

INTERNATIONAL STANDARD

IEC 60811-1-3

Edition 2.1
2001-07

Edition 2:1993 consolidated with amendment 1:2001

Common test methods for insulating and sheathing materials of electric and optical cables –

Part 1-3:

General application –

Methods for determining the density –

Water absorption tests – Shrinkage test

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*This **English-language** version is derived from the original **bilingual** publication by leaving out all French-language pages. Missing page numbers correspond to the French-language pages.*



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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**COMMON TEST METHODS FOR INSULATING AND SHEATHING
MATERIALS OF ELECTRIC AND OPTICAL CABLES –****Part 1-3: General application –
Methods for determining the density –
Water absorption tests – Shrinkage test**

FOREWORD

- 1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the 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, the IEC publishes International Standards. 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. The 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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- 3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical specifications, technical reports or guides and they are accepted by the National Committees in that sense.
- 4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.
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- 6) Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. The IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 60811-1-3 has been prepared by sub-committee 20A: High-voltage cables, of IEC technical committee 20: Electric cables.

This consolidated version of IEC 60811-1-3 consists of the second edition (1993) [documents 20A(CO)152/FDIS and 20A(CO)162418/RVD], and its amendment 1 (2001) [documents 20A/462/FDIS and 20A/470/RVD].

The technical content is therefore identical to the base edition and its amendment and has been prepared for user convenience.

It bears the edition number 2.1.

A vertical line in the margin shows where the base publication has been modified by amendment 1.

The committee has decided that the contents of the base publication and its amendments will remain unchanged until 2007. At this date, the publication will be

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

COMMON TEST METHODS FOR INSULATING AND SHEATHING MATERIALS OF ELECTRIC AND OPTICAL CABLES –

Part 1-3: General application – Methods for determining the density – Water absorption tests – Shrinkage test

1 Scope

This section of IEC 60811-1 specifies the test methods to be used for testing polymeric insulating and sheathing materials of electric cables for power distribution and telecommunications including cables used on ships and in offshore applications.

This section three of part 1 gives the methods for determining the density, water absorption tests and shrinkage test which apply to the most common types of insulating and sheathing compounds (elastomeric, PVC, PE, PP, etc.).

1.1 Normative reference

The following normative document contain provisions which, through reference in this text, constitute provisions of this part of IEC 60811. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of IEC 60811 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 1183:1987, *Plastics – Methods for determining the density and relative density of non-cellular plastics*

2 Test values

Full test conditions (such as temperatures, durations, etc.) and full test requirements are not specified in this standard; it is intended that they should be specified by the standard dealing with the relevant type of cable.

Any test requirements which are given in this standard may be modified by the relevant cable standard to suit the needs of a particular type of cable.

3 Applicability

Conditioning values and testing parameters are specified for the most common types of insulating and sheathing compounds and of cables, wires and cords.

4 Type tests and other tests

The test methods described in this standard are intended, in the first instance, to be used for type tests. In certain tests, where there are essential differences between the conditions for type tests and those for more frequent tests, such as routine tests, these differences are indicated.