

**SDW** Strong-Drive® Structural Wood Screws

Engineered Wood & Structural Composite Lumber Connectors

The Strong-Drive® SDW screw is a 0.22" diameter, high-strength structural wood screw specifically designed for fastening multi-ply wood members such as plated trusses, engineered-lumber products and solid-sawn lumber. The SDW installs easily with no pre-drilling and is available in optimized lengths for fastening 2, 3 and 4-ply trusses or 1 3/4" engineered lumber such as structural composite lumber (SCL). The SDW enables single-side fastening, while still allowing concurrent loading on both sides of the assembly to the full allowable head or tip-side load of the fastener.

- Low-profile head for reduced interference during handling or installation of hardware on the assembly
- High shear values enable wider screw spacing
- Bold thread design firmly cinches plies together to close gaps in multi-ply assemblies
- Optimal screw lengths provide maximum penetration

**MATERIAL:** Heat-treated carbon steel

**FINISH:** Black E-coat™

**WARNING:** Industry studies show that hardened fasteners can experience performance problems in wet or corrosive environments. Accordingly, the SDW wood screws should only be used in dry, interior and non-corrosive environments.

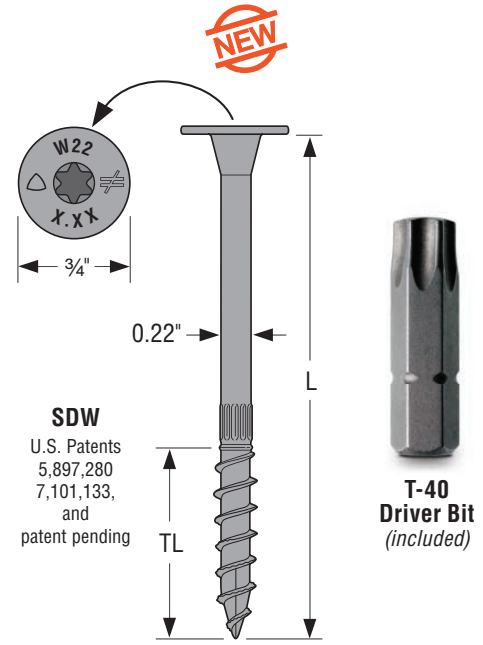
**INSTALLATION:** • Use all specified fasteners. See General Notes.

- SDW screws install best with a low-speed 1/2" drill and a T-40 6-lobe bit. The matched bit included with the screws is recommended for best results.
- Pre-drilling is typically not required. SDW screws may be installed through metal truss plates as approved by the Truss Designer, provided the requirements of ANSI/TPI 1-2007 Section 8.9.2 are met (*pre-drilling required through the plate using a maximum of 3/32" bit*).
- Screw heads that are countersunk flush to the wood surface are acceptable if the screw has not spun out.
- Individual screw locations may be adjusted up to 3" to avoid conflicts with other hardware or to avoid lumber defects.

**NOTES TO THE DESIGNER:**

1. Single-fastener shear loads for Tables 1-4, and withdrawal loads in this section, are based on testing per ICC-ES AC233. Allowable withdrawal load for DF/SP/SCL is 200 pounds per inch (lbs./in.) and for SPF/HF withdrawal is 150 lbs/in. Total allowable withdrawal load is based on actual thread penetration into the main member.
2. Allowable loads in tables are shown at the load duration factor of C<sub>D</sub> = 1.00 and shall be multiplied by all applicable adjustment factors per the NDS. Loads may be increased for load duration per the building code up to a C<sub>D</sub> of 1.6.
3. Minimum fastener spacing requirements: 6" end distance, 1 7/16" edge distance, 5/8" between staggered rows of fasteners, 4" between non-staggered rows of fasteners and 6" between fasteners in a row. Note exceptions in Table 5.
4. Maximum fastener spacing is recommended to not exceed 24" on-center except as approved by a qualified Designer.
5. For structural composite lumber (SCL = LVL, PSL or LSL) loads, assume an equivalent Specific Gravity of 0.50 or higher.
6. Tabular loads in this document are based on the capacity of the Simpson Strong-Tie® SDW22 fasteners. The capacity of the multi-ply assembly must be checked by a qualified Designer.
7. For top loaded solid sawn 2x built-up assemblies that are evenly loaded across the entire assembly width, the recommended fastener spacing is two rows at 32" o.c.. For top-loaded SCL 1 3/4" built up assemblies that are evenly loaded across the entire assembly width, the recommended fastener spacing is two rows at 24" o.c. for up to 18" deep members, and 3 rows at 24" o.c. for members deeper than 18".

