



**Washington State
Department of Transportation**



REGISTRATION POLICIES & INFORMATION HANDBOOK

Transportation Testing Technician Qualification Program

ABOUT THIS HANDBOOK

The Registration, Policies, & Information Handbook (RP&IH) is intended to be a guidance document for Sampling/Testing Technicians (Testing Technicians) involved in the Washington State Department of Transportation's (WSDOT) Testing Technician Qualification Program (WTTQP) and Western Alliance for Quality Transportation Construction (WAQTC's) Transportation Testing Technician Qualification Program (TTQP). It is, however, the responsibility of the Testing Technician to remain up to date on all matters pertaining to the program. If you have questions about either program, contact the appropriate Agency person listed in this Handbook.

The phrase "Testing Technician" shall be all encompassing and include both individuals that perform sampling and testing.

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LIST OF ABBREVIATIONS

AASHTO	American Association of State Highway Officials
ACI	American Concrete Institute
ASTM	American Society of Testing Officials
AgTT	Aggregate Testing Technician
AKDOT & PF	Alaska Department of Transportation & Public Facilities
AQC	Agency Qualification Committee
AsTT-I	Asphalt Testing Technician I
AsTT-II	Asphalt Testing Technician II
CDOT	Colorado Department of Transportation
CFLHD	Central Federal Lands Highway Division
CTT	Concrete Testing Technician
DTT	Density Testing Technician
EBTT	Embankment and Base Testing Technician
EBTT/DTT	Embankment and Base Testing Technician/ In-Place Density Testing Technician
FHWA	Federal Highway Administration
HDOT	Hawaii Department of Transportation
IAI	Independent Assurance Inspector
ITD	Idaho Transportation Department
LQP	Laboratory Qualification Program
MDT	Montana Department of Transportation
MQTT	Method Qualified Testing Technician
NWCEL	Northwest Council of Engineering Labs
NDDOT	North Dakota Department of Transportation
ODOT	Oregon Department of Transportation
QAC	Qualification Advisory Committee
RP&IH	Registration, Policies and Information Handbook
ST	Sampling Technician
TTQP	Transportation Technician Qualification Program
UDOT	Utah Department of Transportation
WAQTC	Western Alliance for Quality Transportation Construction
WFLHD	Western Federal Lands Highway Division
WSDOT	Washington State Department of Transportation
WTTQP	Washington State Department of Transportation's Testing Technician Qualification Program
WQC	WSDOT Qualification Committee

WESTERN ALLIANCE FOR QUALITY TRANSPORTATION CONSTRUCTION (WAQTC)

INTRODUCTION

The Western Alliance for Quality Transportation Construction (WAQTC), is comprised of the States of Alaska, Colorado, Hawaii, Idaho, Montana, North Dakota, Oregon, Utah, and Washington, and the Western and Central Federal Lands Highway Division (WFLHD and CFLHD) of the Federal Highway Administration. This organization is dedicated to improving the quality of the transportation products and services.

WAQTC MISSION STATEMENT

Provide leadership in the pursuit of continuously improving quality in transportation construction.

Through our partnership, we will:

- promote an atmosphere of trust, cooperation, and communication between government agencies and the private sector
- respond in a unified and consistent manner to identified quality improvement needs and new technologies that impact the products that we provide
- provide a forum to promote uniform test standards
- provide highly skilled, knowledgeable materials sampling and testing technicians
- provide reciprocity for Qualified testing technicians among accredited Agencies

PURPOSE OF THE WAQTC

The WAQTC is comprised of at least one representative of each of the member Agencies. WAQTC is focused in three main areas: standardizing test methods (WAQTC, AASHTO, and ASTM), certifying sampler / testers through the WAQTC Transportation Technician Qualification Program (TTQP), and working together on significant national programs including research, training, and technology deployment.

WAQTC BENEFITS OF MEMBERSHIP

Cost savings

Partnering

Savings to contractors and consultants working in more than one state

Sharing resources human, tech, financial

Reducing wasteful duplication

WAQTC ORGANIZATIONAL STRUCTURE

- Executive Board
 - Contributing Member
 - Accredited Contributing Members
 - Advisory member
 - Guest
- Transportation Technician Qualification Program (TTQP) Committees
 - Qualification Advisory Committee (QAC)
 - Agency Qualification Committee (AQC)

WAQTC EXECUTIVE BOARD

The Executive Board is comprised of at least one representative of each of the member Agencies of the WAQTC. This committee is responsible for the mission, objectives, structure, policy decisions, the direction of the WAQTC, and other programs as may be undertaken in the future. Operational guidance for this committee can be found in the WAQTC Bylaws.

WAQTC ACCREDITED CONTRIBUTING MEMBERS

Agencies that have agreed to follow the standards of the TTQP accreditation program will have the status of Accredited Contributing Membership on the Executive Board. These member agency representatives shall have a single vote on all operational matters of the TTQP. Further guidelines can be found in the TTQP operational agreement.

WAQTC TTQP QUALIFICATION ADVISORY COMMITTEE (QAC)

The Qualification Advisory Committee (QAC) is the committee that has the principal task of overseeing technical portions of the TTQP. The QAC acts in an advisory capacity to the Executive Board and reports directly to them. The QAC reviews the program and suggests changes or updates and ensures that the program continues to meet the highest standards. Additional information is contained in WAQTC's TTQP Operational Agreement.

<http://waqtc.org/library/documents/ttqp.pdf>.

QAC Representative for Washington is:

Randy Mawdsley

mawdslr@wsdot.wa.gov

360-709-5497

WSDOT'S AGENCY QUALIFICATION COMMITTEE (WQC)

WSDOT's Qualification Committee (WQC) is responsible for oversight of the Washington Department of Transportation's Testing Technician Qualification Program (WTTQP). The WQC ensures consistency in the implementation of the program. The WQC consists of a minimum of five members including a committee chair. The WSDOT Assistant State Materials Engineer, or his delegate shall serve as the WQC chair. The WQC chair will appoint the remaining committee positions. The members of the WQC are knowledgeable in the administrative procedures of the WTTQP. The WQC is responsible for hearing and acting on allegations of testing technician misconduct, laboratory misconduct and matters that determine the efficient operation of the program. Testing technician complaints brought to the WQC will follow the Testing Technician Complaint Process (*see Appendix C*).

