



SLOVENSKI STANDARD
SIST EN 646:1997

01-september-1997

Določitev trdnosti in vzdržljivosti barve barvanega papirja in kartona namenjenega za stik s hrano - Določitev vzdržljivosti barve barvanega papirja in kartona

Paper and board intended to come into contact with foodstuffs - Determination of colour fastness of dyed paper and board

Papier und Pappe vorgesehen für den Kontakt mit Lebensmitteln - Bestimmung der Farbechtheit von gefärbtem Papier und Pappe

Papier et carton destinés à entrer en contact avec les denrées alimentaires - Détermination de la solidité de la couleur du papier et du carton teintés

<https://standards.iteh.ai/catalog/standards/sist/9dc84924-01b9-4be7-a6f1-dd79f2afe15b/sist-en-646-1997>

Ta slovenski standard je istoveten z: EN 646:1993

ICS:

67.250	Materiali in predmeti v stiku z živili	Materials and articles in contact with foodstuffs
85.060	Papir, karton in lepenka	Paper and board

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en

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EUROPEAN STANDARD

EN 646:1993

NORME EUROPÉENNE

EUROPÄISCHE NORM

October 1993

UDC 676.2:663/664:626.1:535.68

Descriptors: Paper, paperboards, food products, food-container contact, measurements, colourfastness, tests

English version

**Paper and board intended to come into contact
with foodstuffs - Determination of colour fastness
of dyed paper and board**

Papier et carton destinés à entrer en contact
avec les denrées alimentaires - Détermination
de la solidité de la couleur du papier et du
carton teintés

Papier und Pappe vorgesehen für den Kontakt mit
Lebensmitteln - Bestimmung der Farbechtheit von
gefärbtem Papier und Pappe

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REPUBLIKA SLOVENIJA
MINISTRSTVO ZA ZNANOST IN TEHNOLOGIJO
Urad RS za standardizacijo in meroslovje
LJUBLJANA

SIST. EN 646

PREVZET PO METODI RAZGLASITVE

-09- 1997

This European Standard was approved by CEN on 1993-10-01. CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

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CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

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Foreword

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

This European Standard shall be given the status of National Standard, either by publication of an identical text or by endorsement, at the latest by april 1994, and conflicting National Standards shall be withdrawn at the latest by april 1994.

According to the CEN/CENELEC Internal Regulations, the following countries are bound to implement this European Standard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

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1 Scope

This European Standard describes procedures for the testing of dyed paper and board intended to come into contact with foodstuffs. Two procedures are given. Procedure A for contact of long duration (e.g. foodpackaging) and procedure B for contact of short duration (e.g. napkins, kitchen papers, household papers).

2 Normative references

This European Standard 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 Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

- ISO 186 Paper and Board - Sampling to determine average quality
- ISO 8787 Paper and Board - Determination of capillary rise - Klemm method
- ISO 105 A03 Textiles Tests for colour fastness - Part A03: Grey scale for assessing staining

3 Definition

For the purposes of this standard, the following definition applies.

Colour fastness

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The extent of staining of a non-stained glass fibre paper saturated with a test fluid, evaluated visually for staining against a grey scale.

4 Principle

A sample is brought into contact with glass fibre papers which have been saturated with a test fluid and placed under load for a given time. The staining of the glass fibre paper is evaluated with the grey scale. The test fluids used are water, dilute acetic acid, sodium carbonate solution and olive oil.

5 Materials and equipment

5.1 Unstained glass fibre papers of 60 mm x 90 mm. The glass fibre papers shall meet the following conditions:

- grammage 70 g/m²;
- capillary rise of 190 mm to 210 mm in 10 min in accordance with ISO 8787;
- free from fluorescent whitening and wetstrength agents;
- free from cellulosic fibres.

