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

GB/T 3810.10-2016

Replacing GB/T 3810.10-2006

**Test methods of ceramic tiles -- Part 10: Determination of
moisture expansion**

陶瓷砖试验方法 第10部分：湿膨胀的测定

(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 10 of GB/T 3810.

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

This part replaces GB/T 3810.10-2006 "Test methods for ceramic tiles Part 10. Determination of wet expansion".

This section is the main change compared with GB/T 3810.10-2006 as follows.

- modified terms and definitions (see Chapter 2, Chapter 2 of the 2006 edition);
- modified the formula for wet expansion (see Chapter 7, Chapter 7 of the 2006 edition).

This part uses the translation method equivalent to ISO 10545-10:1995 "Ceramic tiles Part 10. Determination of wet expansion" (English version).

This section makes the following editorial changes.

--- Standard name changed to "Ceramic tile test method Part 10. Determination of wet expansion".

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 Ltd., Guangdong Dongpeng Holding Co., Ltd., Ministry of Industry and Information Technology Building Sanitary Ceramics and Sanitary Ware Product Quality Control Technical Evaluation Laboratory.

1 Scope

This part of GB/T 3810 specifies the test method for the wet expansion of ceramic tiles.

2 Terms and definitions

The following terms and definitions apply to this document.

Wet expansion

The bread is immersed in boiling water to heat the expansion to accelerate the expansion ratio.

3 Principle

By heating the bricks into boiling water to accelerate the wet expansion, the length change ratio is determined.

4 Equipment

4.1

measuring device, dial gauge with a dial gauge or similar device, accurate to 0.01mm.

4.2

nickel steel (nickel iron alloy) standard block, length and sample length is similar to the use of insulation fixture.

4.3

Roasting furnace, can be 150 °C/h heating rate rose to 600 °C, and the control temperature deviation of not more than ± 15 °C.

4.4

vernier caliper, or other suitable device for length measurement, accurate to 0.5mm.

4.5

Boiling device to keep the test sample in boiling deionized water or distilled water for 24 h.

5 Samples

The specimen consists of 5 pieces of the whole brick. If the measuring device is not long, the specimen shall be cut from the center of each brick. The minimum length shall be 100mm, the minimum width of 35mm, the thickness of the thickness of the brick.

For extruded bricks, the length of the specimen should be along the extrusion direction.

Prepare the sample according to the requirements of the measuring device (4.1).

6.1 Re-burning

The sample was placed in a roaster (4.3) and re-roasted at a heating rate of 150 ° C/h, rose to (550 ± 15) ° C, at (550 ± 15) Temperature 2h. Let the sample cool in the furnace. When the temperature dropped to (70 ± 10) °C, the sample into the dryer, at room temperature to maintain 24h ~ 32h. If the sample is cracked after re-burning, the sample is re-roasted at a slower heating and cooling rate.