	

1. Allowable loads have been increased for wind or seismic loading with no further increase allowed; reduce where other loads govern.
2. 0.148" x 1 ½" fasteners achieve full loads when installed directly to framing. When nailing strap over wood structural panels, use 2 ½"-long fastener minimum.
3. Use half of the nails in each member being connected to achieve the listed loads.
4. Tension loads apply for uplift when installed vertically.
5. **Fasteners:** Nail dimensions are listed diameter by length.



LSTA and MSTA
(pilot holes not shown)



Typical LSTA18 Installation

CS/CMST

Coiled Straps

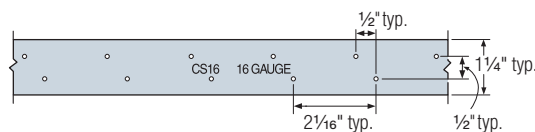
CMSTC provides countersunk nail slots for lower profile when installed with 0.148" x 3/4" sinkers; it can be cut to length. CS are continuous utility straps which can be cut to length on the jobsite. Packaged in lightweight (about 40 lb.) cartons.

Finish: Galvanized. Some products available in ZMAX® coating; see Corrosion Information, pp. 10–13. CS16 may be ordered in stainless steel (order CS16SS-R).

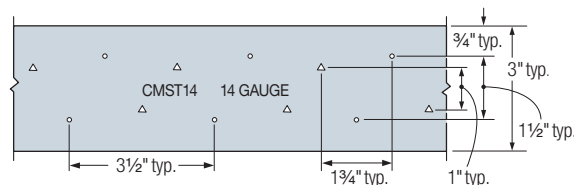
Installation:

- Use all specified fasteners; see General Notes.
- Wood shrinkage after strap installation across horizontal wood members may cause strap to buckle outward.
- Refer to the applicable code for minimum nail penetration and minimum wood edge and end distances.
- The table shows the maximum allowable loads and the nails required to obtain them. Fewer nails may be used; reduce the allowable load as shown in footnote #3.
- The cut length of the strap shall be equal to twice the "End Length" noted in the table plus the clear span dimension.
- CMST — Fill round and triangle holes for loads shown. If wood tends to split, fill only round holes and double the end length listed for full load.
- For lap splice and alternate nailing information, refer to technical bulletin T-CMST at strongtie.com.
- CS straps are available in 25' lengths; order CS14-R, CS16-R, CS18-R, CS20-R, or CS22-R.

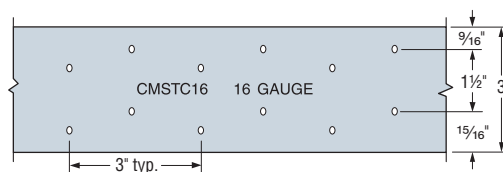
Codes: See p. 8 for Code Reference Key Chart



CS16 Hole Pattern
(All other CS straps similar)



CMST14 Hole Pattern
(CMST12 similar)



CMSTC16 Hole Pattern

Gauge stamped on part for easy identification.

These products are available with additional corrosion protection. For more information, see pp. 10–13.



Many of these products are approved for installation with the Strong-Drive® SD Connector screw. See strongtie.com/sd for more information.

Model No.	Total Length (ft.)	Ga.	DF/SP		SPF/HF		Allowable Tension Load (160) (lb.)	Code Ref.
			Fasteners (in.)	End Length (in.)	Fasteners (in.)	End Length (in.)		
CMST12	40	12	(74) 0.162 x 2 1/2	33	(84) 0.162 x 2 1/2	38	9,215	IBC, FL, LA
			(86) 0.148 x 2 1/2	39	(98) 0.148 x 2 1/2	44	9,215	
CMST14	52 1/2	14	(56) 0.162 x 2 1/2	26	(66) 0.162 x 2 1/2	30	6,475	
			(66) 0.148 x 2 1/2	30	(76) 0.148 x 2 1/2	34	6,475	
CMSTC16	54	16	(50) 0.148 x 3/4	20	(58) 0.148 x 3/4	25	4,690	
CS14	100	14	(26) 0.148 x 2 1/2	15	(30) 0.148 x 2 1/2	16	2,490	
			(30) 0.131 x 2 1/2	16	(36) 0.131 x 2 1/2	19	2,490	
CS16	150	16	(20) 0.148 x 2 1/2	11	(22) 0.148 x 2 1/2	13	1,705	
			(22) 0.131 x 2 1/2	13	(26) 0.131 x 2 1/2	15	1,705	
CS18	200	18	(16) 0.148 x 2 1/2	9	(18) 0.148 x 2 1/2	11	1,370	
			(18) 0.131 x 2 1/2	11	(22) 0.131 x 2 1/2	12	1,370	
CS20	250	20	(12) 0.148 x 2 1/2	7	(14) 0.148 x 2 1/2	9	1,030	
			(14) 0.131 x 2 1/2	9	(16) 0.131 x 2 1/2	9	1,030	
CS22	300	22	(10) 0.148 x 2 1/2	6	(12) 0.148 x 2 1/2	7	845	
			(12) 0.131 x 2 1/2	7	(14) 0.131 x 2 1/2	8	845	

1. Fastener quantities and end lengths are calculated using an increase for wind or seismic loading.
2. Use half of the required nails in each member being connected to achieve the listed loads.
3. Calculate the connector value for a reduced number of nails as follows:

$$\text{Allowable Load} = \frac{\text{No. of Nails Used}}{\text{No. of Nails in Table}} \times \text{Table Load}$$

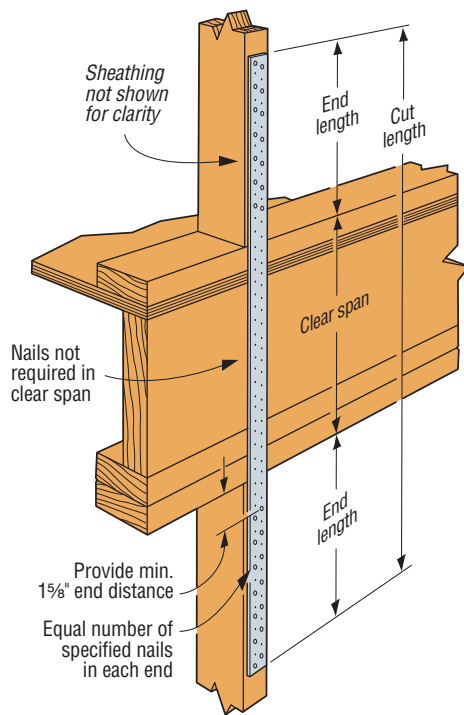
Example: CMSTC16 in DF/SP with 40 nails total.
(Half of the nails in each member being connected)

$$\text{Allowable Load} = \frac{40 \text{ Nails (Used)}}{50 \text{ Nails (Table)}} \times 4,690 \text{ lb.} = 3,752 \text{ lb.}$$

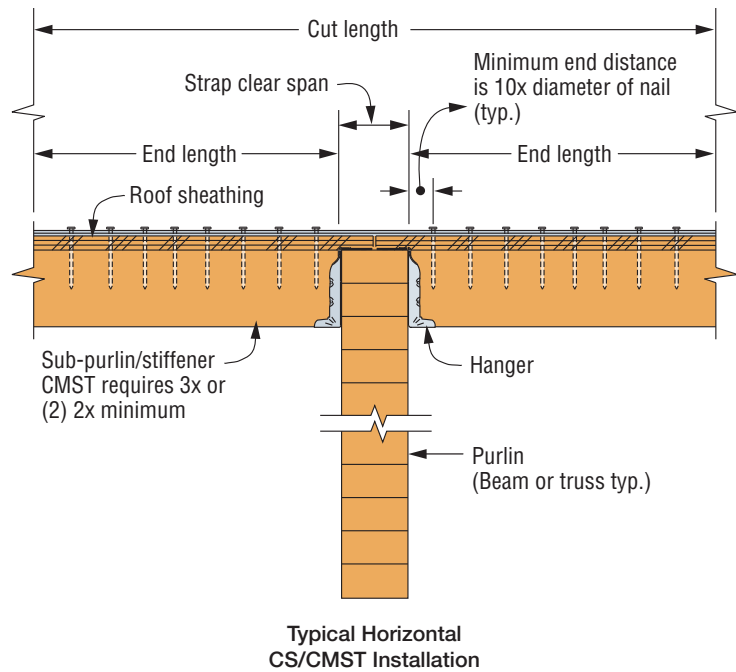
4. Tension loads apply for uplift when installed vertically.
5. 0.148" x 2 1/2" may be used for 0.148" x 3/4" sinkers at full table load.
6. 0.131" x 1 1/2" may be used for 0.131" x 2 1/2" and 0.148" x 1 1/2" may be used for 0.148" x 3/4" sinker or 0.148" x 2 1/2" with no load reduction when installed directly over framing (use 0.92 load adjustment factor when substituting 0.148" x 1 1/2" nails for CMST12 in SPF lumber). For installations over wood structural panel sheathing, use 2 1/2"-long fasteners minimum.
7. **Fasteners:** Nail dimensions are listed diameter by length.

CS/CMST

Coiled Straps (cont.)



**Typical CS Installation
As a Floor-to-Floor Tie**
(CMST requires minimum (2) 2x studs)



**Typical Horizontal
CS/CMST Installation**

Not Sure How Much Coil Strap You Need?

Simpson Strong-Tie has a web-based app, the Coil Strap Length Calculator, which can help you quickly determine the cut length of each strap and the total amount of coil strap needed for each application on a project.

For more information or to access, go to strongtie.com/software.

Stair Cassette Ledger Connector

The latest in our line of offsite construction solutions, the code-listed SCLC stair cassette ledger connector offers a safer and more efficient way to field-attach preassembled stair cassettes to floor cassette headers. It installs on the floor cassette header in the factory with power-driven or hand-installed nails, and is fastened with Strong-Drive® SDS Heavy-Duty Connector screws on the jobsite once the cassette is securely seated.

Feature:

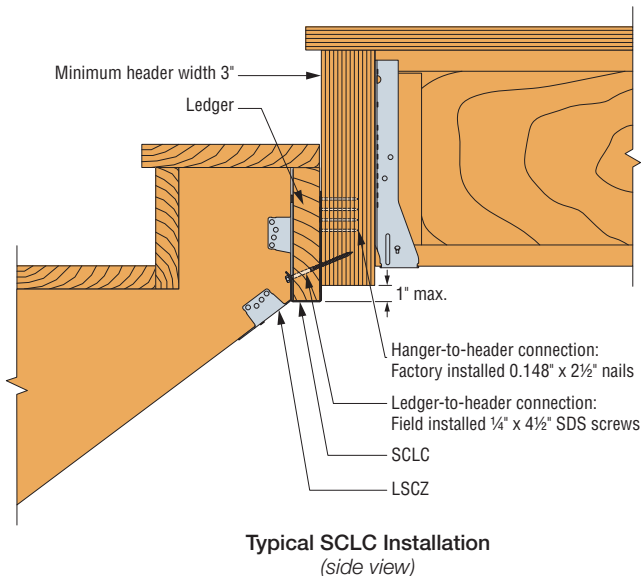
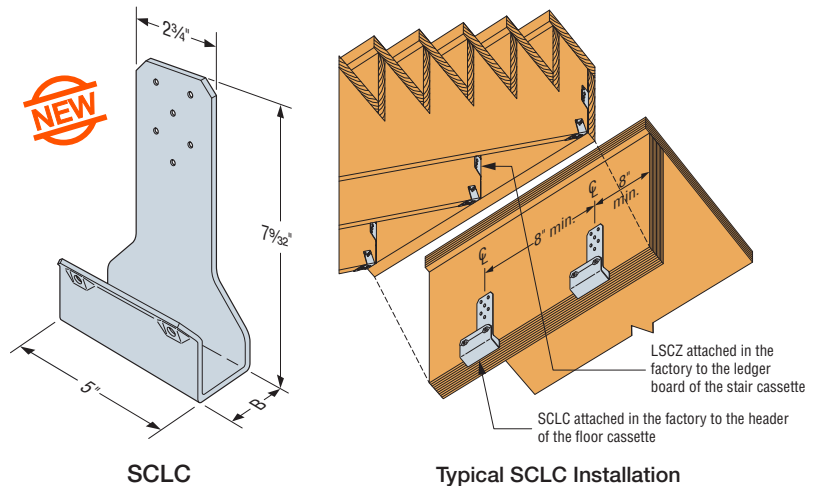
- Factory installation of connector on floor cassette header reduces onsite labor demand
- Stair cassette seats securely on connector for safer onsite installation
- Precise onsite fit-up tolerance
- Uses power-driven or hand-installed nails and SDS Heavy-Duty Connector screws
- Can be installed in conjunction with the LSCZ stair stringer connector, see the current *Wood Construction Connectors* catalog at strongtie.com

Material: 14 gauge

Finish: G90 galvanized

Installation:

- Use all specified fasteners; see General Notes.
- In the factory, attach the SCLC to the header of the floor cassette. A minimum of two SCLC connectors shall be used to support a stair cassette.
- In the field, crane the stair cassette into place so that the stair cassette ledger engages all supporting SCLC connectors.
- Complete the installation with all specified field-installed SDS fasteners as shown in the installation images.
- **Codes:** See p. 8 for Code Reference Key Chart



Model No.	Supported Ledger Thickness (in.)	Dimensions (in.)			Fastener Schedule		Allowable Download (100/115/125)		Code Ref.
		W	B	H	Header	Ledger / Header	DF/SP	SPF/HF	
SCLC2	1 1/2	5	1 5/8	7 1/2	(6) 0.148" x 2 1/2"	(2) SDS 1/4" x 4 1/2"	1,335	1,155	IBC, IRC, LA, FL
SCLC1.75	1 3/4	5	1 7/8	7 1/2	(6) 0.148" x 2 1/2"	(2) SDS 1/4" x 4 1/2"	1,335	1,155	

1. When cross-grain tension cannot be avoided in the member, mechanical reinforcement to resist such forces shall be considered by the designer.

2. **Fasteners:** Nail dimensions are listed diameter by length.
SDS screws are Simpson Strong-Tie Strong-Drive Heavy Duty Connector screws.

MASOZ™/MASOPZ™



This product is preferable to similar connectors because of (a) easier installation, (b) higher loads, (c) lower installed cost, or a combination of these features.

The latest in our growing line of offsite construction solutions, the MASOZ is an ideal mudsill anchor for factory-built, sheathed wall panels. The connector provides a very efficient anchorage method that reduces onsite labor costs. It provides a convenient alternative to traditional cast-in-place anchor bolts because crews don't waste time hassling with misaligned anchors. In addition, it saves labor over post-installed anchors by eliminating the need for a separate crew to drill and set anchors after wall panels are in place. Finally, the MASOZ eliminates the need for additional blocking and connectors required by our MASA™ product when used over sheathing. Two versions of the MASOZ are available — the standard MASOZ for installation on standard form boards, and the MASOPZ for panelized forms.

Features:

- Strategic nail hole and bend-line locations provide a versatile design that works with up to ½"-thick sheathing when flush to or overhanging the edge of concrete
- Nail holes include our raised emboss to allow speedy installation of nails with a power framing nailer
- F₁ (shear parallel-to-plate) allowable loads exceed those of code-prescribed ½" anchor bolts on 2x sill plates
- Compound bend at the intersection of the top of the form-board and concrete, along with notches at the outside edge provide form-board alignment features for more intuitive installation
- MASOZ installs to the outside of the wall panel, allowing panels to be placed without the hassle of aligning sill plate holes with protruding anchor bolts

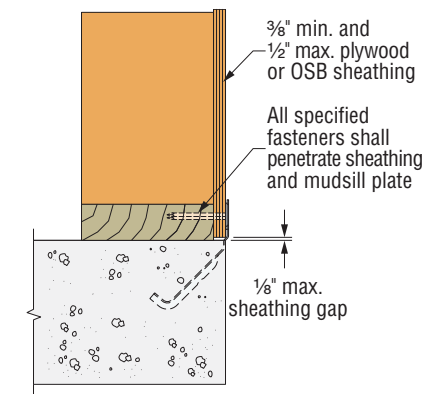
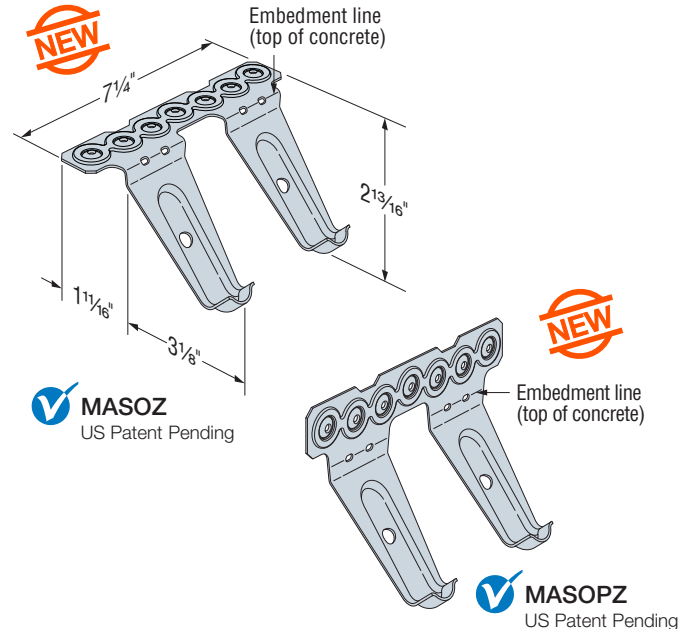
Material: 16 gauge

Finish: ZMAX® coating

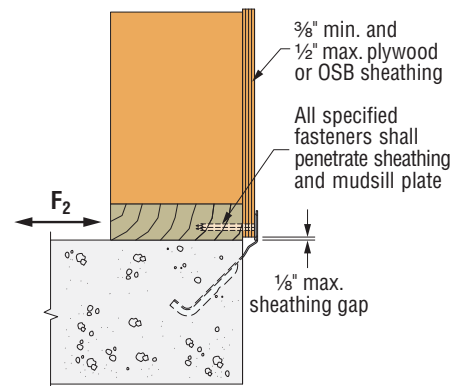
Installation:

- Use all specified fasteners; see General Notes.
- Concrete shall have a minimum $f'_c = 2,500$ psi. Use a concrete vibrator or other means to ensure full consolidation of concrete around the part.
- The MASOZ is designed to be attached through wood structural panel sheathing. For direct attachment to the sill plate, use MASA.
- Spalling — full loads apply for spalls up to a maximum height of 1" and a maximum depth of ¾". Any exposed portion of the mudsill anchor must be protected against possible corrosion.
- Minimum MASOZ end distance is 6" and minimum center-to-center spacing is 12" for full load. For reduced center-to-center spacing and/or end distance, contact Simpson Strong-Tie for reduced loads.
- For continuous load path, uplift connectors should be installed on the same side of the wall as the MASOZ.
- For installation in severe corrosion environments, refer to strongtie.com/cipcorrosion for additional considerations.

Codes: See p. 8 for Code Reference Key Chart



**Typical MASOZ/MASOPZ
Final Installation
with Flush Sheathing
(side view)**



**Typical MASOZ/MASOPZ
Final Installation
with Overhang Sheathing
(side view)**

Mudsill Anchors (cont.)

Prescriptive Spacing for MASOZ and MASOPZ
to Replace Mudsill Anchor Bolts

Model No.	Anchor Bolt Size to Replace	Anchor Bolt Spacing to Replace	MASOZ/MASOPZ Spacing			
			DF/SP 2x Sill Plate		SPF/HF 2x Sill Plate	
			Wind and SDC A&B	SDC C-E	Wind and SDC A&B	'SDC C-E
MASOZ MASOPZ	½" diameter	6' o.c.	6'-0"	6'-0"	6'-0"	6'-0"
		4' o.c.	4'-0"	4'-0"	4'-0"	4'-0"
MASOZ MASOPZ	⅝" diameter	6' o.c.	5'-0"	5'-0"	4'-10"	4'-10"
		4' o.c.	3'-4"	3'-4"	3'-2"	3'-2"

1. Detached one- and two-family dwellings in SDC C may use "Wind and SDC A&B" spacing per 2012/2015/2018/2021/2024 IBC Section 1613 and IRC Section 301.2.2.

2. Spacing is based on the parallel-to-plate (F₁) load direction only.

3. ⅝" anchor bolts required for Seismic Design Category E.

4. The prescriptive spacing shown for DF/SP 2x sill plates requires the use of WSP consisting of OSB, Structural 1 plywood, or plywood of a species known to have an assigned specific gravity (SG) equal to or greater than 0.50.

These products are available with additional corrosion protection. For more information, see pp. 10–13.

Model No.	Sill Size	Fasteners (in.)	Allowable Load (lb.)												Code Ref.
			Uncracked						Cracked						
			Wind and SDC A&B ⁶			SDC C–F			Wind and SDC A&B ⁶			SDC C–F			
			Uplift	F ₁	F ₂	Uplift	F ₁	F ₂	Uplift	F ₁	F ₂	Uplift	F ₁	F ₂	
DF/SP Sill Plate with WSP Sheathing ⁸															
MASOZ or MASOPZ	2x4, 2x6, 3x4, 3x6	(7) 0.148 x 2½	970	1,295	465	850	1,295	465	675	1,295	465	595	1,190	465	IBC, FL, LA
HF/SPF Sill Plate with WSP Sheathing															
MASOZ or MASOPZ	2x4, 2x6, 3x4, 3x6	(7) 0.148 x 2½	920	1,120	405	850	1,120	405	675	1,120	405	595	1,120	405	—

1. Loads have been increased for wind or earthquake loading, with no further increases allowed. Reduce where other loads govern.

2. Concrete shall have a minimum compressive strength of $f'_c = 2,500$ psi.

3. Allowable loads are based on a minimum stem wall width of 6".

4. For simultaneous loads in more than one direction, the connector must be evaluated using the Unity Equation as described on p. 22.

5. Minimum wood structural sheathing thickness shall be ⅝" and maximum sheathing thickness shall be ½".

Refer to installation images for additional requirements.

6. Detached one- and two-family dwellings in SDC C may use "Wind and SDC A&B" spacing per 2012/2015/2018/2021/2024 IBC Section 1613 and IRC Section 301.2.2.

7. For designs under the 2015/2018/2021 IBC, sill plate size shall comply with the shearwall requirements of the 2015/2021 Special Design Provisions for Wind and Seismic.

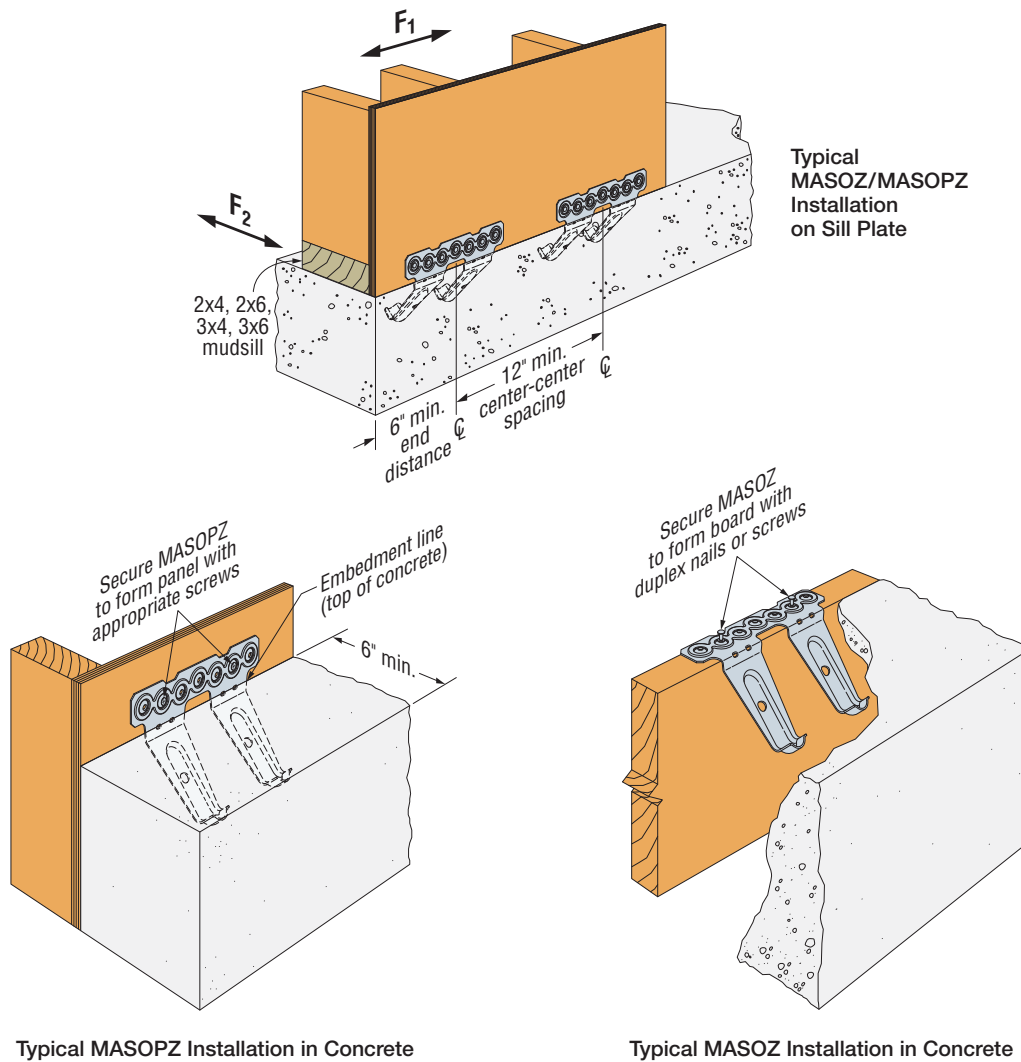
8. The tabulated values for DF/SP sill plates require the use of WSP consisting of OSB, Structural 1 plywood, or plywood of a species known to have an assigned specific gravity (SG) equal to or greater than 0.50. For other WSP conditions used in conjunction with DF/SP sill plates, use HF/SPF tabulated values.

9. Contact Simpson Strong-Tie for load reductions associated with gaps larger than ⅛" between the sheathing and concrete.

10. **Fasteners:** Nail dimensions are listed diameter by length.

MASOZ™/MASOPZ™

Mudsill Anchors (cont.)

**⚠ Warning**

This product is not compatible with all power framing nailers and nails. Do not use any tool that has been altered or modified. Before using the MASOZ/MASOPZ with any power framing nailer, you must determine whether the nailer is compatible with the MASOZ/MASOPZ product. If the nail is unable to be installed in accordance with the information above, or if the nail is not centered in the fastener feature, do not use that power framing nailer with the MASOZ/MASOPZ product. Wear eye and hand protection. Follow the manufacturer's safety precautions when using any power nailer.

Important Notes for Installers

This product is compatible with many power framing nailers and nails.

- Use only nails with concentric, full-round heads that comply with ASTM F1667.
- Do not use 28° wire-weld nails, or any nails with offset, clipped, or D heads.

Place the tool's nosepiece in the MASOZ/MASOPZ fastener feature. The outer ring of the power framing nailer nosepiece should fit within the outer ring of the fastener feature. Install a few nails to ensure nail install acceptance. The nail should be seated into the center of the MASOZ/MASOPZ fastener feature. Adjust air pressure or drive depth to achieve the correct nail placement. Operate framing nailers in single-drive, sequential actuation mode only.

Strong-Drive® SWD® DOUBLE-THREADED™ Screw

The new Strong-Drive SWD Double-Threaded screw is an innovative fastener designed for stealth, strength and speed, and is ideal for securing two wood members together on exterior or interior structural jobs. Available in an assortment of lengths, the SWD screw can be used in a variety of applications such as knee bracing, fastening beam to post, beam to joist, or guardrail to post with ease. The screw features a chisel point for reduced splitting, a smooth and unthreaded mid-shank to secure wood members tight, and a compact head for low visibility. Code listed for structural applications, the SWD has a black, exterior-grade, double-barrier coating for corrosion resistance.

