

Oklahoma Highway Construction Materials Technician Certification Board

Guide to Key Elements of Performance Examinations

Introduction

This guide is designed to help applicants prepare for Oklahoma Highway Construction Materials Technician Certification Board certification modules. The certification process requires applicants to perform specified sampling and/or testing procedures in the presence of an evaluator who determines whether or not the applicant has the skills and knowledge required to obtain consistent results that will compare closely with those obtained by other competent technicians. A critical feature of this process is an evaluation of the applicant's ability to properly perform certain elements of the procedure that are considered to be essential for obtaining consistent, accurate, and repeatable results. Below are lists of the types of physical and procedural "key elements" which an applicant is expected to know before attempting certification. It is important to understand that ***an applicant is expected to know quantities*** that are associated with these elements. For example, if a procedure specifies a temperature range, the applicant is expected to know the value of that range by memory without the aid of reference materials. In other words, if an evaluator asks for the required temperature of a water bath, the answer "About 71 degrees," would be incorrect. The correct answer might be "71 plus or minus one degree Fahrenheit." Verbal questions about temperatures, times, and other criteria are included in all performance examinations.

Material Sampling Methods

Many procedures describe a variety of methods for sampling materials depending on where in the production/construction process the material is sampled. Applicants are expected to know all methods described in a procedure. (For example, a technician seeking certification in Asphalt or Materials Sampling & Testing may have sampled asphalt only from a truck transport and from the roadway before compaction. Such a technician will still be required to know the proper procedure for sampling from a windrow, funnel device, and ***all other locations*** described in AASHTO T 168.)

Some key elements for sampling procedures are:

- method for selecting sample locations
- minimum sample size for tests anticipated
- method for reducing sample to testing size
- proper equipment required for collecting and reducing samples (A few examples: Fine aggregate sampling tubes must have what dimensions? Splitter must have how many chutes per side for coarse aggregate? For fine aggregate? What kind of container for liquid AC or emulsions? Release agent properties?)
- number and locations of sample increments
- method for assuring representative nature of sample (Examples: Sample taken for what depth? Top layer removed or included? Devices used to create barrier?)

Material Testing Methods

Materials test standards are generally divided into three sections - apparatus, procedure, and calculations. Applicants must be familiar with each of these areas.

Some key elements for testing procedures are:

- times
- temperatures
- tolerances (\pm °F, \pm kg, \pm mL, \pm min or sec)
- equipment specifications (thermometer temperature range, scale accuracy, etc.)
- equipment inspection (Sieves cleaned? Correct container size and shape?)
- sequence of elements (steps in proper order)
- conditioning of sample prior to test (Sieve? Dry? Temperature?)
- response to special conditions (Absorption > 2%? Excessive moisture?)
- device calibration and settings
- calculations

During performance examinations, most tests are to be performed and completed just as they would be under actual field/lab conditions. Applicants are required to properly perform a procedure and to know all of its key elements in order to successfully certify as an RHCMT.

Pass/Fail criteria and the “Fourth Strike” rule.

Two chances to perform a procedure - If an applicant misses one or more key elements on a procedure, it is considered a strike. If the applicant misses fewer than three key elements, the evaluator shall tell the applicant which key elements were missed. If the applicant misses three or more key elements, the evaluator shall tell the applicant only that the attempt was failed and how many key elements were missed but not which ones were missed. After being informed that the attempt was unsuccessful, the applicant will be given an opportunity to review the standard and make a second attempt to perform the procedure. If a key element is missed on the second attempt, the applicant has failed to meet the requirement for that procedure.

One retest permitted for performance evaluations - If an applicant fails to meet the requirement for a procedure during the evaluation process (two attempts failed), a retest for that procedure is scheduled for a later date (neither less than 7 nor more than 60 days later) and the applicant continues the process with two strikes from that procedure. If a second procedure is failed (two attempts), the applicant has failed the module and must re-enroll at a later date. For the retest, the applicant gets only one opportunity to perform the procedure. If a key element is missed, the applicant has failed the module and must re-enroll.

The “Fourth Strike” rule - Missing one or more key elements on a procedure results in a strike. A successful second attempt means the applicant continues but now with “one strike.” A failed second attempt means failure of that procedure (retest scheduled) and the applicant continues but now with “two strikes.” Once an applicant receives a third strike, missing another key element in any procedure is considered the “fourth strike” and the applicant has failed the module and must re-enroll. For re-enrollments, the entire module must be repeated regardless of where in the process an applicant was when the module was failed.

More rules concerning the certification process are available in the official Board Rules which can be accessed via hyperlink from the home page of our web site at <http://oktechcert.org>.