

**Strong-Drive® SDWS FRAMING Screw**  
Multipurpose Structural Wood Screw



**Versatility  
Defined**

*Now Available in 2 1/2",  
3", 3 1/2" and 4" Lengths*

(800) 999-5099  
strongtie.com

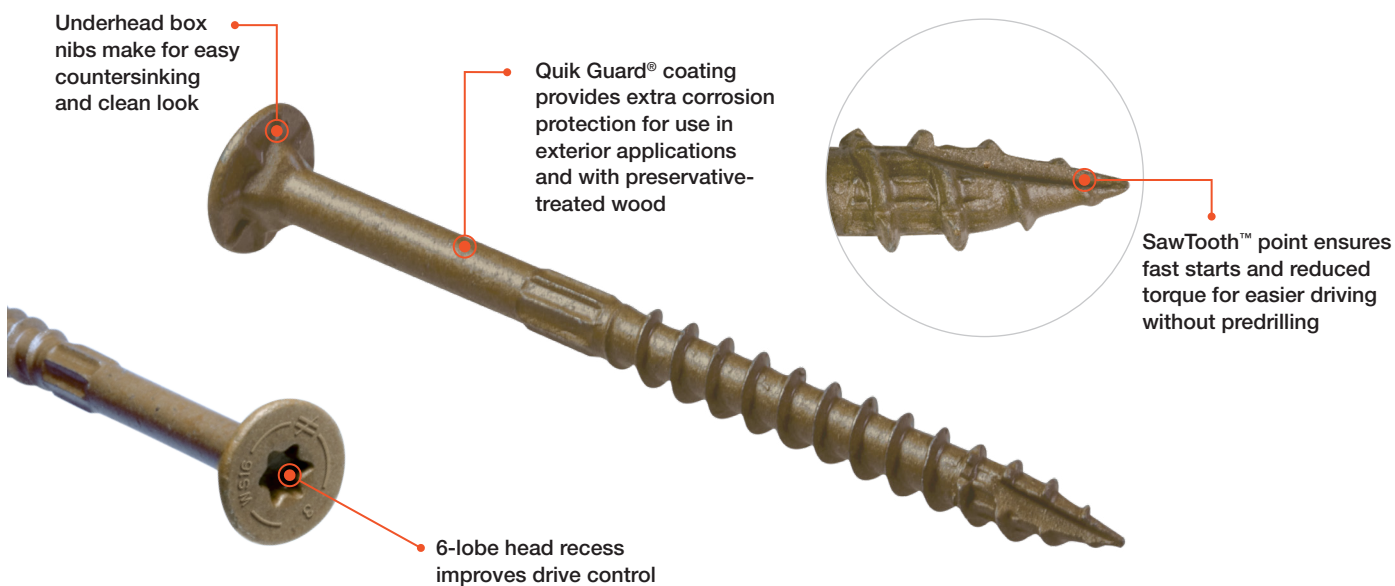
## Multipurpose, Fast-Driving and Code-Compliant

The Strong-Drive® line of structural fasteners now includes an incredibly versatile 0.160"-diameter structural screw designed and load-rated for replacing 16d, 10d and 8d nails in framing and remodeling applications.

The Strong-Drive® SDWS Framing screw is a great choice for contractors and do-it-yourselfers who may be working in areas too constrained for the use of a hammer, or desire the superior holding power and pull-out resistance of screws. In addition to its many general applications, the SDWS Framing screw is code-listed under IAPMO UES ER-192 and meets 2015 and 2018 IRC and IBC code requirements for all common wood framing connections. Lateral and pull-through design values for use with wood structural panels are given in C-F-2019TECHSUP.

The SDWS Framing screw has a SawTooth™ point with serrated threads that makes for fast installations with reduced torque and no predrilling, and its specially designed head countersinks easily to provide a clean, flush finish. The T25 bit holds the 6-lobe recess tightly for drive control. **Available in 2½", 3", 3½" and 4" lengths for a variety of uses.**

The next time you need to fill your nail bag, fill it with the SDWS Framing screw and put the reliability and performance of Strong-Drive to work for you.



Framing Connections



Exterior Projects



Cabinets

## Multipurpose, Fast-Driving and Code-Compliant

The **Strong-Drive® SDWS Framing screw** is the perfect multipurpose fastener to replace nails or common fasteners in a variety of wood-to-wood uses. Load-rated following ICC-ES AC233, the SDWS Framing screw is designed for strength and fast driving in interior and exterior applications.



