



### EVALUATION SUBJECT: SIMPSON STRONG-TIE STRONG DRIVE® SDWC AND SWD WOOD SCREWS

**REPORT HOLDER:**  
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CSI Division: 06 00 00 – Wood, Plastics, and Composites  
CSI Section: 06 05 23 – Wood, Plastic, and Composite Fastenings

#### 1.0 SCOPE OF EVALUATION

##### 1.1 Compliance to the following codes & regulations:

- 2024, 2021, 2018, 2015, and 2012 International Building Code® (IBC)
- 2024, 2021, 2018, 2015, and 2012 International Residential Code® (IRC)
- 2023 City of Los Angeles Building Code (LABC) – attached Supplement
- 2023 City of Los Angeles Residential Code (LARC) – attached Supplement
- 2023 Florida Building Code, Building, 8th Edition, (FBC–Building) – attached supplement
- 2023 Florida Building Code, Residential, 8th Edition, (FBC–Residential) – attached supplement

##### 1.2 Evaluated in accordance with:

- ICC-ES AC233
- ICC-ES AC257

##### 1.3 Properties assessed:

- Structural
- Corrosion Resistance

#### 2.0 PRODUCT USE

The Simpson Strong-Tie Strong-Drive® SDWC TRUSS screws (SDWC15) and SWD DOUBLE-THREADED screws (SWD18DBB and SWD22DBB) described in this report are dowel-type threaded and self-drilling screws used for wood-to-wood connections. These fasteners comply with 2024, 2021, 2018, and 2015 IBC Section [2304.10](#) (2012 IBC Section [2304.9](#)). The fasteners are permitted when an engineered design is submitted in accordance with IRC Section [R301.1.3](#).

The Simpson Strong-Tie Strong-Drive® SDWC15450 and SWD may be used where fasteners are required to exhibit

corrosion resistance when exposed to adverse environmental conditions and/or in chemically treated wood, which are subject to limitations of Section [5.5](#) of this report, and are alternatives to hot-dipped-zinc-coated galvanized fasteners with a coating weight in compliance with [ASTM A153](#), Class D. Fasteners with these proprietary corrosion-resistant coatings were evaluated for contact with wood chemically treated with waterborne alkaline copper quaternary, Type (D) (ACQ-D), to a maximum retention level of 0.4 pcf (6.4 kg/m<sup>3</sup>), which was shown to be more corrosive than Chromated Copper Arsenate, Type C (CCA-C), Micronized Copper Azole (MCA), and Dispersed Copper Azole (μCA-C).

#### 3.0 PRODUCT DESCRIPTION

**3.1 General:** The SDWC screws ([Figure 1](#) of this report) are fully threaded with rolled threads spaced approximately at 7 threads per inch (0.28 threads/mm) and a type 17 point. The head is a cap-style head with a T-30 recess. The SWD screws ([Figure 2](#) of this report) are dual-threaded bodies with chisel points. The head is a cap-style head with a T-30 and T-40 for SWD18DBB and SWD22DBB, respectively. The SDWC15600 screws have a clear zinc coating and are acceptable for dry-service conditions, and the SDWC15450 and SWD screws have a proprietary black electro-coat applied over a clear zinc undercoating. [Table 1](#) of this report describes the screws recognized in this report, including the bending yield strength, tensile strength, and shear strength.

##### 3.2 Materials

**3.2.1** The SDWC screws are manufactured from C1022 steel, using a standard cold-forming process, and consist of heat-treated carbon steel compliant with ASTM A510.

The SWD screws are manufactured from SAE J403 Grade 10B21 steel, using a standard cold-forming process, and consist of heat-treated carbon steel compliant with EN 16120-2.

**3.2.2 Wood Members:** The wood side and main members shall consist of solid-sawn lumber with a specific gravity of 0.42 to 0.55 or a minimum of 0.8E grade structural composite lumber (e.g., LVL, PSL, LSL, glulam, etc.) for lateral and withdrawal loading of the SDWC screws, or a minimum 1.5E grade for lateral and withdrawal loading of the SWD screws. The structural composite lumber shall be recognized in an approved evaluation report and have an equivalent specific gravity of 0.50 minimum for lateral loading and 0.42 minimum for withdrawal loading of the SDWC screws and 0.50 minimum for lateral and withdrawal loading of the SWD screws. Tables 2, 3, 5, 6, 7, and 8 of this report include design values. The wood side members shall be as specified in those tables.

*The product described in this Uniform Evaluation Service (UES) Report has been evaluated as an alternative material, design or method of construction in order to satisfy and comply with the intent of the provision of the code, as noted in this report, and for at least equivalence to that prescribed in the code in quality, strength, effectiveness, fire resistance, durability and safety, as applicable, in accordance with Section 104.2.3 of the 2024 IBC and Section 104.11 of previous editions. This document shall only be reproduced in its entirety.*





Chemicals used to preservative-treat solid-sawn wood and structural composite lumber are limited to the following:

1. Alkaline Copper Quaternary Type D (ACQ-D), with a maximum retention level of 0.4 pcf (6.4 kg/m<sup>3</sup>).
2. Wood treatments proven to have lower levels of corrosivity compared to ACQ-D.

## 4.0 DESIGN AND INSTALLATION

### 4.1 Design

**4.1.1 General:** Reference lateral, withdrawal, and pull-through design values in the report are for allowable stress design (ASD) and shall be multiplied by all applicable adjustment factors specified in the ANSI/AWC NDS to determine adjusted design values, including wet service conditions specified in Section 11.3.3 of the [ANSI/AWC NDS – 2024, 2018, or 2015](#) (or Section 10.3.3 of the [ANSI/AWC NDS – 2012](#)). The fastener strength taken from [Table 1](#) of this report shall not be multiplied by the ANSI/AWC NDS adjustment factors.

