

Exterior Wood Screws

Strong-Drive® SDS HEAVY-DUTY CONNECTOR Screw

Heavy-Duty Simpson Strong-Tie® Connectors

A 1/4" diameter high-strength structural wood screw ideal for various connector installations as well as wood-to-wood applications.

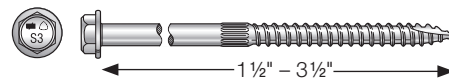
Features:

- Patented 4-CUT™ point (coated version) and type-17 point (stainless version) enable easy driving with no pre-drilling and minimal splitting
- Available with a double-barrier coating and Type 316 stainless steel
- 3/8" hex head
- Head is stamped with the Simpson Strong-Tie "S" sign and fastener length for easy identification after installation

Install Tips: A low-speed 1/2" drill with a 3/8" hex driver is the recommended tool for installation.

Codes/Standards: ICC-ES ESR-2236; City of L.A. RR25711

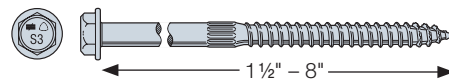
For Technical Data and Loads, see pages 317-321
U.S. Patents 6,109,850; 5,897,280; 7,101,133



Type 316 Stainless Steel

Size (in.)	Thread Length (in.)	Retail Pack		Bulk	
		Fasteners Per Pack	Model No.	Fasteners Per Pack	Model No.
1/4 x 1 1/2	1	25	SDS25112SS-R25	1500	SDS25112SS
1/4 x 2	1 1/4	25	SDS25200SS-R25	1300	SDS25200SS
1/4 x 2 1/2	1 1/2	25	SDS25212SS-R25	1100	SDS25212SS
1/4 x 3	2	25	SDS25300SS-R25	950	SDS25300SS
1/4 x 3 1/2	2 1/4	25	SDS25312SS-R25	900	SDS25312SS
		25	SDS25312SS-R25L*	—	—

* Packaged in a ledger specific box with 3/8" hex-driver bit.



Double-Barrier Coating

Size (in.)	Thread Length (in.)	Retail Pack		Mini Bulk		Bulk	
		Fasteners Per Pack	Model No.	Fasteners Per Pack	Model No.	Fasteners Per Pack	Model No.
1/4 x 1 1/2	1	25	SDS25112-R25	300	SDS25112MB	1500	SDS25112
1/4 x 2	1 1/4	25	SDS25200-R25	250	SDS25200MB	1300	SDS25200
1/4 x 2 1/2	1 1/2	25	SDS25212-R25	200	SDS25212MB	1100	SDS25212
1/4 x 3	2	25	SDS25300-R25	150	SDS25300MB	950	SDS25300
1/4 x 3 1/2	2 1/4	10	SDS25312-R10	125	SDS25312MB	900	SDS25312
		25	SDS25312-R25L*	—	—	—	—
1/4 x 4 1/2	2 3/4	10	SDS25412-R10	100	SDS25412MB	800	SDS25412
1/4 x 5	2 3/4	10	SDS25500-R10	—	—	—	—
		25	SDS25500-R25L*	100	SDS25500MB	500	SDS25500
1/4 x 6	3 1/4	10	SDS25600-R10	100	SDS25600MB	600	SDS25600
1/4 x 8	3 1/4	50	SDS25800-R50	—	—	400	SDS25800
		10	SDS25800-R10	—	—	—	—

* Packaged in a ledger specific box with 3/8" hex-driver bit.

- These coated fasteners possess a level of corrosion resistance that makes them suitable for use in some exterior and corrosive environments and with some preservative-treated woods. For applications in higher-exposure applications, consider Type-300 series stainless-steel fasteners for superior corrosion resistance. See page 15 for additional important information before selecting a fastener for a specific application.

Load Tables, Technical Data and Installation Instructions

Strong-Drive® SDS HEAVY-DUTY CONNECTOR Screw

Heavy-Duty Simpson Strong-Tie® Connectors

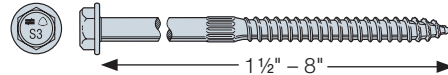
The Simpson Strong-Tie® Strong-Drive® SDS screw is a ¼" diameter high-strength structural wood screw ideal for various connector installations as well as wood-to-wood applications.

Install Tips: A low-speed ½" drill with a ⅜" hex driver is the recommended tool for installation.

