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ACCREDITATION
SERVICE

ACC-CD-46

Criteria For the Accreditation of Non-Destructive Testing

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1 Background Information

1.1 Introduction

This guidance document outlines the supplementary requirements and best practices essential for conducting Non-Destructive Testing (NDT) activities effectively and consistently. Given the dynamic nature of the NDT field, the content of this document is intended to be reviewed every four (4) years or as emerging needs and advancements dictate. This shall ensure it remains relevant, practical, and aligned with evolving industry demands.

1.2 Purpose

This guidance document serves to complement and align with the requirements of ISO/IEC 17020 and ISO/IEC 17025 for Inspection Bodies and Testing Laboratories performing Non-Destructive Testing (NDT) services. It also integrates relevant KENAS policies, procedures, and guidance documents to ensure the comprehensive and consistent application of best practices in NDT.

Accreditation under ISO/IEC 17020 will be considered for Inspection bodies performing onsite inspections or those that are involved in regulatory or compliance inspections and shall be used in in-service inspection of equipment, inspection prior to commissioning, vendor surveillance and quality control during manufacturing, inspection related to safety and compliance

Accreditation under ISO/IEC 17025 is appropriate for Testing laboratories performing NDT methods in a laboratory environment with controlled conditions where samples are tested and results are quantifiable and repeatable. Such accredited testing for NDT can be used as part of material qualification of Research & Development, production testing where measurements are part of product release, in calibrated test setups or development of new NDT methods. The laboratory shall be required to participate in and provide Proficiency Testing results when applying for accreditation.

1.3 Scope

This document is applicable to Inspection bodies and/or testing laboratories providing Non-Destructive Testing (NDT) services. The criteria outlined herein will be utilized alongside the Assessor Guide and Terms of Reference ACC-CD-02, the Procedure for Management and Reporting of Assessments ACC-PR-07, the Procedure for Sampling during Assessment and Internal Audits ACC-PR-03, the Policy for Management of Extraordinary Events PL-13, the Policy for Handling Objections to Assessors/Experts PL-30, and applicable International Laboratory Accreditation Cooperation (ILAC) policies and guidance documents. Accreditation shall be granted based on the Inspection Body's and/or Testing Laboratory's demonstrated competence.

1.4 Role(s) and Responsibility

Role	Responsibility
Manager Certification /Manager Testing	Process owner
Principal Accreditation Officers Inspection/ Testing	Reviewer
Chief Manager Inspection & Verification/Chief Manager Laboratories	Recommender
Chief Executive Officer	Approval
Inspection Bodies/ Testing Laboratories	Compliance

2 Terms and Definitions

For this guidance document, the following terms and definitions shall apply in addition to those given in ISO/IEC 17000 and the Kenya Accreditation Service Act Cap 496A Laws of Kenya.

2.1 Definition of Terms

2.1.1 Accreditation

Third-party attestation related to a conformity assessment body conveying formal demonstration of its competence to carry out specific conformity assessment tasks.

2.1.2 Scope of accreditation

The specific conformity assessment services for which accreditation is sought or has been granted.

2.1.3 Non-Destructive Testing

Non-destructive testing (NDT) are methods which allow for the characterization of the integrity state of parts and/or industrial structures without degrading them.

2.1.4 Measurement

The process of experimentally obtaining one or more values that can reasonably be attributed to a size.

2.1.5 Metrological traceability

Refers to the ownership of a measurement result referenced through an uninterrupted and documented calibration chain, each contributing to the measurement uncertainty.

2.1.6 Witnessing

An observation of an Inspection Body (IB) or a Testing Laboratory carrying out NDT inspection or NDT activities within their scope of accreditation, respectively.

2.1.7 Technical area

This is an area characterized by similar activities, products or services and the related environmental aspects.

2.1.8 Functional check

Is a measurement of at least one point in a range of a measuring instrument or system or material against a known value to confirm that it has not deviated significantly from its original calibrated value. It is also an examination of the condition of an artefact to determine that it has not been adversely affected by constant use.

