

SDR SELF-DRILLING RUSPERT SCREW



PRODUCT HIGHLIGHTS

Self-drilling 6.3mm Ruspert Screw for fastening of timber to steel



T30



Self counter
sinking



Timber drilling break
away wing tabs

Drills up to
12mm plate

KEY FEATURES

- TX30 self-drilling screw for timber-to-steel applications.
- Tested into steel plate up to 12 mm; predrill required at 12 mm.
- Silver Ruspert coating with 1,000-hour salt-spray performance.
- Wings ream timber to reduce jacking and force-feeding.
- #4 drill point for steel fixing; predrill above 350 MPa steel if required.
- Suitable for softwood and hardwood applications.
- Broad washer head improves clamping and pull-through resistance.

APPLICATIONS

- Fixing timber panels to metal substructures: tested up to 12 mm steel in the published application range.
- Suitable for use with:
 - Lintels
 - I-Beams
 - Metal Purlins
- Predrilling is required for 12 mm plate and may be required for steel grades above 350 MPa or adverse installation conditions.



Material / Finish	Compliance / Coating Notes
Material: C1022 / SAE 1022 carbon steel Finish: Silver Ruspert coating Drive: TX30 / T30 Head: countersunk washer / large flat head Point: self-drilling #4 point with wings	Manufacturer confirmation supports AS 3566.1:2002 general requirements and mechanical properties. AS 3566.1 does not provide a separate dimensional specification for washer heads; therefore, head diameter is not assessed as a standard CSK head pass/fail item. Ruspert coating is a three-layer system: zinc layer, chemical conversion layer and baked ceramic outer layer.

Available sizes and Key inspection dimensions

Product code	Dia.	Length	Drive	Part no	Key information from inspection drawings
SHCSK6.3x45R	6.3 mm	45 mm	T30	SHCSK6.3X45R	Head Dia. 19.20–19.80 mm; Recess Depth 2.95–3.35 mm; Major Dia. 6.04–6.25 mm; Total Length 43.75–46.25 mm.
SHCSK6.3x65R	6.3 mm	65 mm	T30	SHCSK6.3X65R	Head Dia. 19.20–19.80 mm; Recess Depth 2.95–3.35 mm; Major Dia. 6.04–6.25 mm; Total Length 63.75–66.25 mm.
SHCSK6.3x80R	6.3 mm	80 mm	T30	SHCSK6.3X80R	Head Dia. 19.20–19.80 mm; Recess Depth 2.95–3.35 mm; Major Dia. 6.04–6.25 mm; Total Length 78.75–81.25 mm.
SHCSK6.3x130R	6.3 mm	130 mm	T30	SHCSK6.3X130R	Head Dia. 19.20–19.80 mm; Recess Depth 2.95–3.35 mm; Major Dia. 6.04–6.25 mm; Total Length 128.75–131.25 mm.

Inspection reports also record surface hardness minimum 560 HV, core hardness HV350–425, and minimum breaking torque 173 kgf-cm for the sizes.



Mechanical properties

Working load is calculated from design capacity divided by FOS = 2.5 for steel. The design capacity values are taken directly from the original test reports and were calculated separately under AS/NZS 1170.0:2002 Appendix B.

Part	Length	Mean tensile	Tensile Design Capacity	Working tensile (FOS 2.5)	Mean shear	Shear design capacity	Working shear (FOS 2.5)
	(mm)	(kN)	(kN)	(kN)	(kN)	(kN)	(kN)
SHCSK6.3x45R	45	24.51	21.1	8.44	—	—	—
SHCSK6.3x65R	65	24.47	21.2	8.48	—	—	—
SHCSK6.3x80R	80	25.17	22.1	8.84	14.72	12.7	5.08
SHCSK6.3x130R	130	25.44	22.4	8.96	—	—	—

Pull-out values in Steel Plate

Product	Plate material	Plate thickness	Mean load	Design capacity	Working load (FOS 2.5)
		(mm)	(kN)	(kN)	(kN)
SHCSK6.3x80R	steel plate	5	10.35	5.955	2.38
SHCSK6.3x80R	steel plate	6	16.31	13.434	5.37
SHCSK6.3x80R	steel plate	8	19.35	14.687	5.87
SHCSK6.3x80R	steel plate	10	21.45	16.017	6.41
SHCSK6.3x80R	steel plate	12	23.50	20.591	8.24
SHCSK6.3x130R	steel plate	10	22.94	16.6	6.64

Maximum published steel plate thickness is 12 mm. Predrilling is required for 12 mm plate. Values are based on laboratory testing and must be checked for project-specific conditions.



Timber shear values — 6.3 x 80 mm SDR Ruspert screw

Applies to the 80 mm long version only. Framing timber was fixed to a steel plate with one Ruspert screw and tested in single shear; the timber was tested in both longitudinal and transverse grain directions. Mean and Design capacities are from the test reports.

Longitudinal timber shear test results — 80 mm screw

Direction	Steel plate thickness	Mean shear	Design Capacity	Working shear (FOS 2.5)
	(mm)	(kN)	(kN)	(kN)
Longitudinal	5	8.43	5.892	2.36
Longitudinal	6	7.70	6.004	2.40
Longitudinal	8	8.46	6.603	2.64
Longitudinal	10	8.18	6.943	2.78
Longitudinal	12	7.75	5.133	2.05

Transverse grain timber shear test results — 80 mm screw only

Direction	Steel plate thickness	Mean shear	Design Capacity	Working Shear (FOS 2.5)
	(mm)	(kN)	(kN)	(kN)
Transverse	5	10.21	8.410	3.36
Transverse	6	8.45	6.074	2.43
Transverse	8	8.68	6.987	2.79
Transverse	10	9.17	6.978	2.79
Transverse	12	10.21	6.604	2.64



Installation guidance and limitations

- Use the correct Torx TX30/T30 drive bit with a standard drill/driver with adjustable torque and steady speed control. Recommended installation speed is 800–1200 rpm for screws up to 80 mm long and 1200–1500 rpm for the 130 mm long screw.
- Avoid impact drivers, especially in thick steel applications. Keep the screw perpendicular to the fixing surface and maintain controlled speed and alignment.
- Apply firm, consistent pressure. Allow the self-drilling point to bite and form the hole before the thread fully engages.
- Do not over-tighten or force-feed the screw. The wings clear the timber path before engaging the steel, helping reduce timber jacking.
- Predrilling is required for 12 mm steel plate and may be required for steel grades greater than 350 MPa, thicker/harder steel, dense hardwood, worn bits, or adverse site conditions.
- Design values are based on laboratory test conditions. Actual performance may vary with steel grade, timber density, member thickness, edge distance, screw spacing, installation angle, corrosion environment and workmanship.

NOTES

1000 N = 1 kN. Mean Load/Strength is the average ultimate strength of the samples tested. Design capacity values are taken directly from the original test reports and were calculated separately in accordance with AS/NZS 1170.0:2002 Appendix B. Working Load is calculated by dividing the source report design capacity by FOS = 2.5. This document is technical guidance only and does not replace project-specific engineering design or assessment of suitability for the intended application.

