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Fastener Designer is a quick, easy-to-use tool for providing Simpson Strong-Tie structural screw alternatives to specified standard NDS fasteners in withdrawal, lateral load parallel-to-grain, lateral load perpendicular-to-grain, multi-ply, ledger connections and sole plate to rim board. This application provides detailed load calculations for both the NDS fastener and the recommended Simpson Strong-Tie structural screw.

Report Application Issues or Provide Customer Feedback (https://app.smartsh)

About FD

Side Member

Side Member Type

☒ Wood ☐ Steel

Side Member Properties

Side Member Species ?

Douglas Fir-Larch

OR

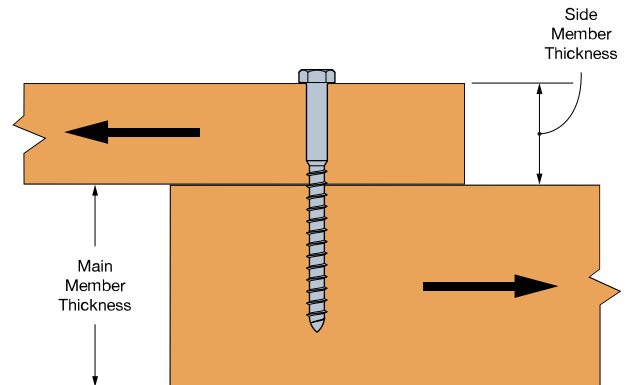
Specific Gravity ?

e.g., 0.49

Side Member Thickness ?

2

in



Lateral Load Parallel to Grain

Main Member

Main Member Properties

Main Member Species ?

Douglas Fir-Larch

OR

Specific Gravity ?

e.g., 0.49

Main Member Thickness ?

4

in

Factors ?

Load Duration Factor ?

1.6

Temperature Factor ?

1

Wet Service Factor ?

1

RESTART

FASTENER SUBSTITUTION OPTIONS

Simpson Strong-Tie Fastener Substitution Options

Fastener Type

☒ All Types

☐ SDWH TIMBER-HEX Screw

☐ SDWS FRAMING Screw

☐ WSNTL SUBFLOOR Screw

☐ SDS HEAVY-DUTY CONNECTOR Screw

☐ SDWH TIMBER-HEX SS Screw

☐ SDWS TIMBER Screw

☐ DWP Wood SS Screw

☐ SDWS LOG Screw

☐ SDWH TIMBER-HEX HDG Screw

Click on a fastener tile below to view detailed information regarding the chosen fastener substitution



Supply (30) 3" Strong-Drive® WSNTL SUBFLOOR Screws WSNTL3S

Low



Supply (11) 0.195" x 6" Strong-Drive® SDWS LOG Screws SDWS19600

Low

- Corrosion Resistance: All Types, Low, Medium, High, Severe

Buttons: RESTART, CREATE PDF

Input

Table with 2 columns: Input, SST Fastener Capacity. Rows include Design Method, Code, Main Member Thickness, Side Member Thickness, Dowel Length, Main Member Bearing Angle, Side Member Bearing Angle, Main Member Specific Gravity, Side Member Specific Gravity, Actual Diameter, Load, Load Duration Factor, Temperature Factor, Wet Service Factor, End Grain Factor.

Calculation

Table with 2 columns: Calculation, SST Fastener Capacity. Rows include Dowel Root Diameter, Main Member Dowel Bearing Length, Side Member Dowel Bearing Length, Main Member Dowel Bearing Strength, Side Member Dowel Bearing Strength, Dowel Bending Yield Strength, and three empty rows.

