INTERNATIONAL STANDARD

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Textile floor coverings — Determination of size, squareness and straightness of edge of tiles

Revêtements de sol textiles — Détermination de la dimension, de la rectitude et de l'équerrage des arêtes de dalles

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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.

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.

Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

International Standard ISO 13747 was prepared by Technical Committee ISO/TC 38, *Textiles*, Subcommittee SC 12, *Textile floor coverings*.

Annex A forms a normative part of this International Standard.

Textile floor coverings — Determination of size, squareness and straightness of edge of tiles

1 Scope

This International Standard specifies methods for the determination of size, squareness and straightness of edge of textile floor covering tiles and is applicable to tiles of all types of construction, maximum thickness 15 mm, and for all methods of installation, e.g. loose laid or adhered.

2 Normative reference

The following normative document contains 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 edition of the normative document indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 139:1973, *Textiles — Standard atmospheres for conditioning and testing.*

3 Principle

Dimensions of the tiles are measured using apparatus such as micrometer gauges, and straightness of edge is determined using feeler gauges.

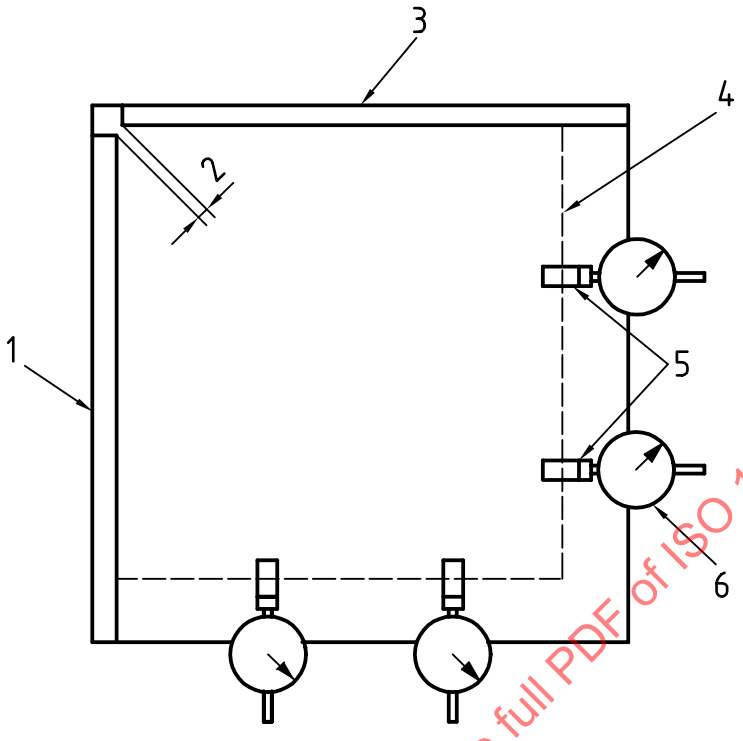
4 Apparatus

4.1 Rigid, durable, smooth and waterproof baseboard, e.g. of metal or marine plywood coated with a plastics laminate

The base plate shall be of a size suitable to accommodate the test specimen. Two stop bars, approximately 25 mm wide and 15 mm high, are fitted at right angles along two adjacent sides with a gap of approximately 1 mm at the corner. On each of the two opposite sides, two cut-outs or slots are made approximately 20 mm wide and at least 20 mm long, to accommodate the presser feet of the dial gauge micrometers. The slots are positioned at 1/3 and 2/3 of the nominal test specimen size (length of side) from the stop bars and are required to allow the presser feet to move ± 10 mm from the nominal size of the test specimen (see Figure 1).

