

Winding wires — Test methods —

Part 4: Chemical properties

The European Standard EN 60851-4:1998, with the incorporation of amendments A1:1997 and A2:2005, has the status of a British Standard

ICS 29.060.10

National foreword

This British Standard is the English language version of EN 60851-4 + A1:1997 + A2:2005. It was derived by CENELEC from IEC 60851-4:1996 and incorporates Amendment 1:1997 and Amendment 2:2005. It supersedes BS EN 60851-4:1995 which is withdrawn.

The start and finish of text introduced or altered by CENELEC amendment is indicated in the text by tags **A1** **A1**. Tags indicating changes to CENELEC text carry the number of the CENELEC amendment. For example, text altered by CENELEC amendment A1 is indicated in the text by **A1** **A1**.

The CENELEC common modifications have been implemented at the appropriate places in the text and are indicated by sidelines in the margin.

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Summary of pages

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(includes amendments A1:1997 + A2:2005)
(IEC 851-4:1996 + A1:1997 + A2:2005)

Fils de bobinage — Méthodes d'essai
Partie 4: Propriétés chimiques
(inclut les amendements A1:1997 + A2:2005)
(CEI 851-4:1996 + A1:1997 + A2:2005)

Wickeldrähte — Prüfverfahren
Teil 4: Chemische Eigenschaften
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CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

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Foreword

The text of document 55/473A/FDIS, future edition 2 of IEC 851-4, prepared by IEC TC 55, Winding wires, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60851-4 on 1996-10-01. This European Standard supersedes EN 60851-4:1994.

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- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 1997-07-01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

Foreword to EN 60851-4:1996/A1:1997

The text of document 55/597/FDIS, future amendment 1 to IEC 60851-4:1996, prepared by IEC TC 55, Winding wires, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as amendment A1 to EN 60851-4:1996 on 1997-10-01.

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Foreword to amendment 2

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Endorsement notice

The text of amendment 2:2005 to the International Standard IEC 60851-4:1996 was approved by CENELEC as an amendment to the European Standard without any modification.

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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) methods of test (IEC 60851);
- b) specifications (IEC 60317);
- c) packaging (IEC 60264).

1 Scope

This part of IEC 60851 specifies the following tests:

- Test 12: Resistance to solvents;
- Test 16: Resistance to refrigerants;
- Test 17: Solderability;
- Test 20: Resistance to transformer oil.

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 normative documents contain provisions which, through reference in this text, constitute provisions of this part of IEC 60851. At the time of publication, the editions indicated were valid. All normative documents are subject to revision, and parties to agreements based on this part of IEC 60851 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. Members of the IEC and ISO maintain registers of currently valid International Standards.

IEC 60296:1982, *Specification for unused mineral insulating oils for transformers and switchgear*.

IEC 60554-1:1977, *Specification for cellulosic papers for electrical purposes — Part 1: Definitions and general requirements*.

IEC 60851-1:1996, *Winding wires — Test methods — Part 1: General*.

IEC 60851-3:1996, *Winding wires — Test methods — Part 3: Mechanical properties*.

IEC 60851-5:1996, *Winding wires — Test methods — Part 5: Electrical properties*.

A1 3 Test 12: Resistance to solvents (applicable to enamelled round wire with a nominal conductor diameter over 0,250 mm and applicable to enamelled rectangular wire)

The test is not suitable for round wires with a nominal conductor diameter up to and including 0,250 mm. Resistance to solvents is expressed by the pencil hardness of the wire after solvent treatment. **A1**

3.1 Equipment

The following solvents shall be used:

- standard solvent as specified below, or
- solvent as agreed between purchaser and supplier.

The standard solvent shall be a mixture of:

- 60 % by volume white spirit with maximum aromatic content of 18 %;
- 30 % by volume xylene;
- 10 % by volume butanol.

The pencil to be used shall be a lead pencil of a hardness as specified in the relevant standard. Before each test, the point of the pencil shall be sharpened with a smooth-cut file to form an angle of 60° symmetrical about the axis of the lead according to Figure 1.