REPRESENTATIVES AND CONTACT POINTS

WAQTC EXECUTIVE BOARD (CONTRIBUTING MEMBERS)

Michael San Angelo - AKDOT&PF Michael_SanAngelo@dot.state.ak.us	Oak Metcalfe – MDT rmetcalfe@mt.gov
Michael Voth – FHWA Michael.Voth@dot.gov	Matt Linneman – NDDOT mlinneman@nd.gov
Brian Ikehara – HDOT brian.ikehara@hawaii.gov	Larry Ilg – ODOT Larry.D.ILG@odot.state.or.us
Craig Wieden, CDOT Craig.Wieden@state.co.us	Scott Nussbaum – UDOT snussbaum@utah.gov
John Bilderback – ITD john.bilderback@itd.idaho.gov	Garrett Webster – WSDOT WebsteG@wsdot.wa.gov

TTQP CONTACTS

Alaska AKDOT&PF	Dan Gettman daniel.gettman@alaska.gov (907) 269-6248	North Dakota NDDOT	Sharon Taylor staylor@nd.gov (701) 328-6937
Colorado CDOT	Christopher P. Russell christopher.russell@state.co.us (303) 398-6587	Oregon ODOT	Sean Parker sean.p.parker@odot.state.or.us (503) 986-6631
Hawaii HDOT	Vacant	Utah UDOT	Gilbert Arredondo garredondo@utah.gov (801) 633-6269
Idaho ITD	Lori Copeland Lori.Copeland@itd.idaho.gov (208) 332-7176	Washington State WSDOT	Randy Mawdsley MawdsIR@wsdot.wa.gov (360) 709-5497
Montana MDT	Misty Miner mminer@mt.gov (406) 233-3607		

Current course or qualification information, Qualified Technicians, updates, and other useful information can be accessed at : www.waqtc.org or by contacting the respective Agencies at the listed numbers.

WSDOT’S TESTINGTECHNICIAN QUALIFICATION PROGRAM (WTTQP)

PURPOSE OF THE WTTQP

The purpose of this Qualification program is to provide improved quality in the transportation products that we provide. One means of accomplishing this is by ensuring that individuals have demonstrated abilities to engage in quality assurance activities (quality control, acceptance, and independent assurance) in transportation construction work under the jurisdiction of the WSDOT and those laboratories that perform WSDOT work meet an acceptable level of performance. Unless otherwise specified in the contract documents all technicians who perform WSDOT contract work will have successfully completed WSDOT’s Testing Technician Qualification Program, and laboratories that perform sampling and testing on WSDOT projects will have been Qualified by the Quality Systems Laboratory Review Team.

WAQTC’s TTQP consists of 7 certification modules including instructional materials used to assist in the training of sampling and testing procedures. WSDOT has adopted 5 of the 7 WAQTC certifications and training modules. Concrete Testing Technicians (CTT) and Asphalt Testing Technician I (AsTT-I) are excluded. WSDOT requires the American Concrete Institutes (ACI) concrete certification, ACI Concrete Field Testing Technician—Grade I. WAQTC Asphalt II (AsTT-II) replaces AsTT-1.

This program is prescribed to meet, in part, the requirements of The Code of Federal Regulations (CFR) 637, Subpart B - Quality Assurance Procedures for Construction.

WTTQP OBJECTIVES

- To provide highly skilled, knowledgeable materials sampling and testing technicians
- To promote uniformity and consistency in testing
- To provide reciprocity for Qualified testing technicians between WAQTC participating Agencies
- To create a harmonious working atmosphere between public and private employees based upon trust, open communication, and equivalency of Qualification

DEFINITION OF CERTIFICATION AND QUALIFICATION (QUALIFIED)

Within the context of this guide and program the term *Certification* is defined as confirmation (certificate) that someone has successfully met the qualification requirements, as defined elsewhere in this guide, in one of the technical areas in which WAQTC offers such credentials. *Qualification (qualified)* is defined as the demonstration of the requirements in one of these technical areas.

These are solely credentials as defined by WAQTC and establish that the recipient has demonstrated a required level of knowledge and is eligible to perform work on certain transportation projects under the jurisdiction of the member contracting Agencies or others that utilize this program. This definition does not in any way suggest an affiliation with any national or other organization that provides similar credentials, or accredits organizations to provide similar credentials, in any like areas to those that are included in the WAQTC program.

Qualification (qualified) is also defined as confirmation that someone has successfully met the WSDOT Method Qualification requirements, as defined elsewhere in this guide, A single Method Qualification is designed for those individuals responsible for field and/or laboratory testing of specified materials.

DEFINITION OF TESTING TECHNICIAN

The WTTQP defines testing technician as any person responsible for sampling and/or testing material for acceptance or verification. WTTQP's Testing Technician is synonymous with WAQTC's Transportation Technician.

WHO MUST HOLD A CERTIFICATION/QUALIFICATION?

All individuals responsible for sampling and or testing materials, and or, reporting test results, in any of the technical areas in which Certification/Qualification is offered, as defined elsewhere, on any project under the jurisdiction of WSDOT must hold a certificate of qualification, unless otherwise designated in the contract documents. Certification/Qualification may be granted only after successfully completing the qualification requirements of this program. "Grandfathering" or "exceptions" to the TTQP, other than as noted in the Concrete Qualification, will not be granted.

QUALIFICATION / CERTIFICATION RECIPROACITY

Testing technicians must successfully complete all requirements of a Qualification area to be considered Qualified by the TTQP in that area. A person completing these requirements, and holding a valid Certification, will then be considered Qualified to perform those specific sampling and testing functions, only, falling under that Certification in any participating Agency of the WAQTC.

