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Ceramic tiles —

Part 23: Determination of elastic modulus for glazed and unglazed ceramic tiles, substrate and glaze layer

Carreaux et dalles céramiques —

Partie 23: Détermination du module d'élasticité pour les carreaux et dalles céramiques émaillés et non émaillés, le substrat et la couche d'émail

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Contents

Page

Foreword ... **iv**

1 Scope ... **1**

2 Normative references ... **1**

3 Terms and definitions ... **1**

4 Principle ... **2**

5 Apparatus ... **2**
5.1 Testing machine ... 2
5.2 Data acquisition ... 2
5.3 Dimensional measuring devices ... 2

6 Test specimens ... **2**
6.1 Test specimen size ... 2
6.2 Test specimen preparation ... 3
6.2.1 Test specimen machining ... 3
6.2.2 Test specimen handling and storage ... 3
6.2.3 Number of test specimens ... 3

7 Test procedure ... **3**
7.1 Testing machine and loading speed ... 3
7.2 Elastic modulus measurement ... 4
7.3 Measurement for the thickness of glaze layer ... 5
7.4 Temperature and relative humidity ... 5

8 Calculation of elastic modulus ... **6**
8.1 Calculation of elastic modulus of test specimens ... 6
8.2 Calculation of elastic modulus of the glaze layer ... 6
8.3 Mean value and standard deviation ... 7

9 Analysis of precision and uncertainty ... **7**

10 Test report ... **7**

Annex A (informative) **Application of elastic modulus of ceramic tiles** ... **9**

Annex B (informative) **Preparation of test specimens for elastic modulus tests** ... **11**

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Foreword

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This document was prepared by Technical Committee ISO/TC 189, *Ceramic tile*.

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Ceramic tiles —

Part 23:
Determination of elastic modulus for glazed and unglazed ceramic tiles, substrate and glaze layer

1 Scope

This document specifies a testing method for determining the elastic modulus of glazed and unglazed ceramic tiles, substrate and glaze layer at ambient temperature by three-point bending tests. This document also specifies procedures for test specimen preparation, test modes, load rates, data collection and reporting.

This test method can be used for material research, quality control, characterization and design data-generation purposes of ceramic tiles with a plate shape. See Annex A for more information. This method is not applicable to the ceramic tiles with profiled structures from which the test specimen cannot be machined.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 3611, *Geometrical product specifications (GPS) — Dimensional measuring equipment — Design and metrological characteristics of micrometers for external measurements*

ISO 7500-1, *Metallic materials — Calibration and verification of static uniaxial testing machines — Part 1: Tension/compression testing machines — Calibration and verification of the force-measuring system*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1
elastic modulus
ratio of stress to strain within the linear elastic range

3.2
modulus ratio
ratio of the glaze modulus to the substrate modulus

3.3
thickness ratio
ratio of the glaze thickness to the substrate thickness

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