2.2 Acronyms and Abbreviations

AB	Accreditation Body
IB	Inspection Body
CAB	Conformity Assessment Body
CEO	Chief Executive Officer
CMIV	Chief Manager, Inspection and Verification
MIV	Manager Inspection and Verification
NDT	Non-Destructive Testing
IEC	International Electrotechnical Commission
ISO	**International Organization for Standardization**
KENAS	Kenya Accreditation Service
TS	Technical Specifications
NMI	National Metrology Institute
ILAC P10	ILAC Policy on Metrological Traceability of Measurement Results

3 Criteria

3.1 Requirements of Accreditation

3.1.1 General requirements:

3.1.1.1 An Inspection Body / Testing Laboratory applying for accreditation in Non-Destructive Testing (NDT) shall provide:

a) A definition of the competency required related to the NDT methods being applied

b) Information about the availability of this competency (competence evaluation of (sub-) contracted inspectors for specified technical areas).
c) A potential client who has made an application to be inspected or an inspected client.

3.1.2 Application Package:

3.1.2.1 The application package includes the following:

a) Duly filled application form
b) Corporate Profile
c) Copy of documents demonstrating legal status
d) Organizational chart
e) Geographic activity details including specification of NDT activities carried out at each location such as the client's name, inspection/testing documents and records.
f) Cross reference matrix identifying the Inspection Body/ Testing Laboratory's system documentation where accreditation requirements are met.
g) Management System Documents such as procedures and supporting documents that demonstrate conformity to accreditation criteria or sector-specific requirements.
h) Matrix of certified personnel which identifies their qualifications for the applicable scopes.

3.2 Determination of Accreditation Scope

3.2.1 The accreditation scope for the inspection body shall be based on the following NDT methods

- Visual testing (VT)
- Magnetic particle testing (MT)
- Magnetic flux leakage testing (MFL)
- Liquid penetrant testing (PT)
- Ultrasonic testing (UT)
- Radiographic testing (RT)
- Eddy current testing
- Acoustic emission testing
- Ground penetrating radar (GPR)
- Guided wave testing
- Thermal/infrared testing (IR)
- Microwave testing (MW)
- Laser testing (LM)
- Leak testing (LT).
- Elastic rebound

- Magnetic Resonance Imaging (MRI)
- Reflectometry methods

3.3 Human Resource Requirements

3.3.1 The Inspection bodies/Testing laboratories shall determine their competence criteria for personnel involved in the management and performance of NDT methods

3.3.2 The Inspection body/ Testing laboratory shall demonstrate that the personnel meet qualifications outlined in standards, customer specifications, or applicable regulations.

3.3.3 The Inspection body/ Testing laboratory shall check that the qualification and certification of NDT personnel is appropriate to the test/inspection to be carried out. This shall include checking any limitations in the scope of competence certified and the resulting need for job specific training and authorisation.

3.3.4 Certifications for NDT personnel shall be valid, or the Inspection body/ Testing laboratory shall demonstrate that renewal or recertification procedures are in progress.

3.3.5 Personnel performing NDT shall have qualifications from an independent certifying body meeting the requirements of ISO 9712.

3.3.6 The person(s) responsible for NDT shall as a minimum oversee the following activities:

i. Authorization of NDT personnel as competent to perform specific inspections/tests and/or to release results.
ii. Approving inspection/test procedures and validating methods. For employer-based schemes compliance with clause 4.3.7 of this document is mandatory

3.3.7 The employer-based scheme competency program shall include job-specific training required before personnel authorization as well as procedures for regularly assessing and maintaining personnel proficiency.

3.3.8 Irrespective of the qualification system used, the Inspection body/Testing Laboratory shall ensure that NDT personnel conducting inspections and tests have the required knowledge, training, education and experience in the type of defects, which may occur during manufacture, and /or use of an object or item for the NDT.

3.3.9 In the absence of suitable certification arrangements, it may be necessary to establish qualification schemes (in-house or externally) e.g. UT testing for highly attenuative materials.

3.3.10 Personnel responsible for the determination of significance of defects found, based on test results shall, in addition to the appropriate qualifications, experience, training and satisfactory knowledge of the examinations carried out, also have:

3.3.10.1 Relevant knowledge of the manufacturing technologies utilized for the items being tested (e.g., materials and products), their use or intended use, and the potential defects or degradations that may arise during their manufacturing and or use.

3.3.10.2 Knowledge of the general requirements expressed in the legislation and standards and an understanding of the significance of defects found regarding the normal use of the items, material, product etc. concerned.

