

Load Tables, Technical Data and Installation Instructions

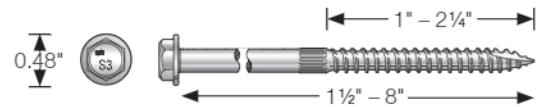
Strong-Drive® SDS HEAVY-DUTY CONNECTOR Screw

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 and EWP fastening applications.

Install Tips: A low-speed ½" drill with a ⅜" hex driver (BITHEXR38-134) is the recommended tool for installation.

Codes/Standards: ICC-ES ESR-2236; US Patent 9,523,383



SDS Screw — Factored Resistances — Steel Side-Plate Applications

Size (in.)	Thread Length (in.)	Coating/ Material	Model No.	Factored Resistance (lb.)									
				D.Fir-L					S-P-F				
				Lateral ($K_D = 1.00$)				Withdrawal ($K_D = 1.15$)	Lateral ($K_D = 1.00$)				Withdrawal ($K_D = 1.15$)
				Steel Side Plate Thickness, in. (ga.)					Steel Side Plate Shear, in. (ga.)				
0.054 (16 ga.)	0.068 (14 ga.)	0.123 (10 ga.)	0.241 (3 ga.)	0.054 (16 ga.)	0.068 (14 ga.)	0.123 (10 ga.)	0.241 (3 ga.)						
¼ x 1½	1	Double-barrier coating	SDS25112	310	340	465	545	280	285	315	435	435	215
¼ x 2	1¼		SDS25200	370	400	530	655	355	340	370	455	455	270
¼ x 2½	1½		SDS25212	435	465	590	825	425	395	420	550	590	320
¼ x 3	2		SDS25300	495	525	655	840	565	445	475	590	590	430
¼ x 3½	2¼		SDS25312	550	585	715	840	635	500	525	590	590	485
¼ x 4½	2¾		SDS25412	550	585	720	840	775	500	530	590	590	590
¼ x 5	2¾		SDS25500	550	585	720	840	775	500	530	590	590	590
¼ x 6	3¼		SDS25600	550	585	720	840	915	500	530	590	590	700
¼ x 8	3¼	SDS25800	550	585	720	840	915	500	530	590	590	700	
¼ x 1½	1	Type 316 stainless steel	SDS25112	310	340	465	545	280	285	315	435	435	215
¼ x 2½	1½		SDS25212	435	465	590	825	425	395	420	550	590	320
¼ x 3	2		SDS25300	495	525	655	840	565	445	475	590	590	430
¼ x 3½	2¼		SDS25312	550	585	715	840	635	500	525	590	590	485

- Factored resistances shown have been developed in accordance with 12.11 CSA O86-14. Apply the adjustment factors K_D , K_{SF} and K_T as per 12.11.4.1 CSA O86-14 when applicable.
- Factored lateral resistances shown assume steel side plates with a minimum $F_u = 45000$ psi (310 MPa).
- Factored lateral resistances shown assume full penetration into the main member.
- Factored withdrawal resistances shown are applicable to short-term loads, reduce for other load durations where applicable.
- Factored withdrawal resistances shown assume the entire threaded portion of the screw is installed into the main member. Where the penetration into the main member is less than the length of the thread, the factored resistance may be calculated by multiplying the length of penetration of the threads x 280 lb./in. (49 N/mm) for D.Fir-L and 215 lb./in. (38 N/mm) for S-P-F.
- Factored withdrawal resistances shown are for penetration into the main member. Head pull-through resistance may govern and must be calculated in accordance with 12.11.5.3 CSA O86-14 using a washer diameter $d_w = 0.480$ ".
- Minimum spacing, edge and end distances shall be in accordance with 12.9.2.1 CSA O86-14 using a fastener diameter of 0.250" (6.4 mm).
- Screws may be provided with the 4CUT™ or Type-17 point
- Strong-Drive® SDS Heavy-Duty Connector screws install best with a low speed ½" drill with a ⅜" hex head driver.
- Where predrilling is required for SDS, use a ⅝" bit.

