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**Tissue paper and tissue products —**

Part 8:

**Water-absorption time and water-  
absorption capacity, basket-immersion  
test method**

iTeh STANDARD PREVIEW

*Papier tissé et produits tissés —*

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*Partie 8. Temps d'absorption d'eau et capacité d'absorption d'eau,  
méthode d'essai d'immersion au panier*

ISO 12625-8:2006

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. 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.

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.

ISO 12625-8 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 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 first edition cancels and replaces ENV 12625-8:2001, which has been technically revised.

With regard to ENV 12625-8:2001, the following changes have been made:

- a) the description of the preparation and conditioning of the test pieces was formulated more precisely;
- b) the instruction for the manual test method procedure, as well as for the automated test method procedure, were described more precisely;
- c) figures for the precision of both test methods were added;
- d) editorial updating;
- e) change of the status from ENV to ISO.

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 and apparent bulk density*
- *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*
- *Part 8: Water-absorption time and water-absorption capacity, basket-immersion test method*
- *Part 9: Determination of ball burst strength*

## Introduction

This part of ISO 12625 describes one principle for determination of water-absorption properties of tissue paper and tissue products, a principle in which sheets of the sample are inserted in a cylindrical basket, which is immersed in water. The results are expressed as:

- water-absorption time;
- water-absorption capacity.

In European and International trade, both water-absorption time and water-absorption capacity represent important parameters required in the field of comparison of tissue products.

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# Tissue paper and tissue products —

## Part 8:

# Water-absorption time and water-absorption capacity, basket-immersion test method

## 1 Scope

This part of ISO 12625 specifies basket-immersion test methods (one manual and one automated) for the determination of water-absorption time and water-absorption capacity of absorbent tissue paper 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 should be applied.

## 2 Normative references

The following referenced documents are indispensable for the application 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 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 14487, *Pulps — Standard water for physical testing*

## 3 Terms and definitions

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

### 3.1

#### **water-absorption time**

time required for complete wetting of a test piece after the start of water immersion

### 3.2

#### **water-absorption capacity**

mass of water that is absorbed per unit mass of the test piece under specified conditions

## 4 Principle

A test piece of the tissue paper or the tissue product is placed in a cylindrical basket and allowed to immerse in water under its own weight.

The time required for complete wetting of the test piece is measured, the mass of water absorbed then being determined after a stated immersion time followed by a given draining time, under specified conditions.

## 5 Reagent

**5.1 De-ionized water**, with a conductivity of 0,25 mS/m in accordance with ISO 14487, and a temperature of  $(23 \pm 1)^\circ\text{C}$  in accordance with ISO 187.

To avoid interference due to contamination of the water from previous test pieces, change the water after each series.

## 6 Preparation and conditioning of the test pieces

### 6.1 Sampling

The sample shall be selected in accordance with ISO 186. When sampling finished roll products, eliminate at least the first six layers and the last six layers because of the possible presence of adhesive or mechanical damage.

### 6.2 Preparation of test pieces

From the sample, prepare five test pieces by cutting test pieces of  $(76 \pm 1)$  mm width, with the length in the machine direction sufficient for the mass of each test piece to be  $(5,0 \pm 0,2)$  g.

When preparing test pieces comprising a number of superimposed sheets, all individual sheets shall have the same face up.

If several sheets are cut at once, separate them before testing.

Record the mass of each test piece ( $m_0$ ) to the nearest milligram.

Other specific test piece sizes could be agreed between the parties concerned and shall be reported in the test report.

### 6.3 Conditioning

Condition the test pieces in accordance with ISO 187.

## 7 Manual test method

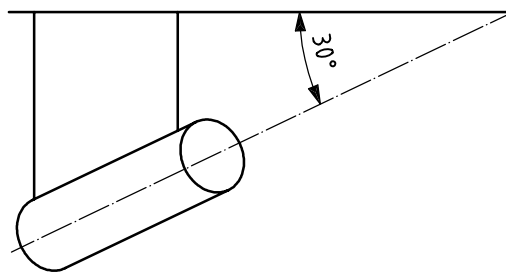
### 7.1 Apparatus

**7.1.1 Water container**, large enough for the basket to be fully submerged when lying on its side (total volume: 3 l).

The container shall be filled with de-ionized water (5.1) at  $(23 \pm 1)^\circ\text{C}$  to a depth of 100 mm.