**Framing**

SawTooth™ point is great for fast starts, reduced torque and easy driving with no predrilling.

### Interior Projects

The large head with box-nibs improves bearing in structural applications and provides clean and easy countersinking.

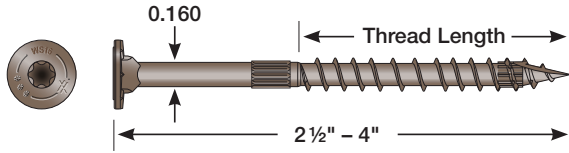
The 6-lobe drive results in easy installations and longer bit life.



**DIY Projects**

**Maximum Versatility:** Quik Guard® coating provides protection in indoor and outdoor applications.

Technical Information



Available in convenient package sizes for your next project

Nominal Screw Length (in.)	Shank Diameter (in.)	Thread Length (in.)	Retail Pack			Mini-Bulk			Bulk		
			Fasteners per Pack	Packs per Master Carton	Model No.	Fasteners per Pack	Packs per Master Carton	Model No.	Fasteners per Pack	Packs per Master Carton	Model No.
2½	0.16	1.125	50	10	SDWS16212QR50	250	4	SDWS16212QMB	1,000	—	SDWS16212Q
2½	0.16	1.125	75	12	SDWS16212QR75	150	3	SDWS16212QR150	—	—	—
3	0.16	1.625	50	10	SDWS16300QR50	250	4	SDWS16300QMB	1,000	—	SDWS16300Q
3	0.16	1.625	75	12	SDWS16300QR75	150	3	SDWS16300QR150	—	—	—
3½	0.16	2.000	50	10	SDWS16312QR50	—	—	—	—	—	—
4	0.16	2.500	50	6	SDWS16400QR50	—	—	—	—	—	—

Lateral Design Values for Wood-to-Wood Connections with the Strong-Drive® SDWS Framing Screw

Model No.	Nominal Screw Length (in.)	Side Member Thickness (in.)	Main Member Penetration (in.)	Reference Allowable Shear Loads (lb.)		
				SP	DFL	SPF/HF
SDWS16212	2½	1½	0.90	131	106	99
SDWS16300	3	1½	1.40	229	150	150
		2	0.90	—	129	89
SDWS16312	3½	1½	2.0	254	254	199
SDWS16400	4	1½	2.5	254	254	199
		2	2.0	262	262	199

- The main and side members must be wood having a NDS assigned specific gravity of 0.50 for DFL, 0.55 for SP, and 0.42 for SPF and HF or on engineered wood product with similar equivalent specific gravity.
- Tabulated allowable shear loads are shown at a  $C_D = 1.0$ . 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 from the NDS as referenced in the IBC or IRC. For in-service moisture content greater than 19%, use  $C_M = 0.70$ .
- Screws must 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.
- DFL is Douglas fir-larch. SP is southern pine. SPF is spruce-pine-fir. HF is hem-fir.
- For LRFD values, the reference connection design values shall be adjusted in accordance with NDS-18, Section 11.3.

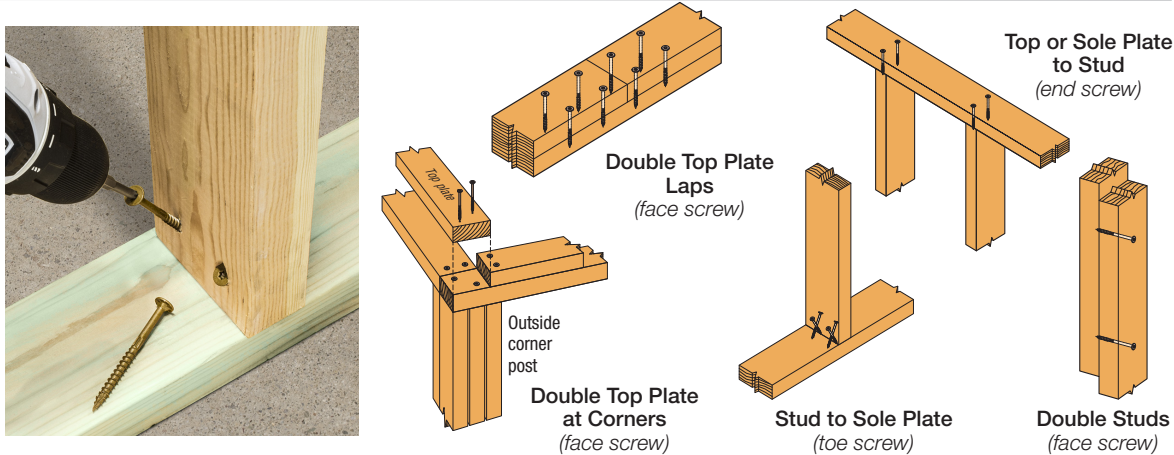
Withdrawal Design Values for Wood-to-Wood Connections with the Strong-Drive® SDWS Framing Screw

