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Natural stone test methods - Determination of the abrasion resistance

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

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ICS 73.020, 91.100.15

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EUROPEAN STANDARD

EN 14157

NORME EUROPÉENNE

EUROPÄISCHE NORM

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ICS 73.020; 91.100.15

Supersedes EN 14157:2004

English Version

Natural stone test methods - Determination of the abrasion resistance

Pierres naturelles - Détermination de la résistance à l'usure

This European Standard was approved by CEN on 20 July 2017.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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European foreword

This document (EN 14157:2017) 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of an identical text or by endorsement, at the latest by April 2018, and conflicting national standards shall be withdrawn at the latest by April 2018.

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 14157:2004.

The main technical changes compared to EN 14157:2004 are the following:

- 1) Method C AMSLER is deleted;
- 2) For Method B Böhme only 3 specimen are used instead of 6.

This document is one of the series of draft documents 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 crystallization*

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

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

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

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

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*

It is intended that other ENs should call up this EN 14157 as the basis of evaluation of conformity. Nevertheless it is not intended that all natural stones products should be subjected regularly to all the listed tests. Specifications in other documents should call up only relevant test methods.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

1 Scope

This European Standard specifies two test methods to determine the abrasion resistance of natural stones used for flooring in buildings.

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 10025 (all parts), *Hot rolled products of structural steels*

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

EN ISO 6506-1, *Metallic materials — Brinell hardness test — Part 1: Test method (ISO 6506-1)*

3 Method A – Wide Wheel Abrasion Test

3.1 Principle

The test is carried out by abrading the face of a specimen which will be exposed in use with an abrasive material under standard conditions.

3.2 Abrasive material

The abrasive required for this test is corundum (white fused alumina) with grit size of 80 in accordance with technical document FEPA 42-1:2006. It shall not be used for more than three times.

3.3 Apparatus

3.3.1 The 'wearing' machine

The wearing machine (see Figure 1) is essentially made of a wide abrasion wheel, a storage hopper with one or two control valves to regulate the output of the abrasive material, a flow guidance hopper, a clamping trolley and a counterweight.

When two valves are used, one shall be used to regulate the rate of flow and can be permanently set while the other is used to turn the flow on and off.