

	LOM 2.13 Traceability of Measurement	
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2.13 Traceability of Measurement

2.13.1 Overview

Traceability supports the validity and accuracy of calibration and test measurement results. Traceability is a property of the result of a measurement and is established through an unbroken chain of comparisons/calibrations to a stated reference.

The unbroken chain of comparisons is demonstrated by explicitly describing and documenting a series of calibrations that successively link the value of the measurement to the values of each of the intermediate reference standards, and hence to the value of the stated reference standard.

The chain of comparisons must, when possible, extend to a national or international standard whose value can be expressed in SI Units (International System of Units).

The necessity for traceability applies to all measuring equipment and analytical instrumentation that generate results that will have a significant effect on the uncertainty of measurement of the ultimate test or calibration results. Refer to discipline-specific procedures manuals for information about which measurements require this level of traceability.

2.13.2 Types of Measurements

Two distinct types of measurement may be described: physical and chemical. The requirements to achieving traceability for each are shown below.

2.13.2.1 Physical Measurements

Data is collected (thickness, weight, temperature, etc.) using equipment (calipers, balance, thermometer, etc.) calibrated by an accredited calibration laboratory that provides a certificate showing that the measurements are traceable to a national or international reference standard or by a method approved by the equipment manufacturer.

Additional information regarding the traceability of physical measurements may be found in the discipline-specific procedures manuals.

2.13.2.2 Chemical Measurements

Data is collected using analytical equipment calibrated using laboratory standards prepared from a reference material whose properties are traceable to a national or international standard or validated through inter-laboratory comparisons, use of certified reference material, consensus standards, or use of specified methods.

Additional information regarding the traceability of chemical measurements may be found in the discipline-specific procedures manuals.