

**Natural stone test methods - Determination of resistance
of marble to thermal and moisture cycles**

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NATIONAL FOREWORD

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ICS 73.020; 91.100.15

English Version

Natural stone test methods - Determination of resistance of marble to thermal and moisture cycles

Méthodes d'essai pour pierres naturelles - Détermination de la résistance du marbre aux cycles thermiques et d'humidité

Prüfverfahren für Naturstein - Bestimmungen der Beständigkeit von Marmor bei zyklischer Belastung mit Wärme und Feuchtigkeit

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Contents

Page

Foreword.....	3
1 Scope.....	4
2 Normative references.....	4
3 Terms and definitions	4
4 Principle.....	4
5 Symbols.....	5
6 Apparatus	5
7 Preparation of specimens.....	9
7.1 Sampling.....	9
7.2 Test specimens	9
7.3 Reference marks on the specimens.....	10
7.4 Drying the specimen	10
8 Test procedure	10
8.1 Control measurements before cycling.....	10
8.2 Procedure for bow measurement.....	10
8.3 Readings, exposure and duration of test.....	10
8.4 Measurements after exposure	10
9 Calculation of results	11
9.1 Bowing magnitude	11
9.2 Flexural strength	11
10 Precision.....	12
11 Test report	12
Annex A (informative) Guidance on limit values.....	13
A.1 General	13
A.2 Flexural strength	13
Annex B (informative) Non-destructive testing.....	14
B.1 General	14
B.2 Ultrasonic velocity	14
B.3 Modulus of elasticity	15
Annex C (informative) Enhanced petrographic analysis	16
C.1 General	16
Bibliography.....	18

Foreword

This document (EN 16306:2013) has been prepared by Technical Committee CEN/TC 246 "Natural stones", the secretariat of which is held by UNI.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by August 2013, and conflicting national standards shall be withdrawn at the latest by August 2013.

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1 Scope

This European Standard specifies a laboratory method for determining the resistance to thermal and moisture cycling of marble intended for cladding of building facades.

For scientific definition of marble, reference is made to EN 12670:2001, Terminology: 2.1.243 a.

NOTE Bowing and rapid strength loss is known to occur in some marbles when used as exterior claddings.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 12372, *Natural stone test methods – Determination of flexural strength under concentrated load*

EN 12670:2001, *Natural stone – Terminology*

EN 13161, *Natural stone test methods – Determination of flexural strength under constant moment*

EN 14146, *Natural stone test methods – Determination of the dynamic modulus of elasticity (by measuring the fundamental resonance frequency)*

EN 14579, *Natural stone test methods – Determination of sound speed propagation*

EN ISO 4892-1:2000, *Plastics - Methods of exposure to laboratory light sources - Part 1: General guidance (ISO 4892-1:1999)*

3 Terms and definitions

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

3.1

bowing

change in shape from flat and planar to a curved or dished shape in a convex or concave direction

Note 1 to entry: Other terms commonly used for the same phenomenon are dishing and warping. Convex bowing is quantified by positive values, concave bowing by negative values.

3.2

convex

centre part of the specimen is bowing upwards, away from the moist substratum

3.3

concave

centre part of the specimen is bowing downwards, against the moist substratum

4 Principle

Bowing is measured on test samples exposed to moisture from beneath and heating from above. The temperature interval is from 20°C to 80°C, one cycle completed each 24 h. The 80 °C is measured on a black reference, placed on the surface of one specimen to control the climate of the chamber/bath.