

### Aerospace Case Hardening Steel

#### Product Description

BS S82 in the British Standard Aerospace Series is a 4% Ni-Cr-Mo case-hardening steel with a tensile strength of 1,320-1,520 MPa. The material is manufactured by an electric melting process. 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 carburising, hardening and tempering

#### Typical Applications

- Aircraft engineering components
- High performance components for autosport

#### Material Specifications

- S S82:1976
- BS S156 (related spec. - VAR remelted)
- Wr.N 1.6722/3 (related German spec.)
- 16NCD17 (related French spec. in AIR 9160)

#### Availability

- Black bar (S82B)
- Bright bar (S82D)
- Forgings (S82C)
- We stock S82D in a range of bar diameters

#### Chemical Composition (weight %)

Weight (%)	C	Si	Mn	P	S	Cr	Mo	Ni
Min	0.14	0.15	0.25			1.0	0.20	3.8
Max	0.18	0.40	0.55	0.025	0.020	1.4	0.30	4.3

#### Mechanical Properties

0.2% PS, MPa	UTS, MPa		Elongation (%)	R of A (%)	Izod impact, ft lbf Charpy U-notch, J
	Min.	Max.			
1030	1320	1520	8	35	25

The maximum hardness in the softened condition is 277 HB

The above mechanical properties are achieved in the final heat treated condition

#### 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	Smiths Leeds	0113 307 5167
Smiths Biggleswade	01767 604 704	Smiths Manchester	0161 794 8650
Smiths Birmingham	0121 728 4940	Smiths Norwich	01603 789 878
Smiths Bristol	0117 971 2800	Smiths Nottingham	0115 925 4801
Smiths Chelmsford	01245 466 664	Smiths Redruth	01209 315 512
Smiths Gateshead	0191 469 5428	Smiths Verwood	01202 824 347
Smiths Horsham	01403 261 981	Main Office	0845 527 3331

#### Quality & Testing:



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