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

The Strong-Drive® SDWS Timber screw may be installed with one or two layers of ⅝" gypsum board. This layer of gypsum is to be located between the side member and main member for a standard connection and between the ledger and sheathing of a ledger 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 ⅝" Gypsum Board

Size (in.)	Model No.	Thread Length (in.)	DF/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
0.22 x 4	SDWS22400DB	2.375	265	—	—	—	—	—	—	—	—
0.22 x 5	SDWS22500DB	2.75	265	265	235	—	—	—	-—	—	—
0.22 x 6	SDWS22600DB	2.75	265	265	265	265	235	—	—	—	—
0.22 x 8	SDWS22800DB	2.75	265	265	265	265	255	255	255	—	—
0.22 x 10	SDWS221000DB	2.75	265	265	265	265	255	255	255	255	—

See notes on following page.

SDWS Timber Screw – Douglas Fir-Larch and Southern Pine Lumber Allowable Single Shear Loads with Two Layers of ⅝" Gypsum Board

Size (in.)	Model No.	Thread Length (in.)	DF/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
0.22 x 4	SDWS22400DB	2.375	—	—	—	—	—	—	—	—	—
0.22 x 5	SDWS22500DB	2.75	265	265	—	—	—	—	—	—	—
0.22 x 6	SDWS22600DB	2.75	265	265	265	265	—	—	—	—	—
0.22 x 8	SDWS22800DB	2.75	265	265	265	265	255	255	255	—	—
0.22 x 10	SDWS221000DB	2.75	265	265	265	265	255	255	255	255	—

See notes on following page.

SDWS Timber Screw – Spruce-Pine-Fir and Hem-Fir Lumber Allowable Single Shear Loads with One Layer of ⅝" Gypsum Board

Size (in.)	Model No.	Thread Length (in.)	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
0.22 x 4	SDWS22400DB	2.375	250	—	—	—	—	—	—	—	—
0.22 x 5	SDWS22500DB	2.75	260	190	190	—	—	—	—	—	—
0.22 x 6	SDWS22600DB	2.75	260	235	235	235	200	—	—	—	—
0.22 x 8	SDWS22800DB	2.75	260	235	235	235	200	200	180	—	—
0.22 x 10	SDWS221000DB	2.75	260	235	235	235	200	200	180	180	—

See notes on following page.

Strong-Drive®
SDWS **TIMBER** Screw with Gypsum Board Interlayer(s) (cont.)

SDWS Timber Screw – Spruce-Pine-Fir and Hem-Fir Lumber Allowable Single Shear Loads with Two Layers of ⅝" Gypsum Board

Size (in.)	Model No.	Thread Length (in.)	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
0.22 x 4	SDWS22400DB	2.375	—	—	—	—	—	—	—	—	—
0.22 x 5	SDWS22500DB	2.75	260	190	—	—	—	—	—	—	—
0.22 x 6	SDWS22600DB	2.75	260	235	235	235	—	—	—	—	—
0.22 x 8	SDWS22800DB	2.75	260	235	235	235	200	200	180	—	—
0.22 x 10	SDWS221000DB	2.75	260	235	235	235	200	200	180	180	—

1. All applications are based on full penetration which equals fastener length minus 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. Minimum fastener spacing requirements: 6" end distance, 1⁷⁄₁₆" edge distance, ⅝" between staggered rows of fasteners, 4" between non-staggered rows of fasteners and 8" between fasteners in a row. Refer to SDWS Spacing Requirements figure on p. 292.
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.

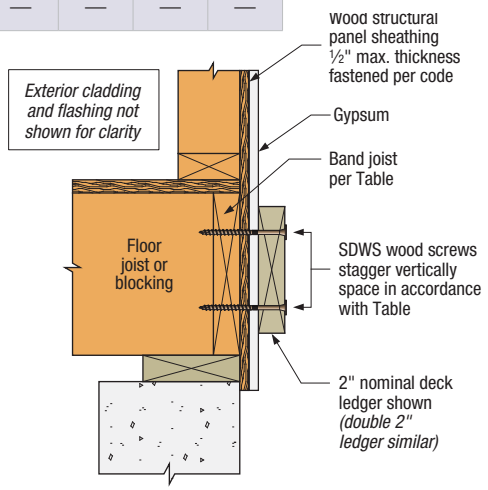
Strong-Drive®

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

SDWS Timber Screw – 2009, 2012 and 2015 IRC Compliant Spacing for a Sawn Lumber Ledger to Rim Board with One or Two Layers of ⅝" Gypsum Board

