Strong-Drive® SDWC TRUSS Screw

On This Page

Strong-Drive® Interior Wood Screws

This product's information may differ depending on the category of use. You are currently viewing details related to **Strong-Drive® Interior Wood Screws**. You can also view product information related to the category: **Fasteners for the Quik Stik™ System**

Product Details

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 under IAPMO-UES ER-262 and meets 2015 and 2018 IRC® and IBC® code requirements for several common wood framing applications.

Key Features

- Fully threaded shank engages the entire length of the fastener, providing a secure connection between the roof and wall framing members
- 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
- Matched-tolerance driver bit (included) engages fastener head securely to allow one-handed driving (replacement bit part no. BIT30T-2-RC3)
- Orange color for easy inspection
- Type-17 point for faster starts and easier driving
- SDWC15450 is recognized for use in chemically treated wood as described in the evaluation report

Applications

- Truss/rafter-to-plate and stud-to-plate connections

Product Includes

SDWC15450-KT and SDWC15600-KT contain:

- (50) Strong-Drive SDWC screws
- (1) Matched-tolerance driver bit (part no. BIT30T-2; also sold separately)
- (1) Metal installation guide tool
    - SDWC-GUIDE (for SDWC15600 only)
      or
    - SDWC-GUIDE275 (for SDWC15450 only)

SDWC15450B-KT and SDWC15600B-KT contain:

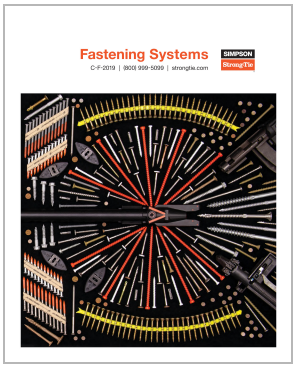
- (500) Strong-Drive SDWC screws
- (2) Matched-tolerance driver bits (part no. BIT30T-2; also sold separately)
- (2) Metal installation guide tools
    - SDWC-GUIDE (for SDWC15600 only)
      or
    - SDWC-GUIDE275 (for SDWC15450 only)

Related Links

- Fastening Systems Technical and Installation Notes
- Installation Detail Drawings
- Recorded Webinar: Drive a New Path: Resisting Uplift with Structural Fasteners

Catalog Pages

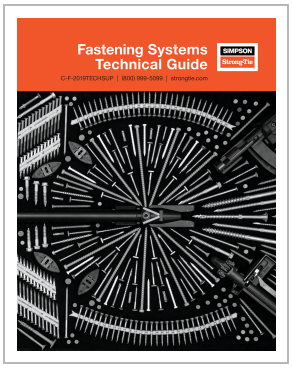
- Fastener Product Information: C-F-2019, page 84
- Fastener Technical Data and Loads: C-F-2019TECHSUP, pages 54–68 and 73



Fastening Systems Catalog

C-F-2019 — *Catalog*

A catalog including new product information as well as any applicable specification and installation instructions for Simpson Strong-Tie® fasteners and Quik Drive® systems.



Fastening Systems Technical Guide

C-F-2019TECHSUP — *Catalog*

A technical document featuring engineering information for structural fasteners featured in the C-F-2019 Fastening Systems Catalog.

Guía técnica de los sistemas de sujeción

C-F-2019TECHSP — *Catalog*

Un documento técnico información de ingeniería para los sujetadores estructurales que se incluyen en el C-F-2019SP Catálogo de sistemas de sujeción.

Sistemas de sujeción

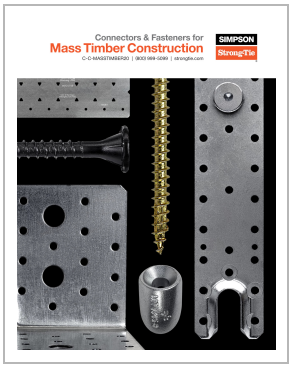
C-F-2019SP — *Catalog*

Catálogo que incluye información sobre productos nuevos y las instrucciones de instalación y especificaciones correspondientes para los sujetadores Simpson Strong-Tie® y los sistemas Quik Drive®.

