



Institut luxembourgeois de la normalisation  
de l'accréditation, de la sécurité et qualité  
des produits et services

**ILNAS-EN 13454-2:2003+A1:2007**

**Binders, composite binders and  
factory made mixtures for floor  
screeds based on calcium sulfate - Part  
2: Test methods**

Calciumsulfat-Binder, Calciumsulfat-  
Compositbinder und Calciumsulfat-  
Werkmörtel für Estriche - Teil 2:  
Prüfverfahren

Liants, liants composites et mélanges  
fabriqués en usine à base de sulfate de  
calcium pour chapes de sol - Partie 2:  
Méthodes d'essai

**07/2007**



## National Foreword

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## Binders, composite binders and factory made mixtures for floor screeds based on calcium sulfate - Part 2: Test methods

Liants, liants composites et mélanges fabriqués en usine à base de sulfate de calcium pour chapes de sol - Partie 2: Méthodes d'essai

Calciumsulfat-Binder, Calciumsulfat-Compositbinder und Calciumsulfat-Werkmörtel für Estriche - Teil 2: Prüfverfahren

This European Standard was approved by CEN on 1 September 2003 and includes Amendment 1 approved by CEN on 22 June 2007.

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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 Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, 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.



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## Foreword

This document (EN 13454-2:2003+A1:2007) has been prepared by Technical Committee CEN/TC 241 "Gypsum and gypsum based products", the secretariat of which is held by AFNOR.

This document shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by January 2008 and conflicting national standards shall be withdrawn at the latest by January 2008.

This document includes Amendment 1 approved by CEN on 2007-06-22.

This document supersedes EN 13454-2:2003.

The start and finish of text introduced or altered by amendment is indicated in the text by tags **A1** **A1**.

**A1** deleted text **A1**

The European Standard EN 13454 for binders, composite binders and factory made mixtures for floor screeds based on calcium sulfate consists of two parts:

*Part 1: Definitions and requirements*

*Part 2: Test methods*

The requirements in prEN 13454-1 are based on the results of tests according to EN 13454-2 on binders, composite binders and factory made mixtures for floor screeds based on calcium sulfate.

This European Standard describes test methods for binders, composite binders and factory made mixtures where the principal active component is calcium sulfate.

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, 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.

## 1 Scope

This European Standard describes the test methods for binders and composite binders for floor screeds based on calcium sulfate specified in prEN 13454-1.

This European Standard describes the test methods for factory made mixtures for floor screeds based on calcium sulfate specified in EN 13813.

This European Standard describes reference test methods. If other than these methods and conditions are used, it is necessary to show that they give results equivalent to those given by the reference methods. In the event of a dispute, only the reference test method is used.

## 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 196-1:2005 <sup>A1</sup>, *Methods of testing cement – Part 1 : Determination of strength*

EN 196-3:2005, *Methods of testing cement - Part 3: Determination of setting times and soundness* <sup>A1</sup>

EN 196-7:1989, *Methods of testing cement – Part 7: Methods of taking and preparing samples of cement*

EN 459-2:2001, *Building lime – Part 2: Test methods*

EN 13813, *Screed material and floor screeds - Screed material - Properties and requirements*

EN 13892-1, *Methods of test for screed materials - Part 1: Sampling, making and curing specimens for test*

## 3 Test conditions and sampling

### 3.1 General requirements for testing

#### 3.1.1 Water

The water used for testing and chemical analyses shall be distilled or deionised.

Unless otherwise specified, the water temperature shall be the same as the air temperature in the laboratory.

#### 3.1.2 Apparatus

The apparatus used for gauging and the moulds used for preparing the test specimens, shall be free from leaks and shall be manufactured from a water proof material which is non reactive to calcium sulfate (e.g. glass, brass, stainless steel, hardened steel, hard rubber and plastics etc.).

Since the characteristics of calcium sulfate are strongly influenced by the presence of particles of calcium sulfate dihydrate which can influence the setting time, all equipment used in the tests shall be kept in a perfect state of cleanliness.

### 3.2 Sampling for binders (CAB, CAC)

Sampling for binders shall be carried out in accordance with EN 196-7 and EN 459-2.

### 3.3 Sampling for factory made mixtures (CA)

Sampling for factory made mixtures shall be carried out in accordance with EN 13892-1. The composition of samples shall always be representative of the average composition of the material, the possibility of segregation being taken into consideration. The test report shall state whether the samples taken are spot samples or composite samples (See 3.6 and 3.7 of EN 196-7:1989).

Samples which are likely to change in air shall be placed in airtight containers, such as cans, immediately after they have been taken.

Wherever possible tests shall be carried out on specimens prepared immediately after obtaining the sample, if necessary on site. Specimens shall be prepared during working time but not later than 2 h after gauging. This period shall also be observed when fresh samples are supplied to a testing centre, and may be appropriately decreased or increased for samples containing accelerators or retarders.

If transportation of fresh samples cannot be avoided, they shall be supplied immediately for testing, accompanied by a certificate stating which tests are to be carried out, and protected from changes, such as loss of water, entry of water etc., as may occur during transportation. Specimens shall be prepared immediately on receipt of the sample, after the sample has been mixed again manually.

Specimens shall be prepared within the working time after gauging. For this reason, they shall as a rule (e.g. when prepared in situ) be stored under vibration-free conditions and protected from climatic effects (e.g. frigobox etc.) for at least 24 h before they are conveyed in the moulds for testing. If special requirements in respect of the preparation and storage of the particular sample are specified for the tests envisaged these shall be observed.

## 4 Test methods for binders (CAB ; CAC)

### 4.1 Content of calcium sulfate

#### 4.1.1 Principle

The calcium sulfate is decomposed by digestion with hydrochloric acid solution. Insoluble impurities are removed by filtration. The sulfate in the filtrate is determined gravimetrically as barium sulfate.

#### 4.1.2 Apparatus

- a) Sieve 0,1 mm mesh.
- b) 600 ml and 800 ml beakers.
- c) Rapid filtration funnels.
- d) Muffle furnace.
- e) Ignition crucible, porosity 4.
- f) Filter paper capable of retaining particles greater than 2,5 µm.
- g) Porous porcelain or silica crucible.