Loading Condition	Nominal Ledger Thickness (in.)	Model No.	Rim Board 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	For one layer of gypsum board use: SDWS22400DB For two layers of gypsum board use: SDWS22500DB	1" OSB 1" LVL	13	10	8	6	6	5	4
			1⅛" OSB 1⅝" LVL 1¼" LSL	15	11	9	8	7	6	5
			2x SP, DFL 2x SPF, HF	20	15	12	10	9	8	7
60 psf Live 10 psf Dead	2x	For one layer of gypsum board use: SDWS22400DB For two layers of gypsum board use: SDWS22500DB	1" OSB 1" LVL	9	7	6	5	4	—	—
			1⅛" OSB 1⅝" LVL 1¼" LSL	11	8	7	5	5	4	4
			2x SP, DFL 2x SPF, HF	14	11	9	7	6	5	5
100 psf Live 10 psf Dead	2x	For one layer of gypsum board use: SDWS22400DB For two layers of gypsum board use: SDWS22500DB	1" OSB 1" LVL	6	4	4	—	—	—	—
			1⅛" OSB 1⅝" LVL 1¼" LSL	8	6	5	4	—	—	—
			2x SP, DFL 2x SPF, HF	9	7	5	5	4	—	—
40 psf Live 10 psf Dead	(2) 2x	For one layer of gypsum board use: SDWS22600DB	1" OSB 1" LVL	14	11	9	7	6	5	5
			1⅛" OSB 1⅝" LVL 1¼" LSL	15	11	9	8	7	6	5
			2x SP, DFL 2x SPF, HF	15	11	9	8	7	6	5
60 psf Live 10 psf Dead	(2) 2x	For one layer of gypsum board use: SDWS22600DB	1" OSB 1" LVL	10	8	6	5	5	4	—
			1⅛" OSB 1⅝" LVL 1¼" LSL	11	8	6	5	5	4	4
			2x SP, DFL 2x SPF, HF	11	8	6	5	5	4	4
100 psf Live 10 psf Dead	(2) 2x	For one layer of gypsum board use: SDWS22600DB	1" OSB 1" LVL	7	5	4	—	—	—	—
			1⅛" OSB 1⅝" LVL 1¼" LSL	7	5	4	—	—	—	—
			2x SP, DFL 2x SPF, HF	7	5	4	—	—	—	—

1. Sawn rim board 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 the lesser of single fastener ICC-ES AC233 testing of the Strong-Drive® SDWS screw with a safety factor of 5.0 or ledger assembly testing based on ICC-ES AC13 with a factor of safety of 3.0. Spacing does NOT include NDS wet service factor adjustment.
3. Multiple ledger plies shall be fastened together per code independent of the SDWS screws.
4. SDWS screw spacing values are equivalent to 2009 IRC Table R502.2.2.1 and 2012/2015 IRC Table R507.2. The table also provides SDWS screw spacing for a wider range of materials commonly used for rim boards, and an alternate loading condition as required by some jurisdictions.
5. Rows of screws shall be vertically offset and evenly staggered. Screws shall be placed 1½" to 2" from the top and bottom of the ledger or rim board with 3" minimum and 6" maximum between rows and spaced per the table. End screws shall be located 6" from the end and at 1½" to 2" from the bottom of the ledger. For screws located at least 2" but less than 6" from the end, use 50% of the load per screw and 50% of the table spacing between the end screw and the adjacent screw, and for screws located between 2" and 4" from the end, predrill using a 5⁄32" drill.
6. The design installation permits a wood structural panel (WSP) interlayer in addition to one or two layers of gypsum board. If present, the WSP shall be a maximum of ½" thick, adjacent to the framing and fastened directly to the framing per the code.
7. Gypsum board must be attached as required per the building code.



