

# **AGGREGATE INDEPENDENT ASSURANCE PROGRAM**

## **1 PURPOSE**

To describe the Independent Assurance (IA) evaluation program for qualified aggregate technicians. The IA program evaluates the performance of the qualified sampling and testing personnel and testing equipment. The program covers sampling procedures, testing procedures, and testing equipment.

## **2 AUTHORITY**

Code Of Federal Regulations (CFR), Federal-Aid Policy Guide (FAPG), Subchapter G - Engineering and Traffic Operations, Part 637 - Construction Inspection and Approval, Subpart B - Quality Assurance Procedures for Construction.

## **3 SCOPE**

Primary offices affected by this procedure include the State Materials Office (SMO), State Construction Office (SCO), District Construction Offices (DCO), District Materials Offices (DMO), and Resident Construction Offices (RCO).

## **4 INDEPENDENT ASSURANCE PERSONNEL**

Independent Assurance (IA) personnel are the personnel employed by the Department's Materials offices or Consulting firms hired by the Department to perform Independent Assurance inspection and testing.

District personnel performing IA evaluations must participate in at least one evaluation annually.

## **5 GENERAL INFORMATION**

- 5.1 Technicians who perform Acceptance Program sampling and testing for the Florida Department of Transportation (FDOT) construction projects must be qualified by the Construction Training Qualification Program (CTQP). Qualifications can be verified by calling the University of Florida, CTQP office, or checking their web site. Acceptance Program sampling and testing includes Quality Control (QC), Verification (V), Independent Verification (IV), and Resolution (R) testing.

- 5.2 Periodic IA evaluations are intended to assure continuance of qualifications, used in acceptance of the materials.
- 5.3 CTQP qualifications are subject to suspension according to the Construction Training and Qualification Manual (CTQM).
- 5.4 The number of evaluations for each qualification area will be a percentage of the active qualified technicians in that qualification area for one calendar year.
- 5.5 The SMO will monitor and review the IA Program statewide to ensure consistency in implementation and to evaluate the effectiveness of the program.

### **5.5.6 FREQUENCY & GOALS OF EVALUATION**

The frequency of Independent Assurance evaluations will be determined by a statistically representative sampling of active technicians. The minimum frequency will be 70 % of the active technicians. The schedule will be based on a systems approach.

Qualified Technicians will be evaluated for assurance for the following qualification areas:

- 5.5.6.1 Aggregate
- Qualified Sampler Technician
  - Aggregate Field Testing Technician
  - LBR Technician
  - Aggregate Laboratory Testing Technician
  - Aggregate Chemical Analyst

### **5.5.7 SCHEDULING EVALUATION**

Evaluations of the active technicians shall be scheduled randomly through out a calendar year to meet the sampling goals as specified in **Section 5.5.6 of this Chapter.**

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## 5.5.8 PERFORMING EVALUATION

### 5.5.8.1 Testing Equipment

The testing equipment shall be evaluated by using one or more of the following: Calibration Checks, Split Samples, or Proficiency Samples.

### 5.5.8.2 Testing Personnel

Testing personnel shall be evaluated by Proficiency Samples, or Observations and Split Samples.

When Observations & Split Samples are used as a means of evaluation, an evaluation is considered complete when any one of the two evaluation methods is used. However, at the end of the year, the completed evaluations must be a combination of both the evaluation methods or split sample only.

The IA personnel shall promptly compare and document test results to support the Qualification Performance Report (QPR) described in Section **5.5.10.2**.

### 5.5.8.3 Resolution for Deficient Evaluation

Sampling and testing technician who fail an evaluation, will be scheduled for re-evaluation. The re-scheduled evaluation will be conducted by a different evaluator than the previous one, and can be in a different test method under the same qualification area. A failing evaluation by proficiency sample will not be followed by another proficiency sample for re-evaluation.

