

Winding wires - Test methods - Part 3: Mechanical properties

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

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English Version

Winding wires - Test methods - Part 3: Mechanical properties
(IEC 60851-3:2023)

Fils de bobinage - Méthodes d'essai - Partie 3: Propriétés
mécaniques
(IEC 60851-3:2023)

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European foreword

The text of document 55/1938/CDV, future edition 4 of IEC 60851-3, prepared by IEC/TC 55 "Winding wires" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 60851-3:2023.

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INTERNATIONAL STANDARD

NORME INTERNATIONALE



**Winding wires – Test methods –
Part 3: Mechanical properties**

**Fils de bobinage – Méthodes d'essai –
Partie 3: Propriétés mécaniques**



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**Winding wires – Test methods –
Part 3: Mechanical properties**

**Fils de bobinage – Méthodes d'essai –
Partie 3: Propriétés mécaniques**

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CONTENTS

FOREWORD.....	5
INTRODUCTION.....	7
1 Scope.....	8
2 Normative references	8
3 Terms and definitions	8
4 Test 6: Elongation	8
4.1 Elongation at fracture.....	8
4.2 Tensile strength	9
5 Test 7: Springiness.....	9
5.1 General.....	9
5.2 Round wire with a nominal conductor diameter from 0,080 mm up to and including 1,600 mm.....	9
5.2.1 Principle	9
5.2.2 Equipment	9
5.2.3 Procedure.....	11
5.3 Round wire with a nominal conductor diameter over 1,600 mm and rectangular wire	12
5.3.1 Principle	12
5.3.2 Equipment	12
5.3.3 Specimen	13
5.3.4 Procedure.....	13
6 Test 8: Flexibility and adherence	14
6.1 General.....	14
6.2 Mandrel winding test.....	14
6.2.1 Round wire	14
6.2.2 Rectangular wire.....	15
6.2.3 Covered bunched wire	16
6.3 Stretching test (applicable to enamelled round wire with a nominal conductor diameter over 1,600 mm)	16
6.4 Jerk test (applicable to enamelled round wire with a nominal conductor diameter up to and including 1,000 mm).....	17
6.5 Peel test (applicable to enamelled round wire with a nominal conductor diameter over 1,000 mm)	17
6.6 Adherence test.....	19
6.6.1 General	19
6.6.2 Enamelled rectangular wire	19
6.6.3 Impregnated fibre covered round and rectangular wire.....	19
6.6.4 Fibre covered enamelled round and rectangular wire	19
6.6.5 Tape-wrapped round and rectangular wire (for adhesive tape only)	20
7 Test 11: Resistance to abrasion (applicable to enamelled round wire)	20
7.1 General.....	20
7.2 Principle	20
7.3 Equipment	20
7.4 Procedure	21
8 Test 18: Heat bonding (applicable to enamelled round wire with a nominal conductor diameter over 0,050 mm up to and including 2,000 mm and to enamelled rectangular wire).....	22

8.1	General.....	22
8.2	Vertical bond retention of a helical coil.....	22
8.2.1	General	22
8.2.2	Nominal conductor diameter up to and including 0,050 mm.....	22
8.2.3	Nominal conductor diameter over 0,050 mm up to and including 2,000 mm	22
8.3	Bond strength of a twisted coil	25
8.3.1	General	25
8.3.2	Principle	25
8.3.3	Equipment	25
8.3.4	Specimen	25
8.3.5	Procedure.....	27
8.3.6	Result.....	27
8.4	Enamelled rectangular wire heat bonding.....	28
Annex A	(informative) Bond strength of heat bonding wires	30
A.1	Calculation of the temperature of the twisted coil specimen	30
A.1.1	Method	30
A.1.2	Temperature coefficient.....	30
A.1.3	Calculation	30
A.2	Determination of the heating period	31
A.2.1	Voltage-time graphs.....	31
A.2.2	Voltage at maximum temperature	31
Annex B	(informative) Friction test methods.....	36
B.1	General.....	36
B.2	Test A: Static coefficient of friction test method.....	36
B.2.1	Test method (applicable to enamelled round wires with a nominal conductor diameter from 0,050 mm up to and including 1,600 mm).....	36
B.2.2	Test apparatus	36
B.3	Test B: First dynamic coefficient of friction test method.....	37
B.3.1	Principle	37
B.3.2	Method of test.....	37
B.4	Test C: Second dynamic coefficient of friction test method (applicable to enamelled round wires with a nominal conductor diameter from 0,050 mm up to and including 1,600 mm).....	37
B.4.1	Test equipment.....	37
B.4.2	Test specimen	38
B.4.3	Specimen preparation.....	38
B.4.4	Procedure.....	39
B.5	Test D: Force of friction by the twisted pair method.....	40
B.5.1	Enamelled round wires with a nominal conductor diameter from 0,1 mm up to and including 1,500 mm	40
B.5.2	Test method	40
Bibliography	46
Figure 1	– Test equipment to determine springiness	10
Figure 2	– Construction and details of the mandrel (see Table 1).....	10
Figure 3	– Test equipment to determine springiness	13
Figure 4	– Test equipment for mandrel winding test	16
Figure 5	– Test equipment for jerk test.....	17

