
CHAPTER 3

ASPHALT INSPECTION TRAINING AND QUALIFICATION PROGRAM

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3.1 PURPOSE

The purpose of this section is to describe the Asphalt Inspection Training and Qualification Program. This program is designed to establish a qualification program for persons responsible for the manufacture, placement and inspection of asphalt concrete material. This procedure lists the details of the qualification program including the associated training courses.

3.2 BACKGROUND

Personnel performing oversight, inspection, sampling, and testing of asphalt and asphalt pavement on Department projects are required to be formally qualified. The Department Construction Training and Qualification Program's Asphalt courses provide the instruction and skills required to ensure a strong Quality Assurance program.

3.3 QUALIFICATIONS BY JOB FUNCTION

3.3.1 Asphalt Paving Level 1

This is for the technician, private lab or contractor employee who is qualified to perform acceptance tests such as surface tolerance (rolling straightedge and cross-slope), random sampling, core sampling and testing, and density calculation. Entry-level Department employees performing these tests shall obtain this qualification.

3.3.2 Asphalt Paving Level 2

This is for the more experienced roadway technician, private consultant or contractor employee who is knowledgeable in the specification requirements, paver and roller operations, balancing of the paving operation, uniformity of the mat and components of hot mix asphalt placement. Additionally, this person is able to identify trends, norms, problem areas, other best management practices and adjust paving operations as necessary.

3.3.3 Asphalt Plant Level 1

This is for the technician, private lab or contractor employee who is qualified to sample asphalt mixtures, aggregate or asphalt cement and perform acceptance tests such as bulk specific gravity, maximum specific gravity, gyratory compaction,

asphalt content (ignition oven), gradation and permeability. Department employees performing acceptance tests at the plant shall obtain this qualification

3.3.4 Asphalt Plant Level 2

This is for the more experienced plant technician, private consultant or contractor employee who is knowledgeable in the specification requirements, stockpiling, cold feeds, blending and adjustments, interpreting quality control charts, plant calibration/inspection/operation, temperature control and load out. Additionally, this person is able to identify trends, norms, problem areas, other best management practices related to uniform mix and intricacies of hot mix asphalt production.

3.3.5 Asphalt Mix Designer

This is for the experienced bituminous specialist who is qualified to design asphalt mixtures. This individual has knowledge of aggregates, bituminous materials, modified binders, volumetric calculations, RAP mixes, and Florida's Superpave specifications.

3.4 QUALIFICATIONS AND COURSES

There are five qualifications:

- (1) Asphalt Paving Level 1
- (2) Asphalt Paving Level 2
- (3) Asphalt Plant Level 1
- (4) Asphalt Plant Level 2
- (5) Asphalt Mix Designer

The criteria for becoming qualified in these areas are described in detail in the following text.

3.4.1 Asphalt Paving Level 1 Qualification Requirements

The objective of this qualification is to ensure all test results used for quality control, verification, dispute resolution and acceptance of asphalt mixtures are performed in accordance with the **Standard Test Methods** and therefore reflect the actual asphalt characteristics and whether specifications are met.

All trainees seeking Asphalt Paving Level 1 qualifications must:

- (1) Pass the Asphalt Paving Level 1 written examination.
- (2) Pass the Asphalt Paving Level 1 proficiency examination.

After a trainee has successfully met all of these qualification requirements, the trainee's qualification date will be added to the Training and Qualification Database System. Qualification shall be for five years (60 months). The date of qualification shall be from the date the last qualification examination requirement was satisfied.

3.4.1.1 Asphalt Paving Level 1 Training Course

This course shall consist of a one-day training class with a written examination and a proficiency examination given on the same day as the course instruction. Total course instruction and exam time is approximately 9.0 hours.

Instruction and exam times are as follows:

Instruction (5.5 hours):

Classroom: 5.0 hours

Proficiency: 0.5 hours

Exams (3.5 hours):

Written exam: 2 hours

Proficiency exam: approximately 1.5 hours
(depending on class size)

Also included are the:

- Calculations for testing
- Calibration procedures for the testing devices
- The reporting of data using standard report forms

Training course attendance is encouraged, but is not required for qualification.

