SLOVENSKI STANDARD
SIST ENV 12625-8:2002

01-maj-2002

Tissue papir in proizvodi iz tissue papirja ï 8. del: Ļas in kapaciteta absorpcije ï Roļ na in avtomatska preskusna metoda

Tissue paper and tissue products - Part 8: Water absorption time, water absorption capacity - Manual and automated test method

Tissue-Papier und Tissue-Produkte - Teil 8: Zeit für die Wasseraufnahme, Wasseraufnahmekapazität - Manuelles und automatisches Prüfverfahren

Papier tissue et produits tissues - Partie 8: Temps d'absorption d'eau, capacité d'absorption d'eau - Méthodes d'essai manuelle et automatique

Ta slovenski standard je istoveten z: ENV 12625-8:2001

ICS:

85.080 Papirni izdelki Paper products

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This European Prestandard (ENV) was approved by CEN on 19 April 2001 as a prospective standard for provisional application.

The period of validity of this ENV is limited initially to three years. After two years the members of CEN will be requested to submit their comments, particularly on the question whether the ENV can be converted into a European Standard.

CEN members are required to announce the existence of this ENV in the same way as for an EN and to make the ENV available promptly at national level in an appropriate form. It is permissible to keep conflicting national standards in force (in parallel to the ENV) until the final decision about the possible conversion of the ENV into an EN is reached.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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Contents

Foreword

This European Prestandard has been prepared by Technical Committee CEN/TC 172, "Pulp, paper and board", the secretariat of which is held by DIN.

This Standard of the series EN 12625 contains the following parts:

- Part 2: Procedure for sampling and conditioning (currently available as a prENV)
- 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, water absorption capacity - Manual and automated test method (currently available as ENV)

The following Standard of this series is in preparation:

- Part 1: General guidance on terms

In addition, it is expressly stated that the detection of impurities and contraries in tissue paper and tissue products should be applied according to the following European Standard:

- EN ISO 15755 "Paper and board – Estimation of contraries (ISO 15755 : 1999)

For the determination of moisture content in tissue paper and tissue products, EN 20287 should be applied.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to announce this European Prestandard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

Introduction

This European Prestandard contains test methods on which the following determinations can be proceeded:

- water absorption time;
- water absorption capacity.

In the European and International region both properties present important requirement parameters in the field of comparison of products.

As the test method for the water absorption time could be developed more precise for the time being, it was decided to publish this content as a European Prestandard. Concerning the determination of water absorption round robins are in preparation but up to now, not finished.

In contrary, a wide consensus could be found on the water absorption capacity, so that this test method can be considered as practicable.

1 Scope

These test methods specify the evaluation of the behaviour of tissue paper and tissue products in the presence of water.

The purpose of this European Prestandard is to determine, on the same sample:

- water absorption time;
- water absorption capacity.

2 Normative reference

This European Prestandard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Prestandard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

ENV 12625-2, *Tissue paper and tissue products – Part 2: Procedures for sampling and conditioning*

ISO 14487, *Pulps – Standard water for physical testing*

3 Terms and definitions

For the purposes of this European Prestandard, the following terms and definitions apply:

3.1 water absorption time

the time required for complete wetting of an absorbent material

3.2 water absorption capacity

the weight of liquid that is absorbed per unit weight of the sample

4 Principle

A test piece of the tissue product being tested is progressively immersed by allowing it to come into contact with water for a defined period of time.

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

5 Reagent

For official tests, water shall have a conductivity value less than 0,25 mS/m, in accordance with ISO 14487.

For control tests, water shall be demineralised.

In both cases, water shall be changed after each series of five tests, to avoid liquid pollution due to migration of surfactants included in samples.

6 Preparation and conditioning of the test pieces

6.1 Sampling

Test pieces shall be selected in accordance with ENV 12625-2.

Five test pieces shall be taken from the sample.

When sampling finished roll products, the first six sheets have to be eliminated because of the possible presence of glue.

6.2 Preparation of test pieces

Cut the test pieces in machine direction (76 ± 1) mm wide and of sufficient length to have 5 stacks of (5,0 ± 0,2) g. Report the weight of each test piece (M_O).

Stacks need to be prepared comprising a number of sheets superimposed with all individual test pieces having the same face up.

If several sheets are cut at once, it is essential to dissociate them before testing.

NOTE Test pieces could be cut in 10 cm x 10 cm squares with a punch and treated exactly as above.

