SLOVENSKI STANDARD
SIST EN 1081:2019+A1:2020

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Netekstilne, laminirane (plastene) in večplastne talne obloge - Ugotavljanje električne upornosti

Resilient, laminate and modular multilayer floor coverings - Determination of the electrical resistance

Elastische, Laminat- und modulare mehrschichtige Bodenbeläge - Bestimmung des elektrischen Widerstandes

Revêtements de sol résilients, stratifiés et multicouches modulaires - Détermination de la résistance électrique

Ta slovenski standard je istoveten z: **EN 1081:2018+A1:2020**

ICS:

97.150	Talne obloge	Floor coverings

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EUROPEAN STANDARD

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Resilient, laminate and modular multilayer floor coverings - Determination of the electrical resistance

Revêtements de sol résilients, stratifiés et multicouches modulaires - Détermination de la résistance électrique

Elastische, Laminat- und modulare mehrschichtige Bodenbeläge - Bestimmung des elektrischen Widerstandes

This European Standard was approved by CEN on 1 July 2018 and includes Amendment approved by CEN on 10 August 2020.

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

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European foreword

This document (EN 1081:2018+A1:2020) has been prepared by Technical Committee CEN/TC 134 “Resilient, textile and laminate floor coverings”, the secretariat of which is held by NBN.

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of an identical text or by endorsement, at the latest by March 2021, and conflicting national standards shall be withdrawn at the latest by March 2021.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document includes Amendment 1 approved by CEN on 10 August 2020.

This document supersedes A1 EN 1081:2018 A1.

The start and finish of text introduced or altered by amendment is indicated in the text by tags A1 A1.

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, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

1 Scope

This document specifies test methods for determining:

a) the vertical resistance,

b) the resistance to earth,

c) the surface resistance

of a resilient, laminate and modular multilayer floor covering after installation in test piece or after installation.

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 62631-3-1, *Dielectric and resistive properties of solid insulating materials - Part 3-1: Determination of resistive properties (DC methods) - Volume resistance and volume resistivity - General method (IEC 62631-3-1)*

ISO 48, *Rubber, vulcanized or thermoplastic - Determination of hardness (hardness between 10 IRHD and 100 IRHD)*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

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

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp

3.1
vertical resistance R1
electrical resistance measured between a tripod electrode on the surface of a test piece and an electrode attached to the underside of the test piece

Note 1 to entry: See Figure 1 for tripod electrode and see Figure 2 for testing of vertical resistance.

3.2
resistance to earth R2
electrical resistance measured between a loaded tripod electrode on the surface of a laid floor covering and earth

3.3
surface resistance R3
electrical resistance measured between two tripod electrodes set up at a fixed distance of 100 mm apart on a laid floor covering

Note 1 to entry: See Figure 4 for the electrical resistance measured between two tripod electrodes and see Figure 3 for distance of 100 mm apart on a laid floor covering.

4 Sampling

For method A or when measurements are done in laboratory, take a representative sample from the whole of the available material. In the case of rolls, take approximately a third of the test pieces from the area close to the edges, the distance between the outer edge of the sample and the nearest edge of the roll being between 50 mm and 100 mm.

5 Apparatus and reagents

5.1 Tripod electrode

The tripod electrode (Figure 1) shall be capable of comprising a triangular aluminium plate with an insulating layer on the upper surface and three cylindrical feet of conductive rubber on the underside at a distance of 180 mm apart.

The rubber feet shall have a hardness in accordance with ISO 48 of 50 IRHD to 70 IRHD, and the electrical resistance of each rubber foot shall be less than 10^3 Ohm when tested between two metal surfaces.

NOTE A "soft electrode" such as that described above is able to provide a more intimate contact with a smooth floor covering and in practice this type of electrode has been found to be the most satisfactory.

5.2 Load

The load (F) shall be capable of exerting a minimum force of 300 N on the tripod electrode.

This can be achieved by using a person's body weight. In method C, one person may stand with a foot on each electrode.

5.3 Power supply

The power supply shall fulfil the requirements given in EN 62631-3-1.

5.4 Resistance meter

〈A1〉 The resistance meter shall fulfil the requirements given in EN 62631-3-1. It shall be calibrated to determine the resistance *R* of a floor covering to an accuracy of ± 5 % in the range 10^3 Ohm to 10^{11} Ohm and an accuracy of ± 10 % for greater than 10^{11} Ohm. The tolerances for the open circuit voltage shall be:

— 10 V ± 0,5 V for resistance below $1{,}0 \times 10^6$ Ω

— 100 V ± 5 V for resistance between $1{,}0 \times 10^6$ Ω and $1{,}0 \times 10^{11}$ Ω

— 500 V ± 25 V for resistance above $1{,}0 \times 10^{11}$ Ω

When implementing tests according to procedures 6.5, 7.4 and 8.4, start with the voltage set to 10 V, if the value exceeds 10^6 Ω, select 100 V and repeat the measurement. If the value for this second measurement exceeds 10^{11} Ω, select 500 V and make a final measurement. Record the reading which matches the voltage and resistance range specified above, if either of the following situations occur:

a) the measured resistance at 10 V is greater than $1{,}0 \times 10^6$ Ω and the measured resistance at 100 V is less than $1{,}0 \times 10^6$ Ω; or

