



# **STRONG-DRIVE<sup>®</sup> STRUCTURAL WOOD SCREWS**

for Interior and Exterior  
Fastening Applications

◆ Easy to Drive

◆ Washer Head

◆ Tested Performance

# Strong-Drive® Structural Wood Screws

## High Strength and Easy Installation for Interior and Exterior Applications

Simpson Strong-Tie has expanded the Strong-Drive® SDW wood screw product line with two new screws designed to provide an easy-to-install, high-strength alternative to through-bolting and traditional lag screws. The new SDWS and SDWH structural wood screws are ideal for the contractor and do-it-yourselfer alike.

### FEATURES:

- Bold thread design that provides superior holding power
- Patented 4CUT™ tip that ensure fast starts, reduces installation torque and eliminates the need for pre-drilling in most applications
- Under-head nibs that offer greater installer control when seating the head
- Large washer head provides maximum bearing area



**SDWS**  
(6-lobe drive)



**SDWH**  
(Hex head)



# SDWS Structural Wood Screws

## Strong-Drive® SDWS Structural Wood Screw

The Simpson Strong-Tie® Strong-Drive® SDWS wood screw is specifically designed for structural wood-to-wood applications and is also ideal for a wide variety of projects where a high-strength attachment is needed. This 0.220" diameter fastener requires less torque to install than comparable fasteners, making it easier to drive, and the corrosion-resistant coating makes it suitable for interior or exterior applications.

### FEATURES:

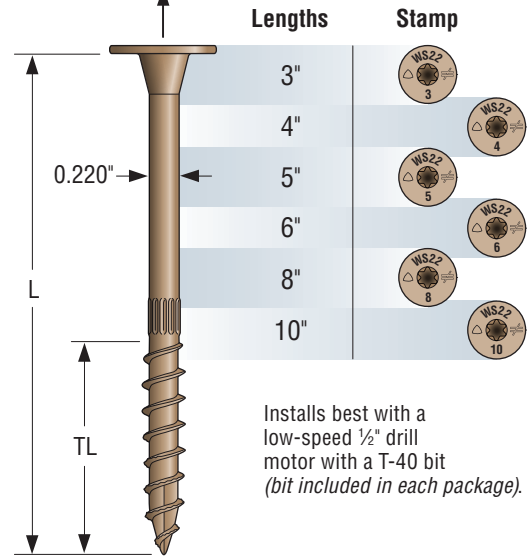
- Deep, 6-lobe recess reduces cam-out, making driving easier
- Low-profile head design provides a clean look and less interference after installation
- Double-barrier coating provides corrosion resistance equivalent to hot-dip galvanization, making it suitable for certain exterior and preservative-treated wood applications



The 6-lobe drive prevents cam-out and head stripping



Identification on all SDWS screw heads



Installs best with a low-speed 1/2" drill motor with a T-40 bit (bit included in each package).

### SDWS

U.S. Patents 5,897,280; 7,101,133, and patent pending

Available in retail packs as well as mini-bulk and bulk buckets

The SDWS screw is designed for structural fastening applications such as deck ledgers.



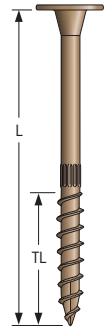
Easy to drive.



# SDWS Structural Wood Screws

## SDWS Screw Product Information

Size Dia. x L (in.)	Thread Length TL (in.)	Retail Pack <sup>1</sup>			Mini-Bulk Bucket <sup>1</sup>			Bulk <sup>1</sup>	
		Fasteners Per Pack	Packs Per Master Carton	Model No.	Fasteners Per Pack	Packs Per Master Carton	Model No.	Fasteners Per Pack	Model No.
0.220 x 3	1½	12	10	SDWS22300DB-RC12	50	6	SDWS22300DB-R50	950	SDWS22300DB
0.220 x 4	2¾	12	10	SDWS22400DB-RC12	50	6	SDWS22400DB-R50	600	SDWS22400DB
0.220 x 5	2¾	12	10	SDWS22500DB-RC12	50	6	SDWS22500DB-R50	600	SDWS22500DB
0.220 x 6	2¾	12	10	SDWS22600DB-RC12	50	6	SDWS22600DB-R50	500	SDWS22600DB
0.220 x 8	2¾	12	10	SDWS22800DB-RC12	50	6	SDWS22800DB-R50	400	SDWS22800DB
0.220 x 10	2¾	12	10	SDWS221000DBRC12	50	6	SDWS221000DB-R50	250	SDWS221000DB