Although the testing technician is considered Qualified in that area by all Agencies for the defined test methods, there may be additional Agency specific tests and contract administration or quality assurance procedures, not specifically covered in the TTQP Qualification, that the testing technician will be required by that Agency to demonstrate proficiency in. The testing technician should be aware that non-WAQTC Agencies may or may not accept any of these Qualifications. Each individual should verify specific Agency requirements prior to seeking employment.

If an Agency does not require a testing technician to successfully complete the examination requirements for all test methods contained under a Qualification module, as defined in this manual, that person will not be considered Qualified under the TTQP in that module. A testing technician must successfully complete all exam requirements before obtaining WAQTC-wide Certification. Any WAQTC Certification obtained through the WTTQP will expire after five (5) years, on the same day of the month in which all requirements were successfully completed.

DISCLAIMERS

Certification of an individual by the WAQTC TTQP indicates only that the individual has demonstrated a certain level of competence on a written or performance examination, or both, in a selected field of activity. Members of the WAQTC that are also Contracting Agencies may require Certification of individuals performing activities specified in work contracts or other activities.

Each individual or organization utilizing individuals with certifications must make its own independent judgment of the overall competence of those individuals. The WAQTC specifically disclaims any responsibility for the actions, or the failure to act, of individuals who have certifications through the TTQP.

CANDIDATES WITH DISABILITIES

Persons with disabilities and those who have special needs should notify the IAI at the time of registration so that appropriate accommodations can be made.

WAQTC SAMPLING / TESTING CERTIFICATION MODULES

Aggregate Testing Technician AgTT
Asphalt Testing Technician II AsTT-II
Concrete Testing Technician CTT **reciprocity thru** ACI Concrete Field Testing Technician Grade 1
In-Place Density Testing Technician DTT
Embankment and Base Testing Technician EBTT
Embankment and Base/In-Place Density Testing Technician EBTT/DTT

WSDOT SAMPLING / TESTING CERTIFICATION MODULE

Sampling Technician ST

WSDOT METHOD QUALIFICATIONS

WSDOT Method Qualified Testing Technician MQTT

QUALIFICATION / CERTIFICATION PROCESS

To obtain a WAQTC certification or WSDOT Method Qualification, an individual will be required to pass a written and a practical examination demonstrating a knowledge and understanding of how to perform the test method(s) for each Qualification Area. A WTTQP Certified Written Exam Administrator and a WTTQP Certified Performance Exam Administrator shall administer all tests.

An individual may obtain a testing technician certification by either of the following methods:

- ***Method I***

- Meet applicable prerequisites for obtaining the Certification.
- Forward the registration form (*appendix A or B*), and a Rights and Responsibilities Agreement (*appendix C*) signed by the testing technician. This agreement outlines the testing technician's rights and responsibilities along with the possible consequences of the abuse and/or negligence of these responsibilities. Both documents must be signed and received before taking the written examination.
- Attend the appropriate Qualification course in its entirety
- Successfully pass the WAQTC module or WSDOT single method written and performance examinations.

- ***Method II***

If an individual is confident of their knowledge and experience in a Qualification subject area, he/she may obtain a testing technician certification in that area, without attending a Qualification course, upon successfully completing the written and performance examination requirements as defined under each Qualification section.

The Qualification process is:

- Meet applicable prerequisites for obtaining the Certification.
- Forward the Registration Form (*appendix A or B*), and a Rights and Responsibilities Agreement (*appendix C*) signed by the testing technician. This agreement outlines the testing technicians' rights and responsibilities along with the possible consequences of the abuse and/or negligence of these responsibilities. Both documents must be signed and received before taking the written examination.

- Successfully pass the WAQTC module or WSDOT single method written and performance examinations.

EXAMINATION ADMINISTRATION

The following criteria are common to the examination for each module.

Written Examination

- a. Closed Book
- b. Five (5) questions minimum per test method including multiple choice, true or false, and calculations. Exams will be in English.
- c. Written exam must be completed within 1 ½ hrs.

Performance Examination

- a. Each participant will demonstrate proficiency in the designated test methods.
- b. Open procedure, but the Examinee **will not** have access to the performance exam checklist.
- c. Each procedure must be performed within the time limit set WSDOT.
- d. The Examinee may be asked to explain various steps to the procedure to reduce the full test time. All test method time limits set by WSDOT will take into account the reduction of time due to accelerated steps.
- e. Each test method will have a performance exam checklist with a “P” or “F” checked by the Examiner.

Passing Score - Written/Performance

Written Examination:

- a. Initial exam (first attempt): An overall score of 70% with a minimum of 60% on any one test method.
 - An initial exam score below 60% on any one test method, will require re-examination on all test methods.
 - An initial exam overall score below 70% will require re-examination on all test methods.
- b. Re-exam (second attempt):
 - A re-examination shall be scored the same as the initial exam.

Performance Examination:

To pass all performance checklists must have 100% of the blanks checked “P” and each test method must be performed within the designated time limit. The testing technician is allowed two attempts on the first exam.

Re-Examination Policy

- a. **Written:** Examinees failing the first attempt are required to retake and pass the written examination at the scheduling convenience of the Examiner, if Qualification by the WTTQP is still desired. In no case will the written exam be given before the next calendar day.
- b. **Performance:** Examinees failing any test method on their first attempt will be offered a second attempt, provided that 50% or more of the initial exam test methods were successfully completed. This second attempt will be scheduled by the lead examiner to take place on the day of the exam when possible. Failure of any one of the prescribed test methods on the second attempt will constitute failure of the entire performance exam.
- c. Examinees failing either the written exam or performance exam on the second attempt will be required to wait 30 days before reapplying to retest for WAQTC certification or WSDOT Method Qualification. This waiting period will be waived if the examinee attends a WAQTC sponsored or approved training course for that Qualification if Qualification is still desired. During the 30 day wait it is strongly recommended that studying, hands on training and practice in the qualification area take place.