Local stresses in connections using multiple fasteners shall be checked in accordance with Section 11.1.2 of ANSI/AWC NDS – 2024, 2018, or 2015 (or Section 10.1.2 of the ANSI/AWC NDS – 2012). Structural members forming the connection shall be designed in accordance with the IBC.

The following requirements shall be observed when designing with the fasteners:

1. The allowable load for a single-screw connection in which the screw is subject to tension is the lesser of: (a) the reference withdrawal design value given in [Tables 3 and 7](#) of this report, adjusted by all applicable adjustment factors; (b) the reference head pull-through design value given in [Tables 3 and 8](#) of this report, adjusted by all applicable adjustment factors; and (c) the allowable screw tension strength given in [Table 1](#) of this report.
2. The allowable lateral load for a single-fastener connection is the lesser of: (a) the reference lateral design value given in [Tables 2, 5, and 6](#) of this report, adjusted by all applicable adjustment factors, and (b) the allowable screw shear strength given in [Table 1](#) of this report.
3. Connections containing multiple fasteners shall be designed in accordance with Sections 11.2.2 and 12.6 of ANSI/AWC NDS – 2024, 2018, or 2015 (or Sections 10.2.2 and 11.6 of ANSI/AWC NDS – 2012).
4. Where the screws are subjected to combined lateral and withdrawal loads, connections shall be designed in accordance with Section 12.4.1 of ANSI/AWC NDS – 2024, 2018, or 2015 (or Section 11.4.1 of ANSI/AWC NDS – 2012).
5. When designing a connection, the structural members shall be checked for load-carrying capacity in accordance with Section 11.1.2 of ANSI/AWC NDS –

2024, 2018, or 2015 (or Section 10.1.2 of the ANSI/AWC NDS – 2012) and local stresses within the connection shall be checked against Appendix E in the ANSI/AWC NDS to ensure the capacity of the connection and fastener group.

6. When the use is in structural composite lumber products, the minimum fastener end and edge distances and spacings shall be in accordance with [Tables 4 and 9](#) of this report or in accordance with the recommendations of the structural composite lumber manufacturer, whichever is more restrictive.
7. The SDWC15450, SWD18DBB, and SWD22DBB wood screws have corrosion-resistant coatings that are recognized for use in wood members with chemical treatments as set forth in Section [3.2.2](#) of this report. These fasteners shall be limited to use in applications and limitations defined in [Table 10](#) of this report.

**4.1.2 Lateral Design Values:** Reference lateral (Z) design values for SDWC, SWD18DBB, and SWD22DBB wood screws for single shear wood-to-wood connections loaded perpendicular to grain and parallel to grain are shown in [Tables 2, 5, and 6](#) of this report.

**4.1.3 Reference Withdrawal Design Values:** Reference withdrawal (W) design values for SDWC and SWD wood screws are shown in [Tables 3 and 7](#) of this report and are given in pounds per inch of thread penetration into the main member. Edge distance, end distance, and spacing requirements for screws loaded in withdrawal and not loaded laterally are shown in Table 11 of this report.

**4.1.4 Pull-through Design Values:** Reference pull-through design values for SDWC, SWD18DBB, and SWD22DBB wood screws are shown in [Tables 3](#) and 8 of this report.

**4.2 Installation:** The SDWC, SWD18DBB, and SWD22DBB wood screws shall be installed in accordance with the manufacturer's installation instructions, the evaluation report, and the codes listed in Section [1.1](#) of this report. Installation may be performed without pre-drilling wood members. Edge distances, end distances, and spacing of the screws shall be sufficient to prevent splitting of the wood, or as required by [Tables 4 and 9](#) of this report, whichever is more restrictive. The top of the screw head shall be installed flush with the surface of the member being connected.

## 5.0 LIMITATIONS

The Simpson Strong-Tie Strong-Drive® SDWC and SWD described in this report comply with, or are suitable alternatives to what is specified in, those codes listed in Section [1.0](#) of this report, subject to the following limitations:

**5.1** The fasteners shall be manufactured, identified, and installed in accordance with the manufacturer's published installation instructions, this report, and the applicable code. A copy of the instructions shall be available at the job site



continuously during installation. If there is a conflict between this report and the manufacturer's published installation instructions, the more restrictive shall govern.

**5.2** Calculations and details showing compliance with this report shall be submitted to the building official. The calculations and details shall be prepared by a registered design professional where required by the statutes of the jurisdiction in which the project is to be constructed.

**5.3** Design and installation shall conform to Section [4.0](#) of this report.

**5.4** Use of fasteners in locations exposed to saltwater or saltwater spray is outside the scope of this evaluation report.

**5.5** The SDWC and SWD wood screws are manufactured under a quality control program with inspections by IAPMO Uniform ES.

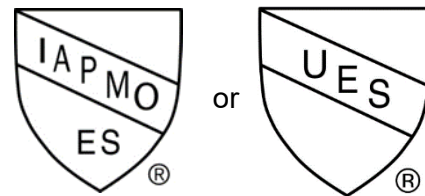
## 6.0 SUBSTANTIATING DATA

**6.1** Data and test reports submitted are from laboratories in compliance with [ISO/IEC 17025](#) and in accordance with the ICC-ES Acceptance Criteria for Alternate Dowel-type Threaded Fasteners (AC233).

**6.2** Data in accordance with the ICC-ES Acceptance Criteria for Corrosion-Resistant Fasteners and Evaluation of Corrosion Effects of Wood Treatments (AC257).

