



**NSAI**  
Standards

Irish Standard  
I.S. EN 2311:2017

# Aerospace series - Bushes with self-lubricating liner - Technical specification

**I.S. EN 2311:2017**

*Incorporating amendments/corrigenda/National Annexes issued since publication:*

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*This document is based on:*

EN 2311:2017

*Published:*

2017-03-29

*This document was published under the authority of the NSAI and comes into effect on:*

2017-04-16

ICS number:

49.035

NOTE: If blank see CEN/CENELEC cover page

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## National Foreword

I.S. EN 2311:2017 is the adopted Irish version of the European Document EN 2311:2017, Aerospace series - Bushes with self-lubricating liner - Technical specification

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EUROPEAN STANDARD

EN 2311

NORME EUROPÉENNE

EUROPÄISCHE NORM

March 2017

ICS 49.035

Supersedes EN 2311:2012

English Version

## Aerospace series - Bushes with self-lubricating liner - Technical specification

Série aérospatiale - Bagues avec garniture  
autolubrifiante - Spécification technique

Luft- und Raumfahrt - Buchsen mit selbstschmierender  
Beschichtung - Technische Lieferbedingungen

This European Standard was approved by CEN on 2 January 2017.

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## **European foreword**

This document (EN 2311:2017) 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 Standard has received the approval of the National Associations and the Official Services of the member countries of ASD, 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of an identical text or by endorsement, at the latest by September 2017, and conflicting national standards shall be withdrawn at the latest by September 2017.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 2311:2012.

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## EN 2311:2017 (E)

### 1 Scope

This document specifies the required characteristics, inspections and tests, quality assurance and qualification, acceptance and delivery conditions for bushes, designed to be subjected under load, to slow sliding movements, rotations and small oscillations only for aerospace applications.

This standard applies to all bushes when referred to in the respective product standards or in a design documentation.

The liner is designed to be used in the temperature range of  $-50\text{ °C}$  to  $163\text{ °C}$ . Aluminium bushes are limited to  $-55\text{ °C}$  to  $121\text{ °C}$ .

### 2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 2285, *Aerospace series — Bushes, plain, aluminium alloy, with self-lubricating liner — Dimensions and loads*

EN 2286, *Aerospace series — Bushes, flanged aluminium alloy, with self-lubricating liner — Dimensions and loads*

EN 2287, *Aerospace series — Bushes, plain corrosion resisting steel, with self-lubricating liner — Dimensions and loads*

EN 2288, *Aerospace series — Bushes, flanged, corrosion resisting steel, with self-lubricating liner — Dimensions and loads*

EN 2755, *Aerospace series — Bearings, spherical plain, in corrosion resisting steel with self-lubricating liner — Elevated loads at ambient temperature — Technical specification*

EN 4534-2, *Aerospace series — Bushes, plain in aluminium alloy with self-lubricating liner, elevated load — Part 2: Dimensions and loads — Inch series*

EN 4535-2, *Aerospace series — Bushes, flanged in aluminium alloy with self-lubricating liner, elevated load — Part 2: Dimensions and loads — Inch series*

EN 4536-2, *Aerospace series — Bushes, plain in corrosion resisting steel with self-lubricating liner, elevated load — Part 2: Dimensions and loads — Inch series*

EN 4537-2, *Aerospace series — Bushes, flanged in corrosion-resisting steel with self-lubricating liner, elevated load — Part 2: Dimensions and loads — Inch series*

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

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

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

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



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