SLOVENSKI STANDARD
SIST EN 6049-001:2018

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Nadomešča:
SIST EN 6049-001:2015

Aeronavtika - Električni kabli, namestitev - Zaščitna obojka iz metaaramidnih vlaken - 001. del: Tehnična specifikacija

Aerospace series - Electrical cables, installation - Protection sleeve in meta-aramid fibres - Part 001: Technical specification

Luft- und Raumfahrt - Elektrische Leitungen, Installation - Schutzschläuche aus Meta-Aramidfasern - Teil 001: Technische Lieferbedingungen

Série aérospatiale - Câbles électriques, installation - Gaine de protection en fibres méta-aramides - Partie 001: Spécification technique

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ICS:

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

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English Version

Aerospace series - Electrical cables, installation - Protection sleeve in meta-aramid fibres - Part 001: Technical specification

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

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Contents

Page

European foreword

This document (EN 6049-001:2018) 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of an identical text or by endorsement, at the latest by February 2019, and conflicting national standards shall be withdrawn at the latest by February 2019.

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1 Scope

This European Standard specifies the general characteristics, qualification and acceptance requirements for protection sleeves in meta-aramid fibres for cable and cable bundles for aerospace application.

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 2591-214, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 214: Lightning strike, current and voltage pulse*

EN 2591-307, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 307: Salt mist*

EN 2825, *Aerospace series — Burning behaviour of non metallic materials under the influence of radiating heat and flames — Determination of smoke density*

EN 2826, *Aerospace series — Burning behaviour of non metallic materials under the influence of radiating heat and flames — Determination of gas components in the smoke*

EN 3197, *Aerospace series — Design and installation of aircraft electrical and optical interconnection systems*

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

EN 3844-1, *Aerospace series — Flammability of non metallic materials — Part 1: Small burner test, vertical — Determination of the vertical flame propagation*

EN 6049-003, *Aerospace series — Electrical cables, installation — Protection sleeve in meta-aramid fibres — Part 003: Braided, tubular, expandable — Product standard*

EN 6049-004, *Aerospace series — Electrical cables, installation — Protection sleeve in meta-aramid fibres — Part 004: Braided, tubular, high expandable — Product standard* 1)

EN 6049-005, *Aerospace series — Electrical cables, installation — Protection sleeve in meta-aramid fibres — Part 005: Sleeve flexible, post installation — Product standard*

EN 6049-006, *Aerospace series — Electrical cables, installation — Protection sleeve in meta-aramid fibres Part 006: Self-wrapping protective sleeve, flexible post installation — Product standard*

EN 6049-007, *Aerospace series — Electrical cables, installation — Protection sleeve in meta-aramid fibres Part 007: Self-wrapping mechanical and electrical protective sleeve, flexible post installation operating temperature from – 55 °C to 260 °C — Product standard*

EN 6049-008, *Aerospace series — Electrical cables, installation — Protection sleeve in meta-aramid fibres Part 008: Self-wrapping shielded (EMI) protective sleeve with nickel copper braid, flexible post installation operating temperature from – 55 °C to 200 °C — Product standard*

1) Published as ASD-STAN Prestandard at the date of publication of this European Standard (www.asd-stan.org).

EN 6049-009, *Aerospace series — Electrical cables, installation — Protection sleeve in meta-aramid fibres Part 009: Self-wrapping fire protection sleeve, flexible, post installation, operating temperature from – 55 °C to 260 °C — Product standard*

EN 6059-201, *Aerospace series — Electrical cables, installation — Protection sleeves — Test methods Part 201: Visual inspection* [1)]

EN 6059-202, *Aerospace series — Electrical cables, installation — Protection sleeves — Test methods Part 202: Dimensions and mass*

EN 6059-203, *Aerospace series — Electrical cables, installation — Protection sleeves — Test methods Part 203: Coverage* [1)]

EN 6059-301, *Aerospace series — Electrical cables, installation — Protection sleeves — Test methods Part 301: Sun light exposure*

EN 6059-302, *Aerospace series — Electrical cables, installation — Protection sleeves — Test methods Part 302: High temperature exposure*

EN 6059-303, *Aerospace series — Electrical cables, installation — Protection sleeves — Test methods Part 303: Resistance to fluids*

EN 6059-304, *Aerospace series — Electrical cables, installation — Protection sleeves — Test methods Part 304: Flammability*

EN 6059-305, *Aerospace series — Electrical cables, installation — Protection sleeves — Test methods Part 305: Fluid absorption* [1)]

EN 6059-306, *Aerospace series — Electrical cables, installation — Protection sleeves — Test methods Part 306: Mould growth* [1)]

EN 6059-308, *Aerospace series — Electrical cables, installation — Protection sleeves — Test methods Part 308: Rapid change of temperature*

EN 6059-309, *Aerospace series — Electrical cables, installation — Protection sleeves — Test methods Part 309: Fire resistance when fitted on a cable bundle* [1)]

EN 6059-401, *Aerospace series — Electrical cables, installation — Protection sleeves — Test methods Part 401: Expansion range* [1)]

EN 6059-402, *Aerospace series — Electrical cables, installation — Protection sleeves — Test methods Part 402: Bending properties* [1)]

EN 6059-403, *Aerospace series — Electrical cables, installation — Protection sleeves — Test methods Part 403: Scrape abrasion* [1)]