## 7.0 IDENTIFICATION

The packaging for the wood screws is labeled with the fastener designation or type, the Simpson Strong-Tie Company name and address, the fastener size and length, the fastener finish, and the IAPMO UES evaluation report number (ER-262). Each SDWC screw head is marked with the No-Equal<sup>®</sup> symbol ( $\neq$ ) and the screw length, as shown in Table 1 of this report. For SWD screws, each underside of the head is marked with a "GX". A die-stamp label may also substitute for the label. Either IAPMO UES Mark of Conformity may also be used as follows:



**IAPMO UES ER-262**

For additional information about this evaluation report please visit [www.uniform-es.org](http://www.uniform-es.org) or email us at [info@uniform-es.org](mailto:info@uniform-es.org)

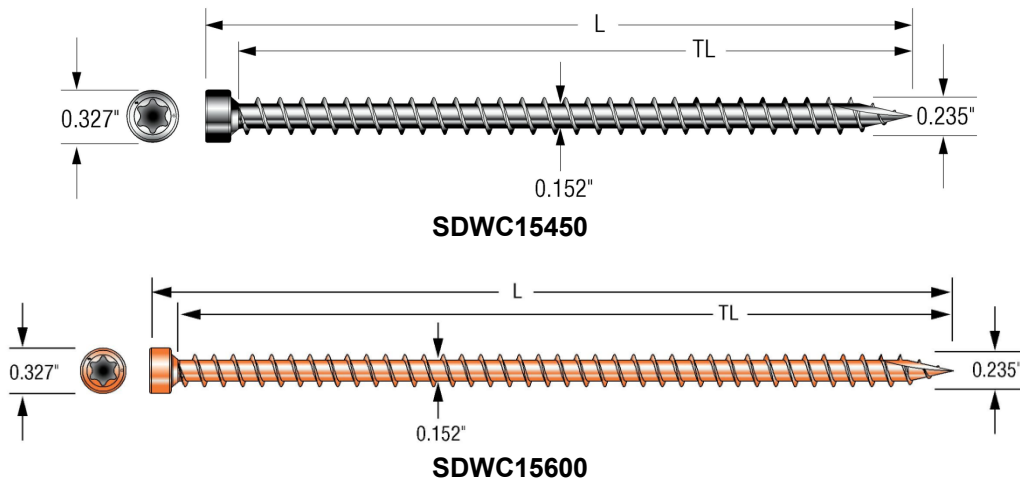


**TABLE 1 – SDWC AND SWD WOOD SCREW SPECIFICATIONS, ALLOWABLE BENDING YIELD STRENGTH, AND FASTENER ALLOWABLE STEEL STRENGTH**

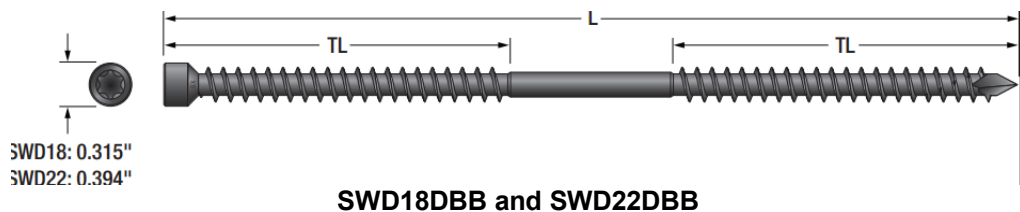
MODEL	HEAD MARKING	FASTENER LENGTH <sup>1</sup> L (in.)	THREAD <sup>2</sup> LENGTH (in.)	UNTHREADED SHANK DIAMETER (in.)	MAJOR THREAD DIAMETER (in.)	MINOR THREAD (ROOT) DIAMETER (in.)	HEAD DIAMETER (in.)	FASTENER ALLOWABLE STEEL STRENGTH <sup>4</sup>		
								Bending Yield Strength <sup>3</sup> (F <sub>yb</sub> ) (psi)	Tension (lbf)	Shear (lbf)
SDWC15450	4.5	4.5	4 1/4	-	0.235	0.152	0.327	195,000	1,160	815
SDWC15600	6	6.0	5 3/4							
SWD18212DBB	GX	2.5	1 1/8	0.180	0.256	0.157	0.315	180,000	965	680
SWD18312DBB	GX	3.5	1 5/8	0.180						
SWD18614DBB	GX	6.25	2 1/2	0.180						
SWD22812DBB	GX	8.5	3 3/4	0.235	0.307	0.213	0.394	180,000	1,840	1,240
SWD221034DBB	GX	10.75	4 1/4	0.235						

For SI: 1 inch=25.4 mm, 1 psi=6.89 kPa, 1 lbf=4.45 N

- For purposes of measuring overall fastener length, screw fasteners are measured from the top of the head to the bottom of the tip.
- The length of the thread includes the tip. Figures 1 and 2 of this report show the location of the dimensions.
- Bending yield strength was determined in accordance with methods specified in [ASTM F1575](#) and based on the minor thread (root) diameter.
- Allowable connection loads include consideration of fastener properties. [Tables 3](#) and [4](#) of this report provide allowable reference lateral (Z), withdrawal (W), and pull-through design values for the screws in wood-to-wood connections.