## 5.5.9 COMPARISON TOLERANCE

### 5.5.9.1 Comparison Testing

Acceptable Comparison Tolerances are shown on each Qualification Checklist located in **Appendix B**.

### 5.5.9.2 Proficiency Samples

Acceptable tolerance for the test results is two standard deviations of the grand average value for all proficiency samples in that evaluation.

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## 5.5.10 DOCUMENTATION

### 5.5.10.1 Systems Report

Each District Materials Engineer (DME) shall prepare a Systems Report for his/her district for the State Materials Engineer (SME). The report will refer to the goals set for that calendar year. It will also include the results achieved, comparison analysis, and the goals for the upcoming year. The State Materials Engineer (SME) shall submit the Final report to the FHWA and specify future goals.

### 5.5.10.2 Qualification Performance Report

The form is attached as **Appendix A**. See form number 675-000-01. This report will have an appropriate completed checklist attached.

The Qualification Performance Report will be used to document the results of the evaluation and will be completed within five working days. The evaluation will be by proficiency samples, or observation, and split samples. The evaluation by observation will be considered satisfactory if all items on the test procedure checklist(s) are completed correctly. The evaluation by split sample will be considered satisfactory if the test results meet the comparison criteria as defined on the checklist(s). The evaluation shall be considered satisfactory if the test results are within two standard deviations of the grand average value for all proficiency samples in that evaluation. For satisfactory evaluations, copies will be distributed as shown on the form. For unsatisfactory evaluations, in addition to the personnel listed on the form, copies will be distributed as described below. Refusal to participate, or lack of cooperation in the IA evaluation will be a sufficient reason to consider an evaluation unsatisfactory.

Distribution of Satisfactory Qualification Performance Report	
IA Evaluation of Aggregate QC Technician	IA Evaluation of FDOT Verification Technician
Aggregate Producer's QC Manager, District Materials Engineer (DME),	DME

Additional Distribution of Unsatisfactory Qualification Performance Report		
Action	IA Evaluation of Aggregate QC Technician	IA Evaluation of FDOT Verification Technician
1 <sup>st</sup> Action	Aggregate Producer's QC Manager, DME	DME
2 <sup>nd</sup> Action	Aggregate Producer's QC Manager, DME, SMO	DME
3 <sup>rd</sup> Action	Aggregate Producer's QC Manager, DME, SMO	DME, SMO

#### 5.5.10.3 IA Test Procedure Checklists

See Appendix B.

## 6 RESPONSIBILITIES

District Materials Offices are responsible for IA evaluation of the district personnel participating in Quality Control, Verification, and Independent Verification testing of the Acceptance Program sampling and testing and set goals at the beginning of each year.

Evaluations of district IA personnel, and SMO technicians participating in the resolution testing of the Acceptance Program may be conducted by SMO personnel or District personnel and SMO sets goal at the beginning of each year.

### 5.5.12 TRAINING

IA personnel must be qualified in the areas they are evaluating.

### 5.5.13 FORMS

Form No. [675-000-01](#), Qualification Performance Report, is available from the Department's Form Library.

Checklists in Appendix B are not considered official forms of the Department since they are used to supplement information that is filled in on Form No. 675-

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000-01, Appendix A. These checklists are available through the State Materials Office Infonet/Intranet website at:

<http://www.dot.state.fl.us/statematerialsoffice/QualitySystems/IAProgram/IAChecklist/IAChecklist.htm>

# APPENDIX A

## Form No.: 675-000-01, Florida Department of Transportation Qualification Performance Report

### STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION QUALIFICATION PERFORMANCE REPORT

675-000-01  
MATERIALS  
10/01

Project Information

Independent Assurance Information

FIN: \_\_\_\_\_  
County/Section: \_\_\_\_\_  
Date: \_\_\_\_\_  
Time: \_\_\_\_\_  
Location: \_\_\_\_\_  
Resident Office: \_\_\_\_\_

Technician ID: \_\_\_\_\_  
Attachments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Technician Information

