Wide Circulation Draft

भारतीय मानक ब्यूरो

BUREAU OF INDIAN STANDRADS

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***भारतीय मानक* मसौदा**

बिना बुने हुए वस्त्रादि – परीक्षण विधि – भाग 7 : झुकने की लंबाई का निर्धारण

(आईएस 15891 भाग 7/आईएसओ 9073 भाग 7 का *पहला पुनरीक्षण)*

Draft *Indian Standard*

Nonwovens — Test methods — Part 7: Determination of bending length
(*First Revision* of IS 15891 part 7/ISO 9073 part 7)

ICS: 59.080.30

Industrial Fabrics Sectional Committee, TXD 33

Last date for receipt of comments is 25 October 2025

NATIONAL FOREWORD
(Formal clauses will be added later)

This Indian Standard intended to be adopted is identical with ISO 9073-7:2024 'Nonwovens — Test methods — Part 7: Determination of bending length' issued by the International Organization for Standardization (ISO).

This standard was originally published in 2012 which was identical with ISO 9073-7 : 1995.The first revision of this standard has been undertaken to harmonize it with the latest version of ISO 9073-7:2024.

This standard has been published in various parts. Other parts in this series are:

Part 1 Determination of mass per unit area
Part 2 Determination of thickness
Part 3 Determination of tensile strength and elongation at break using the strip method
Part 4 Determination of tear resistance by the trapezoid procedure
Part 5 Determination of resistance to mechanical penetration (ball burst procedure)
Part 6 Absorption
Part 8 Determination of liquid strike-through time (simulated urine) for nonwoven coverstocks
Part 9 Determination of drapability including drape coefficient

Part 10 Lint and other particles generation in the dry state
Part 11 Run-off
Part 12 Demand absorbency
Part 13 Repeated liquid strike-through time (simulated urine)
Part 14 Coverstock wetback (simulated urine)
Part 15 Determination of air permeability
Part 16 Determination of resistance to penetration by water (hydrostatic pressure)
Part 17 Determination of water penetration (spray impact)
Part 18 Determination of tensile strength and elongation at break using the grab tensile test

The text of ISO Standard has been approved as suitable for publication as an Indian Standard without deviations. Certain conventions are, however, not identical to those used in Indian Standards. Attention is particularly drawn to the following:

a) Wherever the words 'International Standard' appear referring to this standard, they should be read as 'Indian Standard'.
b) Comma (,) has been used as a decimal marker while in Indian Standards, the current practice is to use a point (.) as the decimal marker.

In the standard intended to be adopted, reference appears to certain International Standard for which Indian Standard also exist. The corresponding Indian Standards which are to be substituted in their respective places are listed below along with their degree of equivalence for the edition indicated:

International Standard	*Corresponding Indian Standard*	*Degree of Equivalence*
ISO 139 Textiles — Standard atmospheres for conditioning and testing	IS 6359: 2023 Method for conditioning of textiles (*first revision*)	Technically Equivalent
ISO 186 Paper and board — Sampling to determine average quality	IS 1060 (Part 5/Sec 1): 2014 ISO 186: 2002 Methods of sampling and test for paper and allied products Part 5 Methods of test for paper and board Section 1 Sampling to determine average quality	Identical
IS0 9073-1, Textiles - Test methods for nonwovens - Part 1: Determination of mass per unit area.	IS 15891 (Part 1): 2024/ISO 9073-1:2023 , Nonwovens — Methods of test Part 1 Determination of mass per unit area (*first revision*)	Identical

The conditioning temperature of 20 ± 2°C as specified in International Standards is not suitable for tropical countries like India where the atmospheric temperature is normally much higher than 20°C. It is almost impossible to maintain this temperature specially during summer when the

atmospheric temperature rises even up to 50°C. In view of the above, IS 6359 : 2023 Method for conditioning of textiles (*first revision*) which specifies a temperature of 27 ± 2°C for conditioning of the test specimens for the tropical countries like India shall be referred.

In reporting the result of a test or analysis made in accordance with this standard, if the final value; observed or calculated, is to be rounded off, it shall be done in accordance with IS 2: 2022 'Rules for rounding off numerical values (*second revision*).

Extract of ISO 9073-7:2024 'Nonwovens — Test methods — Part 7: Determination of bending length'.

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.

i) ISO 139, Textiles — Standard atmospheres for conditioning and testing
ii) ISO 186, Paper and board — Sampling to determine average quality
iii) 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.

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°

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

Notes —
1 Flexural rigidity can be calculated from the bending length.
2 Flexural rigidity is expressed in mN·cm.
3 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.

FORMAT FOR SENDING COMMENTS ON BIS DOCUMENTS

(Please use A4 size sheet of paper only and type within fields indicated. Comments on each clause/sub clause/table/fig etc. be started on a fresh box. Information in column 3 should include reasons for the comments and suggestions for modified working of the clauses when the existing text is found not acceptable. Adherence to this format facilitates Secretariat's work)

Please e-mail your comments to txd@bis.gov.in or faxed on 011-23231282.

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Item, Clause Sub-Clause No. Commented upon (Use Separate Box afresh)	Comments	Specific Proposal (Draft clause to be add/amended)	Remarks	Technical References and justification on which (2), (3), (4) are based
(1)	(2)	(3)	(4)	(5)