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Interested committees:

Title: Draft BS ISO 5858 Aerospace. Nuts, self-locking, with maximum operating temperature less than or equal to 425 °C. 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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UK Vote

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 Please indicate if you are aware of any reason why this draft standard should not be published as a British Standard.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.**
- All comments should be submitted online at <https://standardsdevelopment.bsigroup.com/>. You will need to register in order to comment.

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	Comment (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 5858

Aerospace — Nuts, self-locking, with maximum operating temperature less than or equal to 425 °C — Procurement specification

ICS: 49.030.30

ISO/TC 20/SC 4

Secretariat: **DIN**

Voting begins on:
2025-04-21

Voting terminates on:
2025-07-14

This document is circulated as received from the committee secretariat.

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Foreword

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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

ISO 5858 was prepared by Technical Committee ISO/TC 20, *Aircraft and space vehicles*, Subcommittee SC 4, *Aerospace fastener systems*.

This second edition cancels and replaces the first edition (ISO 5858:1991), which has been technically revised.

[Annex A](#) forms a normative part of this International Standard. [Annex B](#) is for information only.

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

- Update of normative references
- New structure of [table 1](#)
- new Tables for sampling.

Aerospace — Nuts, self-locking, with maximum operating temperature less than or equal to 425 °C — Procurement specification

1 Scope

This International Standard specifies the required characteristics for metric self-locking nuts, with MJ threads, for use in aerospace construction at a maximum temperature less than or equal to 425 °C.

It is applicable to nuts as defined above, provided that reference is made to this International Standard in the relevant definition document.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 691, *Assembly tools for screws and nuts — Wrench and socket openings — Tolerances for general use*

ISO 1463, *Metallic and oxide coatings — Measurement of coating thickness — Microscopical method*

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 3452-1, *Non-destructive testing — Penetrant testing — Part 1: General principles*

ISO 3887, *Steels — Determination of the depth of decarburization*

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

ISO 7403, *Aerospace — Spline drives — Wrenching configuration — Metric series*

ISO 7481, *Aerospace — Nuts, self-locking, with maximum operating temperature less than or equal to 425 °C — Test methods*

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

ISO 7870-2, *Control charts — Part 2: Shewhart control charts*

ISO 7870-3, *Control charts — Part 3: Acceptance control charts*

ISO 8788, *Aerospace — Nuts, metric — Tolerances of form and position*

ISO 9227, *Corrosion tests in artificial atmospheres — Salt spray tests*

ISO 21920-3, *Geometrical product specifications (GPS) — Surface texture: Profile — Part 3: Specification operators*

ASTM E1417, *Standard Practice for Liquid Penetrant Testing*

ASTM E1444, *Standard Practice for Magnetic Particle Testing*

3 Terms and definitions

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

3.1

definition document

document specifying all the requirements for nuts, i.e.:

- metallurgical;
- geometrical and dimensional;
- functional (strength and temperature classes)

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

3.2

finished nut

nut ready for use, inclusive of any possible treatments and/or surface coatings, as specified in the definition document

3.3

batch

definite quantity of some commodity manufactured or produced under conditions which are presumed to be uniform

Note 1 to entry: For the purposes of this International Standard, a batch is a quantity of finished nuts, of the same type and same diameter, produced from a material obtained from the same melt, manufactured in the course of the same production cycle, following the same manufacturing route and having undergone all the relevant heat treatments and surface treatments.

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 resulting from extension of the metal

3.6

lap

folding over of unwelded metal that can arise when the material is formed (drawing) or in the finished product (pressing or forging)

3.7

inclusions

non-metallic particles originating from the material manufacturing process

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

3.8

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, or that is likely to prevent performance of the function of a major end item

3.9

major defect

defect, other than critical, that is likely to result in a failure or to reduce materially the usability of the considered product for its intended purpose

3.10

minor defect

defect that is not likely to reduce materially the usability of the considered product for its intended purpose, or that is a departure from established specifications having little bearing on the effective use or operation of this product

3.11

sampling plan

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

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

3.12

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

3.13

acceptance quality limit

AQL

maximum percent defective (or the maximum number of defects per hundred units) that, for purposes of sampling inspection, can be considered satisfactory as a process average

Note 1 to entry: Variant: quality level which in a sampling plan corresponds to a specified but relatively high probability of acceptance.

3.14

limiting quality

LQ

<sampling plan> quality level which corresponds to a specified and relatively low probability of acceptance

Note 1 to entry: It is the limiting lot quality characteristic that the consumer is willing to accept with a low probability that a lot of this quality would occur.

Note 2 to entry: For the purposes of this International Standard, the limiting quality given in [Table 11](#) to [15](#) corresponds to a consumer's risk of 10 %.

3.15

self-locking torque

torque to be applied to the nut or bolt to maintain its movement of rotation in relation to the associated part, the assembly being under no axial load and the nut-locking system being completely engaged with the bolt (two pitches minimum protrusion, including the end chamfer)

3.16

seating torque

tightening torque to be applied to the nut or bolt to introduce or to increase the axial load in the assembly

3.17

unseating torque

untightening torque to be applied to the nut or bolt to reduce or remove the axial load in the assembly

1) Supplementary information taken from ISO 2859-1.