Technician ID: \_\_\_\_\_

QC     Verification     Other

Qualification(s) Reviewed:

- |             |   |   |   |
|-------------|---|---|---|
| Aggregates: | <input type="checkbox"/> Qualified Sampler  | <input type="checkbox"/> Aggregate Field Tech       | <input type="checkbox"/> Aggregate Lab Tech     |
|             | <input type="checkbox"/> LBR Tech           | <input type="checkbox"/> Aggregate Chemical Analyst |   |
| Asphalt:    | <input type="checkbox"/> Asphalt Paving L-I | <input type="checkbox"/> Asphalt Plant L-I          |   |
| Concrete:   | <input type="checkbox"/> Field Tech L-I     | <input type="checkbox"/> Concrete Lab Tech L-I      | <input type="checkbox"/> Concrete Lab Tech L-II |
| Earthwork:  | <input type="checkbox"/> ECI L-I            | <input type="checkbox"/> ECI L-II                   |   |

- Observation:
- Split Sample Results: Technician \_\_\_\_\_ IA \_\_\_\_\_
- Proficiency Sample Results: Sample No. \_\_\_\_\_ S. v. \_\_\_\_\_ Tech. Dev. \_\_\_\_\_



Sampling, Testing and/or Reporting were demonstrated according to qualification standards?

Yes, concludes evaluation(s) satisfactorily     No, see attachment(s)

Equipment used was in conformance with appropriate test method(s)?

Yes, concludes evaluation(s) satisfactorily     No, see attachment(s)

If no, was the proper procedure explained?     Yes     No

Summary of observation:

If results were unsatisfactory, indictive action taken:

- 1st Action, results documented.
- 2nd Action, results documented.
- 3rd Action, written summary of observations sent to District Material Engineer for disposition.

\_\_\_\_\_  
Signature of Independent Assurance observer

\_\_\_\_\_  
Date

cc: Technician \_\_\_\_\_  
Project Engineer \_\_\_\_\_  
Original (IA files) \_\_\_\_\_  
\_\_\_\_\_

