

Section 5.6

QUALITY CONTROL PROGRAM

5.6.1 PURPOSE

This document describes activities for personnel who are involved with the Florida Department of Transportation's (FDOT) Quality Control (QC) Program, which establishes quality control and process control standards for production and construction operations. The QC Program requires producers and contractors to have an accepted quality control plan; and may also require an accreditation or certification to ensure compliance with industry standards.

Other requirements for certain materials may be described in other sections of this Manual. If no additional requirements exist, then the requirements of this section should be used to administer the Producer QC Program. If other requirements exist, they are to be applied in addition to these requirements. Requirements for administering the Contractor Quality Control Program are described in the ***Construction Project Administration Manual Section 3.3***.

5.6.2 AUTHORITY

Sections 20.23(4)(a) and 334.048(3) Florida Statutes

5.6.3 SCOPE

The primary offices affected by this procedure include the State Materials Office, Office of Construction, District Construction Offices, District Materials and Research Offices and Resident Construction Offices/Operations Centers.

5.6.4 REFERENCES

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

5.6.5 DISTRICT MATERIALS OFFICE RESPONSIBILITIES

The District Materials and Research Offices (DMRO) manage the acceptance of Producer Quality Control Plans (QC Plans) for hot mix asphalt; portland cement concrete (structural); timber; prestressed/precast concrete products; incidental precast concrete products; and drainage products, which include metal and plastic pipe. Each DMRO updates and maintains the QC Plan and QC Plan status in the Materials Acceptance and Certification system (MAC) for production facilities producing these materials. The District Materials and Research

Engineers (DMREs) review the proposed quality control plans and accept or reject the plans based on their completeness or deficiency respectively. The DMRO uploads the latest accepted QC Plan to the MAC production facility. QC Plans uploaded into MAC are automatically maintained in the FDOT Electronic Document Management System (EDMS).

5.6.6 STATE MATERIALS OFFICE RESPONSIBILITIES

The State Materials Office (SMO) manages the acceptance of quality control plans for cementitious materials, structural steel, miscellaneous metals and fiber reinforced polymer products. The SMO updates and maintains MAC for these materials and publishes the **Production Facility Listing**. The SMO technical units upload the latest accepted QC Plan. The SMO technical units review the proposed quality control plan and accept or reject the plans based on their completeness or deficiency respectively.

5.6.7 DOCUMENTS SUBMITTED TO THE MATERIALS OFFICE

5.6.7.1 Prestressed Concrete Plants

The following documents should be reviewed as part of the quality control plan acceptance process:

- (A) A copy of the certification from a precast/prestressed concrete certification agency.
- (B) A copy of a precast/prestressed concrete plant certification agency's approved quality control plan for the plant.
- (C) A quality control plan in accordance with the **FDOT Specification, Section 105**. Items that are not addressed in the above mentioned documents should also be included.

5.6.7.2 Structural Steel Fabrication Facilities:

- (A) A quality control plan meeting the requirements of the American Association of State Highway and Transportation Officials (AASHTO)/National Steel Bridge Alliance (NSBA) 4.1- Steel Bridge Fabrication QC/QA Guide Specification Part B – Quality Control.
- (B) Documentation showing a current **American Institute of Steel Construction (AISC)** certification.
- (C) Documentation showing that the fabricator and the quality control inspector hold the required experience.

5.6.7.3 Fiber Reinforced Polymer Producers:

- (A) A quality control plan in accordance with the ***FDOT Specification, Section 105.***

5.6.8 ACCEPTANCE OF PRODUCER'S QUALITY CONTROL PLAN

When the Materials Office receives a proposed producer's quality control plan, for a new facility that has never been entered into MAC, an entry should be added for the new facility and the facility should be numbered in accordance with ***Table 1.***

NOTE: See ***Appendix A*** for the Producer Quality Control Acceptance Process flowchart.

Table 1 Facility Numbering Criteria					
Material	MAC Material Type	Prefix	1 st numbers	2 nd numbers (if applicable)	Example
Hot Mix Asphalt	Asphalt	A	Facility Number	N/A	A0799
Portland Cement Concrete (Structural)	Structural Concrete	County Numbers (2) with dash for instate facilities or 2 letter State abbreviation with dash for out of state facilities	Facility Number	N/A	01-0999 AL-0999
Cementitious Materials	Cement	CMT	Facility Number (sequential number)	N/A	CMT99
	Fly Ash	FA			FA099
	GGBF Slag	SLAG			SLAG09
	Metakaolin	MK			MK099
	Silica Fume	SF			SF099
	Ultra Fine Fly Ash	UFFA			UFFA099
	Terminal	TM with dash			TM-099
Timber	Timber	T	Facility Number	N/A	T099