Fastening Systems Technical Supplement for Canada

C-F-2017CANADD — *Catalog*

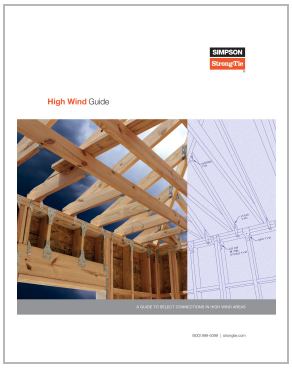
A technical information addendum for Simpson Strong-Tie Fasteners in Canada.



Connectors and Fasteners for Mass Timber Construction Catalog

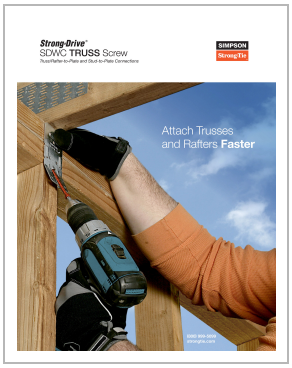
C-C-MASSTIMBER20 — *Catalog*

A catalog featuring connectors and fasteners for mass timber and CLT construction solutions.



High Wind Guide

F-C-HWG20 — *Product Guide*

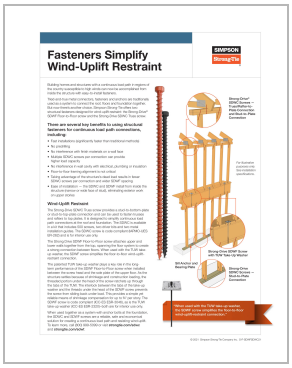


Attach Trusses and Rafters Faster

F-F-SDWC22 — *Flier*

A comprehensive guide to help Designers select the most appropriate connections for challenging, high-wind regions.

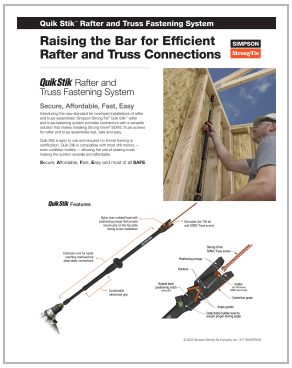
A flier providing features and benefits of the Strong-Drive® SDWC Truss screw.



Fasteners Simplify Wind-Uplift Restraint

S-F-SDWFSDWC21 — *Flier*

A sales flier explaining continuous load path implementations along with features, benefits and installation diagrams for the Strong-Drive® SDWF Floor-to-Floor and SDWC Truss screws.



Raising the Bar for Efficient Rafter and Truss Connections

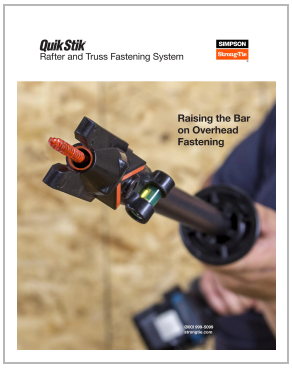
S-F-QUIKSTIK22 — *Flier*

A sales flier providing features and benefits on the Quik Stik™ Rafter & Truss Fastening System.

Retrofit Solutions for Hawaii Homeowners

S-C-22TWHRG21 — *Flier*

A flier providing recommendations on reducing the risk of seismic, hurricane and high-wind induced damage to existing homes in Hawaii.



Raising the Bar on Overhead Fastening

F-F-QUIKSTIK18 — *Flier*

A flier providing product information and installation instructions for the Quik Stik Rafter & Truss Fastening System and Strong-Drive SDWC Truss screws.

SIMPSON
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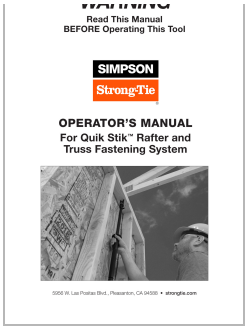
Poniendo a otro nivel las sujeciones sobre cabeza

F-F-QUIKSTIK18SP — *Flier*

Un folleto que proporciona información sobre el producto e instrucciones de instalación para el sistema de sujeción de vigas y cerchas Quik Stik™ y los tornillos para cerchas SDWC Strong-Drive.