Other: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

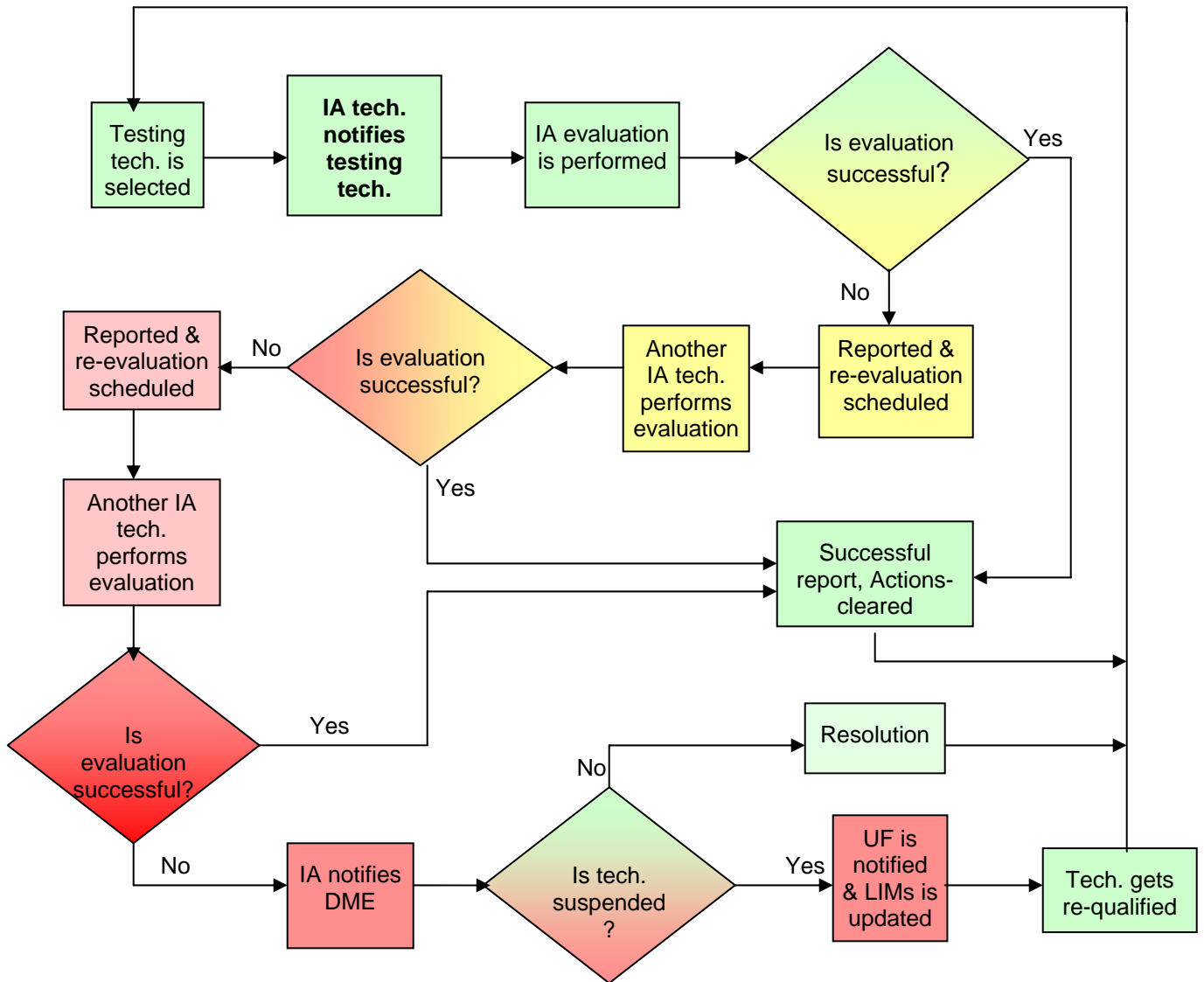
## APPENDIX B CHECKLIST INDEX

Test Method No.	Test Method Name
FM 1-T 002	Florida Method of Test for Sampling Aggregates
FM 1-T 011	Florida Method of Test for Materials Finer than 75-mm (No. 200) Sieve in Aggregates by Washing
AASHTO T 21-00	Organic Impurities in Fine Aggregate for Concrete
AASHTO T 27-99	Sieve Analysis of Fine and Coarse Aggregate
AASHTO T 87-86 (2000)	Dry Preparation of Disturbed Soil & Soil Aggregate Samples for Test
AASHTO T 89-02	Liquid Limit of Soils
AASHTO T 90-00	Plastic Limit and Plasticity Index of Soils
AASHTO T 112-00	Clay Lumps and Friable Particles in Aggregates
FM 1-T 248	Florida Method of Test for Reducing Samples of Aggregate to Testing Size
AASHTO T 255-00	Total Moisture Content of Aggregate by Drying
Test Method No.	Test Method Name
AASHTO T 21-00	Organic Impurities in Fine Aggregate for Concrete
FM 1-T084	Florida Method of Test for Specific Gravity and Absorption of Fine Aggregate
FM 1-T085	Florida Method of Test for Specific Gravity and Absorption of Coarse Aggregate
FM 1-T096	Florida Method of Test for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion & Impact in the Los Angeles Machine
FM 3-C 535	Florida Method of Test for Resistance to Degradation of Large-Size Coarse Aggregates by Abrasion and Impact in the Los Angeles Machine
FM 5-555	Shell Content of Coarse Aggregate



<b>Test Method No.</b>	<b>Test Method Name</b>
FM 5-515	Limerock Bearing Ratio
ASTM D 4643-00	Laboratory Determination of Moisture Content of Granular Soils By Use of a Microwave Oven
FM1-T180	Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in) Drop

**APPENDIX C**



*Independent Assurance Flowchart*