

Ceramic and glass insulating materials —

Part 2: Methods of test

The European Standard EN 60672-2:2000 has the status of a
British Standard

ICS 29.035.30

National foreword

This British Standard is the official English language version of EN 60672-2:2000. It is identical with IEC 60672-2: Ed 2:1999.

The UK participation in its preparation was entrusted by Technical Committee GEL/15, Insulating materials, to Subcommittee GEL/15/3, Material specifications, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible international/European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

A list of organizations represented on this subcommittee can be obtained on request to its secretary.

From 1 January 1997, all IEC publications have the number 60000 added to the old number. For instance, IEC 27-1 has been renumbered as IEC 60027-1. For a period of time during the change over from one numbering system to the other, publications may contain identifiers from both systems.

Cross-references

Attention is drawn to the fact that CEN and CENELEC Standards normally include an annex which lists normative references to international publications with their corresponding European publications. The British Standards which implement these international or European publications may be found in the BSI Standards Catalogue under the section entitled “International Standards Correspondence Index”, or by using the “Find” facility of the BSI Standards Electronic Catalogue.

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, the EN title page, pages 2 to 43, two annex ZA pages and a back cover.

The BSI copyright notice displayed in this document indicates when the document was last issued.

This British Standard, having been prepared under the direction of the Electrotechnical Sector Committee, was published under the authority of the Standards Committee and comes into effect on 15 June 2000

© BSI 06-2000

ISBN 0 580 34820 2

Amendments issued since publication

Amd. No.	Date	Comments

English version

Ceramic and glass insulating materials
Part 2: Methods of test
(IEC 60672-2:1999)

Matériaux isolants à base
de céramique ou de verre
Partie 2: Méthodes d'essai
(CEI 60672-2:1999)

Keramik- und Glasisolierstoffe
Teil 2: Prüfverfahren
(IEC 60672-2:1999)

This European Standard was approved by CENELEC on 2000-01-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

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, Czech Republic, 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 15C/1049/FDIS, future edition 2 of IEC 60672-2, prepared by SC 15C, Specifications, of IEC TC 15, Insulating materials, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60672-2 on 2000-01-01.

This European Standard supersedes HD 426.2 S1:1987.

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) 2000-10-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2003-01-01

Annexes designated "normative" are part of the body of the standard.

In this standard, annexes A and ZA are normative.

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 60672-2:1999 was approved by CENELEC as a European Standard without any modification.

CONTENTS

Clause	Page
1 Scope	5
2 Normative references	5
3 General notes on tests	6
4 Dye penetration test (liquid absorption)	8
5 Bulk density and open (apparent) porosity	9
6 Flexural strength	12
7 Modulus of elasticity	16
8 Mean coefficient of linear thermal expansion	20
9 Specific heat capacity	22
10 Thermal conductivity	23
11 Resistance to thermal shock	24
12 Glass transition temperature (for glass materials only)	26
13 Electric strength	27
14 Withstand voltage	30
15 Relative permittivity, temperature coefficient of permittivity and dissipation factor	31
16 Volume resistivity	33
Annex A (normative) Standard temperature conditions for testing	42
Bibliography	43
Annex ZA (normative) Normative references to international publications with their corresponding European publications	46
Figure 1 – Apparatus for applying high pressure to dye solution contained in a metal container	35
Figure 2 – Function of mechanical testing jigs and symbols for strength tests	36
Figure 3 – Shape, symbols and dimensions of flexural strength test pieces	37
Figure 4 – Deflection parameters and method of determination of deflections for Young's modulus determination	38
Figure 5 – Graphical construction for determination of transition temperature T_g of glasses ..	39
Figure 6 – Test piece for electrical strength and withstand voltage tests, method B	40
Figure 7 – Electrode arrangement for electric strength measurement, method A	41

	Page
Table 1 – Characteristics and minimum number of test pieces for each test.....	7
Table 2 – Density of distilled water	11
Table 3 – Dimensions of test pieces and flexural strength test jig for various groups of ceramic materials	14
Table 4 – Dimensions of test pieces for method B (see also figure 6)	28
Table 5 – Values of <i>k</i> for various values of thickness of test pieces	29
Table A.1 – Standard temperature conditions for testing	42