

Methods of test for electric strength of solid insulating materials —

Part 1: Tests at power frequencies —

(Implementation of CENELEC
HD 559.1 S1)

UDC 621.315.61:621.317.333

NO COPYING WITHOUT BSI PERMISSION EXCEPT AS PERMITTED BY COPYRIGHT LAW

BSI
Documents

AVA

Document Sharing Hub

Committees responsible for this British Standard

The preparation of this British Standard was entrusted by the Cables and Insulation Standards Policy Committee (CIL/-) to Technical Committee CIL/15, upon which the following bodies were represented:

- British Ceramic Research
- British Industrial Ceramic Manufacturers' Association
- Department of Trade and Industry (National Measurement Accreditation Service)
- EEA (the Association of Electronics, Telecommunications and Business Equipment Industries)
- Electrical and Electronic Insulation Association (BEAMA Ltd.)
- Electricity Association
- Rotating Electrical Machines Association (BEAMA Ltd.)
- Transmission and Distribution Association (BEAMA Ltd.)

This British Standard, having been prepared under the direction of the Cables and Insulation Standards Policy Committee, was published under the authority of the Standards Board and comes into effect on 15 June 1994

© BSI 03-1999

The following BSI references relate to the work on this standard:
Committee reference CIL/15
Announced in *BSI News* March 1994

ISBN 0 580 23372 3

Amendments issued since publication

Amd. No.	Date	Comments

Contents

	Page
Committees responsible	Inside front cover
National foreword	ii
Foreword	2
Text of HD 559.1 S1	3
National annex NA (informative) Original IEC text amended by CENELEC common modifications	Inside back cover
National annex NB (informative) Cross-references	Inside back cover

National foreword

This Part of BS 2918 has been prepared under the direction of the Cables and Insulation Standards Policy Committee. It implements Harmonization Document HD 559.1 S1:1991 which was published by the European Committee for Electrotechnical Standardization (CENELEC). It is based on IEC 243-1:1988 *Methods of test for electric strength of solid insulating materials — Part 1: Tests at power frequencies*, published by the International Electrotechnical Commission (IEC) and includes the IEC corrigendum dated March 1989. The IEC corrigendum has been indicated by a side line in the margin.

The CENELEC Common Modifications have been implemented at the appropriate places in the text and are indicated by a side line in the margin. Parts of the original IEC text that have been modified by CENELEC have been quoted in National annex NA.

This British Standard supersedes BS 2918:1957, which is withdrawn.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, the HD title page, pages 2 to 14, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

UDC 621.315.61:621.317.333

Descriptors: Electrical insulant, solid insulating material, electric strength, power frequency, test

English version

Methods of test for electric strength of solid insulating materials

Part 1: Tests at power frequencies

(IEC 243-1:1988, modified)

Méthodes d' essai pour la détermination de la rigidité diélectrique des matériaux isolants solides

Première partie: Essai aux fréquences industrielles
(CEI 243-1:1988, modifiée)

Prüfverfahren zur Bestimmung der elektrischen Durchschlagfestigkeit von festen isolierenden Werkstoffen

Teil 1: Prüfungen bei technischen Frequenzen
(IEC 243-1:1988, modifiziert)

This Harmonization Document was approved by CENELEC on 1990-06-11. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for implementation of this Harmonization Document on a national level.

Up-to-date lists and bibliographical references concerning such national implementation may be obtained on application to the Central Secretariat or to any CENELEC member.

This Harmonization Document exists in three official versions (English, French, German).

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

© 1991 Copyright reserved to CENELEC members

Foreword

The CENELEC questionnaire procedure, performed for finding out whether or not the International Standard IEC 243-1:1988 could be accepted without textual changes, has shown that some CENELEC common modifications were necessary for the acceptance as Harmonization Document. The reference document, together with the common modifications prepared by the Reporting Secretariat SR 15A, was submitted to the CENELEC members for formal vote.

The text of the draft was approved by CENELEC as HD 559.1 S1 on 11 June 1990.

The following dates were fixed:

- latest date of publication
of a new harmonized
national standard (dop) 1991-06-15
- latest date of withdrawal
of conflicting national
standards (dow) 1991-06-15

Contents

	Page
Foreword	2
Introduction	3
1 Scope	3
2 Definitions	3
3 Significance of the test	3
4 Electrodes and specimens	4
5 Conditioning before tests	6
6 Surrounding medium	6
7 Electrical apparatus	6
8 Procedure	7
9 Mode of increase of voltage	7
10 Criterion of breakdown	8
11 Number of tests	9
12 Report	9
Figure 1 — Electrode arrangements for tests on boards and sheets normal to the surface	10
Figure 2 — Typical example of electrode arrangement for tests on tapes normal to the surface	11
Figure 3 — Electrode arrangement for tests normal to the surface on tubes and cylinders with internal diameter greater than 100 mm	12
Figure 4 — Electrode arrangement for tests parallel to the surface	12
Figure 5 — Electrode arrangement for tests parallel to the surface	13
Figure 6 — Arrangement for tests parallel to the laminae for boards more than 15 mm thick with parallel cylindrical electrodes	14
Table I — Successive voltages to be applied	8