Model No.	Nominal Screw Length (in.)	Thread Length (in.)	Reference Withdrawal Design Value, W (lb./in.)			Max Reference Withdrawal Design Value, $W_{max}$ (lb.) <sup>7</sup>		
			SP	DFL	SPF/HF	SP	DFL	SPF/HF
SDWS16212	2½	1.125	177	132	103	199	149	116
SDWS16300	3	1.625	192	127	122	310	205	200
SDWS16312	3½	2.000	181	169	127	345	300	200
SDWS16400	4	2.500	181	169	127	345	300	200

- The main members must be wood having a NDS assigned specific gravity of 0.50 for DFL, 0.55 for SP, and 0.42 for SPF and HF or on engineered wood product with similar equivalent specific gravity.
- Tabulated reference withdrawal design values (W) are in pounds per inch of the thread penetration into the main member.
- Tabulated reference withdrawal design values ( $W_{max}$ ) are in pounds where the entire thread length must penetrate into the main member.
- Tabulated reference withdrawal design values (W) and ( $W_{max}$ ) are shown at a  $C_D = 1.0$ . 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 from the NDS as referenced in the IBC or IRC. For in-service moisture content greater than 19%, use  $C_M = 0.65$ .
- Screws must be installed straight into the side grain of the wood main member with the screw axis at a 90° angle to the wood fibers.
- DFL is Douglas fir-larch. SP is southern pine. SPF is spruce-pine-fir. HF is hem-fir.
- Values are based on the lesser of withdrawal from the main member or pull-through of a 1½" side member.
- For LRFD values, the reference connection design values shall be adjusted in accordance with NDS-18, section 11.3.

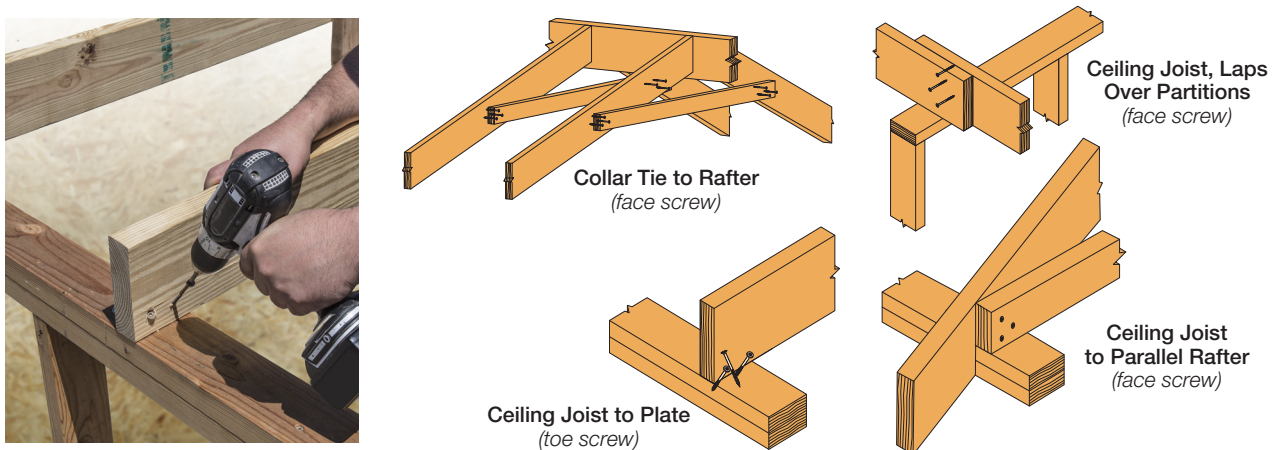
The SDWS Framing screw is code-listed under IAPMO UES ER-192. These common framing connections, per the 2015 and 2018 IRC and IBC building code requirements, are based on engineering analysis. The connection drawings are for illustrative purposes only. Prescriptive fastening should follow common framing practice. For engineered design, please refer to the Lateral Design Values, Withdrawal Design Values and Spacing Requirements tables in this document for installation details. Fastener lengths given in the table are consistent with the building code minimums; screws that are longer than the minimum length may be used where they are fully embedded. IBC section references refer to the 2018 IBC.

