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Standards

Irish Standard  
I.S. EN 60811-508:2012&A1:2017

# Electric and optical fibre cables - Test methods for non-metallic materials - Part 508: Mechanical tests - Pressure test at high temperature for insulation and sheaths

**I.S. EN 60811-508:2012&A1:2017**

*Incorporating amendments/corrigenda/National Annexes issued since publication:*

EN 60811-508:2012/A1:2017

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## National Foreword

I.S. EN 60811-508:2012&A1:2017 is the adopted Irish version of the European Document EN 60811-508:2012, Electric and optical fibre cables - Test methods for non-metallic materials - Part 508: Mechanical tests - Pressure test at high temperature for insulation and sheaths

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 60811-508:2012/A1**

November 2017

ICS 29.035.01; 29.060.20

English Version

**Electric and optical fibre cables - Test methods for non-metallic materials - Part 508: Mechanical tests - Pressure test at high temperature for insulation and sheaths  
(IEC 60811-508:2012/A1:2017)**

Câbles électriques et à fibres optiques - Méthodes d'essai pour les matériaux non-métalliques - Partie 508: Essais mécaniques - Essai de pression à température élevée pour enveloppes isolantes et les gaines  
(IEC 60811-508:2012/A1:2017)

Kabel, isolierte Leitungen und Glasfaserkabel - Prüfverfahren für nichtmetallene Werkstoffe - Teil 508: Mechanische Prüfungen - Wärmedruckprüfungen für Isolierhüllen und Mäntel  
(IEC 60811-508:2012/A1:2017)

This amendment A1 modifies the European Standard EN 60811-508:2012; it was approved by CENELEC on 2017-08-25. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this amendment the status of a national standard without any alteration.

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Comité Européen de Normalisation Electrotechnique  
Europäisches Komitee für Elektrotechnische Normung

**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

**EN 60811-508:2012/A1:2017**

**European foreword**

The text of document 20/1735/FDIS, future IEC 60811-508:2012/A1, prepared by IEC/TC 20 "Electric cables" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 60811-508:2012/A1:2017.

The following dates are fixed:

- latest date by which the document has to be implemented at (dop) 2018-05-25  
national level by publication of an identical national  
standard or by endorsement
- latest date by which the national standards conflicting with (dow) 2020-08-25  
the document have to be withdrawn

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**Endorsement notice**

The text of the International Standard IEC 60811-508:2012/A1:2017 was approved by CENELEC as a European Standard without any modification.

EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 60811-508**

June 2012

ICS 29.035.01; 29.060.20

Supersedes EN 60811-3-1:1995 (partially) + A1:1996 (partially) + A2:2001 (partially)

English version

**Electric and optical fibre cables -  
Test methods for non-metallic materials -  
Part 508: Mechanical tests -  
Pressure test at high temperature for insulation and sheaths  
(IEC 60811-508:2012)**

Câbles électriques et à fibres optiques -  
Méthodes d'essai pour les matériaux  
non-métalliques -  
Partie 508: Essais mécaniques -  
Essai de pression à température élevée  
pour enveloppes isolantes et les gaines  
(CEI 60811-508:2012)

Kabel, isolierte Leitungen  
und Glasfaserkabel -  
Prüfverfahren für nichtmetallene  
Werkstoffe -  
Teil 508: Mechanische Prüfungen -  
Wärmedruckprüfungen für Isolierhüllen  
und Mäntel  
(IEC 60811-508:2012)

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

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

## Foreword

The text of document 20/1304/FDIS, future edition 1 of IEC 60811-508, prepared by IEC/TC 20 "Electric cables" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 60811-508:2012.

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) 2013-01-17
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2015-04-17

This document supersedes Clause 8 of EN 60811-3-1:1995 + A1:1996 + A2:2001 (partially). Full details of the replacements are shown in Annex A of EN 60811-100:2012.

Significant technical changes with respect to EN 60811-3-1:1995 are as follows:

- re-statement of oven characteristics, especially relating to anti-vibration and to temperature control;
- enhanced detail as to the preparations and testing of flat cables;
- enhanced detail as to thickness and dimensional measurements.