4.2 Four dial gauge micrometers

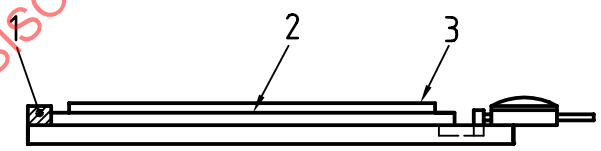
Each micrometer shall have a 20 mm diameter presser foot, a traverse of > 20 mm and be capable of measuring to 0,1 mm with an operating force of between 0,5 N and 1 N. The gauges are mounted centrally within the cut-outs or slots with their axes in a horizontal plane and so that their centres are 5 mm above the level of the base. A means of holding the dial gauge presser foot shafts in their maximum position is required. A suitable apparatus is shown in Figures 1 and 2.



Key

1 Side stop bar
2 Gap of 1 mm
3 Top stop bar
4 Nominal specimen size
5 Cut-outs or slots 20 mm wide allowing ± 10 mm on nominal specimen size
6 Dial gauge

Figure 1 — Apparatus, top view, shown with top plate in position



Key

1 Side top bar
2 Specimen
3 Plate

Figure 2 — Apparatus, side view, shown with top plate in position

NOTE It may be possible to accommodate more than one nominal test specimen size on one apparatus by repositioning the dial gauges and/or by additional stop bars.

4.3 Metal squares or T-squares

The metal squares or T-squares for calibration of the gauge position, shall be of known dimensions equivalent to the nominal test specimen dimensions ± 0,25 mm.

4.4 Square flatplates

The flatplates for covering the test specimens during the test shall be 10 mm smaller than the nominal test specimen size and of mass approximately 5 kg/m^2.

4.5 Feeler gauges

The feeler gauges shall have a nominal width of 5 mm and be capable of measuring in the range 0,2 mm to 2 mm.

4.6 Other means of measuring the dimensions

Other means of measuring the dimensions may be used provided they meet the accuracy requirements of 4.2.

5 Atmosphere for conditioning and testing

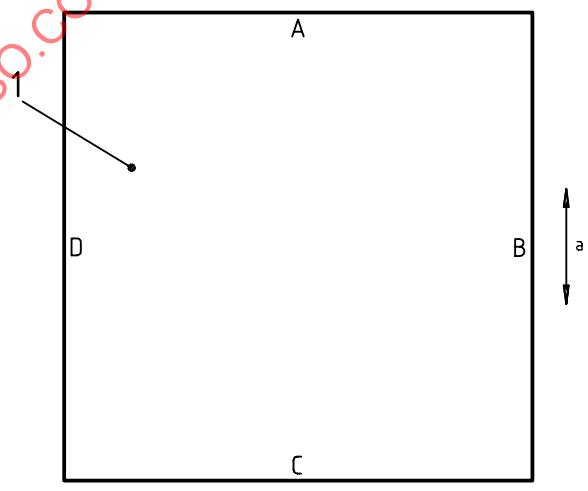
The conditioning and testing atmosphere shall be the standard atmosphere for testing textiles defined in ISO 139, i.e. an atmosphere of (65 ± 2) % relative humidity and 20 °C ± 2 °C.

6 Sampling and selection of test specimens

Sampling of test specimens shall be as agreed between the parties involved in the test. At least three specimens shall be tested unless otherwise agreed between the parties involved in the test. A single whole tile is regarded as one test specimen.

Test specimens shall be allowed to condition laid flat singly, use surface uppermost, in the standard atmosphere for testing textiles as defined in clause 5. They shall be kept in this atmosphere firstly for at least 48 h, and then either to constant mass or for a further period of 48 h.

Wherever possible, the direction of manufacture shall be identified. All measurements shall be made with reference to this, and the sides shall be marked A, B, C, D, as shown in Figure 3. If the direction of manufacture cannot be identified, an arbitrary identification of direction and related sides shall be made.



[a] Direction of manufacture

1 Reverse side

Figure 3 — Marking of test specimens

7 Procedure

7.1 Size and squareness

7.1.1 With the dial gauge presser foot shafts in their maximum positions, place the appropriate calibration square or T-square on the baseboard and ensure that it is in contact with the stop bars. Release the dial gauge shafts and obtain a zero reading for each micrometer.