Penetration Check Detail	SST Fastener Capacity
Penetration, p (in)	4.00
Minimum Penetration Requirement, p _{min} (in)	6D = 1.18
Minimum Penetration Requirement Met	Yes

End/Edge Distance and Spacing

End Distance, Edge Distance, and Spacing	SST Fastener Capacity
	See figure below the fastener image for end distance, edge distance, and spacing requirements

Calculated Reference Design Value

Yield Mode ⓘ	Yield Limit Equation ⓘ	SST Fastener Capacity	
		Yield Limit, Z	Reduction Term, R _D
Mode I _m		Z = 1446 lb	R _D = 2.3
Mode I _s		Z = 723 lb	R _D = 2.3
Mode II		Z = 491 lb	R _D = 2.3
Mode III _m		Z = 500 lb	R _D = 2.3
Mode III _s		Z = 275 lb	R _D = 2.3
Mode IV		Z = 227 lb	R _D = 2.3

Minimum Yield Value ⓘ	Z = 227 lb
Tested Yield Value ⓘ	Z = 265 lb
Adjusted Yield Value ⓘ	Z = 424 lb

Solution

Supply (11) 0.195" x 6" Strong-Drive® SDWS LOG Screws SDWS19600

💡

Strong-Drive® SDWS LOG Screw (<https://www.strongtie.com>

Structural Wood-to-Wood Connections

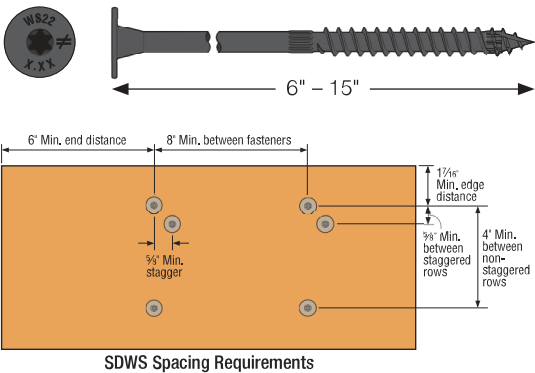
The Strong-Drive SDWS Log screw is a structural wood screw available in longer lengths and is designed for log-home construction and general interior applications. These 0.220" - and 0.195"-diameter structural fasteners require less torque to install than comparable fasteners. The large diameter head pulls logs down easily, eliminating the need to use extra washers.

Features:

- Serrated thread reduces log splitting and damage.
- Patented SawTooth™ point ensures fast starts, reduces installation torque and eliminates the need for pre-drilling in most applications.
- Deep 6-lobe T-40 recess reduces cam-out, making driving easier.
- Large washer head provides maximum bearing area(0.75" head diameter).
- Size identification on all SDWS screw heads.
- Low-profile head makes countersinking easy.

Notes:

1. Loads are based on installation into side grain of the wood with the screw axis perpendicular to the face of the member.
2. Adjusted yield value includes the adjustment factors selected above.
3. The tested yield value is based on testing conducted in accordance with AC233. It is the average ultimate test value



[drive-sdws-log](#)

divided by 5. If no testing was done for the selected thickness
then the minimum yield value is calculated based on National
Design Specification for Wood Construction.

4. For all other general information refer to the

[Fastening Systems Catalog \(http://www.strongtie.com/resources/literature/fastening-systems-catalog\)](http://www.strongtie.com/resources/literature/fastening-systems-catalog)

Codes/Standards:

[IAPMO-UES ER-192 \(http://www.iapmoes.org/Documents/ER_0192.pdf\)](http://www.iapmoes.org/Documents/ER_0192.pdf)

[City of Los Angeles PR25906 \(https://embed.widencdn.net/pdf/plus/ssttoolbox/kytlmm6k2b/COLA_PR_25906.pdf\)](https://embed.widencdn.net/pdf/plus/ssttoolbox/kytlmm6k2b/COLA_PR_25906.pdf)

Product Information:

[Strong-Drive SDWS LOG Screw \(https://www.strongtie.com/strongdrive_interiorwoodscrews/sdws-e_screw/p/strong-drive-sdws-log-screw\)](https://www.strongtie.com/strongdrive_interiorwoodscrews/sdws-e_screw/p/strong-drive-sdws-log-screw)

U.S. Patents: 9,523,383

 **RESTART**

 **CREATE PDF**