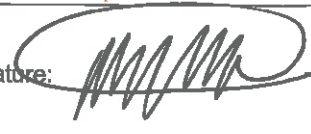



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### 1. Background

The Legal Metrology Act and Regulations requires a process of designation of Verification and Repair Bodies who wish to be designated, in terms of the Legal Metrology Act.

The reviewed SANS10378 document, which originally specified the requirements for Verification bodies and Verification officers, updated to include requirements for Repair bodies and Repairers were submitted to the SABS Standards for the review and publishing process. The process is not yet completed and an anomaly now exists where there is no formal requirements for SANAS accreditation for Verification and/or Repair Bodies.

### 2. Scope

This policy describes the interim requirements for accreditation in the absence of "**SANS10378: General requirements for the competence of verification and repair bodies**" for a body that wishes to be accredited to undertake repairs of measuring instruments, in term of the Legal Metrology Act, 2014 and Legal Metrology Regulations,2017.

This document replaces the current SANS10378: 2012, Edition 2.

Bodies applying to be accredited as a Verification Body shall only address the requirements applicable to Verification bodies in their management system. Bodies applying to be accredited as a Repair body shall only address the requirements applicable to Repair bodies in their management system. Bodies applying to be accredited as a Verification and Repair body shall address the requirements applicable to Verification and Repair bodies in their management system, this may be combined in one manual.

### 3 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. Information on currently valid national and international standards may be obtained from the SABS Standards Division.

Legal Metrology Act, 2014



Legal Metrology Regulations,2017

*OIML V 1: International vocabulary of terms in legal metrology (VIML)*

*OIML V 2-200: International Vocabulary of Metrology - Basic and General Concepts and Associated Terms (VIM).*

NOTE Copyright of these documents is shared jointly by BIPM, IEC, IFCC, ILAC, ISO, IUPAC, IUPAP and OIML.

*SANS 1697: Verification standards for the verification of mass-measuring instruments, including commercial standard masspieces.*

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SANS 1698: *Verification standards for the verification of volume-measuring instruments, including commercial standards of volume.*

ISO/IEC 17025: General requirements for the competence of testing and calibrations.

SANS 17000/ISO/IEC 17000, *Conformity assessment – Vocabulary and general principles.*

**4. Abbreviations and Terminology**

**4.1 Abbreviations**

- NRCS National Regulator for compulsory Specifications
- SANS South African National Standard
- SANAS South African National Accreditation System

**4.2 Terms and definitions**

For the purposes of this document, the definitions given in Legal Metrology Act, 2014, Legal Metrology Regulations(2017), SANS 17000 *OIML V 1: International vocabulary of terms in legal metrology (VIML) and OIML V 2-200: International Vocabulary of Metrology - Basic and General Concepts and Associated Terms (VIM)* , and the following apply.

**4.1**

**Impartiality**

presence of objectivity

**Note 1:** Objectivity means that conflicts of interest do not exist, or resolved so as not to adversary influence activities of the laboratory

**Note 2:** Other terms that are useful in conveying the element of impartiality include "freedom from conflict of interests", "freedom from bias", "lack of prejudice", "neutrality", "fairness", "open-mindedness", "even-handedness", "detachment", "balance"

**4.2**

**accredited**

accredited by the national accreditation body

**4.3**

**make-up material**



legal metrology - any material that is stable and suitable for the purpose of making up a load to substitute verification standard masspieces when a full complement of measurement standard masspieces is not available to verify or test a weighing instrument to full capacity

**4.4**

**permanent facility**

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verification or repair body used or intended for use as a permanent base, with an address that is used in the management documentation of the relevant organization

### 4.5

#### reference material

any material that is stable and used in the place of measurement standards, and the quantity of which has been determined on a suitable instrument that has been calibrated or verified with standards traceable to national or international standards before such determination, for the purpose of verifying or when repairing a measuring instrument

### 4.6

#### verification body

a body accredited in terms of Section 22 of the Accreditation for Conformity Assessment, Calibration and Good Laboratory Practice Act, 2006 (Act 19 of 2006), to verify measuring instruments and designated in terms of Section 7 of the Legal Metrology Act 2014 (Act 9 of 2014) to verify measuring instruments, or a body designated in terms of section 7 of the Legal Metrology Act 2014 (Act 9 of 2014) to verify measuring instruments without accreditation where there are no accreditation scheme available.

### 4.7

#### repair body

a body accredited in terms of Section 22 of the Accreditation for Conformity Assessment, Calibration and Good Laboratory Practice Act, 2006 (Act 19 of 2006), to repair measuring instruments and designated in terms of Section 9 of the Legal Metrology Act 2014 (Act 9 of 2014) to repair measuring instruments, or a body designated in terms of section 9 of the Legal Metrology Act 2014 (Act 9 of 2014) to repair measuring instruments without accreditation where there are no accreditation scheme available.

### 4.8

#### verification mark

a mark (authorised by the national regulator), that is indelible, applied to a measuring instrument to indicate that it has been verified

### 4.9

#### repair mark

a mark (authorised by the national regulator), that is indelible, applied to a measuring instrument to indicate that it complies with all the requirements for such measuring instrument in terms of the relevant national legislation.

### 4.10

#### verification officer

any person appointed and registered by the national responsible body and employed by a verification body.

### 4.11 person responsible for repair

any person appointed and registered by the national responsible body and employed by a repair body.

**Note:** A person responsible for repair may also be referred to as a repairer.

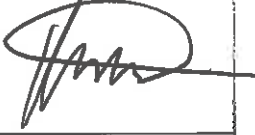

### 4.12

#### measurement standard

standard that is used by verification officers or persons responsible for repairs to verify or repair measuring instruments

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### 4.13

#### verify

in relation to a measuring instrument, means the procedure of examination and issuing of a verification certificate and, if required, marking with a verification mark, that ascertains and confirms that the measuring instrument complies with a legal metrology technical regulation, and includes initial verification and subsequent verification.

### 4.14

#### repair

in relation to any measuring instrument, means any work carried out on, or any adjustment made to, such measuring instrument in order to service, restore or maintain it in a certifiable condition but does not include work carried out on, or adjustment made to a measuring instrument if such work or adjustment does not in any way change the metrological characteristics or accuracy of such measuring instrument.

## 5 General Requirements

### 5.1 Impartiality

**5.1.1** Verification or repair body activities shall be undertaken, structured and managed so as to safeguard impartiality.

**5.1.2** The verification or repair body management shall be committed to impartiality.

**5.1.3** The verification or repair body shall be responsible for the impartiality of its verification or repair body activities and shall not allow commercial, financial or other pressures to compromise impartiality.

The laboratory shall have procedures and arrangements in place on how impartiality will be managed and controlled.

**5.1.4** The verification or repair body shall identify risks to its impartiality on an on-going basis. This shall include those risks that arise from its activities, or from its relationships, or from the relationships of its personnel. However, such relationships do not necessarily present a verification or repair body with a risk to impartiality.

**Note:** A relationship that threatens the impartiality of the verification or repair body can be based on ownership, governance, management, personnel, shared resources, finances, contracts, marketing (including branding), and payment of a sales commission or other inducement for the referral of new customers, etc.

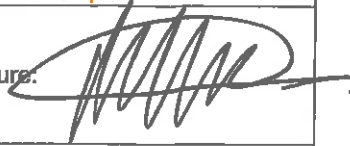

**5.1.5** If a risk of impartiality is identified, the verification or repair body shall be able to demonstrate how it eliminates or minimizes such risk.

### 5.2 Confidentiality

**5.2.1** The verification or repair body shall be responsible, through legally enforceable commitments, for the management of all information obtained or created during the performance of verification or repair body activities. The verification or repair body shall inform the customer in advance, of the information it intends to place in the public domain. Except for information that the customer makes publicly available, or when agreed between the verification or repair body and the customer (e.g. for the purpose of responding to complaints), all other information is considered proprietary information and shall be regarded as confidential.

