INTERNATIONAL STANDARD

ISO 12625-3

Second edition
2014-03-15

Tissue paper and tissue products —

Part 3: Determination of thickness, bulking thickness and apparent bulk density and bulk

Papier tissue et produits tissue —

Partie 3: Détermination de l'épaisseur, de l'épaisseur moyenne d'une feuille en liasse et de la masse volumique moyenne et de la main

Reference number
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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 documents 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).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information.

ISO 12625-3 was prepared by the European Committee for Standardization (CEN) Technical Committee CEN/TC 172, *Pulp, paper and board* in collaboration with Technical Committee ISO/TC 6, *Paper, board and pulps*, Subcommittee SC 2, *Test methods and quality specifications for paper and board,* in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second. edition cancels and replaces the first edition (ISO 12625-3:2005), which has been technically revised.

With regard to ISO 12625-3:2005, the following minor changes have been made:

a) title changed; "bulk" added;

b) the accuracy data in Annex A were adjusted to the existing equipment capabilities and calibration procedures;,

c) preparation of test pieces more precisely described, 7.1 and 7.4 reformulated;

d) editorial updating.

ISO 12625 consists of the following parts, under the general title *Tissue paper and tissue products*

— *Part 1: General guidance on terms;*

— *Part 3: Determination of thickness, bulking thickness, apparent bulk density and bulk*

— *Part 4: Determination of tensile strength, stretch at break and tensile energy absorption;*

— *Part 5: Determination of wet tensile strength;*

— *Part 6: Determination of grammage;*

— *Part 7: Determination of optical properties — Measurement of brightness and colour with D65/10° (outdoor daylight);*

— *Part 8: Water-absorption time and water-absorption capacity; basket-immersion test method;*

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— *Part 9: Determination of ball burst strength;*

— *Part 11: Determination of wet ball burst strength;*

— *Part 12:Determination of tensile strength of perforated lines — Calculation of perforation efficiency;*

— *Part 15 Determination of optical properties — Measurement of brightness and colour with C/2° (indoor daylight) illuminant;*

— *Part 16 Determination of optical properties — Opacity (paper backing) — Diffuse reflectance method*

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Introduction

Thickness is an important property of tissue paper and tissue products.

In the tissue industry, thickness-related parameters, such as the roll diameter of rolled products (kitchen towel) or the stack height of folded products (paper towels) are often measured. However, 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 thickness that can be applied to tissue products at any stage of their manufacture.

The thickness of tissue paper and tissue products is known to be dependent on the pressure applied to the material at the time of measurement. Several different loading pressures, pressure-foot diameters and loading speeds have been used within the tissue industry. This part of ISO 12625 has been prepared by harmonizing those standards applicable to tissue and tissue products currently in use. It specifies a single loading pressure, foot diameter and loading speed to be used for all thickness measurements of tissue and tissue products.

It is expressly stated that the detection of impurities and contraries in tissue paper and tissue products should be applied according to ISO 15755.

For the determination of moisture content in tissue paper and tissue products, ISO 287 or ISO 638 should be applied.

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Tissue paper and tissue products —

Part 3:
Determination of thickness, bulking thickness and apparent bulk density and bulk

1 Scope

This part of ISO 12625 specifies a test method for the determination of thickness and bulking thickness and the calculation of apparent bulk density and bulk of tissue papers and tissue products under a pressure of 2,0 kPa.

NOTE This part of ISO 12625 has been developed to provide a consistent test method for the determination of thickness and density of tissue paper and tissue products. Corresponding test methods for paper and board in general are covered in ISO 534.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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

ISO 187, *Paper, board and pulps — Standard atmosphere for conditioning and testing and procedure for monitoring the atmosphere and conditioning of samples*

ISO 12625-1, *Tissue paper and tissue products — Part 1: General guidance on terms*

ISO 12625-6, *Tissue paper and tissue products — Part 6: Determination of grammage*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 12625-1 and the following apply.

3.1
single-ply thickness
distance between the two principal surfaces of a single ply of tissue paper measured under the applied static load specified in this part of ISO 12625

Note 1 to entry: A ‘ply’ of tissue is an unlaminated tissue, like that made directly from a tissue machine.

3.2
single sheet thickness
distance between the two principal surfaces of a single sheet of tissue product measured under the applied static load specified in this part of ISO 12625

Note 1 to entry: A ‘sheet’ of tissue is a laminated or unlaminated tissue like that present in the finished tissue product.

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