**FIGURE 1 – SDWC SCREWS**



**FIGURE 2 – SWD SCREWS**



**TABLE 2 – REFERENCE LATERAL (Z) DESIGN VALUES FOR WOOD-TO-WOOD CONNECTIONS** <sup>1,2,3,4,7</sup>

MODEL	FASTENER LENGTH (in.)	THREAD LENGTH TL (in.)	NOMINAL SIDE MEMBER THICKNESS	NOMINAL MAIN MEMBER THICKNESS	LATERAL DESIGN VALUE (Z) FOR SINGLE SHEAR (TWO-MEMBER) CONNECTIONS (lbf.)					
					Z <sub>para</sub> <sup>5</sup>			Z <sub>perp</sub> <sup>6</sup>		
					SP	DF	SPF	SP	DF	SPF
SDWC15450	4½	4¼	2x (Face)	2x (End Grain)	-	-	-	225	205	192
SDWC15600	6	5¾	(2)2x (Face)	2x (Edge)	245	240	180	240	240	240
			2x (Face)	2x (End Grain)	-	-	-	225	205	192
			(2)2x (Face)	2x (End Grain)	-	-	-	225	225	186

For SI: 1 inch = 25.4 mm, 1 ksi = 6.89 Mpa, 1 lbf = 4.45 N

- The connection conditions of this table are for specific intended applications. Reference lateral design values for all other shear connections shall be calculated in accordance with the [ANSI/AWC NDS](#). The minimum fastener penetration into the main member shall be 1.0 inch.
- The main and side members shall be wood having a minimum ANSI/AWC NDS-referenced specific gravity of 0.50 for DF, 0.55 for SP, and 0.42 for SPF and HF. Lateral table values for sawn lumber are also applicable for fasteners installed into structural composite lumber, described in Section [3.2.2](#) of this report.
- Reference lateral design values (Z) shall be multiplied by all applicable adjustment factors, including the load duration factor, C<sub>D</sub>, from the ANSI/AWC NDS as referenced in the IBC or IRC.
- DF is Douglas Fir-Larch. SP is Southern Pine. SPF is Spruce-Pine-Fir.
- Parallel to grain loading in the side member and perpendicular to grain loading in the main member.
- Perpendicular to grain loading in the side member and perpendicular to grain loading in the main member, except for 2x (edge) where the main member is loaded parallel to the grain.
- Specific gravities for each species combination are based on values in 2024, 2018, and 2015 [ANSI/AWC NDS](#) Table 12.3.3A ([2012 ANSI/AWC NDS](#) Table 11.3.3A).

**TABLE 3 – REFERENCE WITHDRAWAL (W) AND PULL-THROUGH DESIGN VALUES FOR WOOD-TO-WOOD CONNECTIONS** <sup>1,2,3,4,8</sup>

MODEL	FASTENER LENGTH (in.)	THREAD LENGTH (in.)	NOMINAL MEMBER THICKNESS	WITHDRAWAL DESIGN VALUE (W) (lbf./in.) <sup>5,7</sup>			PULL-THROUGH DESIGN VALUE (lbf./in.) <sup>6</sup>		
				SP	DF	SPF	SP	DF	SPF
SDWC15450 SDWC15600	4½	4¼	2x (Edge)	250	230	149	-	-	-
			2x (End Grain)	200	140	103	208	179	175
	6	5¾	2x (Face)	210	177	118	255	195	159
			(2) 2x (Face)	220	199	163	240	225	188

For SI: 1 inch = 25.4 mm, 1 ksi = 6.89, 1 lbf = 4.45 N

- The reference withdrawal and pull-through values are in pounds per inch of the thread penetration into the main member and a minimum 1½ inch thick side member, respectively.
- The reference withdrawal and pull-through design values shall be multiplied by all applicable adjustment factors in the ANSI/AWC NDS, including the load duration factor, C<sub>D</sub>, as referenced in the IBC or IRC.
- Screws shall be installed into the side grain of the main member with the screw axis at a 90-degree angle to the surface.
- Specific gravities for each species combination are based on values in 2024, 2018, and 2015 ANSI/AWC NDS Table 12.3.3A ([2012 ANSI/AWC NDS](#) Table 11.3.3A).
- The reference withdrawal values shall be multiplied by the length of thread penetration in the main member. The length includes the threaded tip.
- The reference pull-through values shall be multiplied by the length of thread penetration in the side member.
- The main members shall be wood having a minimum ANSI/AWC NDS-referenced specific gravity of 0.50 for DF, 0.55 for SP, and 0.42 for SPF and HF. Withdrawal table values for sawn lumber are also applicable for fasteners installed into structural composite lumber described in Section [3.2.2](#) of this report.
- DF is Douglas Fir-Larch. SP is Southern Pine. SPF is Spruce-Pine-Fir. HF is Hem-Fir.

