
**Paper, board and pulps — International
calibration of testing apparatus —
Nomination and acceptance of
standardizing and authorized laboratories**

*Papiers, cartons et pâtes — Étalonnage international des appareils
d'essai — Désignation et agrément des laboratoires de référence et des
laboratoires agréés*

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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 4094 was prepared by Technical Committee ISO/TC 6, *Paper, board and pulps*.

This second edition cancels and replaces the first edition (ISO 4094:1991). It follows the scheme established in the first edition, with many changes made largely for the sake of clarity. Major changes include the following:

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- a) in the Scope, it is indicated that this standard is for use specifically by ISO/TC 6 or one of its subcommittees;
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 - b) in Clause 5, it is made clear that a laboratory may function as a standardizing laboratory, an authorized laboratory, or both;
 - c) in 7.1.2, it is stipulated that costs associated with the qualification procedure shall be borne by the applicant laboratory;
 - d) the need for strict confidentiality in assessing nominations is emphasized in 7.1.1, and the identification of a deputy convenor is suggested for those situations in which the convenor cannot be neutral;
 - e) in 8.3, it is required that the convenor report, every two years to the ISO/TC 6 Secretariat, the results of interlaboratory meetings and comparisons held during that period;
 - f) a new Clause 10 has been added, specifically dealing with the revocation of appointments.

Introduction

The objective of standardization of testing methods is to create the means by which comparable results can be obtained on different occasions and in different laboratories, to control the processes that determine the acceptability of a product. Most testing methods for paper, board and pulps are linked with the existence of some kind of reference standard to which the numerical results are to be related. In many cases, the comparison is made by means of readily available instruments of appropriate accuracy: for example, a balance with certified weights, a chronometer, a calibrated length-measuring device such as a micrometer, etc. However, in certain instances, the relation to the reference standard may not be obvious, or there may be practical problems in measuring particular properties; the test method must therefore include additional instructions for ensuring reasonable accuracy of the results. This may be accomplished with the aid of transfer standards, when the results are related either to certain properties of a unique reference standard, or to results obtained at specified laboratories entrusted with the performance of certain delicate measurements. Standardizing laboratories and authorized laboratories act as links in supplying the transfer standards required.

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Paper, board and pulps — International calibration of testing apparatus — Nomination and acceptance of standardizing and authorized laboratories

1 Scope

This International Standard provides rules for the nomination and appointment of standardizing and authorized laboratories under the jurisdiction of ISO/TC 6, or one of its subcommittees, with the aim of establishing and maintaining the reference standards and distributing the transfer standards required to achieve interlaboratory agreement in the results of a test method specified in an International Standard for paper, board or pulp. It provides guidelines for the establishment of criteria for the initial appointment and continued acceptance of nominated laboratories.

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/IEC Directives Part 1:2001, *Procedures for the technical work*

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ISO 17025, *General requirements for the competence of testing and calibration laboratories*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply (see also Table 1 and Annex A).

3.1

standardizing laboratory

laboratory appointed by ISO/TC 6 to maintain in safe custody, or otherwise realize an ISO reference standard of level 1 (notation IR1), to determine by comparison with it the values of ISO reference standards of level 2 (notation IR2), to prepare the IR2 standards, and to supply these IR2 transfer standards to authorized laboratories, where required by an International Standard under the jurisdiction of ISO/TC 6

3.2

authorized laboratory

laboratory appointed by ISO/TC 6 to provide ISO reference standards of level 3 (notation IR3), to determine their values by comparison with ISO level 2 standards and to supply these IR3 transfer standards to testing laboratories, in accordance with an International Standard under the jurisdiction of ISO/TC 6

3.3

testing laboratory

laboratory that performs tests

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3.4 ISO reference standard of level 1 IR1

ultimate and permanent reference standard, unique or collective, used for standardization of tests

NOTE This may be, for example:

- a) a material standard supplementing metrological standards for specific industrial needs;
- b) a product of high quality adopted as a reference standard with respect to certain of its properties;
- c) a complex apparatus (or piece of equipment) or a product necessary for the execution of tests and maintained as a permanent reference standard;
- d) an ideal standard.

