

## Tennessee Department of Transportation Division of Materials and Tests

### Ready Mix Concrete Plant Approval Procedures (SOP 4-3)

Purpose: The purpose of this document is to outline the approval process of ready mix concrete plants, in Tennessee and out-of-state, that provide concrete for Tennessee Department of Transportation (TDOT) projects. These inspections standardize certification throughout the regions, improve concrete quality, assure consistency of product, support quality control, and assure adherence to TDOT Standard Specifications.

Discussion: Ready mix concrete producers must undergo a complete inspection of processes, plant equipment, trucks, laboratory equipment, materials, and technician qualifications. A list of all forms and links discussed within this SOP is located in the Appendix.

#### 1.0 Initial Producer Requirements

For initial approval, the producer shall contact Headquarters Materials and Tests (HQMT) at [TDOT.Concrete.Email@tn.gov](mailto:TDOT.Concrete.Email@tn.gov) who will then ensure the following requirements are met. All required documentation shall be kept onsite.

- 1.1 All material sources must be TDOT approved **and listed on the TDOT Producer List/QPL**. The producer shall retain copies of all material certifications, reports, and test results.
  - 1.1.1 All aggregates sources shall be on the TDOT Producer List and in accordance with TDOT Standard Specifications Sections 903.03.
  - 1.1.2 All cements shall be on the TDOT Producer List and in accordance with TDOT Standard Specifications Section 901.01.
  - 1.1.3 Other cementitious and pozzolanic materials shall be on the TDOT Producer List and in accordance with TDOT Standard Specifications Sections 921.15 or 921.16.
  - 1.1.4 All admixtures shall be listed on the TDOT Qualified Products List (QPL) and in accordance with TDOT Standard Specifications Sections 604.03 and 921.06.
  - 1.1.5 All water shall be in accordance with TDOT Standard Specification 921.01. Test results shall be submitted to the appropriate Regional Materials and Tests Supervisor within thirty (30) days of the tests.
- 1.2 The plant shall have personnel certified according to TDOT Standard Specifications Section 604.03 as well as SOP 1-3: Field Technician Certification Requirements.
- 1.3 The producer shall develop an Annual Ready Mix Plant Process Control Plan that outlines the steps or procedures that will ensure that the concrete meets the minimum TDOT Standard Specification requirements and submit it to Regional Materials and Tests for approval. For each project, an approved Placement Site Process Control Plan shall be submitted at the preconstruction conference.

- 1.4 Each facility shall have a plant and laboratory inspection performed by Regional Materials and Tests and documented on the Ready Mix Inspection Checklist.
- 1.4.1 The plant inspection shall include an overall review of the mixers, weighing devices, admixture dispensers, stockpile maintenance, and bins and in accordance with TDOT Standard Specifications sections 604.04.
  - 1.4.2 Regional Materials and Tests will verify that the producer has immediate access (within 50 miles) to a Type A laboratory as defined in TDOT Standard Specification Section 106.06 to conduct any required testing. The laboratory inspection shall include a review of weighing devices; oven; sampling, reducing, and shaking equipment; thermometers; and other apparatus necessary to perform standard tests and practices. SOP 1-4: Laboratory Qualification Requirements, documents the minimum qualifications for field laboratories and concrete testing equipment. Offsite laboratories shall be inspected to ensure the facility meets TDOT Standard Specifications.
- 1.5 Regional Materials and Tests will inspect all trucks for manufacturer's plates, revolution counters, mixer-blade wear, water gauges, axle configuration, tare weight, and allowable gross weights. The inspection shall be documented on the Concrete Truck Checklist.
- 1.6 Based on compliance of the above criteria, HQMT will place the producer on the TDOT Producer List upon completion and documentation of initial inspection by Regional Materials and Tests.

## 2 Producer Annual Requirements

To maintain an active status on the TDOT Producer List, the producer shall have met all requirements in Section 1 of this SOP as well as the following. All required documentation shall be kept **within a TDOT specific binder (Appendix B)**.

