BRITISH STANDARD AEROSPACE SERIES

BS S 155:1976
+A1:2016

Specification for

Nickel-silicon-chromium-molybdenum-vanadium-steel (vacuum arc remelted) billets, bars, forgings and parts —

(1900–2100 MPa: limiting ruling section 75 mm)

ICS 49.025.10

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Committee reference ACE/15
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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 and 2 and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

Amendments issued since publication

Amd. No.	Date	Comments
A1	November 2016	See Foreword.

Contents

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Foreword

Publishing information

This British Standard is published by BSI Standards Limited, under licence from The British Standards Institution.

Supersession

BS S 155:1976+A1:2016 supersedes BS S 155:1976, which is withdrawn.

Information about this document

Text introduced or altered by Amendment No. 1 is indicated in the text by tags [A1] ⟨A1]. Minor editorial changes are not tagged.

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1 Inspection and testing procedure

1.1 General. This British Standard shall be used in conjunction with the relevant sections of the latest issue of BS S 100 as follows:

Bars for machining delivered in other than the finally heat treated condition	sections 1 and 2
Forging stock and billets and bars for subsequent working	sections 1 and 5
Forgings	sections 1 and 6
Parts finally heat treated after machining	sections 1 and 7

〉A1〈 **1.2 Sulfur printing or deep etching tests.** One sample shall be taken from each end of each ingot for sulfur printing or deep etching tests in accordance with Section 1 of BS S 100.

1.3 Ultrasonic examination. Material shall be subjected to ultrasonic examination in accordance with Section 1 of BS S 100. 〈A1〉

2 Manufacture

The material shall be manufactured by consumable electrode vacuum arc remelting.

3 Chemical composition

The steel shall contain:

Element	%	
	min.	max.
Carbon	0.39	0.44
Silicon	1.50	1.80
Manganese	0.60	0.90
Phosphorus	—	0.015
Sulfur	—	0.015
Sulfur + phosphorus	—	0.025
Chromium	0.70	0.95
Molybdenum	0.30	0.45
Nickel	1.65	2.00
Vanadium	0.05	0.10

4 Surface dressing

〉A1〈 The material shall be overall dressed in accordance with Section 1 of BS S 100. 〈A1〉

5 Condition

5.1 The material shall be supplied in the appropriate condition stated below:

Designation	Form	Condition of supply
S155B	Black bars for machining	Normalized and softened
S155A	Forging stock and billets and bars for subsequent working	Softened
S155C	Forgings	Normalized and softened and mechanically descaled
〉A1〈 S155D	Bright bars for machining	Normalized and softened 〈A1〉

5.2 Parts shall be supplied finally heat treated.

6 Heat treatment

6.1 Normalizing treatment. The normalizing treatment shall consist of heating at a temperature of 〉A1〈 (925 ± 10) °C 〈A1〉 for not less than 1 h, followed by cooling in air.

6.2 Softening treatment. The softening treatment shall consist of heating uniformly at a temperature to achieve the hardness specified in **7.2.1**.

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