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# International Standard



# 6925

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INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

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## **Textile floor coverings — Burning behaviour — Tablet test at ambient temperature**

*Revêtements de sol textiles — Comportement au feu — Essai à la pastille à température ambiante*

**First edition — 1982-03-15**

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**UDC 645.12 : 620.1 : 677.014.52**

**Ref. No. ISO 6925-1982 (E)**

**Descriptors :** textiles, floor coverings, tests, laboratory tests, fire tests, test specimen conditioning.

ISO 6925-1982 (E)

Price based on 3 pages

## Foreword

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Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 6925 was developed by Technical Committee ISO/TC 38, *Textiles*, and was circulated to the member bodies in January 1981.

It has been approved by the member bodies of the following countries :

Australia	Indonesia	Romania
Belgium	Ireland	South Africa, Rep. of
Brazil	Israel	Spain
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Czechoslovakia	Korea, Rep. of	Turkey
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Finland	New Zealand	USSR
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The member body of the following country expressed disapproval of the document on technical grounds :

Italy

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Printed in Switzerland

# Textile floor coverings — Burning behaviour — Tablet test at ambient temperature

## 1 Scope and field of application

This International Standard specifies a method for the assessment of the burning behaviour, often superficial, of textile floor coverings in a horizontal position when exposed to a small source of ignition under controlled laboratory conditions.

The method specified in this International Standard is applicable to all types of textile floor coverings whatever their construction or their fibre composition. The method may also be applicable to unfinished material. In this case, the result does not indicate the behaviour of the material in the condition in which it is used.

The results obtained on specimens in a horizontal position, as specified in this International Standard, do not apply to the behaviour of the textile floor covering when used in another position, particularly in a vertical position.

The present method should be used solely to assess the properties of materials or systems in response to heat and flame under controlled laboratory conditions and should not be used for the evaluation or regulation of the hazard of textile floor coverings under actual fire conditions. The method has been used extensively in the trade for acceptance testing and is considered satisfactory as a test for acceptance of merchandise, provided that an appropriate sampling plan such as one selected from ISO 2859 is used.

## 2 References

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

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

ISO 2859, *Sampling procedures and tables for inspection by attributes.*

## 3 Principle

Exposure of a specimen in a horizontal position to the action of a small ignition source (methenamine tablet) under specified conditions and measurement of the resulting damaged length.

## 4 Apparatus and materials

**4.1 Test box**, with inside dimensions of 300 mm × 300 mm × 300 mm and made from hard, fire-resistant insulation board with similar thermal properties to asbestos cement board, not less than 6 mm thick. The chamber is open at the top and has a flat removable base made of the same material as above. The joints shall be air tight.

NOTE — Any other test chamber giving identical results may be used.

**4.2 Square metal plate**, 230 mm × 230 mm, 6,5 ± 0,5 mm thick, with a 205 mm diameter hole cut in the centre of the plate.

**4.3 Desiccator(s)**, for storing the methenamine tablets (see 4.9) and the bone dry specimens (see 5.4.6). It is recommended that self-indicating silica gel is used as desiccant.

**4.4 Circulating air oven**, ventilated, forced draught and thermostatically controlled at 105 ± 2 °C throughout the enclosure.

**4.5 Glove**, disposable, of polyethylene, polypropylene or rubber.

**4.6 Rule**, graduated in millimetres.

**4.7 Vacuum cleaner**, of which all surfaces in contact with the specimen are flat and smooth.

**4.8 Laboratory fume hood**, of about 2 m<sup>3</sup> capacity, capable of being closed and having its draught turned off during the test. The front or one of the sides of the hood shall be glass in order to permit observation of the specimen during the test.

**4.9 Methenamine tablet.**<sup>1)</sup>

Tablets of hexamethylenetetramine, flat, having a mass of 150 ± 5 mg and a diameter of 6 mm.

NOTE — Storage of the tablets in a desiccator reduces the tendency to crack upon ignition.

1) Methenamine tablets are available commercially. Details may be obtained from the ISO Central Secretariat or from the Secretariat of ISO/TC 38.

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**4.10** Timing device, optional.