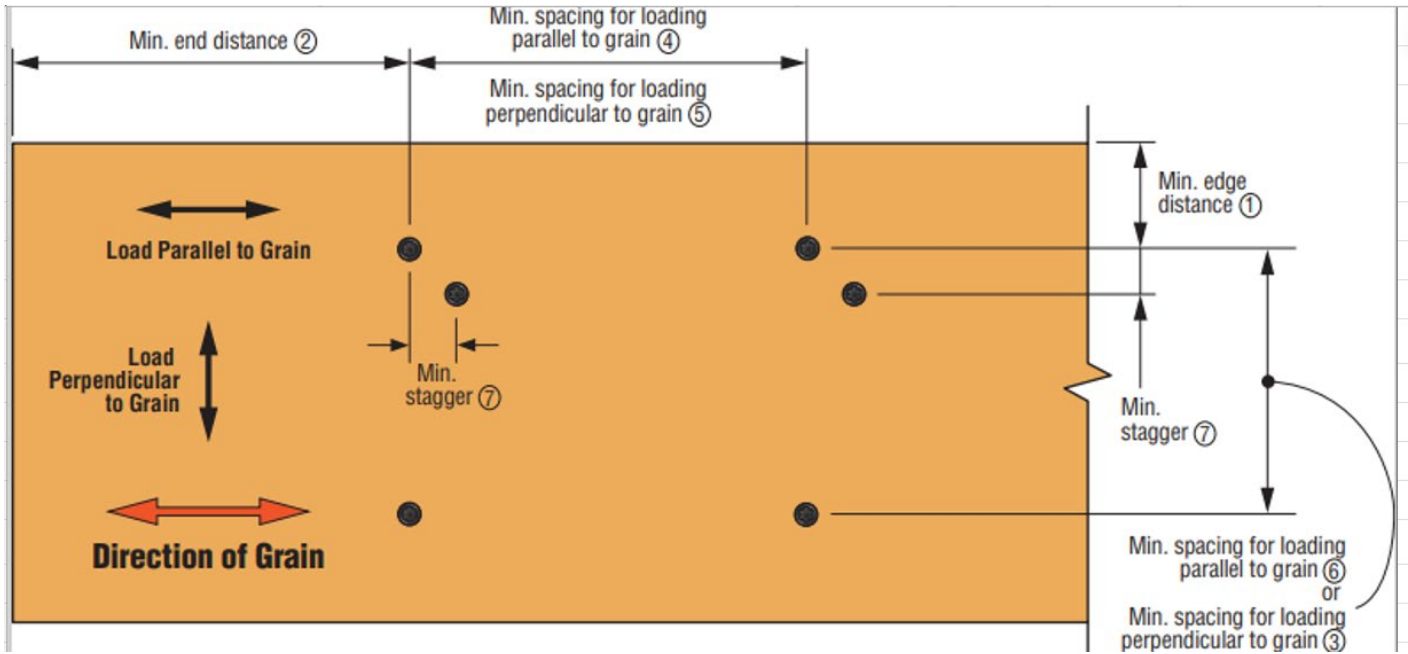


FIGURE 3 – CONNECTION GEOMETRY - SDWC SCREWS

TABLE 4 – CONNECTION GEOMETRY REQUIREMENTS AS ILLUSTRATED IN FIGURE 3 OF THIS REPORT<sup>1</sup>

CONDITION <sup>1</sup>	DIRECTION OF LOAD TO GRAIN	ID	MINIMUM DISTANCE OR SPACING (in.)
Edge Distance	Perpendicular	①	1/2
	Parallel	①	1/2
End Distance	Perpendicular	②	1
	Parallel	②	2
Spacing Between Fasteners in a Row	Perpendicular	③	2 3/8
	Parallel	④	3 1/2
Spacing Between Rows of Fasteners	Perpendicular	⑤	1
	Parallel	⑥	1
Spacing Between Staggered Rows	Perpendicular or Parallel	⑦	1/2

For SI: 1 inch = 25.4 mm, 1 lbf = 4.45N

<sup>1</sup> Edge distances, end distances, and spacings of the screws shall be sufficient to prevent splitting of the wood, or as required by this table, or when applicable, as recommended by the structural composite lumber manufacturer, whichever is the more restrictive.



**TABLE 5– REFERENCE LATERAL (Z) DESIGN VALUES FOR WOOD-TO-WOOD CONNECTIONS WITH SWD WOOD SCREWS FOR DF/SP WOOD<sup>1-5</sup>**

MODEL	THREAD LENGTH (in.)	ALLOWABLE SHEAR LOADS (lbf)				
		Wood Side Member Thickness (in.)				
		0.75	1.5	3.5	5.5	7.5
SWD18212DBB	1 1/8	134	156	-	-	-
SWD18312DBB	1 5/8	134	220	-	-	-
SWD18614DBB	2 1/2	134	220	325	-	-
SWD22812DBB	3 3/4	163	220	325	450	-
SWD221034DBB	4 1/4	163	220	325	430	300

For **SI**: 1 inch = 25.4 mm, 1 ksi = 6.89 MPa, 1 lbf = 4.45 N.

- The main and side members shall be wood having a minimum ANSI/AWC NDS-referenced specific gravity of 0.55 for SP and 0.50 for DF. Lateral table values for sawn lumber are also applicable for fasteners installed into structural composite lumber described in Section 3.2.2 of this report. When the specific gravities or equivalent specific gravities of the main member and side member are different, the design values of the wood with the lowest specific gravity shall be used.
- Tabulated lateral design values (Z) are shown at a  $C_D = 1.0$ . Loads may be increased for load duration in accordance with the IBC or IRC up to a  $C_D = 1.6$ . Tabulated values shall be multiplied by all applicable adjustment factors from the ANSI/AWC NDS as referenced in the IBC or IRC. Where the in-service moisture content is greater than 19 percent,  $C_M = 0.70$ .
- Screws shall be installed straight into the side grain of the wood main member with the screw axis at a 90-degree angle to the wood fibers.
- Minimum main member thickness shall be equal to the screw length minus the side member thickness.
- SP is Southern Pine. DF is Douglas Fir-Larch.

**TABLE 6 – REFERENCE LATERAL (Z) DESIGN VALUES FOR WOOD-TO-WOOD CONNECTIONS WITH SWD WOOD SCREWS FOR SPF/HF<sup>1,2,3,4,5</sup>**

MODEL	THREAD LENGTH (in.)	ALLOWABLE SHEAR LOADS (lbf)				
		Wood Side Member Thickness (in.)				
		0.75	1.5	3.5	5.5	7.5
SWD18212DBB	1 1/8	109	103	-	-	-
SWD18312DBB	1 5/8	109	159	-	-	-
SWD18614DBB	2 1/2	109	159	225	-	-
SWD22812DBB	3 3/4	112	155	225	290	-
SWD221034DBB	4 1/4	112	155	225	330	275

For **SI**: 1 inch = 25.4 mm, 1 ksi = 6.89 MPa, 1 lbf = 4.45 N.

