

S12L14 BRIGHT CARBON STEEL BAR

S12L14 is a premium free machining low tensile, low hardenability carbon steel, with free machining characteristics due to the addition of both Lead and Sulphur. As this material contains Lead, it is not recommended for welding, as it is both problematic and a possible health hazard.

S12L14 is generally only used in the as rolled condition, and then either cold drawn or turned to allow feeding through NC machines. S12L14 can be carburised and electroplated. Core strength will, however, remain low. S12L14 is not recommended for flame, induction or nitride hardening.

Typical applications included lightly stressed components, and machinery parts. Ideally suited for high volume lightly stressed components.

Stocked Sizes - Generally stocked for customer specific requirements. Contact your local branch for further information.

Related Specifications								
Australia	AS 1443 – 1994 12L14							
Japan	JIS G 4804 SUM22L							
USA	AISI/SAE 12L14 UNS G12144							
Chemical Composition								
	Min. %	Max %						
Carbon	0	0.15						
Silicon	0	0.10						
Manganese	0.80	1.20						
Phosphorous	0.04	0.09						
Sulphur	0.25	0.35						
Lead	0.15	0.35						
Typical Mechanical Properties – Cold Drawn & Turned and Polished (For Guidance Only - indicative)								
	Up to 16mm CD	17-38mm CD	39-63mm CD	Turned & Polished (All Sizes)				
Tensile Strength (Mpa)	480-760	430-690	400-630	370-520				
Yield Strength (Mpa)	350-590	330-550	290-500	230-310				
Elongation in 50mm (%)	7	8	9	17				
Hardness (Brinell BHN)	142-225	120-205	115-185	105-155				
Standard Bright Tolerance (h11) in mm								
3-6mm	+6-10mm	+10-18mm	+18-30mm	+30-50mm	+50-80mm	+80-120mm	+120-180mm	+180-250mm
+0/-0.075	+0/-0.09	+0/-0.11	+0/-0.13	+0/-0.16	+0/-0.19	+0/-0.22	+0/-0.25	+0/-0.29mm
Annealing								
Heat to 890-920 Deg C. Hold until temperature is uniform throughout the section and allow to cool in furnace.								
Normalizing								
Heat to 900-940 Deg C. Hold until temperature is uniform through the section, soak for 10-15 minutes per 25mm of cross section, and allow to cool in still air.								
Stress Relieving								
Heat to 500-700 Deg C. Hold until temperature is uniform throughout the section, soak for 1 hour per 25mm of section, and cool in still air								