Non-Load-Bearing Wall to Truss/Joist Fastening

Strong-Drive® SDPW DEFLECTOR Screw

For Non-Load-Bearing Wall Top of Wall Connection

The SDPW DEFLECTOR screws are designed to provide lateral support to full height non-load-bearing partition walls while providing a low friction interface between the fastener and the framing thereby preventing squeaking during differential deflection. These are structural fasteners that compensate for differential vertical deflection that can occur when the truss/joist deflects due to live loads and environmental changes between the framing above the wall and floor system to which the wall is anchored. The lateral resistance provided by the SDPW DEFLECTOR screws is generally normal to the surface of the interior non-load-bearing wall.

The SDPW DEFLECTOR screws are designed for use in interior dry-service conditions. They may be used in applications with dry service wood treatment chemicals and fire-retardant treated wood.

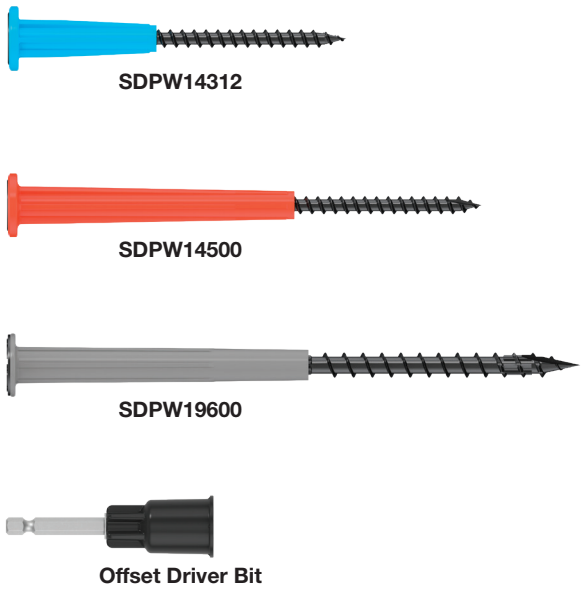
The SDPW DEFLECTOR screws are made from heat-treated carbon steel and coated with an E-coat® for corrosion resistance. They are manufactured under an approved quality system. SDPW DEFLECTOR screws come preassembled with color-coded polymer sleeves, which serve as a visual indicator for screw length.

Code/Standards: IAPMO UES ER-192 (including City of LA Supplement)

For more information, see p. 105, C-F-2023 *Fastening Systems* catalog

SDPW DEFLECTOR Screw Dimensions

Model No.	Screws		Sleeves	
	Length (in.)	Thread Length (in.)	Length (in.)	Color
SDPW14312	3.5	2	1.5	Blue
SDPW14500	5.0	2	3.0	Orange
SDPW19600	6.0	3	3.0	Gray



SDPW DEFLECTOR Screws and Offset Driver Bit

Non-Load-Bearing Wall to Truss/Joist Fastening

Strong-Drive® SDPW DEFLECTOR Screw (cont.)

Typical Installation of SDPW DEFLECTOR Screws

A non-load-bearing wood stud wall is defined by the IBC as any wall that supports less than 100 lb./ft. of vertical load in addition to its self-weight. The SDPW DEFLECTOR screws fasten full-height non-load-bearing partition walls with wood framing in compliance with the IBC and IRC at the top of the wall to supporting wood or wood-based members. The supporting members may be dimension lumber, trusses, I-joists, glulam, structural composite lumber, or cross-laminated timber (CLT). The supporting members at a minimum shall be representative of a wood species combination with an assigned specific gravity of 0.42 or equivalent specific gravity of 0.42. The supporting members shall be equal to or thicker than the minimum penetration length.

Partition walls oriented perpendicular to the supporting framing members shall be fastened directly to the supporting framing members. For a partition wall oriented parallel to and between the overhead framing members, the partition wall shall be fastened to blocking that is installed and fastened as prescribed in the applicable building code.

Installation of the SDPW DEFLECTOR screw requires a predrilled ⅜" hole in the top plate. The supporting member shall not be predrilled. The polymer sleeve shall not penetrate the supporting member.

