AS/NZS 1301.450rp:2006
ISO 9895:1989

AS/NZS 1301.450rp:2006

Australian/New Zealand Standard™

# Methods of test for pulp and paper

# Method 450rp: Compression strength of paper and board—Short span test



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 15 June 2006 and on behalf of the Council of Standards New Zealand on 30 June 2006.
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The following are represented on Committee PK-019:

Australian Plantation Products and Paper Industry Council (A3P)
Appita
CSIRO Forestry and Forest Products
Ensis Papro, SCION
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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 1301.450rp—1989.

The objective of this Standard is to specify a method for the determination of the compressive strength in the machine and cross directions of paper and board using a short span compression tester.

This Standard is identical with and has been reproduced from ISO 9895:1989, *Paper and board—Compressive strength—Short span test*.

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

(a) Its number appears on the cover and title page while the international standard number appears only on the cover

(b) In the source text 'this International Standard' should read 'this Australian/New Zealand Standard.'

(c) A full point substitutes for a comma when referring to a decimal marker.

The terms 'normative' and 'informative' are used 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.

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 | | AS/NZS | |
| 186 | Paper and board—Sampling to determine average quality | — | |
| 187 | Paper and board—Conditioning of samples | 1301 | Methods of test for pulp and paper |
| | | 1301.414s | Method 414s: Conditioning of paper for testing |
| | | 1301.415s | Method 415s: Standard atmosphere for testing paper and board and procedure for monitoring the atmosphere |
| 536 | Paper and board—Determination of grammage | 1301.405s | Method 405s: Grammage of non-creped paper and board |

AUSTRALIAN/NEW ZEALAND STANDARD

# Methods of test for pulp and paper

## Method 450rp:
## Compression strength of paper and board—Short span test

## 1 Scope

This International Standard specifies a method for the determination of the compressive strength in the machine and cross directions of paper and board using a short span compression tester.

This International Standard is intended for papers or boards used for the manufacture of containers and boxes. It can also be used for laboratory sheets prepared for the testing of pulp.

NOTE — The method specified in this International Standard should not be used for the determination of strain (see clause A.1).

## 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 : 1977, *Paper and board — Conditioning of samples*.

ISO 536 : 1976, *Paper and board — Determination of grammage*.

## 3 Definitions

For the purposes of this International Standard, the following definitions apply.

**3.1 compressive strength:** The maximum compression force per unit width that a test piece of paper or board can support until the onset of failure in a compression test.

**3.2 compression index:** The compressive strength divided by the grammage.

## 4 Principle

A test piece, 15 mm wide, is clamped in two clamps, 0,7 mm apart and compressed until failure. The maximum force is measured and the compressive strength is calculated.

## 5 Apparatus

### 5.1 Compression tester.

The tester has two clamps (see figure 1) for holding a test piece 15 mm wide. Each clamp has a stationary and a movable jaw.

The clamps shall be 30 mm long and have a high-friction surface. The clamps shall be able to hold the test piece in position with a constant clamping force of 2 300 N ± 500 N. The clamps shall be designed so that they grip the test piece firmly over its full width. (See also clause A.1.)

The stationary jaws shall be in the same plane and on the same side of the test piece. The clamping surfaces of the movable jaws shall be in the same plane and parallel to those of the stationary jaws. For specifications, see clause A.2.

At the start of the test the free span between the clamps shall be 0,70 mm ± 0,05 mm. After the test is started they shall move towards each other at a speed of (3 ± 1) mm/min.

The tester shall have a measuring and display system so that the maximum compression force can be determined with an error of less than ± 1 % of the reading when this is within 10 % to 100 % of the full scale range.

The tester shall be designed so that a device for calibration of the load cell with weights of known mass can be attached.

The tester shall have a device showing the clamping force exerted by the jaws, expressed in newtons.