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Textile floor coverings — Determination of resistance to delamination

Revêtements de sol textiles — Détermination de la résistance à la délamination

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Foreword

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International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

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.

International Standard 11857 was prepared by Technical Committee ISO/TC 38, *Textiles*, Subcommittee SC 12, *Textile floor coverings*.

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Textile floor coverings — Determination of resistance to delamination

1 Scope

This International Standard describes a method for the determination of the force required to separate the plies of textile floor coverings. It is applicable to all types of textile floor coverings with a secondary or foam backing.

The results obtained by this method are useful as a control of production but cannot be considered to be a reliable indication of in-use performance.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of IEC and ISO maintain registers of currently valid International Standards.

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

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

3 Definition

For the purpose of this International Standard the following definition applies.

3.1
delamination force
the force required to separate the component layers of a textile floor covering, measured over a width of 50 mm and expressed in newtons

4 Principle

The end of a test specimen is delaminated by hand and the force to continue delamination is measured on an autographic tensile strength tester under specified conditions.

5 Apparatus

5.1 Tensile testing machine, capable of being operated at a constant rate of extension (CRE) of 300 mm/min ± 10 mm/min.

5.2 Clamping system, having serrated or padded jaw faces with a minimum area of 25 mm × 75 mm designed to prevent slippage in the clamps during testing

5.3 Autographic load-extension recorder, with or without computer back-up, operating at the same speed as the tensile testing machine, or computer with suitable software and output.

5.4 Self-adhesive textile floor covering tape, 50 mm wide.

6 Test specimens

6.1 Cut out five specimens in each direction, each 50 mm wide and 200 mm long, sampled in accordance with ISO 1957, with the long side in the direction to be tested. For foam backed products, apply a strip of 50 mm adhesive tape (5.4) to the foam backing to prevent tearing of the foam.

6.2 Take each test specimen and separate the component layers by hand to a distance of approximately 50 mm from one end.

NOTE Products with mesh or less stable secondary backings may require the application of a 50 mm long piece of adhesive tape across the secondary backing to help keep it square and properly gripped in the test jaw.

7 Atmosphere for conditioning and testing

7.1 Test specimens shall be laid out singly, use-surface uppermost, in the standard atmosphere for conditioning textiles (see 7.2) for a minimum of 24 h.

7.2 The atmosphere for conditioning and testing shall be the standard atmosphere for testing textiles of 20 °C ± 2 °C and 65 % rh ± 2 % rh (see ISO 139).

8 Procedure

8.1 Clamp a full-width separated component layer of a test specimen in one jaw of the tensile testing machine (5.1) and then clamp the other component layer in the other jaw ensuring that the tension is evenly applied and that the direction of separation will be perpendicular to the edges of the test specimen.

8.2 With the load-extension recorder in action, set the traversing clamp in motion at aconstant rate of 300 mm/min ± 10 mm/min, and obtain a record of the force fluctuations as the delamination proceeds. Continue to the end of the test specimen. Test each of the other test specimens in turn.

8.3 If either component layer breaks, or if the separation occurs at any other point (e.g. pile tufts pull through the primary backing or the tear transfers to inside the foam backing), record this failure and report the force at which it occurs.

NOTE This can be done by marking the chart at the point at which this occurs.

9 Calculation and expression of results

9.1 The trace from the autographic recorder (5.3) consists of a series of peaks, each representing the force at which the component layers have separated, and troughs corresponding to the fall back of the force. A typical recorded trace is shown in figure 1.

9.2 From the recorded trace for each test specimen, mark and ignore the first 25 % along the length of the trace. Within the next 50 % of the trace divide the length into 5 equal sections.

9.3 Determine the value of the peak load recorded within each of the sections.

9.4 Determine the average of the peak loads per specimen.

9.5 Calculate the mean of the averages for the five test specimens in each direction and express the resultant forces in newtons.