

Through Hardenable Steel

Product Description

S155 in the British Standard Aerospace Series is a Nickel-Silicon – Chromium–Molybdenum–Vanadium through hardening steel with a tensile strength of 1,900-2,100 MPa. The material is manufactured by consumable electrode vacuum arc re-melting (VAR). Bars, and where practicable, forgings, are subjected to ultrasonic examination. Bars and forgings are supplied in the normalised and softened condition. Parts produced from bar and forgings are required to be supplied in the finally heat treated condition which consists of hardening followed by oil quenching and tempering followed by air cooling.

Typical Applications

- Aircraft engineering components
- High performance components for autosport

Material Specifications

- BS S155:1976
- AMS 6257 (related spec.)
- 300M (related spec.)
- SAE 4340M (related spec.)

Availability

- Black bars for machining (S155B)
- Forgings (S155C) s

Chemical Composition (weight %)

Weight (%)	C	Si	Mn	P	S	S+P	Cr	Mo	Ni	V
Min	0.39	1.50	0.60				0.70	0.30	1.65	0.05
Max	0.44	1.80	0.90	0.015	0.015	0.025	0.95	0.45	2.00	0.10

Mechanical Properties

	Longitudinal Minimum	Longitudinal Maximum	Transverse Minimum	Transverse Maximum
UTS, MPa	1,900	2,100	1,900	2,100
0.2% PS, MPa	1,550		1,550	
Elongation, %	8		5	
Reduction of area, %	30		20	
Hardness (Brinell)	534 - 601 HB			

The hardness of material in the normalised and softened condition shall not be greater than 302 HB

Above properties after final heat treatment

Technical Assistance

Our knowledgeable staff backed up by our resident team of qualified metallurgists and engineers, will be pleased to assist further on any technical topic.

UK Service Centres:

Smiths Belfast **02895 908 897**
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Quality & Testing:



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