# SLOVENSKI STANDARD
# SIST EN 6059-406:2014

**01-julij-2014**

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**Aeronavtika - Električni kabli, namestitev - Zaščitne obojke - Preskusne metode - 406. del: Vibracije**

Aerospace series - Electrical cables, installation - Protection sleeves - Test methods - Part 406: Vibration

Luft- und Raumfahrt - Elektrische Leitungen, Installation - Schutzschläuche - Prüfverfahren - Teil 406: Vibration



Série aérospatiale - Câbles électriques, installation - Gaines de protection - Méthodes d'essais - Partie 406: Vibrations



**Ta slovenski standard je istoveten z:** **EN 6059-406:2014**

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**ICS:**

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|---|---|---|
| 49.060 | Letalska in vesoljska električna oprema in sistemi | Aerospace electric equipment and systems |

**SIST EN 6059-406:2014** **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

# EN 6059-406

April 2014

ICS 49.060

English Version

# Aerospace series - Electrical cables, installation - Protection sleeves - Test methods - Part 406: Vibration

Série aérospatiale - Câbles électriques, installation - Gaines de protection - Méthodes d'essais - Partie 406: Vibrations

Luft- und Raumfahrt - Elektrische Leitungen, Installation - Schutzschläuche - Prüfverfahren - Teil 406: Vibration

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

**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**

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## Foreword

This document (EN 6059-406:2014) 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of an identical text or by endorsement, at the latest by October 2014, and conflicting national standards shall be withdrawn at the latest by October 2014.

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## 1 Scope

This European Standard specifies the method and means required for testing the vibration resistance of protection sleeve for electrical cable and cable bundles for aerospace application.

It shall be used together with EN 6059-100.

## 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 2266-004, *Aerospace series — Cables, electrical, for general purpose — Operating temperatures between − 55 °C and 200 °C — Part 004: CO2 laser printable — Product standard* [1)]

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 3838, *Aerospace series — Requirements and tests on user-applied markings on aircraft electrical cables*

EN 6059-100, *Aerospace series — Electrical cables, installation — Protection sleeves — Test methods — Part 100: General*



ISO 7137, *Aircraft — Environmental conditions and test procedures for airborne equipment*

AS 23190[2)], *Straps, clamps, and mounting hardware, plastic and metal for cable harness tying and support*



MS 21919E, *Clamp, loop type, cushioned, support* [3)]

MIL-DTL-85052B, *Detail specification clamp, loop, cushion, general specification for* [3)]

## 3 Preparation of specimens

The electrical cables used for this test shall comply with standard EN 2266-004B, or EN 2267-010, or aerospace cables according to EN 3838 approved for-the application, with 24 AWG to 18 AWG.

The cables shall be installed uniformly inside the sleeve to be tested.

Unless otherwise specified in the product standard the test sample shall be manufactured using:

— EN 2267-010 size 006 (20 AWG) single core cable,

— metal cushion cable clamps to AS 23190, MS 21919E or MIL-DTL-85052B,

— the bundle diameter shall be within 75 % to 85 % of the sleeves maximum inner diameter.

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1) Published as ASD-STAN Prestandard at the date of publication of this standard. http://www.asd-stan.org/

2) Published by: SAE National (US) Society of Automotive Engineers. http://www.sae.org/

3) Published by: DoD National (US) Mil. Department of Defense. http://www.defenselink.mil/

# 4 Apparatus

## 4.1 General

The protection sleeves must be installed on the device according to the choice of test set-up, see Figures 1 to 3.

