

TRACEABILITY AND NIST REPORT OF TEST NUMBERS

Throughout the 40 years that we have provided metrology services to the manufacturing community, we have made a commitment to staying on the cutting edge of education, and have further committed to passing that education on to you, our valued customer.

Many of our customers, pressed by their auditors and their customers, require NIST Report Numbers (many call them traceability numbers) to prove traceability. The International Vocabulary of Basic and General Terms in Metrology (VIM; 1993) defines traceability as:

The property of the result of a measurement or the value of a standard whereby it can be related to stated references, usually national or international standards, through an unbroken chain of comparisons all having stated uncertainty.

The National Institute of Standards and Technology (NIST) has written a policy concerning traceability, available at www.nist.gov/traceability, which states:

The NIST Calibration Program often receives calls to verify the authenticity of a NIST Report of Test number appearing on another organization's report. Although NIST can verify the authenticity of its report numbers, having an authentic number does not provide complete assurance or evidence that the measurement value provided by another organization is traceable. Not only should there be an unbroken chain of comparisons, each provided measurement should be accompanied by a statement of uncertainty associated with the farthest link in the chain from NIST, that is, the last facility providing the measurement value. NIST does not have that information; only the facilities that provided the measurement values to the customer can provide the associated uncertainties and describe the traceability chain.

In summary, to adequately establish an audit trail for traceability, a proper calibration result should include: the assigned value, a stated uncertainty, identification of the standards used in calibration, and the specification of any environmental conditions of the calibration where correction factors should be applied, if the standard or equipment were to be used under different environmental conditions.

Further positions concerning traceability have been published by policy-making organizations, such as NCSL-International and A2LA (our accrediting body), which state the same positions. Due to the stance of the metrology community, including NIST, we will be phasing out NIST Report Numbers on our calibration reports. Our statement of uncertainty is listed on every calibration report, thus providing our traceability.