Ledger-to-Rim Board Assembly

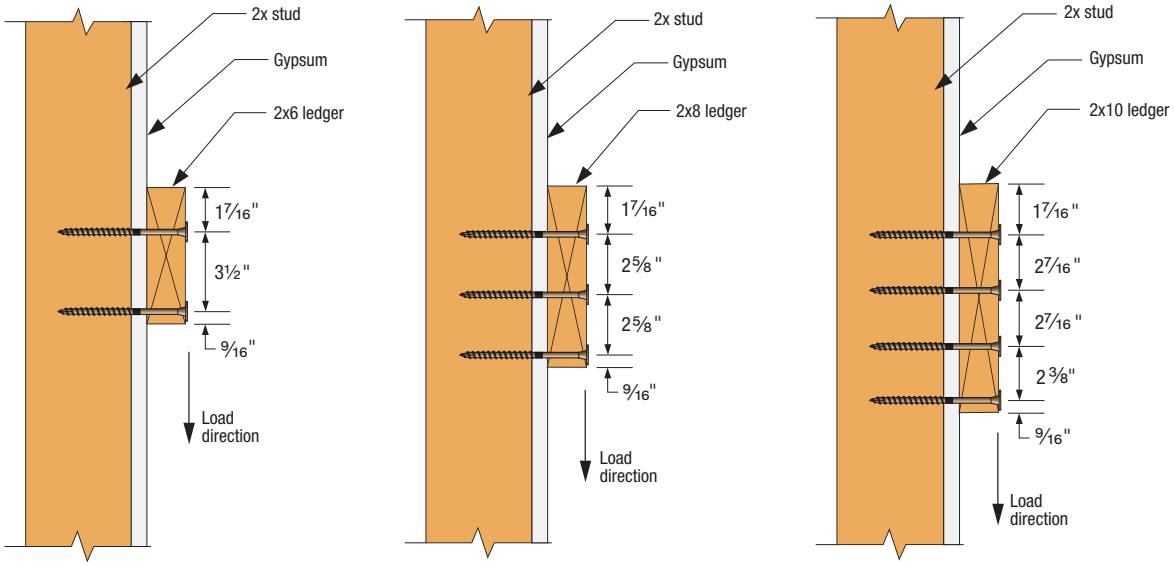
(Wood-framed lower floor acceptable, concrete wall shown for illustration purposes)

Strong-Drive®
SDWS **TIMBER** Screw with Gypsum Board Interlayer(s) (cont.)

SDWS Timber Screw – Allowable Shear Loads for Ledger Attachment to Studs with One or Two Layers of Gypsum Board

Model No.	Length (in.)	Ledger Size	Number of Screws per Stud	Allowable Shear Load (lb.)		
				DF	SPF/HF	SP
SDWS22600DB	6	2x6	2	410	365	510
		2x8	3	580	555	690
		2x10	4	675	675	—

1. Allowable loads shall be limited to parallel-to-grain loaded solid sawn main members (minimum 2" nominal). Wood side members shall be loaded perpendicular to grain.
2. Allowable loads are based on DF, SPF/HF, and SP wood members having a minimum specific gravity of 0.50, 0.42, and 0.55, respectively. 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 as permitted by the building code up to a C_D = 1.60. All adjustment factors shall be applied per the 2012 National Design Specification (NDS). For in-service moisture content greater than 19%, use C_M = 0.70.
4. Fasteners shall be centered in the stud and spaced as shown in the figure. The ledger minimum end distance is 6". The stud minimum end distance is 6" when the load is toward the end and 2½" when the load is away from the end.
5. Screws may be installed with an interlayer of wood structural panel (WSP) between the framing and the gypsum panel(s). When a WSP is present, it shall be a maximum of ½" thick, adjacent to the framing and fastened directly to the framing per code. Minimum screw penetration into the framing of 2½" shall be required; longer screw lengths shall be used to achieve the required penetration.
6. For LRFD values, the reference connection design values shall be adjusted in accordance with the NDS2012, section 10.3, or NDS-15, section 11.3.
7. For 2x10 SP ledgers, use the number of screws and allowable loads of the 2x8 SP ledger.
8. For 2x8 ledgers with two screws, use 2x6 values. For 2x10 ledgers with three screws, use 2x8 values. Spacings and edge distances shown in the figure are minimum dimensions.
9. For loads in the opposite direction from that shown in the figure, use the table values multiplied by: 0.50 for two screw connections, 0.67 for three screw connections, and 0.75 for four screw connections.
10. Gypsum board must be attached as required per the building code.
11. For ledger end distances between 2" and 6", use 50% of load and pre-drill with 5⁄32" drill bit.



Notes to Installer Regarding the Attachment of Ledgers to Studs:

The screws must be installed into the middle of the stud with a tolerance of 3⁄16" either side of center. Various methods can be used to ensure proper placement of the screws in the stud including snapping a chalk line, using a stud finder or prerocking (attaching only a strip of gypsum at the ledger location until the ledger is fastened to the studs). If proper screw placement into the stud cannot be achieved in the field, blocking should be installed between studs to receive and support the ledger screws.