3.5 ISO reference standard of level 2 IR2

transfer standard for the evaluation of level 3 (IR3) standards or for the calibration of instruments, consisting of a material or object evaluated against an ISO reference standard of level 1 by a standardizing laboratory, as specified in the relevant International Standard

3.6 ISO reference standard of level 3 IR3

transfer standard consisting of a material or an object evaluated against an ISO reference standard of level 2 by an authorized laboratory, as specified in the relevant International Standard, and used by a testing laboratory for the calibration of instruments

3.7 competent technical group

ISO/TC 6 working group or subcommittee having responsibility for the International Standard requiring the use of ISO reference standards

3.8 convenor

person who convenes the competent technical group responsible for the International Standard requiring the use of a reference standard

NOTE Normally, this is the convenor of the working group, but if there is no working group, then the appropriate technical committee or subcommittee chairman assumes the responsibilities of convenor.

Table 1 — Organization of laboratories (see Annex A)

Laboratory	Activity	Standard issued
Standardizing laboratory	Maintains IR1 (level 1 standard) Evaluates IR2 against IR1	Level 2 standard (IR2)
Authorized laboratory	Evaluates IR3 against IR2	Level 3 standard (IR3)
Testing laboratory	Calibrates test instrumentation with IR3	No ISO reference standard issued

4 Guidelines for preparation of specific technical criteria

The competent technical group shall have the expertise to draft the specific technical criteria against which the qualifications of a nominated laboratory may be assessed. The specific technical criteria for judging the merits of a nominated laboratory to act as a standardizing or authorized laboratory shall be included as annexes to any International Standard that specifies the use of ISO reference standards.

The technical criteria shall include requirements as to instrumentation (nature, calibration, maintenance) and the procedure to be used, with as much flexibility as possible, while still achieving the desired degree of international standardization.

The technical criteria shall include requirements as to the nature of the ISO reference standards to be made available by the standardizing and authorized laboratories, the traceability of these standards to the next higher level of standardization, and the procedures for, and frequency of, intercomparisons among the standardizing and authorized laboratories.

5 General criteria for appointment

In order that a laboratory may be eligible for appointment as a standardizing or authorized laboratory, or both, the following criteria shall be met.

5.1 The laboratory shall be nominated by its national member body.

5.2 The laboratory shall provide a letter stating:

- a) that, in its opinion, it can and will continue to meet the requirements for a standardizing and/or authorized laboratory, as specified in this International Standard and in the International Standard for the relevant test method;
- b) that it will maintain instrumentation in compliance with the relevant International Standard;
- c) that, in all its activities concerning the preparation of ISO reference standards, it will follow the instructions in the relevant International Standard;
- d) for an authorized laboratory, that it will calibrate against standards of level 2 issued by a standardizing laboratory.

The letter shall include an agreement, for a standardizing laboratory, to calibrate ISO reference standards of level 2 at a reasonable price to an authorized laboratory requesting the level 2 standard, and, for an authorized laboratory, to calibrate reference standards of level 3, at a reasonable price to any laboratory in any country requesting the level 3 standard. The letter shall also include an agreement covering comparative measurements (see 8.2), biennial reports (see 8.3), and changes in procedure (see 8.4).

5.3 The laboratory shall provide documents describing in detail the instrumentation and procedures to be followed, both in the measurement and checking of assigned values for, and in the distribution of, the ISO reference standards of levels 2 or 3, as applicable. This information shall include a description of the instrumentation to be used for the measurements (manufacturer, model and serial numbers, special features and modifications, drawings if own make), applicable publications describing the procedure, descriptions of the materials or objects to be used as level 2 or 3 standards, and other information as specified in the relevant International Standard.

5.4 The laboratory shall, in fact, meet the detailed criteria specified in the relevant International Standard, and shall satisfy the competent technical group convenor that the laboratory has the equipment and technical competence necessary to establish and maintain the required services, and shall cooperate in this determination by providing additional information, if required.