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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 38167-2019

Vitreous and porcelain enamels - Method of test of self-cleaning properties

Issued on: October 18, 2019 **Implemented on: May 1, 2020**

Issued by: State Administration for Market Regulation, China National Standardization Administration

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Foreword

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

This standard uses the redrafting method to modify the ISO 8291.1986 "Test Method for Self-cleaning Properties of Enamel Products and Enamel".

The technical differences between this standard and ISO 8291.1986 and their reasons are as follows.

---About the normative reference documents, this standard has made technical adjustments to adapt to China's technical conditions, adjustments

The situation is reflected in Chapter 2, "Regulatory Citations", and the specific adjustments are as follows.

* Removed ISO 648;

* ISO 2291.1986 referenced ISO 2723 has been replaced by ISO 28764, modified to adopt international standards

GB/T 38166 replaces ISO 28764.

This standard has made the following editorial changes.

--- The position of the introduction has been adjusted to meet the writing habits of China's standards;

--- Chapter 3 "Terms and Definitions" adds an entry number.

This standard is proposed and managed by the China Light Industry Association.

This standard was drafted. Donghua University, National Eyeglass Glass Enamel Product Quality Supervision and Inspection Center, Shanghai Glasses Glass Enamel Products

Quality supervision and inspection station.

Introduction

0.1 Grease is in contact with the wall of self-cleaning baking and roasting enamelware, and its combustion is an oxidation process. The porosity of the enamel wall allows

Its total surface area is large, allowing the oil to spread and spread into a thin layer to promote oxidation. Since the combustion at 250 ° C is not complete, it is not oxygen

The residue of the combustion accumulates in the pores and forms visible oil stains. The test method described in this standard is more stringent than the above process.

Because the test oil in this standard is directly added to the cooled porcelain layer, and the amount of oil on the enamel surface is larger than that in actual use.

0.2 Household refined soybean oil is used as a test oil, and producers are required to indicate their commercial grade components. Freshly prepared soybean oil can be produced by producers

provide.

0.3 The test methods described in this standard are used as comparative methods, mainly for the following reasons.

a) The oxidation process is closely related to the gas flow conditions in the high temperature furnace, and the different high temperature furnace conditions are different;

b) the use of old test oils or test oils of different compositions may result in different test results;

c) The assessment of residue stains is subjective, and the surface roughness of the self-cleaning enamel layer and the gloss of the stain are difficult to objectively

Evaluation.

0.4 The following statement is stated in the proposed technical description.

In order to evaluate the self-cleaning property of the test sample, the number of cycles of the test sample is compared with the number of cycles of the reference sample.

If the difference between the number of cycles of the two samples is not more than one, the test sample is considered to have the same self-cleaning property as the reference sample.

Enamel products and enamel

Test method for self-cleaning performance

1 Scope

This standard specifies the test method for self-cleaning properties of enamel.

This standard applies to baking equipment, grills and baking utensils with enamel as the wall.

This standard does not apply to pyrolyzed clean enamel products.

2 Normative references

The following documents are indispensable for the application of this document. For dated references, only dated versions apply to this article.

Pieces. For undated references, the latest edition (including all amendments) applies to this document.

GB/T 38166 steel plate enamel, aluminum enamel and cast iron enamel sample preparation (GB/T 38166-2019, ISO 28764.2015,

MOD)

3 Terms and definitions

The following terms and definitions apply to this document.

3.1

Continuous self-cleaning enamel continuously self-cleaningenamelfinish

A porous enamel glaze layer that absorbs diffused grease stains during the baking process while burning the oil stains without further heating.

4 Principle

Self-cleaning performance first includes the ability of these appliances to absorb animal and vegetable oil droplets, followed by animal and vegetable oils undergoing subsequent distillation, decomposition and oxygen

The ability of most of the oil to evaporate after the process of combustion (for the sake of simplicity, the following three are collectively referred to as combustion).

A certain amount of test oil is added to the specified portion of the enamel sample to form a oil spot, and then the sample is heated to 250 ° C +/- 10 ° C and protected

At 1 h, the oil spots were burned and cooled to room temperature. Repeat the above process until the unburned residue accumulated on the surface of the sample is clearly

visible.

So far. The comparison test method is used to judge the test result, that is, when the residue has a stain, the number of cycles of the test sample and the reference sample are

The number of loop operations is compared.

5 test oil

The test oil is refined soybean oil, household grade.

It should be ensured that the test oil is stored for no more than 3 months. Stored in a closed container during storage, the ambient temperature is 5 ° C ~ 7 ° C.

6.1 High temperature furnace

It can be ventilated (eg hot air drying oven or oven) and can maintain a temperature of 250 °C +/- 10 °C.