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R 2094

TEXTILE FLOOR COVERINGS

DETERMINATION OF THICKNESS LOSS UNDER DYNAMIC LOADING

1st EDITION

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BRIEF HISTORY

The ISO Recommendation R 2094, *Textile floor coverings – Determination of thickness loss under dynamic loading*, was drawn up by Technical Committee ISO/TC 38, *Textiles*, the Secretariat of which is held by the British Standards Institution (BSI).

Work on this question led to the adoption of Draft ISO Recommendation No. 2094, which was circulated to all the ISO Member Bodies for enquiry in October 1970.

The Draft was approved, subject to a few modifications of an editorial nature, by the following Member Bodies :

Australia	India	Sweden
Belgium	Israel	Switzerland
Canada	Italy	Turkey
Czechoslovakia	Japan	U.A.R.
Denmark	Netherlands	United Kingdom
Finland	Norway	U.S.A.
France	Poland	U.S.S.R.
Germany	Romania	
Hungary	South Africa, Rep. of	

No Member Body opposed the approval of the Draft.

This Draft ISO Recommendation was then submitted by correspondence to the ISO Council, which decided to accept it as an ISO RECOMMENDATION.

ISO Recommendation | R 2094 | November 1971

TEXTILE FLOOR COVERINGS

DETERMINATION OF THICKNESS LOSS UNDER DYNAMIC LOADING

1. SCOPE

This ISO Recommendation describes a method for measuring the thickness loss of textile floor coverings under dynamic loading.

It is applicable to all types of textile floor coverings with a surface that is level in height and construction.

It does not apply to other textile floor coverings unless the areas of different thickness or construction can be tested separately.

2. DEFINITIONS

For the purposes of this ISO Recommendation the following definitions apply :

2.1 *Thickness* (of a textile floor covering). The distance between a reference plate on which the specimen rests and a parallel presser-foot applying a given pressure to the specimen. Ordinarily the thickness of a textile floor covering without compression is measured under the standard pressure of 1.96×10^{-3} N/mm² * applied to a circle of area between 300 and 1 000 mm² within a larger area.

2.2 *Thickness loss* (of a textile floor covering under dynamic loading). The difference between the thickness of the textile floor covering, measured under the standard pressure, before and after it has received a stated number of standard impacts.

3. PRINCIPLE

The specimen is subjected to a cyclic-loading treatment in which a weight-piece, with two steel feet on its underside, repeatedly drops freely onto the specimen. The specimen is slowly traversed so that vertical shearing forces produced by the edges of the feet act on the requisite area of the specimen.

The thickness of the specimen is measured, before and after treatment, by the procedure described in ISO Recommendation R 1765, *Machine-made textile floor coverings – Determination of thickness.*

* Equivalent to 0.2 gF/mm².

4. APPARATUS

4.1 *Dynamic-loading machine,* with the general principle as shown in the Figure, page 6, and meeting the following requirements.

A weight-piece (A) has a plate with two steel feet of rectangular cross-section attached to its underside. The cam (B) is shaped such that a cantilever (F) pivoting at D firstly raises the weight-piece and then allows it to fall freely from a height of 63.5 mm onto the specimen approximately every 4.3 seconds. Each fall of the weight-piece corresponds to one impact. The specimen is clamped to a steel plate (C) 150 mm long and 125 mm wide, by means of two 150 mm long and 20 mm wide steel bars at the sides, screwed at the ends to the base plate.

The base plate is slowly traversed in such a way that there is 3.2 mm movement for each drop of the weight-piece and the return traverse is 1.6 mm out of step with the forward traverse. A complete cycle (one forward traverse and one reverse traverse) is made for a total of 25 impacts to give a total compressed area 50 mm wide by about 90 mm long, which may have a ridge across the centre.

Total mass of impact assembly :	1279 ± 13 g
Size of each foot on weight-piece :	
width	6.3 mm
length	51 mm
depth	9.5 mm
Inside distance between feet :	38.1 mm
Height of drop to steel plate :	63.5 mm
Frequency :	14 ± 1 impacts per minute

A device to count the impacts is necessary.

Before the instrument is used, it is essential to check that the vertical guides have not been displaced, that their surfaces, together with other bearing surfaces and cams, are oiled, and that the impact weight-piece moves freely in the guides.

4.2 *Thickness tester,* as specified in ISO Recommendation R 1765, capable of measuring the thickness of the specimen under a pressure of 1.96×10^{-3} N/mm^2 to an accuracy of 0.01 mm while the specimen is clamped to the steel plate.

4.3 *Guard ring,* as specified in ISO Recommendation R 1765 for testing textile floor coverings without pile.

5. ATMOSPHERE FOR CONDITIONING AND TESTING

The specimens should be conditioned and the test conducted in one of the standard atmospheres for testing textiles as specified in ISO Recommendation R 139, *Standard atmospheres for conditioning and testing textiles.*

6. TEST SPECIMENS

6.1 Test at least two specimens from each sample selected according to the directions in ISO Recommendation R 1957, *Machine-made textile floor coverings – Procedure for sampling and cutting specimens for physical tests.* Cut each test specimen 125 mm × 125 mm, with a side parallel to the warp (or to the machine production direction) and so that they do not contain the same warp or weft threads. They should be cut at least 50 mm from the selvedge.