



AASHTO Accreditation Policy and Guidance on Training and Competency Evaluation

Policy taken from Section 5.5 of Establishing and Implementing a Quality Management System for Construction Materials Testing Laboratories, AASHTO R 18-18.

5.5. Technician Training and Evaluation:

5.5.1. The laboratory shall maintain a procedure that describes the method used to ensure that laboratory personnel are trained to perform tests in accordance with standard procedures. In addition to the description of training methods, the document shall indicate what position or employee is responsible for the laboratory training program and the maintenance of training records (see Figure X1.1).

Note 5-There may be several different methods employed or differing levels of staff experience, including (1) on-the-job apprentice training (one-on-one) for new employees with little or no experience in laboratory or inspection work; (2) formal in-house training sessions for certification, rating, or competency evaluation; and (3) training by external organizations. An individual with prior experience performing a specific test need only have competency evaluated by the laboratory (see Section 5.5.2).

5.5.2. The laboratory shall maintain a procedure describing the method used to evaluate staff competency to ensure that each technician is qualified to perform the tests they perform in accordance with standard procedures. This procedure shall include the frequency of competency evaluations for each technician and indicate the position or employee responsible for evaluating staff competency and maintaining records (see Figure X1.2). The frequency selected may be based on experience and competency of each technician.

Note 6- Multiple intervals may be established based on the experience of the technician being evaluated and the methods used for administering the competency evaluation activities. For example, an experienced technician who consistently performs at a high level of competency may not need to have their competency evaluated as frequently as a less-experienced technician who is still actively learning how to perform the sampling and testing activities.

5.5.3. Evaluation of staff competency shall be conducted through observation of test demonstration by the laboratory technician for the tests they are qualified to perform. The demonstrations shall be evaluated either by in-house personnel, a representative of a certification program, a representative of an assessment body, or a consultant person or company used to provide objective evaluation of testing competency.

5.5.4. The laboratory shall maintain records of technician training and competency evaluation activities. The records shall include the following information:

5.5.4.1. Test method designation for which the technician was evaluated;

5.5.4.2. Date on which competence was evaluated;

5.5.4.3. Name of the individual who evaluated the technician's competency; and

5.5.4.4. A field for recording comments about the training or competency evaluation activity.

5.5.5. If an external certification or assessment program is used as a means of evaluating competency, the date of the evaluation (referred to in Section 5.5.4.2) and the name of the evaluator (referred to in Section 5.5.4.3) shall be reported on the competency evaluation record.

Guidance

Training Requirements (AASHTO R 18 Section 5.5.1)

Training refers to the teaching and evaluation laboratory staff receive for a test method. All new staff must be trained on each test method they will perform. In addition, existing staff shall be trained on any new test methods that are added to the scope of what they are expected to perform. Training is typically done once for each test method. A laboratory may decide to re-train personnel if the results of a competency evaluation show that an individual is not competent for a specific test method.

Training can be accomplished through many methods, including the following:

- one-on-one on the job training,
- formal in-house training sessions,
- and training by external organizations.

This allows for flexibility to decide the best method of training according to the laboratory's needs. AASHTO re:source laboratory assessments cannot be used as a method of training.

Personnel with prior experience performing a specific test *do not* need initial training for that test. Therefore, an experienced technician who is new to a laboratory would not necessarily need a training record. They would, however, need an initial competency evaluation for each test.

It is important to remember that a laboratory's actual practices must be consistent with the policy in their quality management system. For example, if a laboratory's policy does not include a statement saying prior experience will be accepted in lieu of initial training, an individual with prior experience would still need initial training from that laboratory for all tests they perform.

Competency Evaluation Requirements (AASHTO R 18 Section 5.5.2)

Competency evaluation refers to the observation of laboratory staff demonstrating a test method they have prior experience performing. Competency must be evaluated for each test an individual performs at a set interval established by the laboratory and specified in their quality management system. Competency evaluations are required for any individual running any test method at the laboratory, not just the individuals who are involved in the laboratory assessment process.

The interval established refers to the time between evaluations. The specified time interval must not be exceeded, but more frequent competency evaluations are allowed if needed. Laboratories can set different intervals for different personnel. Laboratories may consider someone's experience and frequency of testing when establishing different intervals for personnel. For example, a longer interval may be used for personnel that have a specified number of years of experience. The policy in the quality management system must be consistent with laboratory practices, which means the policy must explicitly state if different intervals are being used for different personnel.

Administering Competency Evaluations (AASHTO R 18 Section 5.5.3)

The competency evaluations can be administered by any one of the following:

- in-house personnel,
- a representative of a certification program,
- a representative of an assessment body,
- or a consultant person or company.

When in-house personnel are used, the evaluator *is not* required to be a supervisor or other higher-

ranking person. Anyone within the company can evaluate the demonstration, as long as they are given access to the resources needed to do so, such as the test method standard and/or any check sheets or documents used to determine competency.

An external certification program can be used to evaluate an individual's competency for a specific test method only if the individual demonstrates that test as part of the certification program. For example, if someone has a general soils certification from an outside agency, they do not necessarily meet the competency evaluation requirement for all soils tests. They could only use this external certification for the competency evaluation of the tests that *they performed* during the certification program. Written testing alone does not meet the competency evaluation requirement.

