

Natural stone test methods - Determination of resistance to salt crystallisation

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resistance to salt crystallisation

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

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| <p>Käesolev Eesti standard EVS-EN 12370:2001 sisaldab Euroopa standardi EN 12370:1999 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 18.06.2001 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p> | <p>This Estonian standard EVS-EN 12370:2001 consists of the English text of the European standard EN 12370:1999.</p> <p>This document is endorsed on 18.06.2001 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p> |
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| <p>Käsitlusala: This European Standard specifies a test method to assess the relative resistance of natural stones with an open porosity of greater than 5%, measured in accordance with EN 1936, to damage caused by the crystallisation of salts. The test is not suitable for low porosity stones.</p> | <p>Scope: This European Standard specifies a test method to assess the relative resistance of natural stones with an open porosity of greater than 5%, measured in accordance with EN 1936, to damage caused by the crystallisation of salts. The test is not suitable for low porosity stones.</p> |
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ICS 73.020, 91.100.15

Võtmesõnad: crystallization, durability, natural stone, salts, tests

ICS 73.020; 91.100.15

English version

Natural stone test methods

Determination of resistance to salt crystallisation

Méthodes d'essai pour pierres
naturelles – Détermination de la
résistance par un essai de
cristallisation des sels

Prüfverfahren für Naturstein –
Bestimmung des Widerstandes
gegen Kristallisation von Salzen

This European Standard was approved by CEN on 1999-02-12.

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.

The European Standards exist 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.

CEN members are the national standards bodies of Austria, Belgium, the Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom.

CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart 36, B-1050 Brussels

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Foreword

This European Standard 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 1999, and conflicting national standards shall be withdrawn at the latest by September 1999.

This draft standard is one of the series of draft standards for tests on natural stone.

Test methods for natural stone consist of the following parts:

- EN 1925 Natural stone test methods - Determination of water absorption coefficient by capillarity
- EN 1926 Natural stone test methods - Determination of compressive strength
- EN 1936 Natural stone test methods - Determination of real density and apparent density and of total and open porosity
- prEN 12371 Natural stone test methods - Determination of frost resistance
- EN 12372 Natural stone test methods - Determination of flexural strength under concentrated load
- prEN 12407 Natural stone test methods - Petrographic description
- prEN 13161 Natural stone test methods - Determination of flexural strength under constant moment
- prEN 13364 Natural stone test methods - Determination of the breaking load at a dowel hole
- prEN(WI 00246011) Natural stone test methods - Determination of thermal dilatation coefficient
- prEN(WI 00246012) Natural stone test methods - Determination of sound - speed propagation
- prEN(WI 00246014) Natural stone test methods - Determination of abrasion resistance
- prEN(WI 00246015) Natural stone test methods - Determination of Knoop hardness
- prEN(WI 00246016) Natural stone test methods - Determination of thermal shock resistance
- prEN(WI 00246017) Natural stone test methods - Determination of slip coefficient
- prEN(WI 00246018) Natural stone test methods - Determination of static elastic modulus
- prEN(WI 00246019) Natural stone test methods - Determination of rupture energy
- prEN(WI 00246030) Natural stone test methods - Determination of surface finishes (rugosity)
- prEN 13373 Natural stone test methods - Determination of geometric characteristics on units
- prEN(WI 00246032) Natural stone test methods - Determination of resistance to ageing by salt mist
- prEN(WI 00246033) Natural stone test methods - Determination of resistance to ageing by humidity, temperature, SO₂ action
- prEN(WI 00246035) Natural stone test methods - Determination of dynamic elastic modulus (by fundamental resonance frequency)
- prEN(WI 00246036) Natural stone test methods - Determination of water absorption at atmospheric pressure

It is intended that other ENs should call up this EN 12370 as the basis of evaluation of conformity. (Nevertheless it is not intended that all natural stones products should be subjected regularly to all the listed tests. Specifications in other standards should call up only relevant test methods).

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

Introduction

This test is designed to assess the salt crystallisation resistance of natural stones where it is considered relevant. The test can not be used in isolation and results will be considered with other physical tests to indicate durability, these include prEN 12371 "Determination of frost resistance".

1 Scope

This European Standard specifies a test method to assess the relative resistance of natural stones with an open porosity of greater than 5%, measured in accordance with EN 1936, to damage caused by the crystallisation of salts. The test is not necessary for low porosity stones.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. There normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these incorporated in it by amendment or revision For undated references the latest edition of the publication referred to applies.

EN 1936 Natural stone test methods - Determination of real density and apparent density and of total and open porosity

prEN 12371 Natural stone test methods - Determination of frost resistance

prEN 12440 Denomination of natural stone

3 Principle

After drying to constant mass, the specimen is immersed in a solution of sodium sulphate, dried and allowed to cool to room temperature. This cycle is carried out 15 times and the percentage mass change measured.

4 Symbols

M_d is the mass of the dried specimen, in grams

M_{d1} is the mass of the dried specimen with label before first cycle, in grams

M_f is the mass of the dried specimen with label, after 15 cycles, in grams

ΔM is the relative difference of masses before and after testing (mass loss or mass gain), in percent.

5 Apparatus

5.1 A ventilated oven capable of maintaining a temperature of $(105 \pm 5)^\circ\text{C}$

5.2 A weighing instrument capable of weighing the specimens to $\pm 0,001\text{g}$