

STANDARD

9073-7

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**Textiles — Test methods for
nonwovens —**

Part 7:
Determination of bending length

*Textiles — Méthodes d'essai pour nontissés —
Partie 7: Détermination de la longueur de flexion*



Reference number
ISO 9073-7:1995(E)

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.

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 ISO 9073-7 was prepared by Technical Committee ISO/TC 38, *Textiles*.

ISO 9073 consists of the following parts, under the general title *Textiles* — *Test methods for nonwovens*:

- *Part 1: Determination of mass per unit area*
- *Part 2: Determination of thickness*
- *Part 3: Determination of tensile strength and elongation*
- *Part 4: Determination of tear resistance*
- *Part 7: Determination of bending length*
- *Part 8: Determination of liquid strike-through time (simulated urine)*
- *Part 9: Determination of drape coefficient*

Annex A of this part of ISO 9073 is for information only.

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Textiles — Test methods for nonwovens —

Part 7: Determination of bending length

1 Scope

This part of ISO 9073 specifies a method for determining the bending length of a nonwoven fabric. An equation is given for calculating the flexural rigidity of the fabric from the bending length.

The method is not applicable to combination-type materials (composites or laminates) in which there can be a natural twist.

NOTE 1 This International Standard describes a test method specific to nonwovens. Other International Standards applicable to textile, paper, plastics, rubber or other materials can also be applied to test certain nonwoven characteristics.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 9073. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 9073 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

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

ISO 186:1994, *Paper and board — Sampling to determine average quality*.

ISO 9073-1:1989, *Textiles — Test methods for nonwovens — Part 1: Determination of mass per unit area*.

3 Definitions

For the purposes of this part of ISO 9073, the following definitions apply.

3.1 bending length: Length of a rectangular strip of fabric, fixed at one end and free at the other, that will bend under its own weight to an angle of $7,1^\circ$.

3.2 flexural rigidity: Ratio of small changes in bending moment per unit width of the material to corresponding small changes in curvature.

NOTE 2 Flexural rigidity can be calculated from the bending length.

4 Principle

A rectangular strip of fabric is supported on a horizontal platform with the long axis of the strip parallel to the long axis of the platform. The strip is advanced in the direction of its length so that an increasing part overhangs the platform and bends down under its own weight. The overhang is free at one end, and fixed at the other from the pressure applied by a slide on the part of the test piece still on the platform.

When the leading edge of the test piece has reached a plane passing through the edge of the platform and inclined at an angle of $41,5^\circ$ below the horizontal, the overhanging length will equal twice the bending length of the test piece (see annex A), and thus the bending length can be calculated.