AS/NZS 1301.440:2016
ISO 5636-3:2013

AS/NZS 1301.440:2016

Australian/New Zealand Standard™

Methods of test for pulp and paper

Method 440: Determination of air permeance (medium range)—Bendtsen method

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 19 September 2016 and by the New Zealand Standards Approval Board on 17 August 2016.
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The following are represented on Committee PK-019:

Appita
Australian Forest Products Association
New Zealand Paper Forum
Scion

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This Standard was issued in draft form for comment as DR AS/NZS 1301.440:2015.

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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 1301.440s—1991, *Methods of test for pulp and paper*, Method 440s: *Bendtsen air permeance of paper and board*.

The objective of this Standard is to provide a method for determining the air permeance of paper and board by means of the Bendtsen air permeance instrument.

This Standard is identical with, and has been reproduced from ISO 5636-3:2013, *Paper and board—Determination of air permeance (medium range),* Part 3: *Bendtsen method*.

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

(a) In the source text 'this part of ISO 5636' 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 references to Australian or Australian/New Zealand Standards, as follows:

Reference to International Standard		*Australian/New Zealand Standard*	
ISO 186	Paper and board—Sampling to determine average quality	AS/NZS 1301 1301.417s	Method of test for pulp and paper Method 417s: Sampling to determine average quality

The normative reference ISO 187 has not been adopted as an Australian/New Zealand Standard.

In Australia and New Zealand the following Standards are generally used:

AS/NZS 1301.414s:2006, *Methods of test for pulp and paper*, Methods 414s: *Conditioning of paper for testing*.

AS/NZS 1301.415s:2008, *Methods of test for pulp and paper*, Methods 415s: *Standard atmosphere for testing paper and board and procedure for monitoring the atmosphere*.

The terms 'normative' and 'informative' have been used in this Standard to define the application of the annex to which they apply. A 'normative' annex is an integral part of a Standard, whereas an 'informative' annex is only for information and guidance.

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Method 440:
Determination of air permeance (medium range)—Bendtsen method

1 Scope

This part of ISO 5636 specifies the Bendtsen method for determining the air permeance of paper and board using the Bendtsen apparatus.

It is applicable to papers and boards which have air permeances between 0,35 µm/(Pa·s) and 15 µm/(Pa·s) when tested with the Bendtsen apparatus.

It is unsuitable for rough-surfaced materials which cannot be securely clamped to avoid leakage.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. 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 187, *Paper, board and pulps — Standard atmosphere for conditioning and testing and procedure for monitoring the atmosphere and conditioning of samples*

3 Terms and definitions

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

3.1
air permeance
mean air flow rate through unit area under unit pressure difference in unit time, under specified conditions

Note 1 to entry: Air permeance is expressed in micrometres per pascal second [1 ml/(m^2·Pa·s) = 1 µm/(Pa·s)].

Note 2 to entry: This property is called air permeance, and not air permeability, because it is reported as a sheet property and is not standardized with respect to thickness to give a material property per unit thickness.

4 Principle

A test piece is clamped between a circular gasket and an annular flat surface of known dimensions. The absolute air pressure on one side of the test area of the test piece is equivalent to atmospheric pressure and the difference in pressure between the two sides of the test piece is maintained at a small, substantially constant, value during the test. Determination of the flow of air through the test area in a specified time.