



SLOVENSKI STANDARD
oSIST prEN 17668:2021
01-julij-2021

Lepila za talne obloge - Priprava za nanašanje lepila - Preskusna metoda za ugotavljanje čezmerne vlage v podtalju

Adhesives for floor coverings - Preparation of adhesive application - Test method for the determination of excessive humidity in subfloors

Klebstoffe für Bodenbeläge - Vorbereitung des Klebstoffauftrags - Prüfverfahren zur Bestimmung des Restfeuchtigkeitsgehalts von Unterböden

Adhésifs pour revêtements de sol - Préparation de l'application d'adhésif - Méthode d'essai pour la détermination de l'humidité excessive dans les chapes

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Ta slovenski standard je istoveten z: prEN 17668

ICS:

83.180	Lepila	Adhesives
97.150	Talne obloge	Floor coverings

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EUROPEAN STANDARD
NORME EUROPÉENNE
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DRAFT
prEN 17668

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ICS 83.180

English Version

Adhesives for floor coverings - Preparation of adhesive application - Test method for the determination of excessive humidity in subfloors

Adhésifs pour revêtements de sol - Préparation de l'application d'adhésif - Méthode d'essai pour la détermination de l'humidité excessive dans les chapes

Klebstoffe für Bodenbeläge - Vorbereitung des Klebstoffauftrags - Prüfverfahren zur Bestimmung des Restfeuchtigkeitsgehalts von Unterböden

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 193.

If this draft becomes a European Standard, 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.

This draft European Standard was established by CEN 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-CENELEC Management Centre has the same status as the official versions.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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European foreword

This document (prEN 17668:2021) has been prepared by Technical Committee CEN/TC 193 “Adhesives”, the secretariat of which is held by UNE.

This document is currently submitted to the CEN Enquiry.

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Introduction

This document describes test methods for measuring humidity in a subfloor. Using these test methods will assist a floor layer in determining whether a floor is suitable to accept a levelling compound and/or an adhesive and a floor covering. High levels of humidity may lead to the (disruption of moisture sensitive levelling compounds or) breakdown and subsequent weakening of the adhesives used for the installation of the floor covering. The result is a reduction in adhesive strength and a negative impact on indoor air quality due to increased overall VOC emissions and bad odour. Using these test methods, a floor layer will be able to decide on the time at which the levelling compound and/or adhesive can be applied in order to help to avoid potential, moisture related problems. As stated in the scope, the test method will be independent of the subfloor material, not measuring a subfloor characteristic, but a subfloor condition.

This document supplements the national standards already described for determining the moisture conditions of concrete floors.

The material independent information regarding the moisture state is one of the outstanding advantages of these measurement methods. They provide highly reliable data to help to establish the readiness for installation, especially for screeds containing additives.

SAFETY WARNING — Persons using this document should be familiar with normal laboratory practice. The document cannot address all safety problems that may be associated with its application. It is the responsibility of the user to define measures for health and safety at work and ensure that these correspond with the European and national regulations.

ENVIRONMENTAL PROTECTION NOTE — The materials approved in this document can have negative effects on the environment. As soon as technological progress leads to better alternatives to these materials, they can be removed from the document as far as possible. At the end of the test, the user should ensure a suitable disposal of the waste corresponding to the regional conditions.

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1 Scope

This document specifies test methods for assessment of the moisture conditions of any kind of subfloor prior to the installation of levelling compounds and/or floor coverings or parquet floors bonded with adhesives. The methods are independent from subfloor chemical composition or materials and applicable with available equipment.

For some highly reactive cement based compositions (e.g. ternary systems) the manufacturer might recommend a specific time when the subfloor is ready to be covered.

