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Responsible committee: ACE/12 Aerospace fasteners and fastening systems

Interested committees:

Title: Draft BS EN 2583 BS Aerospace series - Bolts, MJ threads, in heat resisting nickel base alloy NI-PH2601 (Inconel 718) -
Classification: 1 275 MPa (at ambient temperature)/650 °C - Technical specification.

Please notify the secretary if you are aware of any keywords that might assist in classifying or identifying the standard or if the content of this standard

- i) has any issues related to 3rd party IPR, patent or copyright
- ii) affects other national standard(s)
- iii) requires additional national guidance or information

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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.

For national standards, comments will be reviewed by the relevant UK national committee and the resulting standards published as a British Standard.

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 Please indicate if you are aware of any reason why this draft standard should not be published as a British Standard.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.	

English Version

Aerospace series - Bolts, MJ threads, in heat resisting
nickel base alloy NI-PH2601 (Inconel 718) - Classification:
1 275 MPa (at ambient temperature)/650 °C - Technical
specification

Série aérospatiale - Vis à filetage MJ, en alliage résistant
à chaud à base de nickel NI-PH2601 (Inconel 718) -
Classification: 1 275 MPa (à température
ambiante)/650 °C - Spécification technique

Luft- und Raumfahrt - Schrauben, MJ-Gewinde, aus
hochwarmfester Nickelbasislegierung NI-PH2601
(Inconel 718) - Klasse: 1 275 MPa (bei
Raumtemperatur)/650 °C - Technische
Lieferbedingungen

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee ASD-STAN.

If this draft becomes a European Standard, CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

This draft European Standard was established by CEN in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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European foreword

This document (prEN 2583:2024) has been prepared by ASD-STAN.

This document will supersede EN 2583:2019.

This document includes the following significant technical changes with respect to EN 2583:2019:

- Clause 2, *Normative references*, has been updated;
- Subclause 4.1, *Qualification*, has been updated;
- Subclause 4.2.2, *conditions*, has been updated;
- Table 1, *Technical requirements and test methods*, has been updated;
- Table 4, *Sampling plans for visual inspections and dimensional characteristics*, has been deleted;
- Annex A, *Passivation treatment for bolts*, has been deleted.

1 Scope

This document specifies the characteristics, qualification and acceptance requirements for bolts with MJ threads in NI-PH2601.

Classification: 1 275 MPa¹/650 °C².

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

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

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

ISO 7961, *Aerospace — Bolts — Test methods*

ASTM E112, *Standard Test Methods for Determining Average Grain Size*³

AMS2774, *Heat Treatment Wrought Nickel Alloy and Cobalt Alloy Parts*⁴

NASM 1312-8, *Aeronautical Fasteners Test Methods — Tensile Strength*⁵

3 Terms and definitions

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

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

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

3.1

batch

quantity of finished bolts, 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

¹ Minimum tensile strength of the material at ambient temperature.

² Maximum test temperature of the parts.

³ Published by American Society for Testing and Materials (ASTM International), available at: <https://www.astm.org>.

⁴ Published by SAE International.

⁵ Published by

3.2**Surface discontinuities****3.2.1****crack**

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

3.2.2**seam**

open surface defect

3.2.3**lap**

surface defect caused by folding over metal fins or sharp corners and then compressing them into the surface

3.2.4**inclusions**

non-metallic particles originating from the material manufacturing process.

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

3.3**test temperature**

ambient temperature, unless otherwise specified

3.4**simple random sampling**

taking 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

[SOURCE: ISO 3534 (series)]

3.5**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

[SOURCE: ISO 3534 (series)]

3.6**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

[SOURCE: ISO 3534 (series)]

3.7**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 specification having little bearing on the effective use or operation of this product

[SOURCE: ISO 3534 (series)]

3.8

sampling plan

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

[SOURCE: ISO 3534 (series)]

3.9

limiting quality

in a sampling plan, the quality level which corresponds to the specified 10 % probability of acceptance

3.10

acceptable quality level

AQL

quality level which in a sampling plan corresponds to a specified but relatively high probability of acceptance.

Note 1 to entry: It is the maximum per cent defective (or the maximum number of defects per hundred units) that, for purposes of sampling inspection, can be considered satisfactory as a process average.

[SOURCE: ISO 3534 (series), modified, - second sentence made into note to entry]

3.11

finished bolt

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

3.12

definition document

document specifying all the requirements for finished bolts

4 Quality assurance

4.1 Qualification

The qualification procedure for aerospace standard products (e.g. according to EN 9133 or an equivalent aerospace accepted and established qualification procedure) shall be used and documented according to the specified tests.

Qualification inspections and tests (requirements, methods, numbers of bolts) are specified in Table 1. They shall be carried out on:

- each type and diameter of bolt;
- 25 bolts selected from a single batch by simple random sampling.

Table 2 indicates the allocation of bolt specimens for the inspections and tests.