3.3.11 Records of visual acuity examination as specified by the relevant personnel certification scheme shall be maintained. Records shall clearly identify whether staff can interpret the results in addition to carrying out examinations.

3.3.12 When staff are contracted, the Inspection body/ Testing laboratory shall ensure that such personnel are competent, hold the appropriate personnel certifications, are effectively monitored and operate in accordance with the Inspection body/ Testing laboratory quality management system, using its equipment and procedures.

3.3.13 Personnel conducting NDT activities shall maintain and improve their knowledge and skills through continuous professional development (CPD) activities, such as training, seminars and conferences.

3.4 Equipment and calibration

3.4.1 The Inspection body/Testing laboratory shall have a program for the maintenance and calibration of equipment utilized in testing / inspection activities relevant to Non-Destructive Testing (NDT) services, as applicable.

3.4.2 The Inspection body/Testing laboratory shall ensure that equipment is safeguarded against deterioration and misuse. For equipment relocated to different sites, defined checks shall be conducted prior to use. Measures shall be taken to maintain equipment functionality and calibration validity during and after transportation. On-site checks shall be performed to confirm equipment suitability between calibration intervals. For battery-operated equipment, necessary arrangements shall be in place to ensure batteries always remain functional.

3.4.3 The calibration of reference standards or measuring equipment used for in-house calibration or functional check of NDT instruments, shall be traceable to international standards and, wherever possible, shall be evidenced by certificates issued by an ISO/IEC 17025 accredited calibration laboratory or an NMI in line with ILAC P10.

3.4.4 Where in-house calibration/function check methods are adopted, the body shall have the necessary resources consistent with the accuracy required, and with any standard specifications relevant to the calibration/function check concerned.

3.4.5 Procedures for in-house calibration shall be documented. Equipment records shall define calibration intervals in accordance with the calibration program. Corrective action shall be taken when the calibration results show deviation from the pre-determined limits of accuracy of the instrument under calibration.

3.4.6 Records of all calibrations/functional checks shall be documented and retained and shall include certificates providing evidence of traceability to international standards

3.5 Measurement Uncertainty:

3.5.1 Measurement uncertainty is influenced by the equipment, procedures, environmental factors and calibration. It may also be affected by parameters such as the material, shape and surface finish of the object under test together with the shape and acuity of the defect. Measurement uncertainty shall be estimated according to the requirements of ISO/IEC 17025 and ILAC P14.

3.5.2 Formal estimation and reporting of measurement uncertainty is not required for qualitative or semi quantitative tests, or for tests in which qualitative components are the major components of uncertainty. However, where situations arise that require compliance assessment in accordance with numerical test result criteria, measurement uncertainty shall be considered.

3.5.3 The Inspection body/ Testing laboratory shall have written procedures for the determination of measurement uncertainties for all quantitative tests performed. The Inspection body/ Testing laboratories shall estimate the uncertainty of measurement for any tests that are quantitative (e.g. thickness measurement methods and optical density measurements) and which do not comply with ISO/IEC 17025, Clause 5.4.6.2.

3.5.4 For qualitative or semi-quantitative tests, it is expected that the Inspection body/ Testing laboratories shall identify those factors which contribute to uncertainty, to rank these based on importance and then take action to control them as far as is possible.

3.6 Quality Assurance in Tests

3.6.1 An accredited Inspection body/ Testing laboratory shall have quality control activities to assess inspection/ testing competency. Quality assurance in tests shall be done in accordance with the requirements of ISO/IEC 17025.

3.6.2 The scope of the Inspection body/ Testing laboratory's plan for such external competency assessment is complementary to the in-house competency assessment of personnel, which shall be based on the use of test specimens with known defects.

3.6.3 The Testing laboratory shall ensure that any test specimens used are adequately validated and where it is impractical to provide a suitable range of test specimens, for example due to the nature of testing undertaken, alternative arrangements may be considered. In such cases, items available for testing in the normal course of the facility's operations may be tested by the candidate to be assessed, under monitoring, and then subsequently re-tested by a person authorized by the laboratory for this purpose. This shall be part of internal quality control.

3.6.4 Each applicant or accredited Testing laboratory is required to participate in appropriate proficiency testing, as practicable and available, considering the representativeness of major areas of test and different methods.

