

Methods for

# Determining optical properties of pulp, paper and board —

## Part 3: Determination of opacity (paper backing) of paper and board by the diffuse reflectance method

[ISO title: Paper and board — Determination of opacity (paper  
backing) — Diffuse reflectance method]

UDC 676.017.55:535.345.2:676.2

# Cooperating organizations

The Paper Standards Committee, under whose direction this British Standard was prepared, consists of representatives from the following Government department and professional and industrial organizations:

- British Paper and Board Industry Federation (PIF)\*
- British Printing Industries Federation\*
- Envelope Makers' and Manufacturing Stationers' Association\*
- Her Majesty's Stationery Office\*
- Institute of Trading Standards Administration
- National Association of Paper Merchants
- Pira (The Research Association for the Paper and Board, Printing and Packaging Industries)\*
- Royal Institute of Public Health and Hygiene

The organizations marked with an asterisk in the above list, together with the following, were directly represented on the committee entrusted with the preparation of this British Standard:

- British Wood Pulp Association
- Chemical Industries Association
- Fibreboard Packing Case Manufacturers' Association
- Man-made Fibres Producers' Committee
- Ministry of Defence
- Post Office
- Society of British Printing Ink Manufacturers
- University of Manchester, Institute of Science and Technology

This British Standard, having been prepared under the direction of the Paper Standards Committee, was published under the authority of the Executive Board and comes into effect on 30 June 1980

© BSI 10-1999

First published (as BS 2923) February 1958  
First revision (as BS 4432-3) March 1969  
Second revision August 1975  
Third revision June 1980

The following BSI references relate to the work on this standard:  
Committee reference PAS/11  
Draft for approval 79/65319

ISBN 0 580 11471 6

## Amendments issued since publication

| Amd. No. | Date of issue | Comments |
|----------|---------------|----------|
|          |               |          |
|          |               |          |
|          |               |          |
|          |               |          |

# Contents

|                                                                                                           | Page               |
|-----------------------------------------------------------------------------------------------------------|--------------------|
| Cooperating organizations                                                                                 | Inside front cover |
| National foreword                                                                                         | ii                 |
| 0 Introduction                                                                                            | 1                  |
| 1 Scope and field of application                                                                          | 1                  |
| 2 Definitions                                                                                             | 1                  |
| 3 Apparatus                                                                                               | 1                  |
| 4 Sampling                                                                                                | 2                  |
| 5 Preparation of test pieces                                                                              | 2                  |
| 6 Procedure                                                                                               | 2                  |
| 7 Expression of results                                                                                   | 2                  |
| 8 Test report                                                                                             | 2                  |
| Annex General information on ISO brightness and reflectance factor standards for papers, boards and pulps | 3                  |
| Bibliography                                                                                              | 4                  |
| Publications referred to                                                                                  | Inside back cover  |

## National foreword

This Part of this British Standard has been prepared under the direction of the Paper Standards Committee. It is identical with ISO 2471:1977, “*Paper and board — Determination of opacity (paper backing) — Diffuse reflectance method*”, which was developed by Technical Committee ISO/TC 6, Paper, board and pulps, and was published by the International Organization for Standardization (ISO).

BS 4432-3 was first published (as BS 2923) in 1958. The first revision (as BS 4432-3) was published in 1969 and the second revision in 1975. The edition published in 1975 was identical with ISO 2471:1973.

The second edition of ISO 2471, incorporating a new annex, was published in 1977, and cancelled and replaced the first edition. This third revision of BS 4432-3 has been published to align the British Standard with the text of the current ISO standard, ISO 2471:1977.

This Part of this British Standard is one of a series relating to the optical properties of pulp, paper and board. Other Parts of this British Standard are:

- *Part 1: Measurement of diffuse reflectance factor of paper, board and pulps;*
- *Part 2: Measurement of diffuse blue reflectance factor (ISO brightness) of paper and board;*
- *Part 4: Measurement of diffuse blue reflectance factor (ISO brightness) of pulps.*

The footnote to the Annex states that up-to-date lists of standardizing and authorized laboratories are available from the Secretariat of ISO/TC 6 (AFNOR), or from the ISO Central Secretariat. Within the United Kingdom, ISO reference standards of level 3, which are issued by authorized laboratories, can be obtained from the Research Association for the Paper and Board, Printing and Packaging Industries (PIRA), Randalls Road, Leatherhead, Surrey.

References are made to CIE definitions 45-15-060, 45-15-040 and 45-15-145 in 3.2. These definitions are given in *International Lighting Vocabulary*, 3rd ed., published by Commission International de l'Éclairage (CIE) and obtainable from Hon. Librarian (National Illumination Committee), c/o Thorn Lighting Limited, Great Cambridge Road, Enfield, Middlesex EN1 1UL.

**Terminology and conventions.** The text of the International Standard has been approved as suitable for publication, without deviation, as a British Standard. Some terminology and certain conventions are not identical with those used in British Standards; attention is especially drawn to the following.

Wherever the words “International Standard” appear, referring to this standard, they should be read as “British Standard”.

The comma has been used throughout as a decimal marker. In British Standards it is current practice to use a full point on the baseline as a decimal marker.

NOTE *Typographical error.* The footnote to the Annex should commence with an asterisk, not the Figure 1), to correlate with the asterisk at the end of paragraph 4.