TESTING TECHNICIAN CERTIFICATIONS / QUALIFICATIONS

Following is a summary of the approved Testing Technician Certifications:

- **Aggregate Testing Technician (AgTT):**

Aggregate Certification is designed for those individuals responsible for field sampling and testing of aggregate for bases, asphalt mixtures, or Portland cement concrete.

TEST METHODS FOR AGGREGATE CERTIFICATION

AASHTO/ WAQTC	PROCEDURE	TRAINING Classroom (C) Laboratory (L)	EXAM Written (W) Performance (P)
R 90	Sampling Aggregate Products	C	W, P*
R 76	Reducing Samples of Aggregate to Testing Size	C, L	W, P
T 255	Total Evaporable Moisture Content of Aggregate by Drying	C, L	W, P
T 27/T 11	Sieve Analysis of Fine and Coarse Aggregate Materials Finer Than 75 µm (No. 200) Sieve in Mineral Aggregates by Washing (This is a combined field operating procedure)	C, L	W, P**
T 335	Determining the Percentage of Fracture in Coarse Aggregate	C, L	W, P
T 176	Plastic Fines in Graded Aggregates and Soils by Use of the Sand Equivalent Test	C, L	W, P

- * The Examinee may either be asked to physically sample materials or only to explain the sampling process during this portion of the performance examination.
- ** WSDOT will require a written and performance examination on method B, which may require that a technician seeking employment in another Agency will have to demonstrate proficiency in a different method also.

- ***Asphalt Testing Technician II (AsTT-II):***

Asphalt II Certification is designed for those individuals responsible for field sampling and testing of asphalt mixtures.

TEST METHODS FOR ASPHALT II CERTIFICATION

AASHTO/ WAQTC	PROCEDURE	TRAINING Classroom (C) Laboratory (L)	EXAM Written (W) Performance (P)
R 97	Sampling Asphalt Mixtures	C	W, P*
R 47	Reducing Samples of Asphalt Mixtures to Testing Size	C, L	W, P
T 329	Moisture Content of Asphalt Mixtures by Oven Method	C, L	W, P
T 308	Determining the Asphalt Binder Content of Asphalt Mixtures by the Ignition Method	C, L	W, P
T 209	Theoretical Maximum Specific Gravity (G_{mm}) and Density of Asphalt Mixtures	C, L	W, P
T 166	Bulk Specific Gravity (G_{mb}) of Compacted Asphalt Mixtures Using Saturated Surface-Dry Specimens	C, L	W, P
R 66	Sampling Asphalt Materials	C	W
T 30	Mechanical Analysis of Extracted Aggregate	C, L	W, P
T 312	Preparing and Determining the Density of Asphalt Mixture Specimens by Means of the Superpave Gyratory Compactor	C, L	W, P
TM 13	Volumetric Properties of Asphalt Mixtures	C	W, P

* The Examinee may either be asked to physically sample materials or may only be asked to explain the sampling process during this portion of the performance examination.

- **Concrete Testing Technician (CTT):**

Concrete Certification is designed for those individuals responsible for field sampling and testing of cement concrete. *WSDOT requires an ACI certification for all concrete field-testing testing technicians. Per the WAQTC’s Transportation Testing Technician Qualification Program Administration Manual, a WAQTC CTT Qualification will be granted when the following steps are completed:*

Reciprocity for ACI (American Concrete Institute) Certification “Concrete Field-Testing Technician Grade 1”

- WAQTC recognizes ACI CFT as an equivalent to WAQTC’s CTT. WSDOT will grant reciprocity by submitting evidence of a valid ACI certification (an electronic or hard copy of their ACI Certification Results Report) completed Registration form (*Appendix A or B*) and Rights and Responsibilities form (*Appendix C*).
- For individuals requesting to receive a WAQTC Qualification in Concrete through the ACI reciprocity clause it is recommended that a review of the testing standards listed below occurs. The ACI certification process requires performing ASTM standard test methods. ASTM standards may or may not be the same as the AASHTO and WAQTC standard test methods required by this Qualification.
- By signing the WAQTC Rights and Responsibilities Agreement form, an individual pledges to follow the applicable AASHTO and WAQTC test methods when sampling or testing on jobsites requiring WAQTC Qualifications.

ASTM / ACI	AASHTO / WAQTC	PROCEDURE
C1064/C1064M	T 309	Temperature of Freshly Mixed Hydraulic-Cement Concrete
C172/C172M	TM 2	Sampling Freshly Mixed Concrete
C143/C143M	T 119	Slump of Hydraulic-Cement Concrete
C138/C138M	T 121	Density (Unit Weight), Yield, and Air Content (Gravimetric) of Concrete
C231/C231M	T 152	Air Content of Freshly Mixed Concrete by the Pressure Method
C173/C173M	T 196	Air Content of Freshly Mixed Concrete by the Volumetric Method
C31/C31M	R 100	Making and Curing Concrete Test Specimens in the Field

- **Embankment and Base Testing Technician (EBTT):**

Embankment and Base Certification is designed for those individuals responsible for testing of soils and soil aggregate mixtures.

TEST METHODS FOR EMBANKMENT AND BASE CERTIFICATION

AASHTO/ WAQTC	PROCEDURE	TRAINING Classroom (C) Laboratory (L)	EXAM Written (W) Performance (P)
T 255/T 265	Total Moisture Evaporable Content of Aggregate by Drying / Laboratory Determination of Moisture Content of Soils (This is a combined field operating procedure)	C, L	W, P
T 99/T 180	Moisture-Density Relations of Soils Using a 2.5-kg (5.5-lb) Rammer and a 305-mm (12-in.) Drop / Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop (This is a combined field operating procedure)	C, L	W, P**
R 75	Developing a Family of Curves	C	W, P
T 85	Specific Gravity and Absorption of Coarse Aggregate	C, L	W, P

** WSDOT will require a written and performance examination on one of these two methods, AASHTO T 99 or AAASHTO T 180, which may require that a technician seeking employment in another Agency will have to demonstrate proficiency in the other method also.

