

State of Louisiana
Department of Transportation and Development (DOTD)
Materials and Testing Section Qualification Procedure
for

FLY ASH

MATERIAL SPECIFICATION REFERENCE:

DOTD Standard Specifications, Supplemental Specifications and Special Provisions, Subsections 901.02, 03, 08, 1018.15 (copies attached).

PRELIMINARY REQUIREMENTS:

Approved Materials Evaluation Form

The manufacturer shall submit a standard "Approved Materials Evaluation Form" (copy attached) to the DOTD Materials and Testing Section Coordinator listed below, along with a letter requesting evaluation for the Approved Materials List. The following information must be included in the request for evaluation.

- 1) Complete names and addresses of the Fly Ash source and owner.
- 2) Complete name and address of the supplier.
- 3) Complete name and address of the coal mine.
- 4) Type of fly ash produced and type of coal used.
- 5) Description of fly ash storage facilities including capacities.
- 6) An outline of production procedures including pulverization techniques, description of additives mixed with coal during production, and ash collection methods.
- 7) An outline of the supplier's quality assurance sampling and testing program.
- 8) Name and address of laboratory performing quality control tests and a copy of their CCRL inspection reports.
- 9) Intended use of fly ash.

General Information

Include all pertinent information relative to the material to be evaluated; including, but not limited to, manufacturer's specifications, typical analysis and a Safety Data Sheet (SDS) if applicable.

Certification and/or Test Reports

Submit a notarized Certificate of Analysis for the five daily samples. The Certificate of Analysis shall show test results applicable to the intended use of the material and the test results shall meet all specifications for AASHTO M 295. All test results included on the certificate of analysis shall be performed by a laboratory which has been inspected by CCRL.

Sample (to be furnished at no cost to the Department)

Submit five daily samples, each consisting of approximately 5 kg (10 lbs.) of fly ash, to the DOTD Materials and Testing Coordinator for evaluation. Each sample shall be randomly taken each day for five days from one identifiable storage unit.

Samples are to be shipped in a 1-gallon (4 Liters) metal can with re-sealable lid.

This composited sample shall be continually split until a 5 kg (10-lbs.) sample is obtained. Half of the 5 kg (10 lbs.) sample shall be sent to the Materials and Testing Section and the other half retained and tested by the supplier. The supplier shall forward applicable physical and chemical test results obtained on the retained sample to the DOTD Materials and Testing Coordinator upon completion of tests. After completion of tests, the Department may grant source approval depending on the results of the daily samples. When source approval is given, monthly samples will be required.

TEST REQUIREMENTS:

Laboratory Testing

Each qualification sample will be tested by a Laboratory previously inspected by CCRL for compliance with the applicable Departmental Specification for its intended use. All tests will be conducted in accordance with ASTM C 311. After the qualification samples have been tested, the average fineness and specific gravity will be determined and Initial Variability limits will be established for each source as follows:

Fineness, percentage points from average ± 5
Specific Gravity, max. variation from average $\pm 5\%$

Alkali content calculated in accordance with DOTD TR 531 shall not exceed 2.5 percent by weight. Fly ash with alkali content greater than 1.5 percent may be used with innocuous (non-reactive) aggregates.

Field Evaluation

The Department may require an Inspection of the plant to review methods of sampling, testing and handling of fly ash.

Total Evaluation Time

Laboratory Testing - 12 weeks
Field Evaluation - 2 weeks

GENERAL:

Upon completion of the evaluation, the distributor will be notified in writing concerning the results of the evaluation and whether the source will or will not be added to the Approved Materials Lists. Source approval may be granted based on the Department's satisfaction that consistent fly ash is being produced, and that it conforms with Departmental specifications. The Department must be notified in writing of any change in material formulation. Significant changes may require reevaluation of the material.

1. Effective Quality Control Program:

The source must have an effective quality control program to ensure that the fly ash possesses uniform characteristics within the Department's specifications. The variability limits as defined above will be recalculated after each monthly sample has been tested and will be based on the most current 10 test results.

If approved, the manufacturer is required to submit a list to the DOTD Materials and Testing Coordinator showing plant representatives authorized to:

- 1) Sample fly ash in accordance with this procedure.
- 2) Sign "Fly Ash Certificate of Compliance" forms which must be completed for each shipment.
- 3) Submit monthly source samples and sign certificates of analysis for the monthly source samples.

2. Provide Monthly Samples:

The monthly sample will be a representative sample of the production of fly ash for each month. The 10 kg (20 lbs.) sample is to be split with half retained and tested by a CCRL inspected laboratory and half submitted to the DOTD Materials and Testing Coordinator. All results obtained on monthly samples must be submitted to the DOTD Material and Testing Coordinator with proper identification stating the month represented and sample number.

3. Allow Periodic Inspections by Department Personnel:

When plants are periodically inspected by the National Bureau of Standards Cement and Concrete Reference Laboratory (CCRL), a copy of the latest CCRL report accompanied by documentation of resolutions of any discrepancies in lieu of the above mentioned inspection shall be submitted to the DOTD Materials Section. CCRL reports will be treated with strict confidentiality.

The Department reserves the right to send a representative to make on-site inspections of facilities with emphasis on the method of sampling and testing.

4. Maintain List of Authorized Representatives

All approved suppliers shall submit and maintain a list of representatives authorized to sign documents pertaining to the certification, testing and shipment of fly ash.

5. Provide Fly Ash Certificate of Compliance Forms for Each Shