

Australian/New Zealand Standard™

**Methods of test for pulp and paper**

**Part 411s: Water absorptiveness of  
paper and paperboard (Cobb test)**



#### **AS/NZS 1301.411s:2004**

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 22 January 2004 and on behalf of the Council of Standards New Zealand on 5 March 2004. It was published on 24 March 2004.

---

The following are represented on Committee PK-019:

Appita Inc.  
AusInfo  
Australian Paper Industry Council  
CSIRO Forestry and Forest Products  
Forest Research (New Zealand)  
National Association of Forest Industries  
New Zealand Pulp and Paper Industry Association  
Printing Industries Association of Australia

---

#### **Keeping Standards up-to-date**

Standards are living documents which reflect progress in science, technology and systems. To maintain their currency, all Standards are periodically reviewed, and new editions are published. Between editions, amendments may be issued. Standards may also be withdrawn. It is important that readers assure themselves they are using a current Standard, which should include any amendments which may have been published since the Standard was purchased.

Detailed information about joint Australian/New Zealand Standards can be found by visiting the Standards Web Shop at [www.standards.com.au](http://www.standards.com.au) or Standards New Zealand web site at [www.standards.co.nz](http://www.standards.co.nz) and looking up the relevant Standard in the on-line catalogue.

Alternatively, both organizations publish an annual printed Catalogue with full details of all current Standards. For more frequent listings or notification of revisions, amendments and withdrawals, Standards Australia and Standards New Zealand offer a number of update options. For information about these services, users should contact their respective national Standards organization.

We also welcome suggestions for improvement in our Standards, and especially encourage readers to notify us immediately of any apparent inaccuracies or ambiguities. Please address your comments to the Chief Executive of either Standards Australia International or Standards New Zealand at the address shown on the back cover.

---

# Australian/New Zealand Standard™

## Methods of test for pulp and paper

### Part 411s: Water absorptiveness of paper and paperboard (Cobb test)

Originated as AS P1.P411m—1962.  
Previous edition AS 1301.411s—1989.  
Jointly revised and designated as AS/NZS 1301.411s:2004.

#### **COPYRIGHT**

© Standards Australia/Standards New Zealand

All rights are reserved. No part of this work may be reproduced or copied in any form or by any means, electronic or mechanical, including photocopying, without the written permission of the publisher.

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

ISBN 0 7337 5752 9

## 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 1301.411s—1989, *Methods of test for pulp and paper*, Method 411s: *Water absorptiveness of paper and paperboard (Cobb test)*.

The objective of this Standard is to provide a method for those concerned with determining the water absorptiveness of sized paper and board, including corrugated fibreboard, under standard conditions.

This Standard is identical with and has been reproduced from ISO 535:1991, *Paper and board—Determination of water absorptiveness—Cobb method*.

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

- (a) Its number does not appear on each page of text and its identity is shown only on the cover and title page.
- (b) In the source text, ‘this International Standard’ should read ‘this Australian/New Zealand Standard’.
- (c) A full point should be substituted for a comma when referring to a decimal marker.

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/NZS	
186	Paper and board—Sampling to determine average quality	1301 1301.417s	Methods of test for pulp and paper, Method 417s: Sampling paper, board and pulp for testing
187	Paper, board and pulps—Standard atmosphere for conditioning and testing and procedure for monitoring the atmosphere and conditioning of samples	1301.P414m 1301.415s	Method P414m: Conditioning of paper for testing Method 415s: Standard atmosphere for testing paper and board and procedure for monitoring the atmosphere
5269	Pulps—Preparation of laboratory sheets for physical testing—	1301.214s	Method 214s: Equipment for preparation of handsheets
5269-1	Part 1: Conventional sheet-former method		
8787	Paper and board—Determination of capillary rise—Klemm method	—	

## AUSTRALIAN/NEW ZEALAND STANDARD

### Methods of test for pulp and paper

Method 411s:

Water absorptiveness of paper and paperboard (Cobb test)

#### 1 Scope

This International Standard specifies a method of determining the water absorptiveness of sized paper and board, including corrugated fibreboard, under standard conditions. It may not be suitable for paper of grammage less than 50 g/m<sup>2</sup> or embossed paper. It is not suitable for porous papers such as newsprint or unsized papers such as blotting paper or other papers having a relatively high water absorptiveness for which ISO 8787 is more suitable.

This method is not intended to be used for precise evaluation of the writing properties of paper although it does give a general indication of suitability for use with aqueous inks.

#### 2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 186:1985, *Paper and board — Sampling to determine average quality*.

ISO 187:1990, *Paper, board and pulps — Standard atmosphere for conditioning and testing and procedure for monitoring the atmosphere and conditioning of samples*.

ISO 5269-1:1979, *Pulps — Preparation of laboratory sheets for physical testing — Part 1: Conventional sheet-former method*.

ISO 8787:1986, *Paper and board — Determination of capillary rise — Klemm method*.

#### 3 Definition

For the purposes of this International Standard, the following definition applies.

**water absorptiveness (Cobb value):** The calculated mass of water absorbed in a specified time by 1 m<sup>2</sup> of paper or board under specified conditions.

NOTE 1 The test area is normally 100 cm<sup>2</sup>.

#### 4 Principle

A test piece is weighed immediately before and immediately after exposure for a specified time of one surface to water, followed by blotting. The result of the increase in mass is expressed in grams per square metre (g/m<sup>2</sup>).

#### 5 Reagents and materials

##### 5.1 Water, distilled or deionized.

NOTE 2 The temperature of the water is important and should be maintained during the test at the temperature used for conditioning and testing.

**5.2 Blotting paper,** having a grammage of 250 g/m<sup>2</sup> ± 25 g/m<sup>2</sup>. Pulp evaluation blotters are acceptable for the purposes of this International Standard (see ISO 5269-1).

#### 6 Apparatus

##### 6.1 Absorptiveness tester.

For the determination of water absorptiveness, any type of apparatus may be used which permits

- an immediate and uniform contact of the water with the part of the test piece submitted to the test;