
**Paper, board and pulps — General
requirements for the competence of
laboratories authorized for the issue
of optical reference transfer standards
of level 3**

*Papiers, cartons et pâtes — Exigences générales concernant la
compétence des laboratoires autorisés pour la délivrance des étalons
de référence de transfert optique de niveau 3*

(<https://standards.iteh.ai>)
Document Preview

ISO 4094:2017

<https://standards.iteh.ai/catalog/standards/iso/8f6404dc-9526-4d35-b083-5758628a85f8/iso-4094-2017>



iTeh Standards
(<https://standards.itih.ai>)
Document Preview

ISO 4094:2017

<https://standards.itih.ai/catalog/standards/iso/8f6404dc-9526-4d35-b083-5758628a85f8/iso-4094-2017>



COPYRIGHT PROTECTED DOCUMENT

© ISO 2017, Published in Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

Contents

Page

Foreword	v
Introduction	vi
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Management requirements for Authorized Laboratories	3
4.1 Organization	3
4.2 Management system	4
4.3 Document control	5
4.3.1 General	5
4.3.2 Document approval and issue	5
4.3.3 Document changes	6
4.4 Review of requests, tenders and contracts	6
4.5 Subcontracting of calibrations	7
4.6 Purchasing services and supplies	7
4.7 Service to the customer	8
4.8 Complaints	8
4.9 Control of nonconforming testing and/or calibration work	8
4.10 Improvement	9
4.11 Corrective action	9
4.11.1 General	9
4.11.2 Cause analysis	9
4.11.3 Selection and implementation of corrective actions	9
4.11.4 Monitoring of corrective actions	9
4.11.5 Additional audits	9
4.12 Preventive action	9
4.13 Control of records	10
4.13.1 General	10
4.13.2 Technical records	10
4.14 Internal audits	11
4.15 Management reviews	11
5 Technical requirements	12
5.1 General	12
5.2 Personnel	12
5.3 Accommodation and environmental conditions	13
5.4 Test and calibration methods and method validation	14
5.4.1 General	14
5.4.2 Selection of methods	14
5.4.3 Laboratory-developed methods	14
5.4.4 Non-standard methods	15
5.4.5 Validation of methods	15
5.4.6 Estimation of uncertainty of measurement	16
5.4.7 Control of data	16
5.5 Equipment	17
5.6 Measurement traceability	18
5.6.1 General	18
5.6.2 Specific requirements – calibration	18
5.6.3 Reference standards and reference materials	18
5.7 Proficiency testing and inter-laboratory comparisons	19
5.8 Sampling	19
5.9 Handling of test and calibration items	19
5.10 Assuring the quality of test and calibration results	20

5.11	Reporting the results	20
5.11.1	General	20
5.11.2	Test reports and calibration certificates	21
5.11.3	Test reports	21
5.11.4	Calibration certificates	22
5.11.5	Opinions and interpretations	22
5.11.6	Electronic transmission of results	22
5.11.7	Format of reports and certificates	22
5.11.8	Amendments to test reports and calibration certificates	23
Annex A	(normative) Specific requirements for laboratories authorized to issue optical property reference transfer standards of level 3	24
Annex B	(informative) ISO/TC 6 measurement quantities and standards included in the scope of this standard	28
Annex C	(informative) Example of certificate of compliance as an Authorized Laboratory meeting the requirements of this document	29
Annex D	(informative) Table of contents for Authorized Laboratory biennial report	30
Bibliography		32

iTeh Standards
(<https://standards.itih.ai>)
Document Preview

[ISO 4094:2017](https://standards.itih.ai/catalog/standards/iso/8f6404dc-9526-4d35-b083-5758628a85f8/iso-4094-2017)

<https://standards.itih.ai/catalog/standards/iso/8f6404dc-9526-4d35-b083-5758628a85f8/iso-4094-2017>

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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

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

This third edition cancels and replaces the second edition (ISO 4094:2005). This version underwent major changes and now follows the requirements and adopts the format of ISO/IEC 17025.

ISO 4094:2017

<https://standards.iteh.ai/catalog/standards/iso/8f6404dc-9526-4d35-b083-5758628a85f8/iso-4094-2017>

Introduction

The main objectives of standardization of testing methods are to create the means by which comparable results can be obtained on different occasions, with different instruments and in different laboratories, and to control the processes that determine the acceptability of a product. Most testing methods for paper, board and pulps are linked by some type of reference standards 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 should 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.

The acceptance of testing and calibration results between countries will be facilitated if specified laboratories authorized to issue optical reference transfer standards comply with this document or if they obtain accreditation from bodies which have entered into mutual recognition agreements with equivalent bodies in other countries using this document.

The use of this document will facilitate cooperation between specified laboratories authorized to issue optical reference transfer standards and other bodies, and assist in the exchange of information and experience, and in the harmonization of calibration standards and procedures.

A laboratory's fulfilment of the requirements of this document means the laboratory meets both the general and specific technical competence requirements, and the management system requirements that are necessary for it to consistently deliver technically valid results.

Document Preview

[ISO 4094:2017](https://standards.iteh.ai/catalog/standards/iso/8f6404dc-9526-4d35-b083-5758628a85f8/iso-4094-2017)

<https://standards.iteh.ai/catalog/standards/iso/8f6404dc-9526-4d35-b083-5758628a85f8/iso-4094-2017>