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Domestic porcelain ware

日用瓷器

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Domestic porcelain ware

1 Scope

This document specifies the product classification, technical requirements, test methods, inspection rules and signs, packaging, transportation, storage of domestic porcelain ware.

This document is applicable to fine domestic porcelain ware, common domestic porcelain ware, stoneware products.

2 Normative references

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

GB/T 2828.1-2012 Sampling procedures for inspection by attributes - Part 1: Sampling schemes indexed by acceptance quality limit (AQL) for lot-by-lot inspection

GB/T 2829-2002 Sampling procedures and tables for periodic inspection by attributes (Apply to inspection of process stability)

GB/T 3295 Standard test method for 45°specular gloss of ceramic ware

GB/T 3298 Test method for resistance to thermal shock of domestic ceramic ware

GB/T 3299 Test method for water absorption of domestic ceramicware

GB/T 3300 Standard test method for deformation measurement of domestic ceramic ware

GB/T 3301 Standard method for measurement of volume, rim diameter allowance, height allowance, weight allowance and size of defects of domestic ceramic ware

GB/T 3302 Rules of package mark transport and reserve for domestic ceramic ware

GB/T 3303 Terminology of defects for domestic ceramics

GB/T 5000 Terminology for domestic ceramics

GB/T 27587 Test method for the resistance to microwave heating of domestic

ceramicware

GB/T 32680 Test method for mechanical dishwashing resistance of domestic ceramic ware

GB/T 34253 Test method for resistance to freezer to microwave/oven usage on domestic ceramic wares

OB/T 1503 Test method for whiteness of domestic ceramics

3 Terms and definitions

Terms and definitions, which are defined in GB/T 5000 and GB/T 3303, apply to this document.

4 Product categories

- **4.1** According to the use of the product, it is divided into dishes, bowls, cups, pots and other utensils.
- **4.2** According to the size of the product, it is divided into small, medium, large, special. The size range of each type is as shown in Table 1.
- **4.3** According to the water absorption rate of the product, it is divided into fine porcelain, common porcelain, stoneware porcelain.

5 Technical requirements

5.1 Water absorption

The water absorption shall not exceed 0.5% for fine porcelain products, not exceed 1.0% for common porcelain products, not exceed 5.0% for stoneware products.

5.2 Thermal shock resistance

Small and medium-sized products shall not crack, after subject to one heat exchange at 180 °C to 20 °C; large and special products shall not crack, after subject to one heat

exchange at 160 °C to 20 °C.

5.3 Whiteness, gloss, color difference

It shall meet the requirements of Table 2.

5.4 Microwave adaptability

The heating energy is 72000 J. After the test according to 6.4, there shall be no cracking, damage, or arcing.

5.5 Refrigerator to microwave adaptability

After the test according to 6.5, there shall be no cracking, damage, or arcing.

5.6 Refrigerator to oven adaptability

There shall be no cracking or damaging, after the test in accordance with 6.6.

5.7 Resistance to mechanical washing

The mean number, which is obtained by all observers, shall not be greater than 1.

5.8 Product specification error

5.8.1 Caliber error

The error of the caliber, which is greater than 200 mm, shall be within $\pm 1.0\%$. The error of the caliber, which is within 60 mm \sim 200 mm, shall be within $\pm 1.5\%$. The error of the caliber, which is less than 60 mm, shall be within $\pm 2.0\%$.

5.8.2 Height error

The error of height, which is greater than 100 mm, shall be within $\pm 2.0\%$. The error of height, which is between 30 mm and 100 mm, shall be within $\pm 2.5\%$. The error of height, which is less than 30 mm, shall be within $\pm 3.0\%$.

5.8.3 Mass error

For small and medium-sized products, the mass error shall be within $\pm 6.0\%$. For large and special-sized products, the mass error shall be within $\pm 4.0\%$.

5.9 Appearance quality

6 Test methods

6.1 Determination of water absorption

It is carried out, according to GB/T 3299.

6.2 Determination of thermal shock resistance

It is carried out, according to GB/T 3298.

6.3 Determination of whiteness, gloss, color difference

Whiteness and color difference are performed, according to QB/T 1503. The gloss is performed, according to GB/T 3295.

6.4 Determination of microwave oven adaptability

It is carried out, according to GB/T 27587.

6.5 Determination of refrigerator to microwave oven adaptability

It is carried out, according to GB/T 34253.

6.6 Determination of refrigerator to oven adaptability

It is carried out, according to GB/T 34253.

6.7 Determination of resistance to mechanical washing

It is carried out, according to GB/T 32680.

6.8 Determination of product specification error

It is carried out, according to GB/T 3301.

6.9 Determination of appearance quality

Deformation is performed, according to GB/T 3300. The defect size is performed, according to GB/T 3301.

7 Inspection rules

7.1 Inspection category

Product inspection is divided into exit-factory inspection and type inspection. The number of unqualified products per 100 units (piece counting method) is used, for inspection.

- b) For boxed supporting products, find out the corresponding sample size from Table 5, according to the quantity of the products in the delivered batch; divide the sample size by the number of products in each box; if the quotient is an integer, use this value as the number of boxes to take; if the quotient contains decimals, discard the decimals AND add 1 to the integer to obtain the number of boxes to take. Randomly select a box of supporting products, which has a certain number of boxes, from the delivered batch of products. Then randomly select the sample size of the batch of products, from the selected boxes (the number of samples taken from each box shall be roughly equal).
- c) When the delivered batch is less than or equal to the sample size, take them all as samples.
- **7.2.5** If there are items, that do not meet the requirements in the exit-factory inspection items, it is judged that the batch of products does not meet the requirements of this document.

7.3 Type inspection

- **7.3.1** The type inspection items are the entire contents of the technical requirements of this document, of which the thermal shock resistance shall not be type inspected not less than once every quarter, whilst the other items shall not be type inspected not less than once every half a year. The type inspection shall also be carried out, in one of the following situations:
 - a) When the raw material of the product is changed;
 - b) When changes in production process methods may affect product performance;
 - c) When the production is restored, after suspension for more than 6 months;
 - d) When an accident occurs, during the production process;
 - e) When required by contract.
- **7.3.2** Samples for type inspection shall be taken from a certain batch or batches, which are manufactured in this cycle and passed the batch inspection. The method of sampling shall ensure that, the obtained samples can represent the actual technical level of the current cycle.
- **7.3.3** The count sampling procedures for type inspection shall be implemented, in accordance with the provisions of GB/T 2829-2002. See Table 6, for the nonconformance category, rejection quality level, determination level, nonconformance judgment number, sampling scheme of each inspection item.

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