

Natural stone test methods - Determination of water absorption at atmospheric pressure

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EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

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English Version

Natural stone test methods - Determination of water absorption at atmospheric pressure

Méthodes d'essai pour pierres naturelles - Détermination
de l'absorption d'eau à la pression atmosphérique

Prüfverfahren für Naturstein - Bestimmung der
Wasseraufnahme unter atmosphärischem Druck

This European Standard was approved by CEN on 28 March 2008.

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Foreword

This document (EN 13755:2008) 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of an identical text or by endorsement, at the latest by October 2008, and conflicting national standards shall be withdrawn at the latest by October 2008.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 13755:2001.

This European Standard is one of the series of European Standards for tests on natural stone.

Test methods for natural stone consist of the following parts:

EN 1925, *Natural stone test methods — Determination of water absorption coefficient by capillarity*

EN 1926, *Natural stone test methods — Determination of uniaxial compressive strength*

EN 1936, *Natural stone test methods — Determination of real density and apparent density, and of total and open porosity*

EN 12370, *Natural stone test methods — Determination of resistance to salt crystallisation*

EN 12371, *Natural stone test methods — Determination of frost resistance*

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

EN 12407, *Natural stone test methods — Petrographic examination*

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

EN 13364, *Natural stone test methods — Determination of the breaking load at dowel hole*

EN 13373, *Natural stone test methods — Determination of geometric characteristics on units*

EN 13755, *Natural stone test methods — Determination of water absorption at atmospheric pressure*

EN 13919, *Natural stone test methods — Determination of resistance to ageing by SO₂ action in the presence of humidity*

EN 14066, *Natural stone test methods — Determination of resistance to ageing by thermal shock*

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

EN 14147, *Natural stone test methods — Determination of resistance to ageing by salt mist*

EN 14157, *Natural stone test methods — Determination of abrasion resistance*

EN 14158, *Natural stone test methods — Determination of rupture energy*

EN 14205, *Natural stone test methods — Determination of Knoop hardness*

EN 14231, *Natural stone test methods — Determination of the slip resistance by means of the pendulum tester*

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

EN 14580, *Natural stone test methods — Determination of static elastic modulus*

EN 14581, *Natural stone test methods — Determination of linear thermal expansion coefficient*

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1 Scope

This European Standard specifies a method for determining the water absorption of natural stone – see EN 12670 for terminology and EN 12440 for denomination - by immersion in water at atmospheric pressure.

2 Normative references

Not applicable.

3 Principle

After drying to a constant mass, each specimen is weighed and then immersed in water at atmospheric pressure for a specified period of time. Determination of the water absorption at atmospheric pressure, expressed as a percentage, by the ratio of the mass of the saturated specimen (obtained at constant mass) to the mass of the dry specimen.

4 Symbols

m_d mass of the dry specimen, in grams;

m_i successive masses of the specimen during testing, in grams;

m_s mass of the saturated specimen (after immersion in water until constant mass is reached), in grams;

A_b water absorption at atmospheric pressure, expressed as a percentage.

5 Apparatus

5.1 A tank with flat base comprising small non-oxidising and non-absorbent supports for the specimens.

5.2 A ventilated oven which can maintain a temperature of (70 ± 5) °C.

5.3 A weighing instrument with an accuracy of 0,01 g.

6 Preparation of the specimens

6.1 Sampling

The sampling is not under the responsibility of the test laboratory except where especially requested.

At least six specimens shall be selected from a homogenous batch.

6.2 Test specimens

The test specimens shall have the form of a cylinder, cube or prism (70 ± 5) mm or (50 ± 5) mm and shall be obtained by diamond sawing or coring. Their apparent volume calculated by geometrical measurements shall be at least 60 ml. In addition, the surface area to volume ratio shall be between $0,08 \text{ mm}^{-1}$ and $0,20 \text{ mm}^{-1}$.