



BS S156 / S82

4% NiCrMo Case Hardening Steel

BS S156: Air Melted + Vacuum Arc Remelted (VAR) or Air Melted and Electro Slag Remelted (ESR) S82: Air Melted



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Features and benefits

- High Strength (1350MPa)
- Excellent transverse properties in VAR material
- Develops hard wear resistance case after surface treatment

Related specifications

Typical applications

Heavy duty gears for helicopters and aircrafts

- MSRR 6010 (AM + ESR)
- MSRR 6009
- 16NCD17

Chemical analysis

	С	Si	Mn	Р	s	Cr	Мо	Ni
Min	0.14	0.10	0.25			1.00	0.20	3.80
Max	0.18	0.35	0.55	0.015	0.012	1.40	0.30	4.30

Mechanical properties of typical specifications

Mechanical properties are BS S156 / S582 limits after final heat treatment

	Min	Μαχ
0.2 % Proof Stress MPa	1030	
Tensile Strength MPa	1320	1520
Elongation %	11	
Reduction of area %	40	
Izod* Impact ft Ibf	30	

*The charpy U-notch value obtained from a standard test may be expected to be not less than 30J

Supply condition and availability

- Supplied as normalised and annealed
- Readily available from stock in size range 18mm 250mm diameter
- Other sizes available on request

Heat treatment

- Carburise at 900°C
- Oil quench from 825°C and temper at 190°C
- (N.B. a sub zero treatment at -70°C before tempering is recommended)

Technical support

We have a comprehensive technical support team available to advise on grade selection and product range to achieve the maximum benefit. Customer Technical support provide specialist advice and help with day-to-day problem solving.

Works based metallurgists and the full resources of our Steel Research and Development Laboratories are available to assist with longer-term developments.

For further information, enquiries or any technical guidance on our range of Aerospace products please contact our experts using the details below.

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