

# ISO 4094:2017-12 (E)

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

---

<b>Contents</b>		<b>Page</b>
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