The test set-ups are defined below:

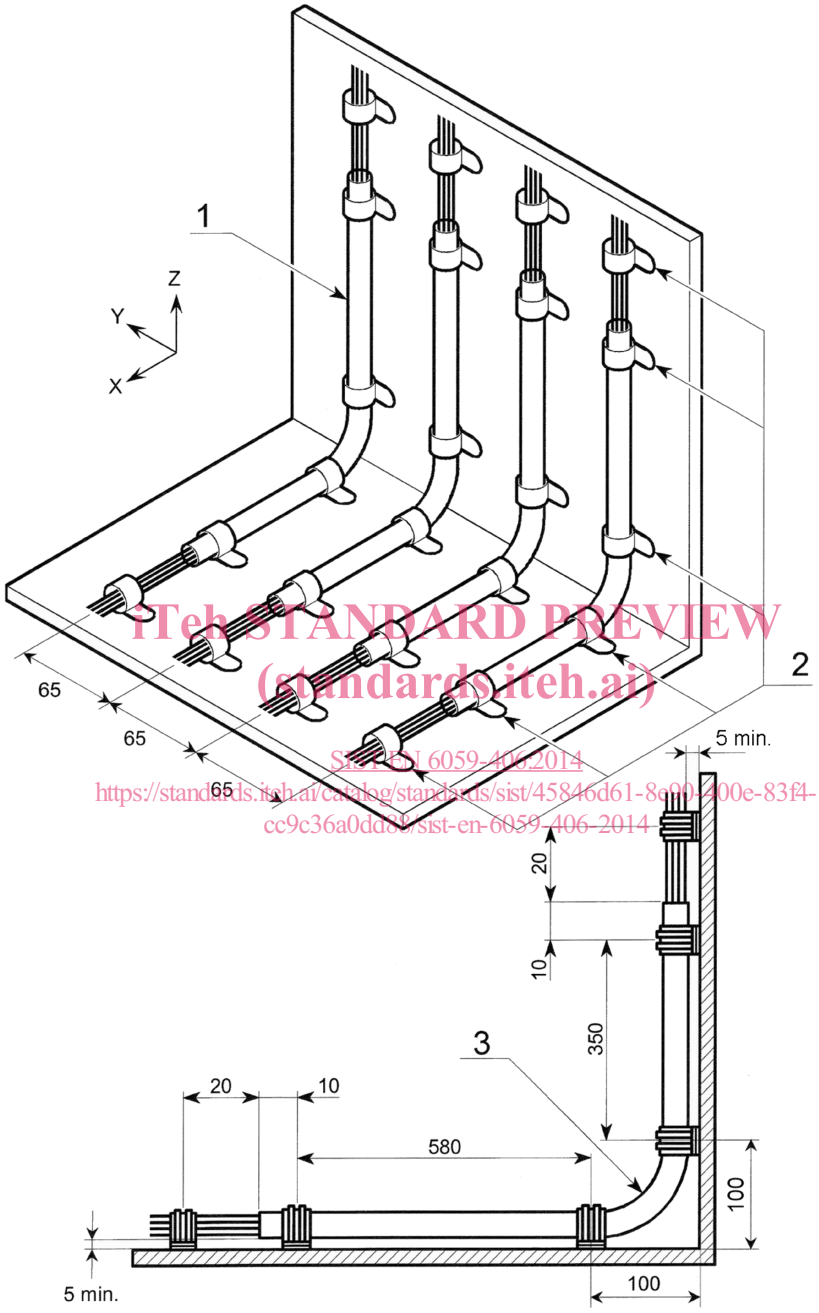
All dimensions are in millimetres.

The sample shall not be in contact with the device during the installation unless otherwise stated. The minimal distance between the sample and the device shall be 5 mm.

Aerospace brackets, spacers and clamps shall be used to ensure the installation of the samples, respecting the distances précised in each test set-up. These components shall be compliant with the test method chosen.

## 4.2 Test set-up 01

See Figure 1.






**Key**

1 Tested protection
2 Cable clamp
3 Minimum conduit bend radius 10

**Figure 1 — Test set-up 01 standard**

### 4.3 Test set-up 02

See Figure 2.