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**5.2.2** When the verification or repair body is required by law or authorized by contractual arrangements to release confidential information, the customer or individual concerned shall, unless prohibited by law, be notified of the information provided.

The verification or repair certificate is not considered confidential information and these certificates should be readily available, on request..

**5.2.3** Information about the customer obtained from sources other than the customer (e.g. complainant, regulator) shall be confidential between the customer and the verification or repair body. The provider (source) of this information shall be confidential to the verification or repair body and shall not be shared with the customer, unless agreed by the source.

**5.2.4** Personnel, including any committee members, contractors, personnel of external bodies, or individuals acting on the verification or repair body's behalf, shall keep confidential all information obtained or created during the performance of verification or repair body activities, except as required by law.

**5.2.5** The verification or repair body shall ensure confidentiality of customer's information and result that is stored electronically, including electronic transmission of information and results.

## 6 Structural requirements

**6.1** The verification or repair body or the organization of which it forms part, shall be an entity that can be held legally responsible.

**6.2** All persons legally responsible for the verification or repair body shall be made known to the national accreditation body and National Responsible Body.

**Note:** A governmental verification or repair body is deemed to be a legal entity on the basis of its governmental status.

**6.3** The verification or repair body shall define and document the range of verification or repair body activities for which it conforms to this document. The verification or repair body shall only claim conformity with this document for this range of verification or repair body activities, which excludes externally provided verification or repair body activities on an ongoing basis.



**6.4** The verification or repair body shall carry out its verification or repair activities in such a way as to comply with the requirements of this document, regulatory requirements, the requirements of the national accreditation body, the national responsible body and customers. This shall include verification or repair bodies activities performed in all its permanent facilities, at sites away from its permanent facilities, at a customer's facility.

**6.5** The verification or repair body shall:

- a) define its organization and management structure, its place in any parent organization, and the relationships between management, technical operations and support services.
- b) specify the responsibility, authority and inter-relationships of all personnel who manage, perform, verify or repair work affecting the results of verification or repair activities;
- c) have managerial and technical personnel with the authority and resources needed to carry out their duties and to identify the occurrence of deviations from the management system or from the procedures for performing verification or repair, and to initiate actions to prevent or minimize such deviations;

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**6.6** The verification or repair body shall have personnel who, irrespective of other responsibilities, have the authority and resources needed to carry out their duties, including:

- a) implementation, maintenance and improvement of the management system;
- b) identification of deviations from the management system or from the procedures for performing verification or repair body activities;
- c) initiation of actions to prevent or minimize such deviations;
- d) reporting to verification or repair body management on the performance of the management system and any need for improvement;
- e) ensuring the effectiveness of verification or repair body activities.

## 7 Resource requirements

### 7.1 General

The verification or repair body shall have available the personnel, facilities, equipment, systems and support services necessary to manage and perform its verification or repair activities.

### 7.2 Personnel

**7.2.1** All personnel of the verification or repair body, either internal or external, shall act impartially, be competent and work in accordance with the verification or repair body's management system.

**7.2.2** The verification or repair body shall document the competence requirements for each function of the verification or repair body activities and the supporting functions, including requirements for education, qualification, training, technical knowledge, skills and experience.

**7.2.3** The management of the verification or repair body shall ensure that the personnel have the competence requirements to operate specific measurement standards, perform tests, or verification, evaluate results and sign test reports, verification certificates and certificates of repair.

When using staff that is undergoing training, appropriate supervision shall be provided by qualified verification officers or repairers.

Personnel that perform specific tasks shall be qualified on the basis of appropriate education, training, experience, and shall demonstrate the skills as specified in the relevant national legislation.

Ongoing training to ensure continued competence of qualified personnel shall be undertaken.



Detailed records of all training provided to personnel shall be maintained.

Training includes knowledge of:

- a) pattern approval documentation before performing specific tasks, and modification thereto,
- b) training in respect of technological developments relevant to the tests being performed,

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- c) general requirements expressed in the relevant national legislation and standards and amendments thereto, and
- d) management system documentation.

**7.2.4** The management of the verification or repair body shall communicate to personnel their duties, responsibilities and authorities.

**7.2.5** The verification or repair body shall have procedure(s) and retain records for:

- a) verification officers or repairers appointments in accordance with the relevant national legislation which prescribe the competence requirements;
- b) the verification or repair bodies, verification officers or repairers who are formally employed by the verification or repair body. The name(s) shall appear in the SANAS schedule of accreditation on the list of approved signatories of the accredited verification or repair body. The name of a verification officer or repairer shall not appear on more than one verification or repair body signatories list at any given time.

He/she shall only use measurement standards that is owned by the accredited verification or repair body and that appears on its measurement standards records.

**Note:** Key support personnel excluding verification officers or repairers may appear in more than one verification or repair bodies documentation and scope of accreditation but not as approved signatories.

- c) identified training needs and for training provided to personnel. The training programme shall be relevant to present and anticipated tasks of the verification or repair body.
- d) adequate supervision of verification officers or repairers; trainee verification officers or trainee repairers shall be supervised by qualified verification officers or repairers.
- e) the verification or repair body shall authorize/permit personnel to perform particular types of verification or repair, to issue verification certificates or certificates of repair and to operate particular types of measurement standards. The verification or repair body will maintain records of the authorization/permission, competence, education and professional qualifications, training, skills and experience of all technical personnel. The information will be readily available and will include the date on which authorization/permission and competence is confirmed.

Records of all authorization/s shall be kept in personnel training files.

Verification officers or repairers shall sign verification certificates or certificates of repair, to take technical and legal responsibility on the verification or repair bodies behalf.

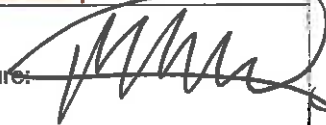

- f) maintaining and the formally issuing of job descriptions for managerial, verification officers or repairers, technical and key support personnel involved in tests and/or verifications.

As a minimum, job descriptions shall address the following, if applicable to the person concerned:

- i) the name and surname of the incumbent;
- ii) declaration by the incumbent acknowledging the content of the job description;
- iii) responsibilities with respect to performing verifications or repairs;

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- iv) powers and duties of verification officers or repairer as defined in the relevant national legislation
- v) responsibilities with respect to the planning of verification or repair work and evaluation of results;
- vi) responsibilities with respect to method modification and development and validation of new methods;
- vii) managerial duties;
- viii) any other required duties or responsibilities.
- ix) development, modification, verification and validation of methods;
- x) analysis of results, including statements of conformity or opinions and interpretations;
- xi) report, review and authorization of results.

**7.2.6** Although verification officers or repairers are appointed by the national responsible body, this in no way absolves the management of the verification or repair body from their duties as required by this document or by their own management system requirements. Management will be held legally responsible for any dereliction of duty by a verification officer or repairer and, if it is of a serious nature, such dereliction of duty might place the accreditation and /or designation of the verification or repair body in jeopardy.

**7.2.7** The verification or repair bodies technical management shall have overall responsibility for the technical operations and the provision of resources needed to ensure the required quality of verification or repair operations;

**7.2.8** The verification or repair body shall appoint a member of staff as management system manager (however named) who, irrespective of other duties and responsibilities, shall have a defined responsibility and authority to ensure that the management system is implemented, maintained and applied at all times.

The management system manager shall have direct access to the highest level of management at which decisions are made on policies or resources; and

**7.2.9** The verification or repair body shall appoint deputies for key managerial personnel.

**Note:** Individuals may have more than one function since it might be impractical to appoint deputies for every function.

### 7.3 Facilities and environmental conditions

**7.3.1** The facilities and environmental conditions shall be suitable for the verification or repair body activities and shall not adversely affect the validity of results.

