

ICS 55.040  
CCS A83



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

**GB/T 15717-2021**

Replacing GB/T 15717-1995

---

**Test method for vacuum-deposited metal thickness - Electric  
resistance method**

真空金属镀层厚度测试方法 电阻法

**Issued on: October 11, 2021**

**Implemented on: May 1, 2022**

---

**Issued by: State Administration for Market Regulation;  
Standardization Administration of China**

## Table of Contents

- 1 Scope
- 2 Normative references
- 3 Terms and Definitions
- 4 Test principle
- 5 Test device

### Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for Standardization Work Part

1. Structure and Drafting Rules of Standardization Documents" drafted. This document replaces GB/T 15717-1995 "Measurement method of vacuum metal coating thickness resistance method", which is consistent with GB/T 15717-1995 In addition to structural adjustment and editorial changes, the main technical content changes are as follows:

--- Revised the schematic diagram of the structure of the vacuum metal aluminized layer thickness measurement device (see Figure 1,

3.2 of the.1995 edition);

--- Modified to increase the measuring head (thickness, material and its conductivity), rubber plate (thickness, hardness and its surface) and pneumatic pressing method, pneumatic source pressure requirements (see Chapter 5,

3.2 of the.1995 edition);

--- Modified the requirements for the size of the sample (see 6.1,

4.1 of the.1995 edition);

--- Modified the test environment specified in GB/T 2918 in the test procedure (see 7.1, 5.1 of the.1995 edition);

--- Modified the requirements for wiping the measuring head of the instrument with absolute ethanol before each measurement in the test procedure (see 7.2,.1995 edition 5.2);

--- Deleted the requirement that the instrument must be zeroed before each measurement in the test procedure (see

5.4 of the.1995 edition);

--- Modified the requirements for measuring the resistance value of the sample in the test procedure (see 7.4,

## 1 Scope

GB/T 15717-2021 is the Chinese national standard on test method for vacuum-deposited metal thickness - electric resistance method, in the field of packaging and distribution of goods. 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 October 2021 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 May 2022. Classification: ICS 55.040, CCS A83. 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 document specifies the test principle, test device and sample preparation for testing the thickness of vacuum metal coating on the surface of insulating soft substrate by resistance method. preparation, test procedures, calculation and presentation of test results, and test reports. This document applies to the measurement of vacuum metallization thickness on insulating soft substrate surfaces.

## 2 Normative references

The contents of the following documents constitute essential provisions of this document through normative references in the text. Among them, dated citations documents, only the version corresponding to that date applies to this document; for undated references, the latest edition (including all amendments) applies to this document.

GB/T 2918 Standard Environment for Conditioning and Testing of Plastic Specimens

## 3 Terms and Definitions

There are no terms and definitions that need to be defined in this document.

## 4 Test principle

This test is based on Ohm's law to measure the resistance value of the metal coating of the specified length and width of the sample, and the sheet resistance (Omega/-) represents the metal coating The thickness of the layer or directly calculate its thickness.

## 5 Test device

This test uses a vacuum metal coating thickness measurement device, the structure of which is shown in Figure

1. The resistance measurement error of the measuring device is  $\pm 1\%$ , The width of the measuring device is not less than 100mm, and the distance accuracy between the two measuring heads is  $\pm 0.1\text{mm}$ ; the thickness of the measuring head is 10mm, which should be made of copper. It can also be other materials with better conductivity (the data measured by other materials and copper material measuring heads are not comparable); the thickness of the rubber plate is not small At 3mm, Shore A hardness is 70~80, and the surface should be smooth and smooth; it is advisable to use pneumatic compression with an air source pressure of 0.5MPa~0.7MPa Way.