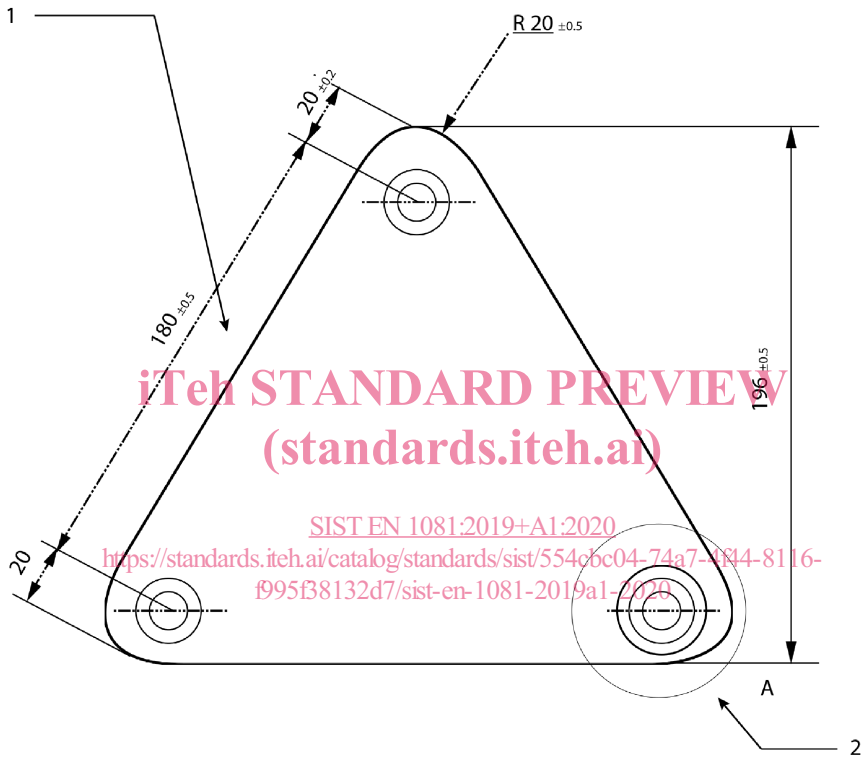
b) the measured resistance at 100 V is greater than $1{,}0 \times 10^{11}$ Ω and the measured resistance at 500 V is less than $1{,}0 \times 10^{11}$ Ω

then the resistance measurement made at the higher voltage level shall be recorded. A1

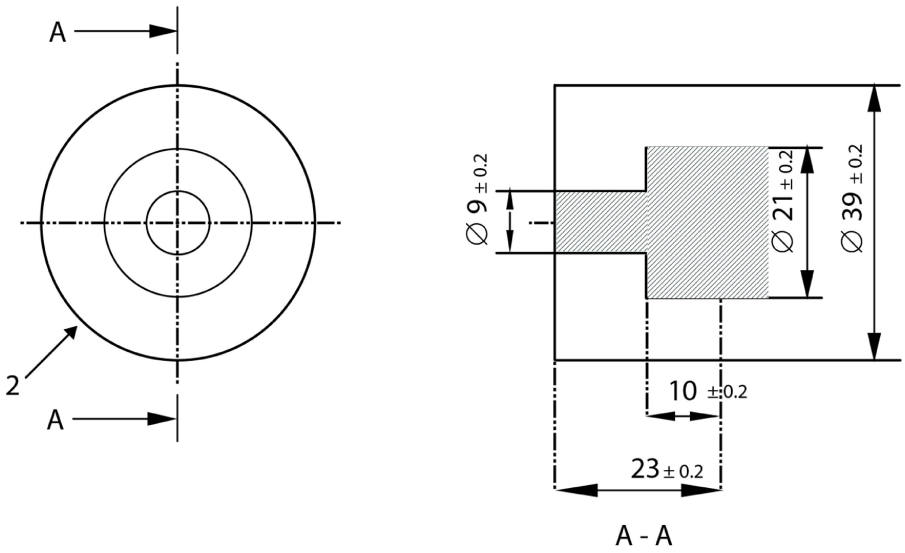
5.5 Temperature and humidity

The instruments for measuring temperature and humidity shall have an accuracy of ± 2 °C and of ± 5 %RH, respectively.

Dimensions in millimetres



a) Triangular pitch



b) Rubber foot

Key

1 triangular pitch

2 rubber foot

Figure 1 — Tripod electrode

6 Method A — For vertical resistance, R1

6.1 Principle

The vertical resistance between a surface electrode and an electrode attached to the underside of a test piece is measured using a defined voltage and a resistance meter.

6.2 Additional apparatus and reagents

6.2.1 Conductive underlay (base electrode)

The conductive underlay shall act as base electrode, e.g. a metal non-deformable plate, of dimensions larger than the test piece.

6.2.2 Reagents

Cleaning fluid, e.g. ethanol, isopropanol. Clean each rubber foot with cotton cloth and cleaning fluid. Wait at least 5 min and make sure that the feet are completely dry before testing.

6.3 Preparation of test pieces

Take either three tiles from a batch or three test pieces of minimum side length 400 mm from a sheet. Clean the test piece with cleaning fluid. Wait at least 30 min before proceeding to testing.

The test pieces should be placed on the front face of the floor covering during the test.