1. Retail and mini-bulk packs include one deep, 6-lobe, T-40 driver bit; bulk packs include two driver bits.

## SDWS Screw Shear Loads, Douglas Fir-Larch and Southern Pine Lumber

Size Dia. x L (in.)	Model No.	Thread Length TL (in.)	DF/SP Allowable Loads									
			Shear (100)									
			Wood Side Member Thickness (in.)									
			1.5	2	2.5	3	3.5	4	4.5	6	8	
0.220 x 3	SDWS22300DB	1½	255	—	—	—	—	—	—	—	—	—
0.220 x 4	SDWS22400DB	2¾	405	405	305	—	—	—	—	—	—	—
0.220 x 5	SDWS22500DB	2¾	405	405	360	360	325	—	—	—	—	—
0.220 x 6	SDWS22600DB	2¾	405	405	405	405	365	365	355	—	—	—
0.220 x 8	SDWS22800DB	2¾	405	405	405	405	395	395	395	395	—	—
0.220 x 10	SDWS221000DB	2¾	405	405	405	405	395	395	395	395	395	395

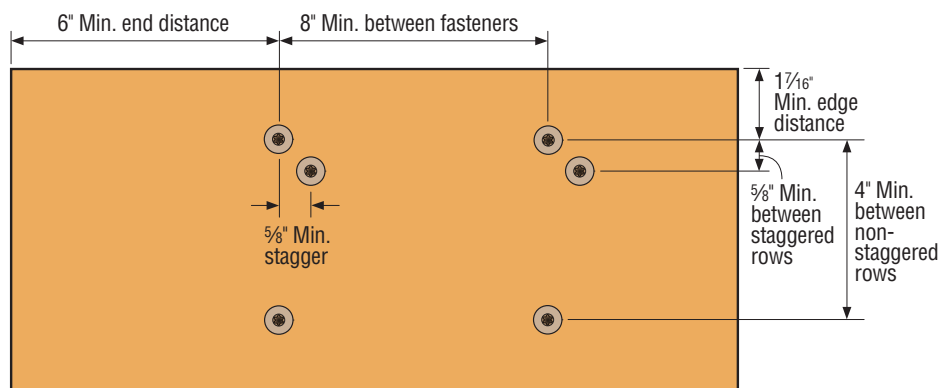
See footnotes below.

## SDWS Screw Shear Loads, Spruce Pine Fir and Hem Fir Lumber

Size Dia. x L (in.)	Model No.	Thread Length TL (in.)	SPF/HF Allowable Loads									
			Shear (100)									
			Wood Side Member Thickness (in.)									
			1.5	2	2.5	3	3.5	4	4.5	6	8	
0.220 x 3	SDWS22300DB	1½	185	—	—	—	—	—	—	—	—	—
0.220 x 4	SDWS22400DB	2¾	385	290	215	—	—	—	—	—	—	—
0.220 x 5	SDWS22500DB	2¾	405	290	290	290	195	—	—	—	—	—
0.220 x 6	SDWS22600DB	2¾	405	365	365	365	310	310	210	—	—	—
0.220 x 8	SDWS22800DB	2¾	405	365	365	365	310	310	280	280	—	—
0.220 x 10	SDWS221000DB	2¾	405	365	365	365	310	310	280	280	280	280

- All applications are based on full penetration into the main member. Full penetration is the screw length minus the side member thickness.
- 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.

