

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
MATERIALS CONTROL, SOILS AND TESTING DIVISION

GENERAL INFORMATION GUIDE TECHNICIAN AND
INSPECTOR CERTIFICATION PROGRAM (TICP)

1. PURPOSE

- 1.1 The purpose of the West Virginia Division of Highways (WVDOH) Technician and Inspector Certification Program is to improve the quality assurance of the following, but not limited to: embankments, subgrades, base course, asphalt and portland cement concrete by the certification of industry and WVDOH. This procedure is to establish guidelines for this purpose.

2. GENERAL

- 2.1 It is the WVDOH's intent to conduct a cooperative program of training, study, and examination so that personnel of the producer, contractor, and the WVDOH will be able to better assure, by their increased technical knowledge, the level of quality required by the governing specifications.

3. SCOPE

- 3.1 This procedure is applicable to all requirements, guidelines, and other support documents of the WVDOH that reference conditions, methods, and levels of qualification specific to the WVDOH Training and Certification Program.

4. POLICIES AND ADMINISTRATION

- 4.1 Board of Certification - The Certification Program will be carried out in accordance with general policy guidelines established or approved by the State Highway Engineer. The State Highway Engineer will be advised by a Board composed of the following members:
1. State Highway Engineer
 2. Human Resources Director
 3. Materials Control Soils and Testing (MCS&T) Division's Director
 4. Quality Assurance Training Program Administrator
 5. Applicable MCS&T Supervisors
- 4.1.1 The Certification Board will meet upon call of the MCS&T Division's Director.

- 4.2 Administration - The program will be administered by the Director of the MCS&T Division (hereafter referred to as "Director"). The Director will have the assistance of an Implementation Committee appointed by the State Highway Engineer as follows:
1. Quality Assurance Training Program Administrator
 2. Applicable MCS&T Division Supervisors
 3. A representative of the WVDOH Human Resources Division.
- 4.2.1 In addition the Certification Board may jointly select representatives of producers and contractors to work with the Implementation Committee at such times and on such matters as the Director and the representatives mutually agree. These representatives shall not be candidates for certification.
- 4.2.2 The Implementation Committee will meet upon call of the Director, or person authorized by the Director. The board shall have a minimum of three (3) members in order to form a quorum for a meeting.
- 4.2.3 The Program Administrator shall be appointed by the Director. The Program Administrator will be assigned to assist the Director in administering the program and to handle planning, administration, and coordinating functions as may be delegated within the scope of appropriate WVDOH directives.

5. REQUIREMENTS

- 5.1 Where applicable, quality control representatives of a contractor or producer will be certified in one (or more) of the certifications listed in Section 6., depending upon the individual's duties or responsibilities. Responsibilities and qualification requirements are listed in appropriate support documents such as Materials Procedures, Quality Control Plans and others.
- 5.2 For purposes of the WVDOH Quality Assurance Program, a non-WVDOH certified technician/Inspector represents the company of which he/she is a full-time employee on the project, owner, or partner (as defined by the Federal Wage and Hour Legislation). If the said company has subsidiary or affiliated organizations, each organization will be required to have its own certified Technicians/Inspectors where applicable unless the State Highway Engineer makes an exception. Exceptions will be granted only when it can be proven that the certified Technician/Inspector actually performs the duties of the technician/inspector for the entire subsidiary or affiliated organizations.
- 5.3 Designated WVDOH personnel will be certified where applicable in one (or more) of the certifications listed in Section 6. depending upon the individual's duties and responsibilities.

6. CERTIFICATIONS

- 6.1 All certifications listed in the sections below require written examinations. Some of the listed certifications require a practical examination after successful completion of the written examination. It is the responsibility of the applicant to determine which certification is applicable to his/her assignment. Following is a description of the certifications listing relevant information about each:

6.2 AGGREGATE CERTIFICATIONS

- 6.2.1 Aggregate Sampling Inspector - The web-based examination for an Aggregate Sampling Inspector consists of the following areas:

1. Specifications
2. Sampling Fundamentals
3. Sampling Methods and Equipment
4. Gradations
5. T11 Wash Test

The Aggregate Sampling Inspector requires the successful completion of an online examination. Certification as an Aggregate Sampling Inspector qualifies the employee, either Industry or Division, to perform sampling of aggregates relevant to the Quality Control Program or Acceptance Program respectively.

