# Elektrilised kaablid ja optilised kiudkaablid. Mittemetallmaterjalide katsetusviisid. Osa 403: Mitmesugused katsetused. Võrkstruktuuriga kompaundide osoonikindluskatsetus

# Electric and optical fibre cables - Test methods for non-metallic materials - Part 403: Miscellaneous tests - Ozone resistance tests on cross-linked compounds

EESTI STANDARDIKESKUS
ESTONIAN CENTRE FOR STANDARDISATION

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

| | |
|---|---|
| See Eesti standard EVS-EN 60811-403:2012 sisaldab Euroopa standardi EN 60811-403:2012 ingliskeelset teksti. | This Estonian standard EVS-EN 60811-403:2012 consists of the English text of the European standard EN 60811-403:2012. |
| 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 15.06.2012. | Date of Availability of the European standard is 15.06.2012. |
| Standard on kättesaadav Eesti Standardikeskusest. | The standard is available from the Estonian Centre for Standardisation. |



Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 29.035.01, 29.060.20

EUROPEAN STANDARD

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# EN 60811-403

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Supersedes EN 60811-2-1:1998 (partially) + A1:2001 (partially)

English version

# Electric and optical fibre cables - Test methods for non-metallic materials - Part 403: Miscellaneous tests - Ozone resistance test on cross-linked compounds

(IEC 60811-403:2012)

Câbles électriques et à fibres optiques - Méthodes d'essai pour les matériaux non-métalliques - Partie 403: Essais divers - Essai de résistance à l'ozone sur les mélanges réticulés (CEI 60811-403:2012)

Kabel, isolierte Leitungen und Glasfaserkabel - Prüfverfahren für nichtmetallene Werkstoffe - Teil 403: Sonstige Prüfungen - Prüfung der Ozonbeständigkeit für vernetzte Mischungen (IEC 60811-403:2012)



CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

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## Foreword

The text of document 20/1287/FDIS, future edition 1 of IEC 60811-403, prepared by IEC/TC 20 "Electric cables" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 60811-403:2012.

The following dates are fixed:

| | | |
|---|---|---|
| • latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement | (dop) | 2013-01-16 |
| • latest date by which the national standards conflicting with the document have to be withdrawn | (dow) | 2015-04-16 |

This document supersedes Clause 8 of EN 60811-2-1:1998 + A1:2001 (partially). Full details of the replacements are shown in Annex A of EN 60811-100:2012.

There are no technical changes with respect to EN 60811-2-1:1998 + A1:2001, but see the Foreword to EN 60811-100:2012.

This standard is to be read in conjunction with EN 60811-100.

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

This standard covers the Principle Elements of the Safety Objectives for Electrical Equipment Designed for Use within Certain Voltage Limits (LVD - 2006/95/EC)

## Endorsement notice

The text of the International Standard IEC 60811-403:2012 was approved by CENELEC as a European Standard without any modification.

# Annex ZA
(normative)

## Normative references to international publications with their corresponding European publications

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.

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

| Publication | Year | Title | EN/HD | Year |
|---|---|---|---|---|
| IEC 60811-100 | 2012 | Electric and optical fibre cables - Test methods for non-metallic materials - Part 100: General | EN 60811-100 | 2012 |
| IEC 60811-501 | - | Electric and optical fibre cables - Test methods for non-metallic materials - Part 501: Mechanical tests - Tests for determining the mechanical properties of insulating and sheathing compounds | EN 60811-501 | - |

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# INTRODUCTION

The IEC 60811 series specifies the test methods to be used for testing non-metallic materials of all types of cables. These test methods are intended to be referenced in standards for cable construction and for cable materials.

NOTE 1 Non-metallic materials are typically used for insulating, sheathing, bedding, filling or taping within cables.

NOTE 2 These test methods are accepted as basic and fundamental and have been developed and used over many years principally for the materials in all energy cables. They have also been widely accepted and used for other cables, in particular optical fibre cables, communication and control cables and cables for ships and offshore applications.

# ELECTRIC AND OPTICAL FIBRE CABLES – TEST METHODS FOR NON-METALLIC MATERIALS –

## Part 403: Miscellaneous tests – Ozone resistance test on cross-linked compounds



## 1 Scope

This Part 403 of IEC 60811 specifies the method for the ozone resistance test, which typically applies to cross-linked compounds.

## 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.

IEC 60811-100:2012, *Electric and optical fibre cables – Test methods for non-metallic materials – Part 100: General*

IEC 60811-501, *Electric and optical fibre cables – Test methods for non-metallic materials – Part 501: Mechanical tests – Tests for determining the mechanical properties of insulation and sheathing compounds*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 60811-100 apply.

## 4 Test method

### 4.1 General

This part of IEC 60811 shall be used in conjunction with IEC 60811-100.

**WARNING** Attention is drawn to the toxicity of ozone. Precautions should be taken to minimize exposure of personnel to it at all times and the concentration in the workroom environment should not be allowed to exceed $1 \times 10^{-5}$ % by volume, or the value in the current industrial hygienic standard, whichever is the lower.

Unless otherwise specified, tests shall be carried out at room temperature.

### 4.2 Apparatus

The following apparatus shall be used:

a) a device for generating a controlled amount of ozone;

b) a means for circulating ozonized air under controlled conditions of humidity and temperature through a chamber containing the test pieces to be tested;

c) a means for determination of ozone concentration;

d) a suitable device for the clamping and elongation of test pieces;

e) cylindrical mandrels consisting of wood or metal;