

Structural and General Fastening

Strong-Drive® SDWS TIMBER Screw (Exterior Grade)

Structural Wood-to-Wood Connections Including Ledgers, Indoor/Outdoor Projects

Designed to provide an easy-to-install, high-strength alternative to through-bolting and traditional lag screws.

The Strong-Drive SDWS Timber screws are ideal for the contractor and do-it-yourselfer alike.

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/Standards: IAPMO UES ER-192, State of Florida FL13975

US Patent 9,523,383

For more information, see p. 59, C-F-2023 Fastening Systems catalog



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

Length (in.)	Model No.	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
3	SDWS22300DB	1½	255	—	—	—	—	—	—	—	—
4	SDWS22400DB	2¾	405	405	305	—	—	—	—	—	—
5	SDWS22500DB	3	405	405	360	360	325	—	—	—	—
6	SDWS22600DB	3	405	405	405	405	365	365	355	—	—
8	SDWS22800DB	3	405	405	405	405	395	395	395	395	—
10	SDWS221000DB	3	405	405	405	405	395	395	395	395	395

See footnotes below.

SDWS Timber Screw — Allowable Shear Loads — Spruce-Pine-Fir and Hem-Fir Lumber

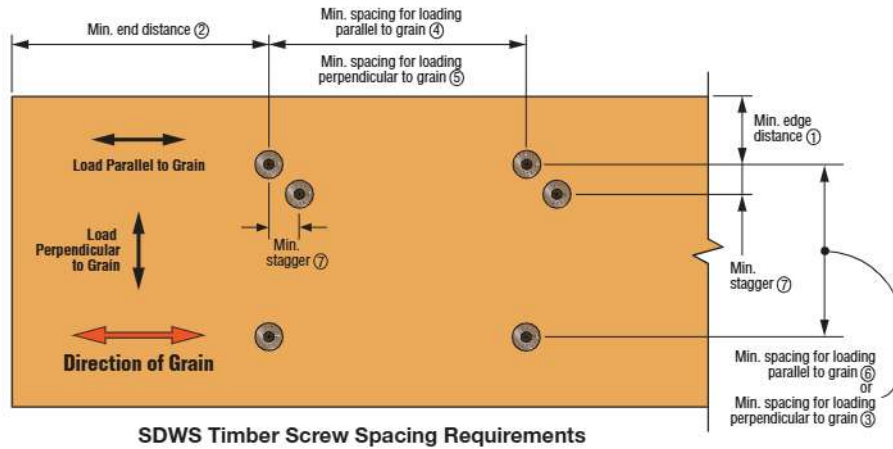
Length (in.)	Model No.	Thread Length (in.)	Reference SPF/HF Allowable Shear Loads (lb.)								
			Wood Side Member Thickness (in.)								
			1.5	2	2.5	3	3.5	4	4.5	6	8
3	SDWS22300DB	1½	190	—	—	—	—	—	—	—	—
4	SDWS22400DB	2¾	385	285	215	—	—	—	—	—	—
5	SDWS22500DB	3	405	290	290	290	195	—	—	—	—
6	SDWS22600DB	3	405	365	365	365	310	310	210	—	—
8	SDWS22800DB	3	405	365	365	365	310	310	280	280	—
10	SDWS221000DB	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 Spacing Requirements Figure and Table on the next page.
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.

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SDWS TIMBER Screw (Exterior Grade) (cont.)



SDWS Timber Screw Spacing Requirements

Condition	Direction of Load to Grain	ID	Minimum Distance or Spacing (in.)
Edge Distance	Perpendicular	①	1 7/16
	Parallel	①	1 7/16
End Distance	Perpendicular	②	6
	Parallel	②	6
Spacing Between Fasteners in a Row	Perpendicular	③	4
	Parallel	④	8
Spacing Between Rows of Fasteners	Perpendicular	⑤	4
	Parallel	⑥	4
Spacing Between Staggered Rows	Perpendicular or Parallel	⑦	5

1. For axial loading only, use the following minimum dimensions: end distance = 3 1/4", edge distance = 1 1/8", spacing parallel to grain = 2 1/4", spacing perpendicular to grain = 1 1/8".

SDWS Timber Screw — Reference Allowable Withdrawal Loads — Douglas Fir-Larch, Southern Pine, Spruce-Pine-Fir and Hem-Fir Lumber

Model No.	Length (in.)	Thread Length (in.)	Reference Allowable Withdrawal Loads, W (lb./in.)		Max. Reference Allowable Withdrawal Loads, W _{max} (lb.)	
			DFL and SP Main Member	HF and SPF Main Member	DFL and SP Main Member	HF and SPF Main Member
SDWS22300DB	3	1 1/2	164	151	245	225
SDWS22400DB	4	2 3/8	179	160	425	380
SDWS22500DB	5	3	214	187	590	495
SDWS22600DB	6	3	214	187	590	495
SDWS22800DB	8	3	214	187	590	495
SDWS221000DB	10	3	214	187	590	495