Codes/Standards: ICC-ES ESR-2236; City of L.A. RR25711

U.S. Patents 6,109,850; 5,897,280; 7,101,133

For More Product Information, see page 61



SDS – Allowable Shear Loads-Steel Side-Plate Applications¹⁻⁵

Size (in.)	Coating/Material	Model No.	DF/SP Allowable Shear Loads (lbs)			SPF/HF Allowable Loads (lbs)		
			Steel Side Plate Thickness, mil (ga)			Steel Side Plate Shear, mil (ga)		
			54 (16)	68 and 97 (14 and 12)	123 (10) or greater	54 (16)	68 and 97 (14 and 12)	123 (10) or greater
¼ x 1½	Double-Barrier Coating	SDS25112	250	250	250	180	180	180
¼ x 2		SDS25200	250	290	290	180	210	210
¼ x 2½		SDS25212	250	390	420	180	280	300
¼ x 3		SDS25300	250	420	420	180	300	300
¼ x 3½		SDS25312	250	420	420	180	300	300
¼ x 4½		SDS25412	250	420	420	180	300	300
¼ x 5		SDS25500	250	420	420	180	300	300
¼ x 6		SDS25600	250	420	420	180	300	300
¼ x 8		SDS25800	250	420	420	180	300	300
¼ x 1½	Type-316 Stainless Steel	SDS25112SS	250	250	250	180	180	180
¼ x 2		SDS25200SS	250	290	290	180	210	210
¼ x 2½		SDS25212SS	250	390	420	180	280	300
¼ x 3		SDS25300SS	250	420	420	180	300	300
¼ x 3½		SDS25312SS	250	420	420	180	300	300

1. Allowable loads for SDS screws are based on ICC-ES Code Report ESR-2236. Screws may be provided with the 4CUT™ or Type-17 point.

2. 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 $C_D = 1.60$.

3. Allowable withdrawal load for DF/SP/SCL is 172 lbs./in. and for SPF/HF withdrawal is 121 lbs./in.. Total withdrawal load is based on actual thread penetration into the main member.

4. LSL wood-to-wood applications that require 4½", 5", 6" and 8" SDS screws are limited to interior-dry use only.

5. Minimum spacing requirements are listed in ICC-ES ESR-2236.

Load Tables, Technical Data and Installation Instructions

Strong-Drive® SDS HEAVY-DUTY CONNECTOR Screw (cont.)

SDS – Allowable Shear Loads – Douglas Fir-Larch and Southern Pine Lumber^{5,6,7}

Size (in.)	Model No.	DF/SP Allowable Shear Loads ²														
		Wood Side Plate Thickness (in.)														
		½	⅝	¾	1	1⅛	1¼	1½	1¾	2½	3	3½	4	4½		
¼ x 2	SDS25200	145	—	—	—	—	—	—	—	—	—	—	—	—	—	—
¼ x 2½	SDS25212	165	165	170	165	—	—	190 ¹	—	—	—	—	—	—	—	—
¼ x 3	SDS25300	165	165	170	185	195	205	280 ¹	—	—	—	—	—	—	—	—
¼ x 3½	SDS25312	165	165	170	185	195	205	340 ¹	340 ¹	—	—	—	—	—	—	—
¼ x 4½	SDS25412	165	165	170	185	195	205	350 ¹	340 ¹	230	200	—	—	—	—	—
¼ x 5	SDS25500	165	165	170	185	195	205	350 ¹	340 ¹	230	230	200	—	—	—	—
¼ x 6	SDS25600	165	165	170	185	195	205	350 ¹	340 ¹	340 ¹	340 ¹	340 ¹	230	200	—	—
¼ x 8	SDS25800	165	165	170	185	195	205	350 ¹	340 ¹	340 ¹	340 ¹	340 ¹	230	230	—	—

