



SLOVENSKI STANDARD
SIST EN 13409:2002
01-september-2002

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Methods of test for hydraulic setting floor smoothing and/or levelling compounds -
Determination of setting time

Prüfverfahren für hydraulisch erhärtende Boden-Spachtelmassen - Bestimmung der
Abbindezeit

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Méthodes d'essai pour les mortiers de lissage et/ou d'égalisation a prise hydraulique -
Détermination du temps de prise

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Ta slovenski standard je istoveten z: EN 13409:2002

ICS:

91.100.99 Drugi gradbeni materiali Other construction materials

SIST EN 13409:2002 **en**

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EUROPEAN STANDARD

EN 13409

NORME EUROPÉENNE

EUROPÄISCHE NORM

March 2002

ICS 91.100.99

English version

Methods of test for hydraulic setting floor smoothing and/or levelling compounds - Determination of setting time

Méthodes d'essai pour les mortiers de lissage et/ou d'égalisation à prise hydraulique - Détermination du temps de prise

Prüfverfahren für hydraulisch erhärtende Boden-Spachtelmassen - Bestimmung der Abbindezeit

This European Standard was approved by CEN on 30 December 2001.

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

Management Centre: rue de Stassart, 36 B-1050 Brussels

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Foreword

This document EN 13409:2002 has been prepared by Technical Committee CEN/TC 193 "Adhesives", the secretariat of which is held by AENOR.

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 2002, and conflicting national standards shall be withdrawn at the latest by September 2002.

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.

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EN 13409:2002 (E)**1 Scope**

This European Standard specifies the measurement of setting time of a hydraulic setting smoothing and/or levelling compound which is referred to as "smoothing and/or levelling compound", after mixing.

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 196-3, *Methods of testing cement - Part 3: Determination of setting time and soundness.*

EN 1937, *Test method for hydraulic setting floor smoothing and/or levelling compounds - Standard mixing procedures.*

ISO 554, *Standard atmospheres for conditioning and/or testing - Specifications.*

3 Terms and definitions

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For the purposes of this European Standard, the following term and definition and those given in EN 1937 apply.

3.1 setting

process of transition from plastic to solid state characterised by the initial and final penetration times

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4 Principle

The setting time is determined by observing the penetration of a needle into the smoothing and/or levelling compound mixture and recording the time for a given penetration value.

5 Safety

Persons using this standard shall be familiar with normal laboratory practice.

This standard does not purport to address all the safety problems, if any, associated with its use.

It is the responsibility of the user to establish safety and health practices and to ensure compliance with any European or national regulatory conditions.

6 Standard test conditions

The standard test conditions shall be (23 ± 2) °C and (50 ± 5) % relative humidity in accordance with ISO 554.

All test materials and apparatus shall be stored under these conditions for the duration of the test.

The tests shall be carried out in an area where the air circulation is less than 0,2 m/s.

7 Apparatus and materials

7.1 Vicat apparatus, in accordance with EN 196-3 (see Figure 1) with a steel needle, length (50 ± 1) mm, diameter $(1,13 \pm 0,05)$ mm, and attachment made from corrosion resistant metal.

The total mass of the moving parts shall be (300 ± 1) g. Their movement shall be truly vertical on an axis coincident with the steel needle and without significant friction.

7.2 Mould (see Figure 1a)), containing the mixture under test shall be made of hard rubber. It shall be of truncated conical form $(40,0 \pm 0,2)$ mm deep and shall have internal diameters at top and bottom of (70 ± 5) mm and (80 ± 5) mm respectively.

The apparatus shall be sufficiently rigid and placed on a plane glass plate larger than the mould and at least 2,5 mm thick.

Moulds of metal or plastics or of cylindrical form can be used provided they are of the specified depth and that they can be shown to give the same test results as the specified hard rubber mould of truncated conical form.

7.3 Timer, accurate to 1 s.

7.4 Smoothing and/or levelling compound, in accordance with EN 1937.

8 Procedure

8.1 Calibration

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Calibrate the Vicat apparatus (7.1) with the needle (see Figure 1b)), attached in advance of the test by lowering the needle to rest on the base plate to be used. Adjust the pointer to zero. Raise the needle to the stand-by position.

8.2 Determination of initial setting time

Lightly grease the glass plate and the mould. When the standard mixing procedure is completed in accordance with EN 1937, fill the mould immediately without undue compaction or vibration and start the timer. Using a straight edge implement remove the excess with a gentle sawing action to leave a flat smooth surface.

Place the test specimen centrally under the needle.

When the smoothing and/or levelling compound mixture is showing signs of setting lower the needle gently until it is in contact with the surface. Pause in that position for between 1 s and 2 s in order to avoid initial velocity or forced acceleration of the moving parts.

