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Paper and board — Testing of cores —

Part 2:

Conditioning of test samples

Papier et carton — Essais des mandrins —

Partie 2: Conditionnement des échantillons pour essai

ISO 11093-2:1994

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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 voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 11093-2 was prepared by Technical Committee ISO/TC 6, *Paper, board and pulps*, Subcommittee SC 3, *Dimensions and grammage of paper, board and pulp products*.

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: *Dimensional measurements*
- Part 5: *Determination of characteristics of concentric rotation*
- Part 8: *Machine test for dynamic cleavage*
- Part 9: *Determination of flat crush resistance*

Paper and board — Testing of cores —

Part 2:

Conditioning of test samples

1 Scope

This part of ISO 11093, based on ISO 187, specifies the conditioning atmospheres to be used for conditioning and testing cores.

2 Normative reference

The following standard contains provisions which, through reference in this text, constitute provisions of this part of ISO 11093. At the time of publication, the edition indicated was valid. All standards are subject to revision, and parties to agreements based on this part of ISO 11093 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 187:1990, *Paper, board and pulps — Standard atmosphere for conditioning and testing and procedure for monitoring the atmosphere and conditioning of samples.*

3 Definition

For the purposes of this part of ISO 11093, the following definition applies.

3.1 conditioning: Establishing a moisture equilibrium between the test piece and a conditioning atmosphere of a specified temperature and relative humidity.

NOTE 1 The moisture equilibrium is required to establish a stable physical state of the cores. Under certain circumstances, conditioning may have to be prolonged until the desired physical state has been attained. Such circumstances, however, are not within the scope of this method.

4 Conditioning atmosphere

See table 1.

Table 1 — Conditioning atmosphere

Designation	Temperature °C	Relative humidity %	Remark
23/50	23 ± 1	50 ± 2	Preferred atmosphere
27/65	27 ± 1	65 ± 2	For tropical countries

Unless otherwise stated in the terms and conditions of delivery or test standard or agreed between the interested parties, the 23/50 conditioning atmosphere shall be used.

NOTE 2 The specification for the temperature and relative humidity, and their admissible tolerance values, conform to those laid down in ISO 554:1976, *Standard atmospheres for conditioning and/or testing — Specifications.*

5 Apparatus

5.1 Climatic chamber and measuring instrumentation

The climatic chamber in which conditioning is carried out shall be provided with an automatic facility capable of bringing the air to standard conditions of temperature and relative humidity, as well as of circulating the air in such a manner that these conditions are uniformly maintained at all relevant points within the climatic chamber.

The atmospheric conditions in the chamber shall be verified in accordance with the specifications given in ISO 187:1990, Annex A.

6 Procedure

6.1 Pre-drying of the test pieces

To speed up the adjustment of the moisture equilibrium between test pieces and the conditioning atmosphere, predry the test pieces, for a period of 48 h, in air of a relative humidity between 20 % and 35 % and at a temperature of $40\text{ °C} \pm 2\text{ °C}$.

6.2 Conditioning

Position the test pieces so that the air has free access to all surfaces until the moisture equilibrium has been attained. The moisture equilibrium shall be considered to be attained if the results of two consecutive weighings, carried out at a minimum interval of 48 h, do not differ from one another by more than 0,1 % of the mass.

6 Conditioning report

The conditioning report shall include the following particulars:

- a) reference to this part of ISO 11093;
- b) type and designation of the specimen or test pieces;
- c) place and date of conditioning;
- d) number of specimen or test pieces;
- e) conditioning atmosphere used and the duration;
- f) deviation, if any, from the method specified.

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