AS/NZS 1301.434:2016
ISO 7263:2011

AS/NZS 1301.434:2016

Australian/New Zealand Standard™

Methods of test for pulp and paper

Method 434: Determination of the flat crush resistance after laboratory fluting

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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 6 December 2016 and by the New Zealand Standards Approval Board on 9 December 2016.
This Standard was published on 23 December 2016.

The following are represented on Committee PK-019:

Appita
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This Standard was issued in draft form for comment as DR AS/NZS 1301.434:2015.

Australian/New Zealand Standard™

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Method 434: Determination of the flat crush resistance after laboratory fluting

First published in Australia as AS 1301.P434s—1983.
Revised and redesignated AS 1301.434s—1989.
Second edition 1991.
First published in New Zealand as Appita P434ts—1975.
Revised and designated Appita P434s—1983.
Revised and redesignated NZS 1301.434s—1989.
Second edition 1991.
Jointly revised and designated AS/NZS 1301.434s:1997.
Jointly revised and designated AS/NZS 1301.434:2016.

Published by SAI Global Limited under licence from Standards Australia Limited, GPO Box 476, Sydney, NSW 2001, Australia

ISBN 978 1 76035 652 1

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/NZS 1301.434s:1997, *Methods of test for pulp and paper*, Part 434s: *Crush resistance of corrugating medium*.

The objective of this Standard is to provide a method for determining the crush resistance of corrugating medium.

This Standard is identical with, and has been reproduced from ISO 7263:2011, *Corrugating medium—Determination of the flat crush resistance after laboratory fluting.*

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

(a) In the source text 'this International Standard' 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		AS/NZS	
		1301	Methods of test for pulp and paper
186	Paper and board—Sampling to determine average quality	1301.417s	Method 417s: Sampling to determine average quality
536	Paper and board—Determination of grammage	1301.405s	Part 405s: Grammage of non-creped paper and board

The normative reference ISO 187 and ISO 13820 have not been adopted as an Australian/ New Zealand Standard. In Australia and New Zealand the following Standards are generally used:

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

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

(iii) The AS/NZS standards use different humidity ranges and allow different apparatus to ISO 187.

(iv) AS/NZS 1301.449s:2015, *Methods of test for pulp and paper*, Method 449s: *Description of crush testing equipment*.

(v) The above Standards describe the test instruments used to perform crush tests set out as in other parts of AS/NZS 1301.

Only normative references that have been adopted as Australian or Australian/New Zealand Standards have been listed.

The term 'informative' has been used in this Standard to define the application of the annex to which it applies. An 'informative' annex is only for information and guidance.

CONTENTS

INTRODUCTION

The flat crush resistance of laboratory-fluted corrugating medium is regarded as an important property because it is an indication of the potential flat crush resistance of corrugated fibreboard made from that medium. The corrugated medium is fluted by passing it between heated rollers. Two different test procedures are then widely used:

a) the fluted corrugating medium is compressed immediately after fluting (i.e. 5 s to 8 s after fluting);

b) the fluted corrugating medium is conditioned for 30 min to 35 min under standard laboratory atmosphere conditions before being compressed.

Procedure a) generally gives considerably higher results than those obtained with procedure b). The differences in results are claimed to be caused by

— the lower moisture content (and thus higher stiffness) of the unconditioned fluted corrugating medium, and/or

— the change in flute profile which occurs during the conditioning period.

Since considerable advantages are claimed for both procedures and both are widely used, this International Standard describes both procedures.

A method of determining the flat crush resistance of manufactured corrugated fibreboard is given in ISO 3035[1].

AUSTRALIAN/NEW ZEALAND STANDARD

Methods of test for pulp and paper

Method 434:
Determination of the flat crush resistance after laboratory fluting

1 Scope

This International Standard specifies two methods for the determination of the flat crush resistance of a corrugating medium after laboratory fluting.

The procedures are applicable to any corrugating medium intended to be used, after fluting, in the manufacture of corrugated board.

2 Normative references

The following referenced documents are indispensable for the application of this document. 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*

ISO 536, *Paper and board — Determination of grammage*

ISO 13820, *Paper, board and corrugated fibreboard - Description and calibration of compression-testing equipment*

3 Terms and definitions

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

3.1
flat crush resistance
maximum force that a corrugated test piece will withstand before the flutes collapse under an increasing force applied perpendicular to its surface

NOTE Flat crush resistance is expressed in newtons.

3.2
flat crush resistance index
flat crush resistance divided by the grammage

NOTE The result is expressed in newton square metres per gram (Nm^2/g).

4 Principle

Fluting of the corrugating medium by passing it between heated rollers, and its formation into single-faced corrugated board using pressure-sensitive adhesive tape as the facing. Application of a crushing force, in the direction perpendicular to the plane of the flutes, and determination of the flat crush resistance.