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Interested committees:

Title: Draft BS ISO 7689 Aerospace — Bolts, with MJ threads, made of alloy steel, strength class 1 100 MPa — Procurement specification.

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Introduction

This draft standard is based on national and international discussions. Your comments on this draft are invited and will assist in the preparation of the consequent standard.

For international standards, comments will be reviewed by the relevant UK national committee before sending the consensus UK vote and comments to the international committee, which will then decide appropriate action. If the international standard is approved, it is usual for the text to be published as a British Standard.

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Please indicate whether you consider the UK should submit a negative (with supporting technical reasons) or positive vote on this draft. Please indicate if you are aware of any reason why this draft standard should not be published as a British Standard.

Submission of Comments

- **Annotated drafts are not acceptable and will be rejected.**
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Template for comments and secretariat observations

Date: xx/xx/20xx	Document: ISO/DIS xxxx
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1	2	(3)	4	5	(6)	7
MB	Clause No./ Subclause No./Annex (e.g. 3.1)	Paragraph/Figure/ Table/Note	Type of comment	Commend (justification for change) by the MB	Proposed change by the MB	Secretariat observations on each comment submitted
	3.1	Definition 1	ed	Definition is ambiguous and needs clarifying.	Amend to read '...so that the mains connector to which no connection...'	
	6.4	Paragraph 2	te	The use of the UV photometer as an alternative cannot be supported as serious problems have been encountered in its use in the UK.	Delete reference to UV photometer.	

DRAFT INTERNATIONAL STANDARD

ISO/DIS 7689

ISO/TC 20/SC 4

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Voting begins on:
2020-04-23

Voting terminates on:
2020-07-16

Aerospace — Bolts, with MJ threads, made of alloy steel, strength class 1 100 MPa — Procurement specification

*Aéronautique et espace — Vis à filetages MJ, en acier allié, de classe de résistance 1 100 MPa —
Spécification d'approvisionnement*

ICS: 49.030.20

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ISO/DIS 7689:2020(E)

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Foreword

This document was prepared by Technical Committee ISO/TC 20, *Aircraft and space vehicles*, Subcommittee SC 4, *Aerospace fastener systems*.

This third edition cancels and replaces the second edition (ISO 7689:2008), which has been technically revised.

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 20, *Aircraft and space vehicles*, Subcommittee SC 4, *Aerospace fastener systems*.

This third edition cancels and replaces the second edition (ISO 7689:2008), which has been technically revised.

The main changes compared to the previous edition are as follows:

- Additional requirements in 5.2 "Dimensions";
- Additional requirements in 5.4.1 "Tensile strength"
- Additional values in [table 5](#) "Minimum loads for tensile and double shear tests" for protruding head.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Aerospace — Bolts, with MJ threads, made of alloy steel, strength class 1 100 MPa — Procurement specification

1 Scope

This International Standard specifies the characteristics and quality assurance requirements for MJ thread bolts made of alloy steel, of strength class 1 100 MPa, for aerospace construction.

It is applicable whenever it is referenced in a definition document.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

ISO 2859-1, *Sampling procedures for inspection by attributes — Part 1: Sampling schemes indexed by acceptance quality limit (AQL) for lot-by-lot inspection*

ISO 4288, *Geometrical Product Specifications (GPS) — Surface texture: Profile method — Rules and procedures for the assessment of surface texture*

ISO 5855-2, *Aerospace — MJ threads — Part 2: Limit dimensions for bolts and nuts*

ISO 6506-1, *Metallic materials — Brinell hardness test — Part 1: Test method*

ISO 6507-1, *Metallic materials — Vickers hardness test — Part 1: Test method*

ISO 6508-1, *Metallic materials — Rockwell hardness test — Part 1: Test method*

ISO 6892-1, *Metallic materials — Tensile testing — Part 1: Method of test at room temperature*

ISO 7870-1, *Control charts — Part 1: General guidelines*

ISO 7961, *Aerospace — Bolts — Test methods*

ISO 7966, *Acceptance control charts*

ISO 8258, *Shewhart control charts*

ISO/TR 13425, *Guidelines for the selection of statistical methods in standardization and specification*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <http://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

3.1
production batch

quantity of finished bolts, manufactured using the same process, from a single material cast (single heat of alloy), having the same number of definition document, same thread and diameter code, heat treated together to the same specified condition and produced as one continuous run

3.2
inspection lot

quantity of bolts from a single production batch having the same number of definition document

3.3
definition document

document specifying directly or indirectly all the requirements for bolts

Note 1 to entry: The definition document can be an International Standard, an in-house standard or a drawing.

3.4
crack

rupture in the material which may extend in any direction and which may be intercrystalline or transcrystalline in character

3.5
seam
open surface defect

3.6
lap
surface defect caused by folding over metal fins or sharp corners and then rolling or forging them into the surface

3.7
crevice
hollow area at thread crest

3.8
inclusions
non-metallic particles originating from the material manufacturing process

Note 1 to entry: These particles can be isolated or arranged in strings.

3.9
sampling plan
plan according to which one or more samples are taken in order to obtain information and possibly to reach a decision

Note 1 to entry: In this International Standard, each sampling plan specifies the number of bolts to be inspected as a function of the size of the batch and the acceptance number [number of defective items acceptable (Ac)]¹⁾.

3.10
simple random sampling
sampling of n items from a population of N items in such a way that all possible combinations of n items have the same probability of being chosen

3.11
critical defect
defect that, according to judgement and experience, is likely to result in hazardous or unsafe conditions for individuals using, maintaining or depending upon the considered product (bolt), or that is likely to prevent performance of the function of a major end item

1) Supplementary information taken from ISO 2859-1.