

**Agglomerated stone - Test methods - Part 6:
Determination of thermal shock resistance**

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NATIONAL FOREWORD

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ICS 91.100.15

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English Version

Agglomerated stone - Test methods - Part 6: Determination of thermal shock resistance

Pierre agglomérée - Méthodes d'essai - Partie 6:
Détermination de la résistance au choc thermique

Künstlich hergestellter Stein - Prüfverfahren - Teil 6:
Bestimmung der Temperaturwechselbeständigkeit

This European Standard was approved by CEN on 9 March 2012.

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

Management Centre: Avenue Marnix 17, B-1000 Brussels

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Foreword

This document (EN 14617-6:2012) 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of an identical text or by endorsement, at the latest by October 2012, and conflicting national standards shall be withdrawn at the latest by October 2012.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 14617-6:2005.

6.3 has been modified since the last edition of this European Standard.

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

1 Scope

This European Standard specifies a method to assess possible modifications of agglomerated stones under the effect of sudden changes in temperature (thermal shock) by immersion in hot water.

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.

EN 14617-2:2008, *Agglomerated stone — Test methods — Part 2: Determination of flexural strength (bending)*

3 Symbols

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

m_0 mass of the dried specimen before the test, in g;

m_f mass of the dried specimen after the test, in g;

Δm % change in the mass of the dried specimens, as a percentage;

R_f flexural strength average value of dried, reference specimens, in MPa;

R_{sf} flexural strength average value of specimens after 20 cycles, in MPa;

$\Delta R_{f,20}$ coefficient of thermal shock resistance as change in flexural strength (as a percentage after 20 cycles).

4 Principle

After drying at (40 ± 5) °C until constant mass is attained, the specimens are subjected to successive cycles, each formed by thermal shock at (70 ± 5) °C followed by immediate immersion in water at (15 ± 5) °C. After 20 cycles, the specimens are visually inspected and compared with the reference specimen, and all visible alterations recorded. Finally, the mass and flexural strength changes of specimens after 20 cycles will be determined in comparison with the values of the same quantities of reference specimens.

NOTE The selected test temperature of 70 °C is for flooring and wall applications.

5 Apparatus

5.1 A ventilated oven capable of maintaining a temperature of (70 ± 5) °C.

5.2 A tank equipped with a cooling system capable of maintaining a temperature of (15 ± 5) °C and a flat base comprising small non-oxidising and non-absorbent supports for the specimens.

5.3 A weighing instrument with an accuracy of at least 0,01 % of the mass to be weighed.

5.4 A desiccator.