Applications:

- Fasten a variety of connections with ease, such as knee bracing, beam to post, beam to joist, purlin to truss, guardrail to post, roof to wall, and post cap connection replacement, along with post-frame configuration and multi-ply assembly

Features:

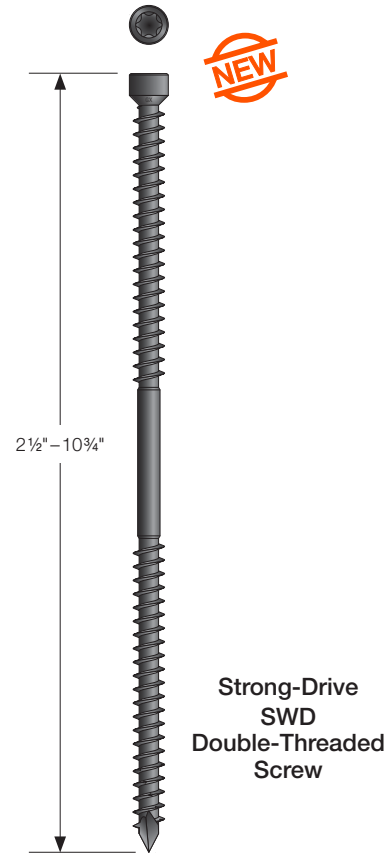
- Professional grade — engineered for strength, versatility and reliability.
- Double-thread design and smooth mid-shank pull members together securely.
- Black, exterior-grade, double-barrier coating for corrosion resistance.
- Chisel point provides easy driving for angled installation and reduced splitting.
- Compact cylinder head design for low-visibility, concealed installations.
- 6-lobe driver bit for secure driving: T30 for 2½", 3½" and 6¼" sizes; T40 for 8½" and 10¾" sizes. Replacement driver bits BIT30T-2-R2 and BIT40T-134-R2.
- Code listed and load rated for structural applications.

Material: Heat-treated carbon steel

Finish: Black double-barrier coating

Codes: IAPMO UES ER-262 (including City of LA Supplement); State of Florida FL13975

For additional technical information regarding this fastener, refer to the current Simpson Strong-Tie *Fastening Systems Technical Guide* available at strongtie.com.



Black Double-Barrier Coating

Model No.	Dimensions							
	Inches				Millimeters			
	OD ¹ x Length	Shank Diameter	Thread Length	Head Diameter	OD ¹ x Length	Shank Diameter	Thread Length	Head Diameter
SWD18212DBB-R50	0.255 x 2½"	0.180	1½"	0.315	6.5 x 65	4.6	28	8.0
SWD18312DBB-R50	0.255 x 3½"	0.180	1½"		6.5 x 90	4.6	40	
SWD18614DBB-R50 ²	0.255 x 6¼"	0.180	2½"		6.5 x 160	4.6	65	
SWD22812DBB-R30	0.315 x 8½"	0.235	3¾"	0.394	8.0 x 220	6	95	10.0
SWD221034DBB-R30	0.315 x 10¾"	0.235	4¼"		8.0 x 275	6	100	

1. OD = is the thread outer (major thread) diameter that includes adjustments for potential manufacturing tolerances.

2. The 6¼" SWD Double-Threaded screw is also available in 500-count buckets: SWD18614DBB.

Allowable Shear Loads

Model No.	Thread Length (in.)	DFL/SP Allowable Shear Loads (lb.)					SPF/HF Allowable Shear Loads (lb.)				
		Wood Side Member Thickness (in.)					Wood Side Member Thickness (in.)				
		¾"	1½"	3½"	5½"	7½"	¾"	1½"	3½"	5½"	7½"
SWD18212DBB	1½"	134	156	—	—	—	109	103	—	—	—
SWD18312DBB	1½"	134	220	—	—	—	109	159	—	—	—
SWD18614DBB	2½"	134	220	325	—	—	109	159	225	—	—
SWD22812DBB	3¾"	163	220	325	450	—	112	155	225	290	—
SWD221034DBB	4¼"	163	220	325	430	300	112	155	225	330	275

1. Screws shall be installed straight into the side grain of the wood main member with the screw axis at a 90° angle to the wood fibers.

2. Tabulated lateral design values are shown at a $C_D = 1.0$. Loads may be increased for load duration per the building code up to a $C_D = 1.6$.

Tabulated values shall be multiplied by all applicable adjustment factors from the NDS as referenced in the IBC or IRC. For in-service moisture content greater than 19%, use $C_M = 0.70$ for DFL/SP and $C_M = 0.58$ for SPF/HF.

3. Minimum main member thickness shall be equal to the screw length minus the side member thickness.

Strong-Drive® SDWC® TRUSS Screw

The Strong-Drive SDWC Truss screw provides a stud-to-bottom plate or stud-to-top plate connection as well as fastening trusses and rafters to top plates. The full-threaded shank engages the entire length of the fastener, providing a secure connection. The SDWC is tested in accordance with ICC-ES AC233 (screw) and AC13 (wall assembly and roof-to-wall assembly) for uplift and lateral loads between wall plates and vertical wall framing and between the top plate and the roof rafters or trusses. It is code listed in IAPMO UES ER-262 and meets 2018, 2021 and 2024 IRC and IBC code requirements for most common wood framing applications. For more information regarding Strong-Drive SDWC Truss screw installation details, please see strongtie.com/SDWC or the Simpson Strong-Tie C-F-2025TECHSUP *Fastening Systems Technical Guide* at strongtie.com.

For safe and easy installation, use the Quik Stik™ rafter and truss fastening system.

Features:

- Fully-threaded shank engages the entire length of the fastener, providing a secure connection between the roof and wall framing members
- Type-17 point for faster starts and easier driving
- Cap-style head countersinks fully into the double top plate to avoid interference with drywall or finish trades
- Wide tolerance on installation angle makes it easy to install the SDWC correctly
- Can be installed from inside the structure, eliminating exterior work on the upper stories and enhancing job safety
- Fastening can be performed before or after exterior sheathing is applied for added flexibility
- Metal installation guide tool (included) to help ensure proper installation
- 6" SDWC Truss screw has orange coating for easy inspection
- 6-lobe, T30 driver bit provides positive engagement that makes the screw easy to drive and improves bit life (replacement driver bit — BIT30T-2-R2)
- SDWC15450 is recognized for use in chemically treated wood as described in the evaluation report

Materials: Carbon steel

Finish: 6" — Clear zinc with orange top coat; 4½" — Black e-coat

Codes/Standards: IAPMO UES ER-262 (including City of LA Supplement), State of Florida FL13975

For additional technical information regarding this fastener, refer to the current Simpson Strong-Tie *Fastening Systems Technical Guide* available at strongtie.com.



SDWC15450-KT and SDWC15600-KT contains:

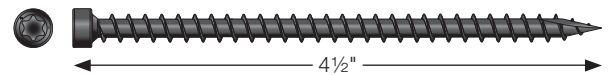
- (50) Strong-Drive SDWC screws
- (1) Matched-tolerance driver bit (Part no. BIT30T-2-R2; also sold separately)
- (1) Metal installation guide tool — SDWC-GUIDE (for SDWC15600 only; also sold separately)

SDWC15450B-KT and SDWC15600B-KT contains:

- (500) Strong-Drive SDWC screws
- (2) Matched-tolerance driver bits (Part no. BIT30T-2-R2; also sold separately)
- (2) Metal installation guide tools — SDWC-GUIDE (for SDWC15600 only; also sold separately)



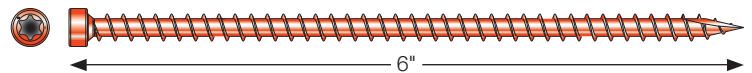
E-coat Finish



Model No.	Dimensions							
	Inches				Millimeters			
	OD ¹ x Length	Minor Diameter	Thread Length	Head Diameter	OD ¹ x Length	Minor Diameter	Thread Length	Head Diameter
SDWC15450	0.235 x 4½	0.155	4¼	0.335	6 x 114	3.9	108	8.5

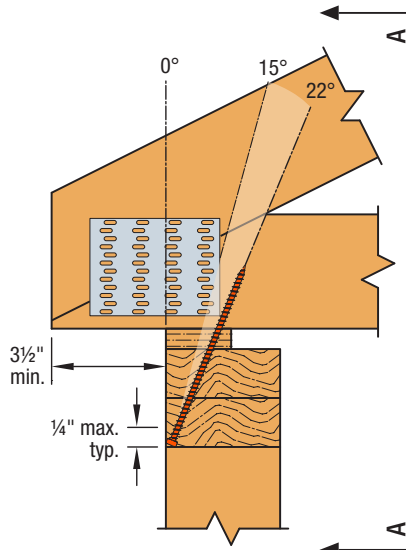
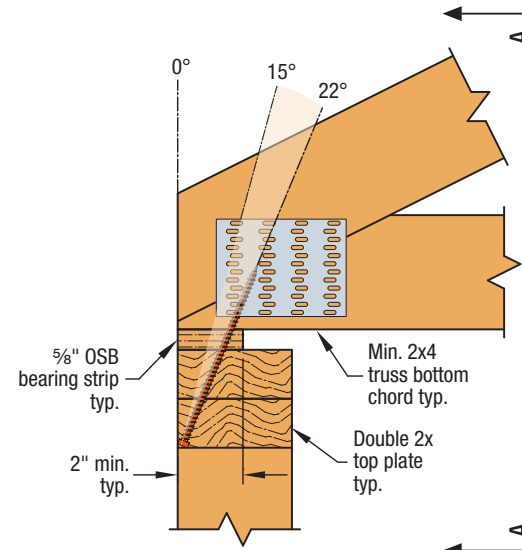
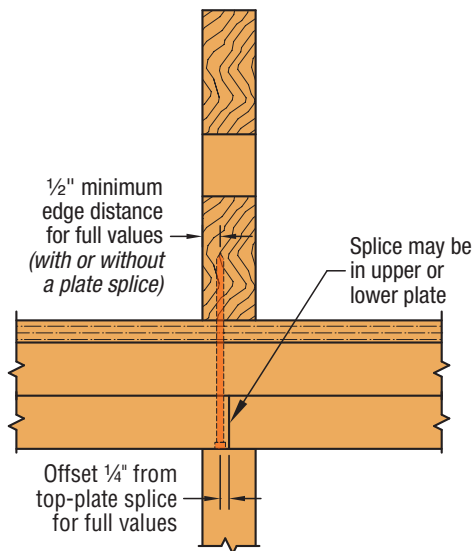
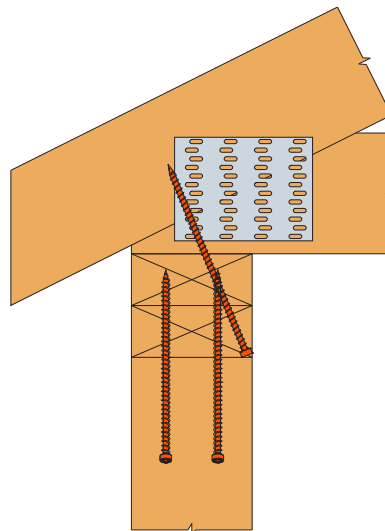
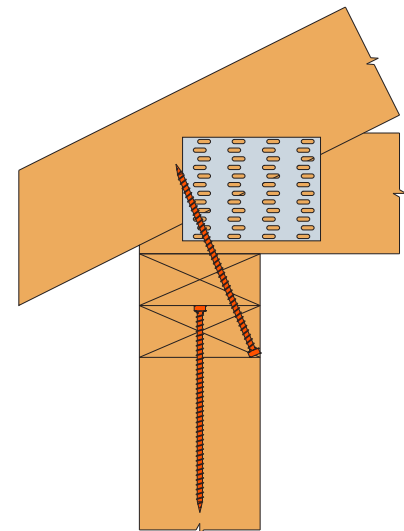
1. OD denotes thread outer diameter.

Clear Zinc Coating (with Orange Topcoat)



Model No.	Dimensions							
	Inches				Millimeters			
	OD ¹ x Length	Minor Diameter	Thread Length	Head Diameter	OD ¹ x Length	Minor Diameter	Thread Length	Head Diameter
SDWC15600	0.235 x 6	0.155	5¾	0.335	6 x 152	3.9	146	8.5

1. OD denotes thread outer diameter.

Strong-Drive® SDWC® TRUSS ScrewSDWC Installation
with OverhangSDWC Installation
Without OverhangSection A-A
Minimum Edge Distance for Top Plate SpliceSDWC Installation
Top-of-Wall Assembly BSDWC Installation
Top-of-Wall Assembly D

See strongtie.com/SDWC or the Simpson Strong-Tie C-F-2025TECHSUP Fastening Systems Technical Guide at strongtie.com for additional applications and load values.

SDWC Truss Screw — Allowable Uplift Loads for Factory-Built Structures

Model No.	Fastener Length (in.)	Thread Length (in.)	Allowable Uplift Loads SPF/DFL/SP (lb.)	
			With Overhang	Without Overhang
SDWC15600	6	5 3/4	415	370

1. Loads have been increased for wind or earthquake ($C_D = 1.6$); no further increase allowed; reduce where other loads govern.
2. Allowable loads apply to spruce-pine-fir, hem-fir, Douglas fir-larch, and southern pine.
3. Allowable loads are for an SDWC installed per the "With Overhang" or "Without Overhang" installation details.
4. SDWC must be installed on the exterior side of the wall.
5. SDWC must be installed at an angle between 10° and 22.5°. Guide provided with screws is at 22.5°.
6. For Uplift Continuous Load Path, top-plate-to-stud connections must be located on the exterior side of the wall.
7. Table loads do not apply to trusses with end-grain bearing.
8. Top plate, stud, and top-plate splice fastened per applicable building code.

Strong-Drive® SDWC® TRUSS Screw

Quik Stik™

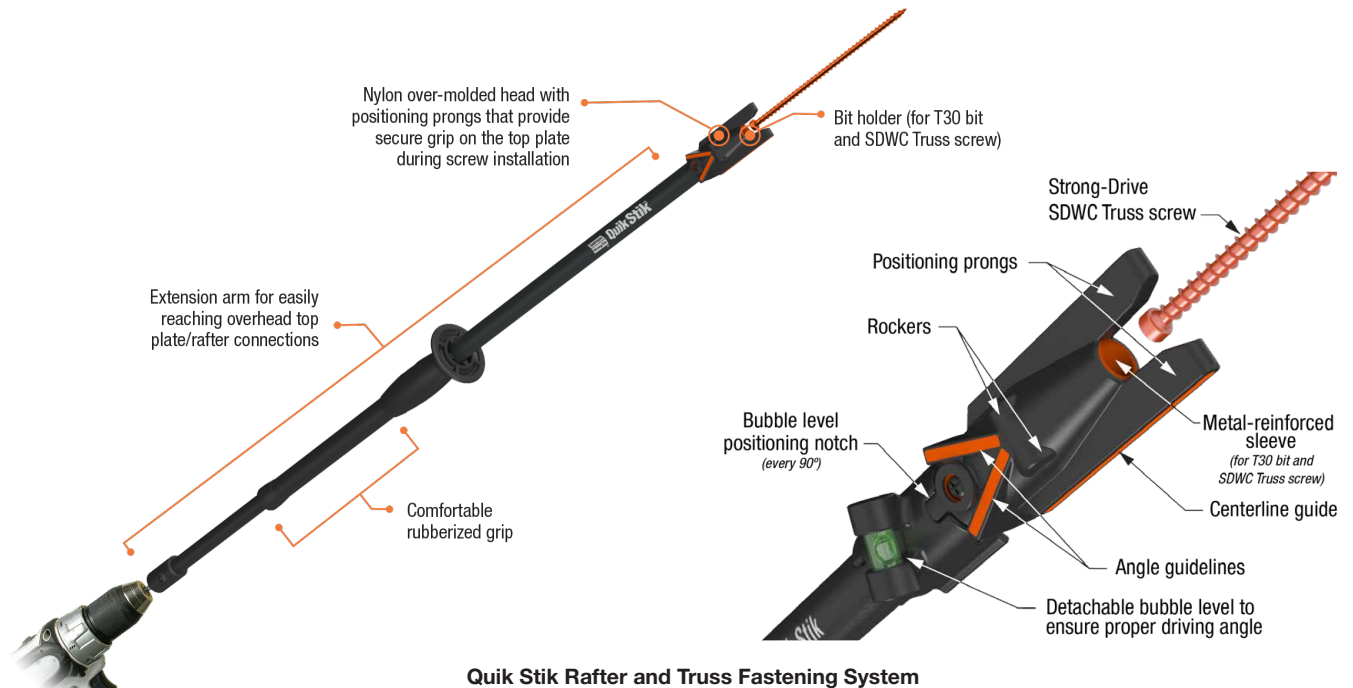
Rafter/Truss-to-Top Plate Installation

For the Quik Stik Rafter and Truss Fastening System

Quik Stik and Strong-Drive SDWC Truss screws are designed to work together for a safe, reliable solution from the leader in structural fastening.

For more information, see the current Simpson Strong-Tie *Fastening Systems* catalog at strongtie.com.

For additional technical information regarding this fastener, refer to the current Simpson Strong-Tie *Fastening Systems Technical Guide* available at strongtie.com.



Rafter/Truss Offset from Stud: Fasten Straight Up Through Double Top Plate

These instructions apply to rafter/truss-to-top-plate connections.

These instructions apply only if the rafter/truss is offset from the stud below.

Note: SDWC Truss screws install best with a minimum 18V (if cordless) drill using the matched-tolerance bit included in the SDWC15600-KT or Quik Stik system using the included bit.

Installation Steps:

Position the Quik Stik head directly under the top plate so that the screw is pointing toward the centerline of the rafter/truss.

Ensure the Quik Stik centerline guide is vertically perpendicular to the top plate.

Drive the SDWC Truss screw straight up through the top plates and into the rafter/truss until the head is flush with the board's surface.



Strong-Drive® SDWV SOLE-TO-RIM Screw

The Simpson Strong-Tie SDWV Sole-to-Rim structural wood screws may be used to attach a sole plate to a rim board. The SDWV Sole-to-Rim screw coating is intended for dry service, low corrosion applications and is suitable for use with FRT in dry-service conditions.

Features:

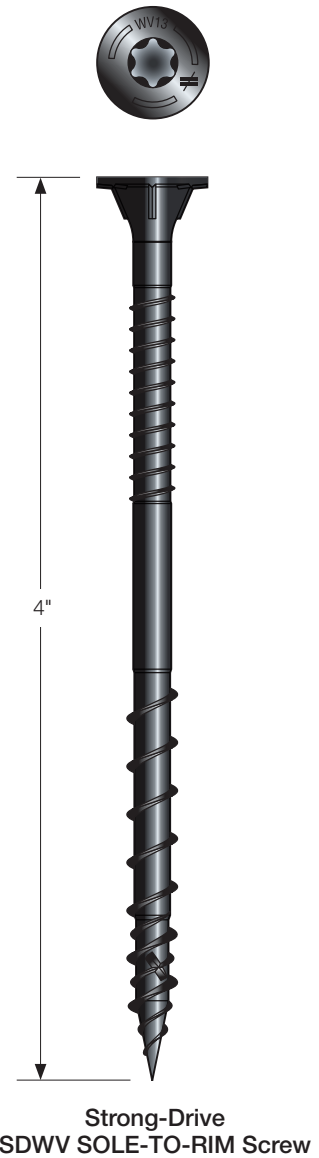
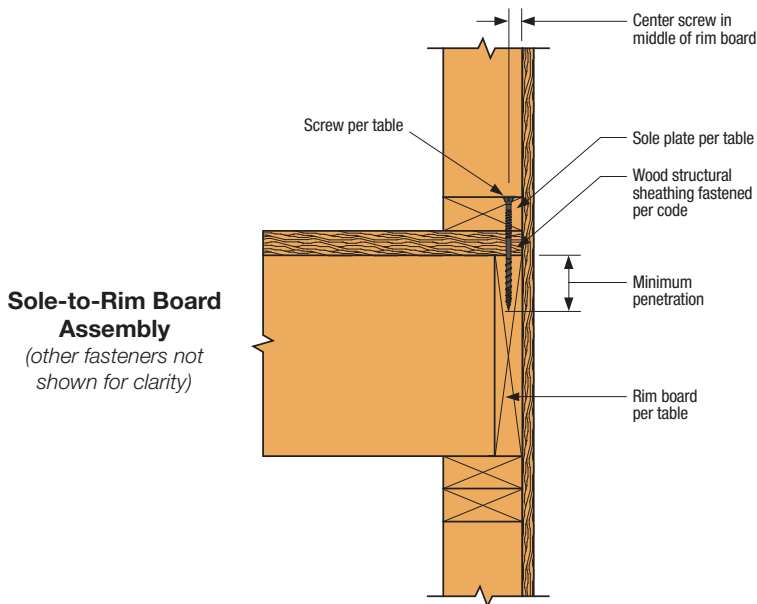
- Large 0.400"-diameter head for increased holding power
- Fast start point with helical ridge for fast, easy, low-torque installation
- Variable thread design, optimized for 2x nominal dimension lumber

Material: Heat-treated carbon steel

Finish: Black e-coat

Codes: IAPMO UES ER-192 (including City of LA Supplement); State of Florida FL13975

For additional technical information regarding this fastener, refer to the current Simpson Strong-Tie *Fastening Systems Technical Guide* available at strongtie.com.



Product Information

Model No.	OD ¹ x Length (in.)	Head Diameter (in.)	Shank Diameter (in.)	Finish
SDWV13400	0.185 x 4	0.400	0.135	Black e-coat

1. OD denotes thread outer diameter.
2. Replacement driver bit: BIT25T-2-R2.

Allowable Shear Loads for Sole-to-Rim Connection

Model No.	OD ¹ x Length (in.)	Nominal Sole Plate Thickness (in.)	Minimum Penetration into Rim Board (in.)	Reference Allowable Loads (lb.) per Screw							
				2x Min. DFL/SP Rim Board		2x Min. SPF/HF Rim Board		1 1/4" Min. LVL Rim Board		1 1/4" Min. LSL Rim Board	
				DFL/SP Sole Plate	SPF/HF Sole Plate	DFL/SP Sole Plate	SPF/HF Sole Plate	DFL/SP Sole Plate	SPF/HF Sole Plate	DFL/SP Sole Plate	SPF/HF Sole Plate
SDWV13400	0.185 x 4	2x	1.75	220	175	165	160	185	165	185	175

1. OD denotes thread outer diameter.
2. Allowable loads are based on testing per ICC-ES AC233 and are limited to parallel-to-grain loading. The equivalent specific gravity for the LVL and LSL having a minimum 0.8E designation for edge fastening is 0.50.
3. Allowable loads are shown at the wood load duration factor of $C_D = 1.0$. Loads may be increased for load duration as permitted by the building code up to a $C_D = 1.6$.
4. Minimum spacing of the SDWV is 6" o.c., minimum end distance is 6", and minimum edge distance is $\frac{5}{8}$ ".
5. Wood structural panel up to $\frac{3}{32}$ " thick is permitted between the sole plate and rim board provided it is fastened to the rim board per code and the minimum penetration of the screw into the rim board is met.
6. Minimum rim board height shall be 9 1/4" when fastening a sole plate and a single top plate to the rim board with SDWV screws.
7. Sole-to-rim loads can be achieved without a wall below.

Strong-Drive® SDW™ TRUSS-PLY and EWP-PLY Screws

The Strong-Drive SDW Truss-Ply and EWP-Ply screws are 0.220"-shank-diameter, high-strength structural screws specifically designed for fastening multi-ply members such as plated trusses, engineered-lumber products and solid sawn lumber. The Strong-Drive SDW Truss-Ply and EWP-Ply screws install with no predrilling and are available in optimized lengths for fastening 2-, 3- and 4-ply trusses or 1¾"-engineered lumber such as structural composite lumber (SCL). The Strong-Drive SDW Truss-Ply and EWP-Ply screws enable single-side fastening, while still allowing concurrent loading on both sides of the assembly to the full allowable head or point-side load of the fastener.

Features:

- Low-profile head for reduced interference during handling or installation of hardware on the assembly
- Patented SawTooth® point ensures fast starts, reduces installation torque and eliminates the need for predrilling in most applications
- High shear values enable wider screw spacing
- Bold thread design firmly cinches plies together to close gaps in multi-ply assemblies
- Optimal screw lengths provide maximum penetration. The thread length allows for tight connections without any "jacking" of the LVL/Truss members

Material: Heat-treated carbon steel **Finish:** Black e-coat

Codes: IAPMO UES ESR-192 (including City of LA Supplement), State of Florida FL13975

For additional technical information regarding this fastener, refer to the current Simpson Strong-Tie *Fastening Systems Technical Guide* available at strongtie.com.

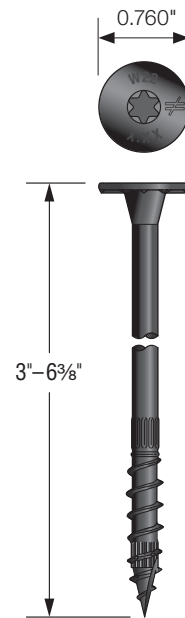
Warning: Industry studies show that hardened fasteners can experience performance problems in wet or corrosive environments. Accordingly, the Strong-Drive SDW Truss-Ply and EWP-Ply screws should only be used in dry, interior and noncorrosive environments.

Installation:

- Use all specified fasteners; see General Notes.
- Strong-Drive SDW Truss-Ply and EWP-Ply screws install best with a low-speed ½" drill motor and a T40 6-lobe bit. The matched bit included with the screws is recommended for best results.
- Predrilling is typically not required. Strong-Drive SDW Truss-Ply and EWP-Ply screws may be installed through metal truss plates as approved by the truss designer, provided the requirements of ANSI/TPI 1-2014 Section 8.9.2 are met (predrilling required through the plate using a maximum of ⅝" bit).
- Screw heads that are countersunk flush to the wood surface are acceptable if the screw has not spun out.
- Individual screw locations may be adjusted up to 3" to avoid conflicts with other hardware or to avoid lumber defects.

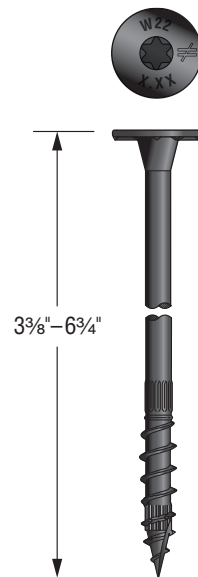
Notes to the Designer:

1. Single-fastener shear loads and withdrawal loads in this section, are based on testing per ICC-ES AC233. Allowable withdrawal load for DF/SP/SCL is 200 lb./in. and for SPF/HF withdrawal is 150 lb./in. of thread length penetration into the main member. Total allowable withdrawal load is based on actual thread penetration into the main member.
2. Allowable loads can be found in the *Fastening Systems Technical Guide* at strongtie.com and are shown with a load duration factor of $C_D = 1.0$ and shall be multiplied by all applicable adjustment factors per the NDS. Loads may be increased for load duration per the building code up to a C_D of 1.6.
3. Minimum fastener spacing requirements: 6" end distance, 1⅞" edge distance, ⅝" between staggered rows of fasteners, 4" between non-staggered rows of fasteners and 6" between fasteners in a row.
4. Maximum fastener spacing is recommended not to exceed 24" on center except as approved by a qualified designer.
5. Structural composite lumber (SCL = LVL, PSL or LSL) loads assume an equivalent Specific Gravity of 0.50 or higher for fastener shear in the wide face (unless otherwise noted).
6. Tabular loads can be found in the *Fastening Systems Technical Guide* at strongtie.com and are based on the capacity of the Simpson Strong-Tie Strong-Drive SDW Truss-Ply and EWP-Ply screws. The capacity of the multi-ply assembly must be checked by a qualified designer.
7. For a top-loaded, solid sawn 2x, multi-ply assembly that is evenly loaded across the entire assembly width, the recommended fastener detail is two rows of SDW screws where the spacing between fasteners in a row is 32". For a top-loaded, SCL (1¾") multi-ply assembly that is evenly loaded across the entire assembly width, the recommended spacing between SDW screws in a row is 24" o.c.; use two rows for up to 18"-deep members and three rows for members deeper than 18".



