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

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Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 11.01.2012.	Date of Availability of the European standard is 11.01.2012.
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ICS 49.060

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 6059-503

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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 - Schutzschläuche - Prüfverfahren - Teil 503: Erwärmung bei Nennstrom eingespeist in den Schlauch

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

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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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of an identical text or by endorsement, at the latest by July 2012, and conflicting national standards shall be withdrawn at the latest by July 2012.

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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.

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

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