

# Interior Screws

## Strong-Drive® SDW TRUSS-PLY Screw

### Truss-Ply Fastening

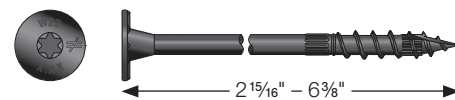
The Strong-Drive SDW Truss-Ply screw is a high-strength structural wood screw specifically designed for fastening multi-ply wood members, such as joining plated trusses and solid-sawn lumber. The SDW installs easily with no predrilling and is available in optimized lengths for fastening 2-, 3- and 4-ply trusses. With the SDW Truss-Ply screw, multi-ply trusses and components can be fastened from one side without requiring the lifting and flipping of heavy assemblies. It is code listed under IAPMO-UES ER-192 and meets 2015 and 2018 IRC® and IBC® code requirements for several common wood framing applications with wood and engineered wood.

#### Features:

- Large washer head with nibs provides maximum bearing area; stamped with the Simpson Strong-Tie “S” sign and fastener length for easy identification after installation (0.75" head dia.)
- 6-lobe, T40 drive provides positive engagement that makes the screw easy to drive and improves bit life (replacement driver bit — BIT40T-14)
- Low-profile head results in less interference after installation; makes stacking and sliding members easier and allows installation of hardware and finishes to be virtually flush
- Higher shear values than competitive products enable wider spacing, saving time and money
- Bold thread design provides superior holding power and cinches fastened members together for consistent installation
- SawTooth™ point ensures fast starts, reduced installation torque and eliminates the need for predrilling in most applications
- Retail and mini-bulk packs include one 6-lobe, T-40 driver bit; bulk packs include two driver bits

**Codes/Standards:** IAPMO-UES ER-192; City of L.A. RR25906, State of Florida FL13975

**For Technical Data and Loads,** see Technical Supplement  
US Patent: 9,523,383



### E-Coat® Coating

Size (in.)	Thread Length (in.)	Typical Application <sup>1,2,3</sup>	Retail Pack			Mini-Bulk Bucket		Bulk	
			Fasteners per Pack <sup>5</sup>	Packs Per Master Carton	Model No.	Fasteners per Pack	Model No.	Fasteners per Pack	Model No.
0.220 x 2 1/16	1 7/16	2x/Truss	1	6	SDW22300-R50	250	SDW22300MB	950	SDW22300
0.220 x 4 3/8	1 7/16	2x/Truss desert	1	4	SDW22438-R50	200	SDW22438MB	600	SDW22438
0.220 x 4 3/8	1 7/16	2x/Truss	1	4	SDW22458-R50	200	SDW22458MB	600	SDW22458
0.220 x 6	1 7/16	2x/Truss desert	1	4	SDW22600-R50	200	SDW22600MB	500	SDW22600
0.220 x 6 3/8	1 7/16	2x/Truss	1	4	SDW22638-R50	200	SDW22638MB	500	SDW22638

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).
2. If assembly is less than or equal to 4 3/8" thick, use the SDW22438.
3. If assembly is less than or equal to 6 3/8" thick, use the SDW22600.
4. Replacement driver bit: BIT40T-134.
5. Master carton quantities: 50.

## Strong-Drive® SDWS LOG Screw

### Log Home Construction and General Interior Applications

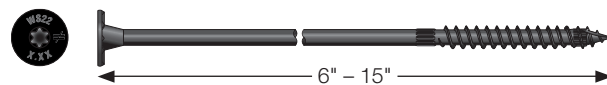
The Strong-Drive SDWS Log screw is a structural wood screw available in longer lengths and is designed for log-home construction and general interior applications. These 0.220"- and 0.195"-diameter structural fasteners require less torque to install than comparable fasteners. The large diameter head pulls logs down easily, eliminating the need to use extra washers. It is code listed under IAPMO-UES ER-192 and meets 2015 and 2018 IRC® and IBC® code requirements for several common wood framing applications.

