The Bulletin

sanas South African National Accreditation System

Newsletter of the South African National Accreditation System

Issue 48, August 2018

VERIFICATION VS CALIBRATION

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Verification

Verification Laboratories are accredited in accordance with SANS 10378:2012) to verify the accuracy of measuring instruments (mass, volume and length) used for trade purposes as prescribed in the Legal Metrology Act, Act 09 of 2014. The laboratories perform verifications against a schedule of accreditation which includes the Field of verification, Types of verification and Range as well as standards, specifications, Acts and Regulations pertaining to the measuring instruments.

Definitions

*In terms of the Legal Metrology Act, (Act 9 of 2014) the term "**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.*

Any instrument which has been repaired must be verified where "Repairs", 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 the accuracy of such measuring instrument.

Verification, in terms of ISO 9000: 2000, means confirmation through the provision of objective evidence that specified requirements have been fulfilled. **Objective evidence** may be the result of testing the measuring instrument, and **specified requirements** are those prescribed in the Legal Metrology Act and Regulations, specifications and pattern descriptions.

Scope of verification work done

In accordance with SANS 10378:2012 and applicable technical regulations the result of verification may lead to a decision either to restore in service, to perform adjustments, to repair, to downgrade or to declare obsolete. In all cases a written trace of the verification performed shall be kept on the measuring instrument's individual record.

This relates to verification of instruments used for a prescribed purpose in terms of the Legal Metrology Act and Regulations.

Prescribed limits

When verifying instruments for trade purposes the Legal Metrology Act and Technical Regulations prescribe the limits of error which are used as a basis of certifying or rejecting the instrument.

Calibration

Calibration laboratories are accredited in accordance with ISO/IEC 17025 to do measuring of instruments in various fields to obtain traceability

to National/International Standards. These laboratories form vital links between the National Measuring Standard, the Working Standard and test and measurements equipment used in industry. The laboratories perform calibrations against a schedule of accreditation which includes details of the Parameter, Ranges, and Best Measurement Capabilities within which the laboratory can operate.

Definition

According to VIM (International Vocabulary of basic general terms in Metrology) the term "Calibration" is defined as a set of operations that establish, under specified conditions, the relationship between the values of quantities indicated by a measuring instrument or measuring system, or values represented by a material, and the corresponding values realized by standards.

NOTES

1 The result of a calibration permits either the assignment of values of measurands to the indications or the determination of corrections with respect to the indications

2 A calibration may also determine other metrological properties such as the effect of influence quantities

3 The result of a calibration may be recorded in a document, sometimes called a calibrations certificate or a calibration report,

Determination of correction with respect to indications may involve adjustments of the measuring instrument, thus bringing it into a state of performance suitable for its use.

Calibration laboratories are required to calculate the measurement uncertainties in accordance with GUM (Guide to the expression of Uncertainty in Measurement) and state these in the calibration report/certificate.

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