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Utgåva 1

Konststen – Provningsmetoder –
Del 9: Bestämning av slaghållfasthet

Agglomerated stone – Test methods –
Part 9: Determination of impact resistance

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EUROPEAN STANDARD

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English version

Agglomerated stone - Test methods - Part 9: Determination of impact resistance

Pierre agglomérée - Méthodes d'essai - Partie 9: Détermination de l'énergie de rupture

Künstlich hergestellter Stein - Prüfverfahren - Teil 9: Bestimmung der Schlagfestigkeit

This European Standard was approved by CEN on 3 February 2005.

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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 Central Secretariat has the same status as the official versions.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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Contents

Foreword

This document (EN 14617-9:2005) 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of an identical text or by endorsement, at the latest by September 2005, and conflicting national standards shall be withdrawn at the latest by September 2005.

Test methods for agglomerated stones consist of the following:

EN 14617-1, *Agglomerated stone - Test methods – Part 1: Determination of apparent density and water absorption*

EN 14617-2, *Agglomerated stone – Test methods – Part 2: Determination of flexural strength (bending)*

prEN 14617-3, *Agglomerated stone - Test methods – Part 3: Determination of slipperiness*

EN 14617-4, *Agglomerated stone - Test methods – Part 4: Determination of the abrasion resistance*

EN 14617-5, *Agglomerated stone - Test methods – Part 5: Determination of freeze and thaw resistance*

EN 14617-6, *Agglomerated stone - Test methods – Part 6: Determination of thermal shock resistance*

prEN 14617-7, *Agglomerated stone – Test methods – Part 7: Determination of ageing*

prEN 14617-8, *Agglomerated stone – Test methods – Part 8: Determination of resistance to fixing (dowel hole)*

EN 14617-9, *Agglomerated stone - Test methods – Part 9: Determination of impact resistance*

EN 14617-10, *Agglomerated stone – Test methods – Part 10: Determination of chemical resistance*

EN 14617-11, *Agglomerated stone – Test methods – Part 11: Determination of linear thermal expansion coefficient*

EN 14617-12, *Agglomerated stone – Test methods – Part 12: Determination of dimensional stability*

EN 14617-13, *Agglomerated stone – Test methods – Part 13: Determination of electrical resistivity*

prEN 14617-14, *Agglomerated stone – Test methods – Part 14: Determination of surface hardness*

EN 14617-15, *Agglomerated stone – Test methods – Part 15: Determination of compressive strength*

EN 14617-16, *Agglomerated stone – Test methods – Part 16: Determination of dimensions, geometric characteristics and surface quality of modular tiles*

prEN 14617-17, *Agglomerated stone – Test methods – Part 17: Determination of biological resistance*

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

1 Scope

This document specifies a method for determining the impact resistance of agglomerated flat stone products.

2 Normative references

The following referenced documents are indispensable for the application 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.

Not applicable.

3 Principle

The impact resistance is determined by the dropping of a spherical steel ball from given increasing heights until the specimen breaks.

4 Apparatus

4.1 A steel sphere with mass of 1,0 kg ± 0,1 kg and diameter of about 6,3 cm.

4.2 An electromagnet with a ball bearing housing and a switch.

4.3 A vertical stick graduated at 5 cm intervals from 0 cm to 120 cm, along which the electromagnet can travel.

4.4 A box of minimum section 40 cm X 40 cm and no less than 30 cm high, containing a bed of dry sand at least 20 cm deep. The sand grain size distribution should be in the 1 mm – 1,5 mm range.

5 Preparation of the specimens

At least four specimens should be prepared with 20 cm X 20 cm sides. The sample thickness should be between 0,5 cm and 3 cm and should equal the one of the final product. The main faces must be parallel and with the finishing of the end product (sand blasted, gauged or polished surface) faced to the falling sphere but without any chemical surface treatment.

6 Test procedure

Lay the sample in the centre of the box on the bed of sand so that the whole thickness is buried. It should be placed so that the centre of the face with the larger size lies on the vertical passing through the vertical of the sphere. A spirit level should be used to check that the upper face of the sample lies horizontal. The electromagnet should be attached to the stick at a point corresponding to the 6 cm drop (from the bottom) of the sphere. Switch off the electromagnet and let the sphere fall. The drop height (h) should be measured between the lowest point of the sphere and the impact surface. Repeat the test by progressively increasing the drop height 5 cm at a time until the sample is broken. Any surface damage caused by the steel sphere drop will be visually noticed in comparison with reference specimens, recorded and reported in the test results.