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**Test Method for Metal Marking Resistance of Glazed
Ceramic Tableware**

日用陶瓷釉面耐金属刀叉划痕性能测试方法

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Test Method for Metal Marking Resistance of Glazed Ceramic Tableware

1 Scope

This Standard specifies the test method of determining the metal marking resistance of glazed ceramic tableware at room temperature.

This Standard is applicable to glazed plate products that are in contact with metal cutlery, such as: daily-use porcelain, stoneware and pottery, etc.

2 Normative References

The following documents are indispensable to the application of this document. In terms of references with a specified date, only versions with a specified date are applicable to this document. In terms of references without a specified date, the latest version (including all the modifications) is applicable to this document.

GB/T 1220 Stainless Steel Bars

GB/T 3280 Cold Rolled Stainless Steel Plate, Sheet and Strip

3 Principle

Simulate the mode of using a table knife, adopt a standard cutting tool to scratch the ceramic glaze back and forth in a straight line under a specific force, observe the severity of the scratch on the glaze, and determine its scratch resistance to metal tableware.

4 Reagent

Absolute ethanol (chemically pure).

5 Equipment and Appliances

5.1 Scratch Resistance Performance Tester

As it is shown in Figure 1.

The temperature is controlled within $\pm 5^{\circ}\text{C}$.

5.4 Balance

The accuracy is 0.1 g.

6 Specimen

Take the plate products of the same production batch specification and the same type of ware. The surface of the sample shall be free from defects, such as: cracks, lack of glaze and thin glaze, etc.

7 Procedures

7.1 Use sponge or cotton cloth dipped in absolute ethanol to wipe the glazed surface of the sample, then, use tap water to rinse it and use a dry cloth to dry it. At $105^{\circ}\text{C} \pm 5^{\circ}\text{C}$, dry it in a drying oven. Take it out, then cool it to room temperature.

7.2 Horizontally place the sample on the working platform, select a suitable scratching position (for example, the part where the table knife is often used), adjust the fastening pressure bar to compress the sample, ensure that the sample will not be loosened during the test.

7.3 Clamp the standard cutting tool, make the tool face perpendicular to the ceramic glaze. The tool edge is in parallel contact with the glaze.

7.4 Adjust the balance weight, so that the tool edge is just in contact with the glaze without any applied force.

7.5 Load the counterweight, so that the force of the cutting tool acting on the glaze is 10 N.

7.6 Turn on the power switch and carry out the scratching test. Make 3 scratches on each sample, and for each scratch, scratch for 4 times (one back and forth cycle of the cutting tool is recorded as 2 times of scratch). The parallel interval between the scratches is 10 mm.

7.7 After scratching, turn off the power switch and loosen the fastening pressure bar; remove the sample and use absolute ethanol to wipe it.

7.8 Under natural light or artificial lighting conditions, at a distance of about 25 cm from the glazed surface, conduct visual inspection.

8 Grading of Scratch Resistance Performance

From the three scratches, select two with similar degrees to conduct the determination in accordance with Table 1.

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