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

GB/T 30199-2013

**Vitreous and porcelain enamels -- Determination of scratch
resistance of enamel finishes**

搪玻璃层抗划伤性能的测定

(English Translation)

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Foreword

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

This standard uses redrafted Law Amendment uses ISO 15695:2000 "enamel coating scratch resistance measurement." this standard and ISO 15695:2000 technical differences and their reasons are as follows.

--- Deleted range ISO 15695:2000 "About ISO 1518:1992" Paints and varnishes scratch test ", " medium case Shao, due to the present standard and ISO 1518:1992 is not directly related.

--- On normative references, this standard has been adjusted technical differences, in order to adapt our technical conditions, the adjusted situation Focus is reflected in the status of Chapter II "normative Application File", the specific adjustments are as follows.

- increase cited "GB/T 678" (see 5.4);
- with "HG/T 3105; 1995" instead of the ISO 15695:2000 referenced "ISO 2723:1995";
- Remove the ISO 15695:2000 referenced "ISO 2724. 1973, ISO 13804:1999", because the two enamel discomfort for glass-lined equipment;
- equivalent adoption of international standards "GB/T 11186.3. 1989" instead of the ISO 15695:2000 referenced "ISO 7724-3.

1984. "

--- Increased the cotton softness provisions to ensure that will not scratch the glass-lined layer (see 5.3) when using cotton;

--- Increased alcohol purity requirements, to ensure that the alcohol can evaporate quickly after wiping, drying to ensure that the sample surface (see 5.4);

--- Added "sample circular" requirement, because the method specified in this standard can

not use their shape with his sample (see 6.1);

--- Increasing the sample selection and high voltage test requirements, because not smooth specimen, chipping, cracking, spalling and around the atheroma will be strict Heavy affect the accuracy of test data (see 6.2).

This standard also made the following editorial changes.

--- Adjustment Chapter 7 of the section numbers.

The standard proposed by China Petroleum and Chemical Industry Association.

The standard glass-lined equipment by the National Standardization Technical Committee (SAC/TC72) centralized.

This standard was drafted. Linyi Hongye Chemical Equipment Co., Tianhua Chemical Machinery and Automation Research Institute, a non-metal chemical industry Metallic material and equipment for Quality Supervision and Inspection Center.

1 Scope

This standard specifies the enamel coating scratch resistance measurement method and requirements.

This standard applies to the determination of the maximum pressure when subjected to sharp enamel coating material applied pressure when it can bear. This standard is measured the data can not be used to indicate the hardness of the enamel coating hardness, glass-lined layer should be in accordance with EN101:1991 "ceramic tile surface Mohs scratch Determination of hardness "is measured.

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 678 chemical reagent ethanol (ethanol) (GB/T 678-2002, ISO 6353. 1983, Reagentsforchemical analysis; Part 2Specifications; Firstseries, NEQ) GB/T 11186.3 coating method for measuring the color of the third part of the color difference calculation (GB/T 11186.3-1989, ISO 7724-3.

1984, IDT)

Preparation of HG/T 3105 glass-lined steel specimens (HG/T 3105-2009, ISO 2723:1995, NEQ)

3 Terms and Definitions

The following terms and definitions apply to this document.

Scratch resistance So that each color in the glass-lined layer draw pen scratches left the maximum pressure of less than 50% of the length of the test applied in Newtons.

Principle 4

Using a diamond indenter on the specimen surface crossed, leaving scratches in the maximum length of the pigment pressure test length of less than 50% of the time, this pressure is the maximum scratch resistance of the sample.

5.1 Turntable and indenter

1, the apparatus is not less than a radius of the turntable and the clamping device is 50mm, the turntable rotation speed control in the 10s ~ 13s, and may be automatically stopped.

Apparatus further comprises a cone angle at $90^\circ \pm 1^\circ$, radius of curvature of $90\mu\text{m} \pm 3\mu\text{m}$ diamond indenter, the spindle head diamond crystal should be parallel to the vertical axis of the head arm, and the head can be 0 ~ 10N of force of the arm of a certain weight is applied to the sample, and Accuracy 0.1N. as shown in picture 2.