Steel and Miscellaneous Metals	Aluminum	AF with dash	2 letter State abbreviation with dash	Facility Number	AF-FL-099
	Bridge Machinery	BM with dash			BM-FL-099
	Steel Bridges	BR with dash			BR-FL-099
	Castings	CA with dash			CA-FL-099
	Fencing	FE with dash			FE-FL-099
	Galvanizing	GA with dash			GA-FL-099
	Guardrail	GR with dash			GR-FL-099
	Hardware	HR with dash			HR-FL-099
	Miscellaneous Metals	MM with dash			MM-FL-099
	Painting	PA with dash			PA-FL-099
	Powder Coating	PC with dash			PC-FL-099
	Railroad	RR with dash			RR-FL-099
	Sign Structures	SS with dash			SS-FL-099
Prestressed Concrete Products	Prestressed Concrete Products	PCP	Concrete Production Facility Number for concrete production facility at the Prestressed facility	N/A	PCP01-9999 PCPMS-999
Precast Concrete Products	Incidental Precast Products	IPC with dash	Facility Number	NA	IPC-99
	Precast Drainage	PC with dash	Facility Number	N/A	PC-99

	Structures				
	Precast Pipe	PI with dash	Facility Number	N/A	PI-99
Drainage Products	Metal Pipe	FPP with dash	Facility Number	N/A	FPP-99
	Plastic Pipe				
Fiber Reinforced Polymer Products	Fiber Reinforced Polymers	FRP with dash	Facility Number	N/A	FRP-99
Aggregate*	Aggregate	County Numbers (2) No dash for instate facilities or 2 letter State abbreviation with dash for out of state facilities	Facility Number	N/A	01999 AL0999
Liquid asphalt*	Asphalt Binder	LA no dash	Facility Number (3 digits)	N/A	LA999
	Asphalt Emulsions				
Ground tire rubber*	Ground Tire Rubber	RU no dash	Facility Number (3 digits)	N/A	RU999
Non-Structural concrete*	Non Structural Concrete	County Numbers (2) with dash for instate facilities or 2 letter State abbreviation with dash for out of state facilities	Facility Number	N/A	01-0999 AL-0999

Numbering format for production facility entries is included for consistency purposes. Requirements for these materials are not part of the QC Program as defined in **Specifications Section 105. These facilities may or may not require a QC Plan and may have different production facility statuses than are described in this Section. Please refer to the specific program requirements for aggregates, liquid asphalt and ground tire rubber. Non-structural concrete plants are included in MAC for reporting purposes only and do not have specific requirements documented. They are not a material under the Quality Control Program.*

The QC plan should be reviewed using the checklists provided on the SMO web site to assure that the document is complete and accurate. Once the review is complete, the producer should be notified of the proposed QC plan status within twenty-one (21) calendar days from the date of submittal. If an existing QC plan addendum is reviewed, the producer should be notified of the revision status within seven (7) calendar days.

For an unacceptable QC plan, a list of deficiencies should be attached along with any actions expected from the producer. An anticipated time for completion

should be included in the notification. Document the date the notification was provided in MAC as the Information Requested Date. When the response is received, document the date the response was received in MAC as the Information Received Date. This information is used to establish producer turnaround times for responses.

For an acceptable QC plan, the qualification status should be changed to “Accepted” in MAC. If necessary, a production facility inspection should also be scheduled. The inspection should determine if the production facility complies with the requirements of the **FDOT Specifications** and the QC plan.

Periodic evaluations of the production facility should be performed to ensure compliance with the requirements of the **FDOT Specifications** and the quality control plan. At a minimum, the production facility should be inspected once a year or at the frequency specified in an individual section of the **Materials Manual**.

The routine periodic evaluations of the production facilities can be performed either by onsite inspection of the fabrication facilities or by remote audit. The remote audit process will be administered at the discretion of the Department and is restricted to producers that have not produced for Department projects for more than a year. A remote audit requires the quality control manager of the production facility to complete, certify, and notarize a remote audit checklist that will be provided by the Department. Department qualification review personnel will complete the remote audit process by reviewing the inspection checklist that has been submitted by the production facility’s QC manager

Updating the MAC database with current producer information, including status, is essential to the success of the Quality Control Program. The information is used to generate the Quality Control Program Key Performance Measures found in **5.6.15** of this **Section**. The Quality Control Program personnel, in the appropriate SMO or DMO, are responsible for updating MAC in a timely manner. Contact information is updated by the production facility profile manager with the exception of non-structural concrete production facilities. Non-structural concrete production facility profiles are maintained by the DMO concrete personnel.

5.6.8.1 QUALIFICATION STATUS CODES FOR QUALITY CONTROL PLANS

- A) **In Progress** = QC Plan has been received and is being reviewed by the Materials Office.
- B) **Accepted** = QC plan accepted. This status is for when the review of a QC plan is acceptable.
- C) **Suspended** = QC plan suspended. This status is for when an existing QC plan is suspended. Chose the correct suspension criteria listed in **FDOT Specification, Section 105** from the comments drop down list

in MAC to identify why the plan was suspended.

