

Quality Corner: ISO/IEC 17025 Accreditation

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Did you know that AASHTO re:source offers on-site assessments and AASHTO offers accreditation for International Standard ISO/IEC 17025? You may have at least heard of this standard by now, but maybe you don't know much about it. The title of the standard is "General Requirements for the Competence of Testing and Calibration Laboratories." But how does that differ from AASHTO R 18, "Establishing and Implementing a Quality Management System for Construction Materials Testing Laboratories," which is the basis for accreditation through the AASHTO Accreditation Program ([AAP](#))? How can a laboratory become accredited for ISO/IEC 17025? What are the benefits? Let's take a closer look.

First, a little background. ISO/IEC 17025 was originally known as ISO/IEC Guide 25 when it was first issued in 1999. ISO is the [International Organization for Standardization](#), which was founded in 1947. ISO is the world's largest developer of international standards, and is comprised of a network of the national standards institutes of over 160 countries. IEC is the [International Electrotechnical Commission](#), which operates closely with ISO. The IEC publishes international electrotechnology standards and manages conformity assessment systems. There are approximately 17,500 ISO standards. Those with the ISO/IEC prefix, such as ISO/IEC 17025, include publications from the ISO/IEC Joint Technical Committee 1.

ISO/IEC 17025 is the most widely used conformity assessment standard by testing and calibration laboratories worldwide. Laboratories that meet the requirements of this standard can demonstrate that they have a QMS geared towards being technically competent to perform testing and calibrations and to producing technically valid results. Laboratories that comply with ISO/IEC 17025 will also operate in accordance with another popular ISO conformity assessment standard, ISO 9001 - "Quality Management Systems - Requirements." ISO/IEC 17025 was first published in 2001 and a second release was made in 2005 after the wording was revised to align more closely with that of ISO 9001. The most significant changes included greater emphasis on the responsibilities of senior management, specific requirements to continually improve the QMS, and a stronger focus on customer communications.

The ISO/IEC 17025 standard is comprised of two main sections: Management Requirements and Technical Requirements. Management Requirements include requirements for sound laboratory management, primarily those related to the implementation and effectiveness of the laboratory's QMS. Technical Requirements focus on factors that directly contribute to the accuracy and reliability of the tests and/or calibrations, performed by the laboratory. Above all, the standard places a very strong emphasis on continual improvement.

Now let's talk about AASHTO R 18 vs. ISO/IEC 17025. Perhaps not surprisingly, there are many similarities between the two standards. However, there are also some critical differences. R 18 includes very specific equipment requirements, such as calibration, standardization, and check intervals and related procedures, that 17025 does not. R 18 also has specific requirements for technician training and competency evaluation activities, as well as specified time frames for conducting internal audits and retaining records. 17025 has more general requirements for those activities, but includes requirements for some topics not covered by the scope of R 18: contract review, purchasing, supplier evaluation, customer feedback, nonconforming work, preventive action, and sampling. 17025 also includes various requirements for reporting the results of testing that are not covered by R 18. Requirements found only in 17025 for activities that a laboratory does not undertake, such as sampling, are not mandatory and do not apply. Additionally, the 17025 clauses such as laboratory-developed methods, non-standard methods, and validation of methods do not apply to AASHTO-accredited laboratories because only standard AASHTO and ASTM methods are included in the scope of AAP.

AASHTO's ISO/IEC 17025 accreditation program recognizes laboratories that already adhere to AASHTO R 18 and would like to meet the additional requirements of an internationally known and accepted quality system standard. The program is available to all laboratories that are currently accredited by AAP. In order to receive accreditation for ISO/IEC 17025, accredited laboratories must first implement a quality management system that satisfies the requirements of 17025, a copy of which can be purchased from [ISO](#). Next, interested laboratories must submit an ISO/IEC 17025 Assessment Request Form, [additional required documentation](#), and a non-refundable deposit for the additional assessment required for 17025 accreditation. AASHTO re:source staff will review the required documentation and provide assistance to the laboratory to assure compliance with the basic 17025 documentation requirements before an on-site assessment is scheduled.

The ISO/IEC 17025 assessment is separate from the regular AASHTO re:source and/or CCRL on-site assessments that AASHTO accredited laboratories already receive. This special assessment mainly involves an in-depth review of the laboratory's QMS, extensive interviews with staff, observations of ongoing testing activities, and a thorough review of records. Separate demonstrations of test procedures are typically not involved. ISO/IEC 17025 assessments are usually completed within approximately two days. Laboratories must then provide adequate corrective action, including root cause analysis, for each nonconformity noted during the assessment before accreditation for 17025 can be granted. Once a laboratory has been accredited for ISO/IEC 17025 for one year, on-site assessments are conducted approximately every 27 months.

If your organization desires worldwide recognition of your products and services, or if you simply want to go the extra step in the pursuit of quality, recognition for ISO/IEC 17025 may be of interest to you. For more information about [AASHTO's ISO/IEC 17025 accreditation program](#), please contact [Tracy Barnhart](#).