



SLOVENSKI STANDARD

SIST EN 6059-503:2012

01-marec-2012

Aeronavtika - Električni kabli, namestitvev - Zaščitne obojke - Preskusne metode - 503. del: Segrevanje obojke zaradi vnesenega naznačenega toka

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

Luft- und Raumfahrt - Elektrische Leitungen, Installation - Schutzschläuche - Prüfverfahren - Teil 503: Erwärmung bei Nennstrom eingespeist in den Schlauch

Série aérospatiale - Câbles électriques, installation - Gainses de protection - Méthodes d'essais - Partie 503: Échauffement sous courant nominal injecté sur la gaine

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Ta slovenski standard je istoveten z: EN 6059-503:2012

ICS:

49.060

Letalska in vesoljska
električna oprema in sistemi

Aerospace electric
equipment and systems

SIST EN 6059-503:2012

en,fr,de

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EUROPEAN STANDARD

EN 6059-503

NORME EUROPÉENNE

EUROPÄISCHE NORM

January 2012

ICS 49.060

English Version

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

Série aérospatiale - Câbles électriques, installation -
Gaines de protection - Méthodes d'essais - Partie 503:
Échauffement sous courant nominal injecté sur la gaine

Luft- und Raumfahrt - Elektrische Leitungen, Installation -
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Nennstrom eingespeist in den Schlauch

This European Standard was approved by CEN on 27 August 2011.

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. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

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.

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COMITÉ EUROPÉEN DE NORMALISATION
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Foreword

This document (EN 6059-503:2012) 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 July 2012, and conflicting national standards shall be withdrawn at the latest by July 2012.

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

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, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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EN 6059-503:2012 (E)**1 Scope**

This European Standard specifies a method of assessing the behaviour and temperature increase of EMI protection sleeves or conduits subject to permanent and/or fault currents in the shielding.

It should be used together with EN 3475-100.

2 Normative references

The following referenced documents are indispensable for the application 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 3475-100, *Aerospace series — Cables, electrical, aircraft use — Test methods — Part 100: General*

3 Preparation of specimens

Each specimen having 0,75 m to 1 m useful length between the supports, shall be installed horizontally in front of a screen and lightly stretched at the ends to avoid any slack during the test.

The test shall be carried out at ambient temperature T_a (typically 20 °C) in a chamber where the whole unit shall be sheltered from draughts. An extraction shall be provided but only operated after completion of the test.

To identify the appearance of smoke, a screen with black and white horizontal bands or any other device shall be used.

Means of electrical power connection at both extremities shall not provide any risks of temperature increase.

4 Method

The purpose of this test shall be to check that there is no smoke emission and minimum increase in temperature of the protection sleeve or conduit for the nominal current I_n , bringing the conductor to a temperature T_n , and that for an overload current I_1 bringing the conductor to a temperature T_1 , there is neither ignition nor disappearance of non conductive materials. The currents I_n and I_1 shall be specified in the protection sleeve or conduit specification or product standard.

The test shall be performed on sizes as defined in the concerned protection sleeve or conduit specification or product standard.

The temperatures shall be determined by measuring the variation of the voltage drop in the central part of the cable (2/3 of the useful length maximum) between the voltage application points.

$$\frac{\Delta U_{\theta}}{\Delta U_{20}} = \frac{R_{\theta}}{R_{20}} = 1 + \alpha (\theta - 20) \quad \text{when } T_a = 20 \text{ °C and } \alpha \text{ given by Table 1.}$$

Table 1

Base metal	Copper alloy	Copper	Aluminium
α	0,003 5	0,004	0,004

First regulate the current to I_n value, which raises the temperature of the conductor to T_n , for a period of 30 min. Calculate $\Delta T = (T_n - T_a)$, based on the voltage drop relationship.

The current shall then be increased to the second value I_1 for the time specified in the concerned product standard, bringing the temperature of the conductor to T_1 . Calculate T_1 .

5 Requirements

At I_n : no visible smoke or smell or appreciable change of colour; the variation of temperature $\Delta T = T_n - T_a$ shall be lower than the value specified in the protection sleeve or conduit product standard.

At I_1 : no visible deterioration of materials (peeling, cracking, ...) no spontaneous combustion and no visible smoke; T_1 shall be lower than the value specified in the protection sleeve or conduit product standard.

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