- Minimum fastener spacing requirements to achieve table loads:  
6" end distance, 1¼" edge distance, ¾" between staggered rows of fasteners, 4" between non-staggered rows of fasteners and 8" between fasteners in a row.
- For in-service moisture content greater than 19%, use  $C_M = 0.7$ .



Spacing Requirements

# SDWS Structural Wood Screws

## Douglas Fir-Larch, Southern Pine, Spruce Pine Fir and Hem Fir Lumber Allowable Withdrawal Loads

Model No.	Fastener Length, L (in.)	Thread Length, TL (in.)	Reference Withdrawal Design Value, W (lbs/inch)		Max. Reference Withdrawal Design Value, W <sub>Max</sub> (lbs)	
			DF and SP Main Member	HF and SPF Main Member	DF and SP Main Member	HF and SPF Main Member
SDWS22300DB	3	1½	164	151	245	225
SDWS22400DB	4	2¾	179	160	425	380
SDWS22500DB	5	2¾	214	187	590	495
SDWS22600DB	6	2¾	214	187	590	495
SDWS22800DB	8	2¾	214	187	590	495
SDWS221000DB	10	2¾	214	187	590	495

1. The tabulated reference withdrawal design value, W, is in pounds per inch of the thread penetration into the side grain of the main member.
2. The tabulated reference withdrawal design value, W<sub>Max</sub>, is in pounds where the entire thread length must penetrate into the side grain of the main member.
3. Tabulated reference withdrawal design values, W and W<sub>Max</sub>, are shown at a C<sub>D</sub> = 1.0. Loads may be increased for load duration per the building code up to a C<sub>D</sub> = 1.6. Tabulated values must be multiplied by all applicable adjustment factors from the NDS as referenced in the IBC or IRC.
4. Embedded thread length is that portion held in the main member including the screw tip.
5. Values are based on the lesser of withdrawal from the main member or pull-through of a 1½" side member.
6. For in-service moisture content greater than 19%, use C<sub>M</sub> = 0.7.

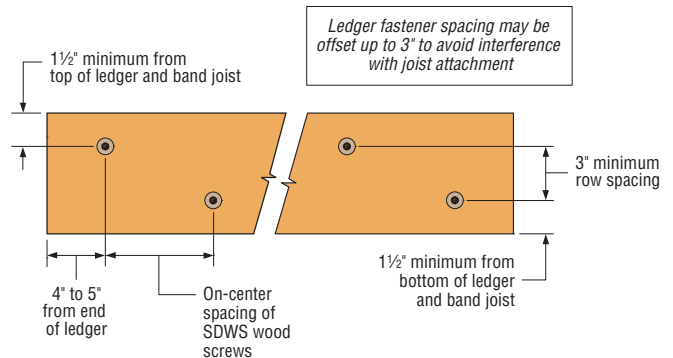
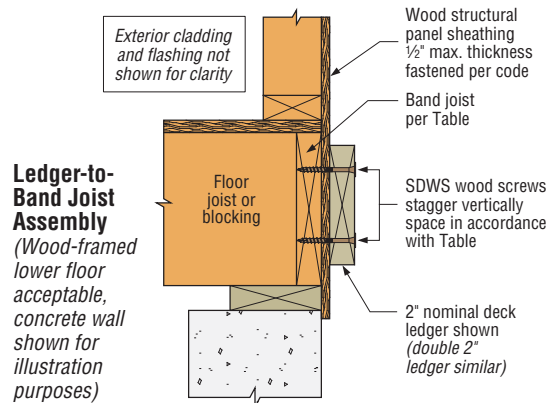
## 2009 IRC Compliant Spacing for a Sawn Lumber Deck Ledger to Band Joist