**Note:** Influences that can adversely affect the validity of results can include, but are not limited to dust, electromagnetic disturbances, radiation, humidity, electrical supply, temperature, sound and vibration.



**7.3.2** The verification or repair body shall ensure that the environmental conditions do not invalidate the results or adversely affect the required quality of any measurement. Particular care shall be taken when tests or verifications are undertaken at sites other than a permanent facility. The technical requirements for facility and environmental conditions that can affect the results of tests or verifications shall be documented.

**7.3.3** The verification or repair body shall monitor, control and record environmental conditions as required by relevant specifications, methods and procedures or where they influence the quality of the results. Due attention shall be paid, for example, to electromagnetic disturbances, humidity, electrical supply, temperature and



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vibration levels, as appropriate to the technical activities concerned. Tests and verifications shall be stopped when the environmental conditions jeopardize the results of the tests or verifications.

**7.3.4 Measures to control facilities shall be implemented, monitored and periodically reviewed and shall include, but not be limited to:**

- a) access to and use of areas affecting the quality of the tests or verifications, shall be controlled. The verification or repair body shall determine the extent of control based on its particular circumstances.
- b) special attention shall be paid to the following additional influences, which could have a detrimental effect on the accuracy of measuring instruments under verification or test conditions and when the instruments are being tested in situ but not limited to:
  - i) fluctuations in the supply voltage and frequency;
  - ii) radio frequency interference;
  - iii) electrostatic interference;
  - iv) air turbulence; and
  - v) liquid flow turbulence.
- c) the effective separation between neighbouring areas in which there are incompatible activities.

### 7.4 Measurement standards



**7.4.1** The verification or repair body shall be equipped with measurement standards required for the correct performance of the verification or test. All measurement standards shall comply with the applicable statutory requirement. Where verification or repair bodies have satellite operations, these satellites need not be furnished with measurement standards to cover the full scope of accreditation but shall have measurement standards suitable for day-to-day verifications or tests.

Specific requirements for the minimum mass of measurement standards to be used for verifying or testing instruments are given in the relevant national legislation dealing with specific instruments. These minimum accreditation requirements shall be complied with irrespective of the minimum mass of measurement standards owned by the verification or repair body.

**7.4.2** Where the verification or repair body needs to use measurement standards outside its permanent control, it shall ensure that the applicable requirements of these standards are complied with.

**7.4.2.1** The verification or repair body shall own the following minimum calibrated verification or repair measurement standards masspieces for the verification or repair of weighing instruments for which it is accredited:

- a) accreditation for instruments of capacity not exceeding 1 t: verification or repair standard masspieces of capacity equal to that for which accreditation is sought;
- b) accreditation for instruments of capacity exceeding 1 t but not exceeding 10 t: verification or repair standard masspieces of capacity equal to the greater of 50 % of that for which accreditation is sought, and 1 t;

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c) accreditation for instruments of capacity exceeding 10 t: verification or repair standard masspieces of capacity equal to the greater of 20 % of that for which accreditation is sought, and 5 t. The relevant national legislation might require masspieces of a capacity greater than 20 % of the maximum capacity of the instrument being verified or repaired and this requirement shall be complied with at the time of verification or repair.

**Note:** The schedule of accreditation will limit the range of accreditation according to the total mass of verification or repair measurement standards available and requirements in the relevant national legislation.

**7.4.2.2** The verification or repair body shall, for measuring instruments other than those mentioned in 7.4.2.1, own measurement standards as prescribed in the relevant national legislation provided that:

a) underground calibrated verification or repair measurement standards for verifying bulk truck meters need not be owned, but laboratories shall sign an agreement with the owner of a permanently installed measure for access and use of such measure.

**Note:** This means that laboratories only accredited to verify bulk truck meters need not own a calibrated standard measure.

b) scales used for verifying meters need not be owned by verification laboratories. These scales shall comply with applicable requirements in SANS 1698.

**7.4.3** The verification or repair body shall have procedures for safe handling, transport, storage, use and planned maintenance of measurement standards to ensure proper functioning, protect the calibration integrity, and to prevent contamination or deterioration. Records shall be kept of maintenance carried out to date, and any damage, malfunction, modification or repair to the measurement standards.

There shall be an issue register or comparable arrangement for issuing measurement standards, verification or repair marks (stamps/stickers), sealing pliers, reports and certificate forms/books, etc. to individual verification officers or repairers.

Where measurement standards, not issued to an individual verification officer or repairer, is removed from the permanent facility of the verification or repair body, the relevant verification officer or repairer shall sign an issue register (or comparable arrangement) on removal, and a member of staff shall sign the said register on the return of the measurement standards.



**7.4.4** All standards used for verification or repair activities shall comply with the applicable requirements in SANS 1697 and SANS 1698 or any other statutory requirement and the bodies shall keep documented records of compliance checks and confirmations.

All measurement standards including auxiliary measurements used for verification or test shall be calibrated before being put into service and, thereafter, at intervals acceptable to the national responsible body and suitable for ensuring confidence in the accuracy and integrity thereof and shall keep documented records of such calibrations including checks for compliance and confirmations.

**7.4.5** The verification or repair measurement standards and its software used for verification, testing shall be capable of achieving the measurement accuracy required and shall comply with the specifications relevant to the verification or test concerned.

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### 7.4.6 Verification or repair standards shall be calibrated when:

- a) the measurement accuracy or measurement uncertainty affects the validity of the reported results, and/or
- b) calibration of the verification or repair standards is required to establish the metrological traceability of the reported results.

**Note:** Types of verification or repair standards having an effect on the validity of the reported results may include:

- i) those used for the direct measurement of the measurand, e.g. use of a balance to perform a mass measurement;
- ii) those used to make corrections to the measured value, e.g. temperature measurements;
- iii) those used to obtain a measurement result calculated from multiple quantities.

**7.4.7** The verification or repair body shall establish calibration programmes for all measuring quantities or values of the instruments where these properties have a significant effect on the results. Before being placed into service, measurement standards, including that used for sampling, shall be calibrated or checked to establish that it complies with the verification or repair bodies' specification requirements and complies with the relevant standard specifications

**7.4.8** All measurement standards requiring calibration or which has a defined period of validity shall be labelled, coded or otherwise identified to allow the user of the measurement standards to readily identify the status of calibration or period of validity.

**7.4.9** Measurement standards that has been subjected to overloading or mishandling, gives questionable results, or has been shown to be defective or outside specified requirements, shall be taken out of service. It shall be isolated to prevent its use or clearly labelled or marked as being out of service until it has been verified to perform correctly. The verification or repair body shall examine the effect of the defect or deviation from specified requirements and shall initiate the management of nonconforming work procedure.

**7.4.10** When intermediate checks are necessary to maintain confidence in the performance of the equipment, these checks shall be carried out according to a procedure.

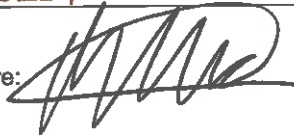

**7.4.11** When calibration and reference material data include reference values or correction factors, the verification or repair body shall ensure the reference values and correction factors are updated and implemented, as appropriate, to meet specified requirements.

**7.4.12** The verification or repair body shall take practicable measures to prevent unintended adjustments of equipment from invalidating results.

**7.4.13** Records shall be retained for measurement standards which can influence verification or repair body activities.

The records shall include the following, where applicable:

- a) the identity of measurement standards, including software and firmware version;
- b) the manufacturer's name, type identification, and serial number or other unique identification;
- c) evidence of verification that equipment conforms with specified requirements;

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- d) the current location;
- e) calibration dates, results of calibrations, adjustments, acceptance criteria, and the due date of the next calibration or the calibration interval;
- f) documentation of reference materials, results, acceptance criteria, relevant dates and the period of validity;
- g) the maintenance plan and maintenance carried out to date, where relevant to the performance of the equipment;
- h) details of any damage, malfunction, modification to, or repair of, the equipment.