Course Prerequisites

There are no prerequisites for taking the Asphalt Paving Level 1 Course.

Written Examination

An open book written examination (2 hours, multiple choice) is administered

after the course is taught. The examinations are electronically graded by the CTQP Administrator. The passing grade for this examination 70%. Two weeks should be allowed for grading and posting of the examination results.

Proficiency Examination

A proficiency examination (approximately 1.5 hours) is administered after the course is taught and the written exam is administered. Each trainee is expected to correctly demonstrate skills in measurement of surface tolerance, and cross slope. Each trainee is given two chances to pass each test. Should a trainee fail any one test twice, this will constitute failure of the proficiency examination. The proficiency examination is closed book. The trainee is permitted to refer to the course material following a failed attempt and prior to the second attempt.

Anyone failing either the written or the proficiency examination can apply for another examination. The application must be completed and the appropriate fee paid before the examination.

3.4.2 Asphalt Paving Level 2 Qualification Requirements

The objective of this qualification is to ensure personnel responsible for inspecting asphalt pavement construction (paving and compaction) are familiar with Department specification requirements, good construction practices and equipment operation necessary to place and compact a Superpave mixture which will meet requirements for smoothness, texture, density, cross slope and thickness.

All trainees seeking Asphalt Paving Level 2 qualification must:

- (1) Pass the Asphalt Paving Level 2 written examination.
- (2) First-time qualifiers must possess an active Asphalt Paving Level 1 qualification at the time of taking the Asphalt Paving Level 2 written examination.
- (3) Have 90 days experience in asphalt paving operations or asphalt roadway testing.

After a trainee has successfully met all of these qualification requirements, the trainee's qualification date will be added to the training database. Qualification shall be for five years (60 months) from the date the last qualification examination requirement was satisfied.

3.4.2.1 Asphalt Paving Level 2 Training Course

This is a three-day course with a written examination (4 hours, multiple choice) given in the second half of the third day. This class emphasizes the need for uniformity and consistency of the mix, placement and compaction operations in achieving the specification requirements for texture, smoothness, density, cross slope, and thickness. Equipment operation of paver and rollers are presented. Balancing delivery, milling, paving, and compaction operations are demonstrated. Proper paver operation for smoothness is emphasized. Proper roller operation is emphasized in order to achieve specific density.

Department specifications for acceptance of mix on the roadway are reviewed. The basics of the statistical approach behind the specifications are presented in order to input data. The trainee will understand and be able to recognize problems and make suggestions for corrections in the paving operation. The use of random numbers for density sampling is explained. Identification and possible causes of pavement problems and the solutions are presented. The need for uniformity and consistency is explained.

Training course attendance is encouraged, but is not required for qualification.

Course Prerequisites

Prior to attending the Asphalt Paving Level 2 Training Course, a trainee employed by the Department shall have passed the Department Asphalt Concrete Paving Self-study examination (CQC version), Construction Math and Contract Plans Reading and have 90 days experience in asphalt paving operations.

Written Examination

An open book written examination (4 hours, multiple choice) is administered at the end of the course. The examinations are electronically graded by the CTQP Administrator. The passing grade for this examination is 70%. Two weeks should be allowed for grading and posting of the examination results.

3.4.3 Asphalt Plant Level 1 Qualification Requirements

The objective of this qualification is to ensure all test results used for quality control, verification, dispute resolution and acceptance of asphalt mix are performed in accordance with **Standard Test Methods** so that the test results reflect the actual characteristics of the asphalt mixtures and whether specification requirements are met.

All trainees seeking Asphalt Plant Level 1 qualification must:

- (1) Pass the Asphalt Plant Level 1 written examination.
- (2) Pass the Asphalt Plant Level 1 proficiency examination.

After a trainee has successfully met all of these qualification requirements, the qualification date will be added to the training database. Qualification shall be for five years (60 months) from the date the last qualification examination requirement was satisfied.