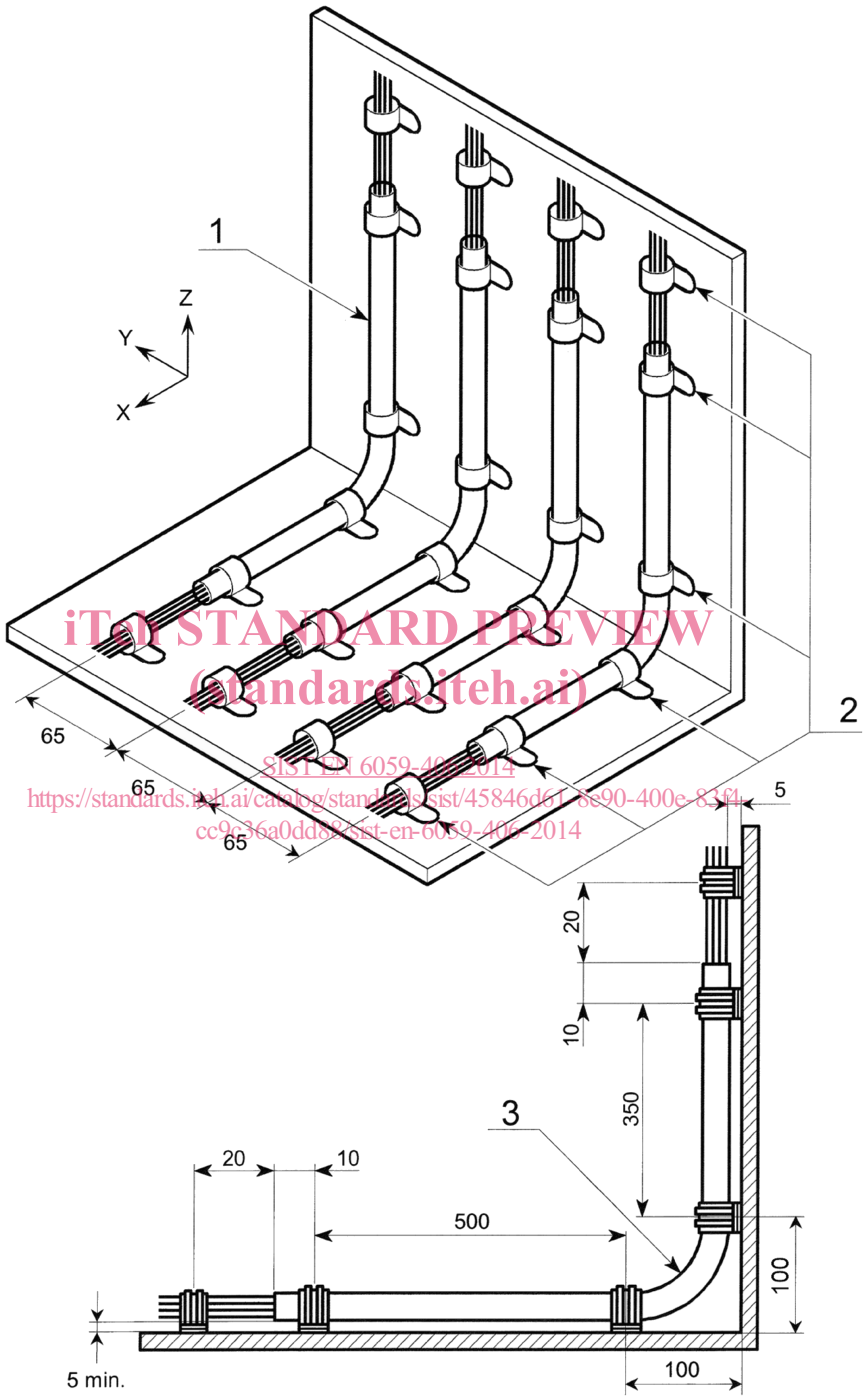





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**Figure 2 — Alternative test set-up 02 (if specified in the product standard)**