- D) **Inactive** = A facility had an accepted QC plan, but is currently inactive. This status is for production facilities that have notified the Department that they do not wish to be inspected because, until further notice, they will no longer be producing for Department projects. The facility will notify the Department when they wish to resume inspection and may have to submit a new or revised quality control plan at that time.

- E) **Expired** = Expired facility. This status is for when a facility has been disassembled or shut down completely. Facilities that are denoted with an "Expired" status will remain in the database for historical purposes, but will not be shown on the ***Department's Production Facility Listing***.

5.6.9 MATERIAL CHECKLISTS

Quality Control Plan Checklists for various materials can be found on the SMO web site:

<http://www.fdot.gov/materials/quality/programs/qualitycontrol/checklists/index.shtm>

5.6.10 QC PLAN REVISIONS

On occasion, a QC plan may need to be revised. The producer or the Department may propose the revisions. When a revision is submitted, the proposed revisions must be reviewed. If satisfactory, the producer's QC Manager should be advised by phone and notified by e-mail. If the QC plan revision is unsatisfactory, a list of deficiencies along with any actions expected from the producer should be attached. An anticipated time frame for completion should also be included in the notification. Document the date the notification was provided in MAC as the Information Requested Date. When the response is received, document the date the response was received in MAC as the Information Received Date.

If the revision is due to the suspension of the QC plan, the proposed corrective action must be reviewed. If the proposed changes are satisfactory, the producer's QC Manager should be advised by phone and notified by e-mail. When necessary, Department personnel must follow up with a certified letter addressed to the QC Manager. When the revision is acceptable, the qualification status should be changed to "Accepted" in MAC. If the proposed changes are unsatisfactory, a list of deficiencies should be attached along with any actions expected from the producer. An anticipated time frame for completion should also be included in the notification. . Document the date the notification was provided in MAC as the Information Requested Date. When the response is received, document the date the response was received in MAC as the Information Received Date.

5.6.11 SUSPENSION OF ACCEPTED STATUS

When an existing QC plan is suspended, Department personnel should notify the producer of a suspension status within one (1) working day of the decision.

If the notification to the producer is made by telephone, Department personnel must follow up with a written communication within three (3) working days. The District Construction Engineer (DCE) and the State Materials Office Quality Control Program Coordinator should be copied on all written communications. A list of Quality Control Program Coordinators can be found on the State SMO website under "Quality Control Program Coordinator Contacts."

The applicable suspension criteria should be detailed as noted in **FDOT Specification, Section 105**. The details should include a list of the specific deficiencies; the expected course of action; the time for completion and whether or not an inspection will be necessary for re-instatement of the production facility's QC Program. When finalized, the qualification status should be changed to "Suspended" in MAC, and when necessary, a certified letter, addressed to the producer's contact person, should also be sent. If the quality control plan has been provided, an executive officer for the company should also be copied. Document the date the notification was provided in MAC as the Information Requested Date. When the response is received, document the date the response was received in MAC as the Information Received Date.

When a production facility QC Plan is suspended, if the production facility is designated on a Contractor QC Plan entry, the entry on the Contractor QC Plan will be updated in MAC to identify that the production facility QC plan is suspended. The PA and QC Manager will be notified by way of the Contractor QC Plan entry. For production facilities that are not listed on Contractor QC Plans, the SMO or DMO must notify the PA if the production facility is producing for an FDOT contract.

5.6.12 SUSPENSION CRITERIA

The criteria for the suspension of the production facility's Quality Control Program can be found in **FDOT Specification, Section 105**. They are repeated below for convenience:

- (A) Failure to timely supply information required.
- (B) Repeated failure of a material to meet **FDOT Specification** requirements.
- (C) Failure to take immediate corrective action relative to deficiencies in the performance of the Quality Control Program.
- (D) Certifying materials that are not produced under an approved Quality Control Program for use on Department projects. (This would include any situation where falsification of records was determined.)

- (E) Failure to correct deficiencies related to any requirement of the Quality Control Program, having received notice from the Department, within the specified amount of time.

5.6.13 DISPOSITION OF MATERIALS WHEN THE PRODUCTION FACILITY IS SUSPENDED

Products that were produced prior to a suspension may be subject to review by the Department to ensure compliance with the ***FDOT Specifications***.

Department inspections will take place prior to a product being shipped to a project site.

