



SLOVENSKI STANDARD

SIST EN 14617-8:2008

01-april-2008

Aglomeriran kamen - Preskusne metode - 8. del: Ugotavljanje odpornosti pritrditve (sidrna izvrtina)

Agglomerated stone - Test methods - Part 8: Determination of resistance to fixing (dowel hole)

Künstlich hergestellter Stein - Prüfverfahren - Teil 8: Bestimmung der Beständigkeit gegen Befestigungen (Ankerdornloch)

Pierre agglomérée - Méthodes d'essai - Détermination de la résistance aux attaches (trou pour broches)

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Ta slovenski standard je istoveten z: EN 14617-8:2007

ICS:

91.100.15

SIST EN 14617-8:2008

en,fr,de

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ICS 91.100.15

English Version

Agglomerated stone - Test methods - Part 8: Determination of resistance to fixing (dowel hole)

Pierre agglomérée - Méthodes d'essai - Partie 8 :
Détermination de la résistance aux attaches (trous pour
broches)

Künstlich hergestellter Stein - Prüfverfahren - Teil 8:
Bestimmung der Beständigkeit gegen Befestigungen
(Ankerdornloch)

This European Standard was approved by CEN on 26 August 2007.

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 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 Management Centre has the same status as the official versions.

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

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Foreword

This document (EN 14617-8:2007) 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of an identical text or by endorsement, at the latest by April 2008, and conflicting national standards shall be withdrawn at the latest by April 2008.

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)*

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*

No existing standard is superseded.

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, 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 and United Kingdom.

1 Scope

This European Standard specifies a test method to determine the breaking load at the dowel hole of agglomerated stones slabs used for cladding or lining in buildings.

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.

EN 197-1, *Cement — Part 1: Composition, specifications and conformity criteria for common cements*

EN 10088-1, *Stainless steels — Part 1: List of stainless steels*

EN 12390-4, *Testing hardened concrete — Part 4: Compressive strength — Specification for testing machines*

3 Principle

This test consists of applying a force in a direction perpendicular to the face of a specimen through a dowel previously placed in a hole drilled in one of its sides and measuring the breaking load of the specimen.

4 Symbols

For the purposes of this document, the following symbols apply.

- d is the thickness of the test specimen, in millimetres
- d_1 is the distance from the hole wall to the face where fracture occurs, in millimetres
- b_A is the maximum distance of the centre of the hole to the fracture edge on the face, in millimetres
- F is the individual breaking load, in newtons
- \bar{d}_1 is the mean value of d_1 , in millimetres
- \bar{F} is the mean value of F , in newtons
- \bar{b}_A is the mean value of b_A , in millimetres

5 Apparatus

- 5.1 A balance capable of weighing the specimens with an accuracy of 0,1 % of their mass.
- 5.2 A ventilated oven capable of maintaining a temperature of (70 ± 5) °C.
- 5.3 A linear measuring device with an accuracy of 0,05 mm.
- 5.4 A rotary drilling machine equipped with a diamond or tungsten carbide tipped bit.
- 5.5 A testing machine of appropriate force in accordance with EN 12390-4 and calibrated according to this European Standard.

- 5.6 A clamping device consisting of two metal plates having the shape and sizes shown in Figure 1.
- 5.7 A device for applying loads perpendicular to the axis of the dowel (see Figure 2).
- 5.8 A room or chamber in which the temperature of the air can be maintained at $(20 \pm 5) ^\circ\text{C}$.

6 Preparation of the specimens

6.1 Sampling

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

6.2 Test specimens

6.2.1 General

The test can be carried out as an identification test or as a technological or performance test.

6.2.2 Tests

6.2.2.1 Identification test

This test is performed only for comparison sake on samples of standard thickness (30 ± 3) mm, which might not be the thickness of the actual agglomerated stone slabs or cut to size products selected for the application.

6.2.2.2 Technological or performance test

This test is performed on samples of the actual thickness of the agglomerated stone slabs or cut to size products selected for the application.

6.2.3 Number of specimens

12 tests shall be made on 3 specimens.

6.2.4 Surface finish of the specimens

a) identification test

The surface finish on the faces and sides of the specimens shall be sawn, honed or polished.

b) technological test

The surface finish on the faces and sides of the specimens shall be carried out according to the application (for example sawn, honed, polished, sanded, rubbed, flamed, bush hammered, riven).

6.2.5 Dimensions of the specimens

a) identification test

— The specimens are square slabs with faces (200 ± 1) mm and a thickness of (30 ± 3) mm. The permissible deviation on the squareness is a maximum of 2 mm.

b) technology test

— The specimens are square slabs with faces (200 ± 1) mm and a thickness $(d \pm 0,1 d)$ mm.