Loading Condition	Nominal Ledger Size	Screw Model No.	Band Joist Material and Minimum 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	SDWS22400DB	1" OSB	14	10	8	7	6	5	5
			1" LVL							
			1½" OSB							
			1½" LVL							
			1¼" LSL							
2x SP, DF – 2x SPF, HF	22	16	13	11	9	8	7			
60 psf Live 10 psf Dead	2x	SDWS22400DB	1" OSB	10	7	6	5	4	4	3
			1" LVL							
			1½" OSB							
			1½" LVL							
			1¼" LSL							
2x SP, DF – 2x SPF, HF	15	12	9	8	7	6	5			
40 psf Live 10 psf Dead	2-2x	SDWS22500DB	1" OSB	15	12	9	8	7	6	5
			1" LVL							
			1½" OSB							
			1½" LVL							
			1¼" LSL							
2x SP, DF – 2x SPF, HF	16	12	10	8	7	6	5			
60 psf Live 10 psf Dead	2-2x	SDWS22500DB	1" OSB	11	8	7	6	5	4	4
			1" LVL							
			1½" OSB							
			1½" LVL							
			1¼" LSL							
2x SP, DF – 2x SPF, HF	12	9	7	6	5	4	4			

1. SDWS screw spacing values are equivalent to 2009 IRC Table R502.2.2.1. The table above also provides SDWS screw spacing for a wider range of materials commonly used for band joists, and an alternate loading condition as required by some jurisdictions.
2. 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.
3. Fastener spacings are based on the lesser of single fastener ICC-ES AC233 testing of the Strong-Drive® SDWS screw with a safety factor of 5.0 or ICC-ES AC13 ledger

assembly testing with a factor of safety of 5.0. Spacing includes NDS wet service factor adjustment.

4. Multiple ledger plies shall be fastened together per code independent of the SDWS screws.
5. Screws shall be placed at least 1½" from the top or bottom of the ledger or band joist, 6" from the end of the ledger with 3" between rows and spaced per the table. See figure below.
6. Structural sheathing between the ledger and band shall be a maximum of ½" thick and fastened per code.



# SDWH Structural Wood Screws

## Strong-Drive® SDWH Structural Wood Screw

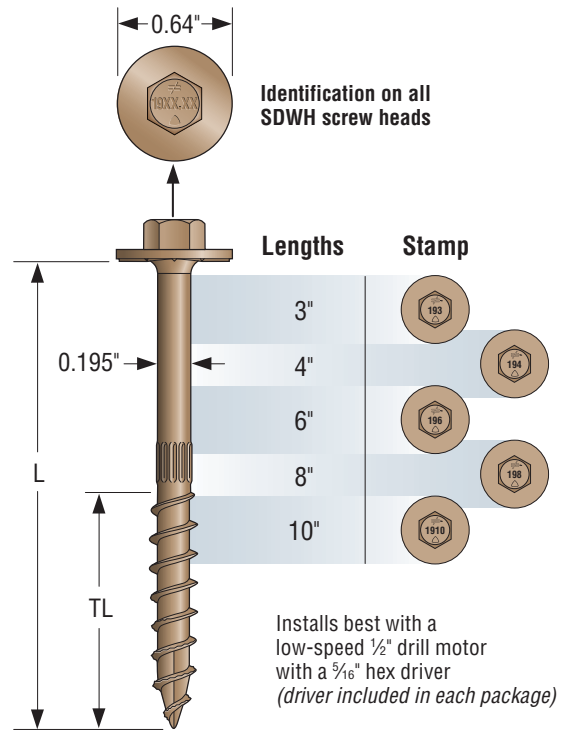
The Simpson Strong-Tie® Strong-Drive® SDWH screw is ideal for structural and general-purpose fastening applications where a hex-head drive is preferred. This 0.195" diameter fastener requires less torque to install than comparable fasteners, making it easier to drive; while the corrosion-resistant coating makes it suitable for interior and exterior applications.

