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Industrial rigid round laminated tubes and rods based on thermosetting resins for electrical purposes - Part 2: Methods of test (IEC 61212-2:1995)

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ICS 29.035.01

Referenčna številka  
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ICS 29.040.20

Descriptors: Solid electrical insulating materials, metal bars, metal tubes, round bars, laminates, thermosetting resins, specifications, tests, mechanical tests, dimensions

English version

**Industrial rigid round laminated tubes and rods based  
on thermosetting resins for electrical purposes  
Part 2: Methods of test  
(IEC 1212-2:1995)**

Tubes et barres industriels, rigides,  
ronds, stratifiés, à base de résines  
thermodurcissables, à usages  
électriques  
Partie 2: Méthodes d'essai  
(CEI 1212-2:1995)

Runde Rohre und Stäbe aus  
technischen Schichtpreßstoffen  
auf der Basis wärmehärtbarer  
Harze für elektrotechnische Zwecke  
Teil 2: Prüfverfahren  
(IEC 1212-2:1995)

This European Standard was approved by CENELEC on 1996-03-05. 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.

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## 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 15C/470/DIS, future edition 1 of IEC 1212-2, prepared by SC 15C, Specifications, of IEC TC 15, Insulating materials, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61212-2 on 1996-03-05.

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) 1996-12-01
- 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.  
In this standard, annex ZA is normative.  
Annex ZA has been added by CENELEC.

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### Endorsement notice

The text of the International Standard IEC 1212-2:1995 was approved by CENELEC as a European Standard without any modification.

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**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 1212-1	1995	Industrial rigid round laminated tubes and rods based on thermosetting resins for electrical purposes Part 1: General requirements	EN 61212-1	1995
IEC 1212-3	series	Part 3: Specifications for individual materials	EN 61212-3	series
IEC 167	1964	Methods of test for the determination of the insulation resistance of solid insulating materials	HD 568 S1	1990
IEC 212	1971	Standard conditions for use prior to and during the testing of solid electrical insulating materials	HD 437 S1	1984
IEC 216-1	1990	Guide for the determination of thermal endurance properties of electrical insulating materials Part 1: General guidelines for ageing procedures and evaluation of test results	HD 611.1 S1	1992
IEC 216-2	1990	Part 2: Choice of test criteria	HD 611.2 S1	1992
IEC 243-1 (mod)	1988	Methods of test for electric strength of solid insulating materials Part 1: Tests at power frequencies	HD 559.1 S1	1991
IEC 250	1969	Recommended methods for the determination of the permittivity and dielectric dissipation factor of electrical insulating materials at power, audio and radio frequencies including metre wavelengths	-	-
IEC 296	1982	Specification for unused mineral insulating oils for transformers and switchgear	-	-
ISO 62	1980	Plastics - Determination of water absorption	-	-

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<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
ISO 178	1975	Plastics - Determination of flexural properties of rigid plastics	-	-
ISO 604	1973	Plastics - Determination of compressive properties	-	-
ISO 1183	1987	Plastics - Methods for determining the density and relative density of non-cellular plastics	-	-

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**CEI  
IEC  
1212-2**

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1995-07

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**Tubes et barres industriels rigides, ronds,  
stratifiés, à base de résines thermodurcissables,  
à usages électriques –**

**Partie 2:  
Méthodes d'essai**

**Industrial rigid round laminated tubes  
and rods based on thermosetting resins  
for electrical purposes –**

**Part 2:  
Methods of test**

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Commission Electrotechnique Internationale  
International Electrotechnical Commission  
Международная Электротехническая Комиссия

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**INDUSTRIAL RIGID ROUND LAMINATED TUBES  
AND RODS BASED ON THERMOSETTING RESINS  
FOR ELECTRICAL PURPOSES –**

**Part 2: Methods of 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 cooperation 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.
- 2) 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.
- 3) They have the form of recommendations for international use published in the form of standards, 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.

International Standard IEC 1212-2 has been prepared by sub-committee 15C: Specifications, of IEC technical committee 15: Insulating materials.

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

DIS 15C/470/DIS	Report on voting 15C/543/RVD
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Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

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## INTRODUCTION

This part of IEC 1212 is one of a series which deals with industrial rigid round laminated tubes and rods based on thermosetting resins for electrical purposes.

The series consists of three parts:

- Part 1: General requirements (IEC 1212-1)
- Part 2: Methods of test (IEC 1212-2)
- Part 3: Specifications for individual materials (IEC 1212-3)

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# INDUSTRIAL RIGID ROUND LAMINATED TUBES AND RODS BASED ON THERMOSETTING RESINS FOR ELECTRICAL PURPOSES –

## Part 2: Methods of test

### 1 General

#### 1.1 Scope

This part of International Standard IEC 1212 deals with the test methods for industrial rigid round laminated tubes and rods based on thermosetting resins for electrical purposes.

#### 1.2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of IEC 1212. At the time of publication, the editions indicated were valid. All normative documents are subject to revision, and parties to agreement based on this part of IEC 1212 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 1212-1: 1995, *Industrial rigid round laminated tubes and rods based on thermosetting resins for electrical purposes – Part 1: General requirements*

IEC 1212-3, *Industrial rigid round laminated tubes and rods based on thermosetting resins for electrical purposes – Part 3: Specifications for individual materials*

IEC 167: 1964, *Methods of test for the determination of the insulation resistance of solid insulating materials*

IEC 212: 1971, *Standard conditions for use prior to and during the testing of solid electrical insulating materials*

IEC 216-1: 1990, *Guide for the determination of thermal endurance properties of electrical insulating materials – Part 1: General guidelines for ageing procedures and evaluation of test results*

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IEC 216-2: 1990, *Guide for the determination of thermal endurance properties of electrical insulating materials – Part 2: Choice of test criteria*

IEC 243-1: 1988, *Methods of test for electric strength of solid insulating materials. Part 1: Tests at power frequencies*