SLOVENSKI STANDARD
SIST EN 12808-4:2009

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Lepila in fugirne malte za ploščice - 4. del: Ugotavljanje skrčka

Grouts for tiles - Part 4: Determination of shrinkage

Klebstoffe und Fugenmörtel für Fliesen und Platten - Teil 4: Bestimmung der Schwindung

Mortiers de joints pour carrelages - Partie 4: Détermination du retrait

Ta slovenski standard je istoveten z: EN 12808-4:2009

ICS:

83.180	Lepila	Adhesives
91.100.10	Cement. Mavec. Apno. Malta	Cement. Gypsum. Lime. Mortar
91.100.23	Keramične ploščice	Ceramic tiles

SIST EN 12808-4:2009 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 12808-4

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ICS 83.180; 91.100.10

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English Version

Grouts for tiles - Part 4: Determination of shrinkage

Mortiers de joints pour carrelages - Partie 4: Détermination du retrait

Klebstoffe und Fugenmörtel für Fliesen und Platten - Teil 4: Bestimmung der Schwindung

This European Standard was approved by CEN on 21 May 2009.

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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.

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

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Foreword

This document (EN 12808-4:2009) has been prepared by Technical Committee CEN/TC 67 “Ceramic tiles”, 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of an identical text or by endorsement, at the latest by January 2010, and conflicting national standards shall be withdrawn at the latest by January 2010.

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 12808-4:2001.

This document is one of a series of European Standards for ceramic tile adhesives including:

EN 1308, *Adhesives for tiles — Determination of slip*

EN 1323, *Adhesives for tiles — Concrete slabs for tests*

EN 1324, *Adhesives for tiles — Determination of shear adhesion strength of dispersion adhesives*

EN 1346, *Adhesives for tiles — Determination of open time*

EN 1347, *Adhesives for tiles — Determination of wetting capability*

EN 1348, *Adhesives for tiles — Determination of tensile adhesion strength for cementitious adhesives*

EN 12002, *Adhesives for tiles — Determination of transverse deformation for cementitious adhesives and grouts*

EN 12003, *Adhesive for tiles — Determination of shear adhesion strength of reaction resin adhesives*

EN 12004, *Adhesives for tiles — Requirements, evaluation of conformity, classification and designation*

EN 12808-1, *Grouts for tiles — Part 1: Determination of chemical resistance of reaction resin mortars*

EN 12808-2, *Grouts for tiles — Part 2: Determination of resistance to abrasion*

EN 12808-3, *Grouts for tiles — Part 3: Determination of flexural and compressive strength*

EN 12808-4, *Grouts for tiles — Part 4: Determination of shrinkage*

EN 12808-5, *Grouts for tiles — Part 5: Determination of water absorption*

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 the United Kingdom.

1 Scope

This European Standard applies to all ceramic tile grouts for internal and external tile installations on walls and floors.

This European Standard specifies the test method to be used to determine the shrinkage of ceramic tile grouts.

This European Standard does not contain performance requirements or recommendations for the design and installation of ceramic tiles.

NOTE Ceramic tile grouts can also be used for other types of tiles (natural and agglomerated stones, etc.), where these do not adversely affect the stones.

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, *Methods of testing cement — Part 1: Determination of strength*

EN 1067, *Adhesives — Examination and preparation of samples for testing*

EN ISO 15605, *Adhesives — Sampling (ISO 15605:2000)*

3 Sampling

Take a sample of at least 2 kg of the product to be tested in accordance with EN ISO 15605 and EN 1067.

4 Test conditions

Standard conditions shall be (23 ± 2) °C and (50 ± 5) % R.H. and a speed of air in the working area less than 0,2 m/s.

5 Test materials

Condition all test materials for at least 24 h under standard conditions.

6 Apparatus

6.1 Moulds, used to prepare prismatic specimens 40 mm x 40 mm x 160 mm (three-gang mould), with ground surfaces, made of steel, in accordance with EN 196-1. Holes for fitting suitable pins shall be drilled into the ends of the sides of the moulds corresponding to the ends of test specimen (see Figure 1).