SDS – Allowable Shear Loads - Spruce-Pine-Fir and Hem-Fir^{5,6,7}

Size (in.)	Model No.	SPF/HF Allowable Shear Loads ²														
		Wood Side Plate Thickness (in.)														
		½	⅝	¾	1	1⅛	1¼	1½	1¾	2½	3	3½	4	4½		
¼ x 2	SDS25200	105	—	—	—	—	—	—	—	—	—	—	—	—	—	—
¼ x 2½	SDS25212	130	135	130	120	—	—	135 ¹	—	—	—	—	—	—	—	—
¼ x 3	SDS25300	130	140	140	150	150	145	200 ¹	—	—	—	—	—	—	—	—
¼ x 3½	SDS25312	130	140	140	150	155	165	245 ¹	245 ¹	—	—	—	—	—	—	—
¼ x 4½	SDS25412	130	140	140	150	155	165	250 ¹	245 ¹	190	160	—	—	—	—	—
¼ x 5	SDS25500	130	140	140	150	155	165	250 ¹	245 ¹	190	190	160	—	—	—	—
¼ x 6	SDS25600	130	140	140	150	155	165	250 ¹	245 ¹	245 ¹	245 ¹	245 ¹	190	160	—	—
¼ x 8	SDS25800	130	140	140	150	155	165	250 ¹	245 ¹	245 ¹	245 ¹	245 ¹	195	195	—	—

1. Noted loads are based on ICC-ES Code Report ESR-2236 and/or testing per ICC 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 2005 and 2012 National Design Specification (NDS) and a minimum penetration of $6D = 1.45"$ 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 values 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 $C_D = 1.00$. Loads may be increased for load duration by the building code up to a $C_D = 1.60$. The Designer shall apply all adjustment factors required per NDS.
5. Loads are based on installation into the side grain of the wood members with the screw axis perpendicular to the wood fibers.
6. Loads apply to corresponding stainless-steel models.
7. For in service moisture greater than 19% use $C_M = 0.7$.

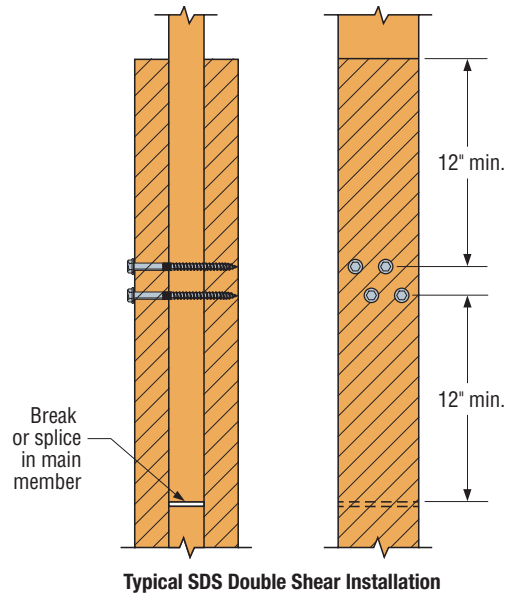
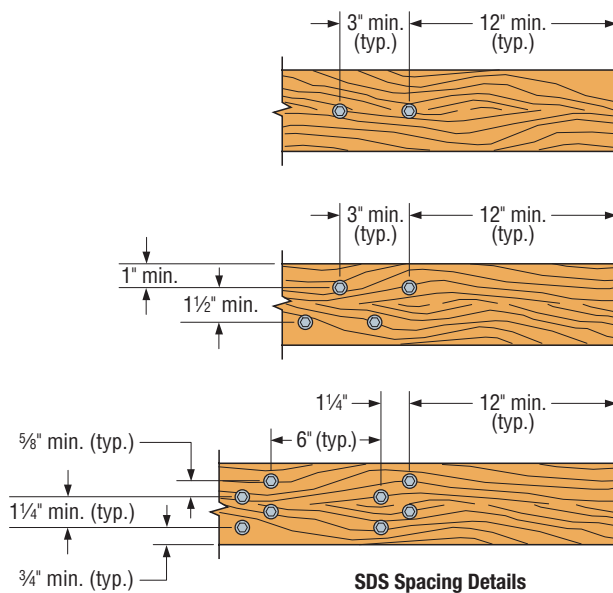
Load Tables, Technical Data and Installation Instructions

Strong-Drive® SDS HEAVY-DUTY CONNECTOR Screw (cont.)