**Strong-Drive
SDW TRUSS-PLY Screw**
US Patent

One or more of these products are covered by a US patent or are pending. Please go to strongtie.com/patents for the most current list of Simpson Strong-Tie patents.



**Strong-Drive
SDW EWP-PLY Screw**
US Patent

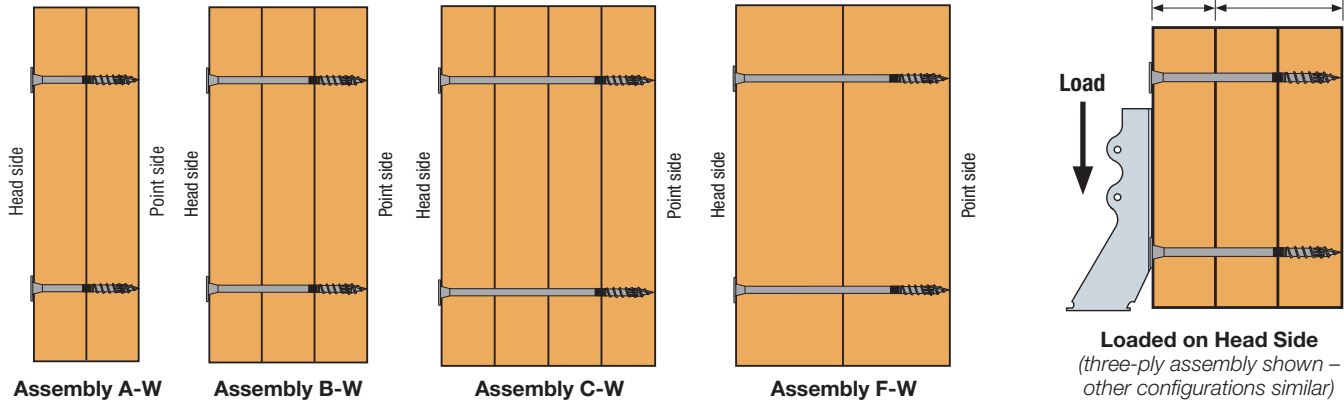
One or more of these products are covered by a US patent or are pending. Please go to strongtie.com/patents for the most current list of Simpson Strong-Tie patents.



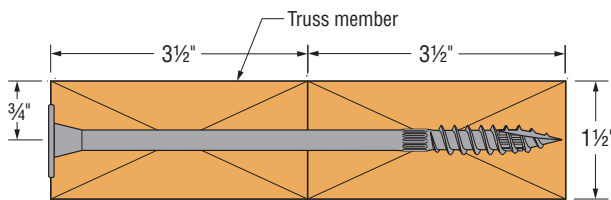
T40 Driver Bit
(included)
BIT40T-134-R2

Strong-Drive® SDW™ TRUSS-PLY and EWP-PLY Screws

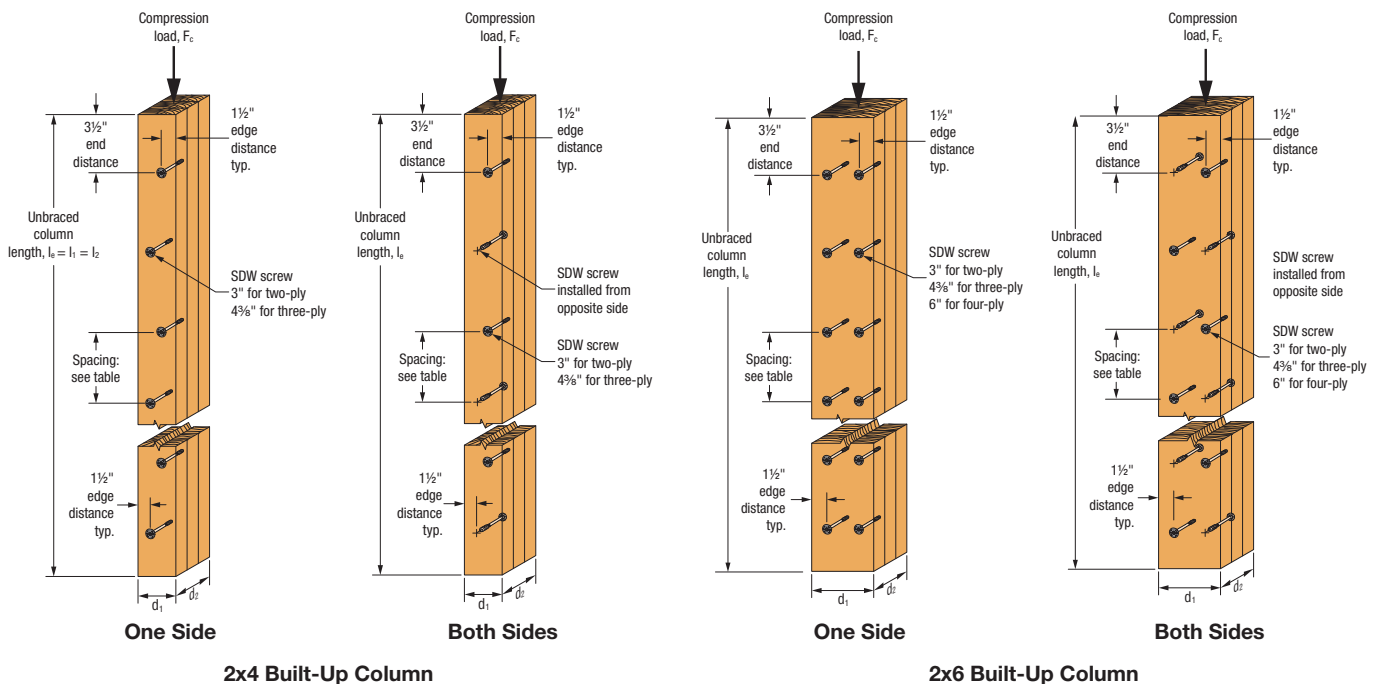
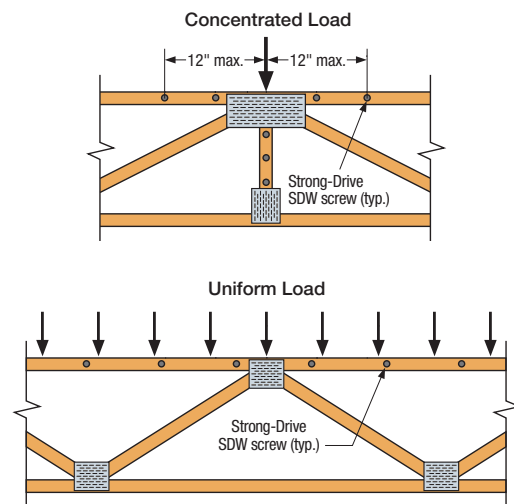
SDW Multi-Ply Assemblies



SDW Multi-Ply Truss and Column Assemblies



SDW Screw Position in Two-Ply 4x2 Truss
(two-ply 3x2 similar)



Strong-Drive® SDWH™ TIMBER-HEX Screw

Ideal for structural and general-purpose fastening applications where a hex-head drive is preferred. The Strong-Drive SDWH Timber-Hex screw is ideal for the contractor and do-it-yourselfer alike. It is code listed in IAPMO UES ER-192 and meets 2018, 2021 and 2024 IRC and IBC code requirements for most common wood framing applications.

Features:

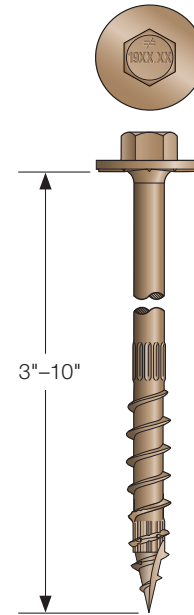
- Bold thread design provides superior holding power
- Patented SawTooth® point ensures fast starts, reduces installation torque and eliminates the need for predrilling in most applications
- Underhead nibs offer greater control when seating the head
- Large washer head provides maximum bearing area (0.650" washer head diameter)
- Size identification on all SDWH screw heads
- 5/16" hex drive (replacement driver bit: BITHEXR516-R1)

Material: Heat-treated carbon steel

Finish: Double-barrier coating provides corrosion resistance equivalent to hot-dip galvanization, making it suitable for certain exterior and preservative-treated wood applications, as described in the evaluation report.

Codes: IAPMO UES ER-192 (including City of LA Supplement), State of Florida FL13975

For additional technical information regarding this fastener, refer to the current Simpson Strong-Tie *Fastening Systems Technical Guide* available at strongtie.com.



**Strong-Drive
SDWH TIMBER-HEX Screw**

US Patent

One or more of these products are covered by a US patent or are pending. Please go to strongtie.com/patents for the most current list of Simpson Strong-Tie patents.

SDWH Timber-Hex Screw — Allowable Shear Loads for Douglas Fir–Larch and Southern Pine Lumber

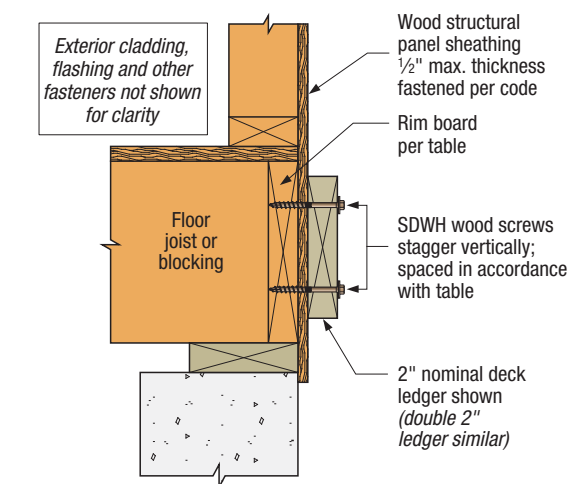
Model No.	Fastener Length (in.)	Thread Length (in.)	Reference DFL/SP Allowable Shear Loads (lb.)								
			Wood Side Member Thickness (in.)								
			1.5	2	2.5	3	3.5	4	4.5	6	8
SDWH19300DB	3	1½	285	—	—	—	—	—	—	—	—
SDWH19400DB	4	2¾	370	300	300	—	—	—	—	—	—
SDWH19600DB	6	2¾	370	265	265	265	265	245	245	—	—
SDWH19800DB	8	2¾	370	265	265	265	265	265	260	245	—
SDWH191000DB	10	2¾	370	265	265	265	265	265	260	260	245

1. All applications are based on full penetration into the main member. Full penetration is the screw length minus the side member thickness.
2. Allowable loads are shown at the wood load duration factor of $C_D = 1.0$. Loads may be increased for load duration per the building code up to a $C_D = 1.6$. Tabulated values must be multiplied by all applicable adjustment factors per the NDS.
3. For minimum fastener spacing requirements for both side and main members, see the current *Fastening Systems Technical Guide* at strongtie.com.
4. For in-service moisture content greater than 19%, use $C_M = 0.7$.
5. Loads are based on installation into the side grain of the wood with the screw axis perpendicular to the face of the member.

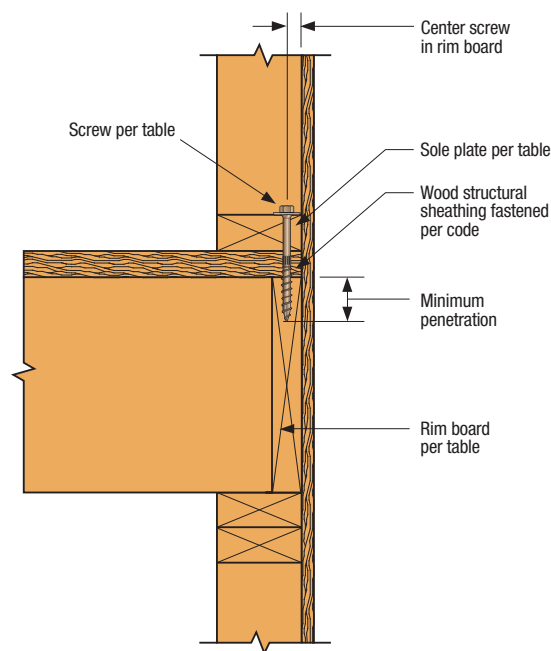
SDWH Timber-Hex Screw — Allowable Shear Loads for Spruce-Pine-Fir and Hem-Fir Lumber

Model No.	Fastener Length (in.)	Thread Length (in.)	Reference SPF/HF Allowable Shear Loads (lb.)								
			Wood Side Member Thickness (in.)								
			1.5	2	2.5	3	3.5	4	4.5	6	8
SDWH19300DB	3	1½	230	—	—	—	—	—	—	—	—
SDWH19400DB	4	2¾	330	235	195	—	—	—	—	—	—
SDWH19600DB	6	2¾	350	265	265	265	265	215	180	—	—
SDWH19800DB	8	2¾	350	265	265	265	265	265	215	215	—
SDWH191000DB	10	2¾	350	265	265	265	265	265	250	250	215

1. All applications are based on full penetration into the main member. Full penetration is the screw length minus the side member thickness.
2. Allowable loads are shown at the wood load duration factor of $C_D = 1.0$. Loads may be increased for load duration per the building code up to a $C_D = 1.6$. Tabulated values must be multiplied by all applicable adjustment factors per the NDS.
3. For minimum fastener spacing requirements for both side and main members, see the current *Fastening Systems Technical Guide* at strongtie.com.
4. For in-service moisture content greater than 19%, use $C_M = 0.7$.
5. Loads are based on installation into the side grain of the wood with the screw axis perpendicular to the face of the member.



Ledger-to-Rim Board Assembly
(wood-framed lower floor acceptable, concrete wall shown for illustration purposes; other fasteners not shown for clarity)



Sole-to-Rim Board Assembly
(other fasteners not shown for clarity)

Strong-Drive® SDWS™ TIMBER (Exterior Grade) Screw

The Strong-Drive SDWS Timber (Exterior Grade) screw is designed to provide an easy-to-install, high-strength alternative to through-bolting and traditional lag screws.

Features:

- Bold thread design provides superior holding power
- Patented SawTooth® point ensures fast starts, reduces installation torque and eliminates the need for predrilling in most applications
- Underhead nibs offer greater control when seating the head and provide a splinter-free clean finish when the head is seated
- Large low-profile washer head provides maximum bearing area

Material: Heat-treated carbon steel

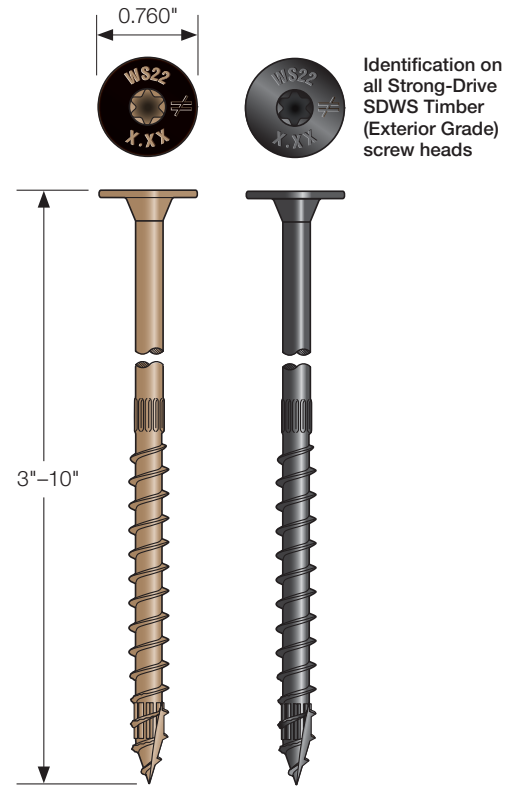
Finish: Double-barrier coating provides corrosion resistance equivalent to hot-dip galvanization, making it suitable for certain exterior and preservative-treated wood applications, as described in the evaluation report.

Installation:

- See General Notes.
- Strong-Drive SDWS Timber (Exterior Grade) screws install best with a low-speed ½" drill and a T40 6-lobe bit. The matched bit included with the screws is recommended for best results (replacement driver bit: BIT40T-134-R2).
- Predrilling is typically not required. Where predrilling is necessary, use a ⅝" drill bit.
- SDWS Timber (Exterior Grade) screws are driven such that screw heads that are countersunk flush to the wood surface are acceptable if the screw has not spun out.
- For additional information, visit strongtie.com/fasteners.

Codes: IAPMO UES ER-192 (including City of LA Supplement), State of Florida FL13975

For additional technical information regarding this fastener, refer to the current Simpson Strong-Tie *Fastening Systems Technical Guide* available at strongtie.com.



**Strong-Drive SDWS TIMBER
(Exterior Grade) Screw**

US Patent

One or more of these products are covered by a US patent or are pending. Please go to strongtie.com/patents for the most current list of Simpson Strong-Tie patents.

SDWS Timber Screw — Allowable Shear Loads for Douglas Fir–Larch and Southern Pine Lumber

Model No.	Fastener Length (in.)	Thread Length (in.)	Reference DFL/SP Allowable Shear Loads (lb.)								
			Wood Side Member Thickness (in.)								
			1.5	2	2.5	3	3.5	4	4.5	6	8
SDWS22300DB SDWS22300DBB	3	1½	255	—	—	—	—	—	—	—	—
SDWS22400DB SDWS22400DBB	4	2¾	405	405	305	—	—	—	—	—	—
SDWS22500DB SDWS22500DBB	5	3	405	405	360	360	325	—	—	—	—
SDWS22600DB SDWS22600DBB	6	3	405	405	405	405	365	365	355	—	—
SDWS22800DB SDWS22800DBB	8	3	405	405	405	405	395	395	395	395	—
SDWS221000DB SDWS221000DBB	10	3	405	405	405	405	395	395	395	395	395

1. All applications are based on full penetration into the main member. Full penetration is the screw length minus the side member thickness.
2. Allowable loads are shown at the wood load duration factor of $C_D = 1.0$. Loads may be increased for load duration per the building code up to a $C_D = 1.6$. Tabulated values must be multiplied by all applicable adjustment factors per the NDS.
3. For minimum fastener spacing requirements for both side and main members, see the current *Fastening Systems Technical Guide* at strongtie.com.
4. For in-service moisture content greater than 19%, use $C_M = 0.7$.
5. Loads are based on installation into the side grain of the wood with the screw axis perpendicular to the face of the member.

Strong-Drive® SDWS™ TIMBER (Exterior Grade) ScrewSDWS Timber Screw —
Allowable Shear Loads for Spruce-Pine-Fir and Hem-Fir Lumber

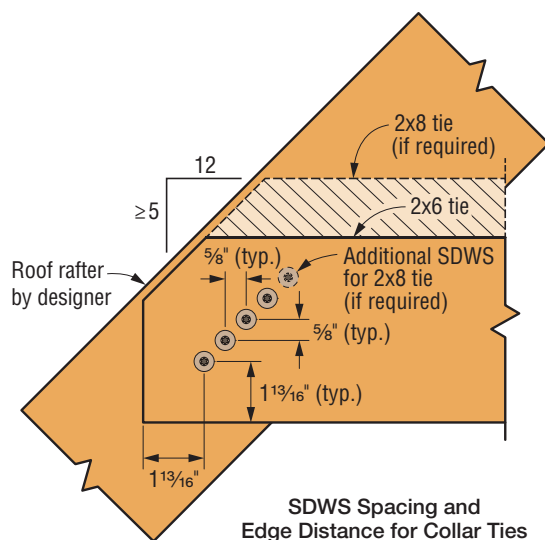
Model No.	Fastener Length (in.)	Thread Length (in.)	Reference SPF/HF Allowable Shear Loads (lb.)								
			Wood Side Member Thickness (in.)								
			1.5	2	2.5	3	3.5	4	4.5	6	8
SDWS22300DB SDWS22300DBB	3	1½	190	—	—	—	—	—	—	—	—
SDWS22400DB SDWS22400DBB	4	2¾	385	285	215	—	—	—	—	—	—
SDWS22500DB SDWS22500DBB	5	3	405	290	290	290	195	—	—	—	—
SDWS22600DB SDWS22600DBB	6	3	405	365	365	365	310	310	210	—	—
SDWS22800DB SDWS22800DBB	8	3	405	365	365	365	310	310	280	280	—
SDWS221000DB SDWS221000DBB	10	3	405	365	365	365	310	310	280	280	280

1. All applications are based on full penetration into the main member. Full penetration is the screw length minus the side member thickness.
2. Allowable loads are shown at the wood load duration factor of $C_D = 1.0$. Loads may be increased for load duration per the building code up to a $C_D = 1.6$. Tabulated values must be multiplied by all applicable adjustment factors per the NDS.
3. For minimum fastener spacing requirements for both side and main members, see the current *Fastening Systems Technical Guide* at strongtie.com.
4. For in-service moisture content greater than 19%, use $C_M = 0.7$.
5. Loads are based on installation into the side grain of the wood with the screw axis perpendicular to the face of the member.

Equivalent SDWS Screws to Replace Bolts for Collar Tie Connections

Rafter Slope	Rafter Spacing	Bolt Quantity and Diameter	Minimum Collar Tie Size	Equivalent SDWS Screws			
				Quantity	Model	OD¹ x Length	Thread Length
≥ 5:12	≤ 16" o.c.	(2) ½"	2x6	4	SDWS22300DB	0.220" x 3"	1½"
		(2) ⅝"	2x8	5			

1. OD denotes thread outer diameter.
2. Bolted connections are assumed to meet the minimum spacing, edge and end distance requirements established in *ANSI/AWC National Design Specification for Wood Construction (NDS)*.
3. Calculated capacity of bolted connections are based on 2x Southern Pine framing members ($t_m = t_s = 1½"$).
4. SDWS screws shall maintain minimum spacing, edge and end distances shown in figure below. Collar tie size is the minimum required for the SDWS connection only; the design of the collar tie itself is the responsibility of the designer.
5. Capacities for tabulated SDWS screw quantities meet or exceed the required heel joint capacities for 20 psf roof live load at a maximum roof span of 36' from WFCM Table 3.9, including an adjustment factor of 1.50 for HC/HR = ⅓ per footnote 5.



Strong-Drive® SDWS™ TIMBER (Interior Grade) Screw

The Strong-Drive SDWS Timber (Interior Grade) screw is a structural wood screw available in a variety of lengths and is designed for cross-laminated timber construction, mass timber construction and general interior applications. These 0.195"- and 0.220"-shank-diameter structural fasteners have a low installation torque demand. The large washer head works with the aggressive threads to pull members together, eliminating the need to use extra washers. It is code listed in IAPMO UES ER-192 and meets 2018, 2021 and 2024 IRC and IBC code requirements for most common wood framing applications.

Features:

- SawTooth® point ensures fast starts, reduces installation torque and eliminates the need for predrilling in most applications
- Low-profile head design makes countersinking easy
- Serrated thread reduces splitting and damage
- Large washer head with underhead nibs provides maximum bearing area
- 6-lobe, T40 drive provides positive engagement that makes the screw easy to drive (replacement driver bit: BIT40T-134-R2)
- Size identification on all Simpson Strong-Tie screws

Material: Heat-treated carbon steel

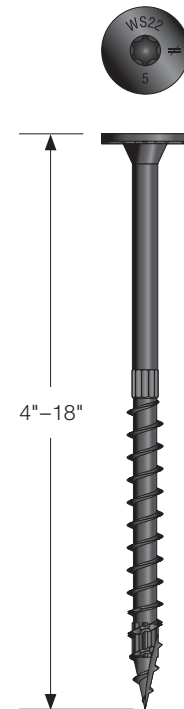
Finish: Black e-coat

Codes: IAPMO UES ER-192 (including City of LA Supplement), State of Florida FL13975

For additional technical information regarding this fastener, refer to the current Simpson Strong-Tie *Fastening Systems Technical Guide* available at strongtie.com.

Warning: Industry studies show that hardened fasteners can experience performance problems in wet and corrosive environments. Accordingly, use this product in dry, interior and noncorrosive environments only.

Testing in a variety of mass timber applications is underway. For the most up-to-date product information, please visit strongtie.com.



**Strong-Drive
SDWS TIMBER
(Interior Grade) Screw**

US Patent
One or more of these products are covered by a US patent or are pending. Please go to strongtie.com/patents for the most current list of Simpson Strong-Tie patents.

E-coat Finish

Model No.	Dimensions							
	Inches				Millimeters			
	OD ¹ x Length	Shank Diameter	Thread Length	Head Diameter	OD ¹ x Length	Shank Diameter	Thread Length	Head Diameter
SDWS19600	0.275 x 6	0.195	3	0.650	7.0 x 152	5.0	76	16.5
SDWS19712	0.275 x 7½	0.195	3	0.650	7.0 x 191	5.0	76	16.5
SDWS19800	0.275 x 8	0.195	3	0.650	7 x 203	5.0	76	16.5
SDWS19900	0.275 x 9	0.195	3	0.650	7 x 229	5.0	76	16.5
SDWS191000	0.275 x 10	0.195	3	0.650	7 x 254	5.0	76	16.5
SDWS191100	0.275 x 11	0.195	3	0.650	7 x 279	5.0	76	16.5
SDWS191200	0.275 x 12	0.195	3	0.650	7 x 305	5.0	76	16.5
SDWS191300	0.275 x 13	0.195	3	0.650	7 x 330	5.0	76	16.5
SDWS191400	0.275 x 14	0.195	3	0.650	7 x 356	5.0	76	16.5
SDWS191500	0.275 x 15	0.195	3	0.650	7 x 381	5.0	76	16.5
SDWS191600	0.275 x 16	0.195	3	0.650	7 x 406	5.0	76	16.5
SDWS191800	0.275 x 18	0.195	3	0.650	7 x 457	5.0	76	16.5
SDWS22400	0.315 x 4	0.220	2¾	0.760	8.0 x 101	5.6	60	19.3
SDWS22500	0.315 x 5	0.220	3	0.760	8.0 x 127	5.6	76	19.3
SDWS22512	0.315 x 5½	0.220	3	0.760	8.0 x 140	5.6	76	19.3
SDWS22600	0.315 x 6	0.220	3	0.760	8.0 x 152	5.6	76	19.3
SDWS22800	0.315 x 8	0.220	3	0.760	8.0 x 203	5.6	76	19.3
SDWS22900	0.315 x 9	0.220	3	0.760	8.0 x 229	5.6	76	19.3
SDWS221000	0.315 x 10	0.220	3	0.760	8.0 x 254	5.6	76	19.3
SDWS221100	0.315 x 11	0.220	3	0.760	8.0 x 279	5.6	76	19.3
SDWS221200	0.315 x 12	0.220	3	0.760	8.0 x 305	5.6	76	19.3
SDWS221500	0.315 x 15	0.220	3	0.760	8.0 x 381	5.6	76	19.3

1. OD denotes thread outer diameter.

2. Driver bit size: T40; replacement driver bit: BIT40T-134-R2.

Strong-Drive® SD CONNECTOR Screw

The Strong-Drive SD Connector screw is specifically designed to replace nails in certain Simpson Strong-Tie connectors, and is the only screw approved for that application. The load-rated SD screw has been tested and approved for use in many popular Simpson Strong-Tie products. In certain applications screws are easier and more convenient to install than nails, and the single-fastener load values achieved by the SD screw exceed those of typical 10d common or 16d common nails. In addition, the galvanized coating makes the SD screw ideal for both interior and most exterior conditions.

