



**SLOVENSKI STANDARD**  
**SIST EN 60851-5:2001**  
**01-september-2001**

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Winding wires - Test methods -- Part 5: Electrical properties

Wickeldrähte - Prüfverfahren -- Teil 5: Elektrische Eigenschaften

Fils de bobinage - Méthodes d'essai -- Partie 5: Propriétés électriques

**Ta slovenski standard je istoveten z: EN 60851-5:1996**

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**ICS:**

29.060.10      Žice      Wires

**SIST EN 60851-5:2001**      **en**

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 60851-5**

December 1996

ICS 29.060.10

Supersedes HD 490.5 S2:1991

Descriptors: Electric wire, winding, insulated wire, electrical property

English version

**Winding wires - Test methods  
Part 5: Electrical properties  
(IEC 851-5:1996)**

Fils de bobinage - Méthodes d'essai  
Partie 5: Propriétés électriques  
(CEI 851-5:1996)

Wickeldrähte - Prüfverfahren  
Teil 5: Elektrische Eigenschaften  
(IEC 851-5:1996)

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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 document 55/474A/FDIS, future edition 3 of IEC 851-5, prepared by IEC TC 55, Winding wires, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60851-5 on 1996-10-01.

This European Standard supersedes HD 490.5 S2:1991.

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) 1997-07-01
- latest date by which the national standards conflicting  
with the EN have to be withdrawn (dow) 1997-07-01

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.

### Endorsement notice

The text of the International Standard IEC 851-5:1996 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 851-1	1996	Winding wires - Test methods Part 1: General	EN 60851-1	1996

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NORME  
INTERNATIONALE  
INTERNATIONAL  
STANDARD

CEI  
IEC  
851-5

Troisième édition  
Third edition  
1996-08

Fils de bobinage – Méthodes d'essai –

Partie 5:  
Propriétés électriques

iTeh STANDARD PREVIEW

Winding wires – Test methods –  
(standards.iteh.ai)

Part 5:  
Electrical properties

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International Electrotechnical Commission  
Международная Электротехническая Комиссия

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For price, see current catalogue

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

## WINDING WIRES – TEST METHODS –

## Part 5: Electrical properties

## 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, express as nearly as possible an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested National Committees.
- 3) The documents produced have the form of recommendations for international use and are 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.
- 5) The IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with one of its standards.
- 6) Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 851-5 has been prepared by IEC technical committee 55: Winding wires.

This third edition cancels and replaces the second edition published in 1988 and its amendment 1 (1990) and constitutes a technical revision.

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

FDIS	Report on voting
55/474A/FDIS	55/515/RVD

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

## INTRODUCTION

This part of IEC 851 forms an element of a series of standards which deals with insulated wires used for windings in electrical equipment. The series has three groups describing:

- a) methods of test (IEC 851);
- b) specifications (IEC 317);
- c) packaging (IEC 264).

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## WINDING WIRES – TEST METHODS –

### Part 5: Electrical properties

#### 1 Scope

This part of IEC 851 specifies the following tests:

- Test 5 : Electrical resistance;
- Test 13: Breakdown voltage;
- Test 14: Continuity of insulation;
- Test 19: Dielectric dissipation factor.

For definitions, general notes on methods of test and the complete series of methods of test for winding wires see IEC 851-1.

#### 2 Normative reference

The following normative document contains provisions which, through reference in this text, constitute provisions of this part of IEC 851. At the time of publication, the edition indicated was valid. All normative documents are subject to revision, and parties to agreements based on this part of IEC 851 are encouraged to investigate the possibility of applying the most recent edition of the normative document indicated below. Members of the IEC and ISO maintain registers of currently valid International Standards.

[https://standards.iteh.ai/catalog/standards/sist/d04ef9a0-ee16-4127-bfcc-](https://standards.iteh.ai/catalog/standards/sist/d04ef9a0-ee16-4127-bfcc-8a021daf8d32/sist-en-60851-5-2001)

IEC 851-1: 1996, *Winding wires – Test methods – Part 1: General*

#### 3 Test 5: Electrical resistance

Electrical resistance is the d.c. resistance at 20 °C of 1 m of wire.

The method used shall provide a precision of 0,5 %.

For bunched wires a length of up to 10 m shall be used and the ends shall be soldered before the measurement. When measuring the resistance to check for an excessive number of broken wires, a length of 10 m of bunched wire shall be used.

If the resistance  $R_t$  is measured at a temperature  $t$  other than 20 °C, the resistance  $R_{20}$  at 20 °C shall be calculated by means of the formula:

$$R_{20} = \frac{R_t}{1 + \alpha (t - 20)}$$

where

$t$  is the actual temperature in Celsius degrees during the measurement;

$\alpha$  is the temperature coefficient.