- ***In-Place Density Technician (DTT):***

In-Place Density Certification is designed for those individuals responsible for field testing for In-Place Density on soils, soil aggregate mixtures, aggregate products, and bituminous mixes.

Prerequisites for Certification in In-Place Density:

- *The examinee* must hold a Certificate of Radiation Safety Training that meets the requirements of the United States Nuclear Regulatory Commission (NRC) and the Washington Department of Health (DOH). (A copy must be included with registration submittal.) HAZMAT Training for the Portable Nuclear Gauge.

TEST METHODS FOR IN-PLACE DENSITY CERTIFICATION

AASHTO/ WAQTC	PROCEDURE	TRAINING Classroom (C) Laboratory (L)	EXAM Written (W) Performance (P)
T 255/T 265	Total Evaporable Moisture Content of Aggregate by Drying /Laboratory Determination of Moisture Content of Soils (This is a combined field operating procedure)	C, L	W, P
T 99/T 180	Moisture-Density Relations Using a 2.5 -kg (5.5-lb) Rammer and a 305-mm (12-in.) Drop / Moisture-Density Relations Using a 4.5 4-kg (10-lb) Rammer and a 457-mm (18-in.) Drop Soils (This is a combined field operating procedure)	C	W
R 75	Developing a Family of Curves	C	
T 272	One Point Method for Determining Maximum Dry Density and Optimum Moisture	C, L	W, P**
T 85	Specific Gravity and Absorption of Coarse Aggregate	C	
T 310	In-Place Density and Moisture Content of Soil and Soil Aggregate by Nuclear Methods	C, L	W, P
T 209	Theoretical Maximum Specific Gravity (G_{mm}) of Asphalt Mixtures	C	
T 166	Bulk Specific Gravity (G_{sb}) of Compacted Asphalt Mixtures Using Saturated Surface-Dry Specimens	C	
T 355	In-Place Density of Asphalt Mixtures by Nuclear Method	C, L	W, P

** WSDOT will require a performance examination on one of the two methods, AASHTO T 99 or AAASHTO T 180, which may require that a technician seeking employment in another Agency will have to demonstrate proficiency in the other method.

Note: Course work may also include field use of WSDOT Test Method T 606.

- ***Embankment and Base/In-Place Density Testing Technician (EBTT/DTT):***

Embankment and Base / In-Place Density Certification is designed for those individuals responsible for field sampling and testing of soils and soil aggregate mixtures and field testing in-place density on soils, soil aggregate mixtures, aggregate products, and asphalt mixtures.

Prerequisites for Certification in Embankment and Base/In-Place Density Testing Technician (EBTT/DTT):

- *The examinee* must hold a Certificate of Radiation Safety Training that meets the requirements of the United States Nuclear Regulatory Commission (NRC) and the Washington Department of Health (DOH). (A copy must be included with registration submittal.) HAZMAT Training for the Portable Nuclear Gauge.

**TEST METHODS FOR EMBANKMENT AND BASE / IN-PLACE DENSITY
CERTIFICATION**

AASHTO/ WAQTC	PROCEDURE	TRAINING Classroom (C) Laboratory (L)	EXAM Written (W) Performance (P)
T 255/T 265	Total Evaporable Moisture Content of Aggregate by Drying /Laboratory Determination of Moisture Content of Soils (This is a combined field operating procedure)	C, L	W, P
T 99/T 180	Moisture-Density Relations Using a 2.5 -kg (5.5-lb) Rammer and a 305-mm (12-in.) Drop / Moisture-Density Relations Using a 4.5 4-kg (10-lb) Rammer and a 457-mm (18-in.) Drop (This is a combined field operating procedure)	C, L	W, P**
R 75	Developing a Family of Curves	C	W, P
T 272	One Point Method for Determining Maximum Dry Density and Optimum Moisture	C, L	W, P**
T 85	Specific Gravity and Absorption of Coarse Aggregate	C, L	W, P
T 310	In-Place Density and Moisture Content of Soil and Soil Aggregate by Nuclear Methods	C, L	W, P
T 209	Theoretical Maximum Specific Gravity (G_{mm}) of Asphalt Mixtures	C	
T 166	Bulk Specific Gravity (G_{sb}) of Compacted Asphalt Mixtures Using Saturated Surface-Dry Specimens	C	
T 355	In-Place Density of Asphalt Mixtures by Nuclear Methods	C, L	W, P

** WSDOT will require a written and performance examination on one of these two methods, AASHTO T 99 or AAASHTO T 180, which may require that a technician seeking employment in another Agency will have to demonstrate proficiency in the other method also.

Note: Course work may also include field use of WSDOT Test Method T 606.

- ***Sampling Technician (ST):***

Sampling Certification is designed for those individuals responsible for field sampling of aggregates and bituminous mixtures.

TEST METHODS FOR SAMPLING CERTIFICATION

AASHTO/ WAQTC	PROCEDURE	EXAM Written (W) Performance (P)
R 90	Sampling Aggregate Products	W, P
R 97	Sampling Asphalt Mixtures	W, P
R 66	Sampling Asphalt Materials	W

The Examinee may either be asked to physically sample materials or may only be asked to explain the sampling process during this portion of the performance examination.

- ***WSDOT Method Qualification Testing Technician (MQTT):***

A single Method Qualification is designed for those individuals responsible for field and/or laboratory testing of specified materials.

Refer to the WSDOT Materials Manual to identify test methods for MQTT. All Method Qualifications require a written and performance exam.

WSDOT EMPLOYEE EXAMINATION REGISTRATION

WSDOT employees registering for the written and performance examination must complete a Registration form (*Appendix A*) and a Rights and Responsibilities Agreement form (*Appendix C*) for each module where certification is desired.

Both forms are available online at: [WSDOT - Construction Materials Services](#)

Submit both forms to the Region Independent Assurance Inspector (IAI). The Region IAI will send a receipt of the registration to the applicant with the date and time of both examinations.

