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Interested committees:

Title: BS EN 1104 Draft Paper and board intended to come into contact with foodstuffs - Determination of the transfer of antimicrobial constituents.

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Introduction

This draft standard is based on national and international discussions. Your comments on this draft are invited and will assist in the preparation of the consequent standard.

For international standards, comments will be reviewed by the relevant UK national committee before sending the consensus UK vote and comments to the international committee, which will then decide appropriate action. If the international standard is approved, it is usual for the text to be published as a British Standard.

For national standards, comments will be reviewed by the relevant UK national committee and the resulting standards published as a British Standard.

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Please indicate whether you consider the UK should submit a negative (with supporting technical reasons) or positive vote on this draft. Please indicate if you are aware of any reason why this draft standard should not be published as a British Standard.

Submission of Comments

- **Annotated drafts are not acceptable and will be rejected.**
- All comments should be submitted online at <https://standardsdevelopment.bsigroup.com/>. You will need to register in order to comment.

Template for comments and secretariat observations

Date: xx/xx/20xx	Document: ISO/DIS xxxx
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1	2	(3)	4	5	(6)	7
MB	Clause No./ Subclause No./Annex (e.g. 3.1)	Paragraph/ Figure/Table/Note	Type of comment	Comment (justification for change) by the MB	Proposed change by the MB	Secretariat observations on each comment submitted
	3.1	Definition 1	ed	Definition is ambiguous and needs clarifying.	Amend to read '...so that the mains connector to which no connection...'	
	6.4	Paragraph 2	te	The use of the UV photometer as an alternative cannot be supported as serious problems have been encountered in its use in the UK.	Delete reference to UV photometer.	

English Version

Paper and board intended to come into contact with foodstuffs - Determination of the transfer of antimicrobial constituents

Papier et carton destinés à entrer en contact avec les
denrées alimentaires - Détermination du transfert des
constituants antimicrobiens

Papier und Pappe vorgesehen für den Kontakt mit
Lebensmitteln - Bestimmung des Übergangs
antimikrobieller Bestandteile

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 172.

If this draft becomes a European Standard, 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.

This draft European Standard was established by CEN in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

Warning : This document is not a European Standard. It is distributed for review and comments. It is subject to change without notice and shall not be referred to as a European Standard.



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 (prEN 1104:2025) has been prepared by Technical Committee CEN/TC 172 “Pulp, paper and board”, the secretariat of which is held by DIN.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 1104:2018.

This document includes the following significant technical changes with respect to EN 1104:2018:

- a) 3.1 has been updated according to current regulations for terms and definitions;
- b) Clause 5, A.3.2.3 and A.3.3.2: The statement that the measuring of the width of the inhibition zone is not compulsory has been removed as the result requires to measure the width of the inhibition zone in order to check the 2 mm criteria;
- c) 5.3 and Clause 7: the precision regarding the punch iron has been updated; usage of the term “aseptic” or “sterile” which both signifies germ-free;
- d) 6.3.1, 6.4.1, 6.5.1, 6.7.1 regarding compositions of media: the term “tryptic digest” for the casein has been deleted as some media indicate pancreatic digest which is the same thing;
- e) 6.3.2, 6.4.2, 6.5.2, 6.6.2: unnecessary details regarding media containers have been deleted; precision about storage conditions have been updated;
- f) 6.8.2, 6.8.3, 6.8.4, 6.8.5: unnecessary details have been deleted and details for a better understanding of the procedure have been added;
- g) 6.8.5: the term “conidia” has been replaced by the term “spores” to harmonize wording since both terms have the same meaning;
- h) 6.9.2: the term “solution” for the amphotericin B has been deleted as it could be bought as pre-impregnated discs; the note has been deleted as the isothiazolinone solution is not commercially available;
- i) Clause 7: the phrase “for each microorganism” has been deleted as 20 test pieces for both microorganisms for one tested area is enough (9 test pieces by microorganism and by tested area/side);
- j) Clause 7 and Clause 8: a clarification about the sides tested has been added;
- k) 8.2.2 and 8.2.3 have been rephrased for a better understanding;
- l) 8.3: evaluation of the plates has been updated since it could be done at least 3 days after the end of the incubation if the plates are stored at $(5 \pm 3) ^\circ\text{C}$;
- m) Clause 9: the precision “with a new inoculating suspension” has been deleted to allow repeating the assay with the same inoculating suspension;
- n) A.3.2.4: the term “positive” has been replaced by “negative” since the negative control is the nutrient agar plate without test pieces and inoculated with the test microorganism.

1 Scope

This document specifies a test method for the determination of the transfer of antimicrobial constituents from paper and board materials and articles intended for food contact.

NOTE The use of this document is determined by legislation pertaining to paper and board intended to come into contact with foodstuffs.

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 ISO 186, *Paper and board — Sampling to determine average quality (ISO 186)*

EN ISO 7218, *Microbiology of the food chain — General requirements and guidance for microbiological examinations (ISO 7218)*

EN ISO 11133¹, *Microbiology of food, animal feed and water — Preparation, production, storage and performance testing of culture media (ISO 11133)*

3 Terms and definitions

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

ISO and IEC maintain terminology 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

inhibition zone

obvious area in which growth is absent and which forms around test pieces placed on a nutrient medium inoculated with a preselected test microorganism, due to the release of water-soluble antimicrobial constituents

Note 1 to entry: The proof of the presence of an inhibition zone is provided by the absence of test microorganism growth (translucent zone) in a minimum of 2 mm width zone at the edges of the test pieces.

4 Principle

A prepared nutrient medium is mixed with an appropriate inoculum and poured into Petri dishes. The test pieces are placed on the nutrient medium before its complete solidification and incubated. When incubation is terminated, the existence of an inhibition zone is an indicator of the release of antimicrobial constituents.

The test is performed with a bacterium, *bacillus subtilis*, and with a fungus, *aspergillus niger*.

5 Apparatus

All laboratory equipment and parts of the equipment, according to EN ISO 7218, shall be used, in addition to the following.

¹ Under revision.