

**भारतीय मानक मसौदा****टीश्यू पेपर और टीश्यू उत्पाद — परीक्षण पद्धतियाँ**

भाग 2 तन्य शक्ति का निर्धारण, अधिकतम बल पर खिंचाव और तन्य ऊर्जा  
अवशोषण

***Draft Indian Standard*****Tissue paper and tissue products — Methods of test**

Part 2 Determination of tensile strength, stretch at maximum  
force and tensile energy absorption

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ICS 85.080.20

Paper and its Products Sectional Committee,  
CHD 15

Last date of comments: 25<sup>th</sup> December 2024

**NATIONAL FOREWORD**

*(formal clauses to be added later)*

Tensile strength and stretch are an important properties of tissue paper and tissue products and varies from products to products whether it is tissue paper or tissue products (facial towel, kitchen towel, paper towel, etc). During the conversion processes, these properties also changes, sometimes very drastically.

The fact that not only end-use tissue products but also the base tissue paper from which these products are made, is the subject of trade between companies and countries, means that there is a genuine need for a consistent measure of tensile strength and associated properties that can be applied to tissue products at any stage of their manufacture.

The measurement of the tensile strength and stretch is known to be dependent on the rate of elongation and calculations.

The relevant test methods for tissue paper and tissue products are being published under the general title 'Tissue paper and tissue products — Methods of test'. The standard is being published in several parts.

Considering the benefits of aligning standard with that of international standards, the Committee responsible for development of this standard decided to prepare this standard by identical adoption of ISO 12625-4 'Tissue paper and tissue products: Part 4 Determination of tensile strength, stretch at maximum force and tensile energy absorption' under dual numbering and publish as part of the general title 'Tissue paper and tissue products – Methods of test'.

This Part provides a test method for the determination of the tensile strength, stretch at maximum force and tensile energy absorption of tissue paper and tissue products. It uses a tensile-testing apparatus operating with a constant rate of elongation. The other parts in this series are:

- (Part 1) Determination of thickness, bulking thickness and apparent bulk density and bulk (*under development*)
- (Part 3) Determination of wet tensile strength (*under development*)
- (Part 4) Determination of grammage (*under development*)
- (Part 5) Determination of optical properties — Measurement of brightness and colour with D65/10° (outdoor daylight) (*under development*)
- (Part 6) Water-absorption time and water-absorption capacity, basket-immersion test method (*under development*)
- (Part 7) Determination of disintegration in water (*under development*)

The text of ISO Standard has been approved as suitable for publication as an Indian Standard without deviations. Certain conventions and terminologies 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'; and
- 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 this adopted standard, reference appears to certain International Standards for which Indian Standards 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 editions indicated:

<i>International Standard</i>	<i>Corresponding Indian Standard</i>	<i>Degree of Equivalence</i>
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

ISO 187 Paper, board and pulps — Standard atmosphere for conditioning and testing and procedure for monitoring the atmosphere and conditioning of samples	IS 1060 (Part 4/Sec 1) : 20XX/ ISO 187 : 2022 Methods of sampling and test for paper and allied products: Part 4 Methods of test for paper, board and pulp: Section 1 Standard atmosphere for conditioning and testing and procedure for monitoring the atmosphere and conditioning of samples. ( <i>first revision</i> ) ( <i>under development</i> )	Identical
ISO 1924-2 Paper and board — Determination of tensile properties: Part 2 Constant rate of elongation method (20 mm/min)	IS 1060 (Part 5/Sec 6) : 2014/ ISO 1924-2 : 2008 Methods of sampling and test for paper and allied products: Part 5 Methods of test for paper and board, Sec 6 Determination of tensile properties — Constant rate of elongation method (20 mm/min)	Identical
ISO 12625-1, Tissue paper and tissue products: Part 1 Vocabulary	IS 14661 (Part 1) : 20XX/ISO 12625-1 : 2019 Tissue paper and tissue products: Part 1 Vocabulary ( <i>under development</i> )	Identical
ISO 12625-6, Tissue paper and tissue products: Part 6 Determination of grammage	IS XXXX (Part 4) : 20XX/ISO 12625-6 : 2016 Tissue paper and tissue products: Part 4 Determination of grammage ( <i>under development</i> )	Identical

The Committee has reviewed the provisions of the following International Standard referred in this adopted standard and has decided that it is acceptable for use in conjunction with this standard:

<i>International Standard</i>	<i>Title</i>
ISO 7500-1	Metallic materials — Calibration and verification of static uniaxial testing machines: Part 1 Tension/compression testing machines — Calibration and verification of the force-measuring system

In this adopted standard, reference appears to certain International Standards where the standard atmospheric conditions to be observed are stipulated which are not applicable to tropical/subtropical countries. The applicable standard atmospheric conditions for Indian conditions are  $(27 \pm 2)$  °C and  $(65 \pm 5)$  percent relative humidity and shall be observed while using this standard.

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*)'.

**'FOR COMPLETE TEXT OF THE DOCUMENT, KINDLY REFER ISO 12625-4 : 2022**

**Note:** The technical content of the document has not been enclosed as these are identical with the corresponding ISO Standard. For obtaining the copy of the complete ISO Standard, please contact:

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