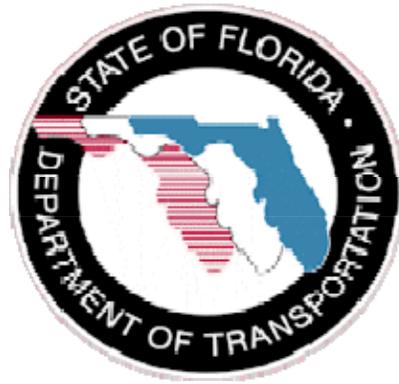


Florida Department of Transportation



Aggregate Acceptance Mine/Terminal Quality Control Plan Outline (Revised November, 2011)

State Materials Office, Geotechnical Material Systems website:
<http://www.dot.state.fl.us/statematerialsoffice/laboratory/geotechnical/aggregates/laboratory.shtm>

COMPANY NAME

Quarry Name

FDOT Source Number

(When Assigned by the Department)

Mine Type

Source Physical Address and Phone

FDOT Contact at Source

Address

Phone

E-Mail

Date written or last revised

(1) Identification of the Physical Location of Source

The identification of the physical location of the source must include a description of the property site, township, range, and section, longitude and latitude. Reference the nearest identifiable points such as highways and towns in order to find the location easily by public roadway from the State Materials Office, Gainesville, FL.

(2) Location of Designated QC Office

The source shall designate the location of its QC office, which shall have responsibility for the administration of its QCP and the custodianship of QC records. When the QC office is located separate from the source, the identification must include the physical address and reference to the nearest identifiable points such as highways and towns, in order to find the location easily by public roadway from the State Materials Office, Gainesville, FL. An office, so designated, shall be available to its own QC personnel and the Department during all QC operations. A copy of the QCP, *Construction Aggregates Manual*, and all pertinent excerpts and references of the *Sampling and Testing Methods*, as well as current test data and control charts, shall be available at the QC office and to its personnel at all times.

(3) Documentation of the Producer's Status

Any business or individual seeking to supply aggregate to the Department or contractors of the Department, must have legal rights to mine the aggregate and must be responsible for the mining (where applicable), processing, quality control, stockpiling, load-out, and certification of the aggregate. Evidence of the mining rights of the producer shall be provided. Include in attachment section of QCP.

(4) Production Flow

The production flow diagram must include a step-by-step written description or flow chart indicating the points involved with all aspects of mining, processing, sampling, and testing the aggregate from natural state to finished product, including all re-handling prior to the load-out of the aggregate.

(5) Labeling Stored Aggregate

The labeling of stockpiles, storage silos, bins, etc., of aggregate must include the clear and precise labeling by sign stating, FDOT, Department code, aggregate description and End User (if Direct Shipment).

(6) Prevention of Contamination, Segregation, and Degradation

The handling and storage of aggregates shall be in such manner as to minimize any segregation or degradation and to prevent contamination by foreign materials. When stockpiles of aggregates cannot be stored sufficiently remote from each other (loader length) to prevent mixing, suitable baffles shall be provided which will prevent intermingling of the different stockpiles. Stockpiles must be sufficiently separated to allow sampling at ninety degrees to creation.

(7) Loading and Shipping Controls

A loading and shipping controls program must include a detailed description of the methods by which the product is to be loaded and shipped for use on Department projects, including safeguards against loading improper aggregate and contamination, degradation, or segregation of aggregate. The program shall also include methods and personnel responsible for ensuring shipping in clean haul units and accurate identification and certification of products.

Shipping tickets shall include the following information:

- (a) Department Source Numbers (Mine Number and/or Terminal Number) and Origin Number, where applicable.
- (b) Date.
- (c) Weight, aggregate description and corresponding Department material code (from the Instructions for Computer Coding of Aggregate Test Data).
- (d) Producer Ticket Number, which must be sequential for each individual source certifying the material.
- (e) The statement "CERTIFIED FOR FDOT" or "CERT. FOR FDOT" (specify one) is to be placed only on those shipping tickets for specific aggregates that the producer certifies were produced under a Department approved QCP and for which QC tests indicate that the specific aggregate meets quality and uniformity requirements set out in Section 2.2 of the *Construction Aggregates Manual*. Certification shall be made at time of shipment when the weight of material is recorded on the shipping ticket.
- (f) The statement "DIRECT SHIPMENT CERT. FOR FDOT FROM MINE" is to be placed only on Redistribution Terminal shipping tickets used to deliver direct shipments of certified material through a Redistribution Terminal without additional testing in accordance with the provisions of subsection 14-103.004 (5)(g), F.A.C.