Features:

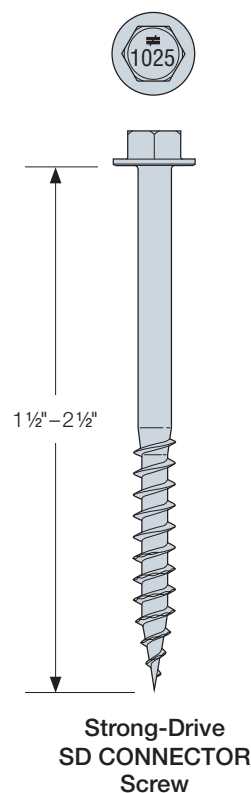
- Specifically designed to replace nails in certain Simpson Strong-Tie connectors, and is the only screw approved for that application. The #9 and #10 SD screws replace 10d and 16d nails, respectively.
- Tested and approved for use in many of our most popular connectors for both interior and exterior applications.
- Ideal for use in connector applications where more control is desired or using a hammer is inconvenient.
- ¼" hex head with 0.370"-diameter integrated washer is stamped with the Simpson Strong-Tie "S" sign and the fastener size for easy identification after installation.
- Shank is specifically designed to match the fastener holes in Simpson Strong-Tie connectors.
- Optimized heat treating for ductility and strength.
- The single-fastener load capacity of the SD9 exceeds the capacity of a 10d common nail, while the single-fastener load capacity of the SD10 exceeds that of the 16d common nail.
- Hex driver bit included (replacement driver bit: BITHEXR14-R1)

Material: Heat-treated carbon steel

Finish: Mechanically-galvanized coating meets ASTM B695 Class 55, is recommended for use with certain preservative-treated woods and recognized as an alternate to hot-dip galvanized in ESR-3046; it is compliant with the 2015, 2018, 2021 and 2024 International Residential Code.

Codes ICC-ES ESR-3046 (including City of LA Supplement), State of Florida FL9589

For additional technical information regarding this fastener, refer to the current Simpson Strong-Tie *Fastening Systems Technical Guide* available at strongtie.com.

**SD Connector Screw — Allowable Shear Loads for Wood Connections**

Model No.	Size x Length (in.)	Thread Length (in.)	Reference DFL/SP Allowable Shear Loads (lb.)			Reference SPF/HF Allowable Shear Loads (lb.)		
			Wood Side Plate Thickness (in.)			Wood Side Plate Thickness (in.)		
			1 ⁵ / ₃₂ – 1/2	2 ³ / ₃₂ – 3/4	1 1/2	1 ⁵ / ₃₂ – 1/2	2 ³ / ₃₂ – 3/4	1 1/2
SD9112	#9 x 1 1/2	1	105	—	—	93	—	—
SD9212	#9 x 2 1/2	1	118	133	130	99	94	109
SD10112	#10 x 1 1/2	1	127	—	—	102	—	—
SD10212	#10 x 2 1/2	1	147	168	152	106	126	123

1. Allowable loads are shown at the wood load duration factor of $C_D = 1.0$. Loads may be increased for load duration per the building code up to a $C_D = 1.6$.
2. The 1⁵/₃₂" and 2³/₃₂" side members must be plywood or OSB with minimum equivalent specific gravities of 0.50 for DFL and SP design values, and 0.42 for SPF and HF design values. See NDS, Table 12.3.3B for specific WSP grades and associated equivalent specific gravities.
3. Loads are based on connections with main members of DFL/SP or SPF/HF and side members as shown and described in table note 2. Screws shall be installed normal to the surface of the wood members.
4. For minimum fastener spacing requirements for both side and main members, see the current *Fastening Systems Technical Guide* at strongtie.com.

SD/SD SS — Allowable Shear Loads — Steel/Stainless-Steel Side Plate

Model No.	Size x Length (in.)	Thread Length (in.)	Reference SPF/HF Allowable Shear Loads (lb.)	
			DFL/SP	SPF/HF
SD9112SS / SD9112	#9 x 1 1/2	1	171	112
SD9212SS / SD9212	#9 x 2 1/2		200	112
SD10112	#10 x 1 1/2		173	138
SD10212	#10 x 2 1/2		215	165

1. Loads are given for $C_D = 1.00$ and may be increased for load duration per the building code to $C_D = 1.60$.
2. Steel/stainless steel side-plate thickness is 33–100 mil (20–12 ga.).

Strong-Drive® SDS HEAVY-DUTY CONNECTOR Screw

The Simpson Strong-Tie Strong-Drive SDS Heavy-Duty Connector screw is a 0.250"-diameter structural wood screw ideal for various connector installations as well as wood-to-wood applications. It installs with no predrilling and has been extensively tested in various applications. The SDS Heavy-Duty Connector screw is improved with an easy-driving Type-17 point and a corrosion resistant double-barrier coating.

Features:

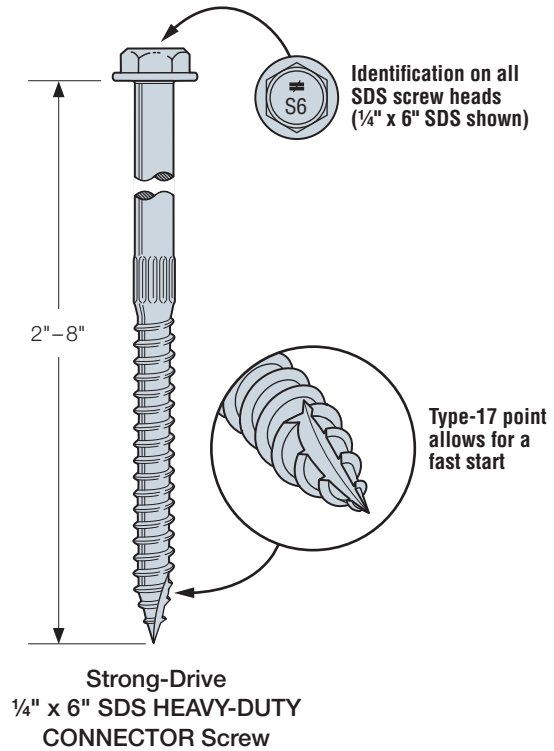
- The Type-17 point reduces installation torque and makes driving easy with no predrilling and minimal wood splitting.
- Available with a double-barrier coating or in Type 316 stainless steel. Carbon steel loads apply to corresponding stainless-steel models.
- 3/8" hex washer head is stamped with the No-Equal® sign and fastener length for easy identification after installation.
- For the 3/8" hex-head driver bit, order model no. BITHEXR38-R1.

Material: Heat-treated carbon steel, Type 316 stainless steel

Finish: Double-barrier coating (all lengths);
Type 316 stainless steel (1½" through 3½" lengths)

Codes: ICC-ES ESR-2236 (including City of LA Supplement),
State of Florida FL9589

For additional technical information regarding this fastener, refer to the current Simpson Strong-Tie *Fastening Systems Technical Guide* available at strongtie.com.



SDS Heavy-Duty Connector Screw — Allowable Shear Loads for Douglas Fir–Larch and Southern Pine Lumber

Model No.	Fastener Length (in.)	Reference DFL/SP Allowable Shear Loads (lb.)													
		Wood Side Plate Thickness (in.)													
		½	⅝	¾	1	1⅛	1¼	1½	1¾	2½	3	3½	4	4½	
SDS25200	2	145	—	—	—	—	—	—	—	—	—	—	—	—	
SDS25212	2½	165	165	170	165	—	—	190 ¹	—	—	—	—	—	—	
SDS25300	3	165	165	170	185	195	205	280 ¹	—	—	—	—	—	—	
SDS25312	3½	165	165	170	185	195	205	340 ¹	340 ¹	—	—	—	—	—	
SDS25412	4½	165	165	170	185	195	205	350 ¹	340 ¹	230	200	—	—	—	
SDS25500	5	165	165	170	185	195	205	350 ¹	340 ¹	230	230	200	—	—	
SDS25600	6	165	165	170	185	195	205	350 ¹	340 ¹	340 ¹	340 ¹	340 ¹	230	200	
SDS25800	8	165	165	170	185	195	205	350 ¹	340 ¹	340 ¹	340 ¹	340 ¹	230	230	

1. Noted loads are based on testing per ICC-ES AC233 and assume a minimum main member thickness of the screw length minus the side member thickness. All other allowable loads are based on the NDS and a minimum penetration of $6D = 1.5"$ into the main member.
2. Values are valid for a connection involving only two members. Where the side and main members have different specific gravities, the lower specific gravity shall be used.
3. Allowable loads are also applicable to structural composite lumber (e.g., LVL, PSL, and LSL) having an equivalent specific gravity of 0.50 or greater.
4. Allowable loads are shown at the wood load duration factor of $C_D = 1.0$. Loads may be increased for load duration by the building code up to a $C_D = 1.6$. The designer shall apply all adjustment factors required per NDS.
5. Loads are based on perpendicular installation into the side grain of the wood members.
6. Loads apply to corresponding stainless-steel models.
7. For in-service moisture greater than 19%, use $C_M = 0.7$.

Strong-Drive® SDS HEAVY-DUTY CONNECTOR ScrewSDS Heavy-Duty Connector Screw —
Allowable Shear Loads for Spruce-Pine-Fir and Hem-Fir

Model No.	Fastener Length (in.)	Reference SPF/HF Allowable Shear Loads (lb.)												
		Wood Side Plate Thickness (in.)												
		½	⅝	¾	1	1⅝	1¾	1½	1¾	2½	3	3½	4	4½
SDS25200	2	105	—	—	—	—	—	—	—	—	—	—	—	—
SDS25212	2½	130	135	130	120	—	—	135 ¹	—	—	—	—	—	—
SDS25300	3	130	140	140	150	150	145	200 ¹	—	—	—	—	—	—
SDS25312	3½	130	140	140	150	155	165	245 ¹	245 ¹	—	—	—	—	—
SDS25412	4½	130	140	140	150	155	165	250 ¹	245 ¹	190	160	—	—	—
SDS25500	5	130	140	140	150	155	165	250 ¹	245 ¹	190	190	160	—	—
SDS25600	6	130	140	140	150	155	165	250 ¹	245 ¹	245 ¹	245 ¹	245 ¹	190	160
SDS25800	8	130	140	140	150	155	165	250 ¹	245 ¹	245 ¹	245 ¹	245 ¹	195	195

1. Noted loads are based on testing per ICC-ES AC233 and assume a minimum main member thickness of the screw length minus the side member thickness. All other allowable loads are based on the NDS and a minimum penetration of $6D = 1.5"$ into the main member.
2. Values are valid for a connection involving only two members. Where the side and main members have different specific gravities, the lower specific gravity shall be used.
3. Allowable loads are also applicable to structural composite lumber (e.g., LVL, PSL, and LSL) having an equivalent specific gravity of 0.50 or greater.
4. Allowable loads are shown at the wood load duration factor of $C_D = 1.0$. Loads may be increased for load duration by the building code up to a $C_D = 1.6$. The designer shall apply all adjustment factors required per NDS.
5. Loads are based on perpendicular installation into the side grain of the wood members.
6. Loads apply to corresponding stainless-steel models.
7. For in-service moisture greater than 19%, use $C_M = 0.7$.

SDS Heavy-Duty Connector Screw — Allowable Shear Loads — Steel Side-Plate Applications

Model No.	Fastener Length (in.)	Thread Length (in.)	Fasteners per Carton	DFL/SP Allowable Loads³ (lb.)							SPF/HF Allowable Loads³ (lb.)						
				Shear					Withdrawal⁴		Shear					Withdrawal⁴	
											Wood Side Plate²		Steel Side Plate				
				1½"	1¾" SCL	16 ga.	14 ga. and 12 ga.	10 ga. or Greater	Wood Side Plate	Steel Side Plate	1½"	1¾" SPF LVL	16 ga.	14 ga. and 12 ga.	10 ga. or Greater	Wood Side Plate	Steel Side Plate
SDS25112	1½	1	1,500	—	—	250	250	250	170	170	—	—	180	180	180	120	120
SDS25200	2	1¼	1,300	—	—	250	290	290	215	215	—	—	180	210	210	150	150
SDS25212	2½	1½	1,100	190	—	250	390	420	255	255	135	—	180	280	300	180	180
SDS25300	3	2	950	280	—	250	420	420	345	345	200	—	180	300	300	240	240
SDS25312	3½	2¼	900	340	340	250	420	420	345	385	245	245	180	300	300	240	270
SDS25412	4½	2¾	800	350	340	250	420	420	345	475	250	245	180	300	300	240	330
SDS25500	5	2¾	500	350	340	250	420	420	345	475	250	245	180	300	300	240	330
SDS25600	6	3¼	600	350	340	250	420	420	345	560	250	245	180	300	300	240	395
SDS25800	8	3¼	400	350	340	250	420	420	345	560	250	245	180	300	300	240	395

1. Allowable loads are shown at the wood load duration factor of $C_D = 1.00$. Loads may be increased for load duration up to a $C_D = 1.60$.
2. Withdrawal loads shown are in pounds (lb.) and are based on the lesser value of either head pull-through for a 1.5"-thick wood side member or withdrawal from the main member. If entire thread length is not installed into the main member, calculate withdrawal based on 172 lb./in. of thread penetration for DFL/SP wood and 121 lb./in. for SPF/HF wood. Maximum withdrawal values with a steel side plate are 635 lb. for 16 ga. and 800 lb. for 14 ga. due to head pull-through.
3. LSL wood-to-wood applications that require 4½", 5", 6" and 8" SDS screws are limited to interior-dry use only.
4. Minimum spacing requirements are listed in ICC-ES ESR-2236.

Strong-Drive® SDWS™ FRAMING Screw

The SDWS Framing screw is designed and load-rated for replacing 16d, 10d and 8d nails in framing applications. The SDWS Framing screw is 0.215" in diameter and superior to nails in holding power and pull-out resistance. It is code listed in IAPMO UES ER-192 and meets 2018, 2021 and 2024 IRC and IBC code requirements for most common wood framing applications.

The screw has a SawTooth® point that makes for fast installations without predrilling, and its specially-designed head countersinks easily to provide a clean, flush finish. The T25 bit holds the 6-lobe recess tightly, reducing cam-out and head stripping.

Features:

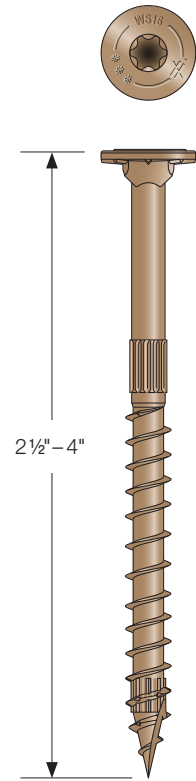
- Large washer head with underhead box-nibs provides increased bearing in structural applications and provides clean and easy countersinking (0.440" head diameter)
- SawTooth point ensures fast starts, reduces installation torque and eliminates the need for predrilling in most applications
- The 6-lobe drive provides positive bit engagement resulting in easier installations and longer bit life
- Quik Guard® coating provides protection in indoor and outdoor applications
- Driver bit model no.: BIT25T-2-R2

Material: Heat-treated carbon steel

Finish: Quik Guard coating

Codes: IAPMO UES ER-192 (including City of LA Supplement), State of Florida FL13975

For additional technical information regarding this fastener, refer to the current Simpson Strong-Tie *Fastening Systems Technical Guide* available at strongtie.com.



**Strong-Drive
SDWS FRAMING Screw**

US Patent
One or more of these products are covered by a US patent or are pending. Please go to strongtie.com/patents for the most current list of Simpson Strong-Tie patents.

SDWS Framing Screw — Allowable Shear Loads for Sawn Lumber

Model No.	Fastener Length (in.)	Side Member Thickness (in.)	Main Member Penetration (in.)	Reference Allowable Shear Loads (lb.)		
				SP	DFL	SPF/HF
SDWS16212	2½	1½	0.90	131	106	99
SDWS16300	3	1½	1.40	229	150	150
		2	0.90	129	129	89
SDWS16312	3½	1½	2.0	254	254	199
SDWS16400	4	1½	2.5	254	254	199
		2	2.0	262	262	199

1. All applications are based on full penetration into the main member. Full penetration is the screw length minus the side member thickness.
2. Allowable loads are shown at the wood load duration factor of $C_D = 1.0$. Loads may be increased for load duration per the building code up to a $C_D = 1.6$. Tabulated values must be multiplied by all applicable adjustment factors per the NDS.
3. For minimum fastener spacing requirements for both side and main members, see the current *Fastening Systems Technical Guide* at strongtie.com.
4. For in-service moisture content greater than 19%, use $C_M = 0.70$.
5. Screws must be installed straight into the side grain of the wood main member with the screw axis at a 90° angle to the wood fibers.

SDWS Framing Screw — Allowable Shear Loads for Wood Structural Panel Side Member

Model No.	Side Member Thickness (in.)	Minimum Main Member Penetration (in.)	Reference Allowable Shear Loads (lb.)		
			SP	DFL	SPF/HF
SDWS16	1½/2	1.93	143	143	143
	2¾/2	1.68	200	187	138

1. Allowable loads are shown at the wood load duration factor of $C_D = 1.0$. Loads may be increased for load duration per the building code up to a $C_D = 1.6$. Tabulated loads must be multiplied by all applicable adjustment factors per the NDS.
2. WSP side members for tests were oriented strand board (equivalent specific gravity = 0.50).
3. All applications are based on full penetration into the main member. Full penetration is the screw length minus the side member thickness.
4. Screws must be installed straight into the side grain of the wood main member with the screw axis at a 90° angle to the wood fibers.

Strong-Drive® SDHR COMBO-HEAD Screw

The Strong-Drive SDHR Combo-Head screw is a structural fastener designed for cross-laminated timber construction, mass timber construction and general interior applications. These partially-threaded, sturdy 0.390"- and 0.470"-diameter structural fasteners are designed to pull structural members together while providing excellent connection strength. The unique "combination" head allows for effortless driving using either a hex driver bit or T40 6-lobe driver bit (BIT40T-134-R2). The SDHR Combo-Head has an interior-grade, zinc coating, a robust knurled shank and Type-17 point for fast starts and low-torque driving.

Features:

- Designed for use with steel side plates
- Type-17 point ensures fast starts, reduces installation torque and eliminates the need for predrilling in most applications
- Partially threaded with aggressive thread to provide high pullout resistance

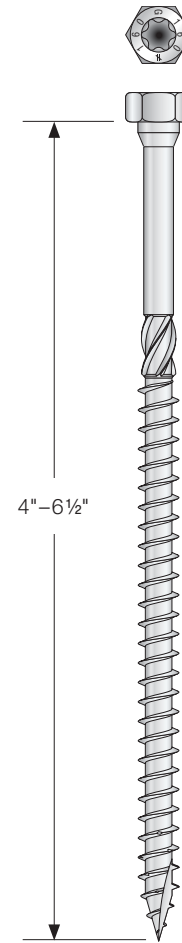
Material: Heat-treated carbon steel

Finish: Zinc coating

Codes/Standards: ICC-ES ESR-3046 (including City of LA Supplement), State of Florida FL9589

For additional technical information regarding this fastener, refer to the current Simpson Strong-Tie *Fastening Systems Technical Guide* available at strongtie.com.

Warning: Industry studies show that hardened fasteners can experience performance problems in wet and corrosive environments. Accordingly, use this product in dry, interior and noncorrosive environments only.



**Strong-Drive
SDHR COMBO-HEAD Screw**

SDHR Combo-Head Screw — Allowable Lateral Design Values for Single-Fastener, Steel-to-Wood Connections

Model No.	Fastener Length (in.)	Reference Allowable Lateral Design Value, Z (lb.)					
		Side Member Thickness, ga. (mil)					
		16 (54)	14 (68)	12 (97)	10 (118)	7 (171)	3 (229)
SG ≥ 0.42							
SDHR27400	4	400	400	400	400	400	485
SDHR27614	6¼	400	400	400	400	400	485
SDHR31400	4	540	540	540	540	540	565
SDHR31614	6¼	540	540	540	540	540	565

1. The main member must be sawn lumber, glulam, or CLT with an assigned specific gravity (SG) as shown in the table above or an engineered wood product with a minimum grade of 1.3E and equivalent SG of at least 0.50.
2. Tabulated reference allowable lateral design values (Z) are shown for normal duration of load ($C_D = 1.0$). Loads may be increased for load duration as permitted by the building code up to a $C_D = 1.6$.
3. Screws must be installed into the face or side grain of the wood main member with the screw axis at a 90° angle to the wood surface.
4. Minimum fastener penetration must be equal to the screw length less the thickness of the side member.
5. Tabulated reference lateral design values apply to combinations of parallel- and perpendicular-to-grain loading.

Strong-Drive® SDCP TIMBER-CP Screw

The Strong-Drive SDCP Timber-CP screw is a structural fastener available in a variety of lengths and is designed for cross-laminated timber construction, mass timber construction and general interior applications. These partially-threaded, 0.315"- and 0.390"-diameter structural fasteners are designed to pull structural members together with superb holding power. The large flat head with underhead ribs provides for clean countersinking. The SDCP Timber-CP has a yellow zinc coating, a robust knurled shaft and Type-17 point for fast starts and low-torque driving.

Features:

- Designed to be countersunk so that head is flush to wood surface
- No predrill needed in most applications. Type-17 point ensures fast starts, reduces installation torque
- Partially threaded with aggressive thread to provide high pullout resistance
- Deep 6-lobe recess for secure driving and longer bit life
- Driver bit model no.: BIT40T-134-R2

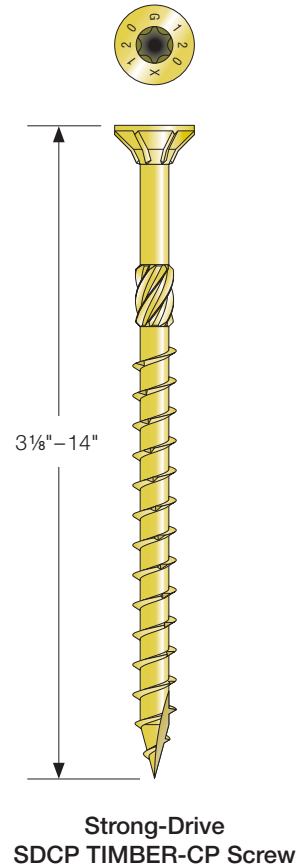
Material: Heat-treated carbon steel

Finish: Yellow zinc coating

Codes: ICC-ES ESR-3046 (including City of LA Supplement), State of Florida FL9589

For additional technical information regarding this fastener, refer to the current Simpson Strong-Tie *Fastening Systems Technical Guide* available at strongtie.com.

Warning: Industry studies show that hardened fasteners can experience performance problems in wet and corrosive environments. Accordingly, use this product in dry, interior and noncorrosive environments only.



SDCP Timber-CP Screw — Allowable Lateral Design Values for Single Shear Wood-to-Wood Connections

Model No.	Side Member Thickness (in.)							
	1.5	3	3.5	4.125	5.5	6.875	7.25	9.625
0.42 ≤ SG < 0.50								
SDCP22318	245	—	—	—	—	—	—	—
SDCP22434	255	—	—	—	—	—	—	—
SDCP22512	255	320	—	—	—	—	—	—
SDCP22614	255	320	320	—	—	—	—	—
SDCP22700	255	320	320	320	—	—	—	—
SDCP22858	255	320	320	320	320	—	—	—
SDCP22912	255	320	320	320	320	—	—	—
SDCP221100	255	320	320	320	320	320	320	—
SDCP221134	255	320	320	320	320	320	320	—
SDCP27400	255	—	—	—	—	—	—	—
SDCP27614	255	415	415	—	—	—	—	—
SDCP27778	255	415	415	415	—	—	—	—
SDCP27912	255	415	415	415	415	—	—	—
SDCP271100	255	415	415	415	415	415	415	—
SDCP271212	255	415	415	415	415	415	415	—
SDCP271400	255	415	415	415	415	415	415	415

1. The main member and side members must be sawn lumber, glulam, or CLT with an assigned specific gravity (SG) as shown in the table above or an engineered wood product with a minimum grade of 1.3E and equivalent SG of at least 0.50.
2. Tabulated reference allowable lateral design value (Z) must be multiplied by all applicable adjustment factors, including the load duration factor, C_D , from the NDS as referenced in the IBC or IRC.
3. Screws must be installed into the face or side grain of the wood main member with the screw axis at a 90° angle to the wood surface.
4. Minimum fastener penetration must be equal to the screw length less the thickness of the wood side member.
5. Tabulated reference lateral design values apply to combinations of parallel- and perpendicular-to-grain loading.

SDCP Timber-CP Screw —
Allowable Lateral Design Values for Single Shear Wood-to-Wood Connections (cont.)

Model No.	Side Member Thickness (in.)							
	1.5	3	3.5	4.125	5.5	6.875	7.25	9.625
0.50 ≤ SG								
SDCP22318	340	—	—	—	—	—	—	—
SDCP22434	360	—	—	—	—	—	—	—
SDCP22512	360	480	—	—	—	—	—	—
SDCP22614	360	480	480	—	—	—	—	—
SDCP22700	360	480	480	480	—	—	—	—
SDCP22858	360	480	480	480	480	—	—	—
SDCP22912	360	480	480	480	480	—	—	—
SDCP221100	360	480	480	480	480	480	480	—
SDCP221134	360	480	480	480	480	480	480	—
SDCP27400	360	—	—	—	—	—	—	—
SDCP27614	360	600	600	—	—	—	—	—
SDCP27778	360	600	600	600	—	—	—	—
SDCP27912	360	600	600	600	600	—	—	—
SDCP271100	360	600	600	600	600	600	600	—
SDCP271212	360	600	600	600	600	600	600	—
SDCP271400	360	600	600	600	600	600	600	600

1. The main member and side members must be sawn lumber, glulam, or CLT with an assigned specific gravity (SG) as shown in the table above or an engineered wood product with a minimum grade of 1.3E and equivalent SG of at least 0.50.

2. Tabulated reference allowable lateral design value (Z) must be multiplied by all applicable adjustment factors, including the load duration factor, C_D , from the NDS as referenced in the IBC or IRC.

3. Screws must be installed into the face or side grain of the wood main member with the screw axis at a 90° angle to the wood surface.

4. Minimum fastener penetration must be equal to the screw length less the thickness of the wood side member.

5. Tabulated reference lateral design values apply to combinations of parallel- and perpendicular-to-grain loading.

Strong-Drive® SDCF TIMBER-CF Screw

The Strong-Drive SDCF Timber-CF screw is a structural fastener available in a variety of lengths and is designed for cross-laminated timber construction, mass timber construction and general interior applications. These 8 mm (0.315")-, 10 mm (0.390")- and 12 mm (0.470")-diameter structural fasteners provide uncompromised strength for these demanding applications. The large, flat head with underhead nibs ensures clean countersinking and a flush finish. The SDCF Timber-CF Screw has been redesigned to incorporate black e-coat and a SawTooth® point. Its SawTooth point technology ensures fast starts, reduces installation torque and eliminates the need for predrilling in most applications.

