

ICS 91.120.10

CCS Q 25



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

GB/T 10297-2015

Replacing GB/T 10297-1998

**Test method for thermal conductivity of nonmetal solid
materials - hot-wire method**

非金属固体材料导热系数的测定 热线法

Issued on: September 11, 2015

Implemented on: August 1, 2016

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

Table of Contents

- 1 Scope "particularly homogeneous isotropic lightweight insulation material."
- 2 Normative references
- 3 Terms and Definitions
- 5 Instruments

Foreword

This standard was drafted in accordance with GB/T 1.1-2009 given rules. This standard replaces GB/T 10297-1998 "non-metallic solid material thermal conductivity measuring wire method." And GB/T 10297- Compared to 1998, in addition to editorial changes outside the main technical changes are as follows:

- Introduction deleted.
- Edition standard temperature International System of Units of thermodynamic temperature.
- Deleted Chapter

1 Scope "particularly homogeneous isotropic lightweight insulation material."

GB/T 10297-2015 is the Chinese national standard on test method for thermal conductivity of nonmetal solid materials - hot-wire method, in the field of construction materials and building. 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 11 September 2015 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 August 2016. Classification: ICS 91.120.10, CCS Q 25. 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.

- The 5.3 "accuracy of the measurement of the heating power should be better than $\pm 0.5\%$ " was changed to "measure the heating power of the error should be less than 0.5%."
- The GB /10297-1998 T in Appendix A (informative annex) is amended as Appendix A

(informative), and added a new increase Bakelite foam and fiberglass phenolic molding plastics and other materials related data safe flame retardant characteristics. Remove discrepancies Combined, environmental protection, low-carbon emission requirements asbestos insulation board and other products. The standard proposed by China Building Materials Federation. This standard by the National Standardization Technical Committee heat insulating material (SAC/TC191) centralized. This standard was drafted. Shenzhen Jintai Fiber Co., Ltd. The main drafters of this standard. Guo Xiaoming, Ye Jin, Lee Ling segment. GB/T 10297-1998 of previously issued as follows:

--- GB 10297-1988. Determination of thermal conductivity of non-metallic solid materials Law Hotline

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version suitable for use herein Member. For undated references, the latest edition (including any amendments) applies to this document.

GB/T 4132 insulation materials and related terms

3 Terms and Definitions

Terms and definitions GB/T 4132 defined apply to this document. Principle

4 Hotline method is a method of non-steady-state thermal conductivity coefficient of determination. The principle is placed in a uniform temperature in an isotropic homogeneous sample Resistance wire, the so-called "hot" when the hotline constant power heat, hot temperature of the sample and its vicinity will rise over time. according to The temperature change over time the relationship between the thermal conductivity of the sample can be determined. Depending on the heat capacity of the hotline and the sample at a constant power to the hot wire Upon heating, the hot wire is not constant power heat, heat power does not necessarily mean its heating power, resulting in measurement errors. For lightweight insulating material, This error can not be ignored, according to a simplified method in this standard assume hotline linear warming corrected.

5 Instruments

5.1 measuring device Determination of conventional hot-wire method apparatus shown in Figure 1 and Figure 2. A, B pitch from the edge of the sample shall be not less than 5mm. Distance temperature heat Galvanic distance should not be less than 60mm.

5.2 Power Stable DC (or AC) constant current (or voltage) power supply. Change its output value should be less than 0.5%.

5.3 Power Measuring Devices Heating power measurement error should be less than 0.5%.

5.4 Thermometer Hotline temperature measuring instrument resolution of not less than 0.02K (for K-type thermocouple equivalent 1 μ V), which should be less than the time constant of 2s.

chinastandards.org · PREVIEW