- The main and side members shall be solid-sawn lumber having a minimum ANSI/AWC NDS-referenced specific gravity of 0.42 for SPF and 0.43 for HF. The tabulated values for sawn lumber are also applicable for fasteners installed into structural composite lumber described in Section 3.2.2 of this report. When the specific gravities or equivalent specific gravities of the main member and side member are different, the design values of the wood with the lowest specific gravity shall be used.
- Tabulated lateral design values (Z) are shown using a  $C_D = 1.0$ . Loads may be increased for load duration in accordance with the ANSI/AWC NDS up to a  $C_D = 1.6$ . Tabulated values shall be multiplied by all applicable adjustment factors from the ANSI/AWC NDS as referenced in the IBC or IRC. Where the in-service moisture content is greater than 19 percent,  $C_M = 0.58$ .
- Screws shall be installed through the side member straight into the side grain of the wood main member with the screw axis at a 90-degree angle to the wood fibers.
- Minimum main member thickness shall be equal to the screw length minus the side member thickness.
- HF is Hem-Fir. SPF is Spruce-Pine-Fir.



**TABLE 7 – REFERENCE WITHDRAWAL (W) DESIGN VALUES FOR WOOD-TO-WOOD CONNECTIONS WITH SWD WOOD SCREWS<sup>1,4,5,6,7</sup>**

MODEL	FASTENER LENGTH, L (in.)	THREAD LENGTH, TL (in.)	REFERENCE WITHDRAWAL DESIGN VALUE, W (lbf/in.) <sup>2</sup>		MAX REFERENCE WITHDRAWAL DESIGN VALUE, W <sub>MAX</sub> (lbf) <sup>3</sup>	
			DF/SP	SPF/HF	DF/SP	SPF/HF
SWD18212DBB	2.50	1 1/8	148	117	165	130
SWD18312DBB	3.50	1 5/8	148	117	240	190
SWD18614DBB	6.25	2 1/2	190	178	475	445
SWD22812DBB	8.50	3 3/4	194	200	695	695
SWD221034DBB	10.75	4 1/4	194	200	695	695

For SI: 1 inch = 25.4 mm, 1 ksi = 6.89 MPa, 1 lbf = 4.45 N.

1. The main members shall be solid sawn lumber having a minimum ANSI/AWC NDS referenced specific gravity of 0.50 for DF, 0.55 for SP, and 0.42 for SPF and HF. Withdrawal table values for solid sawn lumber are also applicable for fasteners installed into structural composite lumber described in Section 3.2.2 of this report.
2. Tabulated reference withdrawal design values (W) are in pounds per inch of the thread penetration into the main member. The thread penetration includes the screw tip.
3. Tabulated maximum reference withdrawal design values (W<sub>MAX</sub>) are in pounds where the entire thread length penetrates into the main member.
4. Tabulated reference design values (W) and (W<sub>MAX</sub>) are shown using C<sub>D</sub> = 1.0. Loads may be increased for load duration in accordance with the IBC or IRC up to a C<sub>D</sub> = 1.6. Tabulated values shall be multiplied by all applicable adjustment factors from the ANSI/AWC NDS as referenced in the IBC or IRC. Where the in-service moisture content is greater than 19 percent, C<sub>M</sub> = 0.70 for SPF/HF and C<sub>M</sub> = 0.56 for DF/SP.
5. Screws shall be installed through the side member straight into the side grain of the wood main member with the screw axis at a 90-degree angle to the wood fibers.
6. End-grain factor of 0.65 shall be applied when installed into the end grain of the member.
7. SP is Southern Pine, DF is Douglas Fir-Larch. SPF is Spruce-Pine-Fir. HF is Hem-Fir.

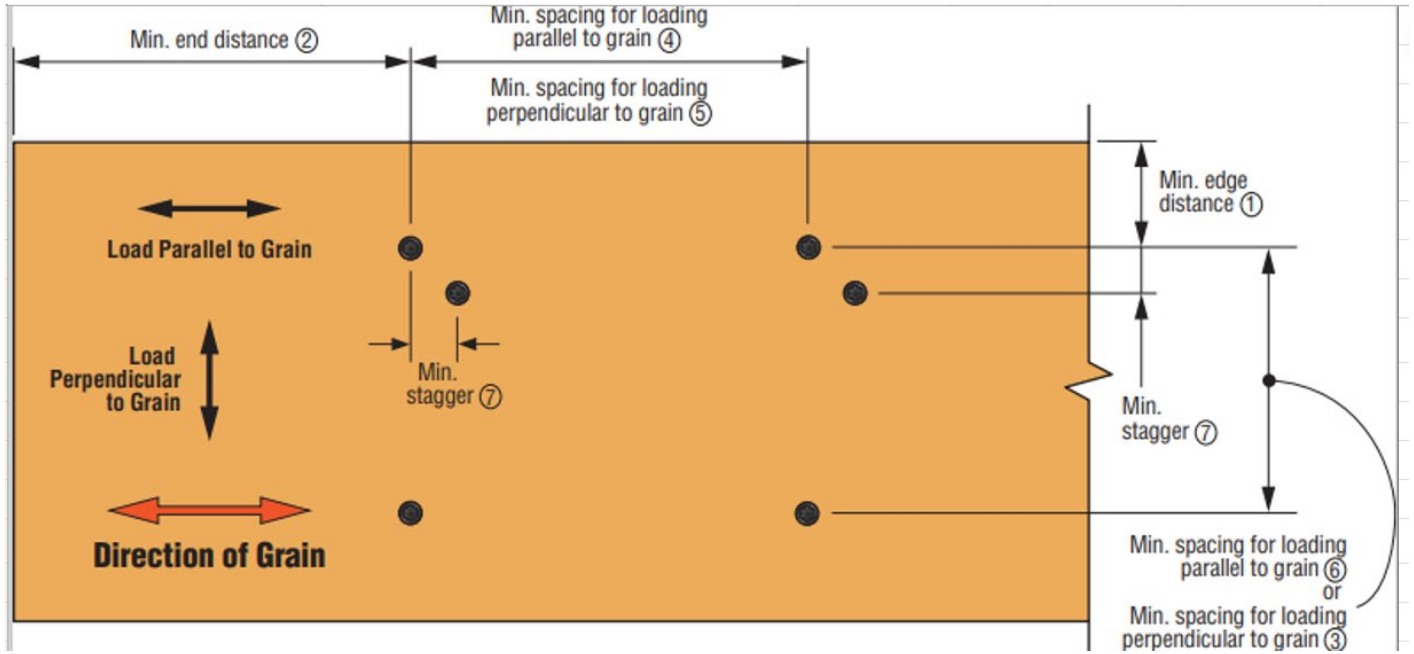
**TABLE 8– REFERENCE PULL-THROUGH DESIGN VALUES FOR WOOD-TO-WOOD CONNECTIONS WITH SWD WOOD SCREWS<sup>1-5</sup>**

