

SLOVENSKI STANDARD
SIST EN 60811-1-4:1999**01-julij-1999**

Materiali za izoliranje in oplaščenje električnih in optičnih kablov - Splošne preskusne metode - 1-4. del: Področje uporabe - Preskušanje pri nizkih temperaturah (IEC 60811-1-4:1985 + popravek maj 1986 + A1:1993)

Insulating and sheathing materials of electric and optical cables - Common test methods - Part 1-4: General application - Tests at low temperature

Isolier- und Mantelwerkstoffe für Kabel und isolierte Leitungen - Allgemeine Prüfverfahren - Teil 1-4: Allgemeine Anwendung - Prüfungen bei niedriger Temperatur
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Matériaux d'isolation et de gainage des câbles électriques et optiques - Méthodes d'essais communes - Partie 1-4: Application générale - Essais à basse température
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Ta slovenski standard je istoveten z: EN 60811-1-4:1995

ICS:

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

SIST EN 60811-1-4:1999**en**

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 60811-1-4

April 1995

ICS 29.060.20

Supersedes HD 505.1.4 S1:1988

Descriptors: Electric cable, insulated cable, electrical insulation, sheath, test at low temperature

English version

**Insulating and sheathing materials of electric cables
Common test methods
Part 1: General application
Section 4: Test at low temperature
(IEC 811-1-4:1985 + corrigendum May 1986 + A1:1993)**

Matériaux d'isolation et de gainage des câbles électriques

Méthodes d'essais communes

Partie 1: Application générale

Section 4: Essais à basse température

(CEI 811-1-4:1985 + corrigendum mai 1986 + A1:1993)

Isolier- und Mantelwerkstoffe für Kabel und isolierte Leitungen

Allgemeine Prüfverfahren

Teil 1: Allgemeine Anwendung

Hauptabschnitt 4: Prüfungen bei niedriger Temperatur

(IEC 811-1-4:1985 +

Corrigendum Mai 1986 + A1:1993)

This European Standard was approved by CENELEC on 1995-03-06. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard 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 European Standard 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, 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 the International Standard IEC 811-1-4:1985, with its corrigendum May 1986 and its amendment 1:1993, prepared by IEC TC 20, Electric cables, was submitted to the Unique Acceptance Procedure and was approved by CENELEC as EN 60811-1-4 on 1995-03-06 without any modification.

This European Standard supersedes HD 505.1.4 S1:1988.

Where reference is made to HD 505.1.4 S1:1988 in another standard, users should refer to this EN 60811-1-4 for the current information.

The following dates were fixed:

- latest date by which the EN has to be implemented
at national level by publication of an identical
national standard or by endorsement (dop) 1996-03-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 1996-12-01

Annexes designated "normative" are part of the body of the standard.

Appendices and annexes designated "informative" are given for information only.

In this standard, annex ZA is normative and appendix A is informative.

Annex ZA has been added by CENELEC.

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Endorsement notice

[SIST EN 60811-1-4:1999](https://standards.iteh.ai/catalog/standards/sist/1c48925c-2116-443e-9272-3aa4d224a477/sist-en-60811-1-4-1999)

The text of the International Standard IEC 811-1-4:1985, with its corrigendum May 1986 and its amendment 1:1993, was approved by CENELEC as a European Standard without any modification.

Annex ZA (normative)

Normative references to international publications
with their corresponding European publications

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

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 538 ¹⁾	1976	Electric cables, wires and cords: methods of test for polyethylene insulation and sheath	-	-
IEC 538A ¹⁾	1980	First supplement: Additional methods of test for polyethylene insulation and sheath of electric cables, wires and cords used in telecommunication equipment and in devices employing similar techniques	-	-
IEC 540 ¹⁾	1982	Test methods for insulations and sheaths of electric cables and cords (elastomeric and thermoplastic compounds)	-	-
IEC 811-1-1 ²⁾	1985	Insulating and sheathing materials of electric cables Common test methods - Part 1: General application Section 1: Measurements of thickness and overall dimensions - Tests for determining the mechanical properties	HD 505.1.1 S3 ³⁾	1991

- 1) IEC 538, IEC 538A and IEC 540 are superseded by IEC 811 and IEC 885 - Electrical test methods for electric cables.
2) The main title and title of Part 1 have been adapted to the new title decided by IEC/TC 20.
3) HD 505.1.1 S3:1991 is superseded by EN 60811-1-1:1995, which is based on IEC 811-1-1:1993.

