

**Georgia Department of Transportation
Office of Materials and Testing**

**Standard Operating Procedure (SOP) 27
Quality Assurance for Asphaltic Concrete Plants in Georgia**

I. General

The Office of Materials and Testing (OMAT) and the Districts are responsible for verifying that Hot Mix Asphaltic Concrete produced for the Department's use meets applicable Georgia Department of Transportation (GDOT) Specifications. Hot Mix Asphaltic Concrete Plants (Asphalt Plants) will be inspected and each Producer's Asphalt Plant that meets specified minimum requirements will be shown in the GDOT's Qualified Products List (QPL) 45, "List of Approved Hot Mix Asphaltic Concrete Plants".

II. Prerequisite for Plant Approval

A. Inspection of Equipment

The Asphalt Plant owner or manager shall schedule an inspection of the Asphalt Plant facilities with OMAT. All equipment for production, facilities, and testing of materials shall meet the minimum requirements set forth in Subsection 400.3 and Subsection 400.4 of the Specifications and be approved by the Engineer. Equipment shall be maintained in a satisfactory operating condition and be capable of always performing its intended function during production.

B. Quality Control (QC) Program

Each Asphalt Plant on the QPL 45 shall have an approved QC program and have a designated person to administer the program as set forth in GDOT's Specifications. This program shall include the testing and control of materials used and the final product produced at the Asphalt Plant. This program shall be done in such a manner as to produce a uniform product that meets Specification requirements.

C. Certified Public Weighers

At each plant producing asphaltic concrete for projects of the Department, at least one employee shall be a Certified Public Weigher (CPW) and be present at the plant during loadout. All asphaltic concrete mix, to be used on projects of the Department, shall be weighed in accordance with Laboratory SOP 15 "Certified Public Weighers".

D. Statement of Certification

Owners of Asphalt Plants with facilities that are found to meet the Department's requirements shall provide the State Materials Engineer with a statement that certifies all asphaltic concrete supplied for Department work shall meet an approved mix design job mix formula (JMF) approved by the Bituminous Construction Branch of OMAT and state that all materials used in the production of the asphaltic concrete for Department work are from approved sources. This statement should be signed by a responsible officer of the company who has authority to bind the company and shall be notarized.

III. List of Approved Hot Mix Asphaltic Concrete Plants

OMAT shall publish a list of approved Hot Mix Asphaltic Concrete Plants (QPL 45) which will be published periodically. As Asphalt Plants are added or removed from the list, notice will be given by letter. QPL 45 shall designate the following information about the Asphalt Plant: name of the company, contractor number, location, type, code, and restrictions where applicable.

A. New Sources

Any Producer of hot mix asphaltic concrete desiring an Asphalt Plant be added to the QPL 45, shall send an application in writing to the State Materials Engineer. The request shall include the following items for the Asphalt Plant:

1. The location, telephone number, manager, superintendent, type, and size/capacity.
2. A list of CPWs showing their signatures and seal imprints.
3. A Quality Control Plan for that specific Asphalt Plant.
4. The Quality Control Manager(s)

Upon receipt of the application, OMAT will schedule an inspection of the Asphalt Plant by Bituminous Construction Technical Services personnel. At the time of the inspection, the facilities of the Asphalt Plant and the quality control facilities will be reviewed.

B. Continual Approval on QPL

Annual inspections will be made to all Asphalt Plants that have produced asphaltic concrete for the Department during the previous calendar year. An Asphalt Plant that has not produced any asphaltic concrete for the Department during the previous year(s) may remain on the QPL 45 with the stipulation that a plant inspection must be made by the Bituminous Technical Services personnel prior to any mixture production. Plants that have not produced any asphaltic concrete for the Department for more than one year, but have requested to remain on QPL 45, must be inspected at a minimum frequency of once every three (3) years.