MODEL	FASTENER LENGTH, L (in.)	THREAD LENGTH, TL (in.)	MAX REFERENCE PULL-THROUGH DESIGN VALUE, (lbf)					
			2x Side		4x Side		6x Side	
			DF/SP	SPF/HF	DF/SP	SPF/HF	DF/SP	SPF/HF
SWD18212DBB	2.50	1 1/8	175	175	-	-	-	-
SWD18312DBB	3.50	1 5/8	175	175	-	-	-	-
SWD18614DBB	6.25	2 1/2	175	175	540	-	-	-
SWD22812DBB	8.50	3 3/4	260	260	590	-	-	-
SWD221034DBB	10.75	4 1/4	260	260	590	-	695	695

For SI: 1 inch = 25.4 mm, 1 ksi = 6.89 MPa, 1 lbf = 4.45 N.

1. The main members shall be solid sawn lumber having a minimum ANSI/AWC NDS referenced specific gravity of 0.50 for DF, 0.55 for SP, and 0.42 for SPF and HF. Pull-through table values for solid sawn lumber are also applicable for fasteners installed into structural composite lumber described in Section 3.2.2 of this report.
2. Tabulated maximum reference design values are in pounds into the side member.
3. Tabulated maximum reference pull-through design values 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 shall be multiplied by all applicable adjustment factors from the ANSI/AWC NDS as referenced in the IBC or IRC. Where the in-service moisture content is greater than 19 percent, C<sub>M</sub>=0.70.
4. Screws shall be installed straight into the side grain of the wood main member with the screw axis at a 90 degree angle to the wood fibers.
5. SP is Southern Pine, DFL is Douglas Fir-Larch. SPF is Spruce-Pine-Fir, HF is Hem Fir.





**FIGURE 4 – CONNECTION GEOMETRY - SWD SCREWS**

**TABLE 9 – CONNECTION GEOMETRY FOR SWD WOOD SCREWS AS ILLUSTRATED IN FIGURE 4 OF THIS REPORT<sup>1</sup>**

CONDITION <sup>1</sup>	DIRECTION OF LOAD TO GRAIN	ID	MINIMUM DISTANCE OR SPACING (in.)	
			SWD18	SWD22
Edge Distance	Perpendicular	①	1	1¼
	Parallel	①	1 3/4	1¾
End Distance	Perpendicular	②	4	5
	Parallel	②	4	5
Spacing Between Fasteners in a Row	Perpendicular	③	4	5
	Parallel	④	4	5
Spacing Between Rows of Fasteners	Perpendicular	⑤	1 1/2	1¾
	Parallel	⑥	1 1/2	1 3/4
Spacing Between Staggered Rows	Perpendicular or Parallel	⑦	7/8	7/8

<sup>1</sup> Edge distances, end distances, and spacings of the screws shall be sufficient to prevent splitting of the wood, or as required by this table, or when applicable, as recommended by the structural composite lumber manufacturer, whichever is the more restrictive.



**TABLE 10 – RECOGNIZED EXPOSURE CONDITIONS FOR SIMPSON STRONG-TIE® SDWC15450 and SWD FASTENERS**

EXPOSURE CONDITION	TYPICAL AWWPA USE CATEGORY	TYPICAL APPLICATIONS	RECOGNITION LIMITATIONS
1	UC1 UC2	Treated wood in dry-use applications	Limited to use where the equilibrium moisture content of the chemically treated wood meets the dry service condition as described in ANSI/AWC NDS
3	UC3A UC3B UC4A	General Construction	Limited to freshwater and chemically treated wood exposure, e.g., no saltwater exposure

**TABLE 11 – EDGE AND END DISTANCE AND SPACING REQUIREMENTS FOR SCREWS LOADED AXIALLY**

MODEL	END DISTANCE (in.)	EDGE DISTANCE (in.)	SPACING (in.)	
			Spacing between fasteners, parallel to the grain	Spacing between fasteners, perpendicular to the grain
SDWC15450	2.50	1.00	1.75	1.00
SDWC15600	2.50	1.00	1.75	1.00
SWD18DBB	2.50	1.00	1.75	1.00
SWD22DBB	3.00	1.25	2.00	1.25

For SI: 1 inch = 25.4mm



## CITY OF LOS ANGELES SUPPLEMENT

### SIMPSON STRONG-TIE STRONG DRIVE® SDWC AND SWD WOOD SCREWS

**REPORT HOLDER:**  
**SIMPSON STRONG-TIE COMPANY INC.**  
**5956 West Las Positas Boulevard**  
**Pleasanton, California 94588**  
**(800) 999-5099**  
[www.strongtie.com](http://www.strongtie.com)