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**NORME
INTERNATIONALE
INTERNATIONAL
STANDARD**

**CEI
IEC**

811-1-4

Première édition
First edition
1985

**Méthodes d'essais communes pour les matériaux
d'isolation et de gainage des câbles électriques**

Première partie:

Méthodes d'application générale

Section quatre – Essais à basse température

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

Part 1:

Methods for general application

Section four – Test at low temperature

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Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

CODE PRIX
PRICE CODE

N

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

Publications 811 de la C E I

(Premières éditions 1985)

I E C Publications 811

(First editions 1985)

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

Common test methods for insulating and sheathing materials of electric cables

CORRIGENDUM 1

Dans l'annexe A, article A2 des Publications 811-1-1, 811-1-2, 811-1-3, 811-1-4, 811-3-1, 811-3-2 et l'annexe B, article B2 de la Publication 811-4-1, veuillez modifier comme indiqué le tableau suivant :

Correspondance entre les articles des Publications 540, 811 et 885 de la C E I *

Titre de l'article dans la Publication 540 *	540	811			885
	Article	Partie	Section	Article	Partie
Essais de décharges partielles	3	-	-	-	2
Mesure des épaisseurs et des diamètres **	4	1	1	8	-
Détermination des propriétés mécaniques des mélanges pour enveloppes isolantes et gaines	5	1	1	9	-
Méthodes de vieillissement thermique	6	1	2	8	-
Essai de perte de masse des enveloppes isolantes et gaines de PVC	7	-	2	8	-
Essai de pression à température élevée pour enveloppes isolantes et gaines de PVC	8	3	1	8	-
Essais à basse température pour enveloppes isolantes et gaines de PVC	9	1	4	8	-
Essais de résistance à la fissuration des enveloppes isolantes et gaines de PVC	10	3	1	9	-
Méthode de détermination de la masse volumique des mélanges élastomères et thermoplastiques	11	1	3	8	-
Mesure de l'indice de fluidité à chaud du polyéthylène thermoplastique	12	4	1	10	-
Essai de résistance à l'ozone	13	2	1	8	-
Essai d'allongement à chaud	14	2	1	9	-
Essai de résistance à l'huile minérale pour les gaines à base d'élastomères	15	2	1	10	-
Essais électriques pour les câbles, les conducteurs et les fils, pour une tension inférieure ou égale à 450/750 V	16	-	-	-	1
Stabilité thermique des enveloppes isolantes et des gaines de PVC	17	3	2	9	-
Mesure dans le PE du taux de noir de carbone et/ou des charges minérales	18	4	1	11	-
Essais d'absorption d'eau	19	1	3	9	-
Essai de rétraction	20	1	3	10	-

* Publication 540: Méthodes d'essais pour les enveloppes isolantes et les gaines des câbles électriques rigides et souples (mélanges élastomères et thermoplastiques).

Publication 885: Méthodes d'essais électriques pour les câbles électriques.

** Techniquement non identique.

In Appendix A, Clause A2 of Publications 811-1-1, 811-1-2, 811-1-3, 811-1-4, 811-3-1, 811-3-2 and Appendix B, Clause B2 of Publication 811-4-1, please amend as follows the table below:

