

ICS 29.035.30

CCS K 15



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 8411.2-2008

Replacing GB/T 8411.2-1987

**Ceramic and glass insulating materials -- Part 2: Methods of
test**

陶瓷和玻璃绝缘材料 第2部分：试验方法

(English Translation)

Issued on: June 30, 2008

Implemented on: April 1, 2009

**Issued by: General Administration of Quality Supervision, Inspection and
Quarantine of the People's Republic of China, Standardization
Administration of the People's Republic of China**

Table of Contents

Foreword
1 Scope
2 Normative references
3 Test General
4 Dye permeability test (liquid absorption)
5 Bulk density and open porosity (stomatal)
6 Bending strength
Modulus of elasticity
8 Average linear thermal expansion coefficient of
9 Specific heat capacity
Thermal conductivity
11 Thermal shock resistance
12 Glass transition temperature (glass only)
Electrical strength
14 Withstand voltage
15 Relative dielectric constant, dielectric constant temperature coefficient and loss factor
16 Volume resistivity
Appendix A (Normative) Test standard temperature conditions

Foreword

GB/T 8411 "ceramic and glass insulation material" is divided into three parts.

Ceramic and glass insulating materials - Part 1. Definitions and classifications;

Ceramic and glass insulating materials - Part 2. Test methods;

Ceramic and glass insulating materials - Part 3. Material properties.

This section GB/T 8411 "ceramic and glass insulation material" part 2.

This part of the revision adopted IEC 60672-2.:1999 "Ceramic and glass insulating materials - Part 2. Test Methods" (in English).

The clauses in this section, the standard structure and IEC 60672-2.:1999 exactly.

The terms, symbols, units used in this section are consistent with IEC 60672-2.:1999.

The main difference between this part and IEC 60672-2.:1999 is.

- a) Remove the foreword of IEC 60672-2.:1999;
- b) replace the comma ",", which is the decimal point with the decimal ".";
- c) Add in Table 3 Note. "If the conditions are not allowed, the test can be 20mm sample, the corresponding conditions such as jig round rod diameter also changed is 20mm. " Nearly three decades, China's porcelain insulator industry to obtain the bending strength data are based on the sample diameter of 20mm. To and IEC standards and gradually transition to the IEC sample, this section adopts IEC 60672-2.:1999C100 category porcelain bending strength specimen diameter, that is 10mm diameter sample. Taking into account the use of the original experimental data during the transition period, A sample of 20 mm in diameter.

GB/T 8411-2008 "Ceramic and glass insulating materials" instead of GB/T 8411.2-1987 "Electrical porcelain materials Part II. Test side law". Compared with GB/T 8411.2-1987 main changes are as follows.

--- The original standard name "porcelain material" in accordance with IEC 60672 changed to "ceramic and glass insulation."

--- In order to meet the needs of the text mining standards, in accordance with the structure of IEC 60672, the original two parts for the three parts.

--- GB/T 8411 will be extended from the scope of pure electrical porcelain materials to electrical insulation ceramics, glass ceramics, glass bonded clouds Female and glass materials.

This Part replaces GB/T 8411.2-1987 "porcelain materials Part II. Test Method." this section compared with GB/T 8411.2-1987 main changes are as follows.

- a) Remove the original standard of tensile strength, impact bending strength, porosity, dynamic elastic modulus measurement method;
- b) deleted the original standard test classification of the content;

Appendix A of this section is normative appendix.

This part is proposed by China Electrical Equipment Industry Association.

This part of the National Standardization Technical Committee insulator (SAC/TC80) centralized.

This section is responsible for drafting unit. Xi'an Institute of Porcelain.

Participated in the drafting of this section. Xi'an Electric high voltage porcelain limited liability company, Nanjing Electric Group Co., Ltd., Hunan University, Fu Shun Electric Porcelain Manufacturing Co., Ltd., Dalian Porcelain Co., Ltd.

1 Scope

This section GB/T 8411 applies to electrical insulation ceramics, glass ceramics, glass-bound mica and glass materials. This section provides Test methods, the purpose is to use these methods to measure the typical properties of the material used in the sample parameters. In most cases, the electrically insulating ceramic parts the dimensions and shape are far from the specimen, so the results of these tests are only indicative of the actual part properties. The sample into the requirements for type and sample handling methods are discussed in the relevant section.

2 Normative references

The following documents contain provisions which, through reference in part of GB/T 8411, become the provisions of this section. For dated references, its subsequent Amendments (not including errata content) or revisions do not apply to this section, however, to encourage the agreement reached under this section of the parties to study whether the latest version of these documents can be used. For undated references, the latest version applies to this section.

GB/T 1214.2-1985 Vernier caliper Vernier caliper GB/T 1216-2004 Diameter micrometer (DIN863-1.:1999 MOD) GB/T 1219-2000 Geometrical Specifications Length Measuring Instruments. Indicator Table Design and Measurement Technical Requirements (eqv ISO 463.

1996)

GB/T 1408.1-1999 Test methods for electrical strength of solid insulating materials at power frequency (eqv IEC 60243-1. 1988) GB/T 1409-1988 Determination of electrical insulation materials in the power frequency, audio, high frequency (including rice wave wavelength) dielectric constant and dielectric loss Test methods for factors (eqv IEC 60250. 1969) GB/T 1410-1989 Test methods for volume resistivity and surface resistivity of solid insulating materials (eqv IEC 60093. 1980) GB/T 8411.1-2008 Ceramic and glass insulating materials. Part 1. Definition and Classification (IEC 60672-1.:1995 MOD) GB/T 8411.3-2008 Ceramic and glass insulating materials. Part 3. Material properties (IEC 60672-3.:1997 MOD) GB/T 10580-2003 Solid insulation materials used in the test before and during the standard conditions (IEC 60212. 1971 IDT) GB 10581-1989 solid insulating materials at high temperature insulation resistance and volume resistivity test method (eqv IEC 60345.

1971)

Determination of glass transition temperature of electrically insulating materials IEC 61006.:1991 ISO 758. 1976 Determination of density of liquid chemical products for industrial use at Glossary and symbols - Part 1. Probability and general statistical terms ISO 7884-8. 1987 Glass viscosity and sticking point - Part 8. Determination of transition

temperature (dilatometer method)

3.1 Sample

The sample preparation conditions should be as close as possible to the normal conditions of the part manufacture and sufficient specimens should be prepared to characterize this normal condition. Sample formation and surface treatment methods will affect the test results, and therefore the sample preparation and surface preparation methods used should be as much as possible with the parts used in manufacturing the same way. Test report should indicate the preparation of the sample. All values measured in this section apply only to the preparation of the method the same shape of the sample, does not apply to other shapes and sizes of the sample and ceramic components, nor is it suitable for other methods of manufacturing samples and ceramics part. Table 1 lists the minimum number of samples required for each test.

NOTE: The thermal prestress state of glass depends on the following factors for tempered glass samples.

--- Coefficient of thermal expansion above and below the glass transition temperature (refer to IEC 61006);