**CODES:** See page 20 for Code Reference Key Chart.



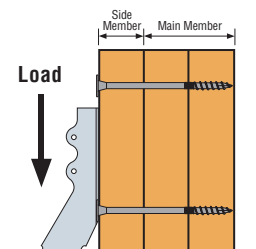
**Product Information**

Model No. <sup>2,3</sup>	Head Stamp Length	Nominal Screw Length (L) (in)	Typical Application <sup>1</sup>	Thread Length (TL) (in)	Retail Box <sup>3</sup> Quantity (1 Bit)	Retail Boxes/ Carton	Mini-Bulk Bucket Quantity <sup>2</sup> (1 Bit)	Bulk Bucket Quantity (2 Bits)
SDW22300	3.00	2 7/8	2x/Truss	1 7/16	50	6	250	950
SDW22338	3.37	3 3/8	SCL	1 7/16	50	6	250	900
SDW22438 <sup>4</sup>	4.37	4 3/8	2x/Truss Desert	1 7/16	50	4	200	600
SDW22458 <sup>4</sup>	4.62	4 5/8	2x/Truss	1 7/16	50	4	200	600
SDW22500	5.00	5	SCL/3x2PCT	1 7/16	50	4	200	600
SDW22600 <sup>5</sup>	6.00	6	2x/Truss Desert	1 7/16	50	4	200	500
SDW22638 <sup>5</sup>	6.37	6 3/8	2x/Truss	1 7/16	50	4	200	500
SDW22634	6.75	6 3/4	SCL/4x2PCT	1 7/16	50	4	200	500

1. Typical screw application key:  
2x/Truss = Solid-sawn dimensional lumber and plated wood trusses.  
2x/Truss Desert = Solid-sawn dimensional lumber and plated wood trusses in desert environments (*scant lumber*).  
SCL = 1 3/4" plies of structural-composite lumber.  
SCL/3x2PCT = 1 3/4" plies of structural-composite lumber or double 3x2 parallel-chord trusses.  
SCL/4x2PCT = 1 3/4" or 3 1/2" plies of structural-composite lumber or double 4x2 parallel-chord trusses.
2. To order mini-bulk buckets add the letters MB to the model number, e.g. SDW22458MB.
3. To order retail pack boxes add "-R50" to the model number, e.g. SDW22458-R50.
4. If assembly is less than or equal to 4 5/16" thick, use the SDW22438.
5. If assembly is less than or equal to 6 5/16" thick, use the SDW22600.

**Table 1 – Single Fastener Shear Loads for Solid Sawn and 2x Truss Loaded on Head Side**

Assembly	Model No.	Nominal Screw Length (L) (in)	Thread Length (TL) (in)	Nominal Side Member Thickness (in)	Main Member Penetration (in)	DF/SP Allowable Shear (lbs)	SPF/HF Allowable Shear (lbs)	Code Ref.
2-ply 2x/Truss	SDW22300	2 7/8	1 7/16	1 1/2	1 3/8 <sup>1</sup>	325	255	IP4, F32
3-ply 2x/Truss Desert	SDW22438	4 3/8	1 7/16	1 1/2	2 3/8	400	325	
3-ply 2x/Truss	SDW22458	4 5/8	1 7/16	1 1/2	2 3/8	400	325	
4-ply 2x/Truss Desert	SDW22600	6	1 7/16	1 1/2	4 1/2	400	340	
4-ply 2x/Truss	SDW22638	6 3/8	1 7/16	1 1/2	4 1/2	400	340	