Corresponding clauses in I E C Publications 540, 811 and 885 *

Heading of clause in Publication 540 *	540	811			885
	Clause	Part	Section	Clause	Part
Partial discharge tests	3	—	—	—	2
Measurement of thicknesses and diameters **	4	1	1	8	—
Tests for determining the mechanical properties of insulating and sheathing compounds	5	1	1	9	—
Thermal ageing methods	6	1	2	8	—
Loss of mass test for PVC insulations and sheaths	7	3	2	8	—
Pressure test at high temperature for PVC insulations and sheaths	8	3	1	8	—
Tests at low temperature for PVC insulations and sheaths	9	1	4	8	—
Tests for resistance of PVC insulations and sheaths to cracking	10	3	1	9	—
Method for determining the density of elastomeric and thermoplastic compounds	11	1	3	8	—
Measurement of the melt flow index of thermoplastic polyethylene	12	4	1	10	—
Ozone resistance test	13	2	1	8	—
Hot set test	14	2	1	9	—
Mineral oil immersion test for elastomeric sheaths	15	2	1	10	—
Electrical tests for cables, cords and wires for voltages up to and including 450/750 V	16	—	—	—	1
Thermal stability of PVC insulations and sheaths	17	3	2	9	—
Carbon black and/or mineral filler content in PE	18	4	1	11	—
Water absorption tests	19	1	3	9	—
Shrinkage test	20	1	3	10	—

* Publication 540: Test Methods for Insulations and Sheaths of Electric Cables and Cords (Elastomeric and Thermoplastic Compounds).

Publication 885: Electrical Test Methods for Electric Cables.

** Technically not identical.

CONTENTS

	Page
FOREWORD	5
PREFACE	5
Clause	
1. Scope	7
2. Test values	7
3. Applicability	7
4. Type tests and other tests	7
5. Pre-conditioning	7
6. Test temperature	7
7. Median value	7
8. Tests at low temperature	9
8.1 Bending test at low temperature for insulations	9
8.2 Bending test at low temperature for sheaths	11
8.3 Elongation test at low temperature for insulations	11
8.4 Elongation test at low temperature for sheaths	15
8.5 Impact test at low temperature for PVC insulations and sheaths	17
FIGURES	20
APPENDIX A — Corresponding clauses and sub-clauses in IEC Publications 538 and 540 and IEC Publication 811	25

SIST EN 60811-1-4:1999

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

COMMON TEST METHODS FOR INSULATING AND SHEATHING
MATERIALS OF ELECTRIC CABLES

Part 1: Methods for general application

Section Four — Tests at low temperature

FOREWORD

- 1) The formal decisions or agreements of the IEC on technical matters, prepared by Technical Committees on which all the National Committees having a special interest therein are represented, express, as nearly as possible, an international consensus of opinion on the subjects dealt with.
- 2) They have the form of recommendations for international use and they are accepted by the National Committees in that sense.
- 3) In order to promote international unification, the IEC expresses the wish that all National Committees should adopt the text of the IEC recommendation for their national rules in so far as national conditions will permit. Any divergence between the IEC recommendation and the corresponding national rules should, as far as possible, be clearly indicated in the latter.

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PREFACE

This standard has been prepared by IEC Technical Committee No. 20: Electric Cables.

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

Six Months' Rule	Report on Voting
20(CO)154	20(CO)164

Further information can be found in the Report on Voting indicated in the table above.

The following IEC publications are quoted in this standard:

- Publications Nos. 538 (1976): Electric Cables, Wires and Cords: Methods of Test for Polyethylene Insulation and Sheath.
- 538A (1980): First Supplement: Additional Methods of Test for Polyethylene Insulation and Sheath of Electric Cables, Wires and Cords Used in Telecommunication Equipment and in Devices Employing Similar Techniques.
- 540 (1982): Test Methods for Insulations and Sheaths of Electric Cables and Cords (Elastomeric and Thermoplastic Compounds).
- 811: Common Test Methods for Insulating and Sheathing Materials of Electric Cables.
- 811-1-1: Part 1: Methods for General Application. Section One — Measurements of Thickness and Overall Dimensions — Tests for Determining the Mechanical Properties. (In preparation.)

The complete standard will eventually replace IEC Publications 538 and 540. To enable users to compare the relevant clauses in all three publications, a table of cross-references is given in Appendix A.