Moulds provided with internal dimensions (10 ± 0,5) mm width, (40 ± 0,5) mm depth and (160 ± 1) mm length, to enable three specimens to be prepared simultaneously; either:

a) moulds with horizontal compartments 10 mm x 40 mm x 160 mm (see EN 196-1 in principle) or

b) moulds in accordance with EN 196-1 with horizontal compartments 10 mm x 40 mm x 160 mm and width reducing plastic or metal inserts,

two for each mould.

6.2 Six smooth, rigid, non-absorbent frames (e.g. in polyethylene or PTFE) to be inserted, with dimensions of 40 mm x 160 mm and thickness of 15 mm.

6.3 Jolting apparatus or jolting table used for the compaction of 10 mm x 40 mm x 160 mm grout specimen; in accordance with EN 196-1.

6.4 Measuring apparatus that shall consist of a measurement attachment and a base with adjustment screws. The measurement attachment shall be formed either by an analogue or digital gauge, which reads accurately to 0,01 mm, rigidly mounted in a measuring frame (see Figures 2, 3 and 4).

6.5 Calibration rod or reference rod that shall be used as a standard length against which gauge readings can be tested. The rod shall be made of material having a negligible coefficient of expansion (e.g. Invar).

7 Procedure

7.1 Mixing of grouts

The amount of water and/or liquid admix required for preparing the cementitious grout shall be as stated by the manufacturer in parts by mass, i.e. liquid to dry powder.

Prepare at least 2 kg of the grout in a mixer of the type described in EN 196-1, using the slow speed settings, (140 ± 5) r/min rotation and (62 ± 5) r/min planetary movement.

Carry out the following procedure:

— pour the liquid into the pan;

— scatter the dry powder over the liquid;

— mix for 30 s;

— take out the mixing paddle;

— scrape down the paddle and pan within 1 min;

— replace the paddle and mix for 1 min.

Let the grout mature if and as specified in the manufacturer's instructions, and then mix for a further 15 s.

In the case of reaction resin grouts follow the manufacturer's instructions.

7.2 Preparation of test specimens

Insert two non-absorbent frames at the sides of each compartment of the mould, to reduce the width to 10 mm. Apply a thin layer of release agent to the internal faces of the mould.

Mould the specimens immediately after the preparation of the grout, with the mould firmly clamped to the jolting table.

Introduce, using a suitable scoop, the first of two layers of grout into each of the compartments, directly from the mixing bowl. Spread the layer uniformly, then compact using 60 jolts.

Introduce the second layer of grout, level and compact with a further 60 jolts.

Lift the mould gently from the jolting table, strike off excess of material and smooth the surface with a flat trowel.

Wipe off the grout left on the perimeter of the mould. Cover with a glass plate according to EN 196-1.

Place the mould, suitably identified, on a horizontal base in standard conditions, (23 ± 2) °C and (50 ± 5) % R.H.

After 24 h remove carefully the specimen from the mould and determine with the measuring apparatus (6.4) the length of the test sample (initial reading).

Keep the demoulded prism in standard conditions leaving a clearance of at least 25 mm on all sides.

Prepare three specimens for each grout.

7.3 Test procedure

Take the reading of each specimen 27 days ± 12 h after the initial reading.

8 Evaluation of results

The linear shrinkage is evaluated in mm/m as the mean of three values based on the initial measurement.