#### Features:

- SawTooth™ point ensures fast starts, reduces installation torque and eliminates the need for predrilling in most applications
- Low-profile head design makes countersinking easy (0.75" head dia.)
- Serrated thread reduces log splitting and damage
- Large washer head with nibs provides maximum bearing area
- 6-lobe, T40 drive provides positive engagement that makes the screw easy to drive and improves bit life (replacement driver bit — BIT40T-134)
- Size Identification on all SDWS screw heads

**Codes/Standards:** IAPMO-UES ER-192

**For Technical Data and Loads,** see Technical Supplement  
US Patent: 9,523,383



### E-Coat Coating

Size (in.)	Thread Length (in.)	Flagged Fasteners		Retail Pack			Mini-Bulk	
		Fast. per Pack	Model No.	Fast. per Pack	Packs Per Master Carton	Model No.	Fast. per Pack	Model No.
0.195 x 6	2 3/4	1	SDWS19600-RP1	50	6	SDWS19600-R50	250	SDWS19600
0.195 x 7 1/2	2 3/4	1	SDWS19712-RP1	50	6	SDWS19712-R50	250	SDWS19712
0.220 x 8	2 3/4	1	SDWS22800-RP1	50	6	SDWS22800-R50	250	SDWS22800
0.220 x 9	2 3/4	1	SDWS22900-RP1	50	6	SDWS22900-R50	250	SDWS22900
0.220 x 10	2 3/4	1	SDWS221000-RP1	50	6	SDWS221000-R50	250	SDWS221000
0.220 x 11	2 3/4	1	SDWS221100-RP1	50	6	SDWS221100-R50	250	SDWS221100
0.220 x 12	2 3/4	1	SDWS221200-RP1	50	6	SDWS221200-R50	250	SDWS221200
0.220 x 15	2 3/4	1	SDWS221500-RP1	50	6	SDWS221500-R50	250	SDWS221500

Replacement driver bit: BIT40T-134.

# Structural and General Fastening

## Strong-Drive® SDWS LOG Screw

Log Building Construction and General Interior Applications

Codes/Standards: IAPMO-UES ER-192, State of Florida FL13975

US Patent: 9,523,383

For more information, see p. 83, C-F-2019 Fastening Systems Catalog



### SDWS Log – Allowable Shear Loads Douglas Fir–Larch and Southern Pine

Size (dia. x length) (in.)	Model No.	Thread Length (in.)	Reference DFL/SP Allowable Shear Loads (lb.)													
			Wood Side Member Thickness (in.)													
			1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	7	8	9	10
0.195 x 6	SDWS19600	2.75	370	265	265	265	265	245	245	—	—	—	—	—	—	—
0.195 x 7.5	SDWS19712	2.75	370	265	265	265	265	245	245	245	245	—	—	—	—	—
0.220 x 8	SDWS22800	2.75	405	405	405	405	395	395	395	395	395	—	—	—	—	—
0.220 x 9	SDWS22900	2.75	405	405	405	405	395	395	395	395	395	395	—	—	—	—
0.220 x 10	SDWS221000	2.75	405	405	405	405	395	395	395	395	395	395	395	—	—	—
0.220 x 11	SDWS221100	2.75	405	405	405	405	395	395	395	395	395	395	395	395	—	—
0.220 x 12	SDWS221200	2.75	405	405	405	405	395	395	395	395	395	395	395	395	395	—
0.220 x 15	SDWS221500	2.75	405	405	405	405	395	395	395	395	395	395	395	395	395	395

### SDWS Log – Allowable Shear Loads Spruce-Pine-Fir and Hem-Fir

Size (dia. x length) (in.)	Model No.	Thread Length (in.)	Reference SPF/HF Allowable Shear Loads (lb.)													
			Wood Side Member Thickness (in.)													
			1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	7	8	9	10
0.195 x 6	SDWS19600	2.75	350	265	265	265	265	215	180	—	—	—	—	—	—	—
0.195 x 7.5	SDWS19712	2.75	350	265	265	265	265	215	215	215	215	180	—	—	—	—
0.220 x 8	SDWS22800	2.75	400	365	365	365	310	310	280	280	280	280	—	—	—	—
0.220 x 9	SDWS22900	2.75	400	365	365	365	310	310	280	280	280	280	—	—	—	—
0.220 x 10	SDWS221000	2.75	400	365	365	365	310	310	280	280	280	280	280	—	—	—
0.220 x 11	SDWS221100	2.75	400	365	365	365	310	310	280	280	280	280	280	280	—	—
0.220 x 12	SDWS221200	2.75	400	365	365	365	310	310	280	280	280	280	280	280	280	—
0.220 x 15	SDWS221500	2.75	400	365	365	365	310	310	280	280	280	280	280	280	280	280