5.2 Glass plates, 60 mm x 90 mm.

5.3 Polyethylene film, uncoloured and transparent.

5.4 Mass, 1 kg.

5.5 Grey scale in accordance with ISO 105 A03.

6 Reagents

6.1 Distilled or deionised water

6.2 Aqueous acetic acid 1,5 %

6.3 Sodium carbonate solution (5 g/l)

6.4 Rectified olive oil, characterized as follows:

- iodine value (Wijs)	80 to 88
- refractive index at 25 °C	1,4665 to 1,4679
- acidity (expressed as % oleic acid)	max. 0,5 %
- peroxide number (expressed as oxygen milli-equivalents per kg oil)	max. 10

7 Sampling

Sampling is carried out in accordance with ISO 186.

8 Preparation of sample

Cut or punch several test pieces of 50 mm x 20 mm from the sample under investigation. Smooth edges shall be obtained.

9 Procedure A (long duration contact)

9.1 Immerse two sheets of glass fibre paper (5.1) in a test fluid (6.1, 6.2, 6.3 or 6.4). Remove the sheets after saturation and free the sheets from excess fluid by wiping on the rim of the container.

9.2 Lay one sheet of glass fibre paper with its smooth side upwards on the glass plate (5.2). Lay the test piece (8) immediately on top and cover it with the second saturated sheet of glass fibre paper so that the same side of the glass fibre paper is in contact with the test piece. Place a second glass plate (5.2) on top, wrap the total assembly in polyethylene film (5.3) to prevent the edges from drying out, load it with a mass of 1 kg (5.4) and allow it to stand for 24 h at (23 ± 2) °C with protection against direct light penetration.

9.3 If test pieces of a grammage > 140 g/m² are to be investigated, an appropriate even number of glass fibre paper layers (5.1) is used so that the total of their grammages just exceeds the grammage of the test piece.

Construct the assembly as described in 9.2, with each glass fibre paper being individually saturated and wiped, and arranged in such a way that the same number of glass fibre papers are in contact with both sides of the test piece.

9.4 After 24 h, open the assembly. Lay the glass fibre papers on 3 adjacent glass rods, \varnothing 8 mm to 10 mm, with the side which was in contact with the test piece upwards, cover them without contact to prevent light penetration and air-dry at ambient temperature. Glass fibre papers saturated with olive oil are not dried.

10 Procedure B (short time contact)

10.1 Immerse two sheets of glass fibre paper (5.1) in a test fluid (6.1, 6.2, 6.3 or 6.4). Remove the sheets after saturation and free the sheets from excess fluid by wiping on the rim of the container.

10.2 Lay one sheet of glass fibre paper with its smooth side upwards on the glass plate (5.2). Lay the test piece (8) immediately on top and cover it with the second saturated sheet of glass fibre paper so that the same side of the glass fibre paper is in contact with the test piece. Place a second glass plate (5.2) on top, wrap the total assembly in polyethylene film (5.3) to prevent the edges from drying out, load it with a mass of 1 kg (5.4) and allow it to stand for 10 min at (23 ± 2) °C with protection against direct light penetration.

10.3 After 10 min open the assembly. Lay the glass fibre papers on three adjacent glass rods, \varnothing 8 mm to 10 mm, with the side which was in contact with the test piece upwards, cover them without contact to prevent light penetration and air-dry at ambient temperature. Glass fibre papers saturated with olive oil are not dried.

11 Evaluation

Evaluate the staining of the glass fibre papers on the side with which they were in contact with the sample, using the grey scale (5.5). Do the evaluation in accordance to ISO 105-A03. When several layers of glass fibre papers are used, evaluate only the layer that was in contact with the test piece. If the two sides of the sample produce different results, the test report shall state to which side of the sample the data relates.

A distinction is drawn between 5 different evaluation grades: Grade 1 signifies poor fastness; grade 5 signifies good fastness. The evaluation grade of the grey scale which is the most similar to the stained glass fibre paper is given as the evaluation grade of the tested paper.

NOTE: In the case that paper or board is coming into contact with food-stuffs only with one side (e.g. foodpackaging) and it is known which side is facing the food, only this side will be evaluated.

12 Test report

The test report shall refer to this European Standard and state:

- a) test result;
 - b) designation of the paper or board tested; side tested if applicable;
 - c) procedure A or B;
 - d) test fluids and associated evaluation notes;
 - e) date of test;
 - f) any deviation from this European Standard.
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