SDS – Allowable Double-Shear Loads – Douglas Fir-Larch, Southern Pine, Spruce-Pine-Fir¹⁻⁵

Size (in.)	Model No.	Side Members	Allowable Shear Loads (lbs.)		
			DF	SP	SPF
¼ x 3½	SDS25300	2 ³ / ₃₂ " Wood Structural Panel Rated Sheathing	355	325	305
¼ x 4½	SDS25412	2x Solid Sawn	395	475	335

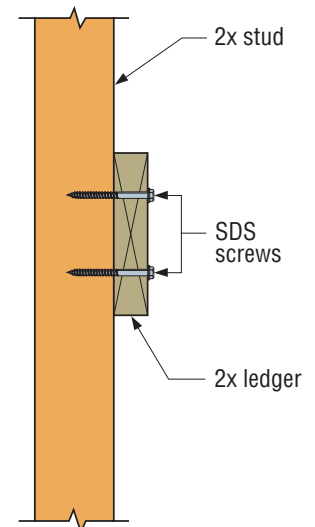
1. Allowable loads are based on Simpson Strong-Tie® laboratory testing with a safety factor of 5 applied to the average ultimate test load.
2. Allowable loads are based on 1½" thick main members and assume no gap between side and main members.
3. Allowable loads are shown at the wood load duration factor of C_D = 1.00. Loads may be increased for load duration by the building code up to a C_D = 1.60. The designer shall apply all adjustment factors required per NDS.
4. For applications with 2x side members, use allowable loads based on the lower of side member or main member species.
5. The Designer is responsible for the design of wood members.



SDS – Allowable Shear Loads – Installations into the Narrow Face of 2X SPF, HF, DFL, SP Lumber¹⁻⁶

Size (in.)	Model No.	Wood Side Member Actual Thickness (in.)	Minimum Main Member Penetration ⁵ (in.)	DF/SP Allowable Shear Loads (lbs.)	SPF/HF Allowable Shear Loads (lbs.)
¼ x 3½	SDS25312	1½	2	250	190
¼ x 4½	SDS25412			250	190

1. Allowable loads are based on testing per ICC AC233 and are limited to parallel-to-grain loaded solid sawn main members (2" nominal). Wood side members may be loaded parallel or perpendicular to grain (see footnote 4).
2. DF/SP allowable loads are based on wood members having a minimum specific gravity of 0.50, and SPF/HF allowable loads are based on wood members having a minimum specific gravity of 0.42. Where the side and main members have different specific gravities, the lower values shall be used.
3. 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.
4. Minimum spacing of fasteners is 3" o.c., minimum end distance is 3" for all parallel-to-grain loaded members, or 4" for all perpendicular-to-grain loaded members, and minimum edge distance is ¾" for all parallel-to-grain loaded members, or 1½" for perpendicular-to-grain loaded side members.
5. Screws may be installed with an intermediate layer of wood structural panel between the side and main member provided the wood structural panel is fastened to the main member per code and the minimum penetration of the screw into the main member (excluding the wood structural panel) is met.



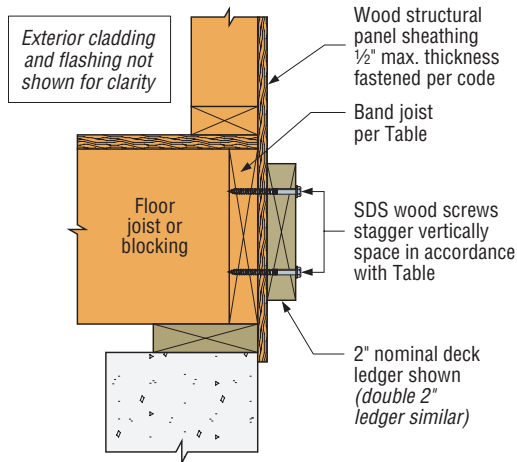
Load Tables, Technical Data and Installation Instructions

Strong-Drive® SDS HEAVY-DUTY CONNECTOR Screw (cont.)