- Design values are based on full fastener embedment and the adjacent members are in contact with each other.
- Allowable loads are shown at the wood load duration factor of  $C_D = 1.0$ . Loads may be increased for load duration up to a  $C_D = 1.6$ .
- Tabulated values must be multiplied by all applicable adjustment factors per the NDS.
- Minimum fastener spacing requirements: 6" end distance, 1 1/16" edge distance, 3/8" between staggered rows of fasteners, 4" between non-staggered rows of fasteners and 8" between fasteners in a row.
- Loads are for in-service moisture content less than or equal to 19% ( $C_M = 1.0$ ).
- Loads are based on installation into the side grain of the wood member with the screw axis perpendicular to the face of the wood member.

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

Size (dia. x length) (in.)	Model No.	Fastener Length (in.)	Thread Length (in.)	Reference Withdrawal Design Value, W (lb./in.)		Maximum Reference Withdrawal Design Value, $W_{max}$ (lb.)	
				DFL and SP Main Member	HF and SPF Main Member	DFL and SP Main Member	HF and SPF Main Member
				0.195 x 6	SDWS19600	6	2.75
0.195 x 7.5	SDWS19712	7.5	2.75	197	164	545	395
0.220 x 8	SDWS22800	8	2.75	214	187	590	495
0.220 x 9	SDWS22900	9	2.75	214	187	590	495
0.220 x 10	SDWS221000	10	2.75	214	187	590	495
0.220 x 11	SDWS221100	11	2.75	214	187	590	495
0.220 x 12	SDWS221200	12	2.75	214	187	590	495
0.220 x 15	SDWS221500	15	2.75	214	187	590	495

- The tabulated reference withdrawal design value, W, is in pounds per inch of the thread penetration into the side grain of the main member.
- The tabulated reference withdrawal design value,  $W_{max}$ , is in pounds where the entire thread must penetrate into the side grain of the main member.
- Tabulated reference withdrawal design values ( $C_D = 1.0$ ), W and  $W_{max}$ , must be multiplied by all applicable adjustment factors from the NDS as referenced in the IBC or IRC.
- Embedded thread length is that portion held in the main member including the screw point.
- Values are based on the lesser of withdrawal from the main member or pull-through of a 1.5" side member.
- Loads are for in-service moisture content less than or equal to 19% ( $C_M = 1.0$ ).

## Structural and General Fastening

### Strong-Drive® SDWS LOG Screw (cont.)

#### Allowable Loads for Strong-Drive SDWS LOG Screws with Expanded Specific Gravity Options

Allowable load tables on the following pages provide shear and withdrawal capacities for wood species with an assigned specific gravity of 0.35 to 0.41. Wood species with a specific gravity within this range are provided below.

#### Wood Species Combinations in the Specific Gravity Range 0.35 to 0.41

Wood Species	Specific Gravity <sup>1</sup>
Alaska Spruce	0.41
Aspen	0.39
Balsam Fir	0.36
Coast Sitka Spruce	0.39
Cottonwood	0.41
Eastern Hemlock	0.41
Eastern Hemlock-Balsam Fir	0.36
Eastern Hemlock-Tamarack	0.41
Eastern Softwoods	0.36
Eastern Spruce	0.41
Eastern White Pine	0.36
Engelmann Spruce-Lodgepole Pine	0.38
Northern Species	0.35
Redwood, open grain	0.37
Spruce-Pine-Fir (South)	0.36
Western Cedars	0.36
Western Cedars (North)	0.35
Western White Pine	0.40
Western Woods	0.36

