SLOVENSKI STANDARD
oSIST prEN ISO 12625-15:2014

01-januar-2014

Tissue papir in proizvodi iz tissue papirja - 15. del: Določevanje optičnih lastnosti - Merjenje beline in barve s svetilom C/2° (osvetlitev v prostoru) (ISO/DIS 12625-15:2013)

Tissue paper and tissue products - Part 15: Determination of optical properties - Measurement of brightness and colour with C/2° (indoor daylight) illuminant (ISO/DIS 12625-15:2013)

Tissue-Papier und Tissue-Produkte - Teil 15: Bestimmung von optischen Eigenschaften - Messung von Brightness und Farbe unter Lichtart C/2° (Tageslichtbedingungen in Innenräumen) (ISO/DIS 12625-15:2013)

Papier tissue et produits tissues - Partie 15: Détermination des propriétés optiques - Mesurage du degré de blancheur et de la coleur avec l'illuminant C/2° lumière du jour à l'intérieur) (ISO/DIS 12625-15:2013)

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Ta slovenski standard je istoveten z: **prEN ISO 12625-15**

ICS:

85.080.20 Tissue papir Tissue paper

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2003-01.Slovenski inštitut za standardizacijo. Razmnoževanje celote ali delov tega standarda ni dovoljeno.

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DRAFT INTERNATIONAL STANDARD

ISO/DIS 12625-15

ISO/TC **6**/SC **2**

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Voting begins on:
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Tissue paper and tissue products —

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

Papier tissue et produits tissues —

Partie 15: Détermination des propriétés optiques — Mesurage du degré de blancheur et de la coleur avec l'illuminant C/2° (éclairage intérieur)

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ISO/CEN PARALLEL PROCESSING

This draft has been developed within the European Committee for Standardization (CEN), and processed under the **CEN lead** mode of collaboration as defined in the Vienna Agreement.

This draft is hereby submitted to the ISO member bodies and to the CEN member bodies for a parallel five month enquiry.

Should this draft be accepted, a final draft, established on the basis of comments received, will be submitted to a parallel two-month approval vote in ISO and formal vote in CEN.

To expedite distribution, this document is circulated as received from the committee secretariat. ISO Central Secretariat work of editing and text composition will be undertaken at publication stage.

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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 12625-15 was prepared by European Committee for Standardisation (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 for quality specifications for paper and board*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

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

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— *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;*

— *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);*

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

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Introduction

Brightness and colour measurement may be performed under various illumination and observation conditions. This International Standard deals with C/2° conditions, which refer to an indoor daylight.

D65/10° conditions (outdoor daylight) are considered in Part 7. Although both standards deal with brightness and colour, results obtained are usually different and do not correlate.

Optical measurements are affected by the geometry of the instruments used and by the texture of the material. The designs of the instrument to be used according to this part of ISO 12625, and the routine to be adopted for its calibration are specified in ISO 2469 and ISO 2470-1.

The optical properties are related to the visual appearance of the material in a specified illumination condition. Therefore, although optical properties are intrinsic properties of tissue paper, they are not functional properties.

Brightness shall not be confuse with the optical property called CIE-whiteness that is based on reflectance data obtained over the full visible spectral range (VIS) in contrast to three measurement of brightness which is limited to the blue region of VIS.

Due to the importance for some countries three different test methods for the determination of optical properties were developed:

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

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

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— Part 16: Determination of optical properties – Measurement of opacity (paper backing) – Diffuse reflectance method;

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Tissue paper and tissue products — Part 15: Determination of optical properties - Measurement of brightness and colour with C/2° (indoor daylight)

1 Scope

This part of ISO 12625 specifies testing procedures for the instrumental determination of brightness and colour of tissue paper and tissue products viewed in indoor daylight conditions. It also gives specific instructions for the preparation of test pieces (single-ply, multi-ply products) and for the optical measurements of products, where special precautions may be necessary.

NOTE The properties called D65 brightness and colour are measured with an instrument adjusted to a much higher UV content than that specified in this part of ISO 12625. The measurements of D65 brightness and colour are described in ISO 12625-7.

2 Normative references

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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*

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ISO 2469:2007, *Paper, board and pulps — Measurement of diffuse radiance factor*

ISO 2470-1:2009, *Paper, board and pulps — Measurement of diffuse blue reflectance factor — Part 1: Indoor daylight conditions (ISO brightness)*

ISO 5631-1:2009, *Paper and board — Determination of colour by diffuse reflectance — Part 1: Indoor daylight conditions (C/2 degrees)*

3 Terms and definitions

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

3.1
reflectance factor
R
ratio of the radiation reflected by a body to that reflected by the perfect diffuser under the same conditions of illumination and detection

NOTE 1 to entry The reflectance factor is expressed as a percentage.

NOTE 2 to entry The reflectance factor is influenced by the backing if the body is translucent.

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3.2
diffuse reflectance radiance factor
R
ratio of the reflection from a body to that from the perfect reflecting diffuser under the same conditions of diffuse illumination and normal detection

NOTE 1 to entry The ratio is often expressed as a percentage.

NOTE 2 to entry [Source ISO 2469:2007].

3.3
intrinsic reflectance factor
R_∞
diffuse reflectance factor of a layer or pad of material thick enough to be opaque, i.e. such that increasing the thickness of the pad by doubling the number of sheets results in no change in the measured reflectance factor

NOTE 1 to entry [Source ISO 2469:2007].

3.4
C/2° brightness
Intrinsic reflectance factor measured with a reflectometer having the characteristics described in ISO 2469, equipped with a filter or corresponding function having an effective wavelength of 457 nm (and a half bandwidth of 44 nm, and adjusted so that the UV content of the irradiation incident upon the test piece corresponds to that of the CIE illuminant C.

NOTE 1 to entry The filter function is described more fully by the weighing function factors given in ISO 2470-1.

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3.5
tristimulus values
X, Y, Z
amounts of the three reference colour stimuli, in a given chromatic system, required to match the stimulus considered

NOTE 1 to entry In this part of 12625 as in ISO 5631-1 the CIE standard illuminant C and the CIE 1931 (2°) standard observer are used to define the trichromatic system.

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NOTE 2 to entry No subscript is applied to conform to the CIE convention that tristimulus values have no subscript when the CIE 1931 (2°) standard observer is used [the subscript 10 is applied for tristimulus values that are obtained using the CIE 1964 (10°) standard observer].

NOTE 3 to entry [Source ISO 5631-1:2009].

3.6
c/2° colour
Is defined as CIELAB colour space: L^*, a^* and b^* coordinates of the sample according to the CIELAB 1976 system, corresponding to the CIE standard illuminant C, described in ISO 11664-2 and the CIE 1964 supplementary standard colorimetric 2° observer, described in ISO 11664-1, determined by the measurements obtained under the conditions specified in ISO 5631-1.

NOTE to entry The quantity L^* is a measure of the lightness of the test piece, where $L^* = 0$ corresponds to black and $L^* = 100$ is defined by the perfect reflecting diffuser. Visually, the quantities a^* and b^* represent respectively the red-green and yellow-blue axes in colour space, such that

$+a^*$ is a measure of the degree of redness of the test piece,

$-a^*$ is a measure of the degree of greenness of the test piece;

$+b^*$ is a measure of the degree of yellowness of the test piece,

$-b^*$ is a measure of the degree of blueness of the test piece.

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