

01-april-2002

Materiali za izoliranje in oplaščenje električnih in optičnih kablov - Splošne preskusne metode - 1-3. del: Področje uporabe - Metode za ugotavljanje gostote - Preskušanje vpijanja vode - Preskus krčenja - Dopolnilo A1 (IEC 60811-1-3:1993/A1:2001)

Insulating and sheathing materials of electric and optical cables - Common test methods - Part 1-3: General application - Methods for determining the density - Water absorption tests - Shrinkage test (IEC 60811-1-3:1993/A1:2001)

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Isolier- und Mantelwerkstoffe für Kabel und isolierte Leitungen - Allgemeine Prüfverfahren - Teil 1-3: Allgemeine Anwendung - Dichtebestimmung - Wasseraufnahmeprüfungen - Schrumpfungsprüfung (IEC 60811-1-3:1993/A1:2001)

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Matériaux d'isolation et de gainage des câbles électriques et des câbles optiques - Méthodes d'essais communes - Partie 1-3: Application générale - Méthodes de détermination de la masse volumique - Essais d'absorption d'eau - Essai de rétraction (CEI 60811-1-3:1993/A1:2001)

Ta slovenski standard je istoveten z: EN 60811-1-3:1995/A1:2001

ICS:

| | | |
|-----------|----------------------------------|---------------------------------|
| 29.035.01 | Izolacijski materiali na splošno | Insulating materials in general |
| 29.060.20 | Kabli | Cables |

SIST EN 60811-1-3:1999/A1:2002 **en**

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English version

**Insulating and sheathing materials of electric and optical cables -
Common test methods
Part 1-3: General application -
Methods for determining the density -
Water absorption tests - Shrinkage test
(IEC 60811-1-3:1993/A1:2001)**

Matériaux d'isolation et de gainage des
câbles électriques et des câbles optiques -
Méthodes d'essais communes
Partie 1-3: Application générale -
Méthodes de détermination de la masse
volumique - Essais d'absorption d'eau -
Essai de rétraction
(CEI 60811-1-3:1993/A1:2001)

Isolier- und Mantelwerkstoffe für Kabel
und isolierte Leitungen -
Allgemeine Prüfverfahren
Teil 1-3: Allgemeine Anwendung -
Dichtebestimmung -
Wasseraufnahmeprüfungen -
Schrumpfungsprüfung
(IEC 60811-1-3:1993/A1:2001)

[SIST EN 60811-1-3:1999/A1:2002](https://standards.iteh.ai/catalog/standards/sist/48c85e8c-cba2-491e-a808-11d1-40e2-485381f04230)

[https://standards.iteh.ai/catalog/standards/sist/48c85e8c-cba2-491e-a808-](https://standards.iteh.ai/catalog/standards/sist/48c85e8c-cba2-491e-a808-11d1-40e2-485381f04230)

This amendment A1 modifies the European Standard EN 60811-1-3:1995; it was approved by CENELEC on 2001-07-01. 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.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

This amendment exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CENELEC

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

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Foreword

The text of document 20/462/FDIS, future amendment 1 to IEC 60811-1-3:1993, prepared by IEC TC 20, Electric cables, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as amendment A1 to EN 60811-1-3:1995 on 2001-07-01.

The following dates were fixed:

- latest date by which the amendment has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2002-04-01
- latest date by which the national standards conflicting with the amendment have to be withdrawn (dow) 2004-07-01

Endorsement notice

The text of amendment 1:2001 to the International Standard IEC 60811-1-3:1993 was approved by CENELEC as an amendment to the European Standard without any modification.

Editorial modification of amended main title:

Amend the main title to read:

Insulating and sheathing materials of electric and optical cables - Common test methods

SIST EN 60811-1-3:1999/A1:2002

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NORME
INTERNATIONALE
INTERNATIONAL
STANDARD

CEI
IEC

60811-1-3

1993

AMENDEMENT 1
AMENDMENT 1
2001-05

Amendement 1

Méthodes d'essais communes pour matériaux
d'isolation et de gainage des câbles électriques et
optiques –

Partie 1-3:

Application générale – Méthodes de détermination
de la masse volumique –

Essais d'absorption d'eau – Essai de rétraction

<https://standards.iteh.ai/catalog/standards/sist/48c85e8c-cba2-491e-a808-e91f21056678/sist-en-60811-1-3-1999-a1-2002>

Amendment 1

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

Part 1-3:

General application – Section 3: Methods for
determining the density – Water absorption tests –
Shrinkage test

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Commission Electrotechnique Internationale
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Международная Электротехническая Комиссия

CODE PRIX
PRICE CODE

D

Pour prix, voir catalogue en vigueur
For price, see current catalogue

FOREWORD

This amendment has been prepared by IEC technical committee 20: Electric cables.