1. Specific gravity as assigned in NDS-18 Table 12.3.3A.

## Structural and General Fastening

## Strong-Drive® SDWS LOG Screw (cont.)

### SDWS Log — Allowable Lateral Loads in the Specific Gravity Range 0.35 to 0.41

Size (dia. x length) (in.)	Model No.	Thread Length (in.)	Reference Allowable Lateral Design Value (lb.)													
			Wood Side Member Thickness (in.)													
			1.5	2	2.5	3	3.5	4	5	5.5	6	7	8	9	10	13
0.195 x 6	SDWS19600	2.75	330	230	230	230	230	230	—	—	—	—	—	—	—	—
0.195 x 7.5	SDWS19712	2.75	330	230	230	230	230	230	230	—	—	—	—	—	—	—
0.220 x 8	SDWS22800	2.75	350	240	240	240	240	240	240	240	240	—	—	—	—	—
0.220 x 9	SDWS22900	2.75	350	240	240	240	240	240	240	240	240	240	—	—	—	—
0.220 x 10	SDWS221000	2.75	350	240	240	240	240	240	240	240	240	240	240	—	—	—
0.220 x 11	SDWS221100	2.75	350	240	240	240	240	240	240	240	240	240	240	240	—	—
0.220 x 12	SDWS221200	2.75	350	240	240	240	240	240	240	240	240	240	240	240	240	—
0.220 x 15	SDWS221500	2.75	350	240	240	240	240	240	240	240	240	240	240	240	240	240

- Design values are based on full fastener embedment and the adjacent members are in contact with each other.
- 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: 6" end distance, 1 1/8" edge distance, 5/8" between staggered rows of fasteners, 4" between non-staggered rows of fasteners and 8" between fasteners in a row.
- For in-service moisture content less than or equal to 19% ( $C_M = 1.0$ ).
- The load tables are based on testing in accordance with ICC-ES AC233, with an applied factor of safety of 5.0.

### SDWS Log — Allowable Withdrawal Loads in the Specific Gravity Range 0.35 to 0.41

Size (dia. x length) (in.)	Model No.	Thread Length (in.)	Reference Withdrawal Design Value, W (lb./in.)	Maximum Reference Withdrawal Design Value, $W_{max}$ (lb.) <sup>5</sup>
0.195 x 6	SDWS19600	2.75	100	280
0.195 x 7.5	SDWS19712	2.75	100	280
0.220 x 8	SDWS22800	2.75	130	360
0.220 x 9	SDWS22900	2.75	130	360
0.220 x 10	SDWS221000	2.75	130	360
0.220 x 11	SDWS221100	2.75	130	360
0.220 x 12	SDWS221200	2.75	130	360
0.220 x 15	SDWS221500	2.75	130	360

- The tabulated reference withdrawal design value, W, is in pounds per inch of the thread penetration into the side grain of the main member.
- The tabulated reference withdrawal design value,  $W_{max}$ , is in pounds where the entire thread must penetrate into the side grain of the main member.
- Tabulated reference withdrawal design values, W and  $W_{max}$ , 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 as referenced in the IBC or IRC.
- Embedded thread length is that portion held in the main member including the screw point.
- Values are based on the lesser of withdrawal from the main member or pull-through of a 1.5" side member.
- For in-service moisture content less than or equal to 19% ( $C_M = 1.0$ ).
- The load tables are based on testing in accordance with ICC-ES AC233, with an applied factor of safety of 5.0.

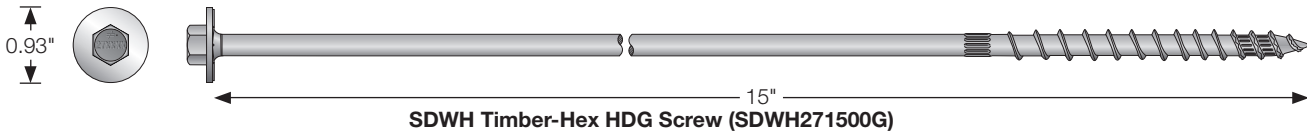
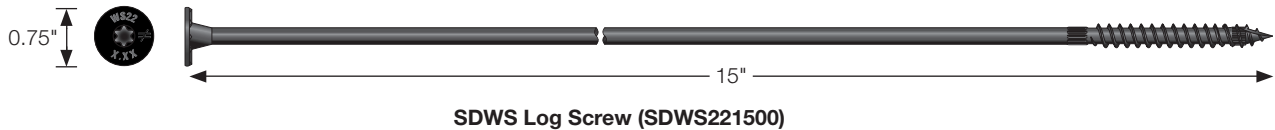
# Floor-to-Floor Fastening

## Strong-Drive® SDWS LOG and SDWH TIMBER-HEX HDG Screw

### Floor-to-Floor

The SDWS Log screw (SDWS221500) and SDWH Timber-Hex HDG screw (SDWH271500G) have been evaluated as alternatives for uplift connection between floors that do not require shrinkage compensation. The application is specific to framing that consists of a single wall bottom plate, joist depth of 9.25 to 9.5 inches, and double 2x top plate. These screws are recognized in IAPMO-UES ER-192. Typical installation and corresponding load tables for floor systems is shown in the following pages.

