



**SLOVENSKI STANDARD**  
**oSIST prEN 6059-505:2023**  
**01-julij-2023**

---

**Aeronavtika - Električni kabli, namestitvev - Zaščitne obojke - Preskusne metode - 505. del: Udar strele ter tokovni in napetostni udar**

Aerospace series - Electrical cables, installation - Protection sleeves - Test methods - Part 505: Lightning strike, current and voltage pulse

Luft- und Raumfahrt - Elektrische Leitungen, Installation - Schutzschläuche - Prüfverfahren - Teil 505: Blitzschlag, Strom- und Spannungsimpuls

Série aérospatiale - Câbles électriques, installation - Gainses de protection - Partie 505 : Tenue à la foudre, impulsion de tension et de courant

**Ta slovenski standard je istoveten z: prEN 6059-505**

---

**ICS:**

29.060.20	Kabli	Cables
49.060	Letalska in vesoljska električna oprema in sistemi	Aerospace electric equipment and systems

**oSIST prEN 6059-505:2023**

**en,fr,de**



EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**DRAFT**  
**prEN 6059-505**

May 2023

---

ICS 49.060

English Version

**Aerospace series - Electrical cables, installation -  
Protection sleeves - Test methods - Part 505: Lightning  
strike, current and voltage pulse**

Série aéronautique - Câbles électriques, installation -  
Gaines de protection - Partie 505 : Tenue à la foudre,  
impulsion de tension et de courant

Luft- und Raumfahrt - Elektrische Leitungen,  
Installation - Schutzschläuche - Prüfverfahren - Teil  
505: Blitzschlag, Strom- und Spannungsimpuls

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.

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.

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.

**Warning** : This document is not a European Standard. It is distributed for review and comments. It is subject to change without notice and shall not be referred to as a European Standard.



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

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

---

<b>Contents</b>		<b>Page</b>
<b>European foreword</b> .....		<b>3</b>
<b>1</b>	<b>Scope</b> .....	<b>4</b>
<b>2</b>	<b>Normative references</b> .....	<b>4</b>
<b>3</b>	<b>Terms and definitions</b> .....	<b>4</b>
<b>4</b>	<b>Preparation of specimens</b> .....	<b>4</b>
<b>4.1</b>	<b>Test specimen</b> .....	<b>4</b>
<b>4.2</b>	<b>High current test</b> .....	<b>6</b>
<b>5</b>	<b>Apparatus</b> .....	<b>6</b>
<b>6</b>	<b>Method</b> .....	<b>6</b>
<b>6.1</b>	<b>Pre-conditioning</b> .....	<b>6</b>
<b>6.2</b>	<b>Procedure</b> .....	<b>6</b>
<b>6.3</b>	<b>Final measurements</b> .....	<b>7</b>
<b>7</b>	<b>Requirements</b> .....	<b>7</b>

**iTeh STANDARD PREVIEW**  
(standards.iteh.ai)

[oSIST prEN 6059-505:2023](https://standards.iteh.ai/catalog/standards/sist/cc4e0e29-07ca-4c81-8580-8b9d28ba29b8/osist-pren-6059-505-2023)

<https://standards.iteh.ai/catalog/standards/sist/cc4e0e29-07ca-4c81-8580-8b9d28ba29b8/osist-pren-6059-505-2023>

## European foreword

This document (prEN 6059-505:2023) 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 document is currently submitted to the CEN Enquiry.

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

[oSIST prEN 6059-505:2023](https://standards.iteh.ai/catalog/standards/sist/cc4e0e29-07ca-4c81-8580-8b9d28ba29b8/osist-pren-6059-505-2023)

<https://standards.iteh.ai/catalog/standards/sist/cc4e0e29-07ca-4c81-8580-8b9d28ba29b8/osist-pren-6059-505-2023>

**prEN 6059-505:2023 (E)****1 Scope**

This document specifies a method to measure the ability of a protective sleeve to withstand specified severities of simulated lightning strikes.

