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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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WINDING WIRES – TEST METHODS –

Part 2: Determination of dimensions

FOREWORD

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This Consolidated version of IEC 60851-2 bears the edition number 3.2. It consists of the third edition (2009-09) [documents 55/1144/FDIS and 55/1163/RVD], its amendment 1 (2015-05) [documents 55/1520/FDIS and 55/1526/RVD] and its amendment 2 (2019-05) [documents 55/1681/CDV and 55/1737/RVC]. The technical content is identical to the base edition and its amendments.

This Final version does not show where the technical content is modified by amendments 1 and 2. A separate Redline version with all changes highlighted is available in this publication.

International Standard IEC 60851-2 has been prepared by IEC technical committee 55: Winding wires.

This third edition constitutes a technical revision.

Technical revisions of note include recognition of the use of optical micrometers in determining the dimensions of round and rectangular enamelled wire.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

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

The committee has decided that the contents of the base publication and its amendments will remain unchanged until the stability date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

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) methods of test (IEC 60851);

b) specifications (IEC 60317);

c) packaging (IEC 60264).

WINDING WIRES – TEST METHODS –

Part 2: Determination of dimensions

1 Scope

This part of IEC 60851 specifies the following method of test:

– Test 4: Dimensions.

For definitions, general notes on methods of test and the complete series of methods of test for winding wires, see IEC 60851-1.

2 Normative references

The following referenced documents are indispensable for the application 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 60851-1, *Winding wires – Test methods – Part 1: General*

IEC 60851-5:2008, *Winding wires – Test methods – Part 5: Electrical properties*

3 Test 4: Dimensions

3.1 Equipment

3.1.1 Round and rectangular wire

The equipment used shall have a resolution of 2 μm or less for wires over 0,200 mm and for wires up to and including 0,200 mm, a resolution of 1 μm or less. Both mechanical contact and optical non-contact micrometers may be used. If mechanical contact micrometers are used, the ratio of measuring force and anvil diameter shall be in accordance with the range as given in Table 1a and Table 1b. The diameter range of the spindle and anvil is also given in Table 1a and Table 1b. If optical micrometers are used, the average of the readings shall be recorded as the diameter of the conductor. If a specific measuring equipment must be used, it shall be agreed upon between the customer and the supplier.

Table 1 – Types of winding wires

Table 1a – Enamelled round wire

Type of winding wire	**Nominal conductor diameter** mm	**Anvil diameter** mm	**Measuring force(N)/anvil diameter(mm) = P(N/mm)**
Enamelled round wire	≤ 0,100	2 to 8	$0,01 \leq P \leq 0,16$
	$0,100 < d \leq 0,45$	5 to 8	$0,16 < P \leq 0,32$
	> 0,45	5 to 8	$0,32 < P \leq 0,80$