Features:

- Designed to be countersunk with head flush to wood surface
- SawTooth point technology for fast start and easy driving
- Fully threaded to provide high withdrawal resistance
- Deep 6-lobe recess for secure driving and longer bit life
- Driver bits model no.: BIT40T-134-R2 and BIT50T-2-R1 (see footnote 2 on next page for size information)

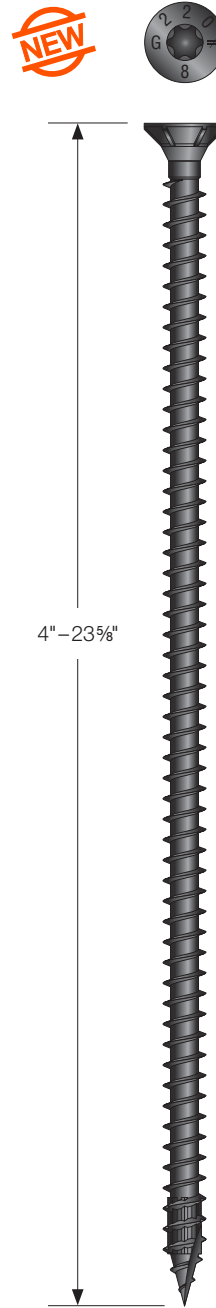
Material: Heat-treated carbon steel

Finish: Black e-coat

Codes: ICC-ES ESR-3046 (including City of LA Supplement), State of Florida FL9589

For additional technical information regarding this fastener, refer to the current Simpson Strong-Tie *Fastening Systems Technical Guide* available at strongtie.com.

Warning: Industry studies show that hardened fasteners can experience performance problems in wet and corrosive environments. Accordingly, use this product in dry, interior and noncorrosive environments only.



**Strong-Drive
SDCF TIMBER-CF Screw**

US Patent

One or more of these products are covered by a US patent or are pending. Please go to strongtie.com/patents for the most current list of Simpson Strong-Tie patents.

Black E-coat Finish

Model No.	Dimensions							
	Millimeters				Inches			
	OD ¹ x Length	Shank Diameter	Thread Length	Head Diameter	OD ¹ x Length	Shank Diameter	Thread Length	Head Diameter
SDCF8X120	8 x 120	5.9	110	15	0.315 x 4¾	0.230	4¼	0.590
SDCF8X140	8 x 140	5.9	130	15	0.315 x 5½	0.230	5½	0.590
SDCF8X160	8 x 160	5.9	150	15	0.315 x 6¼	0.230	5⅞	0.590
SDCF8X180	8 x 180	5.9	170	15	0.315 x 7	0.230	6⅞	0.590
SDCF8X200	8 x 200	5.9	190	15	0.315 x 7⅞	0.230	7½	0.590
SDCF8X220	8 x 220	5.9	210	15	0.315 x 8⅞	0.230	8¼	0.590
SDCF8X240	8 x 240	5.9	230	15	0.315 x 9½	0.230	9	0.590
SDCF8X260	8 x 260	5.9	250	15	0.315 x 10¼	0.230	9¾	0.590
SDCF8X300	8 x 300	5.9	290	15	0.315 x 11¾	0.230	11⅓	0.590
SDCF8X350	8 x 350	5.9	340	15	0.315 x 13¾	0.230	13¾	0.590
SDCF10X100	10 x 100	7.1	88	18.5	0.390 x 4	0.290	3⅞	0.725
SDCF10X160	10 x 160	7.1	148	18.5	0.390 x 6¼	0.290	6	0.725
SDCF10X200	10 x 200	7.1	188	18.5	0.390 x 7⅞	0.290	7⅞	0.725
SDCF10X240	10 x 240	7.1	228	18.5	0.390 x 9½	0.290	9	0.725
SDCF10X280	10 x 280	7.1	268	18.5	0.390 x 11	0.290	10½	0.725
SDCF10X360	10 x 360	7.1	348	18.5	0.390 x 14	0.290	13¾	0.725
SDCF10X400	10 x 400	7.1	388	18.5	0.390 x 15¾	0.290	15¼	0.725
SDCF10X450	10 x 450	7.1	426	18.5	0.390 x 17¾	0.290	16¾	0.725
SDCF12X200	12x200	8.2	180	22.2	0.470 x 7⅞	0.315	7	0.875
SDCF12X240	12x240	8.2	220	22.2	0.470 x 9½	0.315	8⅞	0.875
SDCF12X280	12x280	8.2	260	22.2	0.470 x 11	0.315	10¼	0.875
SDCF12X350	12x350	8.2	330	22.2	0.470 x 13¾	0.315	13	0.875
SDCF12X450	12x450	8.2	425	22.2	0.470 x 17¾	0.315	16¾	0.875
SDCF12X600	12x600	8.2	575	22.2	0.470 x 23⅞	0.315	22⅞	0.875

1. OD denotes thread outer diameter.

2. 6-lobe driver bit sizes: T40 for all 8 mm (0.315") diameter fasteners; T50 for all 10 mm (0.390") and 12 mm (0.470") diameter fasteners.

Replacement bit part number: BIT40T-134-R2; BIT50T-2-R1.

Strong-Drive® SDCFC TIMBER-CFC Screw

The Strong-Drive SDCFC Timber-CFC screw is a structural fastener available in a variety of lengths and is designed for cross-laminated timber construction, mass timber construction and general interior applications. These sturdy 8 mm (0.315")- and 10 mm (0.390")-diameter structural fasteners provide uncompromised strength for these demanding applications. The compact cylinder head provides clean countersinking with a reduced footprint.

Features:

- Designed to be countersunk with head embedded into the wood surface
- SawTooth® point technology for fast start and easy driving
- Fully threaded to provide high withdrawal resistance
- Deep 6-lobe recess for secure driving and longer bit life
- Driver bit model no.: BIT40T-134-R2 and BIT50T-2-R1²

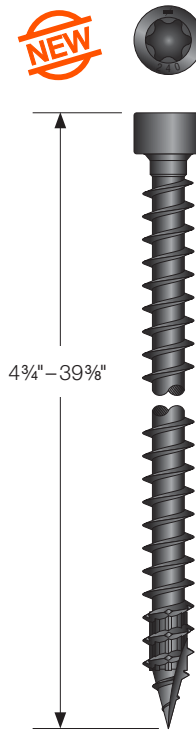
Material: Heat-treated carbon steel

Finish: Black e-coat

Codes: ICC-ES ESR-3046 (including City of LA Supplement), State of Florida FL9589

For additional technical information regarding this fastener, refer to the current Simpson Strong-Tie *Fastening Systems Technical Guide* available at strongtie.com.

Warning: Industry studies show that hardened fasteners can experience performance problems in wet and corrosive environments. Accordingly, use this product in dry, interior and noncorrosive environments only.



**Strong-Drive
SDCFC TIMBER-CFC Screw**

US Patent

One or more of these products are covered by a US patent or are pending. Please go to strongtie.com/patents for the most current list of Simpson Strong-Tie patents.

Black E-coat Finish

Model No.	Dimensions							
	Millimeters				Inches			
	OD ¹ x Length	Shank Diameter	Thread Length	Head Diameter	OD ¹ x Length	Shank Diameter	Thread Length	Head Diameter
SDCFC8X120	8 x 120	5.9	110	10.2	0.315 x 4 3/4	0.230	4 1/4	0.400
SDCFC8X160	8 x 160	5.9	150	10.2	0.315 x 6 1/4	0.230	5 7/8	0.400
SDCFC8X200	8 x 200	5.9	190	10.2	0.315 x 7 7/8	0.230	7 1/2	0.400
SDCFC8X240	8 x 240	5.9	230	10.2	0.315 x 9 1/2	0.230	9	0.400
SDCFC8X280	8 x 280	5.9	270	10.2	0.315 x 11	0.230	10 5/8	0.400
SDCFC8X330	8 x 330	5.9	320	10.2	0.315 x 13	0.230	12 5/8	0.400
SDCFC8X350	8 x 350	5.9	340	10.2	0.315 x 13 3/4	0.230	13 3/8	0.400
SDCFC8X380	8 x 380	5.9	370	10.2	0.315 x 15	0.230	14 5/8	0.400
SDCFC8X430	8 x 430	5.9	407	10.2	0.315 x 17	0.230	16	0.400
SDCFC8X580	8 x 580	5.9	557	10.2	0.315 x 22 7/8	0.230	21 7/8	0.400
SDCFC10X240	10 x 240	7.1	228	13.4	0.390 x 9 1/2	0.290	9	0.528
SDCFC10X300	10 x 300	7.1	288	13.4	0.390 x 11 3/4	0.290	11 1/8	0.528
SDCFC10X320	10 x 320	7.1	308	13.4	0.390 x 12 1/2	0.290	12 1/8	0.528
SDCFC10X380	10 x 380	7.1	368	13.4	0.390 x 15	0.290	14 1/2	0.528
SDCFC10X500	10 x 500	7.1	476	13.4	0.390 x 19 5/8	0.290	18 3/4	0.528
SDCFC10X600	10 x 600	7.1	576	13.4	0.390 x 23 3/8	0.290	22 5/8	0.528
SDCFC10X800	10 x 800	7.1	776	13.4	0.390 x 31 1/2	0.290	30 1/2	0.528
SDCFC10X1000	10 x 1000	7.1	976	13.4	0.390 x 39 3/8	0.290	38 3/8	0.528

1. OD denotes thread outer diameter.

2. 6-lobe driver bit sizes: T40 for all 8 mm (0.315")-diameter fasteners; T50 for all 10 mm (0.390")-diameter fasteners. Replacement bit part number: BIT40T-134-R2; BIT50T-2-R1.

Deck-Drive™ DSV WOOD Screw

The Deck-Drive DSV Wood screw is a powerful fastening solution for preservative-treated decking applications. With its underhead nibs and fast-start tip, the DSV is ideally suited to be driven and countersunk into today's wood deck boards. The shank is designed to withstand the swelling and shrinkage that is common with wood decking products. Available in hand-drive and in collated strips for use in our Quik Drive® auto-feed screw driving system, DSV screws are also offered in a variety of sizes to fasten fascia and trim.

Features:

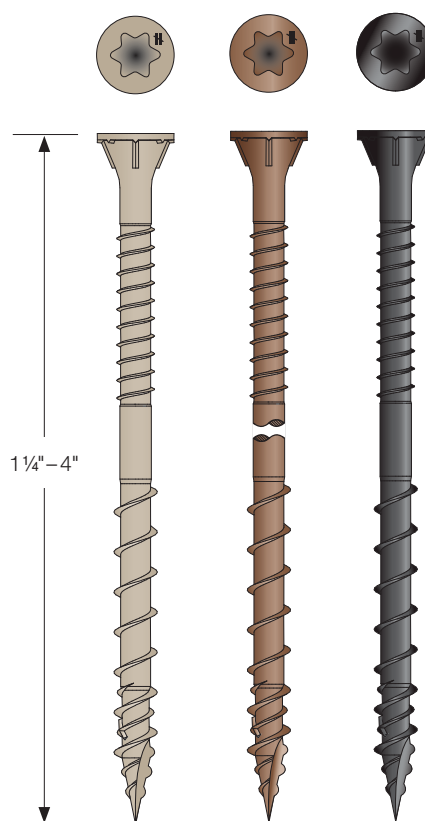
- No predrill needed in most applications
- #10 DSV Wood screws are load rated for shear, pull-through and withdrawal resistance
- Low-torque threads allow up to 35% more screws to be driven on a battery charge
- Rimmed flat head with nibs design countersinks easily and provides a clean, finished appearance
- High-low tip with Type-17 point provides fast starts
- Optimized threads for dimensional lumber
- Quik Guard® coating provides corrosion resistance for exterior and certain preservative-treated wood applications as described by ICC-ES AC257, exposure conditions 1 and 3
- Color blends with wood decking
- T25 6-lobe driver bit included (replacement driver bit: BIT25T-2-R2)

Material: Heat-treated carbon steel

Finish: Quik Guard coating

This screw is also available collated for the Quik Drive system; refer to the current *Fastenings Systems* catalog at strongtie.com for details.

For additional technical information regarding this fastener, refer to the current Simpson Strong-Tie *Fastening Systems Technical Guide* available at strongtie.com.



**Deck-Drive
DSV WOOD Screw**

DSV Wood Screw — Allowable Shear Loads

Model No.	Size x Length (in.)	Thread Length (in.)	SP Reference Allowable Shear Load (lb.)				DF Reference Allowable Shear Load (lb.)				SPF/HF Reference Allowable Shear Load (lb.)			
			Side Member Thickness (in.)				Side Member Thickness (in.)				Side Member Thickness (in.)			
			1.5	2	2.5	3	1.5	2	2.5	3	1.5	2	2.5	3
DSV212	#10 x 2½	1½	125	—	—	—	106	—	—	—	83	—	—	—
DSV3	#10 x 3	1½	206	115	—	—	173	99	—	—	131	80	—	—
DSV312	#10 x 3½	2	206	206	115	—	173	173	99	—	131	131	80	—
DSV4	#10 x 4	2½	206	206	206	115	173	173	173	99	131	131	131	80

1. Allowable loads are based on full penetration into the main member. Full penetration is the screw length minus the side member thickness.
2. Allowable loads are shown at the wood load duration factor of $C_D = 1.0$. Loads may be increased for load duration per the building code up to a $C_D = 1.6$. Tabulated values must be multiplied by all applicable adjustment factors per the NDS. For in-service moisture content greater than 19%, use $C_M = 0.62$.
3. Loads are based on installation into the side grain of the wood with the screw axis perpendicular to the face of the member.
4. Loads are based on tests of connections made with same species as main and side members.
5. Engineered wood must have a minimum grade of modulus of elasticity value of 0.80E and a minimum equivalent specific gravity of at least 0.55 to use the SP values, 0.50 to use the DF values, or 0.42 to use the SPF/HF values.

Deck-Drive™ DCU COMPOSITE Screw

The Deck-Drive DCU composite screw is engineered to provide beautiful fastening results for all types of composite decking while also offering greater ease of installation, a clean finish and superb corrosion resistance. The Deck-Drive DCU is the go-to-screw for all your composite decking applications, eliminating the need to mix and match screws to the decking.

Deck-Drive DCU composite decking screws are available in carbon steel with our Quik Guard® coating. For superior corrosion resistance in marine or high-exposure environments, choose the appropriate stainless-steel DCU screw (Type 305 or Type 316). DCU screws provide a clean finish because of their special head design and are available in 11 colors, matched to blend with most major decking manufacturers. These are bulk screws, also available collated for the Quik Drive® auto-feed screw driving system.

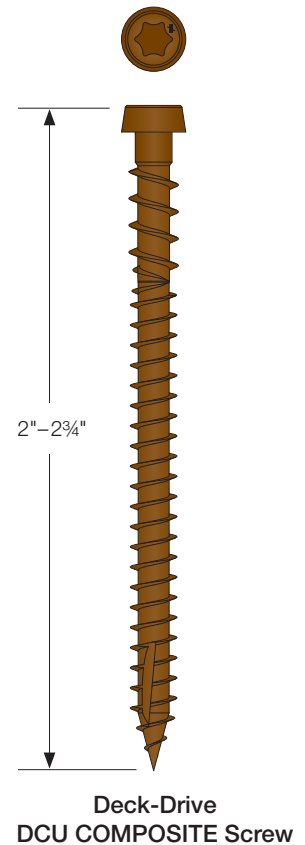
Features:

- Available in carbon steel, as well as Type 305 and Type 316 stainless steel for high to severe levels of corrosion resistance
- Tri-lobe thread design reduces damage to the composite board while driving
- Inverted upper threads clear excess material to ensure the screw has a clean finish
- Cap head prevents mushrooming and material from rising up above the deck for a smoother, clean-looking installation
- The 2¾" length is an approved fastener (by Trex) for Trex composite decking
- The 2¾" length is also available collated for the Quik Drive auto-feed screw driving system; refer to the current *Fastenings Systems* catalog at strongtie.com for details.
- The 2⅝" length is only available collated for Quik Drive system.
- Driver bit BIT20T-2-R2

Material: Heat-treated carbon steel

Finish: Quik Guard coating

For additional technical information regarding this fastener, refer to the current Simpson Strong-Tie *Fastenings Systems Technical Guide* available at strongtie.com.

**DCU Composite Screw — Hand Drive and Collated**

Size	Length (in.)	Color	Quik Guard Coated Carbon Steel	Type 305 Stainless Steel — Painted Head	Type 316 Stainless Steel — Painted Head
#10	2	None	—	—	DCU2C316
#10	2	Gray	DCU2GR	—	—
#10	2⅝	Gray	DCU238SGR*	—	—
#10	2⅝	Tan01	DCU238TN01*	—	—
#10	2¾	None	—	DCU234C305*	DCU234C316*
#10	2¾	Tan	DCU234TN*	DCU234P305TN	DCU234P316TN*
#10	2¾	Tan01	DCU234TN01*	DCU234P305TN01	DCU234P316TN01*
#10	2¾	Tan02	DCU234TN02*	DCU234P305TN02	DCU234P316TN02*
#10	2¾	Tan03	DCU234TN03*	DCU234P305TN03	DCU234P316TN03*
#10	2¾	Tan05	—	DCU234P305TN05	DCU234P316TN05*
#10	2¾	Gray	DCU234GR*	DCU234P305GR	DCU234P316GR*
#10	2¾	Gray01	DCU234GR01*	DCU234P305GR01	DCU234P316GR01*
#10	2¾	Gray04	DCU234GR04*	DCU234P305GR04	DCU234P316GR04*
#10	2¾	Gray05	—	DCU234P305GR05	DCU234P316GR05*
#10	2¾	Brown01	DCU234BR01*	DCU234P305BR01	DCU234P316BR01*
#10	2¾	Brown05	DCU234BR05*	DCU234P305BR05	DCU234P316BR05*
#10	2¾	Red	DCU234RD*	DCU234P305RD	DCU234P316RD*
#10	2¾	Red01	DCU234RD01*	DCU234P305RD01	DCU234P316RD01*

*Also available collated for Quik Drive Auto-Feed Screw Driving Systems.



Deck-Drive™ DCU COMPOSITE Screw

DCU COMPOSITE Screw — Allowable Uplift for PVC, Composite, and HDPE Deck Boards Fastened to Southern Pine Framing

Configuration	Deck Board (Nominal Thickness, Material)	Net Thickness (in.)	Allowable Uplift per Screw (lb.)
Flush Installation	1" PVC	1.000	101
	1" Composite	1.000	148
	1" HDPE	1.000	93
	2" Composite	1.375	260
	2" HDPE	1.375	191
Countersunk Installation	1" PVC	0.725	77
	1" Composite	0.725	128
	1" HDPE	0.725	77
	2" Composite	1.100	235
	2" HDPE	1.100	150

1. Allowable uplift is limited by fastener pull-through value, which is the lesser of fastener pull-through and withdrawal.
No other properties of the deck materials or deck construction are considered.

2. Withdrawal property is based on duration of load of $C_D = 1.6$ and wet service factor of $C_M = 0.7$.

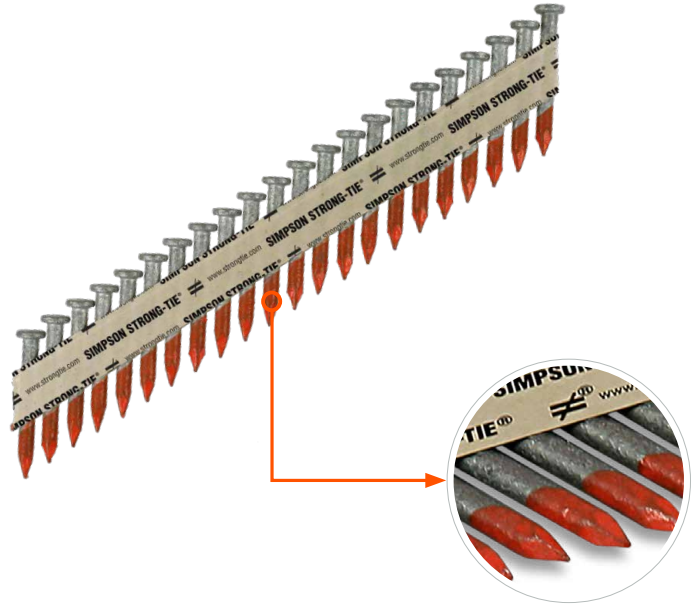
Strong-Drive® 33° SCN SMOOTH-SHANK CONNECTOR Nail**Features:**

- 33° collation angle
- Full round head
- Head ID stamp
- Orange painted tips for easy hole placement

For additional technical information regarding this fastener, refer to the current Simpson Strong-Tie Fastening Systems Technical Guide available at strongtie.com.

Compatible Pneumatic Tools

To determine compatibility with your tools, see go.strongtie.com/toolmatrix or call Simpson Strong-Tie at (800) 999-5099 for assistance with fastener selection.



8	8	10	10	16
0.131" x 1½"	0.131" x 2½"	0.148" x 1½"	0.148" x 2½"	0.162" x 2½"
SCN Smooth-Shank Head Stamps				

Hot-Dip Galvanized — ASTM A153, Class D

Model No.	Shank Dia. x Length (in.)	Head Diameter (in.)	Carton Quantity	Replacement for
N8HDGPT500	0.131 x 1½	0.285	500	8d x 1½"
N8HDGPT4000			4,000	
8DHDGPT500	0.131 x 2½	0.285	500	8d common
8DHDGPT2500			2,500	
N10HDGPT500	0.148 x 1½	0.285	500	10d x 1½"
N10HDGPT3000			3,000	
N10DHDGPT500	0.148 x 2½	0.285	500	10d x 2½"
N10DHDGPT2500			2,500	
N16HDGPT500	0.162 x 2½	0.285	500	16d x 2½"
N16HDGPT2000			2,000	

Strong-Drive® 33° SCN SMOOTH-SHANK CONNECTOR Nail

Bright

Model No.	Shank Dia. x Length (in.)	Head Diameter (in.)	Carton Quantity	Replacement for
N8BRPT4000	0.131 x 1 ½	0.285	4,000	8d x 1 ½"
N10BRPT3000	0.148 x 1 ½	0.285	3,000	10d x 1 ½"
N10DBRPT2500	0.148 x 2 ½	0.285	2,500	10d x 2 ½"

SCN Smooth-Shank Connector Nails and Common Nails

Approved for Use with Simpson Strong-Tie Connectors^{1,2,3}

Length (in.)	Fastener	Head Style	Head Diameter (in.)	Minimum Bending Yield Strength (psi) ^{4,6}
0.131 x 1 ½	N8	Round	0.281	100,000
0.131 x 2 ½	8d common	Round	0.281	100,000
0.148 x 1 ½	N10	Round	0.281	90,000
0.148 x 2 ½	N10D	Round	0.281	90,000
0.148 x 3	10d common	Round	0.281 ⁵	90,000
0.162 x 2 ½	N16	Round	0.281	90,000
0.162 x 3 ½	16d common	Round	0.281 ⁵	90,000

1. Tolerance on diameter and length per ASTM F1667.

2. Tolerance on head diameter (± 0.0015 in.)

3. All dimensions are prior to coating.

4. Tested in accordance with ASTM F1575.

5. Minimum head diameter shown; actual head diameters on 10d and 16d common nails are larger.

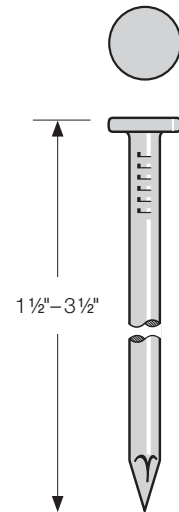
6. Minimum bending yield strengths applicable to SCNR™ nails of the same diameter.

Strong-Drive® SCN SMOOTH-SHANK CONNECTOR Nail

Simpson Strong-Tie connectors have been designed and tested with specific types of nails, which are generally referred to as Structural Connector Nails (SCN). The specified nail size, type and quantity must be installed in the correct holes of the connector or strap to achieve the published loads for the hardware. The dimensions needed for nails used in Simpson Strong-Tie connectors and hardware are given in the table below. The designer and installer must be sure that the correct fastener is specified and installed. In cases where the installed nail matches the criteria of the nail specified for the hardware, full hardware design values result.

						
0.131" x 1 1/2"	0.131" x 2 1/2"	0.148" x 1 1/2"	0.148" x 2 1/2"	0.148" x 3"	0.162" x 2 1/2"	0.162" x 3 1/2"

SCN Smooth-Shank Head Stamps



Hot-Dip Galvanized — Hand Drive Nails — ASTM A153, Class D

Diameter x Length (in.)	Head Diameter (in.)	Approx. Count per lb.	1 lb. Model No.	Retail Pack		Mini-Bulk	
				Fasteners per Pack	Packaging SKU	Fasteners per Pack	Packaging SKU
0.131 x 1 1/2	0.281	150	N8	150	N8DHDG-R	750	N8D5HDG-R
0.148 x 1 1/2	0.312	120	N10	120	N10DHDG-R	600	N10D5HDG-R
0.148 x 3	0.312	50	—	50	10DHDG-R	250	10D5HDG-R
0.162 x 3 1/2	0.344	40	—	40	16DHDG-R	200	16D5HDG-R

Power-driven SCNs are often used to install Simpson Strong-Tie connectors and straps. Power-driven nails must have the same dimensions and bending yield strength as hand-driven nails. Dedicated power nailers are designed to drive nails of specific lengths that may be less than the length required to achieve full design values for the connector or strap hardware. When connectors and straps are installed with power-driven nails or hand-driven nails that are a different type or size than those called out in the connector and strap specifications, adjustment factors as given on strongtie.com must be applied to the allowable loads for the connector or strap.

Overdriven Nails in Connectors and Straps

A nail that is installed such that the head deforms the steel of the connector or strap is considered overdriven. Extra care to prevent overdriven nails should be taken when installing power-driven nails. Simpson Strong-Tie has evaluated the effect of overdriven nails in connectors and straps. No load reductions for connectors or straps apply as a result of overdriven nails if all of the following conditions are met:

- Connectors and straps are 14-, 16-, or 18-gauge steel.
- The top of the nail head is not driven past flush with the face of the metal hardware.
- The nail goes through an existing fastener hole without enlarging it.
- The steel around the hole is not torn or damaged other than denting caused by the nail head.

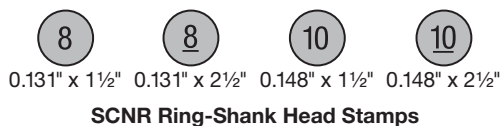
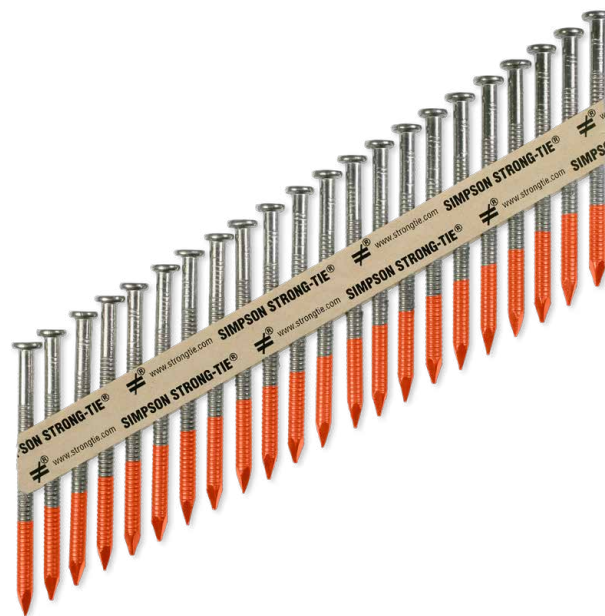
Strong-Drive® 33° SCNR™ RING-SHANK CONNECTOR Nail**SIMPSON****Strong-Tie®****Features:**

- 33° collation angle
- Full round head
- Head ID stamp
- Type 316 stainless steel for use with stainless-steel connectors

For additional technical information regarding this fastener, refer to the current Simpson Strong-Tie *Fastening Systems Technical Guide* available at strongtie.com.

