



BSI Standards Publication

AEROSPACE SERIES

Specification for copper-nickel-silicon alloy rods, bars and sections (solution treated, cold worked and precipitation treated)

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Summary of pages

This document comprises a front cover, an inside front cover, pages i to ii, pages 1 to 4, an inside back cover and a back cover.

Foreword

Publishing information

This British Standard is published by BSI and came into effect on 30 November 2009. It was prepared by Panel ACE/61/-/16, *Copper and miscellaneous alloys*, under the authority of Technical Committee ACE/61, *Metallic materials for aerospace purposes*. A list of organizations represented on this committee can be obtained on request to its secretary.

Supersession

This British Standard supersedes BS 2B 26:2001, which is withdrawn.

Information about this document

This is a full revision of BS 2B 26. The principal change from the previous edition is that requirements are stated in tabular format in accordance with EN 4500-1.

Hazard warnings

WARNING. This British Standard calls for the use of substances and/or procedures that can be injurious to health if adequate precautions are not taken. It refers only to technical suitability and does not absolve the user from legal obligations relating to health and safety at any stage.

Use of this document

It has been assumed in the preparation of this British Standard that the execution of its provisions will be entrusted to appropriately qualified and experienced people, for whose use it has been produced.

Presentational conventions

The provisions of this standard are presented in roman (i.e. upright) type. Its requirements are expressed either as a set of instructions or in sentences in which the principal auxiliary verb is "shall".

Commentary, explanation and general informative material is presented in smaller italic type, and does not constitute a normative element.

Contractual and legal considerations

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard cannot confer immunity from legal obligations.

1 Scope

This British Standard specifies requirements for copper-nickel-silicon alloy supplied in the form of rods, bars and sections.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

BS B 100, *Procedure for inspection, testing and acceptance of wrought copper alloys*

BS EN 12163, *Copper and copper alloys – Rod for general purposes*

3 Technical requirements

Material to this standard shall conform to Table 1.

NOTE The format and symbols used in Table 1 are derived from EN 4500-1.

Table 1 Technical requirements for Cu-Ni-Si alloy rods, bars and sections (solution treated, cold worked and precipitation treated)

1	Material designation		BS B 26					
2	Chemical composition %	Element	Ni	Si	Al	Fe	Total impurities	Cu
		Min.	2.0	0.4	—	—	—	Base
		Max.	3.5	0.8	0.02	0.10	0.30 ¹⁾	
3	Method of melting		—					
4.1	Form		Rods and sections					
4.2	Method of production		Extruded, rolled, forged and cold drawn					
4.3	Limit dimension(s)	mm	—					
5	Technical specification		Sections 1 and 2 of BS B 100					

6.1	Delivery condition		Cold drawn and heat treated					
	Heat treatment		800 °C = $\theta \leq 900$ °C / WQ or OQ + cold work + $\theta \geq 450$ °C / $t \geq 1$ h / AC					
6.2	Delivery condition code		—					
7	Use condition		Delivery condition					
	Heat treatment		—					

Characteristics

8.1	Test sample(s)		See Section 2 of BS B 100					
8.2	Test piece(s)		See Section 2 of BS B 100					
8.3	Heat treatment		Use condition					
9	Dimensions concerned	mm	—					
10	Thickness of cladding on each face	%	—					
11	Direction of test piece		L					
12	T	Temperature	θ	°C	Ambient			
13		Proof stress	$R_{p0.2}$	MPa	≥ 590			
14		Strength	R_m	MPa	≥ 650			
15		Elongation	A	%	≥ 12			
16		Reduction of area	Z	%	—			
17	Hardness		$183 \leq HV \leq 234$ or $174 \leq HBW \leq 223$					
18	Shear strength	R_c	MPa	—				
19	Bending	κ	—	—				
20	Impact strength		—					
21	C	Temperature	θ	°C	—			
22		Time	h	—				
23		Stress	σ_a	MPa	—			
24		Elongation	a	%	—			
25		Rupture stress	σ_R	MPa	—			
26		Elongation at rupture	A	%	—			
27	Notes (see line 98)		1)					

Bibliography

Standards publications

For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 4500-1, *Metallic materials – Rules for the drafting and presentation of material standards – Part 1: General rules*¹⁾

¹⁾ Published as ASD-STAN Prestandard at the date of publication of this standard.

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BSI Group Headquarters

389 Chiswick High Road London W4 4AL UK



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