3.4.3.1 Asphalt Plant Level 1 Training Course

This three-day course shall consist of a one-day training class, a half-day laboratory demonstration by the instructor, and a half-day in the laboratory for trainees to practice on their own. A written examination and a proficiency examination are given on the third day. Total course instruction and exam time is approximately 24 hours.

Instruction and exam times are as follows:

Instruction (16 hours):

Classroom: 8 hours

Laboratory: 4 hours

Individual practice: 4 hours

Exams (6 to 8 hours):

Written exam: 2 hours

Proficiency exam: approximately 4 to 6 hours
(depending on class size)

Included are the calculations for the testing and use of random numbers. The

calibration procedures for the testing devices/equipment and reporting of data using standard report forms are also reviewed.

Training course attendance is encouraged but is not required for qualification.

Course Prerequisites

Prior to attending the course, a trainee employed by the Department must have passed the Department's Asphalt Concrete Testing self-study examination (CQC version).

Written Examination

An open book written examination (2 hours, multiple choice) is administered at the end of the course. The examinations are electronically graded by the CTQP Administrator. The passing grade for this examination is 70%. Two weeks should be allowed for grading and posting of the examination results.

Proficiency Examination

A proficiency examination (approximately 4 to 6 hours, depending on class size) is administered at the end of the course.

Each trainee is given two chances to pass each test. Should a trainee fail any one test twice, this will constitute failure of the proficiency examination. The proficiency examination is closed book. The trainee is permitted to refer to the course material following a failed attempt and prior to the second attempt. Anyone failing either the written or the proficiency examination can apply for another examination. The application must be completed and the appropriate fee paid before the examination.

3.4.4 Asphalt Plant Level 2 Qualification Requirements

The objective of this qualification is to ensure personnel operating or inspecting an asphalt production operation (at a plant) are familiar with the Department Specification requirements, proper materials management, and equipment operation necessary to produce a Superpave mixture which will meet the mix design criteria

and mix production requirements.

All trainees seeking Asphalt Plant Level 2 qualification must:

- (1) Pass the Asphalt Plant Level 2 written examination.
- (2) First-time qualifiers must possess an active Asphalt Plant Level 1 qualification at the time of taking the Asphalt Plant Level 2 examination.
- (3) Have 90 days experience in asphalt plant operations or asphalt mix testing.

After a trainee has successfully met all of these qualification requirements, the qualification date will be added to the training database. Qualification shall be for five years (60 months) from the date the last qualification examination requirement was satisfied.

3.4.4.1 Asphalt Plant Level 2 Training Course

This course is (three) 3 days including a written examination given in the second half of the third day (exam is 4 hours, multiple choice). The course emphasizes the need for uniformity and consistency of asphalt mix materials from the properties of component materials, blending, heating, drying, and mixing to loading and transporting of the mixture to the roadway. Proper stockpiling and loading aggregates into the cold feed bins will be emphasized. Blending and adjustment of blends based on tests are presented. Department specifications for acceptance of mix at the plant are reviewed and the basics of the statistical approach behind the specifications are presented to input data and to understand and recognize problems and then make changes in operation. Interpretation of quality control charts will be discussed and stressed. The theory and use of random numbers for obtaining samples will be reviewed. Plant calibration, inspection and operation will be presented. Proper loading, scale checks and mixture weighing will be explained. The need for uniformity of materials, proportions, temperature and quality control are emphasized.

Training course attendance is encouraged but is not required for qualification.

Course Prerequisites

Prior to attending the course, a trainee employed by the Department must

have taken and passed the Department Asphalt Concrete Plant Inspection self-study examination (CQC version) and have 90 days experience in asphalt plant operations.

Written Examination

An open book written examination (4 hours, multiple choice) is administered at the end of the course. The examinations are electronically graded by the CTQP Administrator. The passing grade for this examination is 70%. Two weeks should be allowed for grading and posting of the examination results.

3.4.5 Asphalt Mix Designer Qualification Requirements

The objective of this qualification is to ensure Superpave Mix Designs and all associated aggregate component testing are done in accordance with **Standard Test Methods** so test results reflect the actual characteristics of the components and mix. This course will ensure the trainee has knowledge of the specification requirements for Superpave Mix Designs.