C. Restrictions

1. When a plant is found to produce asphaltic concrete with "Unacceptable Segregation" restrictions may be placed on that Asphalt Plant in order for the plant to remain approved to produce mix for state funded construction projects. Once an Asphalt Plant is restricted, its restriction code and explanation will be listed in the QPL 45. In order to assure that all plants are evaluated in a consistent and uniform manner, the following restriction evaluation procedure is provided:
 - A. In accordance with Subsection 400.3.06.E of the Specifications, whenever "Unquestionable Unacceptable Segregation" is observed, the work shall automatically be suspended until positive corrective action is taken by the contractor. At this time, 6-inch (150 mm) cores will be obtained and evaluated for compliance with tolerances established in Section 828 of GDOT's Specifications. Once an approved written plan of corrective measures or actions has been submitted, the work can resume. When work resumes, the Contractor will be allowed to place a test section not to exceed 500 tons (454 Mg) of the same asphaltic concrete mixture that was previously affected. This asphaltic concrete mixture will be evaluated using cores. However, if it is apparent that the corrective measures were not effective, the work will again be suspended until a revised written plan of corrective measure or action has been submitted for approval. In addition, OMAT will provide a letter notifying the hot mix producer that their Asphalt Plant is being evaluated for possible restrictions on the QPL 45.
 - B. Once the revised plan of correction has been approved, the work can resume with the placement of a test section not to exceed 500 tons (454 Mg). Should these corrections prove ineffective, the Asphalt Plant will be restricted on the QPL 45.
2. In accordance with Subsection 400.3.06.E, whenever "Unacceptable Segregation" is suspected, the Contractor may elect to continue work at his own risk until 6-inch cores are obtained from the affected mixture and evaluated for compliance with Section 828 in comparison with the approved JMF. If it is determined that the mixture is outside tolerances established in Section 828, the work will immediately be suspended for corrective action as outlined previously in the procedure established in the preceding steps A and B. Failure to eliminate the segregation will be grounds for the Asphalt Plant's restriction in the QPL 45.
3. Once an Asphalt Plant is restricted, a request for reevaluation may be submitted provided that extensive related modifications to the Asphalt Plant or operations are verified. If this request is approved, the reevaluation shall consist of several test sections on the placement of the restricted mixture(s) on multiple projects. This placement will be closely monitored and evaluated by the

District Bituminous Technical Services Specialist (BTSS). If these evaluations determine that the restricted mixes are currently being placed in compliance with Sections 400 and 828, then the plant’s restriction code will be revised to reflect a restriction code 13, which states that “Prior segregation related restrictions for this asphalt plant have been rescinded due to plant modifications which have resulted in non-segregated mixes. This Asphalt Plant will be reviewed annually for continued acceptance”. This revised restriction does not override the necessity of a Materials Transfer Vehicle (MTV) as required in Subsection 400.3.02.C of the Specifications. If it is observed at any time that the in-place mixture is not in compliance with Sections 400 and 828, then the Asphalt Plant’s restriction will be revised to the original restriction and strictly enforced.

D. Removal from the Approved List

Failure to adhere to Specification requirements as set forth in Subsection 400.3.06 as related to quality control, Quality Control Manager and Quality Control Technician requirements may subject the Asphalt Plant to immediately be placed in a “Probationary Period.” If this happens, OMAT will provide the Producer a letter notifying them that their plant is in a “Probationary Period.” At this time, the Producer has ten (10) working days to respond in writing to the State Materials Engineer and explain why the Specification requirements were not met and what steps will be taken to prevent a similar occurrence in the future. Any future occurrence of failure to adhere to Subsection 400.3.06 shall subject the Asphalt Plant to immediate removal from QPL 45. A Producer’s plant may be subject to removal from the QPL 45 for any first offense deemed serious enough by the State Materials Engineer.

Should an Asphalt Plant be identified as having recurring procedure problems, a 10-day “Special Control” will apply. During this 10-day period, a GDOT Representative will be present at the plant fulltime, and a fee will be charged to the Producer.

