

Australian/New Zealand Standard™

Methods of test for pulp and paper

**Method 457s: Determination of
moisture content in paper, board and
pulps**



AS/NZS 1301.457s:2006

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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 edition cancels and replaces AS 1301.457s—1992.

This Standard conforms to ISO 287:1985.

Contents

	<i>Page</i>
1 Scope.....	1
2 Normative references.....	1
3 Methods.....	1
4 Definitions	2
5 Apparatus.....	2
6 Procedures	4
7 Calculation.....	4
8 Test report.....	5

NOTES

Determination of moisture content in paper, board and pulps

1 Scope

The moisture content of many materials is commonly determined by oven-drying, the change in mass of the material being assumed to be due solely to removal of water. In the case of paper products and pulp this assumption is incorrect. Volatile constituents other than water may be lost in oven-drying and oxidation or decomposition of some constituents is possible at high temperatures.

The quantity of water removed depends on the method of drying adopted. In oven-drying the moisture values obtained are to some extent dependent on the temperature used, the humidity in the oven and also on the time of drying.

When other methods of water removal are used, for instance vacuum desiccation or distillation or extraction with solvents, moisture content values do not always agree with those obtained by an oven-drying method.

The moisture content of paper products and pulps must therefore always be defined in terms of a particular method. This Standard describes the two main procedures.

The method of sampling for determination of moisture content is critical and the relevant Standard, AS 1301.417s—1992 *Methods of test for pulp and paper*, Method 417s: *Sampling paper, board and pulp for testing*, fully describes the procedure required.

NOTE 1 — When information is required on variations in moisture content between the centre and edges of sheets or across a reel, a number of test pieces must be cut in a pattern decided by the information required. A scheme for this is described in ISO 287:1985.

2 Normative references

The following documents are referred to in this Standard.

AS

1301.417s Sampling paper, board and pulp for testing

2508 Safe storage and handling information card (series)

AS/NZS

2243.2 Safety in laboratories—Chemical aspects

ISO

287 Paper and board—Determination of moisture content—Oven-drying method

3 Methods

3.1 Oven-drying method

This method applies to paper products and pulps that do not contain any appreciable quantity of material other than water which will escape from the paper at the temperature specified for the test.

3.2 Distillation method

This method employs the Dean and Stark apparatus and follows in most respects the procedure recommended by Tate and Warren*. The method is suitable for materials such as waxed papers, varnished papers, laminates and other products which cannot be tested by the oven-drying method owing to the probable loss of volatile or fusible constituents. It cannot be used if there is a possibility of water being produced by decomposition of any material with which the paper has been treated.

* Tate and Warren, Analyst 61:367 (1936).