

Konststen – Provningsmetoder –
Del 16: Bestämning av dimensioner, geometriska
karaktäristika och ytkvalitet hos modulplattor

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

Europastandarden EN 14617-16:2005 gäller som svensk standard. Detta dokument innehåller den officiella engelska versionen av EN 14617-16:2005.

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 14617-16

March 2005

ICS 91.100.15

English version

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

Pierre agglomérée - Méthodes d'essai - Partie 16:
Détermination des dimensions, des caractéristiques
géométriques et de la qualité de surface des tuiles
modulaires

Künstlich hergestellter Stein - Prüfverfahren - Teil 16:
Bestimmung der Maße, der geometrischen Merkmale und
der Oberflächenqualität von Fliesen

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.

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EN 14617-16:2005 (E)

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Foreword

This document (EN 14617-16:2005) 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of an identical text or by endorsement, at the latest by September 2005, and conflicting national standards shall be withdrawn at the latest by September 2005.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*

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.

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1 Scope

This document specifies methods for determining the dimensional characteristics (length, width, thickness, straightness of sides, rectangularity, surface flatness) and the surface quality of agglomerated stones modular tiles.

2 Term and definition

For the purposes of this document, the following term and definition applies.

2.1

modular tile

piece of an agglomerated stone in standard sizes, generally of thickness 12 mm.

3 Measurement of length and width

3.1 Apparatus

Vernier callipers, or other suitable apparatus for linear measurement.

3.2 Test specimens

Ten whole tiles shall be submitted to measurements.

3.3 Procedure

Measure, to the nearest 0,1 mm, each side of the tile under test, at positions 5 mm from the corners.

3.4 Expression of results

The average dimension of square tiles is the average of four measurements. The average dimension of the sample is the average of 40 measurements.

For oblong tiles, each similar pair of sides of a tile provides the appropriate average dimension of the tile, i.e. an average of two measurements. The average dimensions for length and width of the sample are the average of 20 measurements each.

3.5 Test report

The test report shall include the following information:

- a) reference to this document;
- b) name of the manufacturer and/or the supplier;
- c) description of the tiles;
- d) all individual measurements of length and width;
- e) average size of each test specimen for square tiles, and the average length and width for each oblong tile;
- f) average size of the 10 test specimens for square tiles, and the average length and width for oblong tiles;
- g) deviation, as a percentage, of the average size of each tile (two sides or four sides) from the work size;
- h) deviation, as a percentage, of the average size of each tile (two or four sides) from the average size of the 10 test specimens (20 sides or 40 sides).

4 Measurement of thickness

4.1 Apparatus

Micrometer screw gauge with anvils, of 5 mm to 10 mm diameter, or other suitable apparatus.

4.2 Test specimens

Ten whole tiles shall be submitted to measurements.

4.3 Procedure

For all tiles, draw diagonals between the corners and measure the thickness at the thickest point within each of the four segments. Measure, to the nearest 0,1 mm, the thickness of each tile under test in four positions.

4.4 Expression of results

For all the tiles, the average dimension of each individual tile is the average of four measurements. The average thickness of the sample is the average of 40 measurements.

4.5 Test report

The test report shall include the following information:

- a) reference to this document;
- b) name of the manufacturer and/or the supplier;
- c) description of the tiles;
- d) all individual measurements of thickness;
- e) average thickness of each tile;
- f) the deviation, as a percentage or in millimetres (as required by the product standard), of the average thickness of each tile from the work size thickness.

5 Measurement of straightness of sides

5.1 Term and definition

For the purposes of this document, the following term and definition applies.

5.1.1

straightness of sides

The deviation from straightness of the centre of the side in the plane of the tile.

The measurement is only relevant to the straight sides of tiles (Figure 1) and is calculated as a percentage, using the formula

$$\frac{C}{L} \times 100$$

where

C is the deviation from straightness at the centre of the measured side;

L is the length of the measured side.

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5.2 Apparatus

5.2.1 Apparatus, as shown in Figure 1, or any other suitable instrument.

The dial gauge (D_F) is used for measuring the straightness of sides.

5.2.2 Calibrating plate, of accurate dimensions and with straight, flat sides.

5.3 Test specimens

Ten whole tiles shall be submitted to measurements.

5.4 Procedure

Select an apparatus of the appropriate dimensions (5.2.1) so that, when a tile is placed in the apparatus, on the supporting studs (S_A , S_B , S_C), the locating studs (I_A , I_B , I_C) are 5 mm from each corner of the side being measured. (See Figure 1.)

Fit the appropriate calibrating plate (5.2.2) exactly into position on the instrument, and adjust the dial gauge reading to a suitable known value.

Remove the calibrating plate, place the proper surface of the tile on the locating studs in the apparatus, and record the dial gauge reading in the centre of the side. If the tile is square, rotate it to obtain four measurements. Repeat this procedure for each tile being tested. In the case of oblong tiles, use separate instruments of the appropriate dimensions to measure lengths and widths. Measure to the nearest 0,1 mm.

5.5 Test report

The test report shall include the following information:

- a) reference to this document;
- b) name of the manufacturer and/or the supplier;
- c) description of tiles;
- d) all individual measurements of straightness of sides;
- e) maximum deviation from straightness, as a percentage related to the corresponding work sizes.

6 Measurement of rectangularity

6.1 Terms and definitions

For the purposes of this document, the following term and definition applies:

6.1.1

deviation from rectangularity

If a corner of a tile is placed against the angle of an accurate calibrating plate (see Figure 3), deviation from rectangularity is calculate as a percentage, using the formula

$$\frac{\delta}{L} \times 100$$

where

δ is the deviation of the outer corner of the side of the tile (measured 5 mm from the corner) from the inner side of the calibrating plate;