Below are the Region IAI's email and telephone numbers.

Region	Email	Phone Number
Northwest		
Brian Curtis	curtisb@wsdot.wa.gov	206-768-5930
Larry Worcester	worcesl@wsdot.wa.gov	206-768-5926
Olympic		
Mark Willoughby	willoum@wsdot.wa.gov	360-704-3277
Tam Nguyen	nguyeta@wsdot.wa.gov	360-704-3231
Southwest		
Clay Cartner	cartnee@wsdot.wa.gov	360-905-2238
South Central		
Mike Rhoades	rhoadem@wsdot.wa.gov	509-577-1798
Zac Childress	childrz@wsdot.wa.gov	509-577-1793
North Central		
Todd Demott	demottt@wsdot.wa.gov	509-667-3034
Matt Martinez	martima@wsdot.wa.gov	509-667-3037
Eastern		
Tom Hoff	hofftt@wsdot.wa.gov	509-324-6176
TBD		

CANCELLING EXAM

If for some reason, you are not able to be present for the examinations you will need to contact the Region IAI at least one day prior to the exam.

NON-WSDOT EMPLOYEE EXAMINATION REGISTRATION

WSDOT's agreement with the Northwest Council of Engineering Labs (NWCEL) allows training and / or examination sessions to be administered to consultant and contractor employees, and general public. Individuals wishing to obtain certification in qualification areas: Aggregate, AgTT; Asphalt II, AsTT II; Embankment, EbTT; & In Place Density, DTT; can register for the appropriate training and or examination session at; <http://www.nwcel.org/>.

DOCUMENTATION OF CERTIFICATION/QUALIFICATION

Upon the successful completion of the examination(s), the participant's name will be entered into the WSDOT Qualified Testing Technician database. The WSDOT Qualified Testing Technician database will be linked to the WAQTC website. WSDOT State Materials Laboratory will maintain the official registry on the WAQTC website. WSDOT WAQTC Qualification numbers are uniquely assigned and will be numbers from 60,000-79,999. The number assigned with the first Qualification will remain with that employee no matter if additional Qualifications are attained through other WAQTC Agencies.

INDEPENDENT ASSURANCE AUDITS

Independent Assurance (IA) audits determine an Active Testers (Active Testing Technicians) conformance to the sampling and testing procedures listed in the WSDOT Materials Manual. An IA audit shall be performed a minimum of once per calendar year on all Active Testers. An Active Tester is any testing technician that performs sampling and / or testing for acceptance or verification on WSDOT contracts. A Region IAI will perform the IA audit and submit a report to the Project Engineer, Region Materials Engineer and the Quality Systems Manager.

Each calendar year, it is the Active Testers responsibility to notify the region IAI by phone or email within 15 days of any sampling or testing. Failure to notify the region IAI of your initial testing, in any module certification or method qualification each year is an act of Negligence and may jeopardize any or all certifications/qualifications.

Some scenarios may allow an IA audit observation to be performed remotely/virtually if bandwidth, platform, and devices being used are deemed satisfactory. Unforeseen conditions of an unknown nature, as determined by the WTTQP, may allow an IA audit observation to be performed by the means of verbal review. As soon as practical or conditions allow, an in person follow up observation shall be scheduled.

CERTIFICATION / QUALIFICATION RENEWAL

WSDOT's WAQTC Certifications and Method Qualifications are valid for five (5) years. The testing technician is responsible for making arrangements for obtaining their applicable Certification/Qualification renewal and must do so before the expiration date of that Certification/Qualification. Procedures for Certification/Qualification renewal are the same as for initial Certification/Qualification. Renewal training may or may not be offered. It is the responsibility of the testing technician to stay current of changes to test procedures. WSDOT employees should contact the region IAI for certification / qualification renewal arrangements.

REVOCAION OR SUSPENSION OF CERTIFICATION / QUALIFICATION

Revocation or suspension of Certification / Qualification in the responsibility of WSDOT's WQC.

The process for revocation or suspension of Certification / Qualification is outlined in Appendix D (*Testing Technician Complaint Process*). All official complaints will be reviewed by the QSM and discussed with the Region IAI prior to raising the complaint to the WSDOT Qualification Committee (WQC) level.

The WQC may revoke or suspend a testing technician's Certifications or Qualifications at any time. Proposed revocations will be sent to the individual in writing along with the individual's right to appeal the proposed revocation. A proposed revocation becomes effective the 16th business day from the date the letter is sent by the WQC and will be affirmed, modified, or vacated following any appeal.

A testing technician whose Certifications have been revoked or suspended will be reported to WAQTC member States per the WAQTC Administration Manual and the TTQP Operational Agreement.

APPENDIX A

WSDOT WAQTC TRANSPORTATION TESTING TECHNICIAN QUALIFICATION PROGRAM

REGISTRATION FORM FOR **WSDOT EMPLOYEES**

Name:		Region:	
Phone #:		Office:	
Email Address:		Supervisor:	
WAQTC Certified: Yes <input type="checkbox"/> No <input type="checkbox"/>		WAQTC ID#:	

Desired Certification / Method Qualification (select one qualification per form submitted)	
Original: <input type="checkbox"/>	Renewal: <input type="checkbox"/>
<input type="checkbox"/> Aggregate Testing Technician (AgTT)	<input type="checkbox"/> Asphalt Testing Technician II (AsTT-II)
<input type="checkbox"/> Concrete Testing Technician (CTT) / ACI	<input type="checkbox"/> Sampling Technician (ST)
<input type="checkbox"/> In-Place Density Testing Technician (DTT)	<input type="checkbox"/> Embankment and Base Testing Technician (EBTT)
<input type="checkbox"/> Embankment and Base / In-Place Density Testing Technician (EBTT/DTT)	
<input type="checkbox"/> Method Qualified Testing Technician (MQTT) / Identify Test Method: _____	

Testing Technicians seeking Certification/Qualification in one of the designated specialties should consult WSDOT's Registration, Policies & Information Handbook (RP&IH) for Certification/Qualification criteria, prerequisites, other policies and requirements, and general information.

