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

GB/T 3810.7-2016

Replacing GB/T 3810.7-2006

**Test methods of ceramic tiles -- Part 7: Determination of
resistance to surface abrasion for glazed tiles**

陶瓷砖试验方法 第7部分：有釉砖表面耐磨性的测定

(English Translation)

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Foreword

GB/T 3810 "ceramic tile test method" is divided into 16 parts.

- Part 1. Sampling and receiving conditions;
- Part 2. Inspection of dimensions and surface quality;
- Part 3. Determination of water absorption, apparent porosity, apparent relative density and bulk density;
- Part 4. Determination of fracture modulus and failure strength;
- Part 5. Determining the impact resistance of a brick with a recovery factor;
- Part 6. Determination of wear depth of unglazed tiles;
- Part 7. Determination of abrasion resistance of glazed tiles;
- Part 8. Determination of linear thermal expansion;
- Part 9. Determination of thermal shock resistance;
- Part 10. Determination of wet expansion;
- Part 11. Determination of glaze resistance of glazed tiles;
- Part 12. Determination of frost resistance;
- Part 13. Determination of resistance to chemical corrosion;
- Part 14. Determination of resistance to contamination;
- Part 15. Determination of lead and cadmium elution of glazed tiles;
- Part 16. Determination of small chromatic aberration.

This part is part 7 of GB/T 3810.

This part is drafted in accordance with the rules given in GB/T 1.1-2009.

Part 1. GB/T 3810.7-2006 "Test methods for ceramic tiles - Part 7. Determination of abrasion resistance of glazed tiles".

This part of the main changes compared with GB/T 3810.6-2006 as follows.

- modified the reference file (see Chapter 2, Chapter 2 of the 2006 edition);
- modified the requirements for grinding media (see Chapter 4, Chapter 4 of the 2006 edition);
- The size of the visual evaluation device has been modified (see 5.2, version 5.2).

This part uses the translation method equivalent to ISO 10545-7.:1996 "Ceramic tiles Part 7. Determination of abrasion resistance of glazed tiles" (English version).

In this part of the normative reference to the international documents have a consistent correspondence between the following documents.

GB/T 2481.1-1998 Determination and marking of abrasive grain size composition for consolidation abrasives - Part 1. Coarse abrasive grains F4 to F220 (eqvISO 8486-1..1996) this section makes the following editorial changes.

--- Standard name changed to "Ceramic tile test method Part 7. Determination of abrasion resistance of glazed tiles".

This section is proposed by the China Building Materials Federation.

This part of the National Building Sanitary Ceramics Standardization Technical Committee (SAC/TC249) centralized.

This part of the drafting unit. Xianyang Ceramic Research and Design Institute, Hangzhou Nobel Group Co., Ltd., Guangdong Mona Lisa New Materials Group Limited Company, Guangdong Dongpeng Holding Co., Ltd., Ministry of Industry and Information Technology, Building Sanitary Ceramics and Sanitary Products Quality Control Technology Evaluation Laboratory.

1 Scope

This part of GB/T 3810 specifies the test method for determining the wear resistance of various glazed ceramic tiles.

2 Normative reference documents

The following documents are indispensable for the application of this document. For dated references, only the dated edition applies to this article Pieces. For undated references, the latest edition (including all modifications) applies to this document.

GB/T 3810.14-2016 Test methods for ceramic tiles - Part 14. Determination of resistance to contamination (ISO 10545-14:1995, IDT) ISO 8486-1 Definitions and marking of particle size distribution for adhesive abrasives - Part 1. Coarse grains F4 to F220
(Bonded abrasives-Grainsize analysis-Designation and determination of grainsize distribution-Part 1. Macrogrits F4 to F220)

3 Principle

Brick glazed abrasion resistance is determined by placing a grinding medium on the glazed and rotating, observing the worn specimen and the non-worn specimen Contrast, evaluation of ceramic tile wear resistance method.

4 Grinding media

The grinding media for each sample includes.

- a) 70.0 g of steel ball with a diameter of 5 mm;
- b) 52.5 g of steel ball with a diameter of 3 mm;
- c) 43mm ball with a diameter of 2mm;
- d) 8.75 g of steel ball with a diameter of 1 mm;
- e) 3.0 g of corundum abrasive with particle size F80 according to ISO 8486-1;
- f) deionized water or distilled water 20 mL.

5 Equipment

5.1

wear test machine.

Wear test machine (see Figure 1) by the built-in motor-driven horizontal support plate composed of steel, the smallest sample size of 100mm x 100mm.

The distance between the center of the support plate and the center of each specimen is 195 mm. Adjacent two sample fixture spacing equal to support the tray to 300r/min turn Speed operation, followed by 22.5mm eccentricity e. Therefore, each piece of specimen to do a diameter of 45mm circular motion, the sample by the rubber with dense the metal fixture is fixed (see Figure 2). The inner diameter of the clamp is 83 mm and the test area is about 54 cm². The thickness of the rubber is 9mm, fixture within the space height is 22.5mm. After the test machine reaches the preset speed, it will stop automatically.