**7.5 Metrological traceability**

**7.5.1** The verification or repair body shall establish and maintain metrological traceability of its measurement results by means of a documented unbroken chain of calibrations, each contributing to the measurement uncertainty, linking them to an appropriate reference.

**Note 1:** In ISO/IEC Guide 99, metrological traceability is defined as the “property of a measurement result whereby the result can be related to a reference through a documented unbroken chain of calibrations, each contributing to the measurement uncertainty”.

**7.5.2** The verification or repair body shall ensure that measurement results are traceable to the International System of Units (SI) through:

- a) calibration provided by a competent SANAS accredited verification or repair body; or
- b) direct realization of the SI units ensured by comparison, directly or indirectly, with national or international standards.

Reference materials shall be traceable to the SI units of measurement, and shall comply with the relevant national legislation. Make-up material used shall be in compliance with relevant national legislation.

**7.5.3** The verification or repair body shall ensure that when metrological traceability to the SI units is not technically possible, the laboratory shall demonstrate metrological traceability to an appropriate reference.

**7.5.4** The programme for calibration of measurement standards shall be designed and implemented so as to ensure that the accuracy of measurements made by the verification or repair body during any verification or test is traceable to the SI units of measurement.



**7.6 Externally provided products and services**

**7.6.1** The verification or repair body shall ensure that only suitable externally provided products and services that affect verification or repair body activities are used, when such products and services:

- a) are intended for incorporation into the verification or repair body’s own activities;
- b) are provided, in full, directly to the customer by the verification or repair body, as received from the external provider;

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c) are used to support the operation of the verification or repair body.

**Note:** Products can include, for example, measurement standards, auxiliary equipment, consumable materials and reference materials. Services can include, for example, calibration services, , testing services, facility and equipment maintenance services, and assessment and auditing services.

**7.6.2** The verification or repair body shall have a procedure and retain records for:

- a) defining, reviewing and approving the verification or repair body's requirements for externally provided products and services;
- b) defining the criteria for evaluation, selection, monitoring of performance and re-evaluation of the external providers;
- c) ensuring that externally provided products and services conform to the verification or repair body's established requirements, or when applicable, to the relevant requirements of this document, before they are used or directly provided to the customer;
- d) taking any actions arising from evaluations, monitoring of performance and re-evaluations of the external providers.
- e) records of action taken to check compliance shall be maintained

**7.6.3** The verification or repair body shall communicate its requirements to external providers for:

- a) the products and services to be provided;
- b) the acceptance criteria;
- c) competence, including any required qualification of personnel;
- d) activities that the verification or repair body, or its customer, intends to perform at the external provider's premises.

## 8 Process requirements

### 8.1 Review of requests, tenders and contracts for verification and repair



**8.1.1** The verification or repair body shall establish and maintain procedures for the review of requests, tenders and contracts for verification or repair work to ensure that the verification or repair body is accredited for the type of instrument to be verified or repaired and has the necessary resources. These reviews shall be formally documented by verification officers or repairers when they receive requests on site, unless specifically delegated to a specific person or persons.

The review should establish that the verification or repair body possesses the necessary measurement standards, and that the personnel have the skills and expertise necessary for the performance of the verification or repair in question.

Any differences between the request or tender and the contract shall be resolved before any work commences.

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Each contract shall be acceptable both to the verification or repair body and to the client.

**Note:** The request, tender and contract review should be conducted in a practical and efficient manner, and the effect of financial, legal and time schedule aspects should be taken into account. For internal clients, reviews of requests and contracts may be performed in a simplified manner.

**8.1.2** Where reviews are documented, records, including any significant changes and pertinent discussions with a client, shall be maintained.

**Note:** For review of routine and other simple tasks, the date and the identification (e.g. the initials) of the person in the verification or repair body responsible for carrying out the contracted work are considered adequate. For repetitive routine tasks, the review need be made only at the initial enquiry stage or on granting of the contract for on-going routine work performed under a general agreement with the client, provided that the client's requirements remain unchanged. For new, complex or advanced testing, verification or repair, a more comprehensive record may be required.

**8.1.3** The review shall also cover any work that is subcontracted by the verification or repair body.

- a) A verification or repair body shall only subcontract work that is within its scope of accreditation. When a verification or repair body or repair body subcontract work, the verification or repair body or repair body to which the work is subcontracted shall be accredited to verify or repair the instrument concerned and shall issue the verification certificate or guarantee of repair.
- b) The verification or repair body or repair body shall advise the client and gain the client's approval for the arrangement, in writing or verbally.
- c) The verification or repair body or repair body is responsible to the client for the subcontractor's work, except in the case where the client specifies which subcontractor shall be used.
- d) The verification or repair body or repair body shall maintain a register of all subcontractors that it uses for verification or repair and a record of the evidence of compliance with this standard for the work in question. The review shall also cover any work that is subcontracted by the verification or repair body.
- e) The client shall be informed of any deviation from the contract.
- f) If a contract needs to be amended after work has commenced, the same contract review process shall be repeated and any amendments shall be communicated to all affected personnel.

## 8.2 Selection, verification and validation of methods



### 8.2.1 General

The verification or repair body shall use the appropriate methods and procedures as prescribed in terms of the relevant national legislation for all verification and repair within its scope.

These include sampling handling, transport, storage and preparation of items to be verified or tested, and, where appropriate, the specified maximum permissible error, as well as statistical techniques for analysis of verification or test data.

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The verification or repair body shall have instructions on the use and operation of all relevant equipment, and on the handling and preparation of items for verification or test, where the absence of such instructions could jeopardize the results of verification or tests.

All instructions, equipment, manuals and reference data relevant to the work of the verification or repair body shall be maintained current and be made readily available to personnel. Deviation from verification or test methods shall occur only if the deviation has been documented, technically justified and authorized, and accepted by the national responsible body.

Where the relevant national legislation or international, national or regional standards or specifications which are recognized by the national responsible body contain sufficient and concise information on how to perform the verification or test, they do not need to be supplemented or re-written as internal procedures if they can be used as published by the operating staff in the verification or repair body.

### 8.2.2 Selection of methods

The verification or repair body shall select the appropriate methods and procedures as prescribed in terms of the relevant national legislation for all verification or tests within its scope. The verification or repair body shall ensure that it uses the latest valid edition of a South African National Standard or. When necessary, the standard shall be supplemented with additional details to ensure consistent application.

When the governing technical regulations as specified in the relevant national legislation do not specify the method to be used, the verification or repair body shall select appropriate methods that have been published either in international, regional or national standards, or by reputable technical organizations, or in relevant scientific texts or journals, or as specified by the manufacturer of the equipment after approval thereof by the national responsible body.

The verification or repair body shall confirm that it can operate the latest valid edition of the standard methods before performing the verifications or tests. If the standard method changes, the confirmation shall be repeated. The verification or repair body shall inform the client when the method proposed by the client is considered to be inappropriate or out of date.

### 8.3 Sampling

The verification body shall have sampling plans and procedures when it carries out sampling for verification. The sampling plan, as well as the sampling procedures, shall be available at the location where sampling is undertaken.

Sampling plans shall, be based on appropriate statistical methods. The sampling process shall address the factors to be controlled to ensure the validity of the verification results.



**Note:** Sampling is a defined procedure whereby an instrument is selected for verification to represent the whole sample. Sampling may also be required by the appropriate standard applicable for the instrument to be verified.

### 8.4 Handling of verification or test items

**8.4.1** The verification or repair body shall have procedures for the transportation, receipt, handling, protection, storage, retention and disposal of verification or repair items, including all provisions necessary to protect the integrity of the verification or repair item, and the interests of the verification or repair body and the client.