## 5 Test specimens

### 5.1 Sampling and cutting

Sampling and cutting of specimens shall be carried out in accordance with ISO 1957.

### 5.2 Dimensions and number

Cut at least eight specimens, each  $230 \pm 3$  mm square, from each sample.

NOTE — For acceptance testing, the number of specimens shall be determined by an appropriate sampling plan selected from ISO 2859.

### 5.3 Underlays

The use of an underlay is not specified. However, subject to agreement between the interested parties, this method can be used to assess the effect of an underlay in combination with a textile floor covering.

### 5.4 Conditioning of test specimens

Clean each specimen with the vacuum cleaner (4.7) until the pile is free from fluff or loose ends of yarn, fibres, etc.

Condition test specimens in a manner that will permit free air circulation and so that they are not resting upon one another, in one of the following ways, or as agreed between the interested parties :

- a) in the standard atmosphere of  $20 \pm 2$  °C and  $65 \pm 2$  % relative humidity in accordance with ISO 139, or
- b) by drying the specimens in the oven (4.4) at  $105 \pm 2$  °C for 2 h removing the specimens from the oven with a gloved hand (see 4.5) and placing the specimens immediately in the desiccator (4.3) for at least 1 h, until they reach ambient temperature.

NOTE — The use of bone dry specimens may be more stringent than the use of specimens conditioned at 65 % relative humidity. However, it may be that use of specimens conditioned at 65 % relative humidity is more realistic for some countries. Performance requirements should be set accordingly.

## 6 Procedure

**6.1** Carry out the test in an atmosphere having a temperature between 10 and 30 °C and a relative humidity between 20 and 65 %.

**6.2** Place the test chamber (4.1) in the laboratory fume hood (4.8) with the ventilation turned off.

**6.3** Remove a specimen from the conditioning atmosphere or desiccator (according to the method of conditioning chosen in

5.4) with a gloved hand and, if there is a pile, brush it in a direction opposite to the lay to bring the pile to an upright position.

**6.4** Place the specimen flat on the floor of the test box with the use surface uppermost, ensuring the specimen is horizontal. Place the metal plate (4.2) on top of the specimen, and line up the outside edges of the plate with those of the specimen.

**6.5** Place a methenamine tablet (4.9) flat and in the centre of the specimen, and ignite the tablet with a lighted match which shall only lightly touch the upper face of the tablet. If used, start the timing device (4.10). Do not touch the specimen with the lighted match.

If more than 2 min elapses between removal of the specimen from the conditioning atmosphere or the desiccator and ignition of the tablet, repeat the procedure specified in 6.1 to 6.5 with a new conditioned specimen. Close the fume cupboard.

If the tablet cracks upon ignition, consider the test result void.

**6.6** Allow the ignition flame or any propagated flame to burn until extinction or until the flame or glowing reaches the edge of the hole in the metal plate. Terminate the test when either of the above conditions is reached. Stop the timing device, if used. Start the ventilation in the fume hood to eliminate any volatile products of combustion.

**6.7** After each specimen has been tested, lift the removable base from the test chamber and free it of any residue which would prevent the next specimen from lying in a horizontal plane. Allow sufficient time between each test for the test chamber to cool to ambient temperature  $\pm 5$  °C.

**6.8** Repeat the procedure specified in 6.3 to 6.7 on each specimen.

**6.9** On each specimen measure, to the nearest millimetre, the maximum distance between the centre of the specimen and the edge of the damaged zone using the rule (4.6).

**6.10** If required, measure the time in seconds from the ignition of the tablet to the moment when the flame or glowing reaches the edge of the hole in the metal plate, using the timing device (4.10).

## 7 Expression of results

The results of the test shall be the value obtained for each specimen (see 6.9).

## 8 Test report

The test report shall include the following particulars :

- a) a statement that the test was conducted in accordance with this International Standard;

- b) a statement of the sampling plan used;
- c) whether a separate underlay was incorporated in the test (see 5.3);
- d) the conditioning atmosphere used for the test specimens (see 5.4);
- e) for each specimen, the damaged length as determined in 6.9;
- f) if required, the flame spread time measured according to 6.10;
- g) any operating detail not stated in this International Standard or any incident likely to have had an effect on the test results.