3.7 Handling of items and components

3.7.1 Items to be tested/inspected shall be identified such that traceability is maintained throughout the examination process. Identification shall be such that the areas specifically examined, e.g. welded seams can be precisely identified against test/inspection results.

3.7.2 The method of identification shall not damage the item in question, e.g. halogen free markers may be needed for some components.

3.7.3 Methods for the identification and location of reportable defects and, where appropriate, for the segregation of defective components should be clearly defined and understood. The status of the test item (e.g. accepted, rejected, tested, not tested) shall be clearly indicated at all times. If tested, then the outcomes shall be given. If not tested, then an adequate justification shall be provided.

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3.8 On-site Assessment

3.8.1 During the initial assessment, the implementation of policies and procedures shall be assessed at the office(s) of the Inspection body and at the Testing laboratory.

3.8.2 The on-site assessment shall be conducted at the head office and any other locations based on a risk evaluation.

3.8.3 The initial on-site assessment comprises of two mandatory components to determine if the inspection body/testing laboratory should be granted accreditation:

a) Assessment of the applicant's implementation of its management system in an office assessment.
b) Assessment of the applicant's inspectors/analysts – witnessed assessment

3.8.4 During the office assessment, the team shall sample the files of clients and personnel, representative of the scope for which accreditation is sought.

3.8.5 In case the Inspection body/ Testing laboratory has any engagement with a consultancy body, KENAS shall verify records of this consultancy body to confirm the effectiveness of measures taken to mitigate any identified risks to impartiality.

3.9 Witnessing inspections for initial / reassessment

3.9.1 At least two weeks before witnessing of inspections the KENAS team shall be provided with the following information:

a) Documented information (Quality Manual and procedures) of the organization to be inspected by the IB
b) Duly filled application form
c) Competence profile of the inspectors to be witnessed
d) IB Inspection Plan.
e) Previous inspection records required actions and responses from the previous inspection activity.
f) A copy of the Inspection report or certificate as applicable.

3.10 Selection of witness inspections/ test parameters

3.10.1 The number of inspections/test parameters to be witnessed shall be based on the scopes applied. KENAS shall take into consideration as applicable the following:

a) the Inspection Bodies' /Testing Laboratory's overall performance.

b) factors such as process complexity or legislation etc. which influence the ability of the certification body to demonstrate its ability to meet the intended outcomes of the Management System.
c) feedback from interested parties and from customer surveys, and complaints about the Inspection body's / Testing laboratory's.
d) the results of the Inspection Body's / Testing laboratory's internal audits.
e) changes in Inspection Body's /Testing Laboratory work patterns – growth of work within a specific region or technical area.
f) previous or other office or witnessing assessment results, etc.

3.10.2 In addition to the office assessment activities, the following witness selection rules apply for the granting accreditation and extension of scope of accreditation of NDT activities to guarantee the appropriate coverage of the applicant scope.

3.10.3 In the initial accreditation cycle (meaning from first surveillance to the first reassessment), KENAS shall perform at least one witnessing activity in each accredited scope. This shall be complemented with other assessment activities to guarantee that each scope is assessed in the period of each accreditation cycle.

3.11 Maintenance of accreditation

3.11.1 The implementation of the accredited NDT inspection scheme/ NDT testing scheme shall be verified during surveillance assessments by KENAS.

3.11.2 The files reviewed during the maintenance of accreditation in four years' period (accreditation cycle) shall cover all the scopes mentioned for which the Inspection body/ Testing laboratory is accredited.

3.11.3 The number of files to be reviewed for each assessment is calculated from the number of valid certificates under accreditation for each scope (approximately one fifth of the square root of the number of certificates with a maximum of fifteen (15) files).

3.11.4 For each four (4) year period, the number of witnessed inspections shall be determined based on the following factors:

a) for each scope of sectors included in the accredited scope of the IB; or
b) 1 per $\sqrt{}$ (number of inspectors qualified for NDT inspection activities).

(Whichever gives the higher number, with a maximum of 10)

3.11.5 When the second factor gives the higher number of witnessed inspections, these shall also be spread over all scopes. This formula ensures that both a higher diversity in technical areas and a higher number of inspectors will increase the number of witnessed inspections.

