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(Replacing British Standard 2 S.82)

BRITISH STANDARDS INSTITUTION

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**BRITISH STANDARD SPECIFICATION
FOR AIRCRAFT MATERIAL**

**4 PER CENT NICKEL-CHROMIUM-MOLYBDENUM
CASE-HARDENING STEEL**

NOTE 1. Where metric equivalents are stated the figures in British units are to be regarded as the standard. Where Fahrenheit equivalents are stated, the temperatures in degrees Celsius are to be regarded as the standard. The conversions are approximate. More accurate conversions should be based on the tables in B.S. 350, 'Conversion factors and tables'.

NOTE 2. In place of the customary, but incorrect use of the pound, ton or kilogramme as units of force, the units called pound-force (abbreviation lbf), ton-force (abbreviation tonf) or kilogramme-force (abbreviation kgf) have been used in this standard. These are the forces which, when acting on a body of mass one pound, one ton or one kilogramme respectively, give it an acceleration equal to that of standard gravity.

1. Inspection and testing procedure.

1.1 This British Standard shall be used in conjunction with the relevant sections of British Standard 3 S.100 as follows:

Bars for machining	Sections One and Two.
Billets and bars for forging	Sections One and Five.
Forgings	Sections One and Six.
Case hardened parts	Sections One and Eight.

1.2 *Sulphur printing or deep etching tests.* Samples shall be selected in accordance with British Standard 3 S.100, Section One, Clause 7.2.1.

1.3 *Ultrasonic examination.* Rolled billets and bars to this British Standard shall be subjected to ultrasonic examination for internal cavities in accordance with British Standard 3 S.100, Appendix C.

2. Process of manufacture.

The material shall be manufactured by an electric process, unless otherwise agreed between the manufacturer and the purchaser in accordance with British Standard 3 S.100, Section One, Clause 3.1.

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7. Mechanical properties.

7.1 Mechanical tests. The mechanical properties obtained from test pieces selected and prepared in accordance with the relevant requirements of British Standard 3 S.100 shall be not less than :

Tensile strength		Elongation per cent on gauge length		Impact
tonf/sq in	kgf/mm ²	5.65 $\sqrt{S_0}$	4 $\sqrt{S_0}$	ft lbf
85	134	8	12	25

NOTE. These properties relate to test pieces heat treated at test piece size. (See British Standard 3 S.100, Section One, Clause 10.2).

7.2 Hardness. The hardness of softened material shall be not more than 277 HB.

This British Standard, having been approved by the Aircraft Industry Standards Committee and endorsed by the Chairman of the Engineering Divisional Council, was published under the authority of the General Council of the Institution on 31st January, 1964.

The Institution desires to call attention to the fact that this British Standard does not purport to include all the necessary provisions of a contract.

British Standards are revised, when necessary, by the issue either of amendment slips or of revised editions. It is important that users of British Standards should ascertain that they are in possession of the latest amendments or editions.

The following B.S.I. references relate to the work on this standard:
Committee reference ACE/15. Draft for comment D62/3645.