

## 4340 HIGH TENSILE STEEL

4340 is a 1.8% Nickel-Chrome-Moly high hardenability, high tensile steel. 4340 is generally supplied hardened and tempered (to condition U).

Pre hardened and tempered 4340 can be further surface hardened by flame or induction hardening as well as nitriding. 4340 is used for Heavy duty shafts, Gears spindles, Couplings, Pins. With the addition of Nickel over 4140, 4340 has a better depth of mechanical properties allowing for a larger Limited Ruling Section and resulting in higher core strength at larger diameters.

**Stocked Sizes** - Rounds 25 mm – 610 mm Ø

**Finishes** - Hot Rolled, Peeled, Turned & Polished, Centreless Ground

### Related Specifications

Australia	AS 1444 – 1996 4340
Japan	JIS G4103 SNCM439
USA	AISI 4340 ASTM A29/A29M – 91 4340 SAE 4340 ASTM A322 43430 UNS G43400

### Chemical Composition

	Min. %	Max %
Carbon	0.37	0.44
Silicon	0.10	0.35
Manganese	0.55	0.90
Nickel	1.55	2.00
Chromium	0.65	0.95
Molybdenum	0.20	0.35
Phosphorous	0	0.04
Sulphur	0	0.04

### Mechanical Properties – Hardened & Tempered 4340 to AS1444 (all finishes except cold drawn)\*

Mechanical Property Designation		R	S	S	T	U	V	W
Limited Ruling Section mm*		250	250	150	100	63	30	20
Tensile Strength Mpa	Min	700	770	770	850	930	1000	1080
	Max	850	930	930	1000	1080	1150	1230
0.20% Proof Stress (Yield) Mpa	Min	480	540	570	665	740	835	925
	Max							
Elongation on %	Min	15	13	15	13	12	12	12
Izod Impact J	Min	34	27	54	54	47	47	40
Charpy Impact J	Min	28	22	50	50	42	42	35
Hardness Brinell HB	Min	201	223	223	248	269	293	311
	Max	255	277	277	302	331	352	375

\*For Cold Drawn information contact our office or refer to AS1444-1996

### Annealing

Heat to 800-850 Deg C. Hold until temperature is uniform throughout the section and allow to cool in furnace.