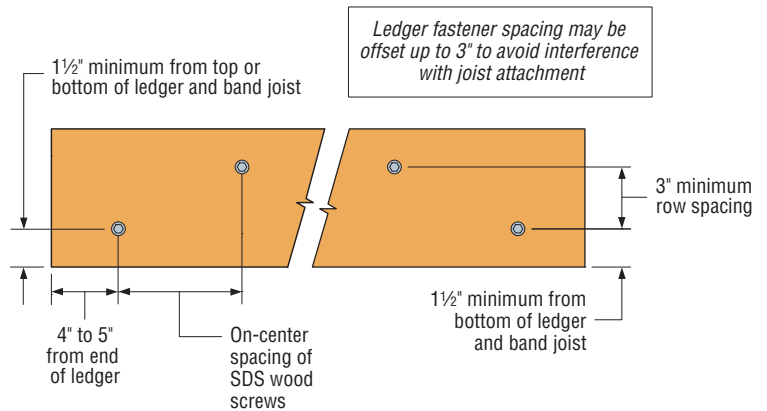
Code-Compliant Spacing for a Sawn Lumber Deck Ledger to Band Joist¹⁻⁵

Loading Condition	Ledger Nominal Size (in.)	SDS Screw Length (in.)	Band Joist Material and Size	Maximum Deck Joist Span						
				Up to 6 ft.	Up to 8 ft.	Up to 10 ft.	Up to 12 ft.	Up to 14 ft.	Up to 16 ft.	Up to 18 ft.
				Maximum On-Center Spacing of Fasteners (in.)						
40 psf Live 10 psf Dead	2x	3½	2" Nominal Sawn Lumber	13	10	8	6	5	5	4
	2-2x³	5								
	2x	3½	1" Min. Oriented Strand Board (OSB) Rim Board	12	9	7	6	5	4	4
	2x	3½	1½" Min. Oriented Strand Board (OSB) Rim Board or 1¼" Min. Structural Composite Lumber	15	11	9	7	6	5	5
60 psf Live 10 psf Dead	2x	3½	2" Nominal Sawn Lumber	9	7	5	4	4	3	3
	2-2x³	5								
	2x	3½	1" Min. Oriented Strand Board (OSB) Rim Board	8	6	5	4	3	3	2
	2x	3½	1½" Min. Oriented Strand Board (OSB) Rim Board or 1¼" Min. Structural Composite Lumber	10	8	6	5	4	4	3

1. Solid-sawn band joists shall be Spruce-Pine-Fir, Hem-Fir, Douglas Fir-Larch, or Southern Pine species. Ledger shall be Hem-Fir, Douglas Fir-Larch, or Southern Pine species.
2. Fastener spacings are based on single fastener testing of the Strong-Drive® SDS screw with a safety factor of 5.0 and include NDS wet service adjustment factor.
3. Multiple ledger plies shall be fastened together per code independent of the SDS screws.
4. SDS screw spacing values (above) are equivalent to 2009 IRC Table R502.2.2.1 and 2012 IRC Table R507.2, based on testing of the Strong-Drive® SDS screw with a factor of safety of 5.0. The table above also provides SDS screw spacing for a wider range of materials commonly used for band joists, and an alternate loading condition as required by some jurisdictions.
5. Screw models SDS25312, SDS25312SS and SDS25500.



Ledger-to-Band Joist Assembly
(Wood-framed lower floor acceptable, concrete wall shown for illustration purposes)



SDS Screw Spacing Detail

Load Tables, Technical Data and Installation Instructions

Strong-Drive® SDS HEAVY-DUTY CONNECTOR Screw (cont.)

SDS – Allowable Shear Values for Sole-to-Rim Connections¹⁻⁶

Size (in.)	Model No.	Sole Plate Nominal Size	Minimum Penetration into Rim Board (in.)	Allowable Loads (lbs)							
				2x DF/SP Rim Board		2x SPF/HF Rim Board		1 1/4" Min. LVL Rim Board		1 1/4" Min. LSL Rim Board	
				DF/SP Sole Plate	SPF/HF Sole Plate	DF/SP Sole Plate	SPF/HF Sole Plate	DF/SP Sole Plate	SPF/HF Sole Plate	DF/SP Sole Plate	SPF/HF Sole Plate
1/4 x 4.5	SDS25412	2x	2	250	190	190	190	190	190	220	190
1/4 x 5	SDS25500	2x	2	250	190	190	190	190	190	220	190
1/4 x 6	SDS25600	2x or 3x	2	250	190	190	190	190	190	220	190

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 SDS for solid sawn applications is 3" o.c., minimum end distance is 3", and minimum edge distance is 5/8".
4. Minimum spacing of the SDS for LVL and LSL applications is 6" o.c., minimum end distance is 6", and minimum edge distance is 5/8".
5. 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.
6. A double 2x sole plate is permitted provided it is independently fastened per the code and the minimum screw penetration per the table is met.

