

SLOVENSKI STANDARD **oSIST prEN ISO 4918:2020**

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Netekstilne, tekstilne in laminatne talne obloge - Preskus s stolom na kolescih (ISO 4918:2016)

Resilient, textile and laminate floor coverings - Castor chair test (ISO 4918:2016)

Elastische, textile und Laminat-Bodenbeläge - Stuhlrollenversuch (ISO 4918:2016)

Revêtements de sol textiles, résilients ou stratifiés - Essai à l'appareil à roulettes (ISO 4918:2016)

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Talne obloge

Floor coverings

oSIST prEN ISO 4918:2020

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INTERNATIONAL STANDARD

**ISO
4918**

Second edition
2016-03-15

Resilient, textile and laminate floor coverings — Castor chair test

*Revêtements de sol textiles, résilients ou stratifiés — Essai à l'appareil
à roulettes*

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Contents

Page

Foreword	iv
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Principle	1
5 Apparatus	2
6 Materials	5
7 Sampling	5
7.1 Textile floor coverings	5
7.2 Resilient floor covering	6
7.3 Laminate floor coverings	6
8 Conditioning	7
8.1 Textile floor coverings	7
8.2 Resilient and laminate floor coverings	7
9 Procedure	7
9.1 Textile floor coverings	7
9.1.1 General	7
9.1.2 Mounting of the specimens	7
9.1.3 Verifications of the castors	7
9.1.4 Preparing of the apparatus	8
9.1.5 Test procedures for textile floor coverings	8
9.2 Resilient and laminate floor coverings	9
9.2.1 General	9
9.2.2 Mounting of the specimen	9
9.2.3 Verification of the castors	10
9.2.4 Preparing the apparatus	10
9.2.5 Test procedure for resilient and laminate floor coverings	10
10 Assessment	10
10.1 Textile floor coverings	10
10.1.1 General	10
10.1.2 Test A — Structural integrity assessment	11
10.1.3 Test A — Appearance retention assessment	11
10.1.4 Test B — Colour change assessment	11
10.1.5 Test C — Structural integrity assessment	11
10.2 Resilient floor coverings	11
10.2.1 Resilient floor covering with click joints for floating installation	11
10.3 Laminate floor coverings	11
11 Calculations and expression of results	12
11.1 Textile floor coverings	12
11.1.1 Optional results for textile floor coverings	12
11.2 Resilient floor coverings	12
11.3 Laminate floor coverings	12
12 Test report	12

ISO 4918:2016(E)

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 219, *Floor coverings*.

This second edition cancels and replaces the first edition (ISO 4918:2009), which has been technically revised.

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Resilient, textile and laminate floor coverings — Castor chair test

1 Scope

This International Standard specifies methods for determining the change of appearance and stability of a textile floor covering or any damage caused by detachment of layers, opening of joints, or crazing of a resilient or laminate floor covering under the movement of a castor chair.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 139, *Textiles — Standard atmospheres for conditioning and testing*

ISO 1957, *Machine-made textile floor coverings — Selection and cutting of specimens for physical tests*

ISO 2424, *Textile floor coverings — Vocabulary*

ISO 9405, *Textile floor coverings — Assessment of changes in appearance*

CEN/TS 16354, *Laminate floor coverings — Underlays — Specification, requirements and test methods*

EN 12466, *Resilient floor coverings — Vocabulary*
<https://standards.iteh.ai/catalog/standards/sist/4d00c03c-463f-441b-bceb-4918f4c55a4e/osist-pren-iso-4918-2020>

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 2424 and EN 12466 apply.

4 Principle

A floor covering, including one or more joints, treated or welded where necessary, is submitted for a prescribed number of cycles to the action of three castors. The castors move in epicyclical paths with multiple changes of direction, stops and starts, and the frequency of passage varies from area to area.

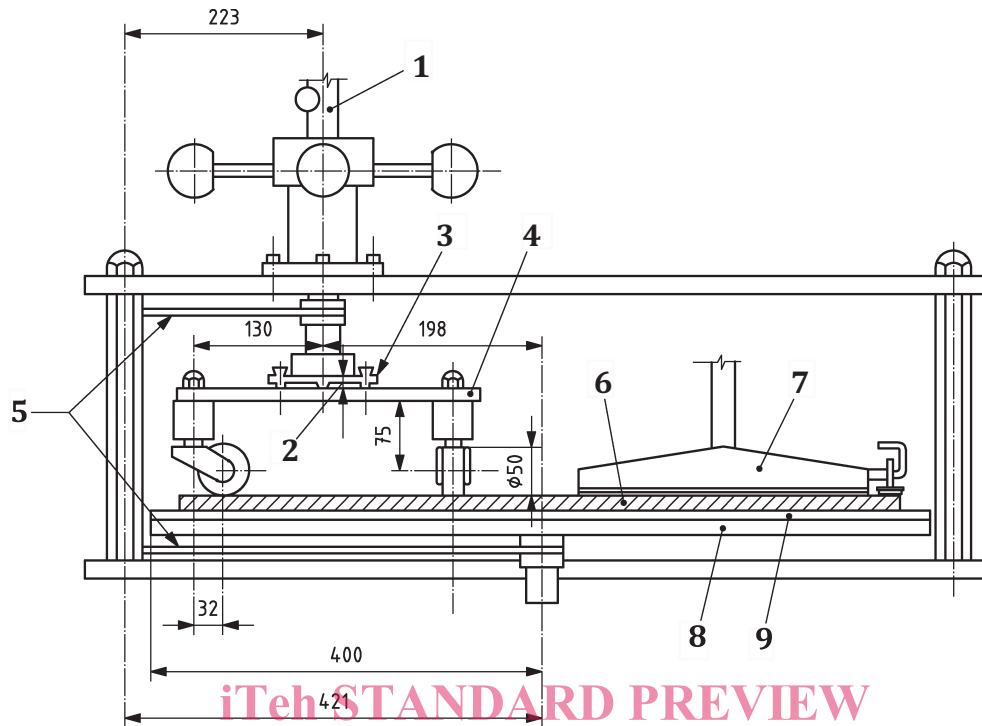
For textile floor coverings, three different assessment methods are specified:

- the change in appearance of a textile floor covering is assessed after 5 000 cycles and 25 000 cycles, in accordance with ISO 9405 (Test A),
- the change in colour is assessed by means of grey scales after 750 cycles (Test B),
- the extent of deterioration of the specimen is assessed after 10 000 cycles or 25 000 cycles (Test C).

For resilient and laminate floor coverings, any damage caused by detachment of layers, opening of joints, or crazing of the specimen is assessed.

5 Apparatus

Dimensions in millimetres



Key

- | | | | |
|---|-----------------------|---|---------------------------------------|
| 1 | total mass 90 kg | 6 | specimen |
| 2 | distance >3 mm | 7 | suction device with height regulation |
| 3 | load/drive plate | 8 | test platform |
| 4 | castor mounting plate | 9 | specimen support |
| 5 | chain | | |

Figure 1 — Typical castor chair apparatus

5.1 Rotating circular test platform.

The rotating circular test platform on which the specimen is placed shall have a diameter of minimum 800 mm.

5.2 Castor assembly.

This assembly comprises a vertical shaft, set in a bearing, and a plate on which the castors are mounted (Figure 2, item 1). This castor assembly is offset at a distance of (198 ± 1) mm from the centre of the rotating test platform.

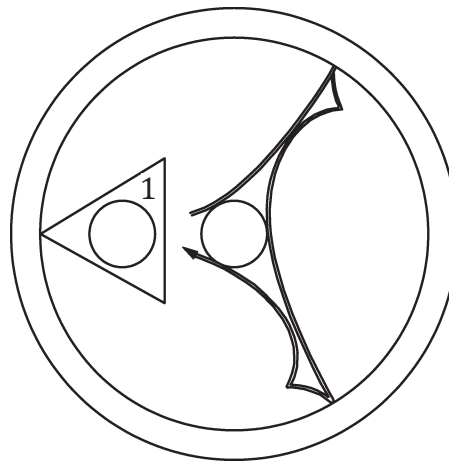
The three castors are each arranged concentrically at 120° intervals around the centre of the plate at a distance of (130 ± 1) mm from the centre of the plate, and are free to rotate, so that they follow the rotation of the castor assembly.

The tested area of the specimen is determined by the distance between the axes of revolution of the castor chair assembly and the specimen table and by the distance of the castors from the centre of the plate. This area is approximately $0,3 \text{ m}^2$.

The apparatus is provided with a lifting device to raise the castor assembly above the testing platform when the apparatus is stopped.

The castor assembly is loaded with a mass of (90 ± 1) kg equally divided over the three castors.

The distance (under load) between the castor mounting plate and the load/drive plate shall be >3 mm.



Key

1 castor assembly

Figure 2 — Path of castors

5.3 Drive mechanism.

The drive to the specimen plate and to the castor assembly is interlocked and fitted with a reversing mechanism. The number of cycles is set by means of a pre-set counter. The rotational speed of the rotating platform shall be (19 ± 2) r/min and that of the castor assembly (50 ± 5) r/min.

After (180 ± 10) s of rotation, the platform shall stop and remain in the stop position for (5 ± 2) s, after which time the direction of rotation of the rotating platform shall reverse.

The relationship between the rotational speed of the specimen plate and that of the castor assembly causes a sharp reverse movement of the castors within the stressed area (see [Figure 2](#)).

5.4 Suction device.

A suction device ([Figure 1](#), item 7) is mounted over the entire width of the stressed area, the height of this device above the specimen being adjustable. The suction capacity shall be at least 25 l/s to 30 l/s.

5.5 Castors.

5.5.1 General

Single-wheel swivel castors shall be used having the following dimensions (see [Figure 3](#)):

- diameter: (50 ± 2) mm;
- width: (20 ± 2) mm;
- radius of curvature, R , of castor tread: (130 ± 5) mm;
- crank distance: (32 ± 2) mm.

The distance between any two castor mountings shall be (225 ± 5) mm.