## Walls



Connection Application	FASTENER QUANTITIES			
	IRC		IBC	
	Nails per Table R602.3 (1)	Equivalent SDWS Framing Screws	Nails per Table 2304.10.1	Equivalent SDWS Framing Screws
Top or sole plate to stud (end screw)	(2) 16d box	(2) SDWS16212	(2) 16d common	(2) SDWS16300
Stud to sole plate (toe screw)	(2) 16d box	(2) SDWS16212	(4) 8d common	(4) SDWS16212
Double top plate laps (face screw)	(8) 16d box	(8) SDWS16212	(8) 16d common	(8) SDWS16300
Double top plate at corners and intersections (face screw)	(2) 10d box	(2) SDWS16212	(2) 16d common	(2) SDWS16212
Double studs (face screw)	10d box 24" o.c.	SDWS16212 24" o.c.	16d box 24" o.c.	SDWS16300 24" o.c.

## Ceiling

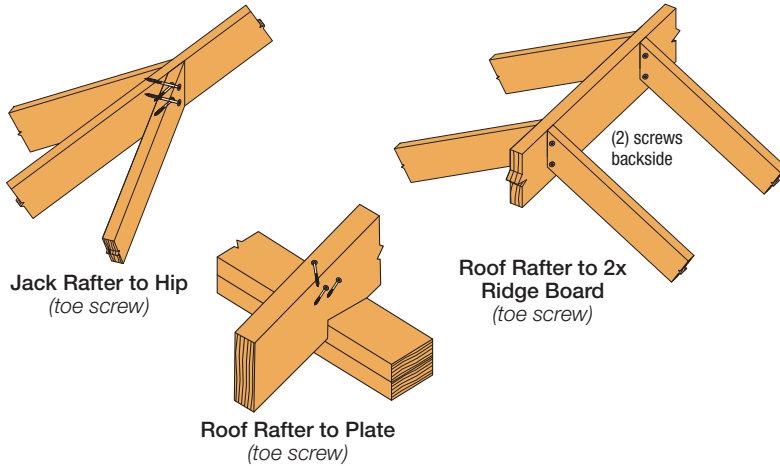


Connection Application	FASTENER QUANTITIES			
	IRC		IBC	
	Nails per Table R602.3 (1) and R802.5.2	Equivalent SDWS Framing Screws	Nails per Table 2304.10.1 and 2308.7.3.1	Equivalent SDWS Framing Screws
Ceiling joist to plate (toe screw)	(3) 8d box	(3) SDWS16212	(3) 8d common	(3) SDWS16212
Ceiling joists, laps over partitions (face screw)	(3 min.*) 10d box	(3 min.*) SDWS16212	(3 min.*) 16d common	(3 min.*) SDWS16300
Collar tie to rafter (face screw)	(3) 10d box	(3) SDWS16212	(3) 10d common	(3) SDWS16300
Ceiling joist to parallel rafter (face screw)	(3) 16d common*	(3) SDWS16300*	(3 min.*) 16d common	(3 min.*) SDWS16300

\*Quantities vary based on project conditions. The SDWS16300 is a 1-for-1 replacement for 16d common nails.

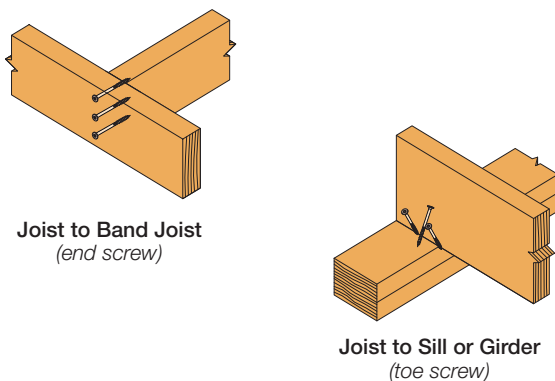
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## Roof