### FEATURES:

- Large hex-washer head provides excellent bearing area for a secure connection
- Hex drive reduces cam-outs for easier driving
- Double-barrier coating provides corrosion resistance equivalent to hot-dip galvanization, making it suitable for certain exterior and preservative-treated wood applications



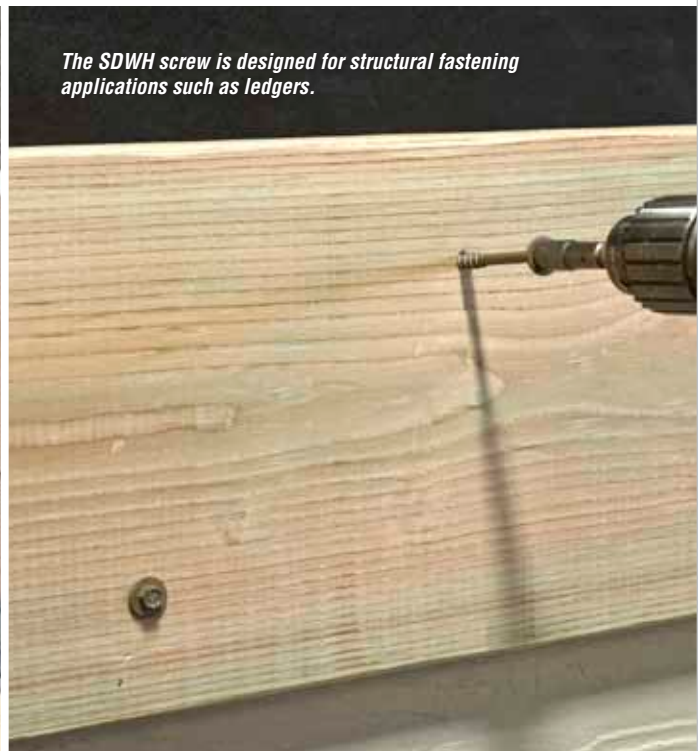
*Hex-washer head provides excellent bearing area*



*Available in retail packs as well as mini-bulk and bulk buckets*



*The SDWH can replace multiple smaller fasteners in many applications.*

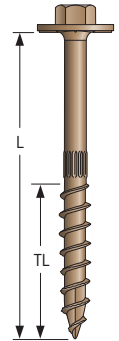


*The SDWH screw is designed for structural fastening applications such as ledgers.*

# SDWH Structural Wood Screws

## SDWH Screw Product Information

Size Dia. x L (in.)	Thread Length (TL) (in.)	Retail Pack <sup>1</sup>			Mini-Bulk <sup>1</sup>			Bulk <sup>1</sup>	
		Fasteners Per Pack	Packs Per Master Carton	Model No.	Fasteners Per Pack	Packs Per Master Carton	Model No.	Fasteners Per Pack	Model No.
0.195 x 3	1½	12	10	SDWH19300DB-RC12	50	6	SDWH19300DB-R50	1000	SDWH19300DB
0.195 x 4	2¾	12	10	SDWH19400DB-RC12	50	6	SDWH19400DB-R50	800	SDWH19400DB
0.195 x 6	2¾	12	10	SDWH19600DB-RC12	50	6	SDWH19600DB-R50	600	SDWH19600DB
0.195 x 8	2¾	12	10	SDWH19800DB-RC12	50	6	SDWH19800DB-R50	500	SDWH19800DB
0.195 x 10	2¾	12	10	SDWH191000DBRC12	50	6	SDWH191000DB-R50	250	SDWH191000DB