Compatible Pneumatic Tools

To determine compatibility with your tools, see go.strongtie.com/toolmatrix or call Simpson Strong-Tie at (800) 999-5099 for assistance with fastener selection.

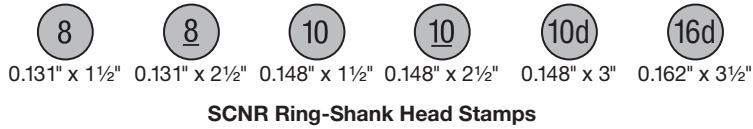
**Type 316 Stainless Steel**

Model No.	Shank Dia. x Length (in.)	Head Diameter (in.)	Carton Quantity	Replacement for
T10A150MCN	0.131 x 1 1/2	0.285	1,500	8d x 1 1/2"
T10A250MCN	0.131 x 2 1/2	0.285	1,000	8d common
T9A150MCN	0.148 x 1 1/2	0.285	1,500	10d x 1 1/2"
T9A250MCN	0.148 x 2 1/2	0.285	1,000	10d x 2 1/2"

Hand-Drive Nails for Simpson Strong-Tie Connectors

Strong-Drive SCNR Ring-Shank Connector nails are the best choice for achieving maximum load values in stainless-steel connectors.

For more information, see the current Simpson Strong-Tie *Fastening Systems* catalog at strongtie.com.



When installing galvanized connectors and straps, use an SCN that is zinc galvanized. If the connectors and straps are stainless steel, then stainless-steel SCNR nails shall be used.

Stainless-Steel Nails

The USDA Forest Service, Forest Products Laboratory showed that stainless-steel nails with smooth shanks do not have the same withdrawal resistance as smooth-shank carbon steel nails (Withdrawal strength and bending yield strength of stainless-steel nails, 2015, *Journal of Structural Engineering*). In addition, Simpson Strong-Tie conducted an extensive series of withdrawal testing with stainless-steel nails made from Type 304, Type 305 and Type 316 stainless steels to assess the stainless-steel ring-shank nail withdrawal performance over a wide range of nail diameters (0.072 in. to 0.238 in.) and wood specific gravities (0.42 to 0.55). The withdrawal tests were conducted in accordance with ASTM D1761 using wood conditioned to 12% moisture content. Further, the reference allowable withdrawal resistance for each of the tested nails was calculated using the withdrawal calculation for post-frame ring-shank nails in NDS-2015, equation 12.2-4; NDS-2018, equation 12.4-5; and NDS-2024, equation 12.2-5.

$$W = 1800 G^2 D$$

The allowable withdrawal loads for Simpson Strong-Tie stainless-steel ring-shank nails with a safety factor of 5.0 were at or above the calculated reference withdrawal resistance for deformed-shank nails. As a result, the deformed-shank nails equation for reference withdrawal design values can be safely used for Simpson Strong-Tie stainless-steel ring-shank nails of all diameters across the specific gravity range of 0.42 to 0.55. This finding and recommendation are specific to Simpson Strong-Tie stainless-steel ring-shank nails and shall not be applied to stainless-steel ring-shank nails made by other manufacturers.

The bending yield strength of Simpson Strong-Tie stainless-steel nails (smooth and ring-shank) meet the bending yield strength specifications of ASTM F1667, which are the same as those in the IBC and IRC.

Stainless Steel Nails for Connectors

Simpson Strong-Tie stainless-steel connectors are required to be installed using stainless-steel fasteners. Recent testing at Simpson Strong-Tie indicates that allowable load values for some Simpson Strong-Tie stainless-steel connectors have changed when smooth-shank stainless steel nails are used. Refer to strongtie.com/products/categories/zmax.html for a list of connectors available in stainless steel, which includes links to load tables for carbon steel and stainless-steel smooth-shank nail installations as applicable.

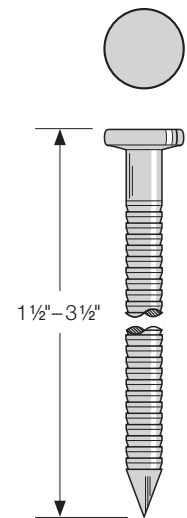
In cases where these load tables indicate stainless-steel smooth-shank nail installations have reduced loads, full allowable loads listed for the same carbon steel connector may be achieved if the stainless-steel connector is installed with the correct replacement stainless-steel Simpson Strong-Tie Strong-Drive SCNR Ring-Shank Connector nails as shown in the following Nail Substitution Chart.

Nail Substitution Chart

Replacement Ring-Shank Stainless-Steel Nails, Type 316 Stainless Steel

Catalog-Specified Carbon-Steel Smooth-Shank Nail	Replacement Stainless-Steel Strong-Drive SCNR Ring-Shank Connector Nail	
Diameter x Length (in.)	Hand-Drive	Collated
0.131 x 1.5	SSNA8	T10A150MCN
0.131 x 2.5	SSA8D	T10A250MCN
0.148 x 1.5	SSNA10	T9A150MCN
0.148 x 2.5	—	T9A250MCN
0.148 x 3.0	SSA10D	—
0.162 x 3.5	SSA16D	—

1. Collated nails listed are available in 33° paper tape strips.



For more information on the Strong-Drive SCNR Ring-Shank Connector nail, please see the current *Fastening Systems* catalog at strongtie.com.

Siding/Fencing/Trim Nails

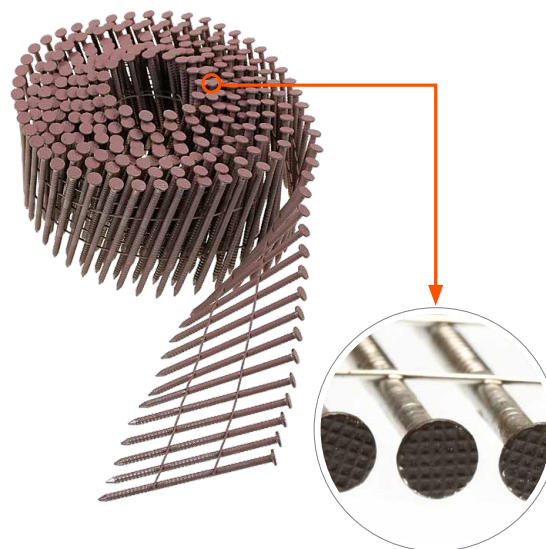
15° Wire Coil, Painted, Full Round Head, Ring-Shank Nail

Features:

- Checker pattern on heads blends with wood grain, reduces glare from sunlight and accepts surface finishes
- Durable painted finish helps heads blend with siding material
- Annular ring shank increases withdrawal resistance to provide a secure attachment
- Slender gauge and diamond point for easier driving

Compatible Pneumatic Tools

To determine compatibility with your tools, see go.strongtie.com/toolmatrix or call Simpson Strong-Tie at (800) 999-5099 for assistance with fastener selection.



Type 304 Stainless Steel

Model No.	Penny Size	Length (in.)	Shank Diameter (in.)	Head Diameter (in.)	Color ¹
S13A200WWCBP	6d	2	0.092	0.221	White
S13A200CCB	6d	2	0.092	0.221	Dark Brown
S13A200CCG	6d	2	0.092	0.221	Gray
S13A200CCR	6d	2	0.092	0.221	Redwood
S13A200CCT	6d	2	0.092	0.221	Tan
S13A200CWH	6d	2	0.092	0.221	White
S13A225CCB	7d	2¼	0.092	0.221	Dark Brown
S13A225CCG	7d	2¼	0.092	0.221	Gray
S13A225CCR	7d	2¼	0.092	0.221	Redwood
S13A225CCT	7d	2¼	0.092	0.221	Tan
S13A225CCS	7d	2¼	0.092	0.221	Sienna
S13A250WWCBP	8d	2½	0.092	0.221	White
S13A250CCBBP	8d	2½	0.092	0.221	Dark Brown
S13A250CCB	8d	2½	0.092	0.221	Dark Brown
S13A250CCG	8d	2½	0.092	0.221	Gray
S13A250CCR	8d	2½	0.092	0.221	Redwood
S13A250CCTBP	8d	2½	0.092	0.221	Tan
S13A250CCT	8d	2½	0.092	0.221	Tan
S13A250CWH	8d	2½	0.092	0.221	White
S13A250CCSBP	8d	2½	0.092	0.221	Sienna
S13A250CCS	8d	2½	0.092	0.221	Sienna



1. Custom colors may be available. Contact Simpson Strong-Tie for details: (800) 999-5099.

These products are subject to quantities on hand, or may require special-order, minimum order quantities and longer lead times. Call Simpson Strong-Tie for details: (800) 999-5099.

Roofing Nails

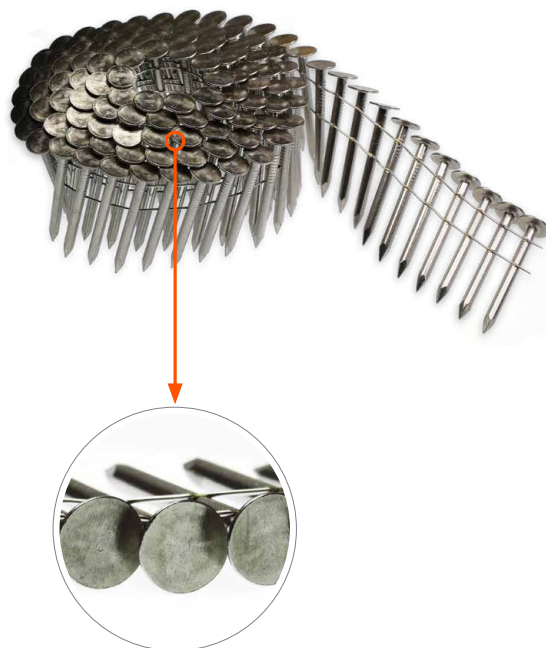
15° Wire Coil, Full Round Head, Smooth-Shank Roofing Nail

Features:

- Ideal for asphalt and synthetic slate roofing
- Large flat head, diamond point for easier driving

Compatible Pneumatic Tools

To determine compatibility with your tools, see go.strongtie.com/toolmatrix or call Simpson Strong-Tie at (800) 999-5099 for assistance with fastener selection.



Type 304 Stainless Steel

Model No.	Penny Size	Length (in.)	Shank Diameter (in.)	Head Diameter (in.)
S11N075RNB	—	¾	0.120	0.357
S11N087RNB	—	7/8	0.120	0.357
S11N100RNB	2d	1	0.120	0.357
S11N125RNB	3d	1¼	0.120	0.357
S11N125RNJ	3d	1¼	0.120	0.357
S11N150RNB	4d	1½	0.120	0.357
S11N150RNJ	4d	1½	0.120	0.357
S11N175RNB	5d	1¾	0.120	0.357
S11N175RNJ	5d	1¾	0.120	0.357

Trim Nails

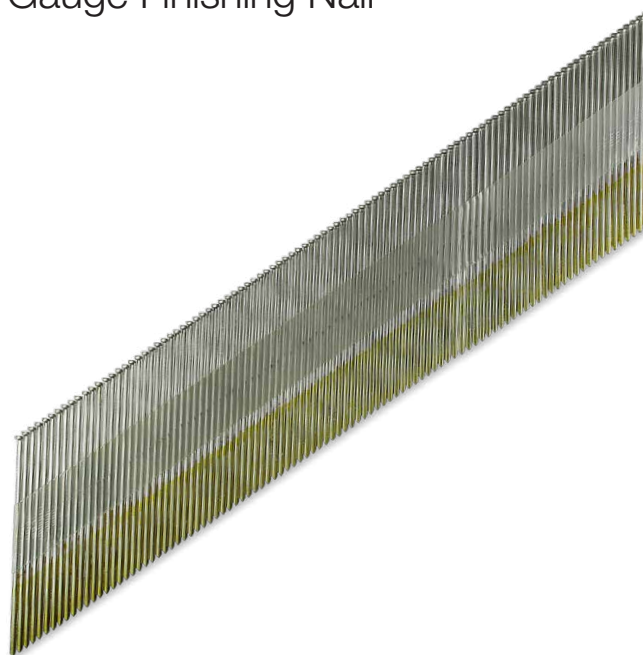
Tape Collation, DA-Style Angle, 15-Gauge Finishing Nail

Features:

- D-style head has greater bearing area to draw trim to the substrate
- Choose Type 316 stainless steel for seaside applications and superior corrosion resistance

Compatible Pneumatic Tools

To determine compatibility with your tools, see go.strongtie.com/toolmatrix or call Simpson Strong-Tie at (800) 999-5099 for assistance with fastener selection.



Type 316 Stainless Steel

Penny Size	Length (in.)	500-Count Model No.	4,000-Count Model No.
3d	1 ¼	—	T15N125SFN
4d	1 ½	T15N150SFB	T15N150SFN
6d	2	T15N200SFB	T15N200SFN
8d	2 ½	T15N250SFB	T15N250SFN

Type 304 Stainless Steel

Penny Size	Length (in.)	500-Count Model No.	4,000-Count Model No.
4d	1 ½	S15N150SFB	S15N150SFN
6d	2	S15N200SFB	S15N200SFN
8d	2 ½	S15N250SFB	S15N250SFN

Collated Staples

1/2" Crown, 15 1/2-Gauge Staples

(Similar to Bostitch "BCS" Series)

Ideal for tongue-and-groove decking

Compatible Pneumatic Tools

To determine compatibility with your tools, see go.strongtie.com/toolmatrix or call Simpson Strong-Tie at (800) 999-5099 for assistance with fastener selection.



Type 304 Stainless Steel

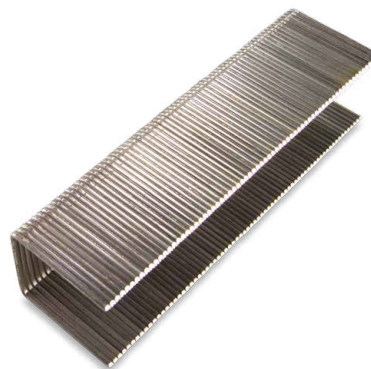
Model No.	Length (in.)	Carton Quantity
S15N200BFS	2	5,000

1" Crown, 16-Gauge Staples

(Similar to Senco "P" Series)

Compatible Pneumatic Tools

To determine compatibility with your tools, see go.strongtie.com/toolmatrix or call Simpson Strong-Tie at (800) 999-5099 for assistance with fastener selection.



Type 316 Stainless Steel

Model No.	Length (in.)	Carton Quantity
T16N100P53	1	5,000

Type 304 Stainless Steel

Model No.	Length (in.)	Carton Quantity
S16N075P51	3/4	5,000
S16N125P55	1 1/4	5,000

Strong-Drive® WSV SUBFLOOR Screw**1 3/4"–3" WSV Fasteners Meet Code Requirements**

As listed in ICC-ES ESR-1472, WSV screws meet code requirements for the 2018, 2021 and 2024 International Building Code (IBC) and International Residential Code (IRC). Evaluation report recognized uses of WSV screws include the following applications:

- Substitute for 8d and 10d common nails in horizontal diaphragms per AWC SDPWS 2015 and 2021, Tables 4.2A, 4.2C, and 4.2D; IBC 2021 and 2024, Table 23.4.10.2 and IBC 2018, Table 2304.10.1; and IRC 2018, 2021 and 2024, Table R602.3(1).
- Code prescribed connections per IBC 2021 and 2024, Table 23.4.10.2 and IBC 2018, Table 2304.10.1; and IRC 2018, 2021 and 2024, Table R602.3(1).
- Single and diagonally-sheathed lumber diaphragms per AWC SDPWS 2015 and 2021, Table 4.2D.
- Prescriptive sheathing applications in IRC 2018, 2021 and 2024, Table R602.3(1) and in structures regulated by the IRC where the engineered design is submitted in accordance with IRC R301.1.3.
- Codes: IBC, IRC, L.A., ICC ESR-1472.

Guidelines for Fastening Diaphragms Without Glue

The design of wood floor systems constructed with wood structural panel (WSP) sheathing fastened to framing considers the diaphragm performance of the system as presented in the codes (as affected by framing, sheathing thickness, sheathing layout and fastening) and may also consider the composite action of the sheathing with the framing system (composite action is the combined stiffness of the joist with the sheathing). The framing systems can be grouped into two classes: (1) sawn lumber and parallel-chord wood trusses, and (2) wood I-joists. WSV screws may be used as alternate fasteners to common nails in each floor class subject to certain constraints.

For Diaphragms with a Framing System That Is Sawn Lumber or Parallel-Chord Wood Trusses

Simpson Strong-Tie WSV screws may be used as one-for-one substitutes for 10d common and smaller nails that are specified for horizontal diaphragm design in accordance with the AWC SDPWS 2015, and IBC and IRC 2018 and 2021.

**For Diaphragms with Wood I-Joist Framing Systems**

I-joist manufacturers use the extra stiffness resulting from composite action when developing allowable floor joist span tables. Therefore, I-joist floor span tables generally assume glued-nailed construction.

1. For floor systems designed or intended to be glued-nailed:
 - WSV screws may be substituted one-for-one for common nails, without glue, provided the maximum allowable I-joist span is reduced by 12" compared to the I-joist manufacturer's glued-nailed spans. The screws shall have at least 1 1/4" penetration into the I-joist flange (or full penetration for flanges less than 1 1/4" thick).
 - Where glue is used with the screws, no reduction in span is required.
 - Check with the I-joist manufacturer for any additional diaphragm requirements.
2. For floor systems designed or intended to be nailed-only:
 - WSV screws may be substituted one-for-one for common nails, with no reduction in span, provided at least 1 1/4" penetration into the I-joist flange is achieved (or full penetration for flanges less than 1 1/4" thick).
 - Check with the I-joist manufacturer for any additional diaphragm requirements.

Strong-Drive® WSV SUBFLOOR Screw (Collated)

Simpson Strong-Tie has engineered this screw to reduce driving torque and increase installation speed. The premium-quality Strong-Drive WSV Subfloor screw has been developed for fastening subfloor sheathing using the Quik Drive® auto-feed screw driving system.

The Strong-Drive WSV Subfloor screw is the only fastener to be dual-evaluated under ICC-ES AC233 and AC120 for wood-frame subfloor fastening.

Fastening with WSV Subfloor screws provides excellent holding power, and combining the WSV Subfloor screw with adhesives can provide the ultimate subfloor solution.

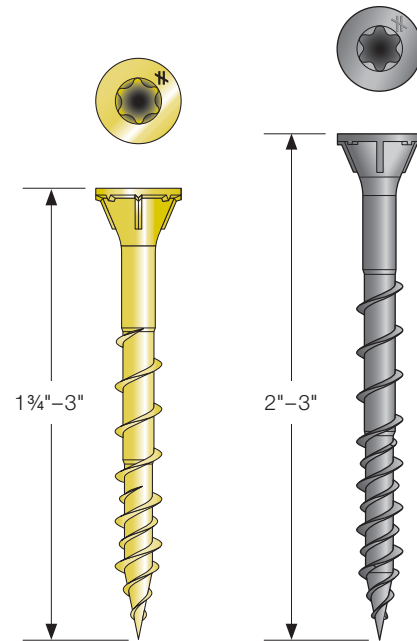
This testing indicates that the WSV Subfloor screws have lateral, shear and withdrawal values that exceed those of 10d common nails, and diaphragms built with WSV Subfloor screws meet or exceed the strength and stiffness of wood frame diaphragms built with 10d nails.

Features:

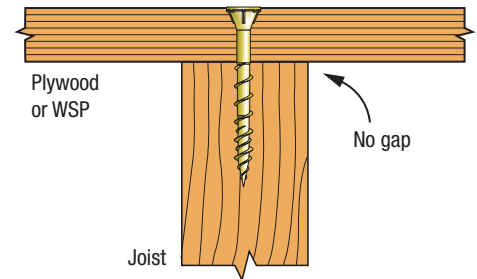
- Point and thread pattern provides easy starts and requires less torque, meaning less wear on tools and more screws driven per battery charge
- Deep 6-lobe recessed ribbed head provides clean countersinking and more secure bit retention for fewer cam-outs
- The holding power of WSV screws reduces the gaps between the joist and subfloor that cause floor squeaks WSV screws can be easily backed out allowing for future access to floor cavities
- 6-lobe T25 drive bit (replacement bit: BITTX25)

Materials: Heat-treated carbon steel

Finish: Yellow zinc or Quik Guard® coating



**Strong-Drive
WSV SUBFLOOR Screw**



Subfloor Fastened with WSV Subfloor Screw
Subfloor fastened with screws is pulled down and kept tight against the joist, with no gaps to cause squeaking.

Strong-Drive WSV Subfloor Screw Variant

The Strong-Drive WSVF Subfloor screw is an available variant with a gray Quik Guard coating that is recognized for corrosion resistance in IAPMO UES ER-192 for Exposures 1 and 3 as described in ICC-ES AC257. Like the WSV Subfloor screw, the WSVF Subfloor screws are designed for dry service applications. The coating system on the WSVF screws will provide corrosion resistance for use with wood and wood-based materials in dry service where the wood and wood-based materials have treatment retentions typical of AWPA Use Categories 1 to 4A and fire-retardant-treated wood and wood-based materials that are recognized in an evaluation report where corrosion effects of the fire-retardant chemical are referenced to code prescribed protection systems for carbon steel fasteners.

Yellow Zinc Coating

Model No.	Size	Length (in.)	Retail Pack		Contractor Pack		PR0200S	PR0250G2	PR0300S
			Fasteners per Pack	Model No.	Fasteners per Pack	Model No.			
WSV134	#9	1 1/4	1,000	HCKWSV134S	2,000	WSV134S	✓	✓	
WSV2	#9	2	1,000	HCKWSV2S	2,000	WSV2S	✓	✓	
WSV212	#9	2 1/2	750	HCKWSV212S	1,500	WSV212S		✓	✓
WSV3	#9	3	500	HCKWSV3S	1,000	WSV3S			✓

Quik Guard Coating

Model No.	Size	Length (in.)	Contractor Pack		PR0200S	PR0250G2	PR0300S
			Fasteners per Pack	Model No.			
WSVF2	#9	2	2,000	WSVF2S	✓	✓	
WSVF212	#9	2 1/2	1,500	WSVF212S		✓	✓
WSVF3	#9	3	1,000	WSVF3S			✓

Subfloor/Sheathing Applications

Quik Drive® Auto-Feed Screw Driving Systems

Quik Drive auto-feed screw driving systems turn repetitive fastening into opportunities to increase efficiency and save time. Extensive research goes into the design of each system, resulting in professional, quality auto-feed solutions that truly make work easier.

- Quik Drive auto-feed attachments and collated fasteners eliminate the need to handle (and fumble) individual screws — the result: faster installations and less waste
- Extensions allow stand-up driving for appropriate applications, making work less of a strain on the back, shoulders and knees

One or more of these products are covered by a US patent or are pending. Please go to strongtie.com/patents for the most current list of Simpson Strong-Tie patents.



Quik Drive auto-feed screw driving systems are ideal for subfloor installation, combining the efficiency of stand-up driving with the holding power of screws. Screws are superior to nails in this application because they reduce the gaps that cause floor squeaks.

PROCCS+ Combo System



- Includes both PRO300SG2 Attachment and PRO200SG2 Attachment for added versatility
- Expanded depth settings for high-density flooring materials
- Reversible and replaceable nonskid teeth
- Sure-grip guide tube increases stability for a broad range of screws

System Options	Model No.
DeWalt® 2,500 rpm screw driver motor	PROCCS+D25K
Makita® 2,500 rpm screw driver motor	PROCCS+M25K

This product is not endorsed by or affiliated with Stanley Black & Decker, Inc. or Makita USA, Inc.

PROSDD Combo System



- Expanded depth settings for appropriate countersink in a variety of applications
- Includes both PRO300SG2 Attachment and PRO200G2 Attachment for added versatility
- Reversible and replaceable nonskid teeth
- Sure-grip guide tube increases stability for a broad range of screws

System Options	Model No.
DeWalt® 2,500 rpm screw driver motor	PROSDDD25K
Makita® 2,500 rpm screw driver motor	PROSDDM25K
Makita 3,500 rpm screw driver motor	PROSDDM35K

This product is not endorsed by or affiliated with Stanley Black & Decker, Inc. or Makita USA, Inc.

Subfloor/Sheathing Applications

PRO250G2 Subfloor System



- Expanded depth settings for high-density flooring materials
- Uniform toenailing and countersink on slick surfaces
- Reversible and replaceable nonskid teeth

System Options	Model No.
DeWalt® 2,000 rpm cordless driver motor	PRO250G2DC2K

This product is not endorsed by or affiliated with Stanley Black & Decker, Inc.

PRO300SG2 Decking System



- Expanded depth settings for high-density flooring materials
- Reversible and replaceable nonskid teeth
- Decking nose clip for accurate and consistent fastening

System Options	Model No.
DeWalt 2,000 rpm cordless driver motor	PRO300SG2DC2K

This product is not endorsed by or affiliated with Stanley Black & Decker, Inc.

PROPHG2 Cold-Formed Steel Framing Attachment



Applications: Fasten cold-formed steel framing

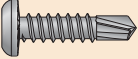
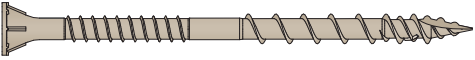
- Compact body for reduced weight and easy handling
- Slim profile allows driving in corners
- Tough reliability for targeted applications

Description	Model No.
Attachment only	QDPROPHG2

Subfloor/Sheathing Applications

Collated Screws for the Quik Drive® System

(For more information regarding collated screws, refer to strongtie.com/products/fastening-systems)

Fastener Model	PR0250G2	PROSDD/CCS+	PR0300SG2	PROPHG2
Strong-Drive® WSV SUBFLOOR Screw  Wood-to-wood applications, yellow zinc coating, sharp point	1¾", 2", 2½"	1¾", 2", 2½"	2½", 3"	—
Strong-Drive PPHD SHEATHING-TO-CFS Screw  Wood-to-steel applications, #5 drill point, Quik Guard® and yellow zinc coating	#8 x 1½"	#8 x 1½"	#8 x 1½"	—
Strong-Drive PHSD FRAMING-TO-CFS Screw  Cold-formed steel framing and sheet steel sheathing to cold-formed steel, yellow zinc coating	—	—	—	#8 x ¾"
Strong-Drive FPHSD FRAMING-TO-CFS Screw  Cold-formed steel framing and sheet steel sheathing to cold-formed steel, clear zinc coating	—	—	—	#10 x ¾", #12 x ¾"
Deck-Drive™ DSV WOOD Screw  Wood-to-wood and preservative-treated wood applications, Quik Guard coating, Type-17 point	1¾", 2", 2½"	1¾", 2", 2½"	2", 2½", 3"	—
Deck-Drive DCU COMPOSITE Screw  Composite and PVC deck board applications, Quik Guard coating, double-cut point	—	2¾"	2¾", 2⅝"	—
WSHL Subfloor Screw  Wood-to-wood applications, gray phosphate coating	1¾"	1¾"	—	—

Subfloor/Sheathing Applications

Collated Screws for the Quik Drive® System (cont.)

(For more information regarding collated screws, refer to strongtie.com/products/fastening-systems)

Fastener Model	PR0250G2	PROSDD/CCS+	PR0300SG2	PR0200SG2
WSF Sheathing-to-CFS Screw  Wood-to-cold-formed-steel applications, yellow zinc coating, fully threaded, twin-lead thread style	—	—	—	1½"
WSC Wood Screw  Wood-to-wood applications, yellow zinc coating, coarse thread	1½"	1½"	—	1½"
MTH Wood Underlayment Screw  Wood underlayment-to-wood applications, yellow zinc coating, high-low thread	—	1"	—	1"
MTH Wood Underlayment Screw  Wood underlayment-to-wood applications, gray phosphate coating, high-low thread	—	1¼"	—	1¼"
CBSDQ Sheathing-to-CFS Screw  Sheathing to cold-formed steel, winged drill point	1⅝", 2¼"	1⅝", 2¼"	2¼"	1⅝"

Drywall Applications

Quik Drive® auto-feed screw driving systems are ideal for fastening drywall. They provide a fast, efficient solution with a precision countersink adjustment that produces consistent dimples.