**7.1.2 Immersion and draining equipment**, having a support, which is adjusted in a way that the hanging cylindrical basket forms a  $30^\circ$  angle with the horizontal (see Figure 1).



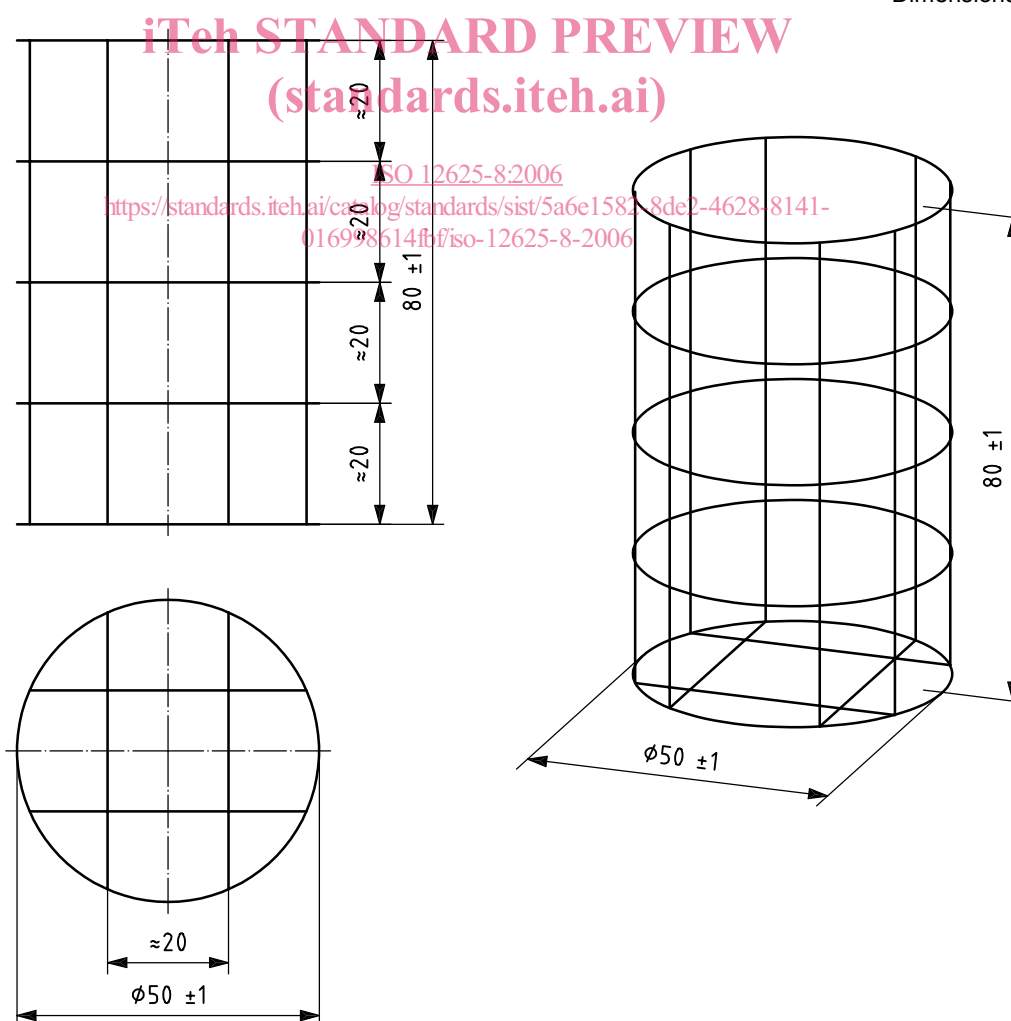
**Figure 1 — Principle of drainage position**

**7.1.3 Timer**, accurate to within  $1/100$  s.

**7.1.4 Balance**, with an accuracy of  $0,001$  g.

**7.1.5 Cylindrical basket**, made of gauge wire, having the dimensions (height and diameter) shown in Figure 2, constructed of any non-corroding steel gauge wire with a diameter of  $0,5$  mm to yield a total mass of the cylindrical basket of  $(3 \pm 0,1)$  g, having a material density of  $8,0$  g/cm<sup>3</sup> to  $8,1$  g/cm<sup>3</sup>.

Dimensions in millimetres



**Figure 2 — Schematic drawing of the cylindrical basket**