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**Resilient floor coverings — Determination  
of thickness of layers**

*Revêtements de sols résilients — Détermination de l'épaisseur des  
couches*

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## Foreword

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The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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.

ISO 24340 was prepared by Technical Committee ISO/TC 219, *Floor coverings*.

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# Resilient floor coverings — Determination of thickness of layers

## 1 Scope

This International Standard describes a method for determining the thickness of different layers of resilient floor coverings.

## 2 Terms and definitions

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

### 2.1

#### **layer**

component of the same composition as part of a resilient floor covering with a given thickness, excluding factory finishes

## 3 Principle

The thickness of layers is measured directly by optical means.

## 4 Apparatus

### 4.1 Microscope or video microscope

**4.1.1 Microscope or video microscope**, having a magnification of at least 40 $\times$ , equipped with a micrometric scale eyepiece for the microscope or adjustable screen lines for the video microscope, readable to 0,01 mm.

**4.1.2 Microscope or video microscope**, having a magnification of at least 40 $\times$ , equipped with an eyepiece micrometric scale readable to 0,002 5 mm used to measure a thickness below 0,05 mm.

**4.2 Lamp (light source)**, to illuminate the specimen configured so that the light falls on the specimen from as vertical a direction as possible.

**4.3 Stage micrometer or video microscope**, for calibrating the eyepiece micrometer.

The scale shall have the smallest division equal to 0,01 mm and shall cover at least 2,54 mm for the microscope or video microscope referred to in 4.1.1, and the smallest division equal to 0,002 5 mm that covers at least 1 mm for the microscope or video microscope referred to in 4.1.2.

**4.4 Holder (stage carrier)**, for holding the specimen without distortion, so that the cut edge is perpendicular to the optical axis of the microscope.

**4.5 Sharp knife or blade**, for cutting the specimen.

**4.6 Straightedge or metal rule**, for guiding the cutting edge.

## 5 Sampling and selection of specimens

5.1 Use a fine sharp blade guided by a metal rule or straightedge and keep it perpendicular while cutting out test pieces. It is very important to cut the specimens face down on a polyamide or similar material board to ensure a clean edge.

5.2 For sheet floor covering, select five specimens (10 mm × 25 mm) evenly distributed across the width.

5.3 For tile floor covering, select one specimen (10 mm × 25 mm) from each of five separate tiles from the carton or pack.

## 6 Atmosphere for conditioning and testing

Condition the specimens for a minimum of 24 h at  $(23 \pm 2)$  °C and at a relative humidity of  $(50 \pm 5)$  %, and test in the same environment.

## 7 Test procedure

### 7.1 Preparation

Place the test piece on the mechanical stage carrier in the holding device, exposing its full thickness (long edge up, the cut surface perpendicular to the optical axis of the microscope).

### 7.2 Calibration

Calibrate the micrometer against the stage micrometer and record the calibration factor.

### 7.3 Measurement

Locate the specimen under the microscope and adjust the light source. Focus the microscope so that both edges of the layer being measured are sharp. If this cannot be done, remount or re-cut the specimen. Measure the thickness by counting the rulings or the divisions on the ruled disk in the eyepiece (read the measurement in the case of the video microscope) that cover the distance from one edge of layer to the other, and by applying the calibration factor determined in 7.2. Record this distance to the nearest graduation on the microscope or video microscope used. Take three readings in each specimen at least 10 mm apart. Repeat the procedure on the other test specimens.

## 8 Calculation and expression of results

Calculate the mean thickness for each layer from the number of measurements taken, and express these results to the nearest 0,01 mm or 0,002 5 mm respective to the microscope or video microscope used.

## 9 Precision statement

An interlaboratory test will be conducted to determine the precision of this method.

## 10 Test report

The test report shall include the following information:

- a) a statement that the tests were performed in accordance with this International Standard (ISO 24340:2006);
- b) the complete identification of each sample, including type, source, colour, and manufacturers reference numbers;
- c) the previous history of the sample;
- d) any deviation from this International Standard which may have affected the results;
- e) the thickness of the layer of the test specimen, which shall be the mean value calculated to the nearest 0,01 mm or 0,002 5 mm respective to the microscope or video microscope used;
- f) the minimum and maximum readings to the nearest 0,01 mm or 0,002 5 mm respective to the microscope or video microscope used.

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## Bibliography

- [1] EN 429, *Resilient floor coverings — Determination of the thickness of layers*
- [2] ASTM F 410, *Standard test method for wear layer thickness of resilient floor coverings by optical measurement*

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