**CSI Division: 06 00 00—Wood, Plastics, and Composites**  
**CSI Section: 06 05 23—Wood, Plastic, and Composite Fastenings**

#### 1.0 RECOGNITION

Simpson Strong-Tie Strong-Drive® SDWC TRUSS wood screws and SWD DOUBLE-THREADED screws described in ER-262 and this supplemental report have been evaluated for use as dowel-type threaded and self-drilling fasteners in wood-to-wood connections. Simpson Strong-Tie Strong-Drive® SDWC and SWD wood screws have been evaluated for structural and corrosion resistance performance properties, subject to the requirements in ER-262 and this supplemental report. Simpson Strong-Tie Strong-Drive® SDWC and SWD wood screws were evaluated for compliance with the following codes and regulations:

- 2023 City of Los Angeles Building Code (LABC)
- 2023 City of Los Angeles Residential Code (LARC)

#### 2.0 LIMITATIONS

Use of the Simpson Strong-Tie Strong-Drive® SDWC and SWD wood screws recognized in ER-262 and this report supplement are subject to the following limitations addition to the limitations shown in the ER-262:

**2.1** Simpson Strong-Tie Strong-Drive® SDWC and SWD wood screws shall be installed in accordance with the manufacturer's published installation instructions and ER-262.

**2.2** Construction details and specifications verifying compliance with the Simpson Strong-Tie Strong-Drive® SDWC and SWD wood screws shall be indicated on the approved plans by the California-registered design professional. The details shall be approved by the structural plan check engineer at the time of application.

**2.3** Reference lateral and withdrawal design values in ER-262 are for allowable stress design and shall be multiplied by all applicable adjustment factors specified in the ANSI/AWC NDS.

**2.4** Structural members forming the connection shall be designed in accordance with the 2023 LABC.

**2.5** When designing a connection, the structural members shall be checked for load-carrying capacity in accordance with Section 11.1.2 of ANSI/AWC NDS 2018.

**2.6** The calculations and plans shall be prepared, stamped, and signed by a California-registered design professional.

**2.7** The design, installation, and inspection shall be in accordance with LABC Chapters 16 and 17, as applicable, due to local amendments to these chapters.

**2.8** This supplement expires concurrently with ER-262.

**For additional information about this evaluation report please visit [www.uniform-es.org](http://www.uniform-es.org) or email us at [info@uniform-es.org](mailto:info@uniform-es.org)**



## FLORIDA SUPPLEMENT

### SIMPSON STRONG-TIE STRONG DRIVE® SDWC AND SWD WOOD SCREWS

**REPORT HOLDER:**  
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**(800) 999-5099**  
[www.strongtie.com](http://www.strongtie.com)

**CSI Division: 06 00 00—Wood, Plastics, and Composites**  
**CSI Section: 06 05 23—Wood, Plastic, and Composite Fastenings**

#### 1.0 RECOGNITION

Simpson Strong-Tie Strong-Drive® SDWC TRUSS wood screws and SWD DOUBLE-THREADED wood screws have been evaluated for structural performance properties, subject to the requirements in ER-262 and this supplemental report for compliance with the following codes and regulations:

- 2023 Florida Building Code, Building, 8<sup>th</sup> Edition, (FBC–Building)
- 2023 Florida Building Code, Residential, 8<sup>th</sup> Edition, (FBC–Residential)

#### 2.0 LIMITATIONS

Use of the Simpson Strong-Tie Strong-Drive® SDWC and SWD wood screws recognized in this supplement complies with the FBC–Building and the FBC–Residential subject to the following limitations in addition to the limitations shown in the ER-262:

**2.1** The design and installation of Simpson Strong-Tie Strong-Drive® SDWC and SWD wood screws recognized in this supplement shall be in accordance with the 2021 International Building Code and the 2021 International Residential Code as noted in ER-262.

**2.2** Construction documents, including calculations showing compliance with FBC–Building Sections 107 and 1603, or FBC Residential Section 107, and this report shall be submitted to the building official. The construction documents shall be prepared by a registered design professional where required by Chapter 471, Florida Statutes, or Chapter 481, Florida Statutes.

**2.3** Load combinations shall be in accordance with Sections 1605.1 or 1605.2 of the FBC–Building, as applicable.

**2.4** Design wind loads shall be in accordance with Section 1609.1.1 of the FBC–Building or Section R301.2.1.1 of the

FBC–Residential, as applicable, and Section 1620 of the FBC–Building where used in High-velocity Hurricane Zones (HVHZ).

**2.5** The use of Simpson Strong-Tie Strong-Drive® SDWC and SWD wood screws recognized in this supplement complies with the High-velocity Hurricane Zone (HVHZ) provisions set forth in Sections 2324.2 of the FBC–Building.

**2.6** Simpson Strong-Tie Strong-Drive® SDWC and SWD wood screws shall be manufactured, identified, and installed in accordance with ER-262 and the manufacturer’s published installation instructions. A copy of the installation instructions shall be available at the job site continuously during installation. If there is a conflict between this report and the manufacturer’s published installation instructions, the more restrictive prevails.

**2.7** For products falling under Section (5)(d) of Florida Rule 61G20-3.008, verification that the report holder’s quality assurance program is audited by a quality assurance entity approved by the Florida Building Commission (or the building official when the report holder does not possess an approval by the Commission) is required to provide oversight and determine that the products are being manufactured as described in this evaluation report to establish continual product performance.

**2.8** This supplement expires concurrently with ER-262.

For additional information about this evaluation report please visit [www.uniform-es.org](http://www.uniform-es.org) or email us at [info@uniform-es.org](mailto:info@uniform-es.org)