The Department reserves the right to remove any plant from the QPL 45 at any time confidence is lost in the Producer’s ability or intention to produce material of uniform characteristics complying with the Specifications.

An Asphalt Plant rating system has been developed based on the degree of quality control at each plant. From the extraction and gradation information compared to the related JMF, each plant will be rated on the following scale:

Rating	Quality Control Level
90 – 100	Excellent
80 - 89	Good
70 - 79	Marginal
Below 70	Unacceptable

The Asphalt Plant rating system for quality control at the plants was developed using the Mixture Control Tolerances established in Section 828 of the Specifications. This system is designed to provide Industry and the Department with a management tool for measuring the success of the Producer Certification Program and to promote consistency of products. The extraction and gradation test data are stored in the plant’s computer. The overall Quality Control Level Rating, assigned to each plant, will be based on the summary of all the test data from that particular plant and published annually. The end of year rating will be based on Quality Control Level Ratings throughout the calendar year for plants which produce a minimum of 10,000 tons (9070 Mg) of asphaltic concrete mixture.

Actual participation in the Quality Control Level Rating will be based on monthly evaluations in accordance with GDT 107, “Determining Asphalt Plant and Compaction Rating of Contractors”. The Asphalt Plant’s Quality Control Level Rating will be determined from the extraction and gradation data at the plant. An “Unacceptable” rating will immediately place the Asphalt Plant in an “Improvement Period.” If this happens, OMAT will provide the Producer a letter notifying them that

their plant is in an Improvement Period and that they have fifteen (15) production days in which to upgrade their quality control procedures. During this period, the Asphalt Plant will report all Quality Acceptance samples to the respective District Testing Management Operations Supervisor (TMOS). At the end of the Improvement Period, the Asphalt Plant's Quality Control will be re-evaluated using these tests results and the Asphalt Plant will either be removed from QPL 45 or reinstated to normal status.

An acceptable Quality Control Level Rating does not preclude the requirement for the mixture produced on a daily basis to meet the Specifications. Acceptance of the work is based on a Lot to Lot basis in accordance with Section 106 and the requirements specified in the Acceptance Plans in Section 400 of the Specifications.

E. Reinstatement to the Approved List

Once removed from the approved list, a Producer's Asphalt Plant may gain reinstatement in the following manner:

1. The Producer shall make a written request to the State Materials Engineer asking to be reinstated to the approved list. The request should address the causes which contributed to the removal from QPL 45. The Producer should state measures taken to upgrade his quality control in the production of the material. A detailed quality control program must be submitted listing the type and frequency of test proposed to control the plant and the name of the certified testing technician and Quality Control Manager responsible for the program.
2. If the submitted quality control program is approved, the Asphalt Plant will be placed on "Special Control" and will remain on this Special Control for a period of ten (10) production days. During this period, the Asphalt Plant will report their Quality Acceptance results to the State Bituminous Construction Manager's Office daily. In addition, a GDOT Representative will be at the plant fulltime, and a fee will be charged to the producer.
3. If the Producer's quality control program is adequate and the State Materials Engineer finds that the Asphalt Plant meets the requirements for approved plants, the Asphalt Plant will be reinstated to the approved list.

IV. INSPECTION

Random visits will be made to all approved plants by inspectors from OMAT. These visits will be made to ensure that the plant facilities are maintained in satisfactory operating condition. Annual visits will be made for the purpose of updating the plant for compliance as set forth in Section II of this SOP.

A. Materials Invoices

In accordance with Section 400.1.03, formal written invoices for all hydrated lime, liquid anti-stripping additive (LASA), ground tire rubber (GTR), fiber or mineral fillers, and all Asphalt Cement bill of ladings will be copied and filed at each Asphalt Plant for a minimum period of 3 months (90 days). These invoices are to be furnished to the Department upon request.

State Materials Engineer

Director of Construction