See also the Foreword to EN 60811-100:2012.

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

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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 60811-508:2012 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60811-3-1:1985	NOTE	Harmonized as EN 60811-3-1:1995 (not modified).
IEC 60811-203	NOTE	Harmonized as EN 60811-203.
IEC 60811-401	NOTE	Harmonized as EN 60811-401.
IEC 60811-501:2012	NOTE	Harmonized as EN 60811-501:2012 (not modified).



## **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.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60811-100	2012	Electric and optical fibre cables - Test methods for non-metallic materials - Part 100: General	EN 60811-100	2012
IEC 60811-201	-	Electric and optical fibre cables - Test methods for non-metallic materials - Part 201: General tests - Measurement of insulation thickness	EN 60811-201	-
IEC 60811-202	-	Electric and optical fibre cables - Test methods for non-metallic materials - Part 202: General tests - Measurement of thickness of non-metallic sheath	EN 60811-202	-

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**IEC 60811-508**

Edition 1.0 2012-03

# **INTERNATIONAL STANDARD**

## **NORME INTERNATIONALE**

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**Electric and optical fibre cables – Test methods for non-metallic materials –  
Part 508: Mechanical tests – Pressure test at high temperature for insulation  
and sheaths**

**Câbles électriques et à fibres optiques – Méthodes d'essai pour les matériaux  
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Partie 508: Essais mécaniques – Essai de pression à température élevée pour  
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**IEC 60811-508**

Edition 1.0 2012-03

# **INTERNATIONAL STANDARD**

## **NORME INTERNATIONALE**

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**Electric and optical fibre cables – Test methods for non-metallic materials –  
Part 508: Mechanical tests – Pressure test at high temperature for insulation  
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non-métalliques –  
Partie 508: Essais mécaniques – Essai de pression à température élevée pour  
les enveloppes isolantes et les gaines**

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

#### **Part 508: Mechanical tests – Pressure test at high temperature for insulation and sheaths**

#### **FOREWORD**

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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International Standard IEC 60811-508 has been prepared by IEC technical committee 20: Electric cables.

This Part 508 of IEC 60811 cancels and replaces Clause 8 of IEC 60811-3-1:1985, which is withdrawn. Full details of the replacements are shown in Annex A of IEC 60811-100:2012.

Significant technical changes with respect to the previous edition are as follows:

- re-statement of oven characteristics, especially relating to anti-vibration and to temperature control;
- enhanced detail as to the preparations and testing of flat cables;
- enhanced detail as to thickness and dimensional measurements.

See also the Foreword to IEC 60811-100:2012.

The text of this standard is based on the following documents:

FDIS	Report on voting
20/1304/FDIS	20/1353/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

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

A list of all the parts in the IEC 60811 series, published under the general title *Electric and optical fibre cables – Test methods for non-metallic materials*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.



## 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 508: Mechanical tests – Pressure test at high temperature for insulation and sheaths**

#### **1 Scope**

This Part 508 of IEC 60811 gives the procedure for a pressure test at high temperature, which typically applies to thermoplastic compounds used for insulating and sheathing materials.

NOTE 1 The method is principally intended for thermoplastic materials, but may be used for cross-linked materials when specifically required by the relevant cable standard.

NOTE 2 The test method is not recommended for thicknesses below 0,7 mm.

#### **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 60811-201, *Electric and optical fibre cables – Test methods for non-metallic materials – Part 201: General tests – Measurement of insulation thickness*

IEC 60811-202, *Electric and optical fibre cables – Test methods for non-metallic materials – Part 202: General tests – Measurement of thickness of non-metallic sheaths*

#### **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.

This standard gives the method for the pressure test at high temperature which applies to insulation and sheathing compounds.

All the tests shall be carried out not less than 16 h after the extrusion of the insulating or sheathing compounds.

##### **4.2 Apparatus**

###### **4.2.1 Air oven**

The test shall be carried out in an oven. The oven shall use natural air circulation.

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