- 6.2.2 Aggregate Technician - The written examination for an Aggregate Inspector consists of the following areas:

1. Aggregate Specifications and Procedures
2. Aggregate Fundamentals
3. Sampling, Control, and Inspection of Aggregates
4. Aggregate Testing

After successful completion of the written examination, the applicant will be required to pass a practical examination consisting of his/her demonstration of testing common to normal aggregate quality requirements. Certification as an Aggregate Inspector qualifies the employee, either Industry or Division, to perform sampling and/or testing of aggregates relevant to the Quality Control Program or Acceptance Program respectively.

6.3 COMPACTION CERTIFICATIONS

6.3.1 Soils and Aggregate Compaction Inspector - The written examination for a Compaction Inspector consists of the following areas:

1. Specifications
2. Soil Compaction Test Procedures
3. Radiation Safety and Nuclear Gauge
4. Test Procedure Problems

After successful completion of the written examination, the applicant will be required to pass a practical examination demonstrating his/her proficiency in using the testing equipment. Certification of the Compaction Inspector qualifies the employee, either Industry or Division, to conduct tests on all Soil construction materials that require compaction testing.

6.4 CONCRETE CERTIFICATIONS

6.4.1 Concrete Technician - The written examination for a Concrete Technician consists of the following areas:

1. Specifications
2. Fundamentals
3. Sampling and Testing
4. Control and Inspection
5. Mix Proportioning and Adjustment

The Concrete Technician requires only the successful completion of the written examination; no practical examination test is required. Certification of the Concrete Technician qualifies the employee, either Industry or Division, to make plant and mix adjustments, proportioning, and other duties.

6.4.2 Concrete Inspector - The written examination for a Concrete Inspector consists of the following areas:

1. Fundamentals
2. Sampling and Testing
3. Control and Inspection
4. Specifications

After successful completion of the written examination, the applicant will be required to pass a practical examination demonstrating his/her proficiency in conducting tests common to concrete quality control. Certification as a Concrete Inspector qualifies the employee, either Industry or Division, to perform sampling

and/or testing of concrete relevant to the Quality Control Program or Acceptance Program respectively.

6.5 ASPHALT MIXTURE CERTIFICATIONS

6.5.1 Asphalt Plant Technician - The written examination for an Asphalt Plant Technician consists of the following areas:

1. Specifications
2. Fundamentals
3. Sampling and Testing
4. Control and Inspection
5. Mix Proportioning and Adjustment

After successful completion of the written examination, the applicant will be required to pass a practical examination demonstrating their proficiency in conducting tests common to Asphalt quality control. Certification of the Asphalt Technician qualifies the employee, either Industry or Division, to take asphalt mixture samples, perform quality control or quality assurance testing on plant produced asphalt mixtures, make plant and mix adjustments, aggregate proportioning, and other duties.

6.5.2 Asphalt Field Technician – The written examination for an Asphalt Field Technician consists of the following areas:

1. Specifications
2. Surface Preparation
3. Mix Delivery and Placement
4. Joint Construction
5. PWL
6. Asphalt Compaction

The successful completion of the written examination and a practical examination test is required. Certification as an Asphalt Field Technician qualifies the employee, either Industry or Division, to oversee or inspect asphalt pavement construction. In addition, the class hand-out material is a valuable reference tool for each stage of the construction process. The required radiation safety training is included in this class and will certify attendees with a passing score to perform nuclear density testing on asphalt pavements.

6.5.2.1 Asphalt Field Technicians must also be evaluated by qualified District personnel on the first WVDOT paving project in which they perform this testing. The District personnel will make the decision as to whether or not the technician is correctly conducting the nuclear density tests in accordance with WVDOT specifications. The

District will also complete an evaluation form and send it to the MCS&T Division for processing. A technician that does not demonstrate proper nuclear density testing techniques shall not be allowed to continue testing on the project. They must be replaced by another qualified technician. Anyone who does not meet the evaluation standards must provide proof of additional WVDOH approved radiation safety training before another evaluation will be conducted.

6.5.3 Inertial Profiler Operator- The written examination for the inertial profiler operator covers of the following areas:

1. West Virginia Specifications
2. AASHTO and ASTM Specifications
3. Knowledge of operation and analysis of collected data

This certification covers an employee of either a contractor, consultant, or DOH staff to operate a lightweight/low-speed and high-speed inertial profiler.

