

ICS 87.040
CCS G 50



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

GB/T 9279.1-2015

**Paints and varnishes -- Determination of scratch resistance --
Part 1: Constant-loading method**

色漆和清漆 耐划痕性的测定 第1部分：负荷恒定法

(English Translation)

Issued on: June 2, 2015

Implemented on: January 1, 2016

**Issued by: General Administration of Quality Supervision, Inspection and
Quarantine of PRC**

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Foreword

GB/T 9279 "Paints and varnishes - Determination of scratch resistance" is divided into two parts.

- Part 1.Constant-loading method;
- Part 2.Variable-loading method.

This Part is Part 1 of GB/T 9279.

This Part was drafted in accordance with the rules given in GB/T 1.1-2009.

This Part replaces GB/T 9279-2007 "Paints and varnishes - Scratch test". Compared with GB/T 9279-2007, the main technical changes are as follows.

- ADD the principle part (see Chapter 3);
- ADD two versions of test instruments (see 4.1);
- MODIFY the minimum length of the scratch, from 60 mm to 40 mm (see 4.1; 4.1 of the 2007 edition);
- ADD the precision part (see Chapter 8);
- CANCEL the Appendix A and Appendix B (see Appendix A and Appendix B of the

2007 edition).

This Part uses the translation method to identically adopt the international standard ISO 1518-1.2011 "Paints and varnishes - Determination of scratch resistance - Part 1. Constant-loading method".

The Chinese documents that have a consistent correspondence with the international documents normatively referenced in this Part are as follows.

- GB/T 3186-2006 Paints, varnishes and raw materials for paints and varnishes - Sampling (ISO 15528.2000, IDT);
- GB/T 9271-2008 Paints and varnishes standard panels for testing (ISO 1514.2004, MOD);
- GB/T 13452.2-2008 Paints and varnishes - Determination of film thickness (ISO 2808.2007, IDT);
- GB/T 20777-2006 Paints and varnishes - Examination and preparation of samples for testing (ISO 1513.1992, IDT).

This Part was proposed by China Petroleum and Chemical Industry Federation.

Paints and varnishes - Determination of scratch resistance -
Part 1.Constant-loading method

1 Scope

This Part of GB/T 9279 specifies a test method for determining the resistance of a single coating or a composite coating system of a paint, varnish or related product to scratching by a stylus loaded with a specified load under specified conditions. The stylus shall penetrate the substrate, but the composite coating system is an exception. In this case, the stylus can penetrate the substrate or the intermediate coating.

This test method can be carried out as follows.

- As a "pass/fail" test, i.e., a specified load is applied to the stylus to assess compliance with a specific specification;
- By gradually increasing the load on the stylus to determine the minimum load at which the coating is penetrated.

2 Normative references

The following documents are essential to the application of this document. For the dated documents, only the versions with the dates indicated are applicable to this document; for the undated documents, only the latest version (including all the amendments) is applicable to this standard.

ISO 1513 Paints and varnishes - Examination and preparation of test samples

ISO 1514 Paints and varnishes - Standard panels for testing

ISO 2808 Paints and varnishes - Determination of film thickness

ISO 15528 Paints, varnishes and raw materials for paints and varnishes - Sampling

3 Principle

A stylus with a specified load is applied across the coating at a constant speed. The scratch mark is examined to determine whether the coating has been penetrated to a specified extent for a single specified test load (a "pass/fail" test); or to determine the minimum test load required to penetrate the coating.

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