

SVENSK STANDARD

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Konststen – Provningsmetoder – Del 12: Bestämning av dimensionsstabilitet

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

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Denna standard ersätter SS-EN 14617-12:2005, utgåva 1.

The European Standard EN 14617-12:2012 has the status of a Swedish Standard. This document contains the official version of EN 14617-12:2012.

This standard supersedes the Swedish Standard SS-EN 14617-12:2005, edition 1.

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EUROPEAN STANDARD

EN 14617-12

NORME EUROPÉENNE

EUROPÄISCHE NORM

April 2012

ICS 91.100.15

Supersedes EN 14617-12:2005

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 9 March 2012.

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.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



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Contents		Page
Foreword.....		3
1	Scope	5
2	Normative references	5
3	Principle	5
4	Apparatus	5
5	Test conditions	6
6	Test specimens	6
7	Test procedure	7
8	Expression of results	7
9	Test report	8
Annex A (normative) Test method for tiles below 12 mm.....		9
Annex B (informative) Choice of the adhesive.....		10
Bibliography		12

Foreword

This document (EN 14617-12:2012) 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 2012, and conflicting national standards shall be withdrawn at the latest by October 2012.

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 14617-12:2005.

Clauses 1 and 3, 4.1, 4.2, 4.3, 4.4 and Clauses 5 to 8 have been modified since the last edition of this European Standard. A new Annex A (normative) has been added, the Annex B (informative) has been modified since the last edition (Annex A) and 4.5 has been deleted.

This European Standard is one of a series of standards for test methods for agglomerated stones which includes 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)*

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*

EN 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*

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*

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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia,

SS-EN 14617-12:2012 (E)

Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

1 Scope

This European Standard specifies the test method to be used for the determination of the dimensional stability and warping of agglomerated stones when in contact with water.

This European Standard applies to agglomerated stones to be installed by adhesive on walls and floors.

The test is mainly performed to classify the material according to the degree of sensitivity to water and to select a suitable adhesive for the correct laying of agglomerated stones.

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.

Not applicable.

3 Principle

The principle of this method consists in measuring the vertical displacement of one corner of the tile using a wet felt placed on the backside of the agglomerated stone to simulate the contact with water. A series of sensors carries out the measurement of the deformation caused by the humidity released by the cloth.

4 Apparatus

4.1 A suitable instrument (see Figure 1) consisting of:

4.1.1 A flat and smooth reference plane.

4.1.2 Three supports for the tile.

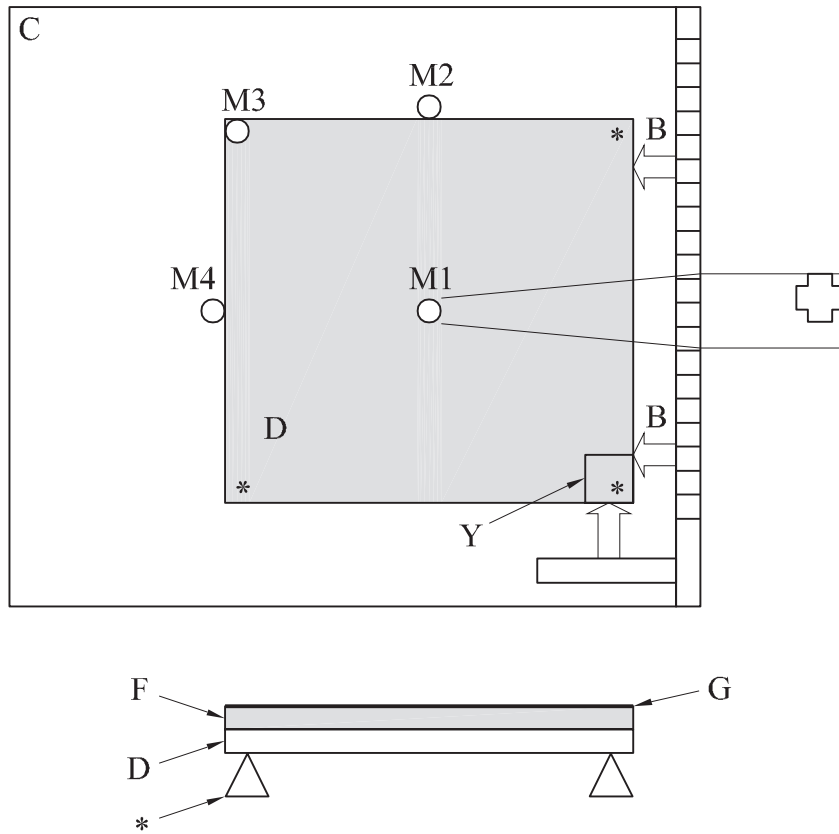
4.1.3 Four digital gauges with an accuracy of 0,01 mm for the normative part (see Figure 1). For the informative part see Annex B where five digital gauges are required.

4.2 A cloth or a felt.

4.3 A water spray dispenser.

4.4 A polyethylene film.

SS-EN 14617-12:2012 (E)



Key

M1, M2, M3, M4 digital gauges (4.1.3)

B lateral supports

C reference plane (4.1.1)

D agglomerated stone

F felt (4.2)

G Polyethylene film (4.4)

Y weight or clamp

* supports (4.1.2)

Figure 1 — Apparatus for the measurement of tile deformation

5 Test conditions

Standard conditions shall be $(23 \pm 2) ^\circ\text{C}$ and 50 % RH.

6 Test specimens

The warping tendency of the material changes depending on the size and thickness of the tile, as well as on its humidity content.

Therefore, in order to obtain reliable results:

- the size of the tile shall be 300 mm × 300 mm with the same thickness used for installation;

NOTE For thicknesses below 12 mm, considering that these types of tiles are not self-supporting, testing should be carried out in accordance with Annex A.

- before being tested, the test specimens shall be stored separately, in vertical position, for at least 24 h under standard conditions. (For tiles that are very wet before storage in standard conditions, it is necessary to dry the test specimens for 12 h at 50 °C.)

7 Test procedure

Before testing the sample, check its planarity.

The tile shall be placed upside down on the three supports (4.1.2) that are positioned on the reference plane (4.1.1) near the corners and fixed with the weight or the clamp (Y). Four digital gauges are to be positioned in contact with the tile as showed in Figure 1. Digital gauge (M3), placed at 5 mm from both sides of the corner, measures the deformation of the free corner, while digital gauge (M1) measures the deformation at the centre of the tile. Digital gauges (M2) and (M4) measure the tile expansion. A wet cloth or felt (F), reproducing the humidity of a traditional mortar bed or of a cementitious adhesive, is placed on the back of the tile and a polyethylene film (G) is placed over the felt to avoid fast evaporation.

During the test the cloth or the felt shall be kept constantly wet by a water spray dispenser.

Deformations are recorded from the digital gauges (4.1.3) after a period of 6 h.

8 Expression of results

6 h after applying the wet felt the deformation is determined to an accuracy of 0,1 mm using the following formula:

$$D = |d(3) - d(1)| \quad (1)$$

where

D is the vertical displacement;

d(3) is the deformation measured by digital gauge (3);

d(1) is the deformation measured by digital gauge (1).

According to the measured deformation in any of the sizes of tiles tested, the agglomerated stones are classified as in Table 1.