# **BS S132** Technical Datasheet

## 3% Chromium-Molybdenum Nitriding Steel



## **Product Description**

S132 in the British Standard Aerospace Series is a 3% Cr-Mo-V nitriding steel offering a tensile strength of 1,320-1,470 MPa (excellent hardenability for high core strength) and develops a hard wear resistant case after surface treatment. The alloy is usually produced by single melting in air followed by electroslag refining (ESR) but is also available as a vacuum arc re-melted version. Bars and, where applicable, forgings are subjected to ultrasonic examination. Bars are usually supplied bright in the softened condition. Final heat treatment consists of hardening at 950°C (oil quench) followed by tempering at not less than 600°C (air cool).

## **Typical Applications**

- Gearbox shafts
- Crankshafts

#### **Material Specifications**

- BS S132:1976
- 40CDV12 (related French spec.)
- Wr.N 1.8523 (related German spec.)
- Various MSRR specifications

#### Availability

- Black bar (S132B)
- Bright bar (S132D)
- Forgings (S132C)
- We stock S132D in a range of bar diameters

Chemical Composition (weight %)											
Weight (%)	С	Si	Mn	Р	S	Cr	Мо	Ni	Sn	V	Fe
Min	0.35	0.10	0.40			3.0	0.80			0.15	Rem
Max	0.43	0.35	0.70	0.020	0.020	3.5	1.10	0.30	0.030	0.25	Rem

Mechanical Properties						
0.2% PS, MPa	UTS, MPa	Elongation (%)	R of A (%)	Izod impact, ft lbf Charpy U-notch, J	Hardness HB Min Max	
1130	Min. Max. 1320 1470	8	35	20	388 429	

The maximum hardness in the softened condition is 277 HB

#### **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:			Quality & Testing:
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	Quality Management
Smiths Bristol 0117 971 2800	Smiths Nottingham	0115 925 4801	
Smiths Chelmsford 01245 466 664	Smiths Redruth	01209 315 512	TESTING
Smiths Gateshead 0191 469 5428	Smiths Verwood	01202 824 347	1930
Smiths Horsham 01403 261 981	Main Office	0845 527 3331	www. <b>smithmetal</b> .com info@ <b>smithmetal</b> .com

All information in our data sheet is based on approximate testing and is stated to the best of our knowledge and belief. It is presented apart from contractual obligations and does not constitute any guarantee of properties or of processing or application possibilities in individual cases. Our warranties and liabilities are stated exclusively in our terms of trading. © Smiths Metal Centres 2023