Agglomerated stone - Test methods - Part 5: Determination of freeze and thaw resistance

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NATIONAL FOREWORD

See Eesti standard EVS-EN 14617-5:2012 sisaldab Euroopa standardi EN 14617-5:2012 ingliskeelset teksti.	This Estonian standard EVS-EN 14617-5:2012 consists of the English text of the European standard EN 14617-5:2012.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 11.04.2012.	Date of Availability of the European standard is 11.04.2012.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

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English Version

Agglomerated stone - Test methods - Part 5: Determination of freeze and thaw resistance

Pierre agglomérée - Méthodes d'essai - Partie 5: Détermination de la résistance au gel et au dégel

Künstlich hergestellter Stein - Prüfverfahren - Teil 5: Bestimmung der Frost-Tau-Wechselbeständigkeit

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

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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.

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Foreword

This document (EN 14617-5:2012) 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of an identical text or by endorsement, at the latest by October 2012, and conflicting national standards shall be withdrawn at the latest by October 2012.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 14617-5:2005.

6.2, 7.3 and Clause 8 have 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 the effect of freeze/thaw cycles on agglomerated stones. It contains provisions for a technological test to be carried out to assess the effect of freeze/thaw cycles on the flexural strength characteristics of the stone.

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 Terms, definitions and symbols

3.1 Terms and definitions

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

3.1.1
freeze/thaw resistance
ability of the agglomerated stone product saturated by water to resist the effect of freeze/thaw cycling

3.2 Symbols

$KM_{f\,25}$ coefficient of freeze/thaw resistance in flexural strength (after 25 freeze/thaw cycles);

R_f flexural strength average value (MPa) of dried, unfrosted specimens;

RM_f flexural strength average value (MPa) of specimens after 25 freeze/thaw cycles.

4 Principle

The principle of this test method is the determination of the ratio between the flexural strength of specimens after 25 freeze/thaw cycles and that of unfrosted specimens. One freeze/thaw cycle includes a freezing part, when a water saturated specimen is loaded into a freezer (temperature (– 20 ± 5) °C), and a thawing part, when a frosted specimen is immersed in tap water (temperature (20 ± 5) °C).

5 Apparatus

5.1 A freezing chamber of sufficient capacity to hold the required number of specimens, possibly with an automatic control system to programme the freezing and thawing cycles within the chamber, capable of maintaining the temperature at (- 20 ± 5) °C.

5.2 A temperature recording system or thermometer capable of measuring temperatures to ± 0,1 °C.

5.3 A linear measuring device with an accuracy of 0,5 mm (for the flexural measurement).

5.4 A desiccator.