Connection Application	FASTENER QUANTITIES			
	IRC		IBC	
	Nails per Table R602.3 (1)	Equivalent SDWS Framing Screws	Nails per Table 2304.10.1	Equivalent SDWS Framing Screws
Roof rafter to plate (toe screw)	(3) 10d common	(3) SDWS16212	(3) 8d common	(3) SDWS16212
Roof rafter to 2x ridge board (toe screw)	(4) 16d box	(4) SDWS16212	(2) 16d common	(2) SDWS16300
Jack rafter to hip (toe screw)	(4) 16d box	(4) SDWS16212	(3) 10d common	(3) SDWS16300

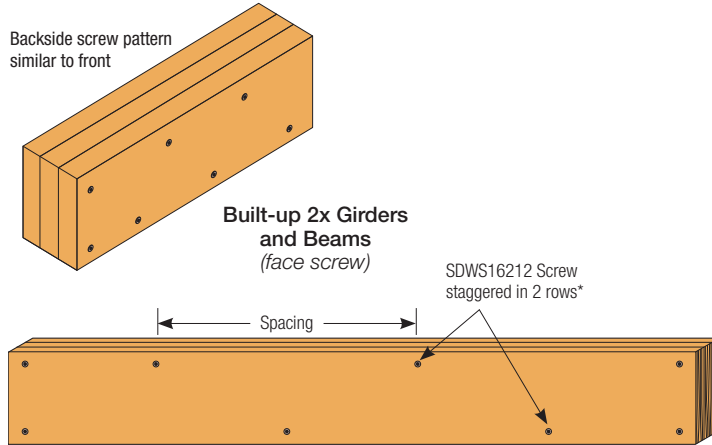
## Floor



Connection Application	FASTENER QUANTITIES			
	IRC		IBC	
	Nails per Table R602.3 (1)	Equivalent SDWS Framing Screws	Nails per Table 2304.10.1	Equivalent SDWS Framing Screws
Joist to band joist (end screw)	(3) 16d common	(3) SDWS16300	(3) 16d common	(3) SDWS16300
Joist to sill or girder (toe screw)	(3) 8d box	(3) SDWS16212	(3) 8d common	(3) SDWS16212

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## Beam

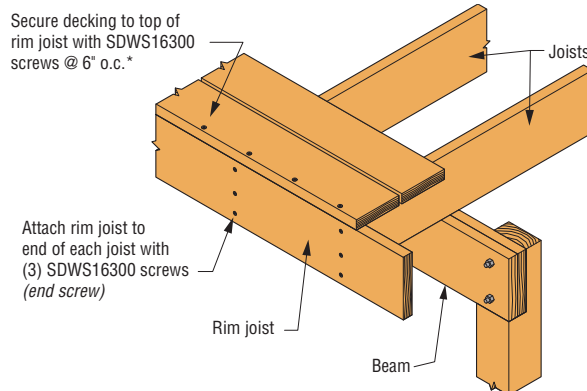


Beam Assembly Detail\*

Connection Application	FASTENER QUANTITIES AND SPACING			
	IRC		IBC	
	Nails per Table R602.3 (1)	Equivalent SDWS Framing Screws	Nails per Table 2304.10.1	Equivalent SDWS Framing Screws
Built-up 2x girders and beams (face screw)	10d box 32" o.c.	SDWS16212 32" o.c.	10d box 24" o.c.	SDWS16212 24" o.c.

\*Fastening pattern shown applies to each ply of the built-up 2x beam.