Then release quickly and allow the needle to penetrate vertically into the smoothing and/or levelling compound.

Read the scale when penetration has ceased or after 30 s after the release of the needle whichever is earlier.

Record the scale reading which indicates the distance between the end of the needle and the base plate together with the time from zero.

Remove and clean the needle.

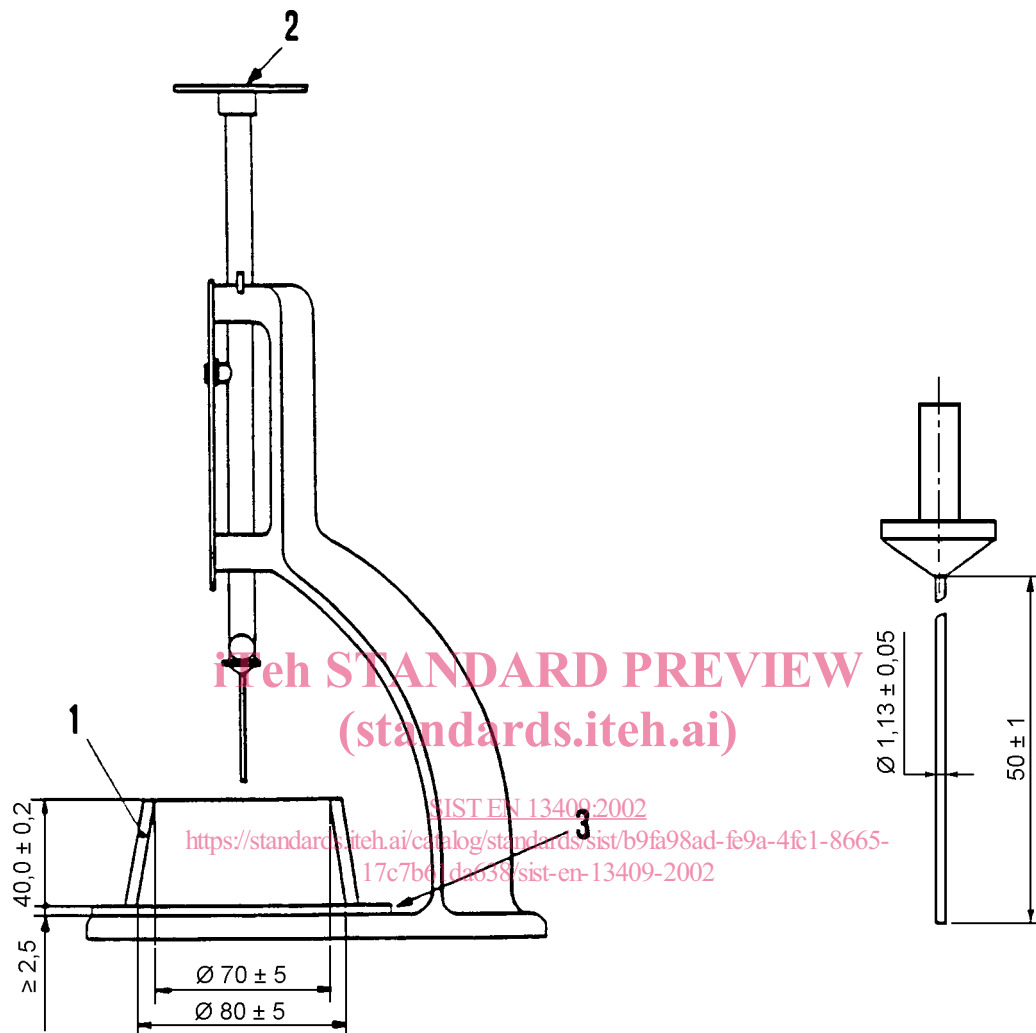
Reposition the test specimen so that the next point of penetration is at a distance greater than 10 mm from the edge or of any previous test.

Repeat at conveniently spaced time intervals, e. g. 5 min. until the scale reading is (4 ± 1) mm.

Time intervals near the end point should be reduced to ensure that successive test results do not vary excessively.

Record to the nearest minute the time at which this occurs together with any abnormalities such as separation.

Dimensions in millimetres

**Key**

- 1 Hard rubber mould
 - 2 Platform for correcting weights
 - 3 Glass plate
- a) Side view with mould for setting time determinations b) needle for determination of setting time

Figure 1 — Vicat apparatus for determining setting times**8.3 Determination of final setting time**

Continue with the procedure in 8.2 until the needle penetrates the compound by 0,5 mm.

Time intervals near the end point should be reduced to ensure that successive test results do not vary excessively.