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**8.4.2** The verification or repair items referred to in this sub clause are instruments submitted by clients for verification or repair. Any instruments that are not intended for verification or repair and that fall outside the scope of this standard shall be segregated, unless they are dealt with in accordance with the same procedures as instruments used in terms of the relevant national legislation and are so marked as to leave no doubt that they are not for verification or repair.

**8.4.3** The verification or repair body shall have a system for identifying verification or repair items. The identification shall be retained throughout the life of the item in the verification or repair body. The system shall be designed and operated so as to ensure that items cannot be confused physically, or when referred to in records or other documents. The system shall, if appropriate, accommodate a subdivision of groups of items and the transfer of items within and from the verification or repair body, such as segregation of items for verification, repair or rework.

**8.4.4** Upon receipt of the verification or repair item, abnormalities or deviations from normal or specified conditions, as described in the verification or test method, shall be recorded. When there is doubt as to the suitability of an item for verification or repair, or when an item does not conform to the description provided, or the verification or repair required is not specified in sufficient detail, the verification or repair body shall consult the client for further instructions before proceeding, and shall record the discussion.

**8.4.5** The verification or repair body shall have procedures and appropriate facilities for avoiding deterioration, loss or damage to the verification or repair item during storage, handling, preparation and testing. Where a verification or repair item or portion of an item is to be kept secure, the verification or repair body shall have arrangements for storage and security that protect the condition and integrity of the secured items or portions concerned.

### 8.5 Technical records

**8.5.1** The verification or repair body shall retain records of original observations (raw data), derived data and sufficient information to establish an audit trail, verification and calibration records, repair records, staff records and a copy of each verification certificate or certificate of repair issued, for a defined period.

Technical records, such as forms, contracts, test sheets, workbooks, verification certificates, certificate of repair and clients' feedback records, may be kept in hard copy or electronic media.

**Note 1:** Records of observations may be in the form of a metrologist's note, which contains sufficient information to establish an audit trail.

**Note 2:** Technical records are accumulations of data and information which result from carrying out verification or repair and which indicate whether specified quality or process parameters are achieved.

**8.5.2** Observations, data and calculations shall be recorded at the time they are made and be identifiable to the specific task.

**8.5.3** When mistakes occur in records, each mistake shall be crossed out, not erased, made illegible or deleted, and the correct value shall be entered alongside. All such alterations to records shall be signed or initialled and dated by the person making the correction.



**8.5.4** In the case of records stored electronically, equivalent measures shall be taken to avoid loss or change of original data.

### 8.6 Ensuring the validity of verification results



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**8.6.1** The verification or repair body shall have procedures to control and monitor the validity of the verification or repairs undertaken. The resulting data shall be recorded in such a way that trends are detectable and, where practicable, statistical techniques shall be applied to review the results.

The selected procedure for assuring the validity of verification or repair results shall be appropriate for the type and volume of the work undertaken. This procedure for monitoring shall be planned and reviewed and shall include, but are not limited to:

- a) re-testing by a verification officer of completed work carried out by another verification officer,
- b) witnessing of a verification officer while verifying an instrument,
- c) vertical audit starting from a selected certificate,

Records shall be kept of actions taken to monitor the validity of the results of verification and the results of the guarantee issued by a repairer.

### 8.7 Reporting of results

#### 8.7.1 General

The results of each verification or test carried out by the verification or repair body shall be reported accurately, clearly, unambiguously and objectively, and in accordance with any specific instructions in the verification or test methods.



The results shall be reported in a test report and may not be combined with the verification certificate or certificate of repair, and shall include:

- a) all the information that is requested by the client,
- b) information that is necessary for the interpretation of the verification or the tests results, and
- c) all the information required by the method used.

#### 8.7.2 Verification certificate

Each verification certificate shall include at least the following information:

- a) the title "Verification Certificate";
- b) the name, address and designation number of the verification body;
- c) the unique serial number on all its pages to identify that each page is recognized as a part of the verification certificate;
- d) page numbers and a clear identifier of the number of pages in the verification certificate, e.g. page 1 of 1 or a statement at the beginning of the certificate "This certificate consists of 1 page" or a statement at the end of the certificate "End of Certificate";
- e) the name and physical address of the client;

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- f) the number of the verification procedure used by the verification body in terms of their documented management system;
- g) a description and unambiguous identification of the measuring instruments verified, including a description and serial number of components that has an influence on the metrological integrity of the measuring instrument and the type approval number(s) of the instrument or components, if the measuring instrument requires type approval in terms of the relevant national legislation;
- h) a statement that will serve as proof that the measurement standards used are directly related to the reading or obtaining of the results of measurement and are traceable to a national standard.

The following data shall be included as a minimum:

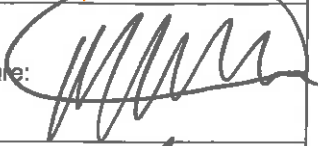

- i) calibration certificate number of the measurement standard(s) used;
- ii) date of calibration of measurement standard(s);
- iii) identification of measurement standards, e.g. serial numbers, description, set number, etc.; and
- iv) whether the measurement standards are owned by the verification body or loan measurement standards;
- v) Measurement standards for auxiliary measurements, such as hydrometers, thermometers and pressure gauges, need to be included in the statement of traceability and be listed accordingly.
- vi) the latest security intervention value, which shall be indicated on the verification certificate if the instrument being verified is secured by means of a software seal.

**Note:** If the security intervention value indicated on the instrument differs from the security intervention value indicated on the certificate, this means that an unlawful intervention was made on the instrument.

- j) expiry date of the verification certificate, if a verification period has been prescribed for the instrument concerned;
- k) the initials, surname and signature of the verification officer responsible for the verification, latest security intervention value, serial number of the verification sticker, date of verification and a seal number used for identification of the responsible verification officer, and
- l) the following statement: "The measuring instrument(s) was/were tested and found to comply in all respects with the requirements of the Legal Metrology Act 2014 (Act 9 of 2014) and may be used for a prescribed purpose as intended by the Act."
- m) the symbol identifying the National Regulator.
- n) no other declarations, identification symbols or statements are allowed other than those prescribed in 8.7.2.
- o) in case where a declaration of conformity is issued the number of the declaration of conformity.

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### 8.7.3 Certificate of repair

Each certificate of repair shall include at least the following information:



- a) the title "Certificate of repair";
- b) the name, address and designation number of the repair body;
- c) the unique serial number on all its pages to identify that each page is recognized as a part of the certificate of repair;
- d) page numbers and a clear identifier of the number of pages in the certificate of repair, e.g. page 1 of 1 or a statement at the beginning of the certificate "This certificate consists of 1 page" or a statement at the end of the certificate "End of Certificate";
- e) the name and physical address of the client;
- f) the number of the procedure used by the repair body in terms of their documented management system, to establish whether the measuring instrument is in a verifiable condition;
- g) a description and unambiguous identification of the measuring instrument repaired, including the description and serial number of components that has an influence on the metrological integrity of the measuring instrument and the type approval number(s), of the instrument or components, if the measuring instrument requires type approval in terms of the relevant national legislation;
- h) a statement that will serve as proof that the measurement standards used are directly related to the reading or obtaining of the results of measurement and are traceable to a national standard. The following data shall be included as a minimum:
  - i) calibration certificate number of the measurement standards used;
  - ii) date of calibration of measurement standards;
  - iii) identification of the measurement standards, e.g. serial numbers, description, set number; and
  - iv) whether the measurement standards is owned by the repair body or loan measurement standards;
  - v) Measurement standards for auxiliary measurements, such as hydrometers, thermometers and pressure gauges, need to be included in the statement of traceability and be listed accordingly.
  - vi) the latest security intervention value (software seal), which must be indicated on the certificate of repair if the measuring instrument being repaired is secured by means of a software seal.