Re-lock the dial gauge shafts in their maximum positions and remove the calibration square.

7.1.2 Place the test specimen, reverse side uppermost, on the apparatus, with side A firmly against the top stop bar and at least part of side D in contact with the side stop bar (position 1), taking particular care where direction of pile might cause springing back. Place the appropriately sized flat plate centrally on top of the test specimen, ensuring that the test specimen remains flat and in position, allow the feet of all four gauges to rest against the edges of the backing of the test specimen, and record the readings x_1 and x_2 in the across-machine direction and y_1 and y_2 in the machine direction to the nearest 0,1mm (see Figure 4).

Calculate the values for dimensions by taking the readings x_1 and x_2 and y_1 and y_2 and adding or subtracting as appropriate the zero readings obtained in the calibration (see 7.1.1), to give values of X_1 and X_2 for the across-machine direction and Y_1 and Y_2 for the machine direction.

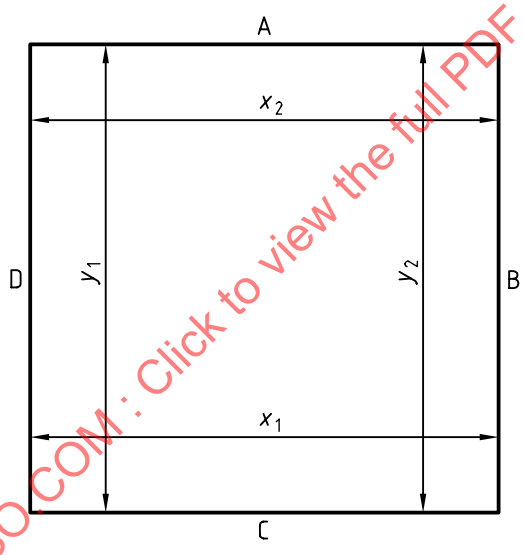


Figure 4 — Distances measured

7.1.3 Remove the flat plate and re-position the test specimen so that side D is firmly against the side stop bar and at least part of side A is in contact with the top stop bar (position 2). No re-positioning will be required if sides A and D are precisely at right angles to each other. Replace the flat plate and again carry out the measurements as described in 7.1.2, recording the readings x_1', x_2', y_1' and y_2' to the nearest 0,1 mm and calculating the values for the dimensions, X_1', X_2' and Y_1' ,Y_2' as before.

7.1.4 Record the eight values for dimensions obtained, four in the direction of manufacture and four at right angles to this, and use the relationships between the values to describe the shape of the test specimen, in accordance with the procedure in annex A.

7.2 Straightness of Edge

7.2.1 With the test specimen in position 1 (see 7.1.2), measure any gaps between the top stop bar and side A by using the largest feeler gauge (see 4.5) that can be inserted. Repeat this procedure for gaps between the side stop bar and side D with the test specimen in position 2 (see 7.1.3), each time with the flat plate in position.

7.2.2 Remove the flat plate and rotate the test specimen through 180° so that side C is adjacent to the top stop bar and side B adjacent to the side stop bar, and repeat the procedures in 7.2.1 using the equivalent positions, i.e. to determine the gaps between sides C and sides B and the appropriate stop bars respectively.

7.2.3 If possible, draw a sketch illustrating the positions of any unevenness found.

8 Test report

The report shall include the following information:

a) that the test was performed in accordance with this International Standard;

b) date the test was completed;

c) the number of test specimens evaluated, and for each test specimen:

   1) the eight values for dimensions from 7.1.4,

   2) a sketch or description of the test specimen shape (see annex A),

   3) the size of the largest feeler gauge that could be inserted for each of the four sides tested,

   4) a sketch illustrating the unevenness of each edge, if any;

d) details of any deviations from the standard test procedure.