

# SDWS16 - Strong-Drive® Framing Screws

## Structural Screw for Roof Batten and Purlin Fastening



### Timber Roof Batten & Purlin Fastening with the Simpson Strong-Tie® Strong-Drive® SDWS16 FRAMING Screw for Residential Timber-Frame Construction (NZS 3604:2011)

The Simpson Strong-Tie Strong Drive SDWS Framing screw (Figure 1) can be used for fixing roof battens or purlins down to rafters or roof trusses to resist wind uplift. The SDWS Framing screw is a carbon steel screw with a multi-layer coating for corrosion resistance that is designed for common framing connections in light-frame timber structures. The large head resists pull-through and has a 6-lobe T25 drive recess for secure driving. Table 1 presents the model information, specification dimensions and basic mechanical properties of the fasteners.

**Table 1. Screw Dimension**

Model No.	Dimensional Specifications (mm)				
	Length	Thread Length	Major Thread Diameter	Shank Diameter	Head Diameter
SDWS16312	89	51	5.5	4.0	11.0

1. Length is top of head to point; thread length is from bottom of knurl to point.

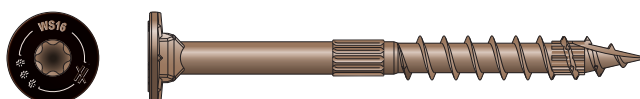


Figure 1. Simpson Strong-Tie Strong-Drive SDWS FRAMING Screw (model SDWS16312 shown).

Characteristic capacities for withdrawal and pull-through are based on data analysis per AS1649, Section 3.2 for Category A fasteners. Table 2 presents characteristic withdrawal and pull-through properties that are critical to batten and purlin uplift design. Design capacities are the product of the characteristic capacities ( $Q_k$ ), the number of screws ( $n$ ), modification factor for a fastener in side grain ( $K_{33}$ ), load duration factor ( $k_2$ ), and the capacity factor ( $\phi$ ).

**Table 2. Characteristic withdrawal and pull-through capacities (Qk) for the SDWS Framing Screw**

Model No.	Characteristic Withdrawal (N/mm)		Characteristic Pull-through (N)	
	JD4	JD5	JD4	JD5
SDWS16312	131	97	3960	2800

1. Withdrawal resistance is based on thread length in mm embedded in the main member.  
 2. Characteristic pull-through resistance calculated from test data per withdrawal in AS1649.

### Alternative to NZS3604:2011

The Simpson Strong-Tie Strong Drive SDWS16 and SDWS22 shank, major thread, and root diameter dimensions meet or exceed the 10g and 14g screw sizes in NZS3604:2011 for fixing Roof Battens and Purlins to rafters or trusses.

Fastener	Description	NZS3604* Capacities	Simpson Strong-Tie equivalent screw size
Gun Nail	2 / 90 x 3.15mm	0.8 kN Fixing Capacity	1 / SDWS16 x 89mm
Screw	1 / 10g x 80mm	2.4 kN Fixing Capacity	1 / SDWS16 x 89mm
Screw	1 / 14g x 100mm	5.5 kN Fixing Capacity	1 / SDWS22 x 102mm

Table 10.10 of NZS3604:2011

#### Features & Benefits:



Easy installation provides good positive connection



Head markings make it easier for Building Inspectors - Correct tested fastener has been installed



Corrosion resistant coating provides excellent fastener protection