BS 4A 169:2002+A2:2019

BSI Standards Publication

AEROSPACE SERIES –

Specification for Bolts, Hexagonal heads (Unified threads) in aluminium alloy, anodized

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Amd. No.	Date	Text affected
16376	June 2006	Corrections to Table 2
A2	February 2019	See Foreword

Contents

Summary of pages
This document comprises a front cover, and inside front cover, pages i to ii, pages 1 to 13, an inside back cover and a back cover.

Foreword

Publishing information

This British Standard is published by BSI Standards Limited, under licence from The British Standards Institution. It was prepared by Technical Committee ACE/12, *Aerospace fasteners and fastening systems*. A list of organizations represented on this committee can be obtained on request to its secretary.

Supersession

BS 4A 169:2002+A2:2019 supersedes BS 4A 169:2002 incorporating Amendment 1, which is withdrawn.

BS 4A 169:2002 incorporating Amendment 1 superseded BS 3A 169:1962 which has been withdrawn.

Information about this document

Text introduced or altered by Amendment No. 2 is indicated in the text by tags 〚A2〉 〈A2〛. Minor editorial changes are not tagged.

The revision of BS 3A 169 referred to the relevant requirements in BS A 100. It incorporated amendment 1 of BS 3A 169 and updated and revised material specifications.

NOTE Fasteners manufactured to previous editions of this specification may continue to be supplied until stocks are exhausted.

Presentational conventions

The provisions of this standard are presented in roman (i.e. upright) type. Its requirements are expressed 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.

Where words have alternative spellings, the preferred spelling of the Shorter Oxford English Dictionary is used (e.g. "organization" rather than "organisation").

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 materials and manufacture, dimensions, protective treatment and quality assurance requirements for aluminium-alloy hexagon-head bolts with unified threads.

NOTE The latest edition of an Aerospace Series standard is indicated by a prefix number.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this British Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. For undated references, the latest edition of the publication referred to applies.

A2 BS 4A 100:2003, *Specification for general requirements for bolts and free-running nuts of tensile strength not exceeding 1 249 MPa*

BS EN 2284, *Specification for sulfuric acid anodizing of aluminium and wrought aluminium alloys* A2

BS L 168, *Specification for bars and extruded sections of aluminium-copper-magnesium-silicon-manganese alloy (solution treated and artificially aged) (not exceeding 200 mm diameter or minor sectional dimension) (Cu 4.4, Mg 0.5, Si 0.7, Mn 0.8)*

A2 SAE AMS03-25, *Sulfuric acid anodizing of aluminium and aluminium alloys* A2

3 General requirements

Bolts shall conform to BS A 100.

4 Materials and manufacture

The bolts shall be machined from bars that conform to BS L 168.

5 Dimensions and tolerances

5.1 All finished bolts shall conform to the dimensions and tolerances specified in Table 1 and Table 2. All dimensions shown are in inches.

5.2 The clamping length of the bolt shall conform to the dimensions and tolerances specified in Table 2, and shall be such that when a standard nut, without countersink or ring gauge, is screwed on as far as possible by hand, its leading face is within a distance *M* from the underside of the bolt head. The run-out of the thread shall not exceed twice the thread pitch.

5.3 The nominal length of the bolt shall be the minimum bearing length *L*, which is determined by the minimum clamping length, *M*, less two thread pitches (see Table 2).

NOTE The bearing lengths L quoted in Table 2 are in ·100 inch increments but where a ·050 length increment is required this should be by agreement between manufacturer and user and should be identified as follows: 8½ B, indicating a 6-32 UNC bolt of bearing length L ·850 inches. M and E need to be adjusted accordingly.