6.3 Conditioning

Condition the test pieces in accordance with ENV 12625-2.

7 Manual test method

7.1 Apparatus

7.1.1 Water container

It shall be large enough for the basket to be submerged lying on its side (appropriate capacity: 3 l).

Fill it with sufficient water to have 100 mm depth. Liquid shall be at room temperature.

7.1.2 Draining equipment

Use a support which is adjusted in a way that the hanging basket forms a 30° angle with the horizontal (see figure 2).

7.1.3 Stopwatches

Accurate within 1/100 s.

7.1.4 Watch glass

Appropriate for weighing (diameter approximately 100 mm).

7.1.5 Balance

Precise within 0,01 g with a tare corresponding to the weight of the watch glass.

7.1.6 Cylindrical metal wire basket

Dimensions in millimetres

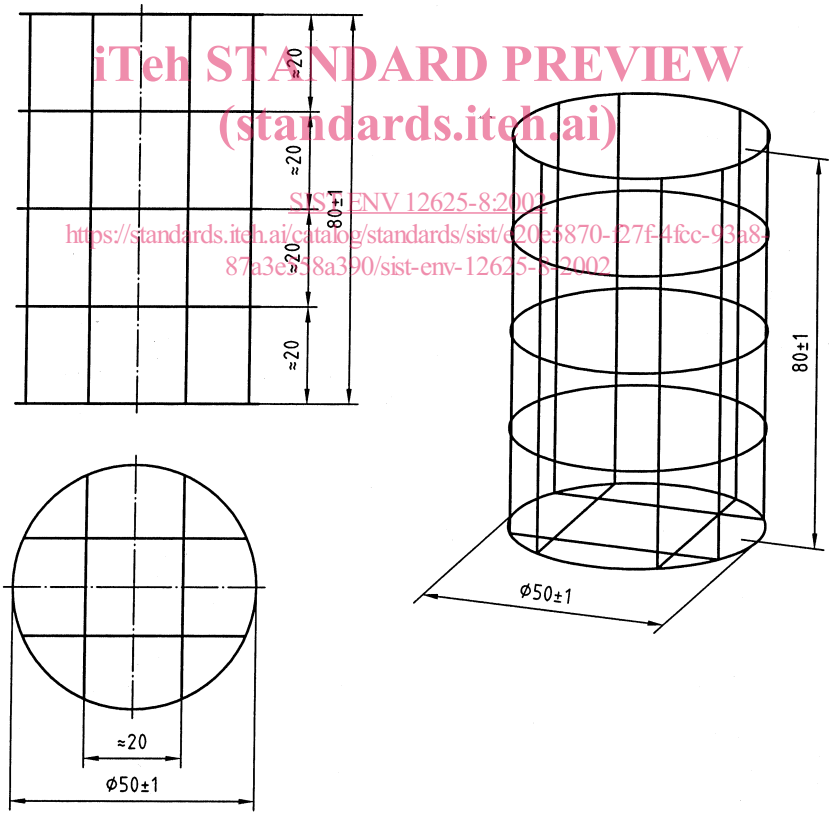

Figure 1 - Dimensions of the basket

The height and the diameter are constructed of suitable gauge wire to weigh (3 ± 0,1) g.

Solders or electric fusion should be used to create a firm structure. If using solders, distribute them symmetrically in order to maintain the balance of the basket.

One can compensate for the weight of the bottom by partially doubling one of the rings.

Record its weight (M_b).

7.2 Procedure

a) Roll each weighed test piece into a loose roll of about the same diameter as that of the cylindrical basket. Place the test piece in the basket, loosely packed, (particularly avoiding any hand pressure), with its 76 mm edge parallel to the side of the basket and gently spread the test piece using fingers so it moulds itself to the contour of the basket (when using squares, place the stack in the basket, do not roll);

b) Drop the basket, on its side, from a height of (25 ± 5) mm above the water surface into the container of water and simultaneously start the stopwatch;

c) Record the time required for complete wetting of the test piece. It means that the stopwatch shall be stopped as soon as the test piece is completely submerged;

d) Allow the basket and test piece to remain submerged in the water for (30 ± 1) s;

e) Remove the basket, keeping it in a horizontal position, and hang it on the support to form an 30° angle with the horizontal;

f) Allow it to drain for (60 ± 1) s;

g) Immediately weigh the basket and its content in the tared watch glass. Record the value (M_n);

h) Repeat the procedure with each of the other four test pieces.

NOTE Water should be changed after each series of five tests.