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Antistatic ceramic tiles

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Foreword

The standard 4.2 and 4.3 are mandatory, the rest are recommended.

This standard GB/T 1.1-2009 given rule drafting.

The reference standard IEC 60093. 1980 "solid insulating material volume resistivity and surface resistivity test method" for the preparation.

The standard proposed by China Building Materials Federation.

This standard by the national building and sanitary ceramics Standardization Technical Committee (SAC/TC249) centralized.

1 Scope

This standard specifies the terms and definitions of anti-static ceramic tile, technical requirements, test methods, inspection rules, signs and instructions, packaging, transportation and storage.

This standard applies to anti-static properties of ceramic tiles.

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 3810.7 Test methods of ceramic tiles - Part 7. Determination of abrasion resistance glazed brick surface GB/T 4100 ceramic tiles GB 6566 building materials radionuclide limits GB/T 9195 building and sanitary ceramics Classification and Terminology GB/T 15463 static safety Terminology GB/T 26542 Test method for slip resistance of ceramic tiles

3 Terms and Definitions

GB/T 9195 and GB/T 15463 and established in the following terms and definitions apply to this document.

Anti-static ceramic tile Join special materials in the production process, the product has permanent anti-static properties of ceramic tiles.

Point Resistance resistancelftwopoint in a given power-on time, the DC voltage between two points and the surface of the material by the ratio of the DC current is applied between these two points.

Surface resistance After a given energizing time, the standard is applied between the electrodes on the surface of the DC voltage between the electrodes for current ratio Value on the electrode polarization phenomena may be negligible. Expressed in units of ohm.

Volume resistivity volumeresistance After a given energizing time, applied to the two opposite surfaces of two materials in contact with an introduction of direct current between the electrodes for the pressure ratio of current between the two electrodes on the electrode polarization phenomena may be negligible. Expressed in units of ohm.

4.1 General requirements for ceramic tiles

The product should comply with GB/T 4100's.

4.2 Anti-static properties

4.2.1

Point resistance. $5 \times 10^4 \text{ohm} \sim 1 \times 10^9 \text{ohm}$.

4.2.2

Surface resistivity. $5 \times 10^4 \text{ohm} \sim 1 \times 10^9 \text{ohm}$.

4.2.3

Volume resistivity. $5 \times 10^4 \text{ohm} \sim 1 \times 10^9 \text{ohm}$.

4.3 Durability

Tested in accordance with the provisions of 5.3, the test shall meet the defender electrostatic properties in 4.2.2 and 4.2.3.

4.4 Non-slip floor tiles

The average terrestrial products limit the angle of inclination of not less than 12° .

4.5 Limit of radionuclides

Shall comply with GB 6566 in Class A requirements.

5.1 General requirements for ceramic tiles

General requirements for ceramic tile method according to GB/T 4100 regulations.

5.2.1.1 Insulation test table

Surface resistance and volume resistivity greater than $1 \times 10^{13} \text{ohm}$ and at least greater than the sample size 10cm flat surface.

5.2.1.2 Test environmental conditions

Temperature. $20^\circ\text{C} \sim 25^\circ\text{C}$. Relative humidity less than 40% RH.

5.2.1.3 Test Instruments

Range to meet the $1 \times 10^4 \text{ohm} \sim 1 \times 10^{10} \text{ohm}$, an accuracy of $\pm 5\%$ of the insulation resistance tester, or in compliance with the test requirements of similar instruments.

5.2.2-point resistance test method

5.2.2.1 Test electrodes

Electrodes made of stainless steel or copper; column electrode diameter $63\text{mm} \pm 3\text{mm}$; contact end electrode material is a conductive rubber hardness of $(60 \pm$

10) (Shore A grade), the thickness of $6\text{mm} \pm 1\text{mm}$, the volume resistivity less than $500\Omega\cdot\text{m}$; single-electrode weight $2.25\text{kg} \sim 2.5\text{kg}$.

5.2.2.2 Sample

Use 5 whole tiles as a test sample.

Note: Not available for less than 400mm diagonal products.

5.2.2.3 Test Procedure

The sample was washed with water with a pH value of ~ 7 , remove residue and dirt on the product, and the sample at $110^\circ\text{C} \pm 5^\circ\text{C}$ oven after cleaning Bake 8h after removing the specimen was placed under 5.2.1.2 test environment conditions for at least 48h after the test.

As shown in Figure 1, the sample face up and put it down on the table insulation test, electrodes are placed on the test sample diagonal positions on the surface Uneven sample should be placed a layer of conductive sponge between the electrode and the sample. The distance between the electrodes is 300mm (in front of electrode placement, electrical Pole surfaces should be clean-containing lower amounts of cotton cloth dipped in a concentration of at least 70% ethyl alcohol solvent wipe clean and dry). On Resistance Tester, 100V test voltage is applied for at least 10min, until the reading is stable resistance readings recorded. Each sample test two pairs Point resistance value moldings.

Report test results for each block diagonal two-point samples measured resistance value.

Millimeters

a) front view

b) a plan view

1-point resistance test schematic

5.2.3.1 Test electrodes

70mm concentric ring electrode test consists of two electrodes made of a conductive material and a diameter of 85mm to 4mm thick discoid reverse Electrodes (as shown in Figure 2). Electrode material should be corrosion resistant under the measurement conditions, it does not react with the material being tested.