9 Test report

The test report shall provide the following information:

c) number, title and issue of this European Standard;

d) place and date of sampling;

e) type of grout, commercial designation and manufacturer name;

f) identification of the test sample;

g) handling and storage of samples before testing;

h) test conditions;

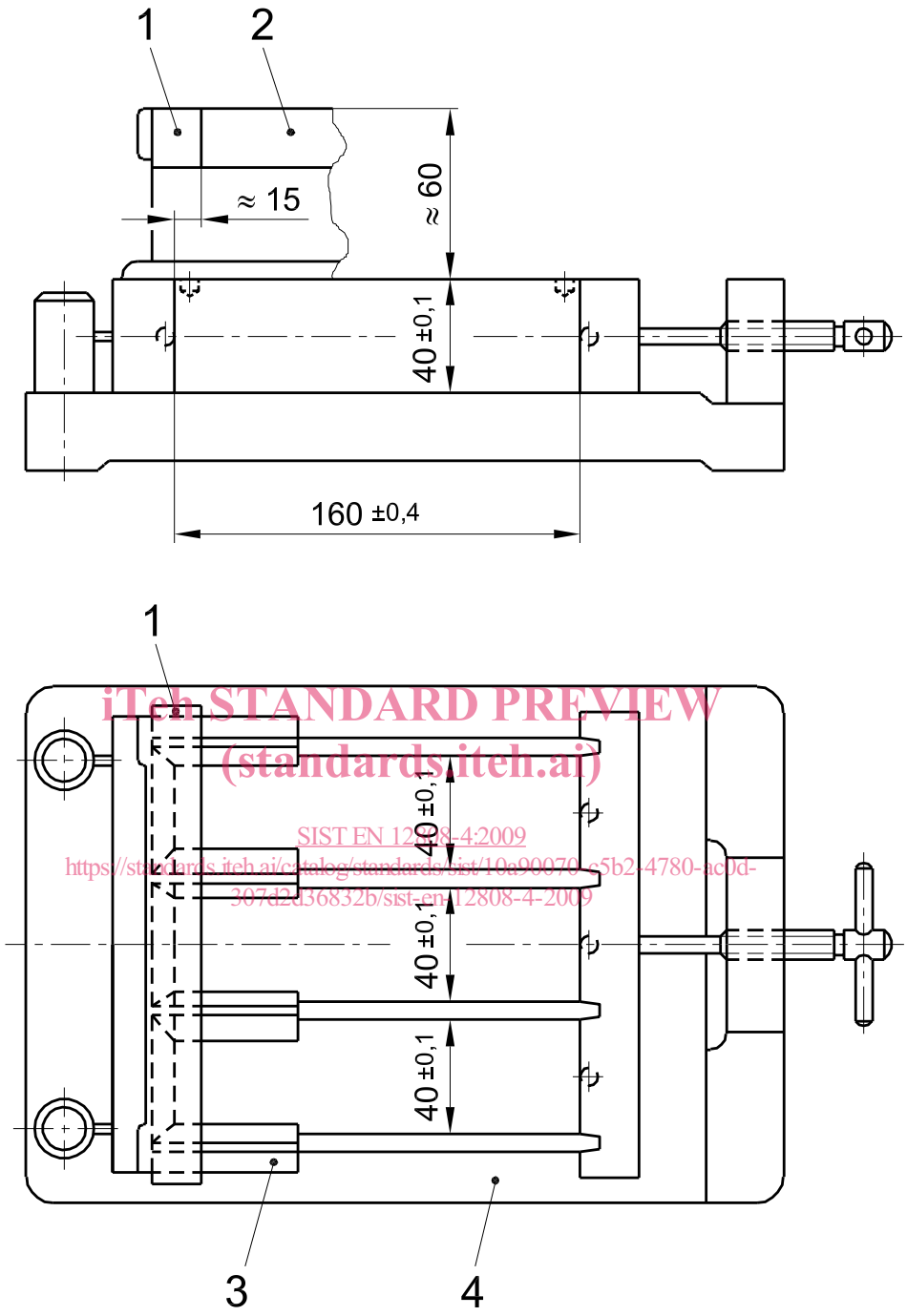
i) date of testing;

j) amount of water or liquid used for preparing the grout;

k) test results (individual and means values) in mm/m;

l) any other factor that could have influenced the result.

Dimensions in millimetres



Key

1 Cover strip
2 Top frame internal width (39,6 ± 0,2) mm
3 With top frame
4 Without top frame

Figure 1 — Three gang mould used to prepare prismatic specimens 40 mm x 40 mm x 160 mm