

Specification for

Steel hexagonal-headed bolts (B.A. and B.S.F. threads) for aircraft

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Foreword

This revision of BS 2A 25:1950 has been prepared to relate this standard to the relevant requirements of the latest edition of BS A 100.

Reference is made to the following British Standards:

BS A 100, *General requirements for bolts and nuts of tensile strength not exceeding 180 000 lb/in² (125 hbar).*

BS S 147, *Specification for 0.5 % nickel-chromium-molybdenum steel (bars for the manufacture of forged bolts only).*

BS S 148, *Specification for low nickel-chromium steel (bars for the manufacture of forged bolts only).*

BS S 149, *Specification for 1.75 % nickel-chromium-molybdenum steel bars for the manufacture of forged bolts and forged nuts.*

BS S 154, *Specification. 2½ % nickel-chromium-molybdenum steel billets, bars, forgings and parts (880 – 1 080 MPa: limiting ruling section 150 mm).*

BS S 158, *Specification for 1 % chromium-molybdenum steel bars for the manufacture of forged bolts and forged nuts.*

NOTE 1 The values in MPa are to be regarded as the standard for mechanical properties. To convert MPa to “ton force” (abbreviated to tonf) reference should be made to BS 350.

NOTE 2

- a) British Standard material BS S 96, BS S 114 and BS S 117 may be used until stocks are exhausted.
- b) Parts made in BS S 96, BS S 114 and BS S 117 material may be used until stocks are exhausted.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 8, an inside back cover 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 of issue	Comments
4726	November 1962	
5298	August 1964	
2106	October 1976	
5751	November 1987	
6082	November 1990	Indicated by a sideline in the margin

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 17 May 1962

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The following BSI references relate to the work on this standard:
Committee reference ACE/12
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1 Scope

This British Standard specifies the materials, dimensions, finish and inspection requirements for steel hexagonal headed bolts with B.A. and B.S.F. threads for aircraft.

2 General requirements

The bolts shall comply with the relevant requirements of Part 1 of BS A 100 in respect of manufacture, screw threads, anti-corrosion treatment, identification and marking.

3 Material and manufacture

- a) The bolts shall be manufactured by one of the following methods:
 - i) Machined from bright drawn bars which comply with the latest issue of one of the following British Standards:
BS S 154
 - ii) Forged from material which complies with the latest issue of one of the following British Standards:
BS S 105 bolts up to and including $\frac{1}{2}$ in diameter only
or BS S 147
or BS S 148
or BS S 149
or BS S 158
- b) In the finally heat-treated condition, the mechanical properties of the material used for forged bolts shall be as follows:

0.2 per cent proof stress	690 MPa (minimum)
Tensile strength	880/1 080 MPa
Elongation on $5.65 \times$ area	12 per cent minimum
Impact value	55 J (40 ft lbf)

4 Dimensions

- a) All finished bolts, after the application of the anti-corrosion coating, shall conform to the dimensions and tolerances given in Table 1 and Table 2.
- b) The length of the plain portion of the shank shall conform to the dimensions and tolerances given in Table 2, and shall be such that, when a standard nut without countersink or a ring gauge without countersink has been screwed on as far as possible by hand, its leading face is within the distance L from the underside of the bolt head. The runout of thread shall not exceed twice the pitch.

5 Screw threads

The bolts shall have B.A. or B.S.F. threads of the form and class of fit specified in the relevant requirements of BS A 100, Part 1.

6 Anti-corrosion treatment

All finished bolts shall be coated with cadmium.

7 Inspection procedure

The bolts shall be inspected in accordance with the relevant requirements of BS A 100, Part 2.