5.6.14 MATERIALS OFFICE REVIEW OF CONTRACTOR QUALITY CONTROL PLANS

QC Plan entries require the DMRO concrete personnel to review the structural concrete production facilities listed along with the structural concrete mix designs proposed to be used on the contract. The DMRO concrete personnel should review the proposed mix designs. If any mix design does not meet the contract specific requirements; or if any plant is unable to produce the proposed mix, the DMRO concrete personnel should indicate that the mix design is not appropriate for the contract.

5.6.15 QUALITY CONTROL PROGRAM KEY PERFORMANCE MEASURES

Key performance measures for the Quality Control Program are:

- (A) Reduce the number of quality related suspensions.
- (B) Increase the number of quality related asphalt bonuses.

5.6.16 TRAINING

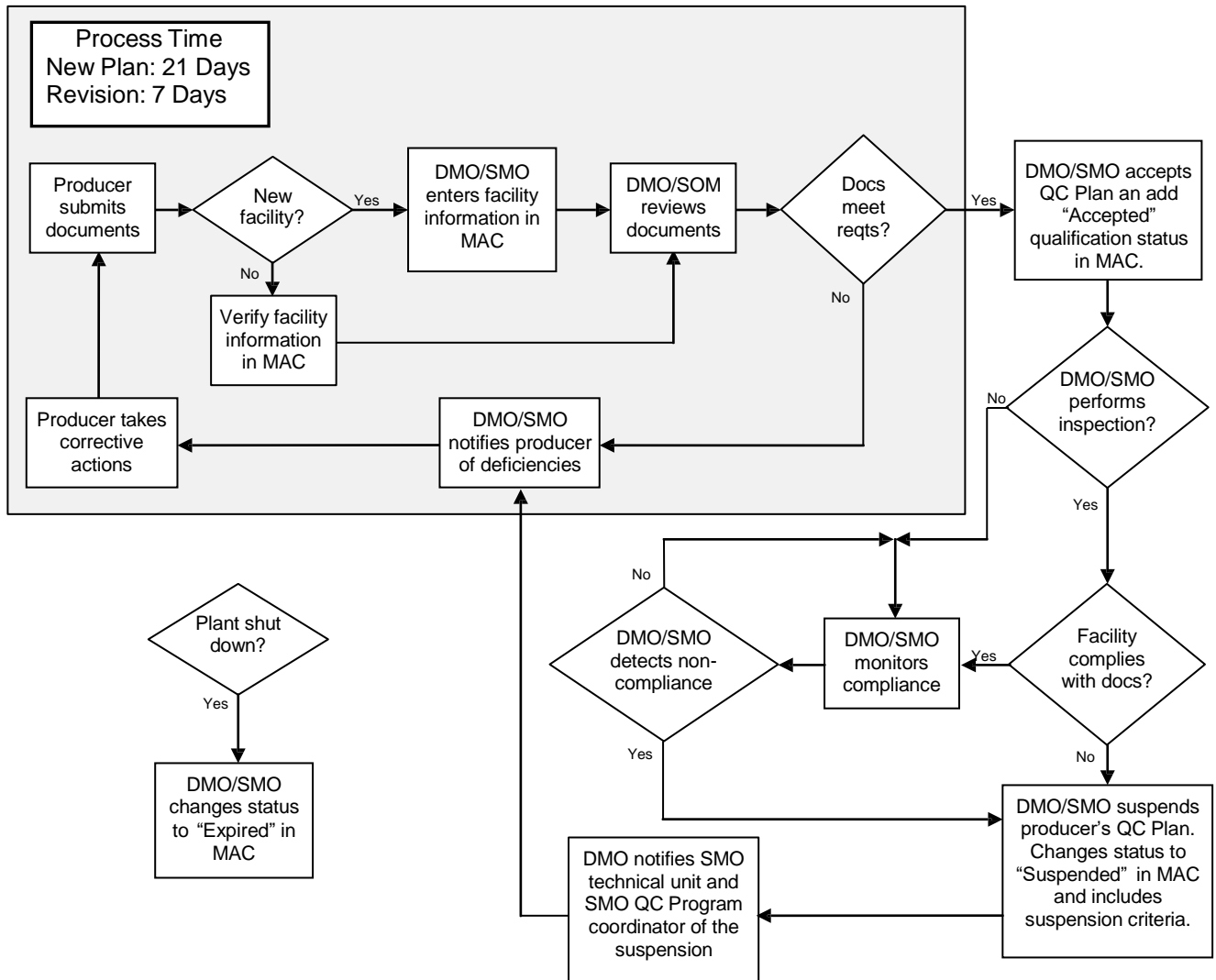
Training for Quality Control Program administration in MAC is covered by the Materials Acceptance and Certification system (MAC) Program Maintenance Users and District Application Coordinator Training, ***TRESS # CU-17-0008***

5.6.17 FORMS

No forms are required.

APPENDIX A

Producer's Quality Control Program Approval Process



The Department reserves the right to perform an inspection at any time.