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

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GENERAL INFORMATION GUIDE  
FOR QUALITY ASSURANCE TESTING

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1.0 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 embankments, subgrades, base course, asphalt and Portland cement concrete by the certification of industry and Division of Highways personnel. This procedure is to establish guidelines for this purpose.

2.0 GENERAL

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

3.0 SCOPE

- 3.1 This procedure is applicable to all requirements, guidelines, and other support documents of the Division of Highways that reference conditions, methods, and levels of qualification specific to the Division of Highways training and certification program.

4.0 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. Director of Materials Control, Soils and Testing Division
2. Director of Contract Administration Division
3. Director of Maintenance Division
4. Director Human Resources Division
5. Representatives of the Contractors Association of West Virginia
6. Representatives of West Virginia Hot-Mix Asphalt Materials Producers
7. Representatives of the West Virginia Aggregate Producers
8. Representatives of the West Virginia Cement Concrete Materials Producers

- 4.1.1 The Certification Board will meet upon call of the State Highway Engineer.
- 4.2 Administration - The program will be administered by the Director of the Materials Control, Soils and Testing 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. Director of Materials Control, Soils and Testing Division
  2. One senior representative of the Contract Administration Division
  3. One senior representative of the Maintenance Division
  4. A representative of the Human Resources Division of the Division of Highways
- 4.2.1 In addition to the above, the non-Division of Highways members (Section 4.1) of 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.
- 4.2.3 A Program Coordinator is to be recommended by the Implementation Committee and selected by the State Highway Engineer. The Committee 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 Division of Highways directives.
- 5.0 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 6.0 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 Division's Quality Assurance program, a non-Highways Division 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 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 all of the subsidiary or affiliated organizations.

5.3 Designated Highways Division personnel will be certified where applicable in one (or more) of the certifications listed in Section 6.0 depending upon the individual's duties or responsibilities.

## 6.0 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 Inspector - The written examination for an Aggregate Inspector consists of the following areas:

- Aggregate Specifications and Procedures
- Aggregate Fundamentals
- Sampling, Control, and Inspection of Aggregates
- 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.

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

- Sampling Fundamentals
- Sampling Methods and Equipment

The Aggregate Sampling Inspector requires only the successful completion of the written examination; no practical examination is required. 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.

### 6.3 COMPACTION CERTIFICATIONS

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

- Specifications
- Compaction Test Procedures
- Radiation Safety and Nuclear Gauge
- 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 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:

- Fundamentals
- Sampling and Testing
- Control and Inspection
- 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:

- Fundamentals
- Sampling and Testing
- Control and Inspection
- 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 HOT-MIX ASPHALT CERTIFICATIONS

### 6.5.1 Hot-Mix Asphalt Technician - The written examination for a Hot-Mix Asphalt Technician consists of the following areas:

- Fundamentals
- Sampling and Testing
- Control and Inspection
- 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 Hot-Mix Asphalt quality control. Those persons, who have already completed certification requirements for the Hot-Mix Asphalt Inspector program (see Section 6.5.3), and have kept their certification updated, will not be required to retake the practical examination. Certification of the Hot-Mix Asphalt Technician qualifies the employee, either Industry or Division, to take HMA samples, perform quality control or quality assurance testing on plant produced HMA, make plant and mix adjustments, aggregate proportioning, and other duties.

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

- Surface Preparation
- Mix Delivery and Placement
- Joint Construction
- Pavement Compaction and Compaction Testing

The successful completion of the written examination is the only mandatory requirement for the Asphalt Field Technician. No practical examination test is required; however, see Section 6.5.2.1 for additional information regarding asphalt pavement density testing. 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 not included in this class.

#### 6.5.2.1 For those Asphalt Field Technicians that wish to become certified to perform nuclear density testing of asphalt pavements, they must be evaluated by qualified District personnel on the first WVDOH 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 Division specifications. The District will also complete an evaluation form and send it to the Materials Control, Soils & Testing 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 Division approved training before another evaluation will be conducted.

- 6.5.3 Hot-Mix Asphalt Inspector – The Hot-Mix Asphalt Inspector certification will no longer be offered by the WVDOT. Those persons who have the Asphalt Inspector certification, but do not have the Hot-Mix Asphalt Technician certification, will be allowed to continue HMA sampling and testing activities for the WVDOT, and their certification will be renewable on a regular basis. For those who have both of these certifications, the Hot-Mix Asphalt Inspector certification will not be renewed since it will no longer be required.

## 7.0 TRAINING

- 7.1 Training - The Division of Highways, contractors, and producers will 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 WVDOT. 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 technician/inspector examinations. These courses are designed to provide instruction for persons with a basic foundation in the subject matter.

## 8.0 EXAMINATIONS

- 8.1 Examinations, both written and practical, will be coordinated by the Materials Control, Soils & Testing Division of the Division of Highways. The locations and dates of the examinations will be announced at least two weeks prior to being given. The examinations may be held on a regional basis when feasible. All written examinations will be a one-part, 'open-book' type, with a maximum time limit of three hours. 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. There will be two written examinations per certification topic each year prior to May.

- 8.3 After the applicant passes the written examination, they will have two attempts within a 12 month period to pass the practical exam.

- 8.3.1 A third written examination shall be offered per certification in July for a fee of \$250.00. This examination is limited to applicants who have not previously taken the written examination more than once within the calendar year. An applicant may only test twice per certification in a calendar year. A practical examination will be offered for those individuals who pass the third examination.
- 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 Division of Highways, 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 - Certification will be renewed every five (5) years. General guidance and information for renewal will be recommended by the Board as required by the State Highway Engineer. All renewals of certification shall be for a five-year period, and shall terminate on December 31 of the fifth-calendar year after renewal has been made.
- 8.6.1 The responsibility for applying for re-certification shall lie with the certified individual. The Division of Highways will attempt to contact a person by mail at their last known address. Such contact will be made within sufficient time to notify a person that their certification is about to expire. It is, however, the responsibility of the individual to inform the Division of Highways Human Resources Division of his/her current address.
- 8.6.2 Applications for re-certification shall be on a standard form prepared by the Division of Highways and should include a chronological history of the candidates work within the area in which certification has been made. Such history will include only those assignments pertinent to this field during the five-year period for which the person was certified. The purpose of including this work history within this field is to permit the Implementation Committee or other party so designated by the State Highway Engineer to determine if the applicant for renewal had sufficient contact within the area in order to obtain renewal without having to retake the examination.
- 8.6.3 The above application will be notarized (Section 8.6.3).
- 8.6.4 The Implementation Committee or other designated party shall establish internal criteria for renewal and shall recommend to the State Highway Engineer disposition of each applicant. The State Highway Engineer may request the Board

to review applications as required.

8.6.5 Upon obtaining renewal of certification, a renewal card shall be issued.

8.7 Application for Certification - Applications for certification will be directed to the Human Resources Division of the Division of Highways.

## 9.0 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 5.0 and whose responsibilities may include such duties as proportioning and adjusting the mix, sampling and testing the product, and preparing control charts.

9.2 The Division of Highways - The Division of Highways 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 - Division of Highways technicians and inspectors will be assigned as necessary to carry out the required acceptance decision activities. These employees will not issue instructions to the contractor or producer regarding process control activities. However, the Division of Highways 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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