INTERNATIONAL STANDARD

ISO 11093-9

Second edition
2006-10-01

Paper and board — Testing of cores —

Part 9: Determination of flat crush resistance

Papier et carton — Essais des mandrins —

Partie 9: Détermination de la résistance à l'écrasement à plat

Reference number
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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.

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 11093-9 was prepared by Technical Committee ISO/TC 6, *Papers, board and pulps*.

This second edition cancels and replaces the first edition (ISO 11093-9:1994), which has been technically revised.

ISO 11093 consists of the following parts, under the general title *Paper and board — Testing of cores*:

— *Part 1: Sampling*

— *Part 2: Conditioning of test samples*

— *Part 3: Determination of moisture content using the oven drying method*

— *Part 4: Measurement of dimensions*

— *Part 5: Determination of characteristics of concentric rotation*

— *Part 6: Determination of bending strength by the three-point method*

— *Part 7: Determination of flexural modulus by the three-point method*

— *Part 8: Determination of natural frequency and flexural modulus by experimental modal analysis*

— *Part 9: Determination of flat crush resistance*

Paper and board — Testing of cores —

Part 9:
Determination of flat crush resistance

1 Scope

This part of ISO 11093 specifies a method for the determination of the maximum flat crush resistance of wound paper and board cores.

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 7500-1, *Metallic materials — Verification of static uniaxial testing machines — Part 1: Tension/compression testing machines — Verification and calibration of the force-measuring system*

ISO 11093-1, *Paper and board — Testing of cores — Part 1: Sampling*

ISO 11093-2, *Paper and board — Testing of cores — Part 2: Conditioning of test samples*

3 Terms and definitions

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

3.1
flat crush resistance
quantity calculated from the load acting at right angles to the axis of the test piece at the first maximum or levelling off of the crushing force of the load deformation curve

NOTE The flat crush resistance is expressed in kilonewtons per metre.

4 Principle

The test piece is placed between two pressure plates arranged in parallel, so that its axis is parallel with the plane of the pressure plates and compressed at a constant plate rate until the first maximum, or levelling, of the load has been exceeded.