Quik Stik Rafter and Truss Fastening System Operator's Manual

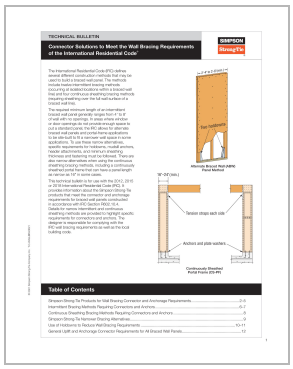
T-F-QUIKSTIK18 — *Owner Manual*

An operator's manual providing installation instructions for overhead assemblies using the Quik Stik Rafter & Truss Fastening System.

Manual del operador para el sistema de sujeción de vigas y cerchas Quik Stik™

T-F-QUIKSTIK18SP — *Owner Manual*

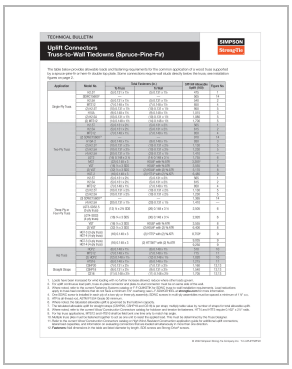
Un manual del operador que proporciona instrucciones de instalación para ensambles sobre cabeza utilizando el sistema de sujeción de vigas y cerchas Quik Stik™.



Connector Solutions to Meet the Wall Bracing Requirements of the International Residential Code®

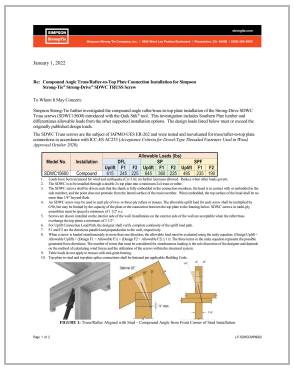
T-C-WALLBRACE21 — *Technical Bulletin*

A technical bulletin providing technical informa wall bracing methods and code sections that require connectors (e.g., holdowns or straps) and anchors.



Uplift Connectors Truss-To-Wall Tiedowns (Spruce-Pine-Fir)

T-C-UPLIFTSPF22 — *Technical Bulletin*

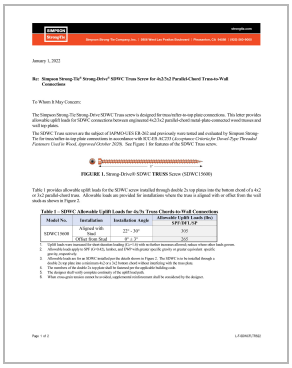


Compound Angle Truss/Rafter-to-Top Plate Installation for Strong-Drive® SDWC TRUSS Screw

L-F-SDWCCMPND22 — *Engineering Letter*

A technical bulletin providing allowable loads and fastening requirements for the common application of a wood truss supported by a spruce-pine-fir or hem-fir double top plate.

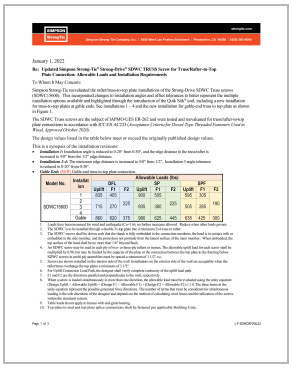
Simpson Strong-Tie further investigated compound-angle rafter/truss-to-top-plate installation of the Strong-Drive® SDWC Truss screw (SDWC15600) introduced with the Quik Stik™ tool.



Simpson Strong-Tie® Strong-Drive® SDWC Truss Screw for 4x2/3x2 Parallel-Chord Truss-to-Wall Connections

L-F-SDWCFLTRS22 — *Engineering Letter*

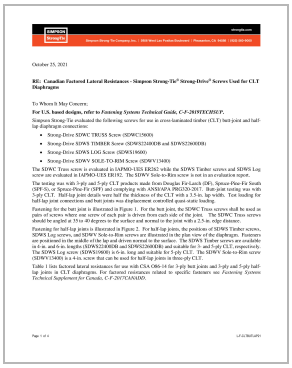
This letter provides allowable uplift loads for SDWC connections between engineered 4 x 2/3 x 2 parallel-chord, metal-plate-connected wood trusses and wall top plates.