A representative of an assessment body can also observe the test demonstration for competency evaluation. This means AASHTO resource laboratory assessments can be used to evaluate competency for a test an individual performs during the assessment. However, it would be difficult to use assessments as the only method for evaluating staff competency because:

- 1) only one individual demonstrates each test during an assessment, so anyone that normally performs a test but did not perform that test for the assessment must have their competency evaluated by other means, and
- 2) the interval between assessments is approximately two years and can vary slightly, so if the time between assessments is greater than the interval established by the laboratory, staff will have to be evaluated by other means.

If an external assessment body is used to evaluate competency, it is up to the laboratory, not the assessment body, to determine if personnel are deemed competent. AASHTO assessors will not physically sign off on a laboratory's competency records, but the lab can reference the assessment report and assessor in their records.

An external consultant or company can observe the test demonstration for competency evaluation. This may be a good method for laboratories with a one-person staff, because an individual is not permitted to evaluate their own competency. As with using in-house personnel, if the external consultant or company has access to the necessary resources, such as the test standard and/or any check sheets or documents, they should be able to effectively evaluate competency.

Any one, or a combination, of the above methods can be used to evaluate staff competency. The quality management system must clearly state the procedure for evaluating competency and records produced must reflect the methods used.

Training and Competency Documentation (AASHTO R 18 Sections 5.5.4 and 5.5.5)

Training records and competency evaluation records can be maintained electronically or physically and must be kept for a minimum of 5 years. Both training and competency evaluation records must include the following:

- test method designation,
- date of evaluation,
- name of the individual who evaluated the technician's competency, and
- a field for recording comments about the training or competency evaluation activity.

All four of these components are required regardless of the method used for training or competency evaluation.

The test method designation must be listed for each relevant standard that was evaluated. If both the AASHTO and ASTM test methods are evaluated, then each standard's official designation must be listed. For competency evaluations, the date of the evaluation must match when the test was actually demonstrated. Depending on the number of tests, and length of those tests, it might not be practical to evaluate the competency for all tests an individual performs in one day. The name of the person who evaluated competency by observing the demonstration of a test must also be included on the record.

The intent of AASHTO R 18 Section 5.5.5 is to highlight that even if an external certification or assessment program is used to evaluate competency, the date of evaluation and name of the evaluator are still required (as is the test method designation and a section for comments from the laboratory). Therefore, when using external certification or assessment programs, just listing the name of the certification or the name of the program itself is not sufficient. Also, the date must reflect when the test was performed, not necessarily just the date certification was granted or the last date an assessment program took place.

Competency Evaluation in ASTM Quality Standards

The ASTM quality standards D3740, C1077, D3666, and E329 all have additional qualification/certification requirements for laboratory personnel beyond what is required in AASHTO R 18. Although competency evaluations can be used to fulfill the performance evaluation requirement of some (not all) of these standards, *competency evaluations alone*, as required in AASHTO R 18, *do not* meet the qualification/certification requirements of any of these standards. For a more in depth description of the certification requirements of these standards reference the [AASHTO Accreditation Policy on Certifications](#) document on our website.

When competency evaluations are being used to fulfil the performance evaluation portion of the qualification/certification requirements in ASTM D3740, C1077, or E329, additional interval requirements apply.

- ASTM D3740 (Section 7) requires that all laboratory and field supervisors have performance evaluations at least every 36 months and that all inspecting or testing technicians have performance evaluations at least every 24 months.
- ASTM C1077 (Section 6.1) requires that any personnel performing laboratory or field testing have certification(s), which include both a written and performance examination, for each relevant standard and that the period of certification does not exceed five years.
- ASTM E329 (Section 9.5) requires that each person be re-evaluated at least every three years for each test the person is authorized to perform.

AASHTO re:source Assessment Guidance

During an AASHTO re:source assessment, assessors will be looking at the following:

- Training and competency evaluation policies in the laboratory's quality management system.
 - The policies must be consistent with actual laboratory practices.
- Current competency and/or training records for each test each technician performed during the assessment.
 - More frequently the assessor will look for a competency evaluation record, because if a technician is demonstrating a test for an assessment, they most likely have been trained or have prior experience performing that test.
 - If a technician is new to the laboratory or a new test method is added, assessors will look for an initial training record. However, if a laboratory's policy accepts previous

experience in lieu of initial training, then the assessor will just look for an initial competency evaluation record.

- Previous competency evaluation records to verify that the technician is being evaluated according to the interval established by the laboratory.
 - The assessor may request to see competency and/or training records going back as far as 5 years (which is the minimum time requirement laboratories are required to maintain these records).
- Interviews with staff
 - The assessor may ask technicians questions related to how long they have worked at that laboratory, what their experience is with specific tests, how they were trained, etc. to determine if the training and competency evaluation policies set up by the laboratory are being followed. This will also help determine whether a technician has prior experience or not, and if they need an initial training record or competency evaluation record for a specific test.