Load Tables, Technical Data and Installation Instructions

Strong-Drive®

SDS HEAVY-DUTY CONNECTOR Screw (cont.)

SDS Screw — Factored Lateral Resistances – D.Fir-L Lumber

Size (in.)	Model No.	D.Fir-L Factored Lateral Resistances (lb.)										
		Wood Side Plate Thickness (in.)										
		¾	7/8	1	1 1/8	1 1/4	1 1/2	1 3/4	2 1/2	3	3 1/2	4 1/2
¼ x 2	SDS25200	239	—	—	—	—	—	—	—	—	—	—
¼ x 2 1/2	SDS25212	302	300	299	297	296	—	—	—	—	—	—
¼ x 3	SDS25300	364	362	361	359	358	370	270	—	—	—	—
¼ x 3 1/2	SDS25312	367	381	395	409	420	435	435	—	—	—	—
¼ x 4 1/2	SDS25412	367	381	395	409	424	475	510	540	475	—	—
¼ x 5	SDS25500	367	381	395	409	424	475	510	580	540	477	—
¼ x 6	SDS25600	367	381	395	409	424	475	510	580	580	581	477
¼ x 8	SDS25800	367	381	395	409	424	475	510	580	581	581	581

See footnotes below.

SDS Screw — Factored Lateral Resistances – S-P-F Lumber

Size (in.)	Model No.	S-P-F Factored Lateral Resistances (lb.)										
		Wood Side Plate Thickness (in.)										
		¾	7/8	1	1 1/8	1 1/4	1 1/2	1 3/4	2 1/2	3	3 1/2	4 1/2
¼ x 2	SDS25200	205	—	—	—	—	—	—	—	—	—	—
¼ x 2 1/2	SDS25212	258	257	256	255	254	—	—	—	—	—	—
¼ x 3	SDS25300	312	310	309	308	307	319	319	—	—	—	—
¼ x 3 1/2	SDS25312	327	339	351	361	360	372	372	—	—	—	—
¼ x 4 1/2	SDS25412	327	339	351	363	375	421	448	399	399	—	—
¼ x 5	SDS25500	327	339	351	363	375	421	448	523	399	399	—
¼ x 6	SDS25600	327	339	351	363	375	421	448	523	523	523	399
¼ x 8	SDS25800	327	339	351	363	375	421	448	523	523	523	523

1. Factored resistances shown have been developed in accordance with 12.11 CSA O86-14. Apply the adjustment factors K_D , K_{SF} and K_T per 12.11.4.1 CSA O86-14 where applicable.

2. Values shown assume side and main members are the same species. For side plate thicknesses less than 1 1/2" values are based on Douglas Fir Plywood (DFP) for D.Fir-L and OSB or Canadian Softwood Plywood (CSP) for S-P-F. For mixed species applications, use the lower of values shown in both tables.

3. Factored lateral resistances shown assume full penetration into the main member.

4. Minimum spacing, edge and end distances shall be in accordance with 12.9.2.1 CSA O86-14 using a fastener diameter of 0.25".

5. Where predrilling is required use a 5/32" bit.

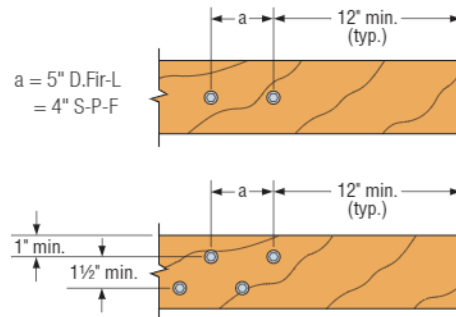
Load Tables, Technical Data and Installation Instructions