**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 2267-010, *Aerospace series - Cables, electrical, for general purpose - Operating temperatures between -55 °C and 260 °C - Part 010: DR family, single UV laser printable - Product standard*

EN 2997 (all parts), *Aerospace series — Connectors, electrical, circular, coupled by threaded ring, fire-resistant or non fire-resistant, operating temperatures -65 °C to 175 °C continuous, 200 °C continuous, 260 °C peak*

EN 3475-301, *Aerospace series - Cables, electrical, aircraft use - Test methods - Part 301: Ohmic resistance per unit length*

EN 3660-033,<sup>1</sup> *Aerospace series - Cable outlet accessories for circular and rectangular electrical and optical connectors - Part 033: Stainless steel banding band, style Z, for attachment of individual and/or overall screens to cable outlets - Product standard*

EN 6059-201,<sup>2</sup> *Aerospace series - Electrical cables, installation - Protection sleeves - Test methods - Part 201: Visual inspection*

**3 Terms and definitions**

No terms and definitions are listed in this document.

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/>

**4 Preparation of specimens****4.1 Test specimen**

Unless otherwise specified in the product standard, the smallest, medium and largest sleeve sizes shall be tested. Unless otherwise specified in the product standard, a minimum of 3 samples by size shall be tested.

The sleeve specimen shall be installed over a bundle with a diameter equal to the nominal sleeve size and made of DR EN 2267-010 cables with a minimum of 1 meter in length.

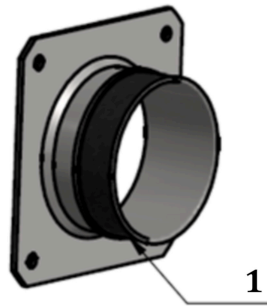
The conductive layer of the specimen, if multi-layer protection sleeves are tested, shall be crimped on both ends to a round conductive metal part. This round conductive metal part shall be either a back-shell of the EN 2997 series or a dummy back-shell receptacle simulating back-shells and compatible in

<sup>1</sup> Published as ASD-STAN Standard at the date of publication of this document by AeroSpace and Defence industries Association of Europe — Standardization (ASD-STAN), <https://www.asd-stan.org/>.

<sup>2</sup> Under preparation.

fit, form and function to conduct the electrical current. This round conductive metal part shall be able to accept the nominal size of the sleeve and be resistant enough to sustain the pressure applied by the metal clamp of at least 6 mm in width of the EN 3660-033 metallic bonding clamp series. The sleeve specimen shall be terminated in such a way to provide at minimum a 360° of the round conductive metal part.

Figure 1 shows an example of a dummy back-shell made of stainless steel.



#### Key

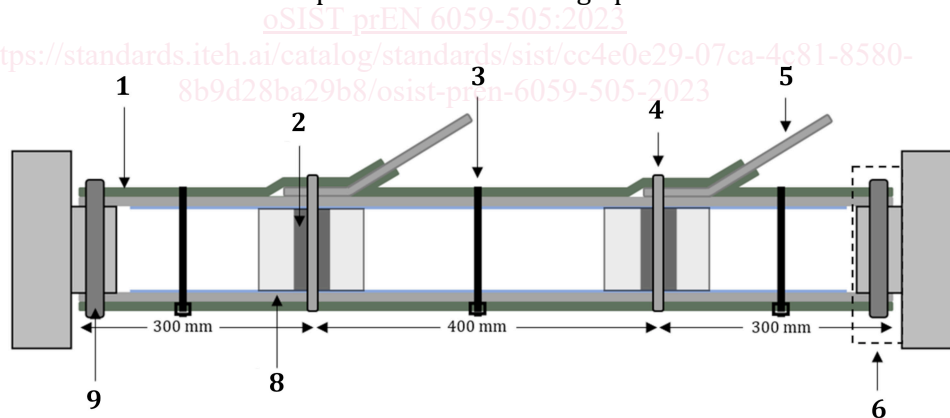
1 Knurling RVK 08 DIN82

NOTE 1 Thickness: min. 1,5 mm

NOTE 2 Material: AISI 303 or 304 L

**Figure 1 — Example of a dummy back-shell made of stainless steel**

A bonding strap, consisting of a flat conductive braid (22 mm<sup>2</sup>) in a compatible metal coating, shall be used for the grounding of the sleeve. The bonding strap and the sleeve are assembled using a support ring placed above the wire harness to protect it from the high pressure of the metallic bonding clamp.



7

#### Key

1 Tested sample

2 Rubber tape under the split ring

3 Lacing tapes or plastic cable ties

4 Crimp ring

5 Bonding strap connection

6 Metal to metal contact

7 Pilling of the PTFE layer

8 Split ring

9 Band-it

**Figure 2 — Installation of the sleeve on the harness and connection**