- The tabulated reference withdrawal design value, W, is in pounds per inch of the thread penetration into the side grain of the main member.
- The tabulated reference withdrawal design value, W_{max}, is in pounds where the entire thread length must penetrate into the side grain of the main member.
- The tabulated reference withdrawal design values, W and W_{max}, are shown at a C_D = 1.6. For end-grain withdrawal, C_{eg} = 0.65. Tabulated values must be multiplied by all applicable adjustment factors from the NDS as referenced in the IBC or IRC.
- Embedded thread length is that portion held in the main member including the screw tip.
- Values are based on the lesser of withdrawal from the main member or pull-through of a 1 1/2" side member.
- For in-service moisture content greater than 19%, use C_M = 0.7.

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Strong-Drive®**SDWS TIMBER Screw (Exterior Grade)**
with Gypsum Board Interlayer(s)

The Strong-Drive SDWS Timber screw may be installed with one or two layers of 5/8" gypsum board. This layer of gypsum is to be located between the side member and main member for a standard connection. See the tables below for the required screw lengths and allowable loads for these applications. Loads are derived from assembly testing based on ICC-ES AC233.

SDWS Timber Screw — Douglas Fir-Larch and Southern Pine Lumber
Allowable Single Shear Loads with One Layer of 5/8" Gypsum Board

Length (in.)	Model No.	Thread Length (in.)	Reference DFL/SP Allowable Shear Loads (lb.)								
			Wood Side Member Thickness (in.)								
			1.5	2.0	2.5	3.0	3.5	4.0	4.5	6.0	8.0
4	SDWS22400DB	2.375	265	—	—	—	—	—	—	—	—
5	SDWS22500DB	3	265	265	235	—	—	—	—	—	—
6	SDWS22600DB	3	265	265	265	265	235	—	—	—	—
8	SDWS22800DB	3	265	265	265	265	255	255	255	—	—
10	SDWS221000DB	3	265	265	265	265	255	255	255	255	—

See footnotes on next page.

SDWS Timber Screw — Douglas Fir-Larch and Southern Pine Lumber
Allowable Single Shear Loads with Two Layers of 5/8" Gypsum Board

Length (in.)	Model No.	Thread Length (in.)	Reference DFL/SP Allowable Shear Loads (lb.)								
			Wood Side Member Thickness (in.)								
			1.5	2.0	2.5	3.0	3.5	4.0	4.5	6.0	8.0
4	SDWS22400DB	2.375	—	—	—	—	—	—	—	—	—
5	SDWS22500DB	3	265	265	—	—	—	—	—	—	—
6	SDWS22600DB	3	265	265	265	265	—	—	—	—	—
8	SDWS22800DB	3	265	265	265	265	255	255	255	—	—
10	SDWS221000DB	3	265	265	265	265	255	255	255	255	—

See footnotes on next page.

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Strong-Drive®

SDWS TIMBER Screw (Exterior Grade) with Gypsum Board Interlayer(s) (cont.)

SDWS Timber Screw — Spruce-Pine-Fir and Hem-Fir Lumber
Allowable Single Shear Loads with One Layer of 5/8" Gypsum Board

Length (in.)	Model No.	Thread Length (in.)	Reference SPF/HF Allowable Shear Loads (lb.)								
			Wood Side Member Thickness (in.)								
			1.5	2.0	2.5	3.0	3.5	4.0	4.5	6.0	8.0
4	SDWS22400DB	2.375	250	—	—	—	—	—	—	—	—
5	SDWS22500DB	3	260	190	190	—	—	—	—	—	—
6	SDWS22600DB	3	260	235	235	235	200	—	—	—	—
8	SDWS22800DB	3	260	235	235	235	200	200	180	—	—
10	SDWS221000DB	3	260	235	235	235	200	200	180	180	—

See footnotes below.

SDWS Timber Screw — Spruce-Pine-Fir and Hem-Fir Lumber
Allowable Single Shear Loads with Two Layers of 5/8" Gypsum Board

Length (in.)	Model No.	Thread Length (in.)	Reference SPF/HF Allowable Shear Loads (lb.)								
			Wood Side Member Thickness (in.)								
			1.5	2.0	2.5	3.0	3.5	4.0	4.5	6.0	8.0
4	SDWS22400DB	2.375	—	—	—	—	—	—	—	—	—
5	SDWS22500DB	3	260	190	—	—	—	—	—	—	—
6	SDWS22600DB	3	260	235	235	235	—	—	—	—	—
8	SDWS22800DB	3	260	235	235	235	200	200	180	—	—
10	SDWS221000DB	3	260	235	235	235	200	200	180	180	—

1. All applications are based on full penetration which equals fastener length minus side member thickness and gypsum board 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 Spacing Requirements Figure and Table on p. 38.
4. For in-service moisture content greater than 19%, use $C_M = 0.7$.
5. Gypsum board must be attached as required per the building code.