



**International  
Standard**

**ISO 9073-7**

**Nonwovens — Test methods —  
Part 7:  
Determination of bending length**

*Nontissés — Méthodes d'essai —*

*Partie 7: Détermination de la longueur de flexion*

**Second edition  
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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

ISO draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at [www.iso.org/patents](http://www.iso.org/patents). ISO shall not be held responsible for identifying any or all such patent rights.

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 38, *Textiles*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 248, *Textiles and textile products*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the first edition (ISO 9073-7:1995), which has been technically revised.

The main changes are as follows: [ISO 9073-7:2024](http://standards.iso/f65f4067-2ef3-4824-a56a-8dd012806d18/iso-9073-7-2024)

- the title has been changed from "*Textiles – Test methods for nonwovens – Part 7: Determination of bending length*" to "*Nonwovens – Test methods – Part 7: Determination of bending length*";
- [Figure 1](#) has been corrected according to ISO/IEC Directives, Part 2;
- [Figure A.1](#) has been corrected according to ISO/IEC Directives, Part 2;
- through the document, "test piece" has been replaced by "test specimen";
- numbering of NOTE has been corrected according to ISO/IEC Directives, Part 2;
- Bibliography has been added to list the informative references described in [8.2](#) and [A.3](#).

A list of all parts in the ISO 9073 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](http://www.iso.org/members.html).

# Nonwovens — Test methods —

## Part 7: Determination of bending length

**SAFETY WARNING** — This document does not claim to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this document to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use. It is expected that the person performing this test has been fully trained in all aspects of this procedure.

### 1 Scope

This document specifies a method for determining the bending length of a nonwoven. A formula is given for calculating the flexural rigidity of the nonwoven material 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 This document describes a test method specific to nonwovens.

### 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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

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

ISO 9073-1, *Nonwovens — Test methods — Part 1: Determination of mass per unit area*

### 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

#### 3.1 bending length

length of a rectangular strip of nonwoven, 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 expressed in mN·cm

Note 1 to entry: Flexural rigidity can be calculated from the bending length.

Note 2 to entry: Flexural rigidity is expressed in mN·cm.

Note 3 to entry: This quantity is a measure of the resistance of the nonwoven to bending by external forces. It is related to the quality of stiffness that is appreciated when a nonwoven is handled, in the sense that the nonwoven having a high flexural rigidity tends to feel stiff.

## 4 Principle

A rectangular strip of nonwoven 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 specimen still on the platform.”

When the leading edge of the test specimen 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 specimen (see [Annex A](#)), and thus the bending length can be calculated.

## 5 Apparatus

### 5.1 Level table.

**5.2 Platform, of width  $(40 \pm 2)$  mm and length  $(200 \pm 2)$  mm**, supported at a height of at least 150 mm above the surface of the table ([5.1](#)). Each side of the platform support shall be transparent and marked with a line (L1, and L, respectively; see [Figure 1](#)) running from the end of the platform at an angle of  $41,5^\circ$  below the horizontal. A mark (D) shall be made on the platform at  $(10 \pm 1)$  mm from the front edge (see [Figure 1](#)).

To avoid adherence of the test specimen, the platform should be coated or covered with polytetrafluoroethylene (PTFE).

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