

INTERNATIONAL STANDARD

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

**Câbles électriques et à fibres optiques – Méthodes d'essai pour les matériaux
non-métalliques –
Partie 201: Essais généraux – Mesure de l'épaisseur des enveloppes isolantes**



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VERSION REDLINE



**Electric and optical fibre cables – Test methods for non-metallic materials –
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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

**Part 201: General tests –
Measurement of insulation thickness**

FOREWORD

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This consolidated version of the official IEC Standard and its amendments has been prepared for user convenience.

IEC 60811-201 edition 1.2 contains the first edition (2012-03) [documents 20/1280/FDIS and 20/1329/RVD], its amendment 1 (2017-07) [documents 20/1731/FDIS and 20/1742/RVD] and its amendment 2 (2023-11) [documents 20/2126/FDIS and 20/2136/RVD].

In this Redline version, a vertical line in the margin shows where the technical content is modified by amendments 1 and 2. Additions are in green text, deletions are in strikethrough red text. A separate Final version with all changes accepted is available in this publication.

International Standard IEC 60811-201 has been prepared by IEC technical committee 20: Electric cables.

There are no technical changes with respect to the previous edition, but see the Foreword to IEC 60811-100:2012.

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

This part of IEC 60811 shall be read 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 document and its amendments will remain unchanged until the stability date indicated on the IEC website under www.iec.ch in the data related to the specific document. At this date, the document will be

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- withdrawn,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

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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.

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

Part 201: General tests – Measurement of insulation thickness

1 Scope

This Part 201 of IEC 60811 gives the methods for measuring the insulation thicknesses which apply to the most common types of insulating compounds (cross-linked, PVC, PE, PP, etc.).

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*

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.

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

Measurement of insulation thickness may be required as an individual test, or as a step in the procedure for carrying out other tests, such as the determination of mechanical properties.

In each case, the method of selecting samples shall be in accordance with the relevant cable standard.

4.2 Measuring equipment

A measuring microscope or a profile projector of at least 10 x magnification or an optical digital image analyser shall be used. These ~~two~~ of equipment shall allow ~~a~~ the reading of 0,01 mm ~~and~~. An estimated reading to three decimal places shall be made when measuring insulation with a specified thickness less than 0,5 mm.

In case of doubt, the measuring microscope shall be taken as the reference method.