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

GB/T 3810.20-2025

**Test method of ceramic tiles - Part 20: Determination of
deflection of ceramic tiles for calculating their radius of
curvature**

(English Translation)

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents".

Drafting.

This document is Part 20 of GB/T 3810 "Test Methods for Ceramic Tiles". GB/T 3810 has already published the following parts.

- Part 1: Sampling and Acceptance 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 Breaking Strength;
- Part 5: Determining the impact resistance of bricks using the coefficient of restitution;
- Part 6: Determination of the abrasion resistance depth of unglazed tiles;
- Part 7: Determination of the abrasion resistance of glazed tile surfaces;
- Part 8: Determination of Linear Thermal Expansion;
- Part 9: Determination of thermal shock resistance;

- Part 10: Determination of Moisture Swelling;
- Part 11: Determination of the resistance to glaze cracking in glazed tiles;
- Part 12: Determination of freeze resistance;
- Part 13: Determination of chemical resistance;
- Part 14: Determination of pollution resistance;
- Part 15: Determination of lead and cadmium leaching in glazed bricks;
- Part 16: Determination of Small Color Differences;
- Part 18: Measurement of Light Reflectance Value (LRV);
- Part 20: Determination of deflection in the calculation of the radius of curvature of ceramic tiles.

This document is equivalent to ISO 10545-20:2022 "Ceramic tiles - Part 20: Determination of deflection in the calculation of radius of curvature of ceramic tiles".

The following minimal editorial changes have been made to this document.

---To align with existing standards, the standard title has been changed to "Test Methods for Ceramic Tiles Part 20: Calculation of Radius of Curvature in Ceramic Tiles".

"Determination of degree".

Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents.

This document was proposed by the China Building Materials Federation.

This document is under the jurisdiction of the National Technical Committee on Standardization of Building and Sanitary Ceramics (SAC/TC249).

Introduction

The radius of curvature of ceramic tiles is of great significance for evaluating their flatness and installation performance.

One of the important indicators of brick performance, its standardization has attracted widespread attention both domestically and internationally. The International Organization for Standardization (ISO) has developed...

The ISO 10545 series of standards are test methods standards for ceramic tiles. my country has already carried out domestic conversion work on this series of standards and established [a system/mechanism].

The corresponding national standard system.

This document is Part 20 of GB/T 3810 "Test Methods for Ceramic Tiles", which aims to determine the deflection of ceramic tiles and then calculate the radius of curvature.

GB/T 3810 "Test Methods for Ceramic Tiles" consists of 18 parts.

---Part 1: Sampling and Acceptance Conditions. The aim is to establish a sampling inspection system for ceramic tiles.

---Part 2: Inspection of Dimensions and Surface Quality. The aim is to establish methods for inspecting the dimensions and surface quality of ceramic tiles to evaluate product quality.

Product appearance quality.

---Part 3: Determination of water absorption, apparent porosity, apparent relative density, and bulk density. The aim is to establish indicators such as water absorption rate for ceramic tiles.

The standard testing method facilitates the classification of ceramic tiles.

---Part 4: Determination of Modulus of Fracture and Breaking Strength. The aim is to establish methods for testing the mechanical properties of ceramic tiles to evaluate their performance.

Mechanical properties of bricks.

---Part 5: Determining the Impact Resistance of Bricks Using the Coefficient of Restitution. The aim is to establish a method for testing the mechanical properties of ceramic bricks to evaluate their impact resistance.

The resistance of ceramic tiles to damage.

---Part 6: Determination of Abrasion Resistance Depth of Unglazed Tiles. The aim is to establish a method for testing the abrasion resistance depth of unglazed tiles to evaluate their resistance to wear.

Ability to resist wear.

---Part 7: Determination of Abrasion Resistance of Glazed Tile Surfaces. The aim is to establish a method for testing the abrasion resistance of glazed tile surfaces to evaluate the performance of glazed tiles.

The ability of bricks to resist wear.

---Part 8: Determination of Linear Thermal Expansion. The aim is to establish a method for testing the linear thermal expansion coefficient of ceramic tiles to evaluate their performance.

High temperature stability.

---Part 9: Determination of Thermal Shock Resistance. The aim is to establish a testing

method for the thermal shock resistance of ceramic tiles to evaluate their ability to withstand rapid thermal shock.

Resistance to damage under extreme temperature changes.

---Part 10: Determination of Moisture Expansion. The aim is to establish a method for testing the moisture expansion of ceramic tiles to evaluate their resistance to deformation. ability.

---Part 11: Determination of Glaze Cracking Resistance of Glazed Tiles. The aim is to establish a testing method for the glaze cracking resistance of ceramic tiles in order to evaluate the performance of ceramic tiles.

Durability.

---Part 12: Determination of frost resistance. The aim is to establish a method for testing the frost resistance of ceramic tiles to evaluate their low-temperature stability.

Qualitative analysis.

---Part 13: Determination of Chemical Resistance. The aim is to establish a testing method for the chemical resistance of ceramic tiles in order to evaluate the performance of ceramic tiles.

The brick's resistance to chemical corrosion.

---Part 14: Determination of Stain Resistance. The aim is to establish a testing method for the stain resistance of ceramic tiles to evaluate their resistance to staining.

staining ability.

---Part 15: Determination of Lead and Cadmium Leaching from Glazed Bricks. The aim is to establish a method for testing the lead and cadmium leaching levels in glazed bricks, in order to evaluate...

Assess the safety of ceramic tiles.

---Part 16: Determination of Small Color Differences. The aim is to establish a testing method for small color differences between monochrome ceramic tiles, in order to evaluate the quality of ceramic tiles.

Appearance quality.

---Part 18: Determination of Light Reflectance Value (LRV). The aim is to establish a method for testing the light reflectance value of ceramic tiles to evaluate their performance.

The light reflectivity of bricks.

---Part 20: Determination of Deflection in the Calculation of the Radius of Curvature of Ceramic Tiles. The aim is to establish a method for testing and calculating the deflection of