**Note:** If the security intervention value indicated on the instrument differs from the security intervention value indicated on the certificate, this means that an unlawful intervention was made on the instrument.

- j) expiry date of the certificate of repair;

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- k) the initials, surname and signature of the person responsible for the repair, latest security intervention value, serial number of the verification sticker date of repair and a seal number used for identification of the responsible person undertaking the repair.
- l) the following guarantee as contemplated in Section 27(3) of the Legal Metrology Act, that the instrument(s) is correct and verifiable: "This/these measuring instrument(s) was/were tested and found to comply in all respects with the requirements of the Legal Metrology Act 2014 (Act 9 of 2014) and may be used for a prescribed purpose as intended by the Act".
- m) the symbol identifying the National Regulator.
- n) no other declarations, identification symbols or statements are allowed other than those prescribed in 8.7.3.

### 8.7.4 Reporting of verification results



**Note 1:** The results required to be documented by this sub clause are not intended to be given out with the verification certificate but may be given to the customer in every case or on request.

For every verification the following must be documented, as a minimum, for the interpretation of test results:

- a) reference to the applicable verification or rejection certificate;
- b) verification status (Initial, subsequent, new, repaired or in actual use) of the instrument immediately before verification;
- c) observations made during the preliminary examination may be combined in a single statement, however, any non-complying aspect needs to be separately indicated;
- d) indication that each test has passed or failed, for example by means of a code such as a tick or a cross, or by indicating the result of measurement or error, for all tests where an error limit is prescribed, including the conventional true value at which the specific tests were done;
- e) a statement of all the applicable maximum permissible errors. All stated maximum permissible errors shall either be expressed in a unit of measurement or as required in the relevant national legislation, e.g. expressed as a percentage or in terms of scale intervals, as long as the same method is used throughout the document;
- f) specific test conditions, such as environmental conditions, where these could affect the accuracy of verification;
- g) initials, surname, signature, and seal identification of the responsible verification officer; and
- h) date of testing.
- i) the symbol identifying the National Regulator.
- j) the national accreditation body symbol and associated verification accreditation number

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### 8.7.5 Reporting of repair results

**Note 1:** Some or all of the information required in this sub clause could be incorporated in the certificate of repair.

For every repair the following must be documented, as a minimum, for the interpretation of test results:

- a) reference to the applicable certificate of repair;
- b) status of the measuring instrument immediately before repair (e.g. rejected, under routine maintenance, outside verification period, broken)
- c) observations made during the preliminary examination may be combined in a single statement, however, any non-complying aspect needs to be separately documented;
- d) indication that each test has passed or failed, for example by means of a code such as a tick or a cross, or by indicating the result of measurement or error, for all tests where an error limit is prescribed, including the conventional true value at which the specific tests were done;
- e) a statement of all the applicable maximum permissible errors. This requirement does not include technical requirements such as limits of indication on weighing instruments or time delay on fuel dispensers. All stated maximum permissible errors must either be expressed in a unit of measurement or as required in the relevant national legislation, e.g. expressed as a percentage or in terms of scale intervals, as long as the same method is used throughout the document;
- f) specific test conditions, such as environmental conditions, where these could affect the accuracy of test results;
- g) initials, surname, signature, and seal identification of the responsible for repair; and
- h) date of testing.
- i) the symbol identifying the National Regulator.
- j) the national accreditation body symbol and associated repair body accreditation number

The results, indicated above, required to be documented are not intended to be supplied with the certificate of repair but may be given to the customer in every case or on request. However this information must be kept on file for inspection by a NRCS market surveillance inspector.

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**8.7.6 Rejection certificates issued by verification body**

A rejection certificate shall be issued, by a verification body, for an instrument that is false, inaccurate or defective. Results of any tests conducted need not be attached to the rejection certificate but shall be recorded as required in 8.7.4.

The rejection certificate shall contain at least the following:

- a) the title "Rejection Certificate" and a serial number;
- b) the name and address of the verification body;
- c) the name and physical address of the client;
- d) description and unambiguous identification of the measuring instrument(s) rejected;
- e) statement that will serve as proof that the measurement standards directly related to the reading or obtaining of the results of measurement is traceable to a national standard when the rejection is related to the inaccuracy of the instrument(s).

The following data shall be included as a minimum:

- i) calibration certificate number;
- ii) date of calibration of measurement standards;
- iii) identification of measurement standards t e.g. serial numbers, description, set number; and
- iv) whether it is the verification body's own or loan measurement standards;
- f) date of rejection;
- g) reason for rejection of the instrument;
- h) initials, surname and signature of the verification officer responsible for the rejection and a seal number used for identification of the responsible verification officer; and the following statement: "The instrument/s has/have been rejected and may not be used for a prescribed purpose in terms of the Legal Metrology Act, 2014 (Act No. 9 of 2014).



**8.7.7 Declaration statement of conformity at initial verification**

**8.7.7.1** In addition to the requirements of 8.7.2 a separate verification test report and declaration of conformity shall be attached to the verification certificate.

The declaration of conformity shall include the declaration and separate compatibility test results.

**8.7.7.2** The statement shall be documented based on:

- a) compliance to the associated type approval documentation and test results,

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- b) the compatibility test(s) performed, where applicable, e.g. non self-contained instruments, to determine the compatibility of the various modules(devices),
- c) compliance to the verification test results, and
- d) The verification certificate number and test report number shall be noted on declaration statement of conformity,

**8.7.8 Amendments to reports**

Amendments to certificates or test reports after issue, shall be made only in the form of a further document, or data transfer, which includes the statement: "Supplement to certificate number or test report number", or an equivalent form of wording. Such amendments shall comply with the requirements of this standard.

When it is necessary to issue a completely new verification, repair or rejection certificate or test report, it shall be uniquely identified and shall contain a reference to the original that it replaces.

Handwritten amendments to a verification, repair or rejection certificate or test report before the issue thereof, shall be made on all copies. Each mistake shall be crossed out, not erased, made illegible or deleted, and the correct value shall be entered alongside and signed or initialled and dated by the responsible verification officer or repairer.

**8.7.9 Prescribed reports and certificates**

**8.7.9.1** When an instrument is repaired, as contemplated in the definition of repair in the relevant national legislation, such instrument shall thereafter be re-verified and a verification certificate issued.



If a seal has to be broken by a verification officer and the metrological characteristics of the measuring instrument has not been altered, and the validity of the current verification certificate has in no way been compromised, a prescribed certificate may be issued permitting the use of such instrument in terms of the relevant national legislation) until the current verification certificate expires.

**8.7.9.2** A prescribed certificate issued shall, in addition to the information required in 8.7.2 (b), (c), (d), (e), (g) and (j) contain the following:

- a) the title " Prescribed Certificate";
- b) declaration that the repair in no way compromised the metrological integrity of the instrument or the validity of the current verification certificate;
- c) the serial number and date of expiry of the current verification certificate;
- d) a brief description of the repair carried out, ; and
- e) a statement permitting the use of the instrument in terms of the relevant national legislation until the expiry of the current verification certificate.

**8.8 Complaints**

**8.8.1** The verification or repair body shall have a documented process to receive, evaluate and make decisions on complaints.

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**8.8.2** A description of the handling process for complaints shall be available to any interested party on request. Upon receipt of a complaint, the verification or repair body shall confirm whether the complaint relates to verification or repair body activities that it is responsible for and, if so, shall deal with it. The verification or repair body shall be responsible for all decisions at all levels of the handling process for complaints.

**8.8.3** The process for handling complaints shall include at least the following elements and methods:

- a) description of the process for receiving, validating, investigating the complaint, and deciding what actions are to be taken in response to it;
- b) tracking and recording complaints, including actions undertaken to resolve them;
- c) ensuring that any appropriate action is taken.

