INTERNATIONAL STANDARD

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Paper and board — Compressive strength — Short span test

Papier et carton — Résistance à la compression — Essai à faible écartement

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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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 9895 was prepared by Technical Committee ISO/TC 6, *Paper, board and pulps*. It is based on SCAN-P 46 : 83, published by the Scandinavian Pulp, Paper and Board Testing Committee.

Annex A forms an integral part of this International Standard. Annex B is for information only.

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Paper and board — Compressive strength — 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.