1. Retail and mini-bulk packs include one deep, 6-lobe, T-40 driver bit; bulk packs include two driver bits.

## SDWH Screw Shear Loads, Douglas Fir-Larch and Southern Pine Lumber

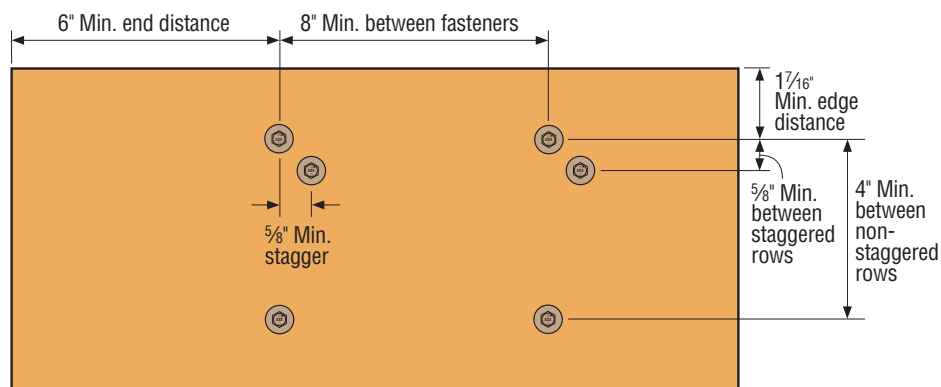
Size Dia. x L (in.)	Model No.	Thread Length TL (in.)	DF/SP Allowable Loads									
			Shear (100)									
			Wood Side Member Thickness (in.)									
			1.5	2	2.5	3	3.5	4	4.5	6	8	
0.195 x 3	SDWH19300DB	1½	285	—	—	—	—	—	—	—	—	—
0.195 x 4	SDWH19400DB	2¾	370	300	195	—	—	—	—	—	—	—
0.195 x 6	SDWH19600DB	2¾	370	265	265	265	265	265	225	225	—	—
0.195 x 8	SDWH19800DB	2¾	370	265	265	265	265	265	265	260	225	—
0.195 x 10	SDWH191000DB	2¾	370	265	265	265	265	265	265	260	260	225

See footnotes below.

## SDWH Screw Shear Loads, Spruce Pine Fir and Hem Fir Lumber

Size Dia. x L (in.)	Model No.	Thread Length TL (in.)	SPF/HF Allowable Loads									
			Shear (100)									
			Wood Side Member Thickness (in.)									
			1.5	2	2.5	3	3.5	4	4.5	6	8	
0.195 x 3	SDWH19300DB	1½	230	—	—	—	—	—	—	—	—	—
0.195 x 4	SDWH19400DB	2¾	330	235	195	—	—	—	—	—	—	—
0.195 x 6	SDWH19600DB	2¾	350	265	265	265	265	265	215	180	—	—
0.195 x 8	SDWH19800DB	2¾	350	265	265	265	265	265	265	215	215	—
0.195 x 10	SDWH191000DB	2¾	350	265	265	265	265	265	265	250	250	215

- All applications are based on full penetration into the main member. Full penetration is the screw length minus the side member thickness.
- 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.
- Minimum fastener spacing requirements to achieve table loads: 6" end distance, 1⅙" edge distance, ⅝" between staggered rows of fasteners, 4" between non-staggered rows of fasteners and 8" between fasteners in a row.
- For in-service moisture content greater than 19%, use  $C_M = 0.7$ .



Spacing Requirements

# SDWH Structural Wood Screws

## Douglas Fir-Larch, Southern Pine, Spruce Pine Fir and Hem Fir Lumber Allowable Withdrawal Loads

Model No.	Fastener Length, L (in.)	Thread Length, TL (in.)	Reference Withdrawal Design Value, W (lbs/inch)		Max. Reference Withdrawal Design Value, W <sub>Max</sub> (lbs)	
			DF and SP Main Member	HF and SPF Main Member	DF and SP Main Member	HF and SPF Main Member
SDWH19300DB	3	1½	177	120	265	180
SDWH19400DB	4	2¾	192	147	455	350
SDWH19600DB	6	2¾	197	164	545	450
SDWH19800DB	8	2¾	197	164	545	450
SDWH191000DB	10	2¾	197	164	545	450

1. The tabulated reference withdrawal design value, W, is in pounds per inch of the thread penetration into the side grain of the main member.
2. The tabulated reference withdrawal design value, W<sub>Max</sub>, is in pounds where the entire thread length must penetrate into the side grain of the main member.
3. Tabulated reference withdrawal design values, W and W<sub>Max</sub>, are shown at a C<sub>D</sub> = 1.0. Loads may be increased for load duration per the building code up to a C<sub>D</sub> = 1.6. Tabulated values must be multiplied by all applicable adjustment factors from the NDS as referenced in the IBC or IRC.
4. Embedded thread length is that portion held in the main member including the screw tip.
5. Values are based on the lesser of withdrawal from the main member or pull-through of a 1½" side member.
6. For in-service moisture content greater than 19%, use C<sub>M</sub> = 0.7.

