

INTERNATIONAL ISO
This is a preview of "ISO 15361:2000". Click here to purchase the full version from the ANSI store.

First edition
2000-03-01

Pulps — Determination of zero-span tensile strength, wet or dry

Pâtes — Détermination de la résistance à la traction à mâchoires jointives, à l'état humide ou sec



Reference number
ISO 15361:2000(E)

© ISO 2000

This is a preview of "ISO 15361:2000". [Click here to purchase the full version from the ANSI store.](#)

PDF disclaimer

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

© ISO 2000

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 734 10 79
E-mail copyright@iso.ch
Web www.iso.ch

Printed in Switzerland

This is a preview of "ISO 15361:2000". [Click here to purchase the full version from the ANSI store.](#)

Contents

	Page
1	Scope 1
2	Normative references 1
3	Terms and definitions 1
4	Principle 2
5	Apparatus 2
6	Sampling 4
7	Preparation of test pieces 4
7.1	Introduction 4
7.2	Pretreatment of sample 4
7.3	Preparation of test pieces to be tested as dry or rewetted 5
7.4	Rewetting of test pieces 5
7.5	Preparation of never-dried test pieces 5
8	Procedure 6
8.1	Calibration 6
8.2	Determination 7
8.3	Test on reference material 7
9	Expression of results 7
9.1	Reporting of results 7
9.2	Zero-span tensile strength 8
9.3	Zero-span tensile index 8
10	Precision 8
11	Test report 9
	Annex A (normative) Alternative equipment for straightening fibres 10
	Bibliography 11

This is a preview of "ISO 15361:2000". [Click here to purchase the full version from the ANSI store.](#)

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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

International Standard ISO 15361 was prepared by Technical Committee ISO/TC 6, *Paper, board and pulps*, Subcommittee SC 5, *Test methods and quality specifications for pulp*.

Annex A forms a normative part of this International Standard.

This is a preview of "ISO 15361:2000". [Click here to purchase the full version from the ANSI store.](#)

Introduction

Tensile strength data at a span length of zero may be used to assess the retention of fibre strength through the entire fibre-processing chain, providing opportunities to optimize fibre characteristics and utilization in various paper grades. Tensile strength values determined at a span length of zero contribute to our understanding of finished sheet strength and are of increasing importance in measuring the impact of new pulping, bleaching and papermaking processes on fibre characteristics.

The zero-span tensile test may be used to determine the strength of pulp fibres when beaten under laboratory conditions, regardless of the laboratory beating procedure used. Measurement of zero-span tensile strength, in conjunction with tensile strength as well as other physical properties, is useful in optimizing new fibre-processing techniques and maximizing utilization of new fibre sources such as recycled fibres. Papers referenced in the bibliography give further information on the use of zero-span tensile measurements.

The clamping pressure utilized in zero-span testing ensures a maximum clamping effect but cannot totally prevent micro-slippage, whereby the tensile load transmitted in the clamped fibres is dissipated by frictional shear into the clamping jaws. This micro-slippage means that the ends of some fibres will slip out from beneath the clamping jaw, thereby diminishing the number of fibres carrying the load at tensile failure. In addition, if kinks in fibres are not removed in the beating process, test results may be diminished. For these reasons, careful interpretation of the zero-span tensile strength value should be exercised in order to separate effects due to the relative number of fibres which are carrying the load at failure, and the effects due to the tensile strength of the individual fibres present in the aggregate.

The zero-span strength values may be different if the samples are tested dry and conditioned, rewetted or wet (never dried).