The SDPW DEFLECTOR screw is preferably installed using the offset driver bit that positions the screw with a ¾" offset (distance between the bottom of the screw head and the lower surface of the top plate). The ¾" offset allows for differential movements in upward and downward directions. Some construction conditions may require a 0" offset that can be achieved with or without the offset driver bit.

The gap (space between the top surface of the top plate and the lower surface of the supporting members) minimizes the potential for the partition wall to be loaded by differential movements of the overhead supporting member and the floor. A 0" gap may result in unintended loading of the partition wall, while the maximum gap is limited by top-plate thickness and screw length.

Minimum penetration into the supporting member shall be not less than ½" for the SDPW14312 and SDPW14500. Minimum penetration into the supporting member for the SDPW19600 shall be not less than ¾". Penetration length into the supporting member includes the point. Allowable loads and spacing for the SDPW19600 may be used for the double 2x top plate and thinner top plates that comply with the building codes. The allowable loads and spacing for the SDPW14500 may be used for the built-up top plate (maximum thickness 2¼") as well as the single nominal 2x top plate.

Non-Load-Bearing Wall to Truss/Joist Fastening

Strong-Drive® SDPW **DEFLECTOR** Screw (cont.)

Allowable Lateral Loads (F_1 and F_2) for SDPW DEFLECTOR Screws That Connect a Non-Load-Bearing Partition Wall and the Supporting Member

Model No.	Top Plate	Allowable Lateral Load (lb.), SPF/DFL/SP (C_D = 1.6)							
		Offset = 0"				Offset = ¾"			
		Gap				Gap			
		0"	½"	¾"	1½"	0"	½"	¾"	1½"
SDPW14312	2x	220	145	145	NA	220	100	NA	NA
SDPW14500	2x +¾" WSP	180	140	140	140	180	105	80	45
SDPW19600	(2) 2x	295	205	165	75	295	205	165	75

1. Allowable lateral load was calculated based on a safety factor of 5.0. Loads were increased for wind and earthquake (C_D = 1.6); no further increases allowed. Reduce when other loads govern.
2. Per section of 1607.16 of IBC-2021, interior walls and partitions at least 6-ft in height must resist a horizontal load of 5 psf. Screw spacing shall be determined by a designer.
3. I-Joist shall shall have minimum flange thickness of 1⅛".
4. The SDPW DEFLECTOR screw is preferably driven with Simpson Strong-Tie offset driver bit for the ¾-in. offset installation.
5. The partition wall top-plate-to-stud and top-plate splice connections shall be fastened per applicable building code.
6. A 0" gap may result in load transfer into walls not designed to be load-bearing.
7. Cells with "NA" represent conditions that should not be built using the SDPW14312 Deflector screws.
8. Visit **strongtie.com/drawings** and search for SDPW Detail Sheet for typical application sheets and load tables in DWG, PDF or DXF format.
9. F_1 is a force parallel to the top plate; F_2 is a force perpendicular to the top plate.

Maximum SDPW DEFLECTOR Screw Spacing for 8-ft. and 10-ft. Tall Residential Walls

Model No.	Top Plate	On-Center Spacing (in.)							
		Offset = 0"				Offset = ¾"			
		Gap				Gap			
		0"	½"	¾"	1½"	0"	½"	¾"	1½"
SDPW14312	2x	48 / 48	48 / 48	48 / 48	NA	48 / 48	48 / 48	NA	NA
SDPW14500	2x +¾" WSP	48 / 48	48 / 48	48 / 48	48 / 48	48 / 48	48 / 48	48 / 36	24 / 18
SDPW19600	(2) 2x	48 / 48	48 / 48	48 / 48	42 / 36	48 / 48	48 / 48	48 / 48	42 / 36

1. Spacings are maximums (inches on center) based on a 5psf horizontal pressure and short duration (C_D = 1.6) allowable loads. For other durations, adjust loads and spacing.
2. In each cell: spacing (in.) for 8' tall/10' tall wall.
3. Cells with "NA" represent conditions that should not be built using the SDPW14312 Deflector screw.
4. Spacing for wall heights between 8' and 10' may be interpolated.
5. Spacing for other loads and wall heights shall be calculated using the allowable lateral loads.