Updated Strong-Drive® SDWC TRUSS Screw for Truss/Rafter-to-Top Plate Connection

L-F-SDWCRF2WL22 — *Engineering Letter*

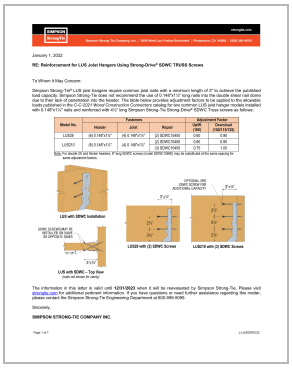
Simpson Strong-Tie reevaluated the rafter/truss-to-top-plate installations of the Strong-Drive® SDWC Truss screw.



Canadian Factored Lateral Resistances — Strong-Drive® Screws Used for CLT Diaphragms

L-F-CLTBUTLAP21 — *Engineering Letter*

Simpson Strong-Tie evaluated the SDWC15600, SDWS22400DB, SDWS22600DB, SDWS19600 and SDWV13400 screws for use in cross-laminated timber (CLT) butt-joint and half-lap diaphragm connections.



Reinforcement for LUS Joist Hangers Using Strong-Drive® SDWC TRUSS Screws

L-LUSSDWC22 — *Engineering Letter*

This letter provides adjustment factors to be applied for two common LUS joist hangers installed with 0.148"x1½" nails and reinforced with 4½"-long Simpson Strong-Tie® Strong-Drive® SDWC Truss screws.

Product Information Table

Model No.	Coating/Material	Length (in.)	Shank Diameter (in.)	Drive Type	Head Type	Thread Length	Point Type	Color	Packaging Qty.
SDWC15450-KT	E-coat® Electrocoating	4 1/2	0.152	T30 6-Lobe	Cap Head	4 1/4	Type-17 Point	Black	50
SDWC15450B-KT	E-coat® Electrocoating	4 1/2	0.152	T30 6-Lobe	Cap Head	4 1/4	Type-17 Point	Black	500
SDWC15600-KT	Clear Zinc Coating	6	0.152	T30 6-Lobe	Cap Head	5 3/4	Type-17 Point	Orange	50
SDWC15600B-KT	Clear Zinc Coating	6	0.152	T30 6-Lobe	Cap Head	5 3/4	Type-17 Point	Orange	500

Load Tables

SDWC — Allowable Shear Loads — DFL, SP, SPF

Size (in.)	Model No.	Thread Length (in.)	Nominal Member Thickness (in.)		Reference Allowable Shear Loads (lb.)					
			Side Member	Main Member	Z_{para}[4]			Z_{perp}[5]		
					SP	DFL	SPF	SP	DFL	SPF
0.15 x 4½	SDWC15450	4¼	2x (Face)	2x (End grain)	—	—	—	225	205	190
0.15 x 6	SDWC15600	5¾	(2)2x (Face)	2x (Edge)	245	240	180	240	240	240
			2x (Face)	2x (End grain)	—	—	—	225	205	190
			(2)2x (Face)	2x (End grain)	—	—	—	225	225	190

1. Allowable loads are shown at the wood load duration factor of C_D = 1.0. Loads may be increased for load duation up to a C_D = 1.6.
2. Tabulated values must be multiplied by all applicable adjustment factors per the NDS.
3. The main and side members shall be sawn lumber or structural composite lumber with a specific gravity or equiv[illegible] gravity 0.42 to 0.55.
4. Z_{para} — Parallel-to-grain loading in the side member and perpendicular-to-grain loading in the main member.
5. Z_{perp} — Perpendicular-to-grain loading in the side member and perpendicular-to-grain loading in the main member, except for 2x (edge) where main member is loaded parallel to grain.
6. The connection conditions of this table are for specific intended applications. Reference lateral design values for all other shear connections are calculated following the NDS.

SDWC — Allowable Withdrawal and Pull-Through Loads — DFL, SP, SPF

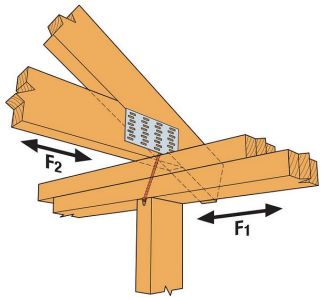
Size (in.)	Model No.	Thread Length (in.)	Nominal Main Member Thickness (in.)	Reference Allowable Withdrawal Loads (lb./in.)			Reference Allowable Pull-Through Loads (lb./in.)		
				SP	DFL	SPF	SP	DFL	SPF
0.15 x 4½	SDWC15450	4¼	2x (Edge)	250	230	150	—	—	—
			2x (End Grain)	200	140	100	210	180	175
0.15 x 6	SDWC15600	5¾	2x (Face)	210	180	120	255	195	160
			(2) 2x (Face)	220	200	160	240	225	190

