

Australian/New Zealand Standard™

Methods of test for pulp and paper

**Part 520: Measurement of diffuse
radiance factor (diffuse reflectance
factor)—Outdoor daylight conditions
(D65 brightness)**



AS/NZS 1301.520:2016

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Appita
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Australian/New Zealand Standard™

Methods of test for pulp and paper

Part 520: Measurement of diffuse radiance factor (diffuse reflectance factor)—Outdoor daylight conditions (D65 brightness)

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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, to supersede AS/NZS 1301.446s:2005, *Methods of test for pulp and paper—Measurement of diffuse blue reflectance factor (brightness) of pulp, paper and paperboard*.

The objective of this Standard is to provide a method for preparation of laboratory pulp sheets for the measurement of diffuse blue reflectance factor under outdoor daylight conditions (D65 brightness).

This Standard is identical with, and has been reproduced from ISO 2470-2:2008, *Paper, board and pulps—Measurement of diffuse blue reflectance factor, Part 2: Outdoor daylight conditions (D65 brightness)*

As this Standard is reproduced from an International Standard, the following applies:

- (a) In the source text ‘this part of ISO 2470-2 should read ‘this Australian/New Zealand Standard’.
- (b) A full point substitutes for a comma when referring to a decimal marker.

References to International Standards should be replaced by reference to Australian or Australian/New Zealand Standards, as follows:

<i>Reference to International Standard</i>	<i>Australian/New Zealand Standard</i>
ISO	AS/NZS
186 Paper and board—Sampling to determine average quality	1301.417s Method 417s: Sampling to determine average quality
2469 Paper, board and pulps—Measurement of diffuse radiance factor (diffuse reflectance factor)	1301.510 Part 510: Outdoor daylight conditions (D65 brightness)
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/NZS ISO
7213 Pulps—Sampling for testing	7213 Pulps—sampling for testing

Only normative references that have been adopted as Australian or Australian/New Zealand Standard have been listed.

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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INTRODUCTION

The reflectance factor (radiance factor) depends on the conditions of measurement, particularly the spectral and geometric characteristics of the instrument used. This part of ISO 2470 should therefore be read in conjunction with ISO 2469, which defines the geometric characteristics of the instrument and also defines the photometric calibration procedure to be adopted.

The radiance factor of fluorescent materials, for which this property is most interesting, is also dependent on the ultraviolet (UV content) of the illumination falling upon the sample. This part of ISO 2470 should therefore be read in conjunction with ISO 11475, which describes the procedure for adjusting the UV content in this type of instrument to match the CIE standard illuminant D65.

It is important to ensure that the property defined in this part of ISO 2470 is not confused with the property known as ISO brightness, which is determined under conditions corresponding to the CIE-illuminant C, where the UV content is much lower, approximating UV levels encountered in indoor viewing conditions.

AUSTRALIAN/NEW ZEALAND STANDARD

Methods of test for pulp and paper

Part 520:

**Measurement of diffuse radiance factor (diffuse reflectance factor)—
Outdoor daylight conditions (D65 brightness)****1 Scope**

This part of ISO 2470 specifies a method for measuring the D65 brightness of pulps, papers and boards.

This part of ISO 2470 is limited in its scope to white and near-white pulps, papers and boards, particularly those exhibiting fluorescence which promotes the appearance of whiteness. The measurement can only be made in an instrument in which the ultraviolet energy level of the illumination has been adjusted to correspond to the CIE standard illuminant D65 using a fluorescent reference standard.

The source employed in this part of ISO 2470 excites almost twice as much fluorescence as the illuminant in ISO 2470-1. Consequently, this part of ISO 2470 is better suited for measuring the fluorescent contribution to the brightness. However, D65 brightness should not be confused with ISO brightness which closely approximates the brightness of papers viewed under indoor conditions.

NOTE The property called ISO brightness is measured with an instrument adjusted to a much lower UV content than that specified in this part of ISO 2470. The measurement of ISO brightness is described in ISO 2470-1.

2 Normative references

The following referenced documents are indispensable for the application 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.

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

ISO 2469:2007, *Paper, board and pulps — Measurement of diffuse radiance factor*

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

ISO 7213, *Pulps — Sampling for testing*

ISO 11475:2004, *Paper and board — Determination of CIE whiteness, D65/10° (outdoor daylight)*