



SLOVENSKI STANDARD
SIST EN 1348:1998
01-april-1998

Adhezije za ploščice - Določitev trdnosti adhezije za cementne adhezije

Adhesives for tiles - Determination of tensile adhesion strength for cementitious adhesives

Mörtel und Klebstoffe für Fliesen und Platten - Bestimmung der Haftfestigkeit zementhaltiger Mörtel für innen und außen

Colles a carrelage - Détermination de l'adhérence par traction des mortiers-colles

STANDARD PREVIEW
(standards.iteh.ai)

Ta slovenski standard je istoveten z: EN 1348:1997

<https://standards.iteh.ai/catalog/standards/sist/df01dde5-66d0-4000-bacb-507eedcd5fc/sist-en-1348-1998>

ICS:

83.180	Lepila	Adhesives
91.100.10	Cement. Mavec. Apno. Malta	Cement. Gypsum. Lime. Mortar

SIST EN 1348:1998

en

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 1348:1998

<https://standards.iteh.ai/catalog/standards/sist/df01dde5-66d0-4000-bacb-507eedccd5fe/sist-en-1348-1998>

EUROPEAN STANDARD

EN 1348

NORME EUROPÉENNE

EUROPÄISCHE NORM

February 1997

ICS 83.180; 91.100.10

Descriptors: tiles, floor coverings, wall coverings, glue, tests, testing conditions, preparation, mortars : material, hydraulic binders, determination, tear strength

English version

Adhesives for tiles - Determination of tensile adhesion strength for cementitious adhesives

Colles à carrelage - Détermination de
l'adhérence par traction des mortiers-colles

Mörtel und Klebstoffe für Fliesen und Platten
- Bestimmung der Haftfestigkeit zementhaltiger
Mörtel für innen und außen

This European Standard was approved by CEN on 1996-12-05. 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 Central Secretariat or to any CEN member.

The European Standards exist 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 Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

	Page
Foreword	3
1 Scope	4
2 Normative references	4
3 Sampling	4
4 Test conditions	4
5 Test materials	4
6 Apparatus	5
7 Mixing of adhesive	5
8 Procedure	5
9 Evaluation and expression of results	7
10 Test report	7

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 1348:1998](https://standards.iteh.ai/catalog/standards/sist/df01dde5-66d0-4000-bacb-507eedccd5fe/sist-en-1348-1998)

<https://standards.iteh.ai/catalog/standards/sist/df01dde5-66d0-4000-bacb-507eedccd5fe/sist-en-1348-1998>

Foreword

This European Standard 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 August 1997, and conflicting national standards shall be withdrawn at the latest by August 1997.

This Standard is one of the series of standards for tests on tile adhesives including:

EN 1308	Adhesives for tiles - Determination of slip
EN 1322	Adhesives for tiles - Definitions and terminology
EN 1323	Adhesives for tiles - Concrete slab for test
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
prEN 12002	Adhesives for tiles - Determination of transverse deformation for cementitious adhesives and grouts
prEN 12003	Adhesives for tiles - Determination of shear adhesion strength of reaction resin adhesives

It is intended that other ENs should call up EN 1348 test methods as the basis of evaluation of conformity. (Nevertheless it is not intended that all adhesives for tiles should be subjected regularly to all the listed tests. Specifications in other standards should call up only relevant test methods).

No existing European Standard is superseded.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 1348:1998](#)

<https://standards.iteh.ai/catalog/standards/sist/df01dde5-66d0-4000-bacb-507eedccd5fe/sist-en-1348-1998>

1 Scope

This European Standard specifies a method for the determination of the tensile adhesion strength of cementitious ceramic tile adhesives.

This European standard is applicable to all cementitious adhesives and cementitious adhesives with separate components for internal and external ceramic tile installations on walls and floors.

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

NOTE: ceramic tile adhesives can be used also for other kinds of tiles (natural and agglomerated stones, etc.), where these do not adversely affect the stones.

2 Normative References

This draft 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.

EN 176	Dust-pressed ceramic tiles with low water absorption ($E^23\%$) - Group BI
EN 196-1:1994	Method of testing cement - Determination of strength
prEN 1066	Adhesives - Sampling
prEN 1067	Adhesives - Examination and preparation of samples for testing
EN 1322	Adhesives for tiles- Definitions and terminology
EN 1323	Adhesives for tiles - Concrete slab for test

3 Sampling

Take, at least, 2 kg test sample of the adhesive in accordance with prEN 1066 and prEN 1067.

