

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

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Determination of freeze and thaw resistance

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 14617-5:2005 sisaldab Euroopa standardi EN 14617-5:2005 ingliskeelset teksti. Käesolev dokument on jõustatud 30.05.2005 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes. Standard on kättesaadav Eesti standardiorganisatsioonist.	This Estonian standard EVS-EN 14617-5:2005 consists of the English text of the European standard EN 14617-5:2005. This document is endorsed on 30.05.2005 with the notification being published in the official publication of the Estonian national standardisation organisation. The standard is available from Estonian standardisation organisation.
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Käsitlusala: The European Standard specifies a method to assess the effect of freeze/thaw cycles on agglomerated stones. The standard contains provision for technological test to assess the effect of freeze/thaw cycles on the flexural strength characteristic	Scope: The European Standard specifies a method to assess the effect of freeze/thaw cycles on agglomerated stones. The standard contains provision for technological test to assess the effect of freeze/thaw cycles on the flexural strength characteristic
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ICS 91.100.15

Võtmesõnad:

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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 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.

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 Central Secretariat has the same status as the official versions.

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Foreword

This document (EN 14617-5:2005) 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 resistance*

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.

1 Scope

The document specifies a method to assess the effect of freeze/thaw cycles on agglomerated stones. The standard contains provision for technological test to assess the effect of freeze/thaw cycles on the flexural strength characteristic.

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 14617-2:2004, Agglomerated stone – Test Methods – Part 2: Determination of flexural strength (bending)

3 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 freezing part, when water saturated specimen is loaded into freezer (temperature $-20\text{ °C} \pm 5\text{ °C}$) and thaw part, when frosted specimen is immersed in tap water (temperature $20\text{ °C} \pm 5\text{ °C}$).

4 Terms, definitions and symbols

4.1 Terms and definitions

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

4.1.1

freeze/thaw resistance

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

4.2 Symbols

KM_{f25} 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.

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 $(-20 \pm 5)\text{ °C}$.

5.2 A temperature recording system or thermometer capable of measuring temperature to $\pm 0,1\text{ °C}$.

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

5.4 A desiccator.

5.5 A ventilated oven capable of maintaining a temperature of $(70 \pm 5)\text{ °C}$.