Please do not write below this line. For Administration use only.

Written Examination Date:		Administrator:	
Pass <input type="checkbox"/> Fail <input type="checkbox"/>		WAQTC ID#:	
Performance Examination Date:		Examiner:	
Pass <input type="checkbox"/> Fail <input type="checkbox"/>		WAQTC ID#:	

Signature of WQC Chair or Designee:	WAQTC ID#:	
	Date:	

APPENDIX B

WSDOT WAQTC TRANSPORTATION TESTING TECHNICIAN QUALIFICATION PROGRAM

REGISTRATION FORM FOR **NON-WSDOT EMPLOYEES**

Name:		Personal Address:	
Phone #:			
Email Address:			
Employer:		Technical Director:	
WAQTC Certified: Yes <input type="checkbox"/> No <input type="checkbox"/>		WAQTC ID#:	

Desired Certification / Method Qualification (select one qualification per form submitted)	
Original: <input type="checkbox"/>	Renewal: <input type="checkbox"/>
<input type="checkbox"/> Aggregate Testing Technician (AgTT)	<input type="checkbox"/> Asphalt Testing Technician II (AsTT-II)
<input type="checkbox"/> Concrete Testing Technician (CTT) / ACI	<input type="checkbox"/> Sampling Technician (ST)
<input type="checkbox"/> In-Place Density Testing Technician (DTT)	<input type="checkbox"/> Embankment and Base Testing Technician (EBTT)
<input type="checkbox"/> Embankment and Base / In-Place Density Testing Technician (EBTT/DTT)	
<input type="checkbox"/> Method Qualified Testing Technician (MQTT) / Identify Test Method: _____	

Testing Technicians seeking Certification/Qualification in one of the designated specialties should consult WSDOT's Registration, Policies & Information Handbook (RP&IH) for Certification/Qualification criteria, prerequisites, other policies and requirements, and general information.

Please do not write below this line. For Administration use only.

Written Examination Date:		Administrator:	
Pass <input type="checkbox"/> Fail <input type="checkbox"/>		WAQTC ID#:	
Performance Examination Date:		Examiner:	
Pass <input type="checkbox"/> Fail <input type="checkbox"/>		WAQTC ID#:	

Signature of WQC Chair or Designee:		WAQTC ID#:	
		Date:	

WSDOT WAQTC TRANSPORTATION TESTING TECHNICIAN QUALIFICATION PROGRAM

RIGHTS AND RESPONSIBILITIES AGREEMENT

This document affirms that _____, hereinafter the Testing Technician (Sampler/Testing technician), desires to be Qualified by the Transportation Testing Technician Qualification Program (TTQP) of Washington.

Certification carries inherent rights and responsibilities. These rights include being exclusively sanctioned along with others so qualified by TTQP to perform sampling, testing, and reporting of test results for quality control and quality assurance programs. These responsibilities include performing and reporting tests with the accuracy and precision expected of the Sampler/Testing technician in accordance with the required test procedures. By signing this document, the Sampler/Testing technician agrees to abide by all of the terms of the WAQTC TTQP included in the Registration, Policies, & Information Handbook and as set forth by the Washington State Transportation Department.

Findings of negligence or abuse of these rights and responsibilities will be penalized according to the decision of the WSDOT's Qualification Committee (WQC).

Negligence is defined as unintentional deviations from approved procedures or the unintentional failure to follow the requirements of the TTQP. A finding of negligence may result in suspension of Certifications. Repeated incidents of negligence may become abuse.

Abuse is defined as intentional deviations from approved procedures or the intentional failure to follow the requirements of the TTQP. A finding of abuse will result in Certification suspension. Subsequent findings of abuse may result in permanent revocation of Certification.

Revocation or suspension of one Certification will be considered a revocation or suspension of all Certifications held by the Testing Technician (Sampler/Testing technician).

Further clarification on Negligence, Abuse, Revocation, Suspension, & Denial of Certification are located in the Registration, Policies and Information Handbook issued by WSDOT.

I, _____, have read, understand, and agree to abide by the rights, responsibilities, and penalties associated with receipt of this Certification.

(Print name)

Signature

Date

<input type="checkbox"/> Aggregate Testing Technician (AgTT)	<input type="checkbox"/> Asphalt Testing Technician II (AsTT-II)
<input type="checkbox"/> Concrete Testing Technician (CTT) / ACI	<input type="checkbox"/> Sampling Technician (ST)
<input type="checkbox"/> In-Place Density Testing Technician (DTT)	<input type="checkbox"/> Embankment and Base Testing Technician (EBTT)
<input type="checkbox"/> Embankment and Base / In-Place Density Testing Technician (EBTT/DTT)	
<input type="checkbox"/> Method Qualified Testing Technician (MQTT) / Identify Test Method:	

TESTING TECHNICIAN COMPLAINT PROCESS

The Washington State Transportation Testing Technician Qualification Program (WTTQP) is intended to assure qualified personnel are performing all sampling and/or testing for acceptance and verification on WSDOT construction projects.

The Testing Technician Complaint Process provides guidance on how to deal with concerns of testing technicians not following approved procedures. Any individual may file a complaint against a qualified testing technician regarding sampling or testing procedures or practices.

Thru section 1-06.2 par1 of the WSDOT Standard Specifications: “The Contractor may observe any of the sampling and testing performed by the Engineer. If the Contractor observes a deviation from the specified sampling and testing procedures, the Contractor shall verbally describe the deviations observed to the Engineer or designated representative immediately and shall confirm these observed deviations in writing to the Engineer within 24 hours, referencing the specific procedures and steps. The Engineer will respond in writing within 3 working days of the receipt of the Contractor’s written communications.”

All other complaints must be sent to the Region Materials Engineer, the Region IAI, and the Quality Systems Manager in writing, within 10 calendar days of the incident. The person filling the complaint must indicate whether they believe the issue is a case of “Negligence” or “Abuse”.