**8.8.4** The verification or repair body receiving the complaint shall be responsible for gathering and verifying all necessary information to validate the complaint.

**8.8.5** Whenever possible, the verification or repair body shall acknowledge receipt of the complaint, and provide the complainant with progress reports and the outcome.

**8.8.6** The outcomes to be communicated to the complainant shall be made by, or reviewed and approved by, individual(s) not involved in the original verification or repair body activities in question.

**Note:** This may be performed by external personnel.

**8.8.7** Whenever possible, the verification or repair body shall give formal notice of the end of the complaint handling to the complainant.

**8.9 Nonconforming work**



**8.9.1** The verification or repair body shall have a procedure that shall be implemented when any aspect of its verification or repair body activities or results of this work do not conform to its own procedures or the agreed requirements of the customer (e.g. equipment or environmental conditions are out of specified limits, results of monitoring fail to meet specified criteria). The procedure shall ensure that:

- a) the responsibilities and authorities for the management of nonconforming work are defined;
- b) actions (including halting or repeating of work and withholding of reports, as necessary) are based upon the risk levels established by the verification or repair body;
- c) an evaluation is made of the significance of the nonconforming work, including an impact analysis on previous results;
- d) a decision is taken on the acceptability of the nonconforming work;
- e) where necessary, the customer is notified and work is recalled;
- f) the responsibility for authorizing the resumption of work is defined.



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**8.9.2** The verification or repair body shall retain records of nonconforming work and actions as specified in, bullets b) to f).

**8.9.3** Where the evaluation indicates that the nonconforming work could recur, or that there is doubt about the conformity of the verification or repair body's operations with its own management system, the verification or repair body shall implement corrective action.

### 8.10 Control of data and information management

**8.10.1** The verification or repair body shall have access to the data and information needed to perform verification or repair body activities.

**8.10.2** The verification or repair body information management system(s) used for the collection, processing, recording, reporting, storage or retrieval of data shall be validated for functionality, including the proper functioning of interfaces within the verification or repair body management system(s) by the verification or repair body before introduction.

**Note:** In this document verification or repair body management system(s) includes the management of data and information contained in both computerized and non-computerized systems. Some of the requirements can be more applicable to computerized systems than to non-computerized systems.

**8.10.3** The verification or repair body management system(s) shall:

- a) be protected from unauthorized access;
- b) be safeguarded against tampering and loss;
- c) be operated in an environment that complies with provider or verification or repair body specifications or, in the case of non-computerized systems, provides conditions which safeguard the accuracy of manual recording and transcription;
- d) be maintained in a manner that ensures the integrity of the data and information;
- e) include recording system failures and the appropriate immediate and corrective actions.

**8.10.4** When a verification or repair body management system is managed and maintained off-site or through an external provider, the verification or repair body shall ensure that the provider or operator of the system complies with all applicable requirements of this document.

**8.10.5** The verification or repair body shall ensure that instructions, manuals and reference data relevant to the management system(s) are made readily available to personnel.

**8.10.6** Calculations and data transfers shall be checked in an appropriate and systematic manner.



## 9 Management system requirements

### 9.1 General

**9.1.1** The verification or repair body shall establish, document, implement and maintain a management system that is capable of supporting and demonstrating the consistent achievement of the requirements of this document and assuring the quality of the verification or repair body results.

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**9.1.2** The policies and objectives shall address the competence, impartiality, and operations of the verification or repair body.

**9.1.3** The verification or repair body management system structure shall be outlined.

The management system shall make reference to supporting procedures including technical procedures.

**9.1.4** The verification or repair bodies management shall ensure that communication take place regarding the effectiveness of the management system and the importance of meeting customers and other requirements.

### 9.2 Management system documentation

**9.2.1** Verification or repair body management shall establish, document, and maintain policies and objectives for the fulfilment of the purposes of this document and shall ensure that the policies and objectives are acknowledged and implemented at all levels of the verification or repair body.

**9.2.2** The policies and objectives shall address the competence, impartiality and consistent operation of the verification or repair body.

**9.2.3** Verification or repair body management shall provide evidence of commitment to the development and implementation of the management system and to continually improving its effectiveness.

**9.2.4** All documentation, processes, systems, records, related to the fulfilment of the requirements of this document shall be included in, referenced from, or linked to the management system.

**9.2.5** All personnel involved in verification or repair body activities shall have access to the parts of the management system documentation and related information that are applicable to their responsibilities.

### 9.3 Control of management system documents

#### 9.3.1 General

The verification or repair body shall establish and maintain procedures to control all the documents that form part of its management system (internally generated or from external sources), such as regulations, standards, other normative documents, verification procedures, verification certificates, repair procedures, certificate of repair, verification and repair data, drawings, specifications, type approval documents, instructions, manuals, policy statements, test sheets, calibration tables, charts, text books, posters, notices, memoranda, software, plans, etc. These may be hard copy or electronic, i.e. digital, analogue, photographic or written.



#### 9.3.2 Document approval and issue

**9.3.2.1** All documents issued to personnel in the verification or repair body as part of the management system shall be reviewed and approved for use by authorized personnel before issue.

A master list or an equivalent document control procedure that identifies the current revision status and distribution of documents in the management system shall be established and be readily available to preclude the use of invalid or obsolete (or both) documents.

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### 9.3.2.2 The procedure(s) adopted shall ensure that

- a) authorized editions of appropriate documents are available at all locations where operations essential to the effective functioning of the verification or repair body are performed,
- b) documents are periodically reviewed and, where necessary, revised to ensure continuing suitability and compliance with applicable requirements,
- c) invalid or obsolete documents are promptly removed from all points of issue or use, or are otherwise protected against unintended use, and
- d) obsolete documents retained for either legal or knowledge preservation purposes are suitably marked.

**9.3.2.3** Management system documents generated by the verification or repair body shall be uniquely identified. Such identification shall include the date of issue or revision (or both) identification, page numbering, the total number of pages or a mark to signify the end of the document, and the issuing authority.

### 9.3.3 Document changes

**9.3.3.1** Changes to documents shall be reviewed and approved by the same function that performed the original review unless specifically designated otherwise. The designated personnel shall have access to pertinent background information upon which to base their review and approval.

#### 9.3.3.2 The altered or new text shall be identified either

- a) in the document or the appropriate attachments, or
- b) in a controlled amendment revision record, or
- c) on the obsolete document being replaced and which is retained for record purposes.

**9.3.3.3** If the documentation control system allows for the amendment of documents by hand, pending the re-issue of the documents, the procedures and authorities for such amendments shall be defined. Amendments shall be clearly marked, initialled and dated. A revised document shall be formally re-issued as soon as is practicable.

**9.3.3.4** Procedures shall be established to describe how changes in documents maintained in computerized systems are made and controlled

**9.3.3.5** The verification or repair body shall control the documents (internal and external) that relate to the fulfilment of this document.

**Note:** In this context, "documents" can be policy statements, procedures, specifications, manufacturer's instructions, calibration tables, charts, text books, posters, notices, memoranda, drawings, plans, etc. These can be on various media, such as hard copy or digital.

#### 9.3.3.6 The verification or repair body shall ensure that:

- a) documents are approved for adequacy prior to issue by authorized personnel;

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- b) documents are periodically reviewed, and updated as necessary;
- c) changes and the current revision status of documents are identified;
- b) relevant versions of applicable documents are available at points of use and, where necessary, their distribution is controlled;
- e) documents are uniquely identified;
- f) the unintended use of obsolete documents is prevented, and suitable identification is applied to them if they are retained for any purpose.

### 9.4 Control of records

#### 9.4.1 General

**9.4.1.1** The verification or repair body shall establish and maintain procedures for the identification, collection, indexing, access, storage, maintenance and disposal of quality and technical records. Management system records shall include reports from internal audits and management reviews, as well as corrective and preventive action records.

