AS 1301.403:2019

Australian STANDARD®

Methods of test for pulp and paper

Method 403: Bursting strength of paper (ISO 2758:2014, MOD)

STANDARDS Australia

AS 1301.403:2019

This Australian Standard® was prepared by PK-019, Methods of Test for Pulp and Paper. It was approved on behalf of the Council of Standards Australia on 09 October 2019.

This Standard was published on 25 October 2019.

The following are represented on Committee PK-019:

Appita
Monash University

This Standard was issued in draft form for comment as DR AS 1301.403:2019.

Keeping Standards up-to-date

Ensure you have the latest versions of our publications and keep up-to-date about Amendments, Rulings, Withdrawals, and new projects by visiting:
www.standards.org.au

ISBN 978 1 76072 608 9

Australian STANDARD®

Methods of test for pulp and paper

Method 403: Bursting strength of paper (ISO 2758:2014, MOD)

Originated as AS P1.P403rp—1961.
Revised and redesignated as AS 1301.403s—1989.
Jointly revised and redesignated as AS/NZS 1301.403s:1997.
Previous edition 2006.
Revised and redesignated as AS 1301.403:2019.

Preface

This Test Method was prepared by the Australian members of Joint Standards Australia/Standards New Zealand Committee PK-019, Methods of Test for Pulp and Paper, to supersede AS/NZS 1301.403s:2006, *Methods of test for pulp and paper — Bursting strength of paper*.

After consultation with stakeholders in both countries, Standards Australia and Standards New Zealand decided to develop this Test Method as an Australian Test Method rather than an Australian/New Zealand Test Method.

The objective of this Test Method is to specify a method for measuring the bursting strength of paper submitted to increasing hydraulic pressure. It is applicable to paper having bursting strengths within the range 70 kPa to 1 400 kPa. It is not intended to be used for the components (such as fluting medium or linerboard) of a combined board, for which the method given in AS 1301.438 is to be used.

In the absence of any commercial agreement as to which method should be used for testing the material, materials with bursting strengths below 600 kPa should be tested according to this Test Method.

This Test Method is an adoption with national modifications, and has been reproduced from, ISO 2758:2014, *Paper — Determination of bursting strength*. The modifications are additional requirements and are set out in Appendix ZZ, which has been added at the end of the source text.

Appendix ZZ lists the variations to ISO 2758:2014 for the application of this Test Method in Australia.

As this document has been reproduced from an International Standard, the following applies:

(a) In the source text "this International Standard" should read "this Australian Test Method".

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

Australian or Australian/New Zealand Standards that are identical adoptions of international normative references may be used interchangeably. Refer to the online catalogue for information on specific Standards.

The terms "normative" and "informative" are used in Test Methods to define the application of the appendices or annexes to which they apply. A "normative" appendix or annex is an integral part of a Test Method, whereas an "informative" appendix or annex is only for information and guidance.

Contents

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2. www.iso.org/directives

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received. www.iso.org/patents

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 6, *Paper, board and pulps*, Subcommittee SC 2, *Test methods and quality specifications for paper and board*.

This fourth edition cancels and replaces the third edition (ISO 2758:2001), of which it constitutes a minor revision. It has been revised to include precision data.

Introduction

This International Standard is applicable to papers with bursting strengths in the range 70 kPa to 1 400 kPa.

For materials with bursting strengths equal to or greater than 350 kPa (or 250 kPa for the components of combined materials), an alternative method, based on similar principles, is specified in ISO 2759[1] All components of solid and corrugated fibreboard, irrespective of bursting strength, should be tested according to ISO 2759.

In view of the overlap between the method for testing papers and boards and in the absence of any commercial agreement, materials below 600 kPa should be tested according to this International Standard.

NOTE Due to differences in the specification of the apparatus, tests made on the same material using the procedures of ISO 2759 and this International Standard will not necessarily give the same results.

NOTES

Australian Standard®

Methods of test for pulp and paper

Method 403: Bursting strength of paper (ISO 2758:2014, MOD)

1 Scope

This International Standard specifies a method for measuring the bursting strength of paper submitted to increasing hydraulic pressure. It is applicable to paper having bursting strengths within the range 70 kPa to 1 400 kPa. It is not intended to be used for the components (such as fluting medium or linerboard) of a combined board, for which the method given in ISO 2759[1] is more suitable.

In the absence of any commercial agreement as to which method should be used for testing the material, materials with bursting strengths below 600 kPa should be tested according to this International Standard.

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*

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

3 Terms and definitions

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

3.1
bursting strength
maximum pressure developed by the hydraulic system in forcing an elastic diaphragm through a circular area of the paper when the pressure is applied in the manner described in the method

Note 1 to entry: The indicated bursting pressure includes the pressure required to extend the diaphragm during the test.

3.2
burst index
bursting strength of paper, in kilopascals, divided by the grammage of the paper determined in accordance with ISO 536

4 Principle

A test piece, placed over a circular elastic diaphragm, is rigidly clamped at the periphery but free to bulge with the diaphragm. Hydraulic fluid is pumped at a constant rate, bulging the diaphragm until the test piece ruptures. The bursting strength of the test piece is the maximum value of the applied hydraulic pressure.

5 Apparatus

The apparatus shall contain, as a minimum, the features described in 5.1 to 5.4.