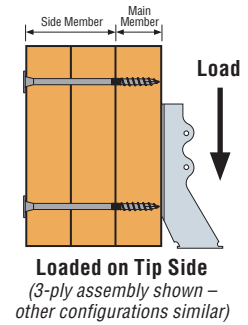
**Loaded on Head Side**  
(3-ply assembly shown – other configurations similar)

1. For minimum penetration into main member of 1 1/8", use 235 lbs. for DF/SP and 210 lbs. for SPF/HF.

**Table 2 – Single Fastener Shear Loads for Solid Sawn and 2x Truss Loaded on Tip Side**

Assembly	Model No.	Nominal Screw Length (L) (in)	Thread Length (TL) (in)	Nominal Side Member Thickness (in)	Main Member Penetration (in)	DF/SP Allowable Shear (lbs)	SPF/HF Allowable Shear (lbs)	Code Ref.
2-ply 2x/Truss	SDW22300	2½	1⅙	1½	1⅝ <sup>1</sup>	325	255	IP4, F32  170
3-ply 2x/Truss Desert	SDW22438	4⅝	1⅙	3	1⅝ <sup>1</sup>	275	255	
3-ply 2x/Truss	SDW22458	4⅝	1⅙	3	1⅝ <sup>1</sup>	275	255	
4-ply 2x/Truss Desert	SDW22600	6	1⅙	4½	1⅝ <sup>1</sup>	275	255	
4-ply 2x/Truss	SDW22638	6⅝	1⅙	4½	1⅝ <sup>1</sup>	275	255	

1. For minimum penetration into main member of 1⅝", use 235 lbs. for DF/SP and 210 lbs. for SPF/HF.



**LUMBER FASTENING IN DRY CLIMATES**

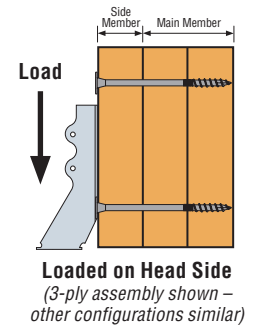
The highlighted regions on this map may experience drier conditions which can result in reduced lumber thickness (*scant lumber*) due to wood shrinkage. To help ensure optimum thread penetration into the main (*last*) member without excessive protrusion, Simpson Strong-Tie offers the 4⅝" and 6" lengths of the SDW screw, which are sized for the thinner members common in these "desert" climates (*see table above*). It is the responsibility of the Truss Manufacturer or contractor/installer to determine the appropriate fastener length for any given application. (*See tables and footnotes for minimum required penetration.*)

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**Table 3 – Single Fastener Shear Loads for LVL, PSL and LSL Loaded on Head Side**

Assembly	Model No.	Nominal Screw Length (L) (in)	Thread Length (TL) (in)	Nominal Side Member Thickness (in)	Main Member Penetration (in)	Allowable Shear (lbs)	Code Ref.
2-ply 1¼ SCL	SDW22338	3⅝	1⅙	1¼	1⅝ <sup>1</sup>	400	IP4, F32
3-ply 1¼ SCL	SDW22500	5	1⅙	1¼	3¼	400	
4-ply 1¼ SCL	SDW22634	6¾	1⅙	1¼	5	400	
2-ply 3½ SCL	SDW22634	6¾	1⅙	3½	3¼	400	

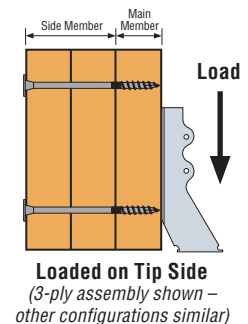
1. For minimum penetration into main member of 1⅝", use 300 lbs.