This document describes the methods in detail and includes a protocol template for documenting the measured values.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 923:2015, *Adhesives — Terms and definitions*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 923:2015 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at <https://www.iso.org/obp>

— IEC Electropedia: available at <https://www.electropedia.org/>
<https://standards.iteh.ai/catalog/standards/sist/275662-3e48313cc93a/osist-pr-en-17668-2021>

3.1

moisture

presence of water in trace amounts

3.2

humidity

water vapour partial pressure present in air

3.3

relative humidity

RH

ratio of the partial pressure of water vapour to the equilibrium vapour pressure of water at a given temperature

Note 1 to entry: It is usually expressed as a percentage.

3.4

readiness for covering

state of a subfloor, when it is suitable for the permanent, damage- and defect-free installation of these coverings

prEN 17668:2021 (E)**3.5
corresponding relative humidity
CRH**

relative humidity in percent, which is present in the air above a sample of the material at or close to equilibrium

Note 1 to entry: The corresponding relative humidity is expressed in % RH or as the absolute number as water activity.

**3.6
hygrometer sample method**

assessment of the moisture state of a substrate by measuring the relative humidity in a container (e. g. polyethylene bag or flask) directly above a sample of the substrate

**3.7
hygrometer box method**

assessment of the moisture state of a substrate by measuring the relative humidity in a pocket of air entrapped between an impervious thermally insulated housing and the screed/concrete base

**3.8
hygrometer sleeve method**

assessment of the moisture state of a substrate by measuring the humidity inside predrilled boreholes within a sleeve with an opening at defined depth

**3.9
calibration**

comparison of the value measured by an instrument with a well-defined reference value, traceable and of an accuracy at least one class better than that of the measuring instrument

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Note 1 to entry: A calibration covering the whole working range of the measuring instrument provides a basis for an adjustment of the values measured by the instrument.