(8) Sampling Plan

A sampling plan identifying all specific sampling points and locations, including intermediate points in process control even though the data will not be entered into the Department's computer program, as well as sampling of the finished product that is as closely representative of shipped material as possible. Sampling methods must be described in detail and in accordance with the *Sampling and Testing Methods* (FM 1-T 002), and must be based on standard statistical practices, including the designation of lots and sub-lots, if applicable.

(9) Initial Quality Control

The Department will assign the initial sampling and testing frequencies for newly approved products at a level specified for less than 95% compliance as shown in appendices 1 through 18 of the *Construction Aggregates Manual*, until a history of test data is developed.

(10) Minimum Quality Control

The Department will assign QC sampling frequencies for products on the Conditional QC Certification System in accordance with subsection 14-103.0071(2), F.A.C. For products on the Full QC Certification System, the producer shall monitor its data to assure continued compliance with Section 1.2 and Section 2 of the *Construction Aggregates Manual*. The producer shall notify the Department in writing of any prescribed changes in product status or QC sampling frequencies. Any reduction in QC sampling and testing frequencies must be pre-approved by the Department and be supported by applicable QC and verification data. The Department will assign QC sampling frequencies for products on the Full QC Certification System in accordance with Section 1.2 of the *Construction Aggregates Manual*.

(11) Analysis and Recording of Data

(a) The producer must have the necessary equipment (i.e., computer) to perform statistical analyses and maintain adequate records of all samples, test results (including worksheets and sample weights), and other actions to verify the effectiveness of its QCP and to substantiate aggregate compliance with all applicable specifications. These records shall indicate the nature and number of tests made, statistical analysis, the number and types of deficiencies found, the quantities approved and rejected, and the nature of the corrective actions taken. Producer test data is to be recorded in standardized format. The Department will initially provide the appropriate computer coding forms and electronic submittal formats.

(b) The QCP shall include a procedure that will chart, review, and analyze test data so as to effectively evaluate control of the process. The control charts and analyses shall be maintained current with each day's test results and be immediately available for review by QC and Department personnel. Other data must be maintained and available for inspection by Department personnel. As a minimum, the Department will require control charts for gradation on critical sieves, and for other required tests for which the producer's initial approval data indicates less than the 100% compliance level shown in Appendices 1 through 18 of the *Construction Aggregates Manual*. The producer may determine the type of control chart most useful in the process; however, control charts using average and range will be considered the minimum acceptable in the absence of more advanced charting. The producer may chart process control tests in lieu of QC tests, provided that process control samples are taken from the finished product and are at a greater frequency than the QC tests. The QCP must include examples of the control charts used.

(c) All QC test results for materials produced under this rule chapter must be reported to the Department. The producer shall monitor its own data for compliance with Section 1.2 and Section 2 of the *Construction Aggregates Manual*. When there is an indication that the process is not being adequately controlled in compliance with the QCP, the producer shall immediately take the necessary steps to adjust the process.

(12) Responsibilities of Personnel

The producer must have a list describing the responsibilities and authority of all personnel involved with the QCP, including supervisors, analysts, technicians, and contact(s). All personnel should be informed of the exact nature of their duties as they apply to the QCP and the Department's Aggregate Independent Assurance Program. Within 15 months of launch of the Aggregate QC Manager training course, an Aggregate QC Manager must be designated as having control over the QCP, and a QC technician designated for each mine. A copy of the QCP shall be on site at the source and available for review by all source personnel during all hours of operation. The Aggregate QC Manager must:

- (a) Have full authority to act as the source's agent to institute any and all action necessary for the successful implementation of the QCP.
- (b) Fluently speak and understand English.
- (c) Be on site at the source or be available upon four hours notice to administer the QCP.
- (d) For Federal Aid Department projects, be qualified as an Aggregate QC Manager through the Department's Aggregate Training and Qualification Program. The Aggregate Technician Training and Qualification Program, effective date 2/2005, is hereby incorporated by reference.

(13) Dealing with Control Failures

Control failures are defined by the producer in the QCP to deal with those failures in the QCP administration that may lead to material not complying with Department specifications and standards, or when production under the QCP must be halted to resolve problems leading to product not meeting the specifications. The producer must submit a contingency plan in the event of test results indicating a control failure, to include the following three points:

- (a) Notification of the Department as soon as results indicating a control failure are known.
- (b) Investigation to determine the extent and location of the cause of the control failure.
- (c) Corrective action will be taken to eliminate the cause of the failure. The Department shall be notified in writing as to the corrective actions taken to assure quality and the disposition of aggregate represented by the control failure. This written notification will become part of the QCP.

