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

GB/T 10701-2008

Replacing GB/T 10701-1989

Test methods for thermal stability of silica glass

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(English Translation)

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Foreword

The standards with international standards ISO 718:1990 "Test methods for laboratory glassware --- thermal shock" non-equivalent.

This standard replaces GB/T 10701-1989 "quartz glass thermal stability test method." this standard compared with GB/T 10701-1989 main changes are as follows.

- Cancel the original standard limit A method and B method scope of application;
- Deletion of the original standard terminology chapter some provisions;
- Modify the sample size;
- Removed the sink should be supplied with water circulation device or a stirrer requirements;
- Added cleaning sample water quality requirements;
- Modify the sample holding time determined manner;
- Modified after the test samples were removed manner;
- A modified method to check sample mode;
- The result of the process to modify the results are expressed;
- Delete the original standard inspection reporting requirements.

The standard proposed by China Building Materials Federation.

The standard by the China Building Materials Academy.

This standard was drafted. China Building Materials Science Research Institute, China Building Materials Inspection and Certification Center.

1 Scope

This standard specifies two test methods for quartz glass thermal stability test. water-cooling method (A method); air cooling method (B method).

This standard applies to all kinds of quartz glass thermal stability test products except opaque quartz glass and brick.

2 Terms and definitions

The following terms and definitions apply to this standard.

Quartz glass to withstand the high temperature and low temperature T1 to T2, drastic changes in temperature capability.

3.1 Test Equipment

3.1.1

high-temperature furnace. maximum temperature T1 should be able to meet the requirements of the test temperature, the size specifications should be suitable for the test sample size, test security Temperature stage furnace temperature does not fluctuate more than $\pm 5\text{ }^{\circ}\text{C}$.

3.1.2

Cooling tank. diameter or length was longer than 300mm, 350mm ~ 400mm high rust sink. Into the water tank, the water level Height of 250mm ~ 300mm, and put two layers of gauze to hold the specimen is immersed in water.

3.1.3

Thermometer. Measuring range $0\text{ }^{\circ}\text{C} \sim 50\text{ }^{\circ}\text{C}$ thermometer.

3.1.4

quartz glass specimen rack or tray.

3.1.5

chrome crucible tongs.

3.1.6

purity of chemically pure ethanol.

3.2 Sample Preparation

A variety of quartz glass sample size should be consistent with the provisions in Table 1. Samples were cut at the required grinding and polishing process to remove cleavage Cracks, defects such as gaps and caving.

Table 1 Sample size in millimeters

Sample name Sample size all kinds of quartz glass tube diameter ≤ 80 , the length of the rod pipe 60 Diameter > 80 various quartz glass tube length (50) x chord (50) x wall thickness of the original sheet Transparent and opaque quartz glass plate-like length (50) x width (50) x original thickness of the block Transparent crucible, evaporating dish, test tubes, funnel, boats, and other vessels cover the whole article

3.3 Test preparation

Placed in the furnace bottom quartz glass spacers, the furnace is heated to a predetermined upper limit temperature T1. After the sample was rinsed with tap water anhydrous Alcohol wipe, and then rinsed with deionized water sample, and finally dry with gauze and set aside.

4.1 Water cooling method (A method)

4.1.1

The prepared sample was placed on a quartz glass specimen rack or tray, then placed in a heating temperature T1 to a high temperature furnace workspace center. Allows multiple simultaneous test sample, but not placed one, and should ensure that the specimen without any external force out of the furnace operation.