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Paper and board — Determination of z-directional tensile strength

Papier et carton — Détermination de la force de traction dans la direction z

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Foreword

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International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. 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 document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 15754 was prepared by Technical Committee ISO/TC 6, *Paper, board and pulps*, Subcommittee SC 2, *Test methods and quality specifications for paper and board*.

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Introduction

This International Standard has been developed in order to specify the conditions for determining the z-directional tensile strength of paper and board, i.e. the tensile strength in the z-direction.

The terminology for the strength of paper in the thickness direction is not well defined. Terms such as z-directional tensile strength, Scott Bond, internal bond strength, internal fibre bond strength, ply adhesion and ply bond strength are used, depending on the measurement procedure, on the type of sample tested and on the purpose of the measurement.

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Paper and board — Determination of z-directional tensile strength

1 Scope

This International Standard specifies a method for the determination of z-directional tensile strength, i.e. the tensile strength in the z-direction. It is applicable to paper and board, but not applicable to corrugated fibreboard.

For papers, the grammage range can not be stated explicitly, but results for papers having a grammage less than 60 g/m^2 shall be treated with caution since the tape may reinforce the paper.

This International Standard does not determine the absolute strength of paper as the measurement is affected by the tape, the pressing conditions and the speed used.

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*

3 Terms and definitions

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

3.1
z-direction
direction perpendicular to the plane of the material

3.2
z-directional tensile strength
maximum tensile stress a paper or board can withstand, when it is loaded in the z-direction under the conditions described in this International Standard

4 Principle

A test piece, attached to and between two flat metal plates using double-sided adhesive tape and given pressure for a specified time, is strained to break during a given time of loading, using a tensile-testing apparatus that records the maximum tensile force in the z-direction.

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