All trainees seeking Mix Designer qualification must:

- (1) Pass the Asphalt Mix Designer written examination
- (2) First-time qualifiers must possess an active Asphalt Plant Level 1 qualification at the time of taking the Asphalt Mix Designer qualification.
- (3) Have 90 days experience in asphalt plant operations or asphalt mix testing.

After a trainee has successfully met all of these qualification requirements, the qualification date will be added to the training database. Qualification shall be indefinite unless revoked in accordance with Section 3.6.

3.4.5.1 Asphalt Mix Designer Course

This course consists of a three and one-half-day training class with a written examination (4 hours, multiple choice) on the afternoon of the fourth day. The testing required for Superpave mix design will be presented in the class. Test methods in Asphalt Plant Level 1 training will be reviewed. Mix design will be presented in logical sequence.

Blending of aggregates and calculations of proportioning will be covered.

Also included is a review of FDOT mix design specification criteria, calculation of volumetric criteria (air voids, VMA, VFA) and reporting of mix design data using standard report forms.

Training course attendance is encouraged, but is not required for qualification.

Course Prerequisites

No prerequisites are required for taking this course.

Examination

An open book written examination (4 hours) is administered at the end of the course. The examinations are electronically graded by the CTQP Administrator.

The passing grade for this examination shall be 70%. Two weeks should be allowed for grading and posting of the examination results.

3.5 REQUALIFICATION

3.5.1 Asphalt Paving Levels 1 & 2, Asphalt Plant Levels 1 & 2

Due to constant changes in specifications, materials and processes, ***Certificate of Qualification*** is issued for five years (60 months).

Near the end of that five year period, qualified technicians are required to submit an application for requalification. There is a fee for requalification and re-examination.

Requalification for all asphalt qualifications requires taking and passing the current written examination and proficiency examination or written examination only for the particular qualification as shown in the following table.

Any trainee who fails to become requalified by the 60th month of qualification shall become disqualified on the last day of the 60th month. A previously qualified person who lets their qualification expire must reapply for qualification.

See the following matrix for requalification requirements.

CTQP ASPHALT REQUALIFICATION			
CTQP QUALIFICATION	REQUALIFICATION REQUIREMENT		
	Pass Written Examination	Pass Proficiency Examination	Remarks
Asphalt Plant Level 1	Asphalt Plant Level 1	Asphalt Plant Level 1	1. Asphalt Plant Level 1 is not automatically requalified with a successful requalification of Asphalt Plant Level 2.
Asphalt Plant Level 2	Asphalt Plant Level 2		1. An active Asphalt Plant Level 1 qualification is not required. 2. Asphalt Plant Level 1 is not automatically requalified with a successful requalification of Asphalt Plant Level 2.
Asphalt Paving Level 1	Asphalt Paving Level 1	Asphalt Paving Level 1	1. Asphalt Paving Level 1 (even if it is expired) is automatically requalified with a successful requalification of Asphalt Paving Level 2.
Asphalt Paving Level 2	Asphalt Paving Level 2		1. An active Asphalt Paving Level 1 qualification is not required. 2. Asphalt Paving Level 1 (even if it is expired) is automatically requalified with a successful requalification of Asphalt Paving Level 2. 3. If the Paving Level 2 is expired, the technician will be considered as a first-time qualifier and must obtain the Asphalt Paving Level 1 qualification.

3.5.2 Asphalt Mix Designer

The CTQP Asphalt Mix Designer qualification does not require requalification. The qualification is indefinite, unless revoked in accordance with Section 3.6.

3.6 REVOCATION OF QUALIFICATION

See ***Sections 1.14.7 CTQP Qualification Revocation Based on Lack of Proficiency*** and ***1.14.8 CTQP Qualification Revocation Based on Falsification of Records***.

3.7 RESPONSIBILITIES

See ***Sections 1.10, 1.11, 1.12, and 1.13***.