Ehituslubi. Osa 2: Katsemeetodid

Building lime - Part 2: Test methods



FESTI STANDARDI FESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 459-2:2010 sisaldab Euroopa standardi EN 459-2:2010 ingliskeelset teksti.

This Estonian standard EVS-EN 459-2:2010 consists of the English text of the European standard EN 459-2:2010.

Standard on kinnitatud Eesti Standardikeskuse 31.10.2010 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.

This standard is ratified with the order of Estonian Centre for Standardisation dated 31.10.2010 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.

Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 08.09.2010.

Date of Availability of the European standard text 08.09.2010.

Standard on kättesaadav Eesti standardiorganisatsioonist.

The standard is available from Estonian standardisation organisation.

ICS 91.100.10

Standardite reprodutseerimis- ja levitamisõigus kuulub Eesti Standardikeskusele

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonilisse süsteemi või edastamine ükskõik millises vormis või millisel teel on keelatud ilma Eesti Standardikeskuse poolt antud kirjaliku loata.

Kui Teil on küsimusi standardite autorikaitse kohta, palun võtke ühendust Eesti Standardikeskusega: Aru 10 Tallinn 10317 Eesti; www.evs.ee; Telefon: 605 5050; E-post: info@evs.ee

Right to reproduce and distribute belongs to the Estonian Centre for Standardisation

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without permission in writing from Estonian Centre for Standardisation.

If you have any questions about standards copyright, please contact Estonian Centre for Standardisation: Aru str 10 Tallinn 10317 Estonia; www.evs.ee; Phone: 605 5050; E-mail: info@evs.ee

EUROPEAN STANDARD NORME EUROPÉENNE

EN 459-2

EUROPÄISCHE NORM

September 2010

ICS 91.100.10

Supersedes EN 459-2:2001

English Version

Building lime - Part 2: Test methods

Chaux de construction - Partie 2: Méthodes d'essai

Baukalk - Teil 2: Prüfverfahren

This European Standard was approved by CEN on 30 July 2010.

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 CEN Management Centre 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 CEN Management Centre has the same status as the official versions.

CEN members are the national standards bodies of 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 and United Kingdom.



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

Management Centre: Avenue Marnix 17, B-1000 Brussels

	Contents		
Forewo	ord	3	
	iction		
	Scope		
1			
2	Normative references	5	
3	Sampling	5	
3.1	General		
3.2	Sampling of powdered material		
3.3 3.4	Sampling of granular material		
3.4 3.5	Preparation of the test portion		
	General requirements for testing		
4 4.1	Number of tests		
4. 1 4.2	Repeatability and reproducibility		
4.3	Expression of masses, volumes, factors and results	7	
4.4	Blank determinations	7	
4.5	Reagents	7	
4.6	Evaluation of test results		
5	Chemical analysis		
5.1	Extraction with hydrochloric acid	8	
5.2	Calcium oxide (CaO) and magnesium oxide (MgO)		
5.3 5.4	Sulfate (expressed as SO ₃)Free water		
5. 4 5.5	Gravimetric determination of carbon dioxide (CO ₂) (reference method)		
5.6	Volumetric determination of carbon dioxide (CO ₂) (alternative method)	18	
5.7	Loss on ignition	21	
5.8	Available lime		
6	Physical tests	24	
6.1	Particle size by dry sieving	24	
6.2	Particle size by air-jet sieving		
6.3 6.4	Bulk densitySoundness	27	
6.4 6.5	Setting times		
6.6	Reactivity		
6.7	Yield		
8.8	Standard mortar by mass and water demand for values of flow and penetration		
6.9	Water retention		
6.10	Determination of air content		
6.11	Compressive strength		
	A (informative) Example for the calculation of the results on sieving		
Annex	Annex B (informative) Precision data for the test methods62		
Bibliog	Bibliography		

Foreword

This document (EN 459-2:2010) has been prepared by Technical Committee CEN/TC 51 "Cement and building limes", the secretariat of which is held by NBN.

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 March 2011, and conflicting national standards shall be withdrawn at the latest by March 2011.

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 459-2:2001.

The following modifications have been made from EN 459-2:2001:

- description of chemical procedures for CaO, MgO, CO₂ gravimetrically, SO₃ and loss on ignition;
- amendments for the determinations of free water and available lime;
- description of the methods for particle size determination;
- description of the determination of setting times;
- amendments for the determination of strength;
- editorial changes were made and minor mistakes corrected.

EN 459, Building lime, consists of the following parts:

- Part 1: Definitions, specifications and conformity criteria
- Part 2: Test methods
- Part 3: Conformity evaluation

The existing standards from the EN 196 series were used as a basis for the testing of physical and mechanical properties in EN 459-2. For the testing of chemical properties of building limes, test methods described in EN 12485 have been incorporated into this European Standard.

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 and the United Kingdom.

Introduction

The objective in this European Standard has been to adopt as many European standardized methods as possible and where this has not been possible to use other appropriate proven methods.

Unless otherwise stated, tolerance class m of ISO 2768-1:1989 should be applied (indications on drawings by Ment is a previous denotated by tills "ISO 2768-m").

All dimensions are in millimetres.

1 Scope

This European Standard describes the test methods for all building limes covered by EN 459-1:2010.

This European Standard specifies the methods used for the chemical analyses and the determination of physical properties of building limes.

This document describes the reference methods and, in certain cases, an alternative method which can be considered to be equivalent. In the case of a dispute, only the reference methods are used.

Any other methods may be used provided they are calibrated, either against the reference methods or against internationally accepted reference materials, in order to demonstrate their equivalence.

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 196-1:2005, Methods of testing cement — Part 1: Determination of strength

EN 196-3, Methods of testing cement — Part 3: Determination of setting times and soundness

EN 196-7, Methods of testing cement — Part 7: Methods of taking and preparing samples of cement

EN 459-1:2010, Building lime — Part 1: Definitions, specifications and conformity criteria

EN 932-1, Tests for general properties of aggregates — Part 1: Methods for sampling

EN ISO 6506-1:2005, Metallic materials — Brinell hardness test — Part 1: Test method (ISO 6506-1:2005)

3 Sampling

3.1 General

Sampling shall be carried out as specified in 3.2 to 3.4 taking into account the need to minimize moisture and carbon dioxide absorption. Samples shall therefore be transported and stored in air-tight containers and all the handling shall be carried out as quickly as possible.

3.2 Sampling of powdered material

Sampling shall be carried out in accordance with EN 196-7.

3.3 Sampling of granular material

Sampling shall be carried out in accordance with EN 932-1.

3.4 Sampling of lime putty and milk of lime

The spot sample size shall be (10 ± 5) dm³.

Where lime putty or milk of lime is sampled, the increments shall be blended thoroughly.

20/5