Form 36

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BSI Group Headquarters

389 Chiswick High Road London W4 4AL

Tel: +44 (0)20 8996 9000
Fax: +44 (0)20 8996 7400
www.bsigroup.com

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Responsible committee: ACE/12 Aerospace fasteners and fastening systems

Interested committees:

Title: Draft BS EN 3043 Aerospace series - Fasteners, externally threaded, in heat resisting steel FE PA92HT (A286) - Classification: 900 MPa/650 °C, manufacturing method optional - Technical specification.

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Responsible Committee Secretary: Dr Beata Mroz-Orlikowska (BSI)
Direct tel: 020 8996 7773
E-mail: beata.mroz-orlikowska@bsigroup.com

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 Please indicate if you are aware of any reason why this draft standard should not be published as a British Standard.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

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.	

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

DRAFT
prEN 3043

January 2023

ICS 49.030.01

Will supersede EN 3043:2008

English Version

Aerospace series - Fasteners, externally threaded, in heat resisting steel FE PA92HT (A286) - Classification: 900 MPa/650 °C, manufacturing method optional - Technical specification

Série aérospatiale - Élements de fixation, filetés, en acier résistant à chaud FE PA92HT (A286) - Classification: 900 MPa/650 °C, mode de fabrication non imposé - Spécification technique

Luft- und Raumfahrt - Verbindungselemente mit Außengewinde aus hochwarmfestem Stahl FE-PA92HT (A286) - Klasse: 900 MPa/650 °C, Herstellverfahren nach Wahl - 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
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European foreword

This document (prEN 3043:2022) has been prepared by the Aerospace and Defence Industries Association of Europe — Standardization (ASD-STAN).

After enquiries and votes carried out in accordance with the rules of this Association, this document has received the approval of the National Associations and the Official Services of the member countries of ASD-STAN, prior to its presentation to CEN.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 3043:2008.

Any feedback and questions on this document should be directed to the users' national standards body. A complete listing of these bodies can be found on the CEN website.

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1 Scope

This document specifies the technical and quality assurance requirements for externally threaded fasteners in material FE-PA92HT (A286) of tensile strength class 900 MPa at room temperature, maximum test temperature of material 650 °C.

The externally threaded fasteners specified here may be manufactured by machining from bar or by forging at the manufacturer's option, if forged there is no requirement for control of grain flow.

Primarily for aerospace applications it is applicable to such externally threaded fasteners when referenced on the product standard or drawing.

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.

EN 2398, *Aerospace series — Heat resisting steel FE-PA2601 (X6NiCrTiMoV26-15) — $R_m \geq 900$ MPa — Bars for machined bolts — D ≤ 25 mm*[1]

EN 2399, *Aerospace series — Heat resisting steel FE-PA2601 (X4NiCrTiMoV26-15) — $R_m \geq 900$ MPa — Bars for forged bolts — D ≤ 25 mm*[1]

EN 3639, *Aerospace series — Heat resisting alloy X6NiCrTiMoV26-15 (1.4980) — Softened and cold worked — Wires for forged fasteners — D ≤ 15 mm — 900 MPa ≤ R_m ≤ 1 100 MPa*[1]

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

ISO 7961, *Aerospace — Bolts — Test methods*

EN 9100, *Quality Management Systems — Requirements for Aviation, Space and Defence Organizations*

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:

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

3.1
production batch
quantity of finished parts fabricated by the same process from a single material cast (single heat of alloy), having the same basic part number and diameter, heat treated together to the same specified condition and produced as one continuous run

[1] Published as ASD-STAN Standard at the date of publication of this standard by AeroSpace and Defence Industries Association of Europe – Standardization (ASD-STAN) (www.asd-stan.org)

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3.2
inspection lot
consists of parts from a single production batch of the same part number which completely defines the part

3.3
discontinuities
3.3.1
crack
rupture in the material which may extend in any direction and which may be intercrystalline or transcrystalline in character

3.3.2
seam
longitudinal surface defect in the form of an unwelded open fold in the material

3.3.3
lap
surface defect caused by folding over metal fins or sharp corners and then rolling or forging them into the surface

3.3.4
inclusion
non-metallic particles originating from the material making process, which may exist as discrete particles or strings of particles extending longitudinally

3.4
test temperature
ambient temperature, unless otherwise specified

3.5
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 3534-2:2006, 1.3.4 – modified]

3.6
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 9152:1998, 3.12 – modified]

3.7
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 9152:1998, 3.13 – modified]

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3.8
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 9152:1998, 3.14 – modified]

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

[SOURCE: ISO 9152:1998, 3.10 – modified]

3.10
limiting quality LQ_{10}
in a sampling plan, a quality level which corresponds to a specified and relatively low probability of acceptance — in this case 10 % probability of acceptance. It is the limiting lot quality characteristic that a lot of this quality would occur

Note 1 to entry: When expressed as a per cent defective, it may be referred to as a lot tolerance per cent defective.

[SOURCE: ISO 9152:1998, 3.15 – modified]

3.11
acceptable quality level
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 9152:1998, 3.16 – modified]

3.12
finished part
part ready for use, inclusive of any possible treatments and/or surface coatings, as specified in the dimensional standard or drawing

4 Certification and quality assurance

4.1 Acceptance

4.1.1 Purpose

The purpose of acceptance tests is to check, as simply as possible, by a method representative of actual use conditions, with the uncertainty inherent to statistical sampling, that the bolts constituting the batch satisfy the requirements of this standard.

4.1.2 Conditions

Acceptance tests are summarised in Table 2. They shall be performed on each batch. Table 1 specifies the test method and sampling plan to be used for each test. Bolts from the batch to be tested shall be selected by simple random sampling.

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