1. Allowable loads are shown at the wood load duration factor of C_D = 1.0. Loads may be increased for load duration up to a C_D = 1.6.
2. Tabulated values must be multiplied by all applicable adjustment factors per the NDS.
3. The reference withdrawal and pull-through values are in pounds per inch of the thread penetration into the main member and a minimum 1 1/2" thick side member, respectively.

SDWC — Allowable Roof-to-Wall Connection Loads — DFL, SP, SPF, HF — Single-Screw Connections

Size (in.)	Model No.	Thread Length (in.)	Installation	Allowable Loads (lb.)								
				DFL			SP			SPF		
				Uplift	F1	F2	Uplift	F1	F2	Uplift	F1	F2
0.152 x 6	SDWC15600	5 3/4	1	835	405	225	900	505	225	595	305	190
			2	715	270		805	380		505	265	
			3									
			4									
			Compound Angle	615	245	225	645	360	225	485	235	190
			Gable End	860	620	375	980	625	445	635	425	300

1. Loads have been increased for wind and earthquake (CD=1.6); no further increases allowed. Reduce when other loads govern.
2. The SDWC is to be installed through a double 2x top plate into a minimum 2x4 truss or rafter.
3. The SDWC screws shall be driven such that the shank is fully embedded in the connection members, the head is in contact with or embedded in the side member, and the point does not protrude from the lateral surface of the main member. When embedded, the top surface of the head shall be no more than 1/8" beyond flush.
4. An SDWC screw may be used in each ply of two- or three-ply rafters or trusses. The allowable uplift load for each screw shall be multiplied by 0.90, but may be limited by the capacity of the plate or the connection between the top plate to the framing below. SDWC screws in multi-ply assemblies must be spaced a minimum of 1 1/2" o.c.
5. Screws are shown installed on the interior side of the wall. Installations on the exterior side of the wall are acceptable when the rafter/truss overhangs the top plates a minimum of 3 1/2".
6. For Uplift Connection Load Path, the designer shall verify complete continuity of the uplift load path.
7. F1 and F2 are the directions parallel and perpendicular to the wall, respectively.
8. When a screw is loaded simultaneously in more than one direction, the allowable load must be evaluated using the unity equation: (Design Uplift ÷ Allowable Uplift) + (Design F1 ÷ Allowable F1) + (Design F2 ÷ Allowable F2) ≤ 1.0. The three terms in the unity equation represent the possible generated force directions. The number of terms that must be considered for simultaneous loading is the sole discretion of the designer and depends on the method of calculating wind forces and the utilization of the screws within the structural system.
9. Table loads do not apply to trusses with end-grain bearing.
10. Top plate-to-stud and top-plate splice connections shall be fastened per applicable Building Code.



Installation — Narrow Face of Stud or Over Header
(offset truss similar)

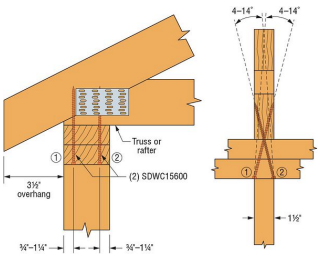
SIMPSON Strong-Tie

SDWC Rafter/Truss-to-Top Plate Connections Utilizing Two-Screw Configurations

Allowable loads for the SDWC Truss screws when installed from the underside of the top plate and from the face of the rafter/truss using a two-screw configuration per the detail configurations shown on the next page.

SDWC — Allowable Loads for Rafter/Truss-to-Top Plate Two-Screw Connections

Configuration	Size (in.)	Model No.	Thread Length (in.)	Quantity Required	Allowable Loads (lb.)					
					DFL/SP			SPF/HF		
					Uplift	F_1	F_2	Uplift	F_1	F_2
A	0.152 x 6	SDWC15600	5¾	2	1,200	685	995	1,045	495	670
B					1,195	680	925	1,195	405	680
C					905	535	790	850	330	595
D					1,115	645	920	960	385	610



Configuration A:
Truss Aligned with Stud
Install through Top Plate into Rafter/Truss
Both screws installed at a 4°–14° angle, offset 3/4"–1 1/4" from opposite edges of the top plate.