- 2.1 Each plant shall have an approved, project specific, concrete mix design as outlined in SOP 4-4: Submittal and Approval of Concrete Mixture Designs, for each class of concrete being produced for a TDOT project. **Each design submitted and approved must also be updated in the plant's TDOT specific binder.**
- 2.2 Form DT-1756, Concrete Delivery Ticket, or equivalent, must accompany each load to the placement site. The ticket must have all the required information according to TDOT Standard Specifications Section 604.03 including the signature of the producer's TDOT Certified Concrete Plant Quality Control Technician.
- 2.3 A ready mix concrete plant's approval is contingent upon continuous, satisfactory field performance as well as periodic quality audits. In addition to the quality monitoring outlined below, a ready mix concrete plant's approval may also be rescinded if there is any concern for safety.
  - 2.4.1 On an annual basis, Regional Materials and Tests will perform a plant and laboratory inspection documented on the Ready Mix Inspection Checklist. Any deficiencies found during the inspection shall be addressed within forty-five (45) days. **Regional Materials and Tests shall send a copy of the checklist to HQMT and the producer. The producer will address any deficiencies on the TDOT Corrective Action Response (CAR) Form. Regional**

Materials and Tests will decide if these deficiencies have been properly resolved and notify HQMT of their compliance.

- 2.4.2 HQMT will audit batch plants in each region to verify all items within the Ready Mix Inspection Checklist have been met and/or corrected. The priority for which HQMT will decide on which plants to audit will be determined by three factors: a plant has failing break data within the past 30 days, if a plant is currently producing for TDOT, and having the eldest date of their most recent audit among other TDOT approved facilities.
- 2.4.3 HQMT shall notify the producer of any failing material as soon as possible. The producer shall identify the location/distribution of the material. Then, HQMT and Regional Materials and Tests will determine the utilization of any existing material and the acceptance of newly produced material.

### 3 Facility Removal

- 3.1 If a facility is inactivated on the TDOT Producer List, HQMT shall immediately notify the producer, and in writing within seven (7) days.
- 3.2 Constituent materials on the producer's yard utilized during production from the date of the last passing test until the date of the failing test may not be acceptable for further use on TDOT projects. All cost incurred will be the responsibility of the producer.
- 3.3 To be reactivated on the TDOT Producer List, the producer shall request a meeting with Regional Materials and Tests and HQMT to discuss actions the producer plans to take to resolve any issues of non-compliance. Once it has been demonstrated that the ready mix concrete plant meets TDOT specifications, HQMT shall notify both Regional Materials and Tests and the producer that the plant has been reactivated on the TDOT Producer List.

## Appendix A

All paperwork is required to be kept at the plant. The following forms, at a minimum, are required for a producer to be approved and remain active on the TDOT Producer List.

1. [Ready Mix Inspection Checklist](#) – Plant and lab inspection results are documented along with any deficiencies the producer needs to address. Regional Materials and Tests inspections are documents on this form as well as random quality audits by HQMT. **The following documents can be found as tabs in the inspection checklist:**
  - i. **Concrete Truck Checklist**– A list of all concrete trucks approved for use on TDOT projects
  - ii. **Annual Ready Mix Process Control Plan** – The annual ready mix process control plan details how the producer will perform quality control at the plant to ensure concrete delivered to TDOT projects meets TDOT Standard Specifications
  - iii. **Placement Site Process Control Plan** – The placement site process control plan details how the producer will perform quality control at the project to ensure concrete delivered to TDOT projects meets TDOT Standard Specifications
2. [Delivery Ticket](#) – Required with each load of concrete
3. **Corrective Action Response (CAR)** – **This document provides a procedure for corrective actions to ready mix deficiencies and how they are applied within the TDOT Ready Mix Concrete Program.**

## **Appendix B**

The producer shall organize the TDOT Ready Mix Plant Binder as follows:

1. Most recent TDOT inspection checklist
2. Plant paperwork:
  - a. Ready Mix Process Control Plan
  - b. Approved concrete delivery truck list
  - c. Certified technician form
  - d. Technician certifications
  - e. Coarse and fine aggregate reports
  - f. Materials List
  - g. Most current test records and inspections performed at plant
  - h. Moistures and gradations
3. Any contract/project you have with necessary paperwork:
  - a. Mix design
  - b. Delivery/Batch Ticket
  - c. Contractor Daily Report for every day for each contract