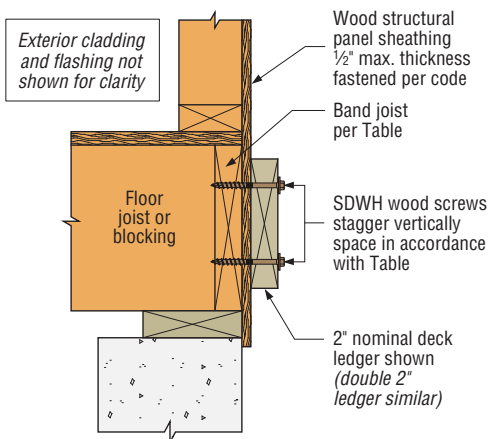
## 2009 IRC Compliant Spacing for a Sawn Lumber Deck Ledger to Band Joist

Loading Condition	Nominal Ledger Size	Screw Model No.	Band Joist Material and Minimum 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	SDWH19400DB	1" OSB	13	9	8	6	5	5	4
			1" LVL							
			1½" OSB	18	13	11	9	8	7	6
			1½" LVL							
			1¼" LSL	15	12	9	8	7	6	5
2x SP, DFL – 2x SPF, HF										
60 psf Live 10 psf Dead	2x	SDWH19400DB	1" OSB	9	7	5	5	4	3	3
			1" LVL							
			1½" OSB	13	10	8	6	5	5	4
			1½" LVL							
			1¼" LSL	11	8	7	6	5	4	4
2x SP, DFL – 2x SPF, HF										

1. SDWH screw spacing values are equivalent to 2009 IRC Table R502.2.2.1. The table above also provides SDWH screw spacing for a wider range of materials commonly used for band joists, and an alternate loading condition as required by some jurisdictions.
2. 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.
3. Fastener spacings are based on the lesser of single fastener ICC-ES AC233 testing of the Strong-Drive® SDWH screw with a safety factor of 5.0 or ICC-ES AC13 ledger assembly

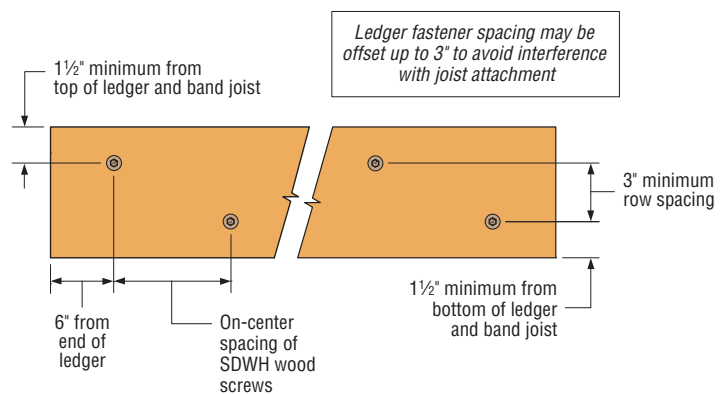
testing with a factor of safety of 5.0. Spacing includes NDS wet service factor adjustment.

4. Screws shall be placed at least 1½" from the top or bottom of the ledger or band joist, 6" from the end of the ledger with 3" between rows and spaced per the table. See figure below.
5. Structural sheathing between the ledger and band shall be a maximum of ½" thick and fastened per code.



### Ledger-to-Band Joist Assembly

(Wood-framed lower floor acceptable, concrete wall shown for illustration purposes)



### SDWH Screw Spacing Detail

This flier is effective until June 30, 2014, and reflects information available as of February 1, 2012. This information is updated periodically and should not be relied upon after June 30, 2014; contact Simpson Strong-Tie for current information and limited warranty or see [www.strongtie.com](http://www.strongtie.com).