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Interested committees:

Title: Draft BS prEN 2943 Aerospace series - Inserts, screw thread, helical coil, - Technical specification

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Introduction

This draft standard is based on European discussions in which the UK has taken an active part. Your comments on this draft are welcome and will assist in the preparation of the consequent British Standard. Comment is particularly welcome on national, legislative or similar deviations that may be necessary.

Even if this draft standard is not approved by the UK, if it receives the necessary support in Europe, the UK will be obliged to publish the official English Language text unchanged as a British Standard and to withdraw any conflicting standard.

UK Vote

Please indicate whether you consider the UK should submit a negative (with reasons) or positive vote on this draft.

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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	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.	

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Edition approved for publication	Comments should be sent within six months after the date of publication to ASD-STAN

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Foreword

This standard was reviewed by the Domain Technical Coordinator of ASD-STAN's Mechanical Domain.

After inquiries and votes carried out in accordance with the rules of ASD-STAN defined in ASD-STAN's General Process Manual, this standard has received approval for Publication.

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1 Scope

This standard specifies the characteristics, qualification and acceptance requirements for helical coil screw thread inserts, with or without surface coating.

It is applicable whenever referenced.

2 Normative references

This European Standard incorporates by dated or undated reference provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

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

EN 3219, *Aerospace series—Heat resisting nickel base alloy (NI-P100HT) cold worked and softened; bar and wire for continuous forging or extrusion for fasteners $3 \leq D \leq 30$ mm*

EN 2945, *Aerospace series — Inserts, screw thread, helical coil, self-locking — Assembly procedure*

EN 9133, *Aerospace series — Quality management systems — Qualification procedure for aerospace standard parts*

EN 3044, *Aerospace series — Installation holes for inserts, screw thread, helical coil, self-locking — Design standard*

ISO 2859-1:1989, *Sampling procedures for inspection by attributes — Part 1: Sampling schemes indexed by acceptance quality limit (AQL) for lot-by-lot inspection*

ISO 3353 (all parts), *Aerospace — Lead and runout threads*

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 965-2, *general purpose metric screw threads*

3 Definitions

For the purposes of this standard, the following definitions apply:

3.1 batch

quantity of finished thread inserts, 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

3.2 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**

sampling where a sample of n sampling units is taken from a population in such a way that all the possible combinations of n sampling units have the same probability of being taken

Note 1 to entry: In bulk sampling, if the sampling unit is an increment, the positioning, delimitation and extraction of increments is such that all sampling units have an equal probability of being selected.

[SOURCE: ISO 3534-2:2006, 1.3.4; modified: without references to the source document]

3.5**defect**

non-fulfilment of a requirement related to an intended or specified use

Note 1 to entry: The distinction between the concepts defect and nonconformity is important as it has legal connotations, particularly those associated with product liability issues. Consequently, the term "defect" should be used with extreme caution.

Note 2 to entry: The intended use by the customer can be affected by the nature of the information, such as operating or maintenance instructions, provided by the customer.

[SOURCE: ISO 9000:2005, 3.6.3]

3.6**sampling plan**

(bulk material) specification of the type of sampling to be used combined with the operational specification of the entities or increments to be taken, the samples to be constituted and the measurements/tests to be made

Note 1 to entry: The plan may specify, for example, that the sampling is systematic and in two stages. In combination with the specification of the type of sampling, the plan, in this example, also may specify the number of increments to be taken from a lot, the number of composite samples (or gross samples) per lot, the number of test samples per composite sample, and the number of measurements/tests per test sample.

[SOURCE: ISO 3534-2:2006, 5.4.3; modified: without references to the source document]

3.7**limiting quality**

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

3.8 **acceptable quality level** **AQL**

(acceptance sampling) worst tolerable quality level

Note 1 to entry: This concept only applies when an acceptance sampling scheme with rules for switching and for discontinuation, such as ISO 2859-1 and ISO 3951, is used.

Note 2 to entry: Although individual lots with quality as bad as the acceptance quality limit can be accepted with fairly high probability, the designation of an acceptance quality limit does not suggest that this is a desirable quality level.

Note 3 to entry: Acceptance sampling schemes found in standards such as ISO 2859-1 with their rules for switching and for discontinuation of sampling inspection are designed to encourage suppliers to have process averages consistently better than the acceptance quality limit. If suppliers fail to do so, there is a high probability of being switched from normal inspection to tightened inspection where lot acceptance becomes more difficult. Once on tightened inspection, unless action is taken to improve the process, it is very likely that the rule requiring discontinuation of sampling inspection pending such improvement will be invoked.

Note 4 to entry: The use of the abbreviation AQL to mean "acceptable quality level" is no longer recommended.

[SOURCE: ISO 3534-2:2006, 4.6.15; modified: without references to the source document]

3.9 **finished thread insert**

a thread insert ready for use, inclusive of any possible treatments and/or surface coatings, as specified in the product standards or definition document

3.10 **definition document**

document specifying all the requirements for finished thread inserts

3.11 **self-locking torque**

The torque to be applied to the associated bolt to maintain its movement of rotation in relation to the thread insert assembly which is under no axial load and the thread insert locking zone being completely engaged with the bolt (minimum protrusion of two pitches, including the end chamfer)

3.12 **seating torque**

the tightening torque to be applied to the thread insert and bolt assembly to introduce or to increase the axial load in the assembly

3.13 **unseating torque**

the untightening torque to be applied to the thread insert and bolt assembly to reduce or remove the axial load in the assembly

3.14 **breakaway torque**

the torque required to start unscrewing the associated bolt with respect to the installed thread insert, with the insert locking zone still fully engaged on the bolt, but after the axial load in the assembly has been removed by unscrewing half a turn followed by a halt in rotational movement