BRITISH STANDARD

BS EN
12808-5:2008

Grouts for tiles

Part 5: Determination of water absorption

ICS 91.100.10

BSI
British Standards

National foreword

This British Standard is the UK implementation of EN 12808-5:2008. It supersedes BS EN 12808-5:2002 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee B/539, Ceramic tiles and other rigid tiling.

A list of organizations represented on this committee can be obtained on request to its secretary.

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This British Standard was published under the authority of the Standards Policy and Strategy Committee on 30 November 2008

ISBN 978 0 580 61259 6

Amendments/corrigenda issued since publication

Date	Comments

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 12808-5

October 2008

ICS 91.100.10

Supersedes EN 12808-5:2001

English Version

Grouts for tiles - Part 5: Determination of water absorption

Mortiers de joints pour carrelage - Partie 5: Détermination de l'absorption d'eau

Mörtel und Klebstoffe für Fliesen und Platten - Teil 5: Bestimmung der Wasseraufnahme

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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

Ref. No. EN 12808-5:2008: E

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Foreword

This document (EN 12808-5:2008) 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of an identical text or by endorsement, at the latest by April 2009, and conflicting national standards shall be withdrawn at the latest by April 2009.

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 12808-5:2001.

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, G*routs 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*

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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 water absorption coefficient due to capillary action when the grout surface contacts the water without any additional pressure. The coefficient is measured by means of prisms.

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

NOTE Ceramic tile grouts may 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 196-1:2005, *Method 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 Three gang mould with ground surfaces, made of steel, used for the preparation of 40 mm x 40 mm x 160 mm prisms, in accordance with Clause 4.5 of EN 196-1:2005.

6.2 Jolting apparatus or jolting table used for the compaction of 40 mm x 40 mm x 160 mm grout specimen, in accordance with Clause 4.6 of EN 196-1:2005.

6.3 Tray with a flat base, large enough to contain three test specimens.

7 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 weight, i.e. liquid to dry powder.

Prepare at least 2 kg of the grout in a mixer of the type described in Clause 4.4 of EN 196-1:2005, 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.

8 Preparation of test specimens

Insert a 1 mm thick, rigid, plastic (e.g. PTFE) or metal divider into each compartment of the mould, approximately in the middle, parallel to the ends.

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 the mould 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 carefully remove the specimen from the mould.

Keep the demoulded prisms for 27 days in standard conditions leaving a clearance of at least 25 mm on all sides.

Prepare six specimens for each grout.

9 Conditioning

The test units are conditioned for 27 days in standard conditions, (23 ± 2) °C and (50 ± 5) % R.H.

10 Test procedure

After 21 days from manufacture seal the side faces by means of a neutral curing silicone sealant so as to be water impermeable.

After 28 days from manufacture, weigh, with 0,1 g precision, each test sample and then place them in the tray, with the upper surface down, immersed in water, 5 mm to 10 mm deep, taking care to prevent the prism faces from coming in contact with each other.

Maintain the water level constant by adding water when necessary.

After 30 min remove the test samples from water, quickly dry them by blotting with a dampened cloth and immediately weigh. Replace in the tray and repeat the procedure after 210 min.

11 Evaluation and expression of results

Calculate the water absorption, in grams, after 30 min and 240 min of each sample using the following formula:

$$W_{mt} = \mathrm{m_t} - \mathrm{m_d}$$

where:

W_{mt} is the water absorption, in grams;

m_d is the mass of the dry specimen, in grams;

m_t is the mass of the specimen after immersion, in grams.

Calculate the mean of at least three test samples.

12 Test report

The test report shall provide the following information:

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

b) place and date of sampling;

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

d) identification of the test sample;

e) handling and storage of samples before testing;

f) test conditions;

g) date of testing;

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

i) test results (water absorption, individual and mean values after 30 min and 240 min);

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

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BSI Group
Headquarters 389
Chiswick High Road,
London, W4 4AL, UK
Tel +44 (0)20 8996 9001
Fax +44 (0)20 8996 7001
www.bsigroup.com/
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