EN 6059-404, *Aerospace series — Electrical cables, installation — Protection sleeves — Test methods Part 404: Tensile strength* [1)]

EN 6059-405, *Aerospace series — Electrical cables, installation — Protection sleeves — Test methods Part 405: Dynamic cut-through* [1)]

EN 6059-406, *Aerospace series — Electrical cables, installation — Protection sleeves — Test methods Part 406: Vibration*

EN 6059-501, *Aerospace series — Electrical cables, installation — Protection sleeves — Test methods Part 501: Voltage proof test*

EN 6059-502, *Aerospace series — Electrical cables, installation — Protection sleeves — Test methods Part 502: Resistance to electrical arcs*

EN 6059-503, *Aerospace series — Electrical cables, installation — Protection sleeves — Test methods Part 503: Temperature rise due to rated current injected on the sleeve*

EN 6059-504, *Aerospace series — Electrical cables, installation — Protection sleeves — Test methods Part 504: Temperature rise within a loom due to self-heating when protected by a sleeve*

EN 6059-601, *Aerospace series — Electrical cables, installation — Protection sleeves — Test methods Part 601: Open and close*

EN 9133, *Aerospace series — Quality Management Systems — Qualification Procedure for Aerospace Standard Products*

ISO 8815, *Aircraft — Electrical cables and cables harnesses — Vocabulary*

IEC 60096-0-1, *Radio frequency cables — Part 0: Guide to the design of detail specifications — Section 1: Coaxial cables*

3 Terms, definitions and symbols

For the purpose of this standard, the terms, definitions and symbols given in ISO 8815 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

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

3.1
expandable sleeve
sleeve with a ratio ≤ 2 between the minimum diameter by stretching of the sleeve and the maximum diameter by compressing the sleeve in longitudinal direction

3.2
high expandable sleeve
sleeve with a ratio > 2 between the minimum diameter by stretching of the sleeve and the maximum diameter by compressing the sleeve in longitudinal direction

3.3
fibre
fibre or monofilament fibre or solid fibre which is a thin singular solid strand of plastic

3.4
multifilament fibre
a fibre consisting of a group of very thin parallel or twisted fibres

3.5
TEX
the mass of multifilament fibres per length, 1 TEX = 1 g/1 000 m. Normally used is dTEX (1 TEX is 10 dTEX)

3.6
tow
a group of very thin parallel fibres, set on one braiding spool

3.7
braiding angle
the angle of crossing fibres in a braiding pattern

3.8
coverage
the amount of cover of a braid expressed in percentage

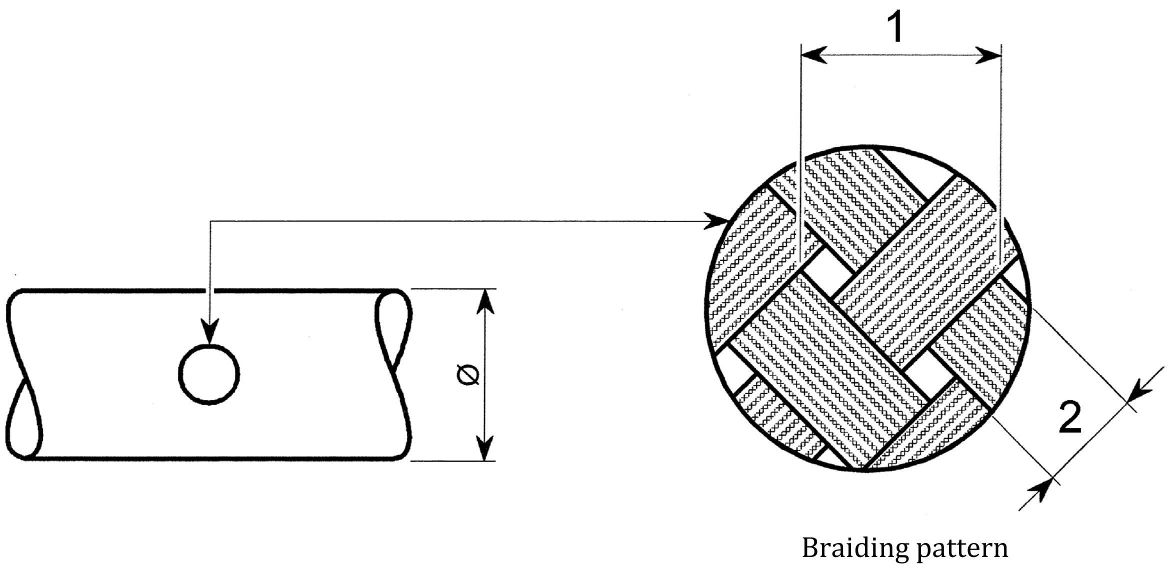
3.9
pitch
the pitch is the distance in longitudinal direction between two tows. An alternative indication for 'tows/cm'

3.10
post installation sleeve
sleeve with self-locking properties over the length of the sleeve which can be applied around cable bundles

4 Description

The following types of sleeves are distinguished:

— Braided tubular sleeve, expandable, tows of multifilament fibres, providing ease of installation and excellent hold once positioned on the harness, see Figure 1.



Key

1 Pitch
2 1 tow

Figure 1