



Institut luxembourgeois de la normalisation  
de l'accréditation, de la sécurité et qualité  
des produits et services

**ILNAS-EN 6095:2023**

**Aerospace series - Rotary fasteners -  
Structural and non-structural  
applications - Technical specification**

Série aérospatiale - Fixations rapides  
filetées - Applications structurales et non  
structurales - Spécification technique

Luft- und Raumfahrt - Drehverschlüsse -  
Strukturelle und nichtstrukturelle  
Anwendungen - Technische  
Lieferbedingung

**12/2023**



## National Foreword

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English Version

**Aerospace series - Rotary fasteners - Structural and non-  
structural applications - Technical specification**

Série aéronautique - Fixations rapides filetées -  
Applications structurales et non structurales -  
Spécification technique

Luft- und Raumfahrt - Drehverschlüsse - Strukturelle  
und nichtstrukturelle Anwendungen - Technische  
Lieferbedingung

This European Standard was approved by CEN on 15 October 2023.

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This European Standard exists 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.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and United Kingdom.



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COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

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## European foreword

This document (EN 6095:2023) 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 European standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by June 2024, and conflicting national standards shall be withdrawn at the latest by June 2024.

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.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

## 1 Scope

This document specifies the required characteristics, inspections, tests, quality assurance requirements, conditions for qualification acceptance and delivery of rotary fasteners for structural and non-structural applications.

This document is applicable to all rotary fasteners for structural and non-structural applications. It can be applied when referred to in the product standard or in a design specification.

## 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 2424, *Aerospace series — Marking of aerospace products*

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

EN 10204, *Metallic products — Types of inspection documents*

EN ISO 6270-2, *Paints and varnishes — Determination of resistance to humidity — Part 2: Condensation (in-cabinet exposure with heated water reservoir) (ISO 6270-2)*

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

ISO 554, *Standard atmospheres for conditioning and/or testing; Specifications*

ISO 1817, *Rubber, vulcanized or thermoplastic — Determination of the effect of liquids*

ISO 4288:1996, *Geometrical Product Specifications (GPS) — Surface texture: Profile method — Rules and procedures for the assessment of surface texture*

ISO 8785, *Geometrical Product Specification (GPS) — Surface imperfections — Terms, definitions and parameters*

ASTM A342<sup>1</sup>, *Standard Test Methods for Permeability of Weakly Magnetic Materials*

BS 2634-1<sup>2</sup>, *Roughness comparison specimens — Specification for turned, ground, bored, milled, shaped and planed specimens*

NASA-STD-6001<sup>3</sup>, *Flammability, Offgassing, and Compatibility Requirements and Test Procedures*

NASM22978<sup>4</sup>, *Fastener, Rotary, Quick-operating, High-strength*

1 Published by: ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959, USA (<http://www.astm.org>).

2 Published by: British Standards Institution.

3 Published by: National Aeronautics and Space Administration (NASA), available at: <https://standards.nasa.gov/>.

4 Published by: Aerospace Industries Association (AIA), 1000 Wilson Boulevard, Suite 1700, Arlington, VA 22209-3928, USA.

### 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

##### **fastener**

turnlock-type device and associated supplementary parts, capable of being easily and quickly operated, with or without usage of tools for closing and opening, for fastening and release of parts such as covers, fairings, equipment, etc.

#### 3.2

##### **lot**

##### **inspection lot**

finished parts of the same dimensions, made from the same material, produced in the same production run, heat treated and surface protected in the same manner and submitted for testing at the same time

### 4 Requirements

According to Table 1 for requirements (in conjunction with Clause 5).

### 5 Inspections and tests

According to Table 1 for inspections and tests (in conjunction with Clause 4).

**Table 1 — Requirements, inspections and tests**

Clause	Characteristic	Requirements	Clause	Inspections and tests	A <sup>a</sup>	Q <sup>b</sup>
4.1	Materials	In accordance with the specifications of the relevant product standards	5.1	The chemical composition shall be evidenced, i.e. by an inspection certificate according to EN 10204 issued by the semi-finished product manufacturer.	X	X
4.2	Dimensions and mass	—	5.2	—	—	—
4.2.1	Dimensions	In accordance with the relevant product standards	5.2.1	Inspection shall be carried out using suitable measuring devices.	X	X
4.2.2	Mass	In accordance with the relevant product standards	5.2.2	Inspection shall be carried out using suitable measuring devices.	X	X
4.3	Surfaces	—	5.3	—	—	—
4.3.1	Surface defects	All surfaces shall be free from surface defects according to ISO 8785.	5.3.1	Visual examination	X	X

Clause	Characteristic	Requirements	Clause	Inspections and tests	A <sup>a</sup>	Q <sup>b</sup>
4.3.2	Surface roughness	In accordance with the relevant product standards	5.3.2	The surface roughness shall be checked by tactile and visual comparison with standard surface specimens according to BS 2634-1. In cases of doubt, where the surface concerned is accessible, the roughness shall be measured according to ISO 4288	—	X
4.3.3	Surface treatment	In accordance with the relevant product standards	5.3.3	The surface treatment as applied shall be substantiated, i.e. by an inspection certificate according to EN 10204.	X	X
4.4	Mechanical properties	—	5.4	—	—	—
4.4.1	Tensile loads	—	5.4.1	—		
4.4.1.1	Rated tensile loads or limit tensile loads	There shall be no permanent deformation after applying 2/3 of the ultimate tensile loads specified in the relevant product standards.	5.4.1.1	The locked fasteners mounted in a test fixture according to NASM22978 shall be subjected to the specified tensile load.	—	X
4.4.1.2	Ultimate tensile load	In accordance with the relevant product standards	5.4.1.2	Testing according to NASM22978	—	X
4.4.2	Retainer and/or stud push out load	There shall be no permanent deformation after applying the loads specified in the relevant product standards.	5.4.2	Testing according to NASM22978	—	X
4.4.3	Receptacle push-out load	There shall be no permanent deformation after applying the loads specified in the relevant product standards.	5.4.3	Testing according to NASM22978	—	X
4.4.4	Shear loads <sup>c</sup>	—	5.4.4	—	—	—
4.4.4.1	Rated shear loads or Limit shear loads	There shall be no permanent deformation after applying 2/3 of the ultimate shear loads specified in the relevant product standards.	5.4.4.1	Testing according to NASM22978 <sup>d</sup>	X	X
4.4.4.2	Ultimate shear loads	In accordance with the relevant product standards	5.4.4.2	Testing according to NASM22978 <sup>d</sup>	—	X
4.4.5	Shear fatigue	There shall be no permanent deformation nor opening of the joint.	5.4.5	Testing according to NASM22978 <sup>d</sup>	—	X