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Electric and optical fibre cables – Test methods for non-metallic materials – Part 202: General tests – Measurement of thickness of non-metallic sheath

Câbles électriques et à fibres optiques – Méthodes d'essai pour les matériaux non-métalliques – Partie 202: Essais généraux – Mesure de l'épaisseur des gaines non métalliques

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

Part 202: General tests – Measurement of thickness of non-metallic sheath

FOREWORD

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This Consolidated version of IEC 60811-202 bears the edition number 1.1. It consists of the first edition (2012-03) [documents 20/1281/FDIS and 20/1330/RVD] and its amendment 1 (2017-07) [documents 20/1732/FDIS and 20/1743/RVD]. The technical content is identical to the base edition and its amendment.

This Final version does not show where the technical content is modified by amendment 1. A separate Redline version with all changes highlighted is available in this publication.

International Standard IEC 60811-202 has been prepared by IEC technical committee 20: Electric cables.

There are no specific 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 the base publication and its amendment 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- withdrawn,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 202: General tests – Measurement of thickness of non-metallic sheath

1 Scope

This Part 202 of IEC 60811 gives the methods for measuring thicknesses of non-metallic sheath which apply to the most common types of sheathing 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.

The measurement of sheath thickness may be required as an individual test, or as a step in the procedure for carrying out other tests, such as the measurement of mechanical properties. The test method applies to the measurement of all sheaths for which thickness limits are specified, for example separation sheaths, as well as external sheaths.

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 types of equipment shall allow a reading of 0,01 mm and an estimated reading to three decimal places when measuring insulation with a specified thickness less than 0,5 mm.

For sheaths applied over longitudinally irregular surfaces such as corrugated metallic sheaths, a micrometer having a ball nose radius of 1 mm and allowing a reading of 0,01 mm may be used. This method is suitable only for corrugations having a radius greater than 1 mm.