3.12 Appeals Handling

1.1.1 An accredited inspection body/testing laboratory that is aggrieved by a decision of KENAS may, by notice in writing to the Chief Executive Officer and upon payment of the prescribed fees, appeal against the decision within twenty-one days of being notified of the decision as outlined in the third schedule of the Kenya Accreditation Service Act 2019.

1.1.2 A notice of appeal under this section shall set out the grounds of the appeal.

1.1.3 The Chief Executive Officer shall, within seven days of receipt of the notice under sub-section (2), forward the notice to the Accreditation Appeals Tribunal.

1.1.4 The Accreditation Appeals Tribunal shall consider the notice of appeal and the response of KENAS before making an award.

1.1.5 An award of the Accreditation Appeals Tribunal may —

a) confirm the decision of KENAS.

b) vary the decision of KENAS.

c) direct KENAS to carry out a fresh evaluation of the application or undertake a fresh assessment of the conformity assessment body; or

d) issue other orders it may consider necessary.

3.13 Scope extension

3.13.1 The assessment by KENAS in case of an application for an additional scope sector consists of one or more of the following assessment methods:

a) A review of documents and records.
b) A visit to the office of the Inspection body/ Testing laboratory, to verify documents, records and to interview relevant staff.
c) A witnessed inspection/testing

3.13.2 A witnessed inspection shall be conducted for the NDT method for which the scope extension is requested. During the scope extension assessment, the following shall be verified: the defined competence requirements for that sector, records of the inspectors' qualification process, and a complete inspection dossier relevant to that sector.

3.14 General remarks on witnessing

3.14.1 In addition to the above-mentioned considerations for selection of inspections to be witnessed, the following will apply:

3.14.1.1 KENAS will not witness the same inspectors more than once within the same scheme.

3.14.1.2 KENAS will not witness inspections at the same organization repeatedly.

3.14.1.3 To facilitate the selection of inspections to be witnessed, the Inspection Body (IB) shall upon request by KENAS provide a schedule of planned inspections for a specified period.

3.14.2 The information on these inspections shall include as a minimum:

3.14.2.1 name and address of client.

3.14.2.2 NDT activities or methods.

3.14.2.3 scope of inspection.

3.14.2.4 name(s) of inspectors(s) and expert(s).

3.14.2.5 date(s) of the inspection.

3.15 Quality Management system:

The quality system shall describe the general and specific arrangements for the conduct of all accredited activities including non-destructive testing and should specifically incorporate:

3.15.1 the arrangements for managing NDT work including the organisational interface and controls between the permanent facilities and remote or site locations.

3.15.2 the control and authorisation of NDT specific procedures and methods.

3.15.3 the need to ensure that inspection/testing procedures and methods are available at the point of inspection, whether in the laboratory or on site.

3.15.4 the need for inspection and review to include remote locations and the interface controls.

4 Associated Documents

KENAS shall ensure a standardized, high level of quality and integrity in the NDT inspection system. An Inspection body/ Testing laboratory shall satisfy the following normative documents for NDT scope of accreditation

Ref	Document Identifier	Document Title
1.	ISO/IEC 17020	Conformity assessment — Requirements for the operation of various types of bodies performing inspection
2.	ISO/IEC 17025	Conformity assessment — General requirements for the competence of testing and calibration laboratories
3.	ASNT guidelines	American Society for Non-Destructive Testing Guidelines
4.	ILAC P10	ILAC Policy on Traceability of Measurement Results
5.	ILAC P10:07	ILAC Policy on Metrological Traceability of Measurement Results (download pdf)
6.	ILAC P15:05	Application of ISO/IEC 17020:2012 for the Accreditation of Inspection Bodies (download pdf)
7.	ILAC-G27:07	Guidance on measurements performed as part of an inspection process
8.	ILAC G28:07	Guideline for the Formulation of Scopes of Accreditation for Inspection Bodies
9.	EA-4/15 G	Accreditation for Non-Destructive Testing
10.	ISO 9712	Non-Destructive Testing. Qualification and certification of non-destructive personnel. (NDT).

5 Revision/ Amendment Record

Date	Ver	Revised By	Reason for Revision
28/06/2025	01	SDE	Newly developed

This document shall be revised/amended after every four (4) years.