- “Negligence” is unintentional deviations from approved procedures.
- “Abuse” Abuse is knowingly deviating from approved procedures or when the testing technician should have known they were deviating from approved procedures.

All complaints must include the date and time of the incident, the name of the testing technician and the title of the test procedure in question. The complainant must also give a detailed explanation of what they observed and identify what part of the test procedure was violated.

General Procedures Applicable to Both Negligence and Abuse:

Revocation or suspension in one Certification/Qualification area requires revocation or suspension of all WAQTC Certifications or WSDOT Method Qualifications held by the sampler / tester. Such revocations or suspensions will be in effect in all WAQTC member Agencies..

Notice of any revocation or suspension will be sent to the testing technician in writing. The notice will also contain an explanation of testing technician’s right to appeal the decision, the procedure for an appeal, and the time frames within which the appeal must be filed. Revocation or suspension becomes effective 16 calendar days from the date of the letter sent by the WSDOT’s Qualification Committee (WQC).

Appealed revocations or suspensions shall be withheld pending the results of this process.

Process for Negligence:

Negligence is less severe than abuse and should be resolved in a positive fashion so that learning and increased knowledge may be accomplished. The complaint process for negligence is intended primarily to allow a means of tracking the types of problems & issues being encountered. In addition, it will track testing technicians who have repeat incidents of negligence.

When an act negligence is suspected a Complaint of Negligence must be filed in writing with the Region's IAI. The Region IAI will investigate all complaints of negligence within 10 calendar days of the receipt of the written complaint.

When an act of negligence is witnessed by an IAI then the IAI will follow the Complaint of Negligence process by documenting the action and take appropriate steps.

Compliance Negligence process is as follows:

1. A single incident of negligence may be resolved through intervention by the Independent Assurance Inspector (IAI). The IAI will supply clarification to the testing technician on the proper performance of sampling and test procedures. A copy of the Independent Assurance Inspectors report will be sent to the Quality Systems Manager (QSM). The QSM will maintain an electronic file containing all reports of negligence or abuse.
2. A second documented incident of negligence will be reviewed by the QSM to determine if the WQC needs to review the complaint. A second documented incident may result in a suspension of Qualification for up to thirty 30 calendar days. The testing technician, the IAI and the Project Engineer or the testing technician's employer (for non-WDOT employees) must develop a Corrective Action Plan (CAP). The testing technician will be required to sign the CAP to acknowledge the date of implementation and their understanding of the plan. The IAI will perform an unannounced audit of the testing technician within three months of the implementation of the CAP.
3. A third documented incident of negligence will result in a hearing by the WQC and may result in a suspension of Certification/Qualification for up to one hundred and eighty days (180).
4. A fourth documented incident of negligence will be considered abuse and will be processed as a Level 1 abuse.

Process for Abuse:

When abuse is suspected a Complaint of Abuse must be filed in writing with the Region's IAI. Upon receipt of the Complaint of Abuse, the Region IAI will contact the person submitting the complaint for more information. The Region IAI and the QSM will jointly investigate reports of abuse except, reports filed by the Independent Assurance Inspector. Complaints of Abuse filed by an IAI will automatically be referred to the WQC.

When an IAI witnesses an act of abuse they shall complete a Complaint of Abuse and send it to the QSM.

The QSM and the IAI will document all steps taken to investigate a Complaint of Abuse and submit this information to the WQC.

Abuse is identified as one of two the levels of severity below:

- **Level 1-**The first level of abuse is identified as the least severe. This level is typically identified as intentional deviations from approved procedures with no evidence of intent to misrepresent the quality of material being incorporated in the project.

This level of abuse will result in a minimum one hundred and eighty days (180) suspension of Certification/Qualification. The exact duration of the suspension is set by the WQC depending on the circumstances encountered.

A second incident of this level of abuse will result in a minimum one (1) year suspension of Certification/Qualification. The WQC may also require the technician to attend additional training and retake a particular Qualification exam before reinstatement.

- **Level 2-** The second level of abuse is more severe and is identified by intentional deviations from approved procedures with the intent to misrepresent the quality of material being tested. This level of abuse requires a minimum of one (1) year suspension but can be determined severe enough to warrant a permanent suspension of Certification/Qualification. The WQC may also require the technician to attend additional training and retake the particular Qualification exam before reinstatement.

A second incident of this level of abuse will result in permanent revocation of all WAQTC Qualifications and WSDOT Method Qualifications.

Process of Appeal

After receiving notification of suspension or revocation from the WQC, the testing technician has 15 calendar days to:

- Make No Response. or
- Appeal and provide a written response to the WQC. or
- Appeal, provide a written response to the WQC, and request an in-person meeting with the WQC.

The appeal to the WQC must present new factual evidence regarding the complaint of negligence or abuse.

The WQC Chair or their designee will send a receipt of appeal to the testing technician within 15 calendar days. If the testing technician has requested an in person meeting with the WQC, a date for the meeting will be set and included in the receipt response to the testing technician.

A decision on the appeal will be issued by the WQC within 15 calendar days from receipt of written appeal or the date of the in person meeting with the WQC.

If the WQC upholds suspension and the suspension is more than 30 days or revocation, the testing technician has 15 calendar days to:

- Make No Response or
- Appeal and provide a written response to the State Materials Engineer. or
- Appeal, provide a written response and request an in-person meeting with the State Materials Engineer.

The appeal to the State Materials Engineer must present convincing factual evidence that the WQC's decision was incorrect regarding the complaint of negligence or abuse.

A receipt of the appeal will be sent to the testing technician within 30 calendar days from when the appeal is received by the State Materials Engineer. If the testing technician has requested an in person meeting with the State Materials Engineer, a date and time for the meeting will be set and included in the receipt response to the testing technician.

A decision of appeal by the State Materials Engineer will be issued within 30 calendar days from receipt of the written appeal or date of the in person meeting with the State Materials Engineer.

The decision of the State Materials Engineer is final.