

Australian/New Zealand Standard™

**Methods of test for pulp and paper**

**Method 462s: Measurement of diffuse  
blue reflectance factor (ISO brightness)  
of pulp, paper and paperboard**

## **AS/NZS 1301.462s:2005**

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee PK-019, Methods of Test for Pulp and Paper. It was approved on behalf of the Council of Standards Australia on 12 May 2005 and on behalf of the Council of Standards New Zealand on 20 May 2005.  
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The following are represented on Committee PK-019:

Australian Plantation Products and Paper Industry Council (A3P)  
Appita  
CSIRO Forestry and Forest Products  
National Association of Forest Industries  
New Zealand Forest Research Institute

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## Methods of test for pulp and paper

### Method 462s: Measurement of diffuse blue reflectance factor (ISO brightness) of pulp, paper and paperboard

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## PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee PK-019, Methods of Test for Pulp and Paper.

The objective of this Standard is to specify a method for measuring the diffuse blue reflectance factor (ISO brightness) of pulps, papers and boards.

This Standard is identical with and has been reproduced from ISO 2470:1999, *Paper, board and pulps—Measurement of diffuse blue reflectance factor (ISO brightness)*.

The term ‘normative’ has been used in this Standard to define the application of the annex to which it applies. A ‘normative’ annex is an integral part of a Standard.

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- (a) Its number does not appear on each page of text and its identity is shown only on the cover and title page.
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The references to International Standards should be replaced by references to the following Australian/New Zealand Standards.

<i>Reference to International Standard</i>		<i>Australian/New Zealand Standard</i>	
ISO		AS	
186	Paper and board—Sampling to determine average quality	1301 1301.417	Methods of test for pulp and paper Method 417s: Sampling paper, board and pulp for testing
		AS/NZS	
2469	Paper, board and pulps—Measurement of diffuse reflectance factor	1301.464s	Method 464s: Equipment for measurement of diffuse reflectance factor
3688	Pulps—Preparation of laboratory sheets for the measurement of diffuse blue reflectance factor (ISO brightness)	1301.466s	Method 466s: Preparation of laboratory sheets for the measurement of diffuse blue reflectance factor (ISO brightness)
		AS	
7213	Pulps—Sampling for testing	1301.417s	Method 417s: Sampling paper, board and pulp for testing

Only international references that have been adopted as Australian or Australian/New Zealand Standards have been listed.

## INTRODUCTION

The reflectance factor depends on the conditions of measurement, particularly the spectral and geometric characteristics of the instrument used. This International Standard should therefore be read in conjunction with ISO 2469 which defines the geometric characteristics of the instrument and the calibration procedure. This edition of ISO 2470 differs from the 1977 edition in that it describes the use of abridged spectrophotometers and also prescribes a routine for adjusting the relative UV-content of the illumination in this type of instrument to a defined level when materials containing fluorescent whitening agents are to be measured.

The definition of ISO brightness is historically linked to the Zeiss Elrepho instrument having as a light source an incandescent lamp which excites fluorescence to only a limited extent. It is specified here that, in instruments of the abridged spectrophotometer type, the UV-content of the illumination be adjusted using a suitable filter to conform to the CIE illuminant C as defined by a fluorescent reference standard having an assigned value of ISO brightness as described in annex B. Only if this is done may the property measured on a fluorescent material be called ISO brightness.

NOTES

## AUSTRALIAN/NEW ZEALAND STANDARD

### Methods of test for pulp and paper

#### Method 462s:

#### Measurement of diffuse blue reflectance factor (ISO brightness) of pulp, paper and paperboard

### 1 Scope

This International Standard specifies a method for measuring the diffuse blue reflectance factor (ISO brightness) of pulps, papers and boards.

This International Standard is limited in its scope to white and near-white pulps, papers and boards. Materials exhibiting fluorescence which promotes the appearance of whiteness may be measured but the ultraviolet energy level of the illumination must be adjusted using a fluorescent calibration standard if standardization and agreement between instruments is to be achieved.

**NOTE** A brightness value associated with an instrument setting adjusted to conform to the CIE standard illuminant D65 (cf. ISO 11475<sup>[1]</sup>), which has a much higher UV-content than the CIE illuminant C specified in this International Standard, is outside the scope of this International Standard and consequently is not "ISO brightness". Such a property may be called "D65 brightness".

### 2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

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

ISO 2469, *Paper, board and pulps — Measurement of diffuse reflectance factor.*

ISO 3688, *Pulps — Preparation of laboratory sheets for the measurement of diffuse blue reflectance factor (ISO brightness).*

ISO 4094, *Paper, board and pulps — International calibration of testing apparatus — Nomination and acceptance of standardizing and authorized laboratories.*

ISO 7213, *Pulps — Sampling for testing.*

### 3 Terms and definitions

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

#### 3.1

##### reflectance factor

*R*

ratio, expressed as a percentage, of the radiation reflected by a body to that reflected by the perfect reflecting diffuser under the same conditions