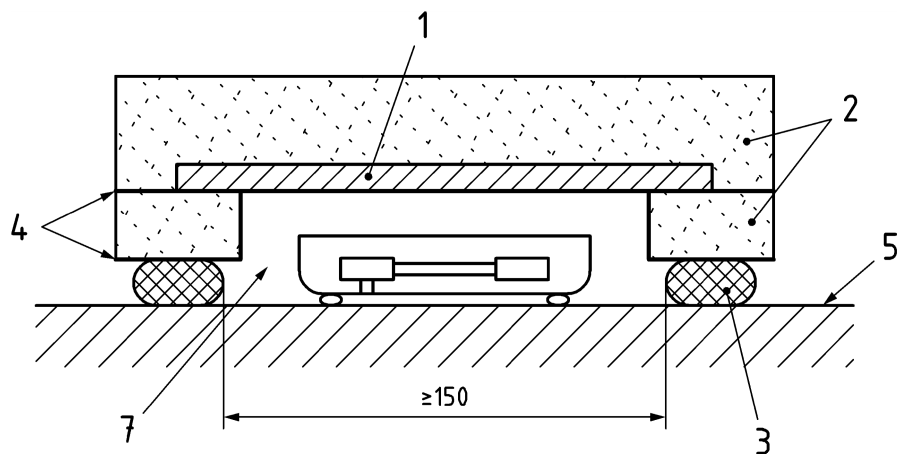
**3.10
drift**

change in the RH reading of an instrument at constant RH

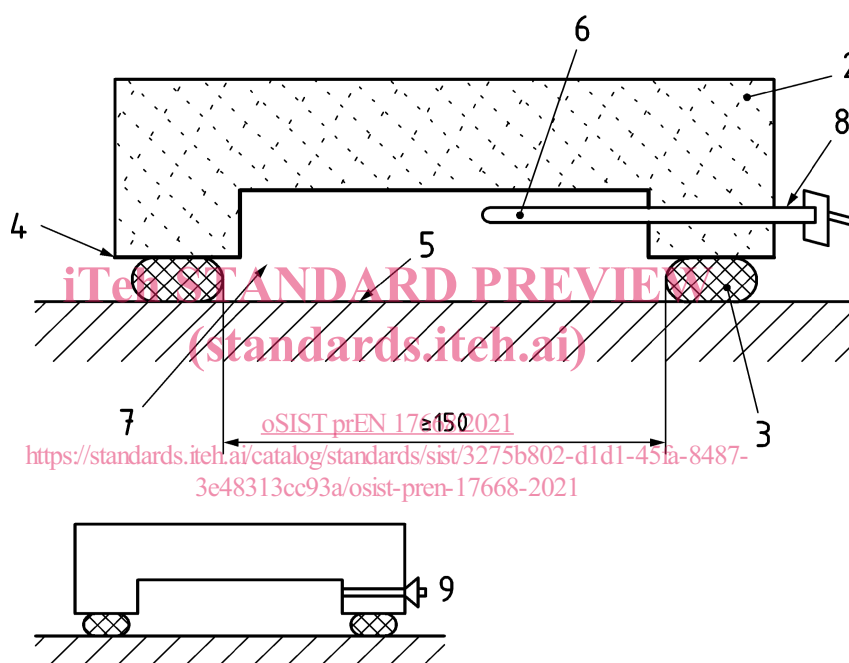
Note 1 to entry: With drift in an instrument the RH reading changes for the same RH as time goes by.

4 Apparatus**4.1 Hygrometer**

An instrument capable of measuring the temperature and relative humidity shall be used (see Figure 1). The instrument and sensors shall be suited for use in the field. After calibration, the instrument shall measure relative humidity to an accuracy of $\pm 3\%$ between 10 % RH to 90 % RH and temperature to an accuracy $\pm 0,1\text{ }^{\circ}\text{C}$.



a) Typical apparatus using hygrometer



b) Typical apparatus using RH probe

Key

- 1 window
- 2 insulation
- 3 butyl sealant
- 4 vapour barrier
- 5 floor
- 6 humidity measuring tip
- 7 air pocket
- 8 RH probe
- 9 plug

Figure 1 — Typical apparatus for the hygrometer box method (see [2])

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Light weight and small size measurement sensors are preferred to avoid measurement error related to temperature changes during measurement. Moisture transfer through measurement sensor from the borehole to surroundings shall be eliminated. Sensor response time should be applicable for the purpose. Measurement accuracy is normally lower than accuracy of sensor due to the measurement error sources during measurement.

NOTE Comparing commercially available hygrometers, significant differences were found in the following parameters:

- accuracy after 30 min;
- accuracy after 60 min;
- drift over a period of 5 weeks;
- suitability for building sites, i.e. measuring accuracy after intensive dusting with cement.

The instrument manufacturer should define the required values for reliable measurement.

4.2 Insulated impermeable box, which can be sealed to the floor surface to create an enclosed pocket of air which is isolated from fluctuations in humidity and temperature from outside air (examples of suitable equipment are shown in Figure 1).

It is essential that the insulated box is sealed to the floor using a preformed butyl sealant tape (4.3) and that readings can be taken while the apparatus is in position on the floor without breaking the seal and releasing the trapped pocket of air.

Other forms of apparatus may be suitable but the width of the quadratic area should not be less than 150 mm and it is essential that the principles of thermal insulation and vapour barrier are followed, so that an insulated vapour-proof space is created.

Suitable vapour barrier materials are sheet metal, glass, 2 mm thick clear acrylic sheet, or 2 mm thick PVC-U, and the apparatus should have a maximum heat transmission value of 1,0 W/(m²·K).

4.3 Preformed butyl sealant tape.

4.4 Adhesive tape.

4.5 Protective mats, rubber or polyethylene.

4.6 Hammer, chisel, bowl and spoon.

4.7 Rotary hammer drill and carbide drill, bit of appropriate diameter.

4.8 Vacuum cleaner with appropriate nozzle.

4.9 Measurement sleeve, plastic tube with the same outer diameter than the borehole of appropriate length (see Figure 4). Sensor manufacturers may also offer prefabricated measurement sleeves with additional properties to help installation in practise.

4.10 Water vapour impermeable sealant or putty.

4.11 Balance, with accuracy of ± 1 g.

4.12 Container for sampling: Polyethylene freezer bag with adhesive tape or suitable flask with volume of 100 ml to 300 ml.