

English Version

**Aerospace series - Cables, electrical, aircraft use - Test methods
- Part 307: Corona extinction voltage**

Série aérospatiale - Câbles électriques à usage
aéronautique - Méthodes d'essais - Partie 307: Tension
d'extinction corona

Luft- und Raumfahrt - Elektrische Leitungen für
Luftfahrtverwendung - Prüfverfahren - Teil 307: Corona-
Aussetzspannung

This European Standard was approved by CEN on 21 June 2014.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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European Foreword

This document (EN 3475-307:2015) 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of an identical text or by endorsement, at the latest by December 2015, and conflicting national standards shall be withdrawn at the latest by December 2015.

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.

This document supersedes EN 3475-307:2010.

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, Former Yugoslav Republic of Macedonia, 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.

Introduction

For an electrical cable, the presence of partial discharges effects at operating voltage may result in a significant reduction of service life.

Some insulation materials are more susceptible to such discharge damage than others.

Evidence of partial discharges during operation signifies for example:

- the insulation thickness is insufficient for the applied voltage;
- the quality of the insulation is inadequate possibly due to excessive size or quantities of internal cavities or voids;
- an overstress is present, resulting in a local reduction of the cable insulation properties.

Significant parameters may influence PDIV^{*} and PDEV^{*} such as pressure, temperature, humidity, previous electrification, input signal characteristics (sine wave, voltage rate, ...). Attention shall be given to installation conditions in A/C, for example excessive bending or surface wrinkling of insulation shall be avoided.

Up to few tens of kHz frequency can be considered as non-significant parameter.

^{*} See definition, Clause 3.

1 Scope

This European Standard defines methods to cover the detection and measurement of partial discharge (corona) under an applied test voltage, including the determination of partial discharges (corona) inception and extinction voltages as the test voltage is raised and lowered, of electrical cables for aircraft use.

It shall be used together with EN 3475-100.

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 2235, *Aerospace series — Single and multicore electrical cables, screened and jacketed*

EN 3475-100, *Aerospace series — Cables, electrical, aircraft use — Test methods — Part 100: General*

EN 60270, *High-voltage test techniques — Partial discharge measurements*

ASTM D 1868, *Standard Test method for Detection and Measurement of Partial Discharge (Corona) Pulses in Evaluation of Insulation Systems* ¹⁾

koniec náhľadu – text ďalej pokračuje v platenej verzii STN

1) Published by: ASTM National (US) American Society for Testing and Materials <http://www.astm.org/>.