AS/NZS 1301.446s:2005

Australian/New Zealand Standard™

Methods of test for pulp and paper

Part 446s: Measurement of diffuse blue reflectance factor (brightness) of pulp, paper and paperboard

Appita

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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 30 March 2005 and on behalf of the Council of Standards New Zealand on 8 April 2005.
This Standard was published on 27 April 2005.

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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This Standard was issued in draft form for comment as DR 05057.

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Part 446s: Measurement of diffuse blue reflectance factor (brightness) of pulp, paper and paperboard

Originated in Australia as AS 1301.446s—1982.
Originated in New Zealand as NZS 1301.446s:1982.
Previous editions AS 1301.446s—1992 and NZS 1301.446s:1992.
Jointly revised and designated as AS/NZS 1301.446s:2005.

Jointly published by Standards Australia, GPO Box 5420, Sydney, NSW 2001 and Standards New Zealand, Private Bag 2439, Wellington 6020

ISBN 0 7337 6650 1

Preface

This standard was prepared by Joint Technical Committee PK-019, Methods of Test for Pulp and Paper, as part of AS/NZS 1301, *Methods of test for pulp and paper*.

This Standard conforms to ISO 2470:1999 and ISO 3688:1999, except that ISO 3688 prescribes different pressures and different pressing times. AS/NZS 1301.446 pressing conditions are the same as those prescribed in AS/NZS 1301.203 for making handsheets for physical testing.

Similar standards are: SCAN-CM 11:95, Tappi T454 om-02 and Tappi T525 om-02.

This edition cancels and replaces AS 1301.446s—1992 and NZS 1301.446s:1992.

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.

Contents

NOTES

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

1 Scope

This Standard sets out a method to measure the diffuse blue reflectance factor (brightness) of pulp, paper and paperboard.

The scope of this Standard is limited to pulps, papers and paperboards which are effectively free from materials emitting fluorescent radiation under the conditions of measurement. Such materials are used to enhance the reflectivity of white papers by absorbing ultraviolet radiation and re-emitting it in the blue visible range. 'Effectively free' means that the fluorescent contribution to the diffuse blue reflectance factor is not greater than 0.3% reflectance factor. Samples which contain fluorescent materials may be tested by this procedure using a UV or near-UV cut-off filter to exclude UV radiation from the light reaching the test piece (see Clause 7.3), but in such cases the test result is not indicative of the visual appearance of the sample.

2 Normative references

The following documents are referred to in this Standard.

AS/NZS	
1301.203	Forming handsheets for physical testing of pulp
1301.214	Equipment for preparation of handsheets
1301.415	Standard atmosphere for testing paper and board and procedure for monitoring the atmosphere
1301.436	Measurement of diffuse reflectance factor
ISO	
2470	Paper, board and pulps—Measurement of diffuse blue reflectance factor (ISO brightness)
3688	Pulps—Preparation of laboratory sheets for the measurement of diffuse blue reflectance factor (ISO brightness)

3 Definitions

For the purpose of this Standard, the following definitions apply.

3.1 Reflectance factor (*R*), the ratio, expressed as a percentage, of the radiation reflected by a body to that reflected by the perfect reflecting diffuser under the same conditions.

3.2 Intrinsic reflectance factor (R_∞), the reflectance factor of a layer or pad of the material thick enough to be opaque.

3.3 Diffuse blue reflectance factor, (commonly referred to as brightness) the intrinsic reflectance factor measured at an effective wavelength of 457 nm with a reflectometer conforming to the requirements described in AS/NZS 1301.436, which is a general method for measuring diffuse reflectance factor and includes geometric and photometric specification of the instrument, procedures for calibration against ISO reference standards and instructions for carrying out measurements.

4 Apparatus

4.1 Reflectometer, as described in AS/NZS 1301.436 and calibrated according to that Standard against ISO reference standards IR 2 or IR 3.