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

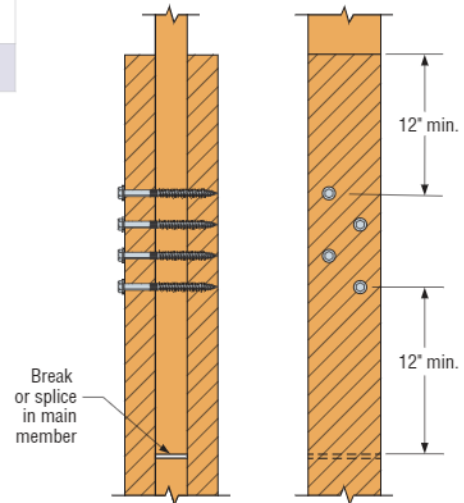
SDS Screw — Factored Lateral Resistances — Double-Shear Connections (lb.)

Size (in.)	Model No.	Side Members	Factored Lateral Resistance (lb.) (K _D = 1.00)	
			D.Fir-L	S-P-F
¼ x 3	SDS25300	¾" wood structural panel rated sheathing	725	650
¼ x 4½	SDS25412	2x solid sawn lumber	575	575

1. Factored resistances shown have been developed in accordance with 12.11 CSA O86-14. Apply the adjustment factors K_D, K_{SF} and K_T per 12.11.4.1 CSA O86-14 where applicable.
2. Factored resistances are based on 1½" thick main members and assume no gap between the side and main members.
3. For applications with 2x side members and mixed species, use the factored resistance based on the lower of the side member or the main member species.
4. The Designer is responsible for the design of wood members.



SDS Spacing Details

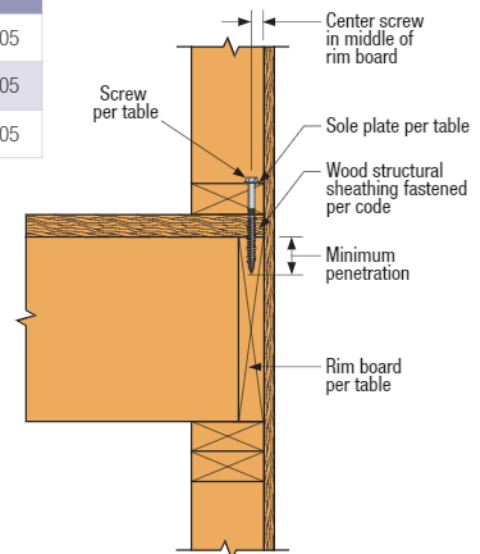


Typical SDS Double-Shear Installation

SDS Screw — Factored Lateral Resistances — Sole-to-Rim Connections (lb.)

Screw Size (in.)	Model No.	Minimum Penetration into Rim Board (in.)	Factored Lateral Resistances (lb.) per Screw (K _D = 1.15)							
			2x D.Fir-L Rim Board		2x S-P-F Rim Board		1½" LVL Rim Board		1½" LSL Rim Board	
			Sole Plate	Sole Plate	Sole Plate	Sole Plate	Sole Plate	Sole Plate	Sole Plate	Sole Plate
			D.Fir-L	S-P-F	D.Fir-L	S-P-F	D.Fir-L	S-P-F	D.Fir-L	S-P-F
¼" x 4.5	SDS25412	2	545	505	520	485	510	505	550	505
¼" x 5	SDS25500	2	545	505	530	485	510	505	550	505
¼" x 6	SDS25600	2	545	505	530	485	510	505	550	505

1. Factored resistances shown have been developed in accordance with 12.11 CSA O86-14 based on testing per ICC-ES AC233 and are limited to parallel-to-grain loading.
2. Apply the adjustment factors K_D, K_{SF} and K_T as per 12.11.4.1 CSA O86-14 when applicable.
3. Minimum spacing and end distances shall be per 12.11.2.2 CSA O86-14.
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 ½".
5. Wood structural panel up to 1½" 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 by the table is met.



Sole-to-Rim Board Assembly