

ICS 31-030
CCS L18



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

GB/T 11387-2008

Replacing GB/T 11387-1989

**Test methods for the properties of piezoelectric ceramics - Test
for the static flexural strength**

压电陶瓷材料性能测试方法 静态弯曲强度的测试

Issued on: August 4, 2008

Implemented on: February 1, 2009

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

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Foreword

This standard replaces GB/T 11387-1989 "piezoelectric ceramic material static bending strength test method." This standard compared with GB/T 11387-1989, there are the following changes.

- Increase the test conditions;
- Enrich the content of the test principle;
- Choice cancel the method of abnormal data, it provides effective digital test results of reservations;
- Cancel the test reporting requirements. The standard proposed by China State Shipbuilding Corporation. This standard by the National Standardization Technical Committee Marine boat marine materials application technology at the Technical Committee. This standard was drafted. the state-owned China Shipbuilding Industry Corporation seventh twenty-one plant. The main drafters of this standard. Zhu Bin, Zhang Hui, Zhang Liying. This standard replaces the standards previously issued as follows:
 - GB/T 11387-1989. Properties of piezoelectric ceramics test methods Static bending strength test

1 Scope

GB/T 11387-2008 is the Chinese national standard on test methods for the properties of piezoelectric ceramics - test for the static flexural strength, in the field of electronics. The /T suffix marks it as a recommended standard: it is not compulsory by itself, but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most foreign buyers meet it. It was issued on 4 August 2008 by the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China; Standardization Administration of China, and has been in force since 1 February 2009. Classification: ICS 31-030, CCS L18. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This standard specifies the testing principle of piezoelectric ceramic materials static bending strength, test conditions, samples, and test equipment and test equipment step. This standard applies to the measurement of the piezoelectric ceramic material static bending strength at room temperature.

2 Test principle

Bending strength testing using three-point bending. The sample is positioned between a ram and two bearings, the relative movement of the ram and bearing Bending the specimen with the test machine, a bending load on the specimen until the specimen breaks through the critical load at break, clamps and specimen Size, according to the formula (1) static bending strength of the sample is calculated. (1) Where. Numerical σ_{ab}

- static bending strength, in megapascals (MPa); F
- the maximum pressure value when the specimen fracture, in Newtons (N);
- Specimen bearing numerical distance between L , in millimeters (mm); $Chou$
- value width of the sample, in millimeters (mm); Test Conditions

3.1 Test atmospheric conditions Test atmospheric conditions are as follows:

- a) Temperature. $15\text{ }^{\circ}\text{C} \sim 35\text{ }^{\circ}\text{C}$;
- b) Relative humidity. 25% to 75%;
- c) Atmospheric pressure. $86\text{kPa} \sim 106\text{kPa}$.

3.2 Arbitration test atmospheric conditions Arbitration test atmospheric conditions are as follows:

- a) temperature. $25\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$;
- b) Relative humidity. 45% to 55%;
- c) Atmospheric pressure. $86\text{kPa} \sim 106\text{kPa}$.

4 Sample

4.1 Sample size Sample dimensions shown in Figure 1.