



SLOVENSKI STANDARD
SIST EN 17545:2022

01-marec-2022

Papir, karton in lepenka - Določevanje sestave papirja, kartona in lepenke za recikliranje z gravimetrično analizo

Paper and board - Determination of composition of paper and board for recycling by gravimetric analysis

Papier und Pappe - Bestimmung der Zusammensetzung von Altpapier zum Recycling durch gravimetrische Analyse

Papiers et cartons - Détermination de la composition des papiers et cartons pour recyclage par analyse gravimétrique

Ta slovenski standard je istoveten z: EN 17545:2021

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ICS:

13.030.50	Recikliranje	Recycling
85.060	Papir, karton in lepenka	Paper and board

SIST EN 17545:2022

en,fr,de

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EUROPEAN STANDARD

EN 17545

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Paper and board - Determination of composition of paper and board for recycling by gravimetric analysis

Papiers et cartons - Détermination de la composition des papiers et cartons pour recyclage par analyse gravimétrique

Papier und Pappe - Bestimmung der Zusammensetzung von Altpapier zum Recycling durch gravimetrische Analyse

This European Standard was approved by CEN on 24 October 2021.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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European foreword

This document (EN 17545:2021) has been prepared by 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 a national standard, either by publication of an identical text or by endorsement, at the latest by May 2022, and conflicting national standards shall be withdrawn at the latest by May 2022.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

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EN 17545:2021 (E)**Introduction**

Paper and board for recycling is a valuable recovered raw material, widely traded in global markets. In Europe, the recognized grades of paper and board for recycling are defined in EN 643, which generally describes paper and board for recycling based on their point of origin or principal components.

For inspection, quality control or compliance purposes, the material should be analysed and the components should be identified and quantified. Results of this analysis determine if that material can be considered as paper and board for recycling as defined in EN 643 or any other agreed standard, including those defined in specific buyer/seller agreements.

The procedures defined in this document do not exclude the use of other methods of measurement if it has been proven that the results are in robust correlation with those obtained using this standard procedure.

This document is not specifically intended for routine monitoring of processes or quality, but the procedures described may be used to form the basis of an agreement between supplier and buyer to define the characteristics of material supplied.

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1 Scope

This document describes a procedure to gravimetrically determine the physical composition of paper and board for recycling by manually separating/sorting the individual components (including any unwanted materials) and determining the relative masses.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

EN 17085, *Paper and board – Sampling procedures for paper and board for recycling*

3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

3.1

composition

relative masses of objects of a sample taken from a lot of paper and board for recycling, being paper and board in any shape and products made predominantly from paper and board (including any other cellulose fibre-based packaging materials), unwanted materials and prohibited materials

3.2

gravimetric analysis

quantitative determination of a component based on its mass

Note 1 to entry: The results are typically expressed as the mass of the material being considered as a percentage of the bulk mass.

4 Principle

A sample of paper and board for recycling is manually separated into different fractions, defined by the purpose of the examination. The different fractions are then weighed and the composition is expressed as the relative mass of each fraction.

5 Equipment and auxiliaries

The analysis shall be carried out in a suitable clean, dry, well-illuminated separated and covered area of appropriate size:

- The containers for sampling shall be clean and dry.
- The bins for separating different fractions of material shall be appropriately sized, clean and dry.

Calibrated weighing equipment, with a resolution sufficient enough to weigh to an accuracy of 0,1 % of the component to be weighed, shall be used.

EN 17545:2021 (E)

6 Procedure

6.1 Sampling

Sampling should be carried out in accordance with EN 17085.

6.2 Composition of paper and board for recycling

The degree of detail required in this analysis is determined by the purpose of the analysis to provide the expected information. In the case of a contractual agreement, the degree of detail required in this analysis is determined by those parties with an interest in the results.

In the absence of any confirmed agreement on the degree of detail, this default determination should be carried out to a level sufficient to demonstrate compliance with the target specification as described in an appropriate standard (for example EN 643).

The minimum requirement is to divide the sample into accepted paper, unwanted materials (non-paper components and unwanted paper), as well as prohibited materials.

It is up to the discretion of the user of this method to decide upon the degree of further detail provided.

Examples of determination of composition are given in the informative Annexes A, B and C.

— Annex A describes a typical 'board grade';

— Annex B describes a typical 'printers grade';

— Annex C describes a typical 'graphic grade'.

6.3 Gravimetric analysis

The sample is subsequently divided according to the various components and applicable allocation criteria as described in 6.2. The individual fractions are then weighed (M_n). The final results are expressed as percentages related to the total sample mass.

$$P_n = \frac{M_n}{M_T} \times 100$$

where:

P_n is the percentage of fraction present;

M_n is the mass of the individual fraction(s);

M_T is the sum of the masses of the individual fractions.

6.4 Assessment of other parameters

Beyond the determination of the composition, other observations like moisture content, age, odour, mould, rotting, charred fibres or dusting should be noted in the report.

7 Test report

The test report shall include the following information:

- a) reference to this document (i.e. EN 17545);
- b) the date and place of testing;
- c) the name of the person responsible for conducting this analysis;
- d) all information necessary for complete identification of the sample or the sampling report as specified in EN 17085;
- e) results expressed as a percentage related to the total sample mass, to a degree of detail commensurate with the aim of the analysis as well as the observations made according to 6.3;
- f) all circumstances of such nature as to influence the results of subsequent tests;
- g) any deviations from the procedure.

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Annex A
(informative)

Possible presentation of results for a board grade

Table A.1 — Possible presentation of results for an old corrugated cardboard (OCC) grade

Group	Element of composition	Tolerance (where specified)	Mass of fraction (kg)	Percentage
Paper components	Corrugated board			
	Other packaging paper and board, covering food carton			
	Graphic paper			
	Beverage carton			
	Cores			
	Kraft sacks			
	Plastic (such as PE) or wax coated paper and board			
	Others...			
Non-paper components	Metals			
	Plastics			
	Glass			
	Textiles			
	Wood			
	Sand and building materials			
	Synthetic			
	Others...			
Prohibited materials	Medical and/or chemical waste			
	Bitumen			
	Toxic powders			
	Contaminated hygiene products			
	Organic waste incl. foodstuffs			
Other observations	f.i. Rotten or charred paper, odours, etc.			
NOTE This grade is not a specific EN 643 grade.				

Weight sample: ... kg