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

| FDIS | Report on voting |
|-------------|------------------|
| 20/462/FDIS | 20/470/RVD |

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

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.

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Cover page, title page, page 5 and page 7

[SIST EN 60811-1-3:1999/A1:2002](https://standards.iteh.ai/catalog/standards/sist/48c85e8c-cba2-491e-a808-69121056678/sist-en-60811-1-3-1999-a1-2002)

Amend the main title to read:
<https://standards.iteh.ai/catalog/standards/sist/48c85e8c-cba2-491e-a808-69121056678/sist-en-60811-1-3-1999-a1-2002>

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

Page 7

1 Scope

Add, at the end of the first paragraph, the following:

... and in offshore applications.

Page 9

8.1.1 Testing equipment

Amend the title to read:

8.1.1 Testing materials and equipment

Amend item 3) to read: Distilled or deionized water.

Amend item 6) to read: Hydrometer calibrated at $(23,0 \pm 0,1) ^\circ\text{C}$.

Page 9

8.1.2 Procedure

Correct the subclause numbers from 9.1.2.1 and on page 11, 9.1.2.2, to 8.1.2.1 and 8.1.2.2 respectively.

Page 11

New subclause 8.1.2.2

Amend, in line 2 of paragraph one, the temperature to $(23,0 \pm 0,5)$ °C.

8.2.1 Apparatus

Change the title of this subclause as follows:

8.2.1 Testing equipment

Amend line 1 to read:

The testing equipment for this method consists of:

Add a fourth dash to the list of apparatus:

– immersion liquid (ethyl alcohol 96 %).

Page 13

8.2.5 Calculation

Amend the definition of "d" as follows: d is the density of ethyl alcohol, 96 %, at 23 °C and is equal to 0,7988 g/ml.

8.3 Correction for filled polyethylene (PE)

Renumber as subclause 8.4.

Insert new subclause 8.3 as follows:

8.3 Apparent mass method

8.3.1 Testing equipment

The testing equipment for this method consists of:

- an analytical balance with a precision of 0,1 mg suitable to weigh a suspended sample;
- a liquid bath;
- immersion liquid: deionized (or distilled) water or ethyl alcohol (96 %).

8.3.2 Test piece

The test piece shall be taken from the bare insulation or sheath. The mass of the test piece shall be not less than 1 g and not greater than 5 g. The test piece shall be made by cutting the sample of insulation or sheath into one or more small pieces; small tubes of insulation and sheath shall be cut longitudinally into two or more parts to prevent the enclosure of air bubbles.

8.3.3 Conditioning

The test piece shall be at an ambient temperature of (23 ± 2) °C.

8.3.4 Procedure

The test piece shall first be weighed in air. The test piece shall then be fixed to a suitable hook and the hook with the test piece hung up in the balance. Subsequently the test piece shall be immersed in distilled or deionized water (or ethyl alcohol, 96 % if the density is expected to be lower than 1 g/ml) at (23 ± 5) °C and its apparent mass determined. Care shall be taken that the test piece is fully covered by the liquid and that the surface is free of bubbles before the apparent mass is recorded. It may be necessary to add a small quantity of a surface active agent to ensure elimination of all bubbles.

The recorded mass shall be corrected for the apparent mass of the empty hook in the immersion liquid.

8.3.5 Calculation

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The density in grams per millilitre of the insulation and sheath may be calculated as follows:

$$\text{density at } 23 \text{ °C} = \frac{m}{m - m_a}$$

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where

m is the mass of the test piece in air; (in grams)

m_a is the apparent mass of the test piece in water; (in grams).

NOTE Where the immersion liquid is water the density is assumed to be 1,0 g/ml. If ethyl alcohol, 96 %, is used, the value of m_a should be corrected for the density of the alcohol (0,7988 g/ml at 23 °C).

Page 17

9.2.2 Testing procedure

Amend, in subclause 9.2.2 a) paragraph 6 to read:

Use preboiled distilled or deionized water.

Page 21

11.2 Sampling (English version only)

Amend, in line 3, (500 ± 5) m to (500 ± 5) mm.