1. Corrective actions need not be in the form of an Addendum if no changes are being made to the QCP; however, documentation of corrective actions, to include maintenance logs, process control reports, or other supporting documentation must be provided. The Department will notify the producer of unacceptable submittals that are not in compliance with this rule chapter within five business days of receipt. Addenda that do not comply with the provisions of this rule chapter will be rejected.

2. Procedural steps to detect and prevent future occurrences of the conditions leading up to the control failure should be addressed through Addenda to the QCP. Addenda shall consist of a cover letter explaining the corrective action, an updated "record of changes," and the appropriate revised and dated pages to the QCP. Addenda are subject to review and approval by the Department. The Department will notify the producer of unacceptable submittals that are not in compliance with this rule chapter within five business days of receipt. Addenda that do not comply with the provisions of this rule chapter will be rejected.

(14) Laboratory

Each source must designate either its own laboratory or a commercial laboratory for the performance of QC testing. Laboratories so designated must be equipped to run all applicable tests with equipment and technicians meeting Department standards. A list of testing equipment and facilities meeting Department requirements must be submitted. Only a Department approved laboratory shall be used for QC testing. Laboratories shall be qualified under one of the following and have current Department approval during testing of Department products:

1. AASHTO Accreditation Program (AAP) accreditation;
2. Inspected by an accreditation agency on a regular basis per methods used in the source's QCP, with all deficiencies corrected, and under the supervision of a Professional Engineer; or
3. Construction Materials Engineering Council (CMEC) accreditation and other independent inspection programs equivalent to subparagraph 1 or 2 above.

(15) QC Technicians

QC technicians must be designated and identified by the producer and include a list of qualifications; they must have successfully completed the Department's Aggregate Training and Qualification Program for Aggregate Technicians. QC technicians must successfully participate in the Department's Aggregate Independent Assurance Program in order to remain qualified.

(16) Testing Methods

Testing or sampling methods and equipment, technicians, and procedures to be used as the basis for producer certification of materials must be described in detail and must be by standard Department methods in accordance with the *Sampling and Testing Methods* (sections pertaining to aggregates), incorporated by reference under subsection 14-103.003(25), F.A.C. Alternative testing methods and procedures may be used by the producer when such procedures provide, at a minimum, the quality control required by the program. Equivalent, alternative methods must be approved by the Secretary of the Department as meeting the required QC. Prior to utilizing such alternatives the producer must describe the changes proposed in a written proposal and demonstrate that their effectiveness is equal to or better than the standard Department procedures in the *Sampling and Testing Methods*. Such approval of alternate methods shall be based upon a technical demonstration, through comparison of analyses of replicate samples, that the proposed alternate method measures the relevant characteristics with the same degree of accuracy as the approved method. In the case of disputes as to whether certain procedures provide equal control, the procedures specified in the *Sampling and Testing Methods* shall apply.

(17) Turn-Around-Time

All producers must state the period of time it will take for test results to be available at their QC office and to be reported to the Department inspection personnel in accordance with the limits of Section 1.3 of the *Construction Aggregates Manual*. Data submitted electronically will not require codesheets. All data including worksheets and Department standardized computer codesheets will be available to the Department mine inspector at the mine and transmitted to the Department within the limits set for each variety of test as per Section 1.3 of the *Construction Aggregates Manual, Table 9*, and are partly dependent on the sampling and testing frequency. Availability at the mine may be considered the test results received verbally from the producer's QC laboratory to be followed by codesheets (where applicable) and worksheets, as per *Table 9*.

(18) Identification of Aggregate

Each producer must furnish a list of aggregate grades, product number, or other identification of aggregate it produces or redistributes under an approved QCP and intends to certify with the corresponding Department Aggregate Description and Code from the *Instructions for Coding of Aggregate Test Data for Computerization*.

QCP Attachments

- A. Copy of current laboratory certification as per section 14 of this outline
- B. Laboratory equipment list
- C. Copy of shipping ticket/bill of lading for FDOT material
- D. Technician qualifications
- E. Control charts (Using approval data from initial product, for new source)
- F. Map to location from Gainesville, FL
- G. Evidence of Mining Rights (for new source or mine)

**Florida Department of Transportation
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Aggregate Acceptance
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State Materials Office, Geotechnical Material Systems website:
<http://www.dot.state.fl.us/statematerialsoffice/laboratory/geotechnical/aggregates/laboratory.shtm>