

**Products and systems for the
protection and repair of concrete
structures - Test method -
Determination of loss of mass of
hydrophobic impregnated concrete
after freeze-thaw salt stress**

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of concrete structures - Test method -
Determination of loss of mass of hydrophobic
impregnated concrete after freeze-thaw salt stress

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 13581:2002 sisaldab Euroopa standardi EN 13581:2002 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 18.10.2002 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 13581:2002 consists of the English text of the European standard EN 13581:2002.</p> <p>This document is endorsed on 18.10.2002 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 is one of series dealing with products and systems for the protection and repair of concrete structures. It specifies a method for determining the loss of mass after freeze-thaw salt stress in sodium chloride solution. It can be used to test the resistance of hydrophobic impregnated concrete as well as the untreated concrete. There are two types of concrete deterioration when a freeze-thaw attack occurs: surface scaling and internal damage.</p>	<p>Scope: This European Standard is one of series dealing with products and systems for the protection and repair of concrete structures. It specifies a method for determining the loss of mass after freeze-thaw salt stress in sodium chloride solution. It can be used to test the resistance of hydrophobic impregnated concrete as well as the untreated concrete. There are two types of concrete deterioration when a freeze-thaw attack occurs: surface scaling and internal damage.</p>
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ICS 91.080.40, 91.100.30

Võtmesõnad: area, meteorology, preimpregnated products, properties, protection, protection systems, repair, repairs, sampling, sampling methods, solid concrete, structures, surface finishes, surface protection, surfaces, testing, varnishes, weight losses

ICS 91.080.40; 91.100.30

English version

Products and systems for the protection and repair of concrete structures - Test method - Determination of loss of mass of hydrophobic impregnated concrete after freeze-thaw salt stress

Produits et systèmes pour la protection et la réparation des structures en béton - Méthode d'essai - Détermination de la perte de masse après la méthode d'essai de gel-dégel d'un béton hydrofuge

Produkte und Systeme für den Schutz und die Instandsetzung von Betontragwerken - Prüfverfahren - Bestimmung des Masseverlustes von hydrophobiertem Beton nach der Beanspruchung durch Frost-Tausalz-Wechsel

This European Standard was approved by CEN on 23 December 2001.

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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 Management Centre has the same status as the official versions.

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



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Foreword

This document (EN 13581:2002) has been prepared by Technical Committee CEN/TC 104 "Concrete and related products", the secretariat of which is held by DIN.

It has been elaborated by Subcommittee SC 8 "Products and systems for the protection and repair of concrete structures", the secretariat of which is held by AFNOR.

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 February 2003, and conflicting national standards shall be withdrawn at the latest by February 2003.

The annex A is normative and the annex B is informative.

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, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

This European Standard is one of a series dealing with products and systems for the protection and repair of concrete structures. It specifies a method for determining the loss of mass after freeze-thaw salt stress in sodium chloride solution. It can be used to test the resistance of hydrophobic impregnated concrete as well as the untreated concrete. There are two types of concrete deterioration when a freeze-thaw attack occurs: surface scaling and internal damage.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These 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 publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 1766, *Products and systems for the protection and repair of concrete structures - Test methods - Reference concrete for testing*.

3 Symbols

Symbol	Explanation	Unit
ΔC	Difference between the reached number of cycles of untreated and treated test cubes	-
C	Consumption of impregnant during treatment	g/m ²
C_{abs}	Quantity of fluid absorbed of one test cube during immersion in 3 % NaCl-solution	%
$C_{abs, m}$	Quantity of fluid absorbed of four test cubes during immersion in 3 % NaCl-solution; Mean value of treated an untreated test cubes	%
C_m	Mean consumption of impregnant during treatment	g/m ²
C_n	Consumption of impregnant for each face of the cube during treatment	g/m ²
C_u	Reached number of cycles of untreated test cubes	-
C_t	Reached number of cycles of treated test cubes	-
n	Indicating the number of cycles carried out	-
ΔW_n	Change of mass after the n cycle	%
W_n	Mass of a test cube after n cycles	g
W_0	Mass of a test cube before immersion for 24 h in 3 % NaCl solution	g
W_{t1}	Mass of test cube immediately prior to treatment	g
W_{t2}	Mass of test cube immediately after treatment	g
W_e	Mass of a test cube after immersion for 24 h in 3 % NaCl solution	g