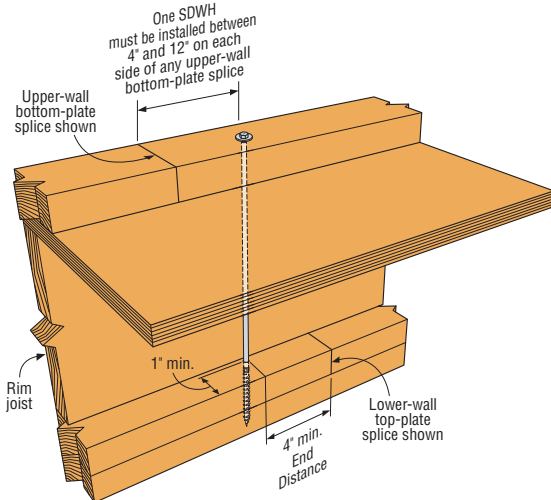
**For more information,** see p. 83 (SDWS Log) and p. 57 (SDWH Timber-Hex HDG), C-F-2019 Fastening Systems Catalog



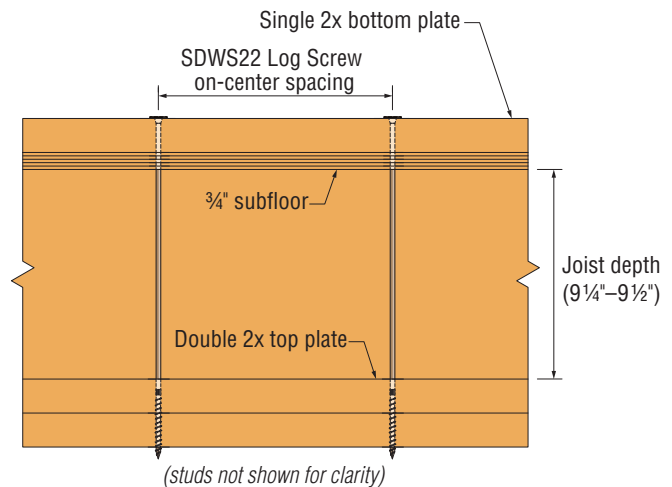
### Product Information and Withdrawal/Pull-Through Loads

Size (in.)	Model No.	Thread Length (in.)	Reference Allowable Withdrawal per Inch of Thread Penetration (lb./in.) <sup>1</sup>			Reference Allowable Fastener Head Pull-Through for 2x Plate (lb.) <sup>1</sup>		
			SP	DFL	SPF	SP	DFL	SPF
0.22 x 15	SDWS221500	2¾	260	215	185	800	695	495
0.27 x 15	SDWH271500G	3	285	255	210	880	875	695

1. Allowable loads are shown at the wood load duration factor of  $C_D = 1.0$ . Loads may be increased for load duration up to a  $C_D = 1.6$ .



(Plate-to-rim fastening not shown for clarity)  
**Typical SDWH271500G Installation**  
(SDWS221500 Similar)