Quik Drive PRO200SG2 attached to DeWalt® DCF630D2G2 driver motor (with adapter) which is compatible with Quik Drive G2 tools and is sold separately.

This product is not endorsed by or affiliated with Stanley Black & Decker, Inc.



PRO200G2 Drywall System



- Compact, lightweight body for reduced weight and easy handling
- Smooth nose will not mar drywall surface
- Slim profile allows driving in corners

System Options	Model No.
DeWalt 2,500 rpm screw driver motor	PRO200G2D25K
Makita® 2,500 rpm screw driver motor	PRO200G2M25K

This product is not endorsed by or affiliated with Stanley Black & Decker, Inc. or Makita USA, Inc.

PRO250DWG2 Attachment



- Compact body for reduced weight and easy handling
- Smooth nose will not mar drywall surface
- Slim profile allows driving in corners

Description	Model No.
Attachment only	QDPRO250DWG2

Drywall Applications

PRO200G2 Attachment

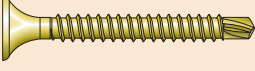
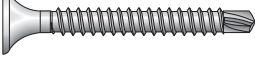


- Compact, lightweight body for reduced weight and easy handling
- Smooth nose will not mar drywall surface
- Slim profile allows driving in corners

Description	Model No.
Attachment only	QDPRO200G2

Collated Screws for the Quik Drive® System

(For more information regarding collated screws, refer to strongtie.com/products/fastening-systems)

Fastener Model	PRO200G2	PRO250DWG2
DWHL Drywall Screw  High-low threads, gray phosphate coating	1 7/8"	—
DWC Drywall Screw  Drywall to wood, gray phosphate and yellow zinc coatings available	1", 1 1/4", 1 5/8", 2"	2 1/2"
DWF Drywall-to-CFS Screw  Drywall to steel, gray phosphate coating (33, 27, 18 mil / 20, 22, 25 ga.)	1 1/4", 1 5/8"	N/A
DWFSD Drywall-to-CFS Screw  Drywall to steel, #2 point, yellow zinc coating (54, 43 mil / 16, 18 ga.)	1 1/4", 1 5/8", 1 7/8"	2 3/8"
DWFSDQ Drywall-to-CFS Screw  Drywall to steel, #2 point, Quik Guard® coating (54, 43 mil / 16, 18 ga.)	1 1/4"	N/A

Titen HD® Heavy-Duty Screw Anchor

A high-strength screw anchor for use in cracked and uncracked concrete, as well as uncracked masonry. The Titen HD offers low installation torque and outstanding performance. Designed for use in dry, interior, noncorrosive environments or temporary outdoor applications.

Features:

- Qualified for static and seismic loading conditions
- Specialized heat-treating process creates tip hardness for better cutting without compromising the ductility
- No special drill bit required — designed to install using standard-sized ANSI tolerance drill bits
- Hex-washer head requires no separate washer, unless required by code, and provides a clean, installed appearance
- For use as a 1:1 replacement to cast-in-place anchors (per technical bulletin T-A-SILPLANCH25 at strongtie.com)
- Post installed anchors eliminate layout conflicts vs. cast in place
- Head stamp includes No-Equal® logo with length indicator for easy identification

Codes: ICC-ES ESR-2713 (concrete);
ICC-ES ESR-1056 (masonry);
City of LA Supplement within ESR-2713 (concrete);
City of LA Supplement within ESR-1056 (masonry);
State of Florida FL15730 (concrete and masonry);
FM 3017082, 3035761 and 3043442;
Multiple DOT listings

Material: Carbon steel

Coating: Zinc plated or mechanically galvanized.

Installation

 Holes in steel fixtures to be mounted should match the diameter specified in the table below.

Use a Titen HD screw anchor one time only — installing the anchor multiple times may result in excessive thread wear and reduce load capacity.

 Do not use impact wrenches to install into hollow CMU.

 **Caution:** Oversized holes in base material will reduce or eliminate the mechanical interlock of the threads with the base material and reduce the anchor's load capacity.

1. Drill a hole in the base material using a carbide drill bit the same diameter as the nominal diameter of the anchor to be installed. Drill the hole to the specified embedment depth plus minimum hole depth overdrill (see table below) to allow the thread tapping dust to settle, and blow it clean using compressed air. (Overhead installations need not be blown clean.) Alternatively, drill the hole deep enough to accommodate embedment depth and the dust from drilling and tapping.
2. Insert the anchor through the fixture and into the hole.
3. Tighten the anchor into the base material until the hex-washer head contacts the fixture.

Additional Installation Information

Titen HD Diameter (in.)	Wrench Size (in.)	Recommended Steel Fixture Hole Size (in.)	Minimum Hole Depth Overdrill (in.)
1/4	3/8	3/8 to 7/16	1/8
3/8	9/16	1/2 to 5/8	1/4
1/2	3/4	5/8 to 1 1/8	1/2
5/8	1 5/16	3/4 to 1 3/8	1/2
3/4	1 1/2	7/8 to 1 5/8	1/2

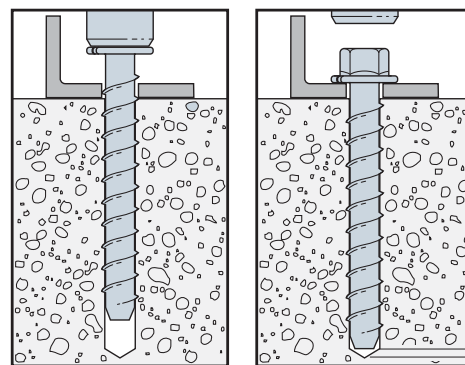
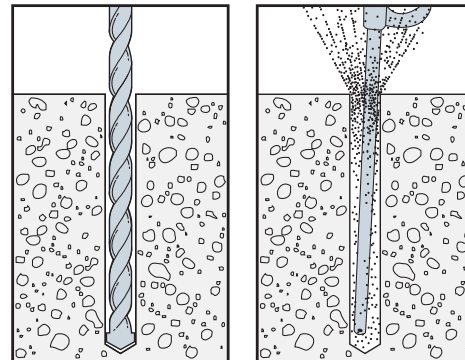
Suggested fixture hole sizes are for structural steel thicker than 12 gauge only. Larger holes are not required for wood or thinner cold-formed steel members.



Serrated teeth on the tip of the Titen HD screw anchor facilitate cutting and reduce installation torque.

**Titen HD
Screw Anchor**

Installation Sequence



Minimum overdrill. See table.

Titen HD® Heavy-Duty Screw Anchor

Washer-Head Head Style

The washer-head design is commonly used where a minimal head profile is necessary. The model is offered in sizes suitable for use in sill plate applications, and the washer head's low installed profile means modular wall and floor systems can be installed on top with no need for notching the wall framing to accommodate the anchor. The anchor's 6-lobe drive eases driving and is less prone to stripping.

Features:

- Available in many standard lengths in 1/2" and 5/8" diameters
- Driver bit included in each box

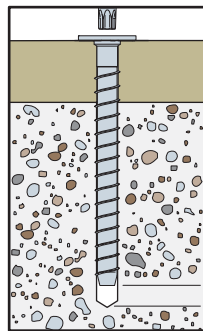
Codes: ICC-ES ESR-2713 (concrete);

City of LA Supplement within ESR-2713 (concrete)

State of Florida FL15730 (concrete)

Material: Carbon steel

Coating: Zinc plated and mechanically galvanized



Minimum overdrill.
See table.

Additional Installation Information

Titen HD Diameter (in.)	Bit Size	Recommended Steel Fixture Hole Size (in.)	Minimum Hole Depth Overdrill (in.)
1/2	T50	1 1/16 to 3/4	1/2
5/8	T60	7/8 to 15/16	1/2

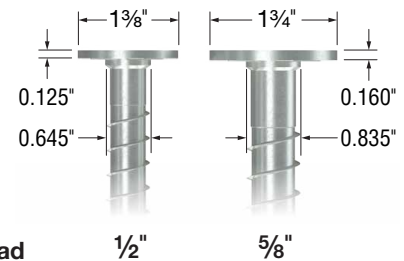
Suggested fixture hole sizes are for structural steel thicker than 12 gauge only. Larger holes are not required for wood or thinner cold-formed steel members.



Titen HD Washer-Head Head Style



6-lobe drive



Countersunk Head Style

The countersunk head style is for applications that require a flush-mount profile. Countersinking also leaves a cleaner surface appearance for exposed through-set applications. The anchor head's 6-lobe drive eases installation and is less prone to stripping than traditional recessed anchor heads.

Features:

- Available in many standard lengths in 1/4" and 3/8" diameters
- Driver bit included in each box

Codes: ICC-ES ESR-2713 (concrete);

ICC-ES ESR-1056 (masonry);

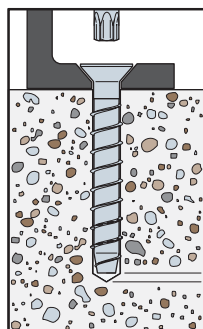
City of LA Supplement within ESR-2713 (concrete);

City of LA Supplement within ESR-1056 (masonry);

State of Florida FL15730 (concrete and masonry)

Material: Carbon steel

Coating: Zinc plated



Minimum overdrill.
See table.

Additional Installation Information

Titen HD Diameter (in.)	Bit Size	Recommended Steel Fixture Hole Size (in.)	Minimum Hole Depth Overdrill (in.)
1/4	T30	3/8 to 7/16	1/8
3/8	T50	1/2 to 9/16	1/4

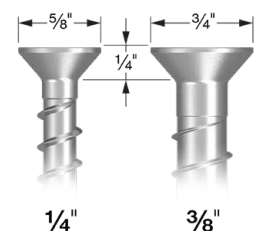
Suggested fixture hole sizes are for structural steel thicker than 12 gauge only. Larger holes are not required for wood or thinner cold-formed steel members.



Titen HD Countersunk Head Style



6-lobe drive



Titen HD® Heavy-Duty Screw Anchor

Titen HD Anchor Product Data — Zinc Plated¹

Size (in.)	Model No.	Thread Length (in.)	Drill Bit Diameter (in.)	Wrench Size (in.)
¼ x 1 ⅞	THDB25178H	1 ½	¼	⅜
¼ x 2 ¾	THDB25234H	2 ⅝	¼	⅜
¼ x 3	THDB25300H	2 ⅝	¼	⅜
¼ x 3 ½	THDB25312H	3 ⅞	¼	⅜
¼ x 4	THDB25400H	3 ⅝	¼	⅜
⅜ x 1 ¾	THD37134H ^{2,3}	1 ¼	⅜	⅞
⅜ x 2 ½	THD37212H ^{2,3}	2	⅜	⅞
⅜ x 3	THD37300H	2 ½	⅜	⅞
⅜ x 4	THD37400H	3 ½	⅜	⅞
⅜ x 5	THD37500H	4 ½	⅜	⅞
⅜ x 6	THD37600H	5 ½	⅜	⅞
½ x 3	THD50300H ^{2,4}	2 ½	½	¾
½ x 4	THD50400H	3 ½	½	¾
½ x 5	THD50500H	4 ½	½	¾
½ x 6	THD50600H	5 ½	½	¾
½ x 6 ½	THD50612H	5 ½	½	¾
½ x 8	THD50800H	5 ½	½	¾
½ x 12	THD501200H	5 ½	½	¾
½ x 13	THD501300H	5 ½	½	¾
½ x 14	THD501400H	5 ½	½	¾
½ x 15	THD501500H	5 ½	½	¾
⅝ x 4	THDB62400H ^{2,4}	3 ½	⅝	1 ⅛
⅝ x 5	THDB62500H	4 ½	⅝	1 ⅛
⅝ x 6	THDB62600H	5 ½	⅝	1 ⅛
⅝ x 6 ½	THDB62612H	5 ½	⅝	1 ⅛
⅝ x 8	THDB62800H	5 ½	⅝	1 ⅛
⅝ x 10	THDB62100H	5 ½	⅝	1 ⅛
¾ x 4	THD75400H ^{2,5}	3 ½	¾	1 ⅞
¾ x 5	THD75500H	4 ½	¾	1 ⅞
¾ x 6	THDT75600H	4 ½	¾	1 ⅞
¾ x 7	THD75700H	5 ½	¾	1 ⅞
¾ x 8 ½	THD75812H	5 ½	¾	1 ⅞
¾ x 10	THD75100H	5 ½	¾	1 ⅞

1. Length of anchor is measured from underside of head to end of anchor.

2. These models do not meet minimum embedment depth requirements for strength design.

3. Installation torque shall not exceed 25 ft.-lb. using a manual torque wrench or maximum torque rating of 100 ft.-lb. when installed with impact wrench.

4. Installation torque shall not exceed 50 ft.-lb. using a manual torque wrench or maximum torque rating of 100 ft.-lb. when installed with impact wrench.

5. Installation torque shall not exceed 50 ft.-lb. using a manual torque wrench or maximum torque rating of 135 ft.-lb. when installed with impact wrench.

Titen HD® Heavy-Duty Screw Anchor

Titen HD Anchor Product Data — Washer Head — Zinc Plated

Size (in.)	Model No.	Thread Length (in.)	Drill Bit Diameter (in.)	Bit Size
½ x 6	THD50600WH	5 ½	½	T50
½ x 8	THD50800WH	5 ½	½	T50
¾ x 6	THDB62600WH	5 ½	¾	T60
¾ x 8	THDB62800WH	5 ½	¾	T60
¾ x 10	THDB62100WH	5 ½	¾	T60

1. Length of anchor is measured from top of head to bottom of anchor.

Titen HD Anchor Product Data — Countersunk — Zinc Plated

Size (in.)	Model No.	Thread Length (in.)	Drill Bit Diameter (in.)	Wrench Size (in.)
¼ x 1 ⅞	THDB25178CS	1 ½	¼	T30
¼ x 2 ¾	THDB25234CS	2 ¾	¼	T30
¼ x 3 ½	THDB25312CS	3 ½	¼	T30
¼ x 4 ½	THDB25412CS	4 ½	¼	T30
⅜ x 2 ½	THD37212CS†	2	⅜	T50
⅜ x 3	THD37300CS	2 ½	⅜	T50
⅜ x 4	THD37400CS	3 ½	⅜	T50
⅜ x 5	THD37500CS	4 ½	⅜	T50

† This model does not meet minimum embedment depth requirements for strength design and require maximum installation torque of 25 ft.-lb. using a torque wrench, driver drill or cordless ¼" impact driver with a maximum permitted torque rating of 100 ft.-lb.

1. Length of anchor is measured from top of head to bottom of anchor.

Titen HD® Heavy-Duty Screw Anchor

Titen HD Anchor Product Data — Mechanically Galvanized

Size (in.)	Model No.	Thread Length (in.)	Drill Bit Diameter (in.)	Wrench Size (in.)
3/8 x 3	THD37300HMG	2 1/2	3/8	9/16
3/8 x 4	THD37400HMG	3 1/2		
3/8 x 5	THD37500HMG	4 1/2		
3/8 x 6	THD37600HMG	5 1/2		
1/2 x 4	THD50400HMG	3 1/2	1/2	3/4
1/2 x 5	THD50500HMG	4 1/2		
1/2 x 6	THD50600HMG	5 1/2		
1/2 x 6 1/2	THD50612HMG	5 1/2		
1/2 x 8	THD50800HMG	5 1/2		
1/2 x 12	THD501200HMG	5 1/2		
5/8 x 5	THDB62500HMG	4 1/2	5/8	15/16
5/8 x 6	THDB62600HMG	5 1/2		
5/8 x 6 1/2	THDB62612HMG	5 1/2		
5/8 x 8	THDB62800HMG	5 1/2		
3/4 x 5	THD75500HMG	4 1/2	3/4	1 1/8
3/4 x 6	THDT75600HMG	4 1/2		
3/4 x 8 1/2	THD75812HMG	5 1/2		
3/4 x 10	THD75100HMG	5 1/2		

Mechanical galvanizing meets ASTM B695, Class 65, Type 1. Intended for some pressure-treated wood sill plate applications. Not for use in other corrosive or outdoor environments. See pp. 10–13 or visit strongtie.com/info for more corrosion information.

Titen HD Anchor Product Data — Washer Head — Mechanically Galvanized

Size (in.)	Model No.	Drill Bit Diameter (in.)	Bit Size
1/2 x 5	THD50500WHMG	1/2	T50
1/2 x 6	THD50600WHMG	1/2	T50
1/2 x 8	THD50800WHMG	1/2	T50
5/8 x 6	THDB62600WHMG	5/8	T60
5/8 x 8	THDB62800WHMG	5/8	T60
5/8 x 10	THDB62100WHMG	5/8	T60

Stainless-Steel Titen HD® Heavy-Duty Screw Anchor

Stainless-Steel Screw Anchor for Concrete and Masonry

The Titen HD stainless-steel screw anchor for concrete and masonry is ideal for when the job calls for fast and efficient installation in multiple types of environments. The Titen HD stainless steel is a state-of-the-art anchor solution that combines the long-lasting corrosion resistance of Type 300 Series stainless steel with the undercutting ability of heat-treated carbon-steel cutting threads.

Innovative — The serrated carbon-steel threads on the tip of the stainless-steel Titen HD are vital because they undercut the concrete as the anchor is driven into the hole, making way for the rest of the threads to interlock with the concrete. In order for these threads to be durable enough to cut into the concrete, they are formed from carbon steel that is then hardened and brazed onto the tip of the anchor.

Corrosion Resistant — For dry, interior applications, carbon-steel corrosion is not a risk, but in any kind of exterior, coastal or chemical environment the anchor would be susceptible to corrosion. With the introduction of the THDSS, there is finally a state-of-the-art anchor solution that combines the corrosion resistance of Type 300 Series stainless steel with the undercutting ability of sacrificial heat-treated carbon-steel cutting threads.

Features:

- Ideal for exterior or corrosive environments
- Anchor contains minimal carbon steel resulting in less expansion forces in the concrete due to corrosion
- Approved for use with many ZMAX® post bases

Codes: IAPMO UES ER-493 (concrete);

ICC-ES ESR-1056 (masonry);

City of LA Supplement within ER-493 (concrete);

City of LA Supplement within ESR-1056 (masonry);

State of Florida FL15730 (masonry); State of Florida FL16230 (concrete)

Material: Type 316 and Type 304 stainless steel with carbon-steel lead threads

Installation

- Caution:** Holes in steel fixtures to be mounted should match the diameter specified in the table below if steel is thicker than 12 gauge.
- Caution:** Use a Titen HD screw anchor one time only — installing the anchor multiple times may result in excessive thread wear and reduce load capacity. Do not use impact wrenches to install into hollow CMU.
- Caution:** Oversized holes in base material will reduce or eliminate the mechanical interlock of the threads with the base material and reduce the anchor's load capacity.

1. Drill a hole in the base material using a carbide drill bit (complying with ANSI B212.15) with the same diameter as the nominal diameter of the anchor to be installed. Drill the hole to the specified minimum hole depth overdrill (see table below) to allow the thread tapping dust to settle, and blow it clean using compressed air. (Overhead installations need not be blown clean.) Alternatively, drill the hole deep enough to accommodate embedment depth and the dust from drilling and tapping.
2. Insert the anchor through the fixture and into the hole.
3. Tighten the anchor into the base material until the hex-washer head or the countersunk head contacts the fixture.

Additional Installation Information

Titen HD Diameter (in.)	Wrench Size (in.)	Recommended Steel Fixture Hole Size (in.)	Minimum Hole Depth Overdrill (in.)
1/4	3/8	3/8 to 7/16	1/8
3/8	9/16	1/2 to 5/8	1/4
1/2	3/4	5/8 to 11/16	1/2
5/8	15/16	3/4 to 13/16	1/2
3/4	1 1/8	7/8 to 15/16	1/2

Suggested fixture hole sizes are for structural steel thicker than 12 gauge only. Larger holes are not required for wood or thinner cold-formed steel members.



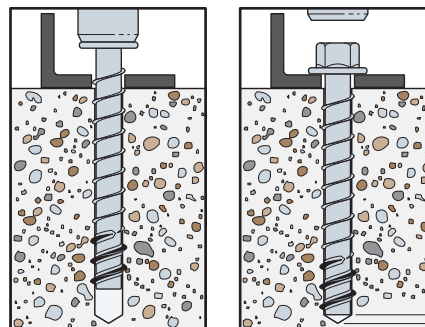
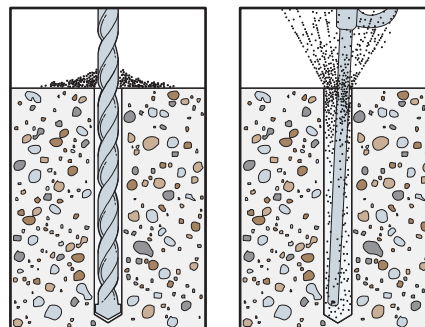
Innovative Carbon-Steel Lead Threads



Stainless-Steel Titen HD Hex-Washer Head Style Screw Anchor

Please go to strongtie.com/patents for the most current list of Simpson Strong-Tie patents.

Installation Sequence



Minimum overdrill. See table.

Stainless-Steel Titen HD® Heavy-Duty Screw Anchor

Stainless-Steel Countersunk Head Style

The countersunk head style is for applications that require a flush-mount profile. Countersinking also leaves a cleaner surface appearance for exposed through-set applications. The anchor head's 6-lobe drive eases installation and is less prone to stripping than traditional recessed anchor heads.

Features:

- Available in many standard lengths in 1/4" and 3/8" diameters
- Countersunk head allows screw anchor applications incompatible with a hex head
- Countersunk version includes driver bit in each box

Codes: IAPMO UES ER-493 (concrete);
ICC-ES ESR-1056 (masonry);
City of LA Supplement within ER-493 (concrete);
City of LA Supplement within ESR-1056 (masonry);
State of Florida FL15730 (masonry); State of Florida FL16230 (concrete)

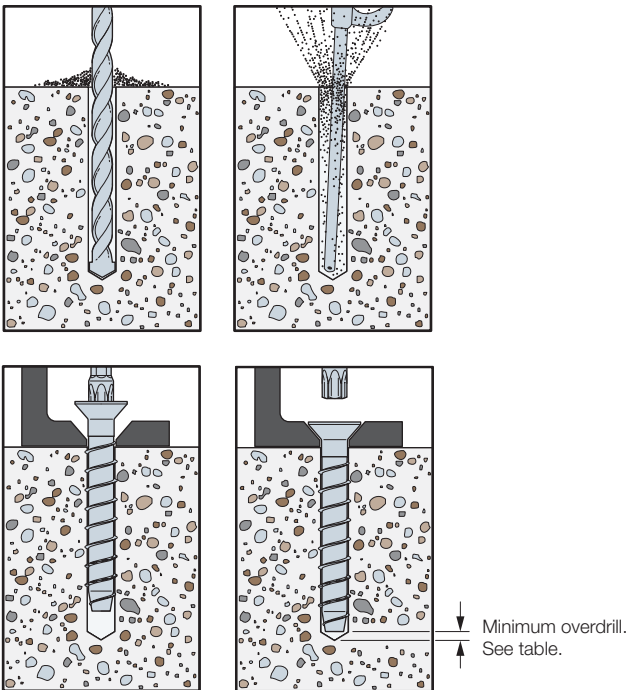
Material: Type 316 stainless steel with carbon-steel lead threads

Additional Installation Information

Titen HD Diameter (in.)	Bit Size	Recommended Steel Fixture Hole Size (in.)	Minimum Hole Depth Overdrill (in.)
1/4	T30	3/8 to 7/16	1/8
3/8	T50	1/2 to 9/16	1/4

Suggested fixture hole sizes are for structural steel thicker than 12 gauge only. Larger holes are not required for wood or thinner cold-formed steel members.

Installation Sequence



Stainless-Steel
Titen HD
Countersunk
Head Style
Screw Anchor



Titen HD Countersunk Installation

Stainless-Steel Titen HD® Heavy-Duty Screw Anchor

Stainless-Steel Titen HD Anchor Product Data — Hex Washer Head

Size (in.)	Model No. (Type 316)	Model No. (Type 304)	Thread Length (in.)	Drill Bit Diameter (in.)	Wrench Size (in.)
¼ x 2	THDC25200H6SS†	—	1⅞	¼	⅜
¼ x 2½	THDC25238H6SS	—	2¼	¼	⅜
¼ x 3	THDC25300H6SS	—	2⅞	¼	⅜
¼ x 4	THDC25400H6SS	—	3⅞	¼	⅜
⅜ x 3	THD37300H6SS	THD37300H4SS	2½	⅜	⅞
⅜ x 4	THD37400H6SS	THD37400H4SS	3½	⅜	⅞
⅜ x 5	THD37500H6SS	THD37500H4SS	4½	⅜	⅞
⅜ x 6	THD37600H6SS	THD37600H4SS	5½	⅜	⅞
½ x 3	THD50300H6SS	THD50300H4SS	2½	½	¾
½ x 4	THD50400H6SS	THD50400H4SS	3½	½	¾
½ x 5	THD50500H6SS	THD50500H4SS	4½	½	¾
½ x 6	THD50600H6SS	THD50600H4SS	5½	½	¾
½ x 6½	THD50612H6SS	THD50612H4SS	6	½	¾
½ x 8	THD50800H6SS	THD50800H4SS	6⅞	½	¾
⅝ x 4	THDB62400H6SS	THDB62400H4SS	3½	⅝	1⅝
⅝ x 5	THDB62500H6SS	THDB62500H4SS	4½	⅝	1⅝
⅝ x 6	THDB62600H6SS	THDB62600H4SS	5½	⅝	1⅝
⅝ x 6½	THDB62612H6SS	THDB62612H4SS	6	⅝	1⅝
⅝ x 8	THDB62800H6SS	THDB62800H4SS	7 ⅞	⅝	1⅝
¾ x 4	THD75400H6SS	THD75400H4SS	3½	¾	1 ⅞
¾ x 5	THD75500H6SS	THD75500H4SS	4½	¾	1 ⅞
¾ x 6	THD75600H6SS	THD75600H4SS	5½	¾	1 ⅞
¾ x 7	THD75700H6SS	THD75700H4SS	6½	¾	1 ⅞
¾ x 8½	THD75812H6SS	THD75812H4SS	7⅞	¾	1 ⅞

† Does not meet minimum embedment in code report.

1. Anchor length is measured from under head to bottom of anchor.

Stainless-Steel Titen HD Anchor Product Data — Countersunk

Size (in.)	Model No. (Type 316)	Thread Length (in.)	Drill Bit Diameter (in.)	Wrench Size (in.)
¼ x 2½	THDC25238CS6SS†	2	¼	T30
¼ x 3	THDC25300CS6SS	2⅞	¼	T30
¼ x 4	THDC25400CS6SS	3⅞	¼	T30
⅜ x 2½	THD37212CS6SS†	2	⅜	T50
⅜ x 3	THD37300CS6SS	2½	⅜	T50
⅜ x 4	THD37400CS6SS	3½	⅜	T50

† These models do not meet minimum embedment depth requirements for strength design and require maximum installation torque of 25 ft.-lb. using a torque wrench, driver drill or cordless ¼" impact driver with a maximum permitted torque rating of 100 ft.-lb.