Figure 6 – Test equipment for peel test.....	18
Figure 7 – Scraper	19
Figure 8 – Cross-section of the wire after removal of the coating	19
Figure 9 – Test equipment for unidirectional scrape test	21
Figure 10 – Test equipment for bond retention of a helical coil.....	24
Figure 11 – Coil winder	26
Figure 12 – Oval shape coil	27
Figure 13 – Twisting device with a load applied to the twisted coil specimen.....	27
Figure 14 – Arrangement of supports	28
Figure 15 – Samples for heat bonding.....	29
Figure A.1 – Example of voltage-time graphs of twisted coil specimens with a nominal conductor diameter of 0,300 mm with isothermic graphs	32
Figure A.2 – Example of voltage-time graphs of twisted coil specimens with a nominal conductor diameter of 0,315 mm with isothermic graphs	33
Figure A.3 – Example of voltage-time graphs of twisted coil specimens with a nominal conductor diameter of 0,355 mm with isothermic graphs	34
Figure A.4 – Example of voltage-time graphs of twisted coil specimens with a nominal conductor diameter of 0,500 mm with isothermic graphs	35
Figure B.1 – Static coefficient of friction test apparatus.....	41
Figure B.2 – Dynamic coefficient of friction test apparatus	42
Figure B.3 – Diagram of a typical dynamic coefficient of friction tester	43
Figure B.4 – Material – sapphire (synthetic).....	44
Figure B.5 – Synthetic sapphires mounted on load block	44
Figure B.6 – Load applied perpendicular to wire path.....	45
Figure B.7 – Twisted specimen	45
Table 1 – Mandrels for springiness	11
Table 2 – Magnification to detect cracks	14
Table 3 – Load for peel test	18
Table 4 – Preparation of helical coils	23
Table 5 – Bond retention at elevated temperature.....	24
Table B.1 – Load block weights for dynamic coefficient of friction testing.....	39
Table B.2 – Twisted pair method.....	40

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WINDING WIRES – TEST METHODS –**Part 3: Mechanical properties****FOREWORD**

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IEC 60851-3 has been prepared by IEC technical committee 55: Winding wires. It is an International Standard.

This fourth edition cancels and replaces the third edition published in 2009, Amendment 1:2013 and Amendment 2:2019. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) Clarification of the distance measurement for determining loss of adhesion in 6.6.3, 6.6.4 for fibre-covered wires and 6.6.5 for tape-wrapped wires.

The text of this International Standard is based on the following documents:

Draft	Report on voting
55/1938/CDV	55/1974/RVC

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

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

A list of all parts in the IEC 60851 series, published under the general title *Winding wires – Test methods*, can be found on the IEC website.

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INTRODUCTION

This part of IEC 60851 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) winding wires – Test methods (IEC 60851);
- b) specifications for particular types of winding wires (IEC 60317);
- c) packaging of winding wires (IEC 60264).

WINDING WIRES – TEST METHODS –

Part 3: Mechanical properties

1 Scope

This part of IEC 60851 specifies the following test methods for winding wires:

- Test 6: Elongation;
- Test 7: Springiness;
- Test 8: Flexibility and adherence;
- Test 11: Resistance to abrasion;
- Test 18: Heat bonding.

For definitions, general notes on test methods and the complete series of test methods for winding wires, IEC 60851-1 applies. This document also provides recommended friction test methods in Annex B.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60851-2:2009, *Winding wires – Test methods – Part 2: Determination of dimensions*
IEC 60851-2:2009/AMD1:2015
IEC 60851-2:2009/AMD2:2019

ISO 178:2019, *Plastics – Determination of flexural properties*

3 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- IEC Electropedia: available at <https://www.electropedia.org/>
- ISO Online browsing platform: available at <https://www.iso.org/obp>

4 Test 6: Elongation

4.1 Elongation at fracture

Elongation is the increase in length expressed as a percentage of the original length.

A straight piece of wire shall be elongated to the point of fracture of the conductor at a rate of (5 ± 1) mm/s with an elongation tester or with tensile testing equipment with a free measuring length of between 200 mm and 250 mm. The linear increase at fracture shall be calculated as a percentage of the free measuring length.