4 Test conditions

Standard conditions shall be $(23 \pm 2)^\circ\text{C}$ and $(50 \pm 5)\%$ relative humidity and a circulation of air in the testing area of less than 0,2 m/s.

5 Test materials

5.1 General

Condition all test materials (adhesive, etc.) to be tested for at least 24 h under standard conditions. The adhesive to be tested shall be within its shelf life, where this is specified.

5.2 Ceramic tiles

The tiles shall be checked prior to conditioning to ensure that they are new, clean, dry and of the following type of tile :

type V1: fully vitrified tile complying with EN 176, with a water absorption ² of 0,2% by mass, unglazed and with a plane adhering surface, with facial dimensions of (50 ± 1) mm x (50 ± 1) mm.

5.3 Concrete slab

The concrete slab shall comply with EN 1323.

6 Apparatus

6.1 Weight

A weight of less than 50 mm x 50 mm cross sectional area capable of exerting a force of $(20 \pm 0,05)$ N.

6.2 Pull head plates

Square metallic plates, with dimensions of (50 ± 1) mm x (50 ± 1) mm and a minimum thickness of 10 mm with a suitable fitting for connection to the test machine.

6.3 Tensile testing machine

A test machine for direct pull tensile force test and with suitable capacity and sensitivity for the test. The machine shall be capable of applying the load to the pull-head plate at the rate of (250 ± 50) N/s through a suitable fitting that does not exert any bending force.

6.4 Air-circulating oven

An air circulating oven capable of controlling the temperature to within ± 2 °C.

7 Mixing of the adhesive

The amount of water and/or liquid admix, required for preparing the adhesive, shall be as stated by the manufacturer in proportion to weight (e.g. the amount of liquid, in kilos and the amount of powder, in kilos, to be mixed, shall be declared). If a range of values is given, the average shall be used.

A minimum quantity of 2 kg of the adhesive shall be prepared in a mixer of the type described in 4.4 of EN 196-1:1994, using the slow speed settings, (140 ± 5) min⁻¹ and (62 ± 5) min⁻¹ 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 adhesive mature in accordance with the adhesive manufacturer's instructions, followed by further mixing for 15 s.

8 Procedure

8.1 Preparation of test units

Apply a thin layer of the adhesive, mixed in accordance with clause 7, to the concrete slab with a straight edge trowel. Then apply a thicker layer and comb with a notched trowel having 6 mm x 6 mm notches at 12 mm centres.

The trowel shall be held at an angle of approximately 60° to the substrate at a right angle to one edge of the slab and drawn across the slab parallel to that edge (in a straight line).

After 5 min place ten type V1 tiles on the adhesive at a distance apart of 50 mm and load each tile with (20 ± 0,05) N for 30 s.

8.2 Initial adhesion

Prepare the test units in accordance with 8.1.

After a 27 days storage under standard conditions bond the pull head plates (see 6.2) to the tiles with a suitably high strength adhesive (e.g. epoxide).

After a further 24 h storage under standard conditions determine the tensile adhesion strength of the adhesive by applying a force at a constant rate of (250 ± 50) N/s.

If fast-setting properties of adhesives are to be tested, also determine the tensile adhesion strength 24 h after bonding, in standard conditions (4).

Report the results in newtons.

8.3 Adhesion strength after water immersion

Prepare the test units in accordance with 8.1.

Condition the test units in standard conditions for 7 days, and immerse in water at the standard temperature.

After 20 days remove the test units from the water, wipe with a cloth and bond the pull head plates (6.2) to the tiles. After a further 7 h immerse the test units in water at the standard temperature.

The following day remove the test units from water and immediately carry out the tensile adhesion test in accordance with 8.2.

Report the results in newtons.

8.4 Adhesion strength after heat ageing

Prepare the the test units in accordance with 8.1.

Condition the test units in standard conditions for 14 days and then place the units in an air-circulating oven at (70 ± 2)°C for a further 14 days. Remove from the oven and bond the pull head plates (6.2) to the tiles with a suitable high strength adhesive (e.g. epoxide).

Condition the test units for a further 24 h in standard conditions. Determine the tensile adhesion strength in accordance with 8.2.

Report the results in newtons.

8.5 Adhesion after freeze-thaw cycle

Prepare the test units in accordance with 8.1. In addition a layer of the adhesive approximately 1 mm thick shall be applied with a straight edged trowel to the back face of the type V1 tile before placing.

Condition the test units for 7 days in standard conditions and immerse in water for 21 days before carrying out 25 freeze-thaw cycles.