6.2.6 Location of the holes

A hole is wet drilled perpendicularly in each of the four sides in the following manner:

a) identification test

- The centre of the hole shall be situated between 98 mm and 102 mm from the other sides, measured to the nearest 0,5 mm.
- The thickness of stone between the edge of the hole and two faces shall be $(10 \pm 2,0)$ mm, measured to the nearest 0,5 mm.

b) technological test

- The centre of the hole shall be situated in the middle of the specimen's length.
- The thickness of stone between the edge of the hole and the face to be tested shall be according to the application, measured to the nearest 0,5 mm.

6.2.7 Dimensions and tolerances of the holes

a) identification test

- The diameter of the holes shall be $(10 \pm 0,5)$ mm. The depth of the holes shall be (30 ± 2) mm.

b) technological test

- The diameter of the holes shall be in accordance with the requirement of the application. The depth of the hole shall be (30 ± 2) mm.

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6.2.8 Drilling the holes

The holes shall be wet drilled with a diamond or tungsten carbide tipped drill bit without hammering.

6.2.9 Conditioning

The specimens shall be dried to constant mass at (70 ± 5) °C in a ventilated oven after the drilling of the holes but before the dowels are fixed in place.

Constant mass is reached when the difference between two weightings carried out (24 ± 2) h apart is less than 0,1 % of the first of the two masses.

After drying and prior to placing the dowels the specimen shall be stored at (20 ± 5) °C until the thermal equilibrium is reached.

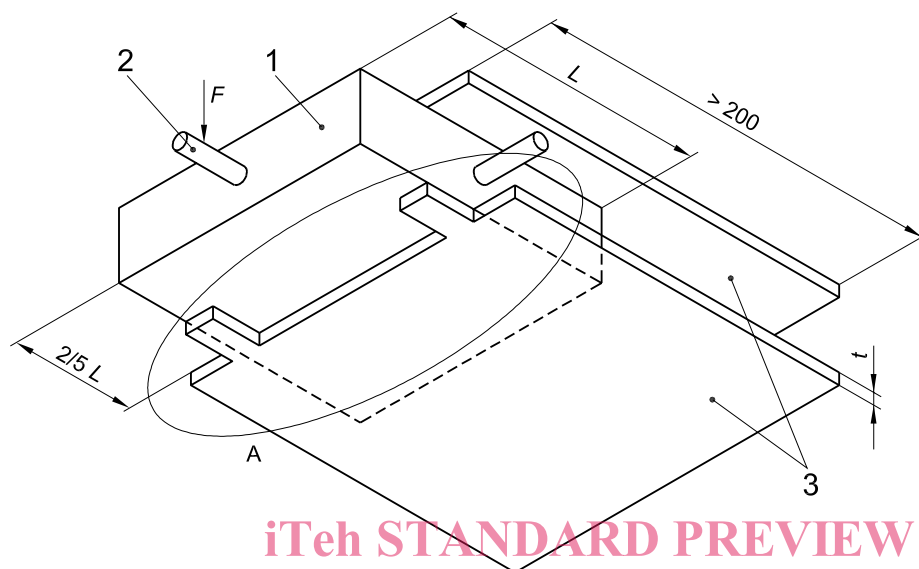
6.2.10 Measuring d and d_1

After conditioning the thickness (d) and the distance from the edge of each hole to the lower face of the specimen in the direction of the force (d_1) shall be measured.

6.3 Clamping device

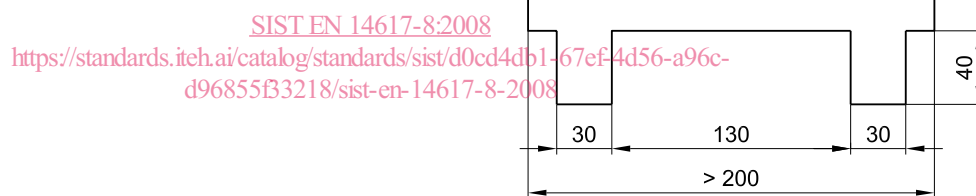
a) General view

Dimensions in millimetres



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a) (standards.iteh.ai)



b)

b) Detail of a plate suitable for tests on specimens having dimensions of 200 mm × 200 mm

Key

- 1 specimen
- 2 dowel
- 3 metal plate
- F force applied on the specimen
- L length of the specimen
- t thickness of the metal plate

Figure 1 — Clamping device to hold the specimen in place