



SURE-FAST
INDUSTRIAL FASTENERS

Mechanical Testing

Sure-Fast Steel Fixing SD screws were tested for determination of withdrawal properties in accordance with *AS 3566.1-2002 Self-Drilling Screws for the Building and Construction Industries – Part 1: General Requirements and Mechanical Properties*.

The test procedure included being driven into galvanized steel substrates of 1.5mm nominal



- Screw Type 1:** Sure-Fast Self Drilling (SD) – 12-14 x 42mm long
- Screw Type 2:** Sure-Fast Self Drilling (SD) – 12-14 x 53mm long
- Head Type:** Hexagon Head
- Head Markings:** SX4
- Head (Nominal):** 7.8mm Across Flats (A/F) – To suit 5/16" driver
- Coating Type:** Zinc

Self Drilling Screws were driven into galvanised steel substrates measuring thicknesses of 1.5mm nominal thicknesses.

For all testing into steel substrates, several full pitch threads were protruding from the underside of the test plate. Axial withdrawal force was then applied individually to the screw head until the screws achieved the peak tensile force and withdrew from the test plate.

**Table 1: Withdrawal Test Data for Self Drilling Screws 12-14 x 42mm long;
1.5mm Thick Steel (Purlin)**

Screw & Substrate Type	Specimen No.	Peak Test Force (kN)	AS 3566.1 Min. Force (kN)	Test Observations/Comments
(ST 5.5) 12-14 x 42 mm long; 1.5mm Thick Steel (Purlin)	1	4.1	2.8	Withdrawal from the steel material, minimal damage to the screw threads - PASS
	2	3.9		"
	3	3.6		"
	4	4.1		"
	5	3.5		"
	6	4.0		"
	7	3.6		"
	8	3.9		"
	9	4.2		"
	10	3.6		"

Mean 3.9

Minimum 3.5

Maximum 4.2

**Table 2: Withdrawal Test Data for Self Drilling Screws 12-14 x 53mm long;
1.5mm Thick Steel (Purlin)**

Screw & Substrate Type	Specimen No.	Peak Test Force (kN)	AS 3566.1 Min. Force (kN)	Test Observations/Comments
(ST 5.5) 12-14 x 53 mm long; 1.5mm Thick Steel (Purlin)	1	3.9	3.1	Withdrawal from the steel material, minimal damage to the screw threads - PASS
	2	3.8		"
	3	4.0		"
	4	4.7		"
	5	4.0		"
	6	4.1		"
	7	4.8		"
	8	4.0		"
	9	3.5		"
	10	4.1		"

Mean 4.1

Minimum 3.5

Maximum 4.8