



**SURE-FAST**  
INDUSTRIAL FASTENERS

# Mechanical Testing

Steel-Fast Steel Self Drilling 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 thicknesses.



**Screw Type 1:** Steel-Fast Self Drilling (SD) – 14-14 x 205mm long  
**Head Type:** Hexagon Head  
**Head Markings:** SX4  
**Head (Nominal):** 9.4mm Across Flats (A/F) – To suit 3/8" 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 at a constant rate until the screws achieved the peak tensile force and withdrew from the test plate.

**Table 1: Withdrawal Test Data for Self Drilling Screws 14-14 x 205mm 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 6.3) 14-14 x 205 mm long; Steel Substrate 1.5 mm	1	3.91	3.10	Withdrawal from the steel substrate, no signs of damage to the screw threads - PASS
	2	3.70		"
	3	3.75		"
	4	4.00		"
	5	3.82		"
	6	4.18		"
	7	3.99		"
	8	3.80		"
	9	3.77		"
	10	3.62		"
Mean		3.85		
Minimum		3.62		
Maximum		4.18		