1. Loads have been increased for wind and earthquake loading (C_D=1.6) with no further increase allowed; reduce where other loads govern.
2. For Uplift Connection Load Path, the designer shall verify complete continuity of the uplift load path.
3. When cross-grain tension cannot be avoided, supplemental reinforcement shall be considered by the designer.
4. The SDWC screws shall not interfere with other fasteners or truss plates. Where truss plates must be penetrated for Configuration D, a Truss Designer approval is required in accordance with ANSI/TPI 1-2007 /2014, Section 7.5.3.4 and 8.9.2. To predrill through truss plate, use a 1/8" drill bit.
5. The metal installation guide provided with the screw is angled at 22.5° and can be used for Configurations C and D; proper installation angles for all configurations are the responsibility of the installer.
6. SDWC screws must be offset min. 1/4" from top plate splices for full values.
7. Loads assume minimum overhang of 3 1/2".
8. When a screw is loaded simultaneously in more than one direction, the allowable load must be evaluated using the unity equation: (Design Uplift ÷ Allowable Uplift) + (Design F1 ÷ Allowable F1) + (Design F2 ÷ Allowable F2) ≤ 1.0. The three terms in the unity equation represent the possible generated force directions. The number of terms that must be considered for simultaneous loading is the sole discretion of the designer and depends on the method of calculating wind forces and the utilization of the screws within the structural system.
9. An SDWC screw may be used in each ply of two- or three-ply rafters or trusses. The allowable uplift load for each screw shall be multiplied by 0.90, but may be limited by the capacity of the plate or the connection between the top plate to the framing below. SDWC screws in multi-ply assemblies must be spaced a minimum of 1 1/2" o.c.

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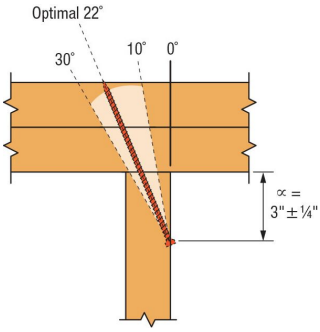
Strong-Tie

SDWC — Allowable Loads for Wide Face of Stud-to-Plate Connections — DFL, SP, SPF, HF

Size (in.)	Model No.	No. of Screws Installed	Thread Length (in.)	Nominal Plate Thickness (in.)	Allowable Loads (lb.)			
					DFL/SP		SPF/HF	
					Uplift	F_2	Uplift	F_2
0.152 x 4½	SDWC15450	1	4¼	2x	360	215	310	153
		2			690	390	595	280
		3			1,035	585	895	420
0.152 x 6	SDWC15600	1	5¾	2x	450	189	310	153
		2			865	345	595	280
		3			1,295	515	895	420
0.152 x 6	SDWC15600	1	5¾	(2) 2x	590	177	510	152
		2			1,135	320	980	275
		3			1,700	485	1,470	415



Stud-to-Top Plate Connection
(This application requires SDWC15600)

1. Loads have been increased for wind and earthquake loading (C_D = 1.6) with no further increases allowed; reduce where other loads govern.
2. Allowable loads are for SDWC installed per the installation instructions.
3. The SDWC15450 is to be installed through the face of 2x stud into a single 2x bottom plate over a concrete/masonry foundation.
4. The SDWC15600 is to be installed through the face of 2x stud into a single 2x bottom plate over a wood floor system.
5. The SDWC15600 is to be installed through the face of 2x stud into a double 2x top or bottom plate.

6. Double-top plates shall be fastened together as required by applicable code.
7. When a screw is loaded simultaneously in more than one direction, the allowable load must be evaluated using the unity equation: (Design Uplift ÷ Allowable Uplift) + (Design F1 ÷ Allowable F1) + (Design F2 ÷ Allowable F2) ≤ 1.0. The three terms in the unity equation represent the possible generated force directions. The number of terms that must be considered for simultaneous loading is the sole discretion of the designer and depends on the method of calculating wind forces and the utilization of the screws within the structural system.