**Typical SDWS221500 Spacing**  
(SDWH271500G Similar)

# Floor-to-Floor Fastening

## On-Center Spacing for Uniform Uplift Loads

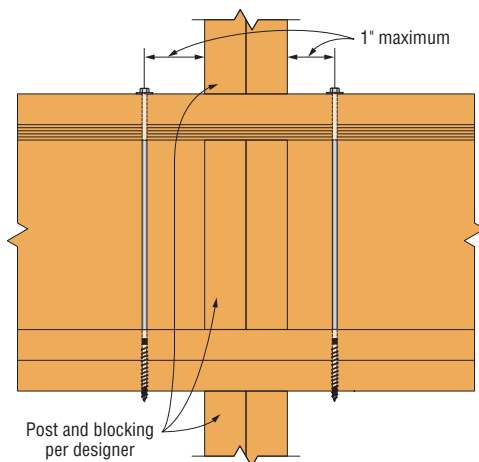
Joist Depth (in.)	Model No.	Wall Plate Species	Withdrawal per Screw (lb.) <sup>2</sup>	Maximum Screw Spacing (in.) Along Wall Bottom Plate for Wind Uplift										
				Interstory Unit Wind Uplift (Pounds per Lineal Foot) <sup>2</sup>										
				100 plf	150 plf	200 plf	250 plf	300 plf	350 plf	400 plf	450 plf	500 plf	550 plf	600 plf
9¼ to 9½	SDWS221500	Single 2x4 Bottom Plate												
		SP	930	46	40	36	34	32	30	28	24	22	20	18
		DFL	770	48	42	38	36	30	26	22	20	18	16	14
		SPF	675	46	40	36	32	26	22	20	18	16	14	12
		Single 2x6 Bottom Plate												
		SP	930	54	46	42	40	36	32	28	24	22	20	18
		DFL	770	56	48	44	36	30	26	22	20	18	16	14
		SPF	675	54	46	40	32	26	22	20	18	16	14	12
		9¼ to 9½	SDWH271500G	Single 2x4 Bottom Plate										
SP	1,150			46	40	36	34	32	30	28	26	24	24	22
DFL	1,020			48	42	38	36	34	32	30	26	24	22	20
SPF	850			46	40	36	34	32	28	24	22	20	18	16
Single 2x6 Bottom Plate														
SP	1,150			54	46	42	40	36	36	34	30	28	24	22
DFL	1,020			56	48	44	42	38	34	30	26	24	22	20
SPF	850			54	46	42	40	34	28	24	22	20	18	16

1. Spacing listed based on lesser of: single bottom plate bending allowable load, single bottom plate deflection limited to spacing/240 and ¼" max. for No. 2 grade lumber, screw allowable withdrawal and pull-through loads.
2. Withdrawal and uplift loads are based on C<sub>D</sub> = 1.6.
3. Stud-to-plate connections and plate-to-rim connections are required to complete the load path.
4. Tabulated loads are applicable to the following minimum thread embedment length into double top plate: SDWS221500 = 2¼", SDWH271500G = 2½".

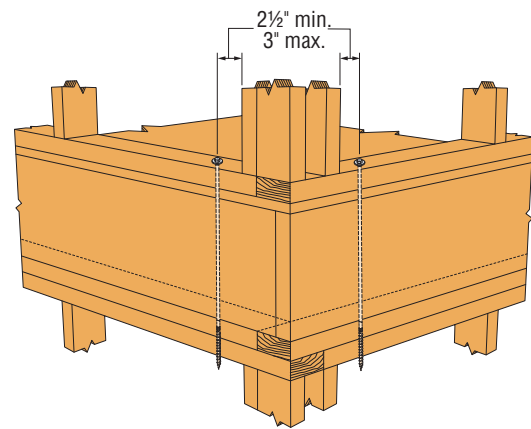
## Concentrated Uplift Loads

Size (in.)	Model No.	Thread Length (in.)	Single Fastener			Double Fastener		
			Allowable Tension Load (lb.)			Allowable Tension Load (lb.)		
			SP	DFL	SPF	SP	DFL	SPF
0.22 x 15	SDWS221500	2¾	930	770	675	1,860	1,540	1,350
0.27 x 15	SDWH271500G	3	1,150	1,020	850	2,240	2,040	1,700

1. Allowable loads include a wood load duration factor of C<sub>D</sub> = 1.6 for wind and earthquake loading with no further increase allowed; reduce when other loads govern.
2. Single and double fastener applications are for concentrated-load uplift restraint conditions (i.e. end of header, at girders, or at the end of shear walls).
3. Tabulated loads are applicable to the following minimum thread embedment into the double top plate: SDWS221500 = 2¼", SDWH271500G = 2½".



**Typical Double SDWH27G or SDWS22 (Similar) Concentrated Load Restraint Detail at Compression Blocking**



**Typical Double SDWH27G or SDWS22 (Similar) Concentrated Load Restraint Detail at Wall Corner**

**Note:** Stud-to-plate connections and rim-to-plate connections are required to complete the load path and are in the responsibility of the designer. SDWS22 and SDWH27G do not replace holdowns in shearwall applications.