## Deck



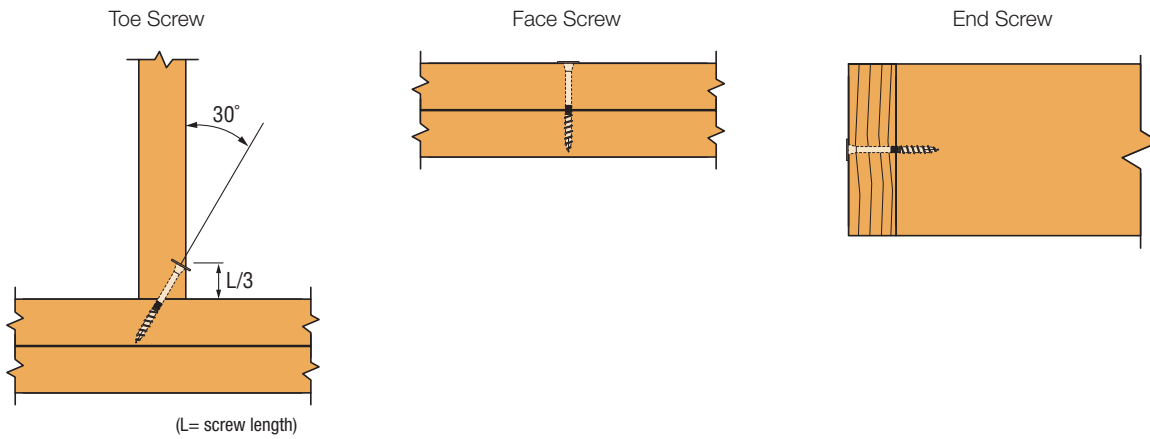
Rim Joist Connection Details

Connection Application	FASTENER QUANTITIES			
	IRC		IBC	
	Nails per Table R602.3 (1)	Equivalent SDWS Framing Screws	Nails per Table 2304.10.1	Equivalent SDWS Framing Screws
Rim joist to end joist (face screw)	(3) 16d common	(3) SDWS16300	(3) 16d common	(3) SDWS16300

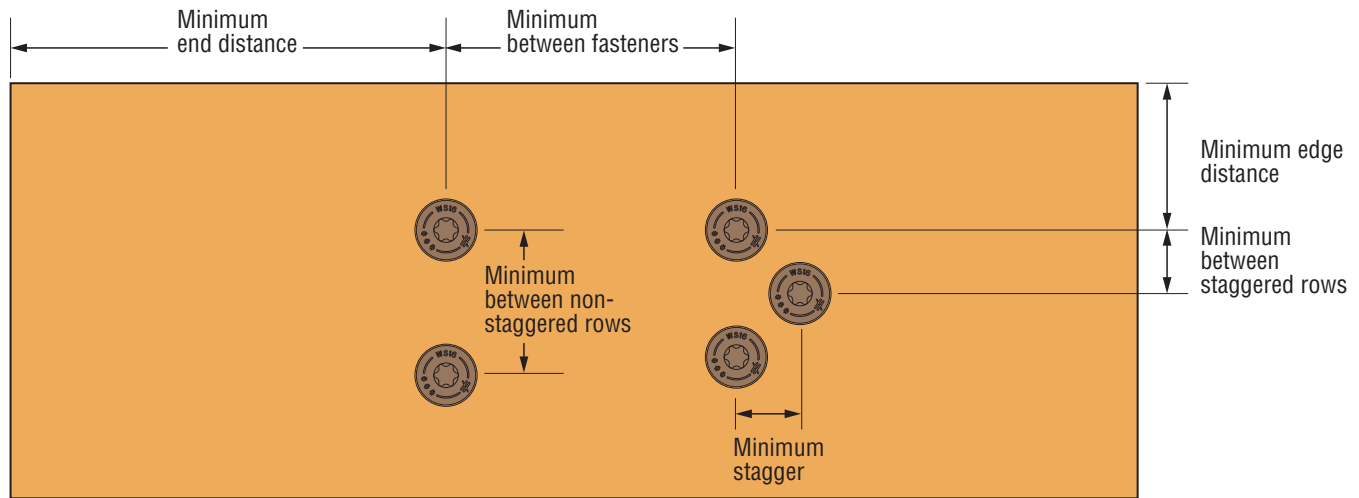
\*Per 2018 American Wood Council (AWC) DCA6.

Product Information

Typical Conventional Framing Connections



Strong-Drive® SDWS Framing Screw Spacing Requirements for Non-Prescriptive Construction



Condition		Minimum Distance or Spacing (in.)	
		SDWS16212	SDWS16300 / SDWS16312 / SDWS16400
End distance	Loading toward end	2	3
	Loading away from end	2	3
	Loading perpendicular to grain	3 1/2	4
Edge distance	Loading parallel to grain	1/2	1
	Loading perpendicular to grain	1	1
Spacing between fasteners in a row	Loading parallel to grain	2	2
	Loading perpendicular to grain	2	2
Spacing between rows	In-line rows*	1	1
	Staggered rows	7/16	7/16

\*Table loads must be multiplied by adjustment factors of 0.93 (SDWS16212) and 0.91 (SDWS16300, SDWS16312 and SDWS16400).