Strong-Drive® SDWC TRUSS Screw for Narrow Face of Stud-to-Plate Connections

The Strong-Drive SDWC Truss screw provides an easy-to-install, high-capacity solution for stud-to-bottom plate or stud-to-top plate(s) connections. This table provides additional allowable load information for the SDWC screws when installed through the narrow face of the stud. The allowable loads are for SDWC screws installed per the details shown installed per the details shown.

SDWC — Allowable Loads for Narrow Face of Stud-to-Plate Connections

Type of Connection	Size (in.)	Model No.	Quantity Required	Thread Length (in.)	Nominal Plate Thickness (in.)	Allowable Loads (lb.)			
						DFL/SP		SPF/HF	
						Uplift	F2	Uplift	F2
1	0.152 x 6	SDWC15600	1	5¾	(2) 2x	590	170	510	145
2	0.152 x 6	SDWC15600	1	5¾	2x	450	155	310	135
3	0.152 x 4½	SDWC15450	1	4¼	2x	295	150	255	130

1. Loads have been increased for wind and earthquake (C_D=1.6). No further increase is allowed; reduce when other loads govern.
2. The SDWC15600 is to be installed through the narrow face of 2x stud into a single 2x bottom plate over a wood floor system.
3. The SDWC15450 is to be installed through the narrow face of 2x stud into a single 2x bottom plate over a concrete/masonry foundation.
4. Double-top plates shall be fastened together as required by applicable Code.
5. When a screw is loaded simultaneously in more than one direction, the allowable load must be evaluated using the unity equation: (Design Uplift ÷ Allowable Uplift) + (Design F1 ÷ Allowable F1) + (Design F2 ÷ Allowable F2) ≤ 1.0. The t… the unity equation represent the possible generated force directions. The number of terms that must be considere… simultaneous loading is the sole discretion of the designer and depends on the method of calculating wind forces… utilization of the screws within the structural system.
6. One SDWC screw per stud maximum when installed in the narrow face of the stud. Where the SDWC screws are installed on multiple adjacent studs, the minimum spacing between screws must be 1 1/2". The allowable uplift load for each screw shall be multiplied by 0.90, but may be limited by the capacity of the plate.
7. For Uplift Continuous 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.

SDWC — Allowable Shear Loads for Sole-to-Rim Connections

Size (in.)	Model No.	Nominal Sole Plate Thickness (in.)	Minimum Penetration into Rim Board (in.)	Reference Allowable Loads (lb.) per Screw							
				2x DFL/SP Rim Board		2x SPF/HF Rim Board		1¼" Min. LVL Rim Board		1¼" 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
0.152 x 4.5	SDWC15450	2x	2.25	235	205	205	205	255	225	275	215
0.152 x 6	SDWC15600	2x, 3x, (2)-2x	2.25	235	205	205	205	255	225	275	215

1. Allowable loads are based on testing per ICC-ES AC233 and are limited to parallel-to-grain loading.

2. Allowable loads are shown at the wood load duration factor of C_D = 1.00. Loads may be increased for load duration by the building code up to a C_D = 1.60.
3. Minimum spacing of the SDWC is 6" o.c., minimum end distance is 6", and minimum edge distance is 5/8".
4. Wood structural panel up to 1 1/8" 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.
5. A double 2x sole plate and/or top plate is permitted provided it is independently fastened per the code and the minimum screw penetration per the table is met.
6. Minimum rim board height shall be 9 1/4" when using fasteners for sole plate and top plate fastening.
7. Sole-to-rim load can be achieved without a wall below.

See additional **Load Tables, Technical Data and Installation Instructions** for the Strong-Drive® SDWC Truss screw

Code Reports & Compliance

Product Series	Compliance/Certific
Strong-Drive® SDWC TRUSS Screw	International Buildin International Resident City of Los Angeles Bui City of Los Angeles Resic
	Florida Building C

Footnotes

1. Please review compliance documents for information about specific product models. In some cases, Compliance documents cover most but not all models a
2. For additional information regarding Florida's Statewide Product Approval System and Miami-Dade County Notice of Acceptance (NOA), click here.

Related Products

SIMPSON Strong-Tie

Strong-Drive® SDWF FLOOR-TO-FLOOR Screw

Driver Bits

Quik Stik™
Rafter and Truss Fastening System