**9.4.1.2** All records shall be legible, reproducible, dated, readily identifiable, maintained in an orderly manner, and shall be stored and retained in such a way that they are readily retrievable in facilities that provide a suitable environment that prevents damage or deterioration and that prevents loss. Retention times of records shall be established and shall be at least the period of validity plus one year.

Where no verification periods are set for instruments (e.g. glass measures), verification certificates shall be kept for a period equal to the period when the instrument was used uninterrupted for a prescribed purpose in terms of the LM Act, plus one year from the date when the instrument was removed from use.

Where no legal period of validity is stated for general records, e.g. internal audit records, the period of validity shall be determined by the verification or repair body and, where required for assessment purposes, such records shall be kept at least until after the specific element has been assessed.

**Note:** Records may be hard copy or electronic media.

**9.4.1.3** All records shall be maintained secure and in confidence.

**9.4.1.4** The verification or repair body shall have procedures to protect and back up records stored electronically, and to prevent unauthorized access to or amendment of these records.



#### 9.5 Actions to address risks and opportunities

**9.5.1** The verification or repair body shall consider the risks and opportunities associated with the verification or repair body activities in order to:

- a) give assurance that the management system achieves its intended results;
- b) enhance opportunities to achieve the purpose and objectives of the verification or repair body;
- c) prevent, or reduce, undesired impacts and potential failures in the verification or repair body activities;

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d) achieve improvement.

### 9.5.2 The verification or repair body shall plan:

- a) actions to address these risks and opportunities;
- b) how to:
  - i) integrate and implement these actions into its management system;
  - ii) evaluate the effectiveness of these actions.

**Note:** Although this document specifies that the verification or repair body plans actions to address risks, there is no requirement for formal methods for risk management or a documented risk management process. Verification or repair bodies can decide whether or not to develop a more extensive risk management methodology than is required by this document, e.g. through the application of other guidance or standards.

**9.5.3** Actions taken to address risks and opportunities shall be proportional to the potential impact on the validity of verification or repair body results.

**Note 1:** Options to address risk verification or repair body can include identifying and avoiding threats, taking risk in order to pursue an opportunity, eliminating the risk source, changing the likelihood or consequences, sharing the risk, or retaining risk by informed decision.

**Note 2:** Opportunities can lead to expanding the scope of the verification or repair body activities, addressing new customers, using new technology and other possibilities to address customer needs.

## 9.6 Improvement

**9.6.1** The verification or repair body shall identify and select opportunities for improvement and implement any necessary actions.

**Note:** Opportunities for improvement may be identified through the review of the operational procedures, the use of the policies, overall objectives, audit results, corrective actions, management review, suggestions from personnel, risk assessment, analysis of data, and proficiency testing results.

**9.6.2** The verification or repair body shall seek feedback, both positive and negative, from its customers. The feedback shall be analysed and used to improve the management system, verification or repair body activities and customer service.

**Note:** Examples of the types of feedback include customer satisfaction surveys, communication records and review of reports with customers.

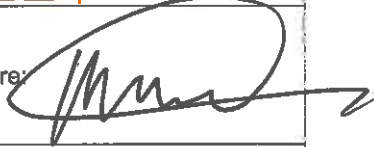

## 9.7 Corrective actions

**9.7.1** When a nonconformity occurs, the verification or repair body shall:

- a) react to the nonconformity and, as applicable:
  - i) take action to control and correct it;
  - ii) address the consequences;

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b) evaluate the need for action to eliminate the cause(s) of the nonconformity, in order that it does not recur or occur elsewhere, by:

- i) reviewing and analysing the nonconformity;
  - ii) determining the causes of the nonconformity;
  - iii) determining if similar nonconformities exist, or could potentially occur;
- c) implement any action needed;
- d) review the effectiveness of any corrective action taken;
- e) update risks and opportunities determined during planning, if necessary;
- f) make changes to the management system, if necessary.

**9.7.2** Corrective actions shall be appropriate to the effects of the nonconformities encountered.

**9.7.3** The verification or repair body shall retain records as evidence of:

- a) the nature of the nonconformities, cause(s) and any subsequent actions taken;
- b) the results of any corrective action.

### 9.8 Internal audits

**9.8.1** The verification or repair body shall periodically, and in accordance with a predetermined schedule and procedure, conduct internal audits of its activities to verify that its operations continue to comply with the requirements of the management system and this standard. The internal audit programme shall address all elements of the management system, including the verification or repair activities, at intervals that do not exceed 12 months. It is the responsibility of the quality manager to plan and organize audits as required by the schedule and requested by management.

Such audits shall be carried out by trained and qualified personnel who are, wherever resources permit, independent of the activity to be audited.

Besides covering areas in respect of which complaints have been received, audits shall include aspects such as:

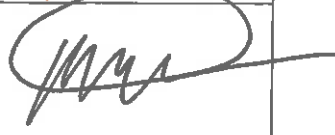

- a) the accuracy of the tests conducted,
- b) the adherence to set test procedures,
- c) the condition of measurement standards and their continued traceability to national standards, and
- d) the correct completion of verification certificates or certificates of repair.

Audits shall include, at least, the witnessing of a number of verification officers verifying or repairers testing an instrument each year.

In a four-year cycle, all verification officers or repairers shall be witnessed on each applicable procedure. A witnessing form or other document, e.g. detailed training record, shall be completed to indicate the results and

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shall be kept on record. The verification or repair body shall keep a documented four (4) year witnessing schedule which is updated annually.

Persons conducting technical audits shall have a thorough knowledge both of the requirements of the measuring instruments concerned, and of the requirements of the relevant national legislation.

Results of audits shall also be documented and shall be dealt with as prescribed by the management system manual and related management system documentation. All entities falling under the accreditation of the verification or repair body shall be included in these audits.

**9.8.2** When audit findings cast doubt on the effectiveness of the operations or on the correctness or validity of the verification or repair results, the verification or repair body shall take timely corrective action, and shall notify clients in writing if investigations show that the results might have been affected.

**9.8.3** The area of activity audited, the audit findings and corrective actions that arise from them shall be recorded. The management of the verification or repair body shall ensure that these corrective actions are discharged within an appropriate and agreed timescale.

**9.8.4** Follow-up activities shall verify and record the implementation and effectiveness of the corrective action taken.

### 9.9 Management reviews

**9.9.1** The verification or repair body management shall review its management system at planned intervals, in order to ensure its continuing suitability, adequacy and effectiveness, including the stated policies and objectives related to the fulfilment of this document.

**9.9.2** The inputs to management review shall be recorded and shall include information related to the following:

- a) changes in internal and external issues that are relevant to the verification or repair body;
- b) fulfilment of objectives;
- c) suitability of policies and procedures;
- d) status of actions from previous management reviews;
- e) outcome of recent internal audits;
- f) corrective actions;
- g) assessments by external bodies;
- h) changes in the volume and type of the work or in the range of verification or repair body activities;
- i) customer and personnel feedback;
- j) complaints;
- k) effectiveness of any implemented improvements;
- l) adequacy of resources;
- m) results of risk identification;
- n) outcomes of the assurance of the validity of results; and
- o) other relevant factors, such as monitoring activities and training.

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**9.9.3** The outputs from the management review shall record all decisions and actions related to at least:

- a) the effectiveness of the management system and its processes;
- b) improvement of the verification or repair body activities related to the fulfilment of the requirements of this document;
- c) provision of required resources;
- d) any need for change.

### 10. Extension of scope to become accredited as Repair body

**10.1** Existing designated Verification Bodies who applied to become a Repair body shall complete their extension of scope of SANAS accreditation to include the Repair Body before **13 December 2019**.