



SLOVENSKI STANDARD

SIST EN 14617-12:2005

01-julij-2005

Aglomeriran kamen - Preskusne metode - 12. del: Ugotavljanje dimenzijske stabilnosti

Agglomerated stone - Test methods - Part 12: Determination of dimensional stability

Künstlich hergestellter Stein - Prüfverfahren - Teil 12: Bestimmung der Maßhaltigkeit

Pierre agglomérée - Méthodes d'essai - Partie 12: Détermination de la stabilité dimensionnelle

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ICS:

91.100.15 Mineralni materiali in izdelki Mineral materials and products

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 14617-12

March 2005

ICS 91.100.15

English version

Agglomerated stone - Test methods - Part 12: Determination of dimensional stability

Pierre agglomérée - Méthodes d'essai - Partie 12:
Détermination de la stabilité dimensionnelle

Künstlich hergestellter Stein - Prüfverfahren - Teil 12:
Bestimmung der Maßhaltigkeit

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

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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of 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.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: rue de Stassart, 36 B-1050 Brussels

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Foreword

This document (EN 14617-12:2005) 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.

EN 14617-12:2005 (E)

1 Scope

This document specifies a test method to determine the dimensional stability, intended as the evaluation of a deformation, towards a bearing plane, by prolonged contact with water, of agglomerated stones tiles used for flooring and cladding in building.

The test is mainly performed to select a suitable adhesive for the laying down operations.

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 principle of the dimensional stability determination consists of measuring the vertical displacement of a corner of the tile to a reference plane¹⁾, subsequently to a prolonged contact with a cloth placed on a tile surface, which is constantly kept humidified.

The tile is placed on three supports positioned near three corners of the tile, with the finished side (flooring or cladding surface) turned to the bottom, whereas a dial gauge measures the vertical deformation of the fourth free corner. Other possible deformation of the tile can be measured by five dial gauges, arranged as in Figure 1.

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4 Apparatus

- 4.1 A suitable instrument (Figure 1), consisting of a grinded surface with the supports for the tile and the dial gauges for the deformation measurement.
- 4.2 Six dial gauges, with accuracy of 0,01 mm, which record the tile deformation.
- 4.3 A wet cloth (or a felt) which is placed on the upper surface of the tile.
- 4.4 A water spray dispenser to keep the cloth or the felt humid (at room and water temperature $20^{\circ}\text{C} \pm 5^{\circ}\text{C}$).
- 4.5 A recording system connected to the dial gauges for the recording of measured values.

1) In ISO 1101 this geometrical tolerance is defined as follows: "The tolerance zone is limited by two parallel planes a distance t apart and parallel to the datum."

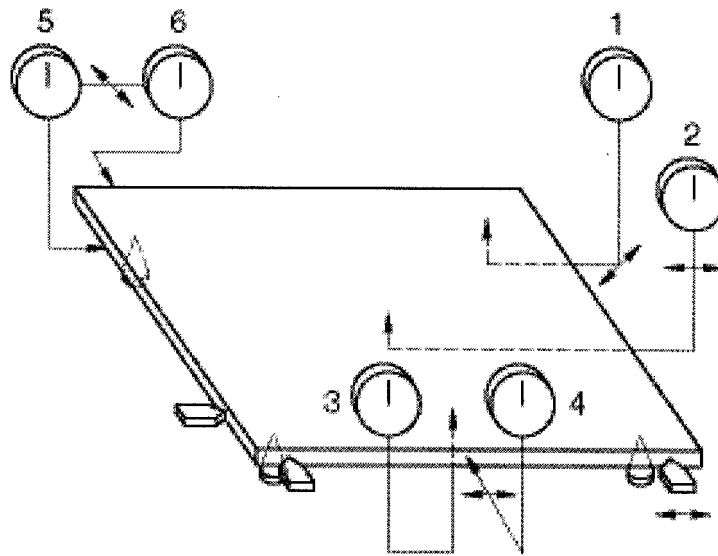


Figure 1 — Apparatus for the measurement of tile deformation

5 Specimens

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Depending on the size of the supporting instrument, the test can be performed with tiles of different dimensions.

For comparison and classification of the results, the tile dimensions are 300 mm x 300 mm \pm 0,4 mm with thickness of 12 mm \pm 0,7 mm.

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The finished side can be honed or polished according to the forecasted application (flooring or cladding).

6 Test procedure

The tile shall be placed on three supports of the instrument near the corners, with the finished side on the bottom. A humid cloth or felt, which reproduces the humidity of a traditional mortar bed or of a concrete-based adhesive is placed on the top side of the tile. Six measure sensors are positioned in contact with the tile in the arrangement displayed in Figure 1. The first (numbered 1), placed at 5 mm from both side of the corner, allows the free corner deformation measurement. The second (2) and third (3) sensors measure the tile warping in two different points as reported in Figure 1. The last three sensors measure the contraction or expansion movement of the tile. Measured values are recorded from the dial gauges, at prefixed time intervals during six hours in order to reproduce the deformation as a function of time, e.g., after 6 h, 24 h, 3 days, 7 days and 14 days. During the test time the cloth or the felt shall be constantly humidified by a water spray dispenser in order to keep the cloth completely wet.

7 Expression of results

When the five dial gauges (2-6) have not shown any movement, agglomerated stones are classified according to the vertical displacement shown by gauge number 1 as follows.

Table 1

Class	Vertical displacement of gauge 1 after the test
A	$\leq 0,3$ mm
B	$> 0,3$ mm and $\leq 0,6$ mm
C	$> 0,6$ mm

The meaning of this classification is described in Annexe A.

If there is movement recorded by gauges 2 to 6 the test shall be repeated or the classification is impossible.

8 Test report

The test report shall contain the following information:

- a) unique identification number of the report;
- b) number, title and date of issue of this document;
- c) name and address of the testing laboratory and the address where the test was carried out if different from the test laboratory;
- d) name and address of the client;
- e) it is the responsibility of the client to supply the following information:
 - name of the supplier
 - name of the person or organization which carried out the sampling;
 - surface finish of the specimens (if relevant to the test);
- f) date of delivery of the sample or of the specimens;
- g) date when the specimens were prepared (if relevant) and the date of testing;
- h) number of specimens in the sample;
- i) dimensions of the specimens;
- j) change in mass percent for each specimen and the mean change in mass percent for each sampling and each concentration testing liquid and temperature
- k) any observed alterations for each specimen
- l) statement on measurement uncertainty (where appropriate)
- m) all deviations from the standard and their justification;
- n) remarks (where appropriate)

The test report shall contain the signature(s) and role(s) of the responsible(s) for the testing and the date of issue of the report. It shall also state that the report shall not be partially reproduced without the written consent of the test laboratory.

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