1. Anchor length is measured from top of head to bottom of anchor.

Titen Turbo™ Concrete and Masonry Screw Anchor

The Titen Turbo screw anchor features an innovative Torque Reduction Channel to trap drilling dust where it can't obstruct thread action, significantly reducing binding, stripping, and snapping without compromising strength. The patented reverse thread design enables smooth driving with less torque while providing superior holding power. The Torque Reduction Channel also allows more space for dust to help prevent anchors from bottoming out in smaller-diameter screw holes. The Titen Turbo screw anchors feature a serrated leading edge to cut into concrete or masonry, and a pointed tip for fast, easy installation in wood-to-concrete and wood-to-wood anchoring applications.

Features

- Patented Torque Reduction Channel that displaces dust where it can't obstruct the thread action, reducing the likelihood of binding in the hole.
- Available with either a hex head or, for a flush profile, a 6-lobe-drive countersunk flat head or trim head.
- 6-lobe drive provides positive bit engagement resulting in easy installations and long bit life.
- 6-lobe bit included in packaging for countersunk flat-head and trim-head version.
- Superior tension load performance.
- Matched-tolerance bit not required; use a standard ANSI drill bit for installation.
- Serrated screw point for fast starts when fastening wood.
- Designed for installation with an impact driver or cordless drill. Installation using the Titen Turbo Installation Tool is recommended.
- Use in dry interior environments only.
- Code listed in accordance with ICC-ES AC193 for uncracked concrete and ICC-ES AC106 for masonry applications without cleaning dust from predrilled holes.

Codes:

IAPMO UES ER-712 (uncracked concrete) (City of LA Supplement within ER-712);
IAPMO UES ER-716 (masonry) (City of LA Supplement within ER-716);
State of Florida FL16230 (concrete and masonry);
Miami-Dade NOA 25-0221.04 (concrete and masonry)

Material: Carbon steel

Coating: Zinc plating with baked-on ceramic coating

Caution: Industry studies show that hardened fasteners can experience performance problems in wet or corrosive environments. Steps must be taken to prevent inadvertent sustained loads above the listed allowable loads. Overtightening and bending moments can initiate cracks detrimental to the hardened screw's performance. Use the Simpson Strong-Tie Titen installation tool kit as it has a bit that is designed to reduce the potential for overtightening the screw.

Caution: Oversized holes in the base material will reduce or eliminate the mechanical interlock of the threads with the base material and will reduce the anchor's load capacity.

NEW



**Titen Turbo
Flat-Head
Screw**
US Patent
11,002,305



**Titen Turbo
Hex-Head
Screw**
US Patent
11,002,305

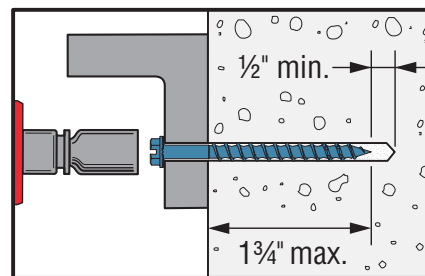
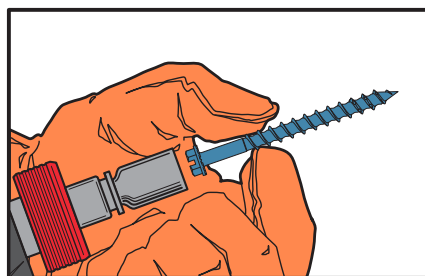
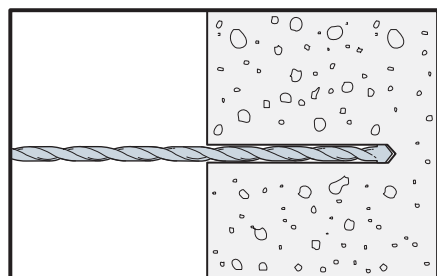


**Titen Turbo
Trim-Head
Screw**
US Patent
11,002,305



6-lobe drive

Installation Sequence



Titen Turbo™ Concrete and Masonry Screw Anchor

Blue Titen Turbo Product Data ($\frac{3}{16}$ " Diameter)

Size (in.)	Head Style	Model No.	Drill Bit Diameter
$\frac{3}{16}$ x $1\frac{1}{4}$	$\frac{1}{4}$ " hex	TNT18114H	$\frac{5}{32}$ "
$\frac{3}{16}$ x $1\frac{3}{4}$		TNT18134H	
$\frac{3}{16}$ x $2\frac{1}{4}$		TNT18214H	
$\frac{3}{16}$ x $2\frac{3}{4}$		TNT18234H	
$\frac{3}{16}$ x $3\frac{1}{4}$		TNT18314H	
$\frac{3}{16}$ x $3\frac{3}{4}$		TNT18334H	
$\frac{3}{16}$ x $1\frac{1}{4}$	T25 6-lobe flat	TNT18114TF	$\frac{5}{32}$ "
$\frac{3}{16}$ x $1\frac{3}{4}$		TNT18134TF	
$\frac{3}{16}$ x $2\frac{1}{4}$		TNT18214TF	
$\frac{3}{16}$ x $2\frac{3}{4}$		TNT18234TF	
$\frac{3}{16}$ x $3\frac{1}{4}$		TNT18314TF	
$\frac{3}{16}$ x $3\frac{3}{4}$		TNT18334TF	



Blue Titen Turbo Product Data ($\frac{1}{4}$ " Diameter)

Size (in.)	Head Style	Model No.	Drill Bit Diameter
$\frac{1}{4}$ x $1\frac{1}{4}$	$\frac{5}{16}$ " hex	TNT25114H	$\frac{3}{16}$ "
$\frac{1}{4}$ x $1\frac{3}{4}$		TNT25134H	
$\frac{1}{4}$ x $2\frac{1}{4}$		TNT25214H	
$\frac{1}{4}$ x $2\frac{3}{4}$		TNT25234H	
$\frac{1}{4}$ x $3\frac{1}{4}$		TNT25314H	
$\frac{1}{4}$ x $3\frac{3}{4}$		TNT25334H	
$\frac{1}{4}$ x 4		TNT25400H	
$\frac{1}{4}$ x 5		TNT25500H	
$\frac{1}{4}$ x 6		TNT25600H	
$\frac{1}{4}$ x $1\frac{1}{4}$	T30 6-lobe flat	TNT25114TF	$\frac{3}{16}$ "
$\frac{1}{4}$ x $1\frac{3}{4}$		TNT25134TF	
$\frac{1}{4}$ x $2\frac{1}{4}$		TNT25214TF	
$\frac{1}{4}$ x $2\frac{3}{4}$		TNT25234TF	
$\frac{1}{4}$ x $3\frac{1}{4}$		TNT25314TF	
$\frac{1}{4}$ x $3\frac{3}{4}$		TNT25334TF	
$\frac{1}{4}$ x 4		TNT25400TF	



Titen Turbo™ Concrete and Masonry Screw Anchor

Black Titen Turbo Product Data (3/16" Diameter)

Size	Head Style	Model No.	Drill Bit Diameter
3/16 x 1 1/4	1/4" hex	TNTBL18114H	5/32"
3/16 x 1 3/4		TNTBL18134H	
3/16 x 2 3/4		TNTBL18234H	
3/16 x 3 1/4		TNTBL18314H	
3/16 x 1 1/4	T25 6-lobe flat	TNTBL18114TF	5/32"
3/16 x 1 3/4		TNTBL18134TF	
3/16 x 2 1/4		TNTBL18214TF	
3/16 x 2 3/4		TNTBL18234TF	
3/16 x 3 1/4		TNTBL18314TF	



Black Titen Turbo Product Data (1/4" Diameter)

Size	Head Style	Model No.	Drill Bit Diameter
1/4 x 1 1/4	1/4" hex	TNTBL25114H	3/16"
1/4 x 1 3/4		TNTBL25134H	
1/4 x 2 1/4		TNTBL25214H	
1/4 x 2 3/4		TNTBL25234H	
1/4 x 3 1/4		TNTBL25314H	
1/4 x 3 3/4		TNTBL25334H	
1/4 x 4		TNTBL25400H	
1/4 x 1 3/4	T30 6-lobe flat	TNTBL25134TF	3/16"
1/4 x 2 1/4		TNTBL25214TF	
1/4 x 2 3/4		TNTBL25234TF	
1/4 x 3 1/4		TNTBL25314TF	
1/4 x 4		TNTBL25400TF	



Bronze Titen Turbo Product Data (6-Lobe Trim Head)

Size	Head Style	Model No.	Drill Bit Diameter
1/4 x 2 3/4	T25 6-lobe trim	TNTB25234TTR	3/16"
1/4 x 2 3/4		TNTB25234TTRB	
1/4 x 3 1/4		TNTB25314TTR	
1/4 x 3 1/4		TNTB25314TTRB	



Titen Turbo™ Concrete and Masonry Screw Anchor

White Titen Turbo Product Data (3/16" Diameter)

Size	Head Style	Model No.	Drill Bit Diameter
3/16 x 1 1/4	T25 6-lobe flat	TNTW18114TF	5/32"
3/16 x 1 3/4		TNTW18134TF	
3/16 x 2 1/4		TNTW18214TF	
3/16 x 2 3/4		TNTW18234TF	
3/16 x 3 1/4		TNTW18314TF	
3/16 x 3 3/4		TNTW18334TF	



White Titen Turbo Product Data (1/4" Diameter)

Size	Head Style	Model No.	Drill Bit Diameter
1/4 x 1 1/4	T30 6-lobe flat	TNTW25114TF	3/16"
1/4 x 1 3/4		TNTW25134TF	
1/4 x 2 1/4		TNTW25214TF	
1/4 x 2 3/4		TNTW25234TF	
1/4 x 3 1/4		TNTW25314TF	
1/4 x 3 3/4		TNTW25334TF	
1/4 x 2 3/4	T25 6-lobe trim	TNTW25234TTR	3/16"
1/4 x 2 3/4		TNTW25234TTRB	
1/4 x 3 1/4		TNTW25314TTR	
1/4 x 3 1/4		TNTW25314TTRB	



Silver Titen Turbo Product Data (6-Lobe Flat Head)

Size	Head Style	Model No.	Drill Bit Diameter
3/16 x 1 3/4	T25 6-lobe flat	TNTS18134TFB	5/32"
3/16 x 2 3/4		TNTS18234TFB	
3/16 x 3 3/4		TNTS18334TFB	
1/4 x 2 3/4	T30 6-lobe flat	TNTS25234TFB	3/16"
1/4 x 3 1/4		TNTS25314TFB	



EasyFrame™ Automated Marking System

BUILD SMARTER. FASTER. EASIER.

Framing Layout Made Easy with Easy Frame Marking System



Precision Marking, Every Time

Our automated marking system doesn't just cut — it prints detailed, accurate framing connection marks directly onto your lumber, including layout lines, connections, labels, framing notes, and detailing.

Simplify Construction

From wall panels to floors and roofs, EasyFrame's markings turn piles of lumber into plug-and-play components. No measuring. No guesswork. Just build.

Boost Efficiency

Reduce errors, save time, and cut labor costs. Crews can frame faster with fewer skilled workers. Trusted by pros who build smarter.

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EASYFRAME™

EasyFrame™ Automated Marking System

The Simpson Strong-Tie EasyFrame automated marking system is an advanced way for wall panel manufacturers, LBMs and component manufacturers to produce wall, floor or truss assemblies. EasyFrame reduces construction timelines and addresses labor shortages by using automation to optimize materials efficiency and increase cutting accuracy.

Driven by one of the most powerful linear optimization algorithms available, the EasyFrame automated marking system prints precision framing layouts for a structure directly onto the framing members themselves using high-resolution ink jet technology. Paired with either a manual or automated saw, the system provides wall panels that are premarked for easy assembly, driving construction efficiency and accuracy. The EasyFrame saws are designed to save the greatest yield possible out of lumber by managing cut completion activity and constantly optimizing on the fly.

EasyCut Angle 24 Saw

The EasyCut Angle 24 (ECA24) is an optional upcut saw with a 24" blade.

Features

- Cuts up to 4 stacked 2x boards
- Material sizes: 2x4 to 4x16; 6x14; and 8x8, including EWP at 90°
- Depending on other options chosen and number of workers per shift
 - Up to 850–1,000 board feet cut per hour for wall parts*
 - Up to 12,000 linear feet per 10-hour shift for EWP

Compatible with:

Walls, Floors, Roofs, EWP, Big Timbers



EasyCut Straight 24 Saw

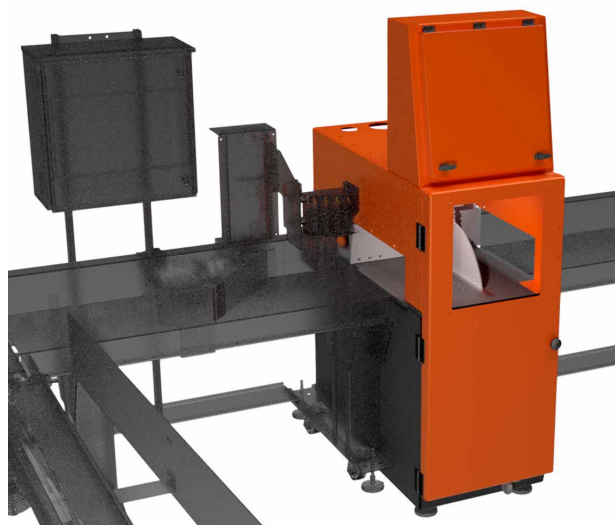
The EasyCut Straight 24 (ECS24) is an optional upcut saw with a 24" blade and is great for wall and EWP cutting.

Features

- Cuts up to 4 stacked 2x boards
- Material sizes: 2x4 to 4x16; 6x14; and 8x8, including EWP
- Depending on other options chosen and number of workers per shift
 - Up to 850–1,000 board feet cut per hour for wall parts*
 - Up to 12,000 linear feet per 10-hour shift for EWP

Compatible with:

Walls, Floors, EWP, Big Timbers



*Maximum saw potential is up to 2,600 board feet per hour. Maximum potential board footage calculation is an estimate based on run tests performed using 14' 2x6 Douglas fir material stacked three boards high with three cuts totaling 42 board feet completed in 50 seconds.

EasyFrame™ Automated Marking System

Chop Saw

The chop saw version is our entry-level equipment solution to help get you started. We offer two DeWalt® models: DWS779 or DSW780.

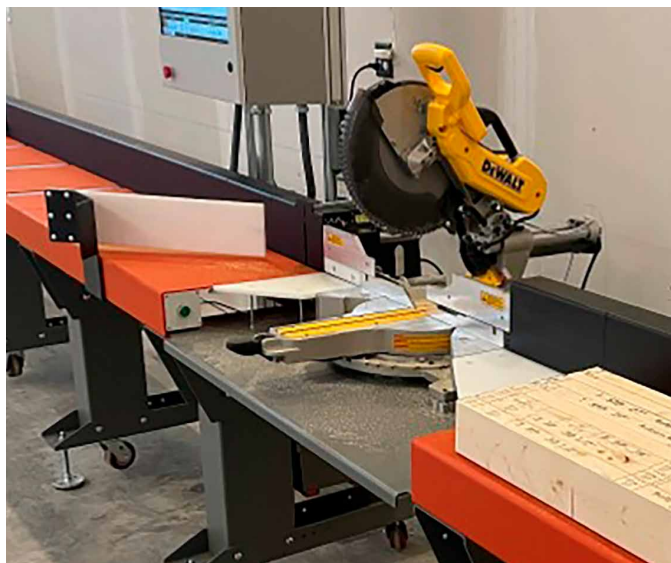
Features

- Varies based on chop saw model chosen.

Compatible with:

Walls and some roof and truss parts

This product is not endorsed by or affiliated with Stanley Black & Decker, Inc.

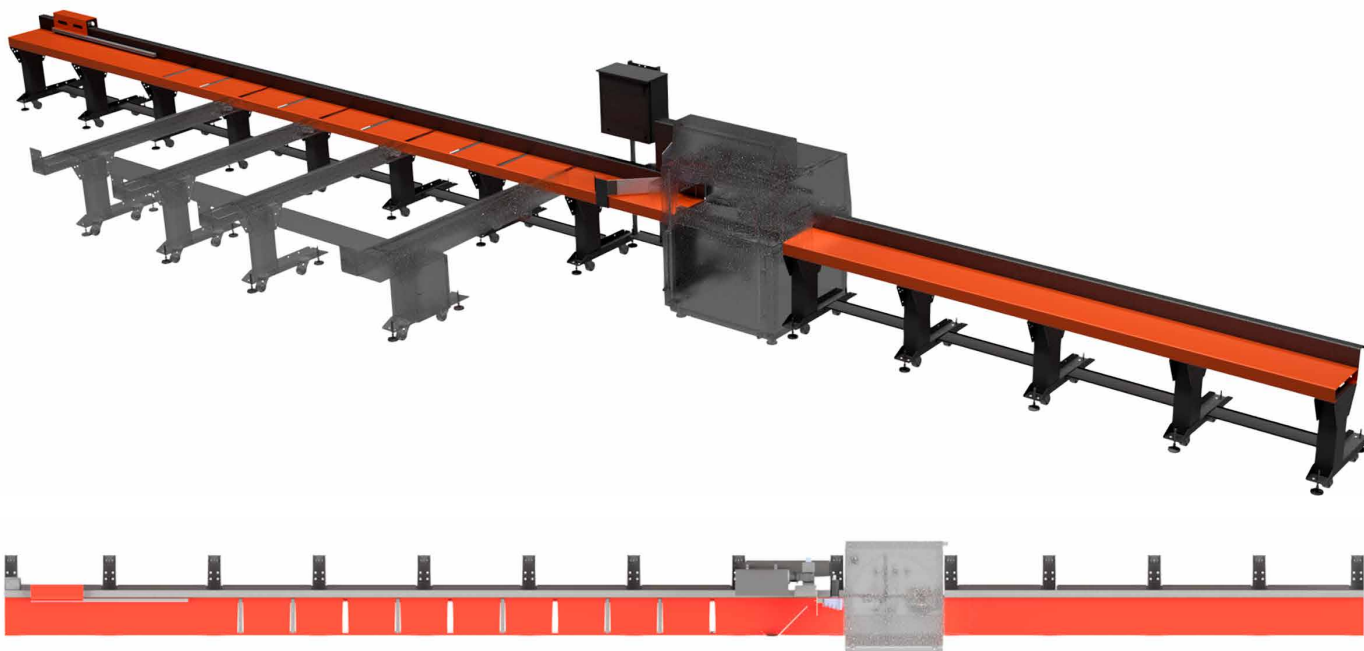


EasyFrame In-Feed and Out-Feed

The EasyFrame In-Feed and Out-Feed sections can be adjusted to accommodate stock material from 6' to 66', allowing you to build a system perfect for your needs whether you're cutting EWP or dimensional lumber. The sections can be paired with either a manual or automated saw.

Compatible with:

Walls, Floors, Roofs, Trusses, EWP, Big Timbers



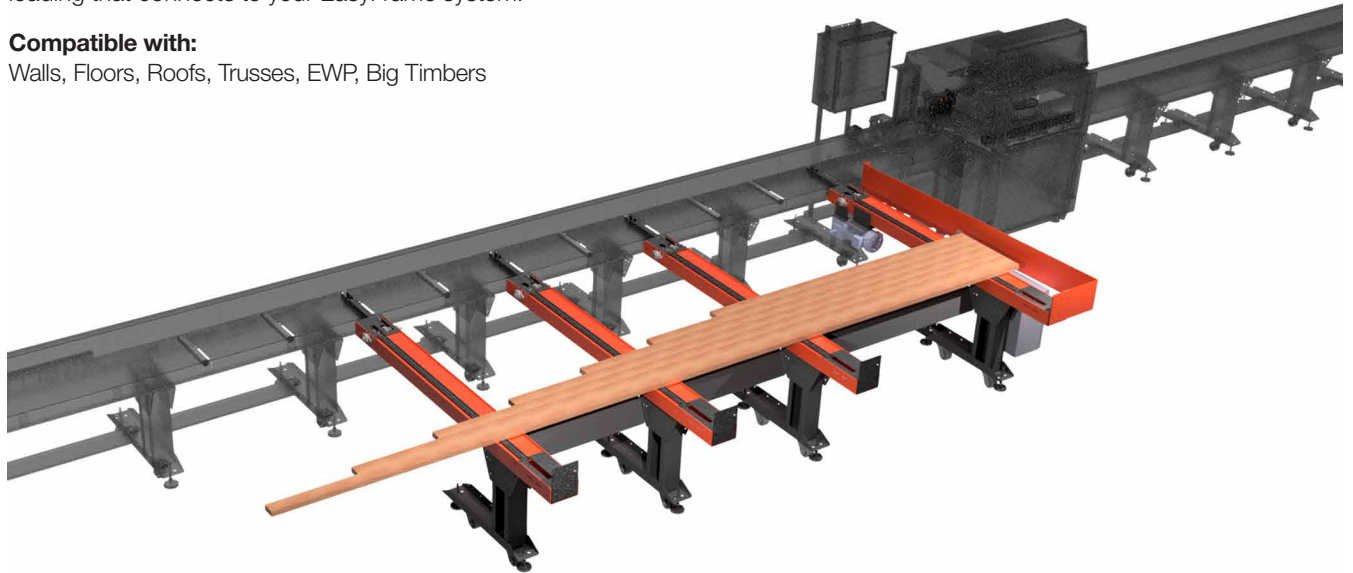
EasyFrame™ Automated Marking System

EasyFrame Autoloader

The EasyFrame Autoloader allows fully automated continuous loading that connects to your EasyFrame system.

Compatible with:

Walls, Floors, Roofs, Trusses, EWP, Big Timbers



Simpson Strong-Tie Limited Warranty

Effective Date: March 18, 2021

This Limited Warranty applies to all Simpson Strong-Tie products ("Products") purchased after the Effective Date while this Limited Warranty remains in effect, other than those Simpson Strong-Tie products that have a separate Limited Warranty applicable to such products. For purchases after the Effective Date, please consult strongtie.com/limited-warranties, as this Limited Warranty may be updated by Simpson from time to time. All future purchases of Products are subject to the terms of the Limited Warranty in effect as of the purchase date.

This Limited Warranty must be read in conjunction with all applicable General Notes, General Instructions for the Installer, General Instructions for the Designer, Building Codes, Corrosion Information, and Terms & Conditions of Sale, along with any other information or specifications published by Simpson Strong-Tie Company Inc. ("Simpson") or available on the strongtie.com website ("Website") or on the product package, label or product manual. All of this information is referred to collectively as the "Simpson Strong-Tie Documentation." All applicable Simpson Documentation must be carefully reviewed each time any Product is used.

Simpson Strong-Tie warrants, to the original purchaser only, that each Product will be free from substantial defects in materials, manufacturing and design if properly specified, installed, and maintained, and when used in accordance with the design limits and the structural, technical, and environmental specifications in the Simpson Strong-Tie Documentation. This Limited Warranty is void and does not apply to any (a) Product purchased from an unauthorized dealer, retailer or distributor, (b) Product deterioration or damage due to environmental conditions or inadequate or improper handling, transportation, storage or maintenance, (c) cosmetic defects, including discoloration, (d) failure or damage caused by improper installation, application, mixing or preparation, (e) use of a Product in temperatures or environmental conditions outside the ranges specified for such Product in the Simpson Strong-Tie Documentation, (f) use of a Product outside of its shelf-life specifications, (g) normal wear and tear, (h) failure or damage caused by the use of a Product with any fasteners, pins, screwstrips, products or accessories other than authentic Simpson Strong-Tie products, (i) Product that was subjected to negligence or excessive or improper use, including any use not in accordance with the Simpson Strong-Tie Documentation, (j) failure or damage caused by the building site, foundation, or any third-party products, building materials or components, (k) failure or damage caused by use of a Product in a structure that has a design or other defect or that does not comply with all applicable building codes, laws, rules and regulations, (l) modified Product, or any nonstandard use or application of a Product, (m) failure or damage caused by corrosion, termites or other wood destroying organisms, animal or insect activity, wood fungal decay, rot, mold, mildew, exposure to chemicals or other hazardous substances, a corrosive environment or materials, inadequate moisture protection, or premature deterioration of building materials, (n) failure or damage caused by an act of God, including any hurricane, earthquake, tornado, lightning, ice, snow, high wind, flood or other severe weather or natural phenomena, (o) installation services or workmanship, including any failure or damage caused by installation of any Product, whether or not in accordance with the Simpson Strong-Tie Documentation, or (p) failure or damage caused by the gross negligence, willful misconduct, or other acts or omissions of the builder, general contractor, installer or any third party, including the building owner. Notwithstanding the foregoing, Simpson Strong-Tie disclaims and does not provide any warranty related to the design of any custom-order or non-catalog Product.

Although Products are designed for a wide variety of uses, Simpson Strong-Tie assumes no liability for confirming that any Product is appropriate for an intended use, and each intended use of a Product must be reviewed and approved by qualified professionals. Each Product is designed for the load capacities and uses listed in the Simpson Strong-Tie Documentation, subject to the limitations and other information set forth in the Simpson Strong-Tie Documentation.

Due to the particular characteristics of potential impact events such as earthquakes and high velocity winds, the specific design and location of the structure, the building materials used, the quality of construction, or the condition of the soils or substrates 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's specifications and the Products are properly installed in accordance with applicable building codes, laws, rules and regulations.

Product demonstrations, training, operator examinations, technical and customer support and other services provided by Simpson Strong-Tie are based on Simpson Strong-Tie's present knowledge and experience, are

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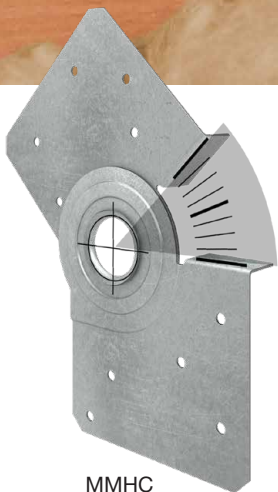
To obtain warranty service, you must contact Simpson Strong-Tie promptly at (800) 999-5099 or at Simpson Strong-Tie Company Inc., 5956 West Las Positas Boulevard, Pleasanton, CA 94588, regarding any potential claim, no later than sixty (60) days after you discover the potential claim. Upon request by Simpson Strong-Tie, you must provide Simpson Strong-Tie with: (a) proof of purchase and written records evidencing, in reasonable detail, the date and manner of installation, application, mixing and preparation of the Products, as applicable, (b) a reasonable opportunity to inspect the site where the Product was installed, and (c) samples of the Products from the actual installation in sufficient quantities in order for Simpson Strong-Tie to perform testing to determine whether or not the Product failed as set forth herein. Simpson Strong-Tie may, in its absolute discretion, request that you return the allegedly defective Products to Simpson Strong-Tie, in which case Simpson Strong-Tie will issue a Return Materials Authorization (RMA), which must be completed and returned to Simpson Strong-Tie with the Product. Simpson Strong-Tie is not responsible for any costs or expenses incurred in connection with any inspection (other than by Simpson Strong-Tie employees) or in connection with the return of Products to Simpson Strong-Tie, but Simpson Strong-Tie shall bear all costs and expenses incurred in connection with the shipment of replacement Products in the event that Simpson Strong-Tie determines that the Product should be replaced in accordance with this Limited Warranty. If Simpson Strong-Tie elects to repair or replace the Product, Simpson Strong-Tie shall have a reasonable time to do so.

No one is authorized to change or add to this Limited Warranty. If at any time Simpson Strong-Tie does not enforce any of the terms, conditions or limitations stated in this Limited Warranty, Simpson Strong-Tie shall not have waived the benefit of said term, condition or limitation and can enforce it at any time. This Limited Warranty is extended only to the original purchaser and is not transferrable. It is not intended nor shall it be construed to create rights in any third party.

Notes



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The innovative MMHC® hinged roof connector makes it easy to build a stick-frame roof in the modular factory that can fold flat during shipping. It's been tested and load rated in multiple directions. The MMHC can be installed on one or both sides of the roof-rafter assembly.

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