6.5.4 Radiation Safety

6.5.4.1 This certification is required by the Nuclear Regulatory Commission (NRC) before operating a portable nuclear gauge. The training consists of 3 - 4 hours class room instruction and has a 25-50 question closed book exam. A minimum score of 70% is required for passing the course. The course and exam will cover the following areas:

1. Proper storage and security of portable nuclear gauges
2. Transportation of portable nuclear gauges
3. Personal safety while operating a portable nuclear gauge

7. TRAINING

7.1 Training - The Division of Highways, contractors, and producers may sponsor courses of instruction consisting of schools and seminars to help prepare personnel for certification under one or more of these certification programs. To the extent possible, these courses of instruction will be joint efforts of the industry and WVDOH. Nothing in this document shall be interpreted to prohibit any party from conducting courses of instruction for their personnel to assist in preparation for these exams.

7.2 The purpose of the schools is to provide helpful information and instruction for persons preparing to take the WVDOH Technician/Inspector examinations. These courses are designed to provide instruction for persons with a basic foundation in the subject matter.

8. EXAMINATIONS

- 8.1 Examinations, both written and practical, will be coordinated by the MCS&T Division of the WVDOH. The locations and dates of the examinations will be announced on the Division's Website¹. The examinations may be held on a regional basis when feasible. Most written examinations will be an 'open-book' type, with a time limit. Practical examinations require performance of the tests required by the specifications for the material type involved.
- 8.2 To pass the written examinations, the applicant must obtain a score of at least 70 percent. The Inertial Profiler Operator exam requires a minimum of 75% to pass. The applicant will be allowed two attempts within a 12-month period to obtain a passing score per each certification class attended.
- 8.3 After the applicant passes the written examination, he/she will have two attempts within a 12-month period to pass the practical exam (when applicable.)
- 8.4 Certificate Non-Transferable - The status of the certification for a Technician or an Inspector is not transferable and is valid only for the quality control procedures designated by the bearer's certificate.
- 8.5 Revocation of Certificate - If at any time a WVDOH, contractor's, producer's, or supplier's Technician or Inspector is found to have altered or falsified test reports or is found to have improperly performed tests or reported their results, the individual's certification may be rendered invalid by the State Highway Engineer upon recommendation of the Implementation Committee and/or the Board.
- 8.6 Renewal and Certification – Certifications shall be renewed as required in the Technician Inspector Certification Program (TICP) handbook. General guidance and information for renewal will be recommended by the Board as required by the State Highway Engineer. All certifications shall terminate on December 31st of the year of expiration. There may be written, and practical examination required for recertification where applicable. More recertification information can be found in the Technician Inspector Certification Program (TICP) handbook available on the MCS&T Division's Website.
- 8.6.1 The responsibility for obtaining re-certification shall lie with the certified individual.
- 8.6.2 The Implementation Committee or other designated party shall establish internal criteria for renewal. The Technician Certification Handbook with the current rules and requirements shall be posted on the MCS&T Division's website.

¹ <http://transportation.wv.gov/highways/mcst/Pages/techcert.aspx>

- 8.6.3 Upon obtaining renewal of certification, a renewal card may be printed from the MCS&T Division's website.
- 8.7 For further information on classes, recertification, schedules, class calendars and other helpful information please visit the Division's website.

9. FUNCTIONS AND RESPONSIBILITIES

- 9.1 Contractor or Producer: The producer and contractor will be responsible for product control of all materials during the handling, blending, and mixing operations. The contractor and producer also will be responsible for the formulation of a design mix that will be submitted to the Division of Highways for approval.
- 9.1.1 Technician/Inspector: A Quality Control representative of a contractor or producer should be a certified Technician/Inspector as outlined in Section 5. and whose responsibilities may include such duties as proportioning and adjusting the mix, sampling and testing the product, and preparing control charts.
- 9.2 WVDOT: The WVDOT is responsible for all acceptance decisions.
- 9.2.1 District Materials Supervisor: District Materials activities are the responsibility of the District Materials Supervisor.
- 9.2.2 Division Technicians and Inspectors: The WVDOT Technicians and Inspectors will be assigned as necessary to carry out the required acceptance decision activities. The WVDOT representatives will not issue instructions to the contractor or producer regarding process control activities. However, the WVDOT representatives have the responsibility to question, and where necessary to reject, any operation or sequence of operations, which are not performed in accordance with the contract documents.



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