**Table 4 – Single Fastener Shear Loads for LVL, PSL and LSL Loaded on Tip Side**

Assembly	Model No.	Nominal Screw Length (L) (in)	Thread Length (TL) (in)	Nominal Side Member Thickness (in)	Main Member Penetration (in)	Allowable Shear (lbs)	Code Ref.
2-ply 1¼ SCL	SDW22338	3⅝	1⅙	1¼	1⅝ <sup>1</sup>	400	IP4, F32
3-ply 1¼ SCL	SDW22500	5	1⅙	3½	1½	300	
4-ply 1¼ SCL	SDW22634	6¾	1⅙	5¼	1½	300	170
2-ply 3½ SCL	SDW22634	6¾	1⅙	3½	3¼	400	

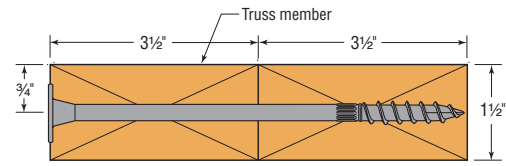
1. For minimum penetration into main member of 1⅝", use 300 lbs.



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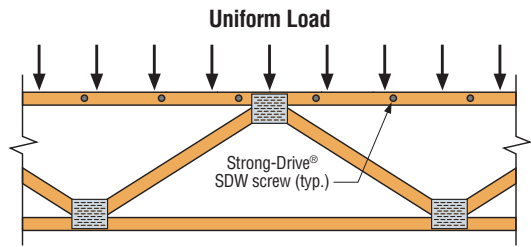
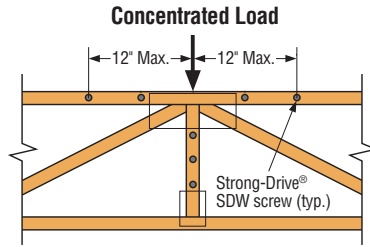
**Table 5 – Single Fastener Shear Loads for Two-Ply 3x2/4x2 Parallel-Chord Trusses Loaded on Either Side**

Assembly	Model No.	Nominal Screw Length (L) (in)	DF/SP Allowable Shear (lbs)	SPF/HF Allowable Shear (lbs.)	Code Ref.
2-ply 3x2 PCT	SDW22500	5	280	200	170
2-ply 4x2 PCT	SDW22634	6¾	280	200	



**SDW Screw Position in 2-Ply 4x2 Truss**  
(2-ply 3x2 similar)

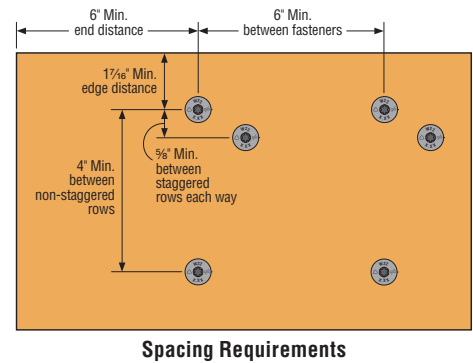
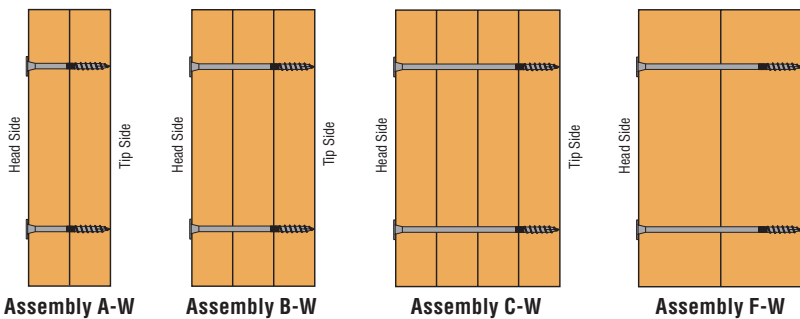
- To transfer uniform or concentrated loads applied to simply supported spans on assembly top chord:
  - Space screws as required to transfer half the load into the supporting truss.
  - Minimum screw spacing shall be 4" o.c.
- To transfer concentrated loads applied to simply supported spans on an assembly top chord or vertical web:
  - Concentrated loads must be applied at a panel point.
  - Screws to be installed within 12" of the concentrated load on top-chord assembly
- Gap between the trusses shall not exceed ½" o.c.
- Floor sheathing shall be screwed or nailed to each top-chord ply. (Fastener spacing per the applicable Code requirements, or 12" o.c.)
- SDW screws shall not be installed in areas where lumber wane exceeds ¼".
- Hangers on skewed girders:
  - Hanger loads not exceeding 34" o.c. on a skewed girder (resulting from uniformly spaced joists up to 24" o.c.) may be converted to a uniform load.
  - For girders with hanger load spacing in excess of 34" o.c. the loads shall be considered as concentrated loads at the applicable locations.
- Other configurations acceptable as long as approved by Truss Designer.



**Table 6 – Sideloaded Multi-Ply Assemblies – Allowable Uniform Load Applied to Either Outside Member**

Multiple Members		Nominal Screw Length (in)	Loaded Side	DF/SP						SPF/HF					
Assembly	Components			SDW @ 12" o.c.		SDW @ 16" o.c.		SDW @ 24" o.c.		SDW @ 12" o.c.		SDW @ 16" o.c.		SDW @ 24" o.c.	
		2 Rows	3 Rows	2 Rows	3 Rows	2 Rows	3 Rows	2 Rows	3 Rows	2 Rows	3 Rows	2 Rows	3 Rows		
A-W	2-ply 2x/Truss	2"	Either	1300	1950	975	1465	650	975	1020	1530	765	1150	510	765
B-W	3-ply 2x/Truss	4" or 4¾"	Head	1200	1800	900	1350	600	900	975	1465	730	1095	490	730
			Tip	825	1240	620	930	415	620	765	1150	575	860	385	575
C-W	4-ply 2x/Truss	6 or 6¾"	Head	1065	1600	800	1200	535	800	905	1360	680	1020	455	680
			Tip	735	1100	550	825	365	550	680	1020	510	765	340	510

- Each ply is assumed to carry same proportion of load.
- Loads may be applied to the head side and tip side concurrently provided neither published allowable load is exceeded. (Example: a 3-ply DF assembly with a head side load of 1300 plf and tip side load of 900 plf may be fastened together with 3 rows of SDW @ 16" o.c.)
- When hangers are installed on tip side, hanger face fasteners must be a minimum of 3" long.
- Tables are based on Main Member Penetration as noted in Tables 1 and 2.
- Hanger load spacing on the multi-ply assembly should not exceed 24" o.c. Exception: On a skewed girder, hanger loads up to 34" o.c. (resulting from joists uniformly spaced up to 24" o.c.) may be converted to a uniform load.



**Table 7 – Sideloaded Multi-Ply LVL, PSL and LSL Assemblies – Allowable Uniform Load Applied to Either Outside Member**

Multiple Members		Nominal Screw Length (in)	Loaded Side	SDW @ 12" o.c.		SDW @ 16" o.c.		SDW @ 24" o.c.	
Assembly	Components			2 Rows	3 Rows	2 Rows	3 Rows	2 Rows	3 Rows
A-W	2-ply SCL	3¾"	1600	2400	1200	1800	800	1200	
B-W	3-ply SCL	5"	Head	1200	1800	900	1350	600	900
			Tip	900	1350	675	1015	450	675
C-W	4-ply SCL	6¾"	Head	1065	1600	800	1200	535	800
			Tip	800	1200	600	900	400	600
F-W	2-ply SCL	6¾"	1600	2400	1200	1800	800	1200	

- Each ply is assumed to carry same proportion of load.
- Loads may be applied to the head side and tip side concurrently provided neither published allowable load is exceeded. (Example: a 3-ply assembly with a head side load of 1300 plf and tip side load of 1000 plf may be fastened together with 3 rows of SDW @ 16" o.c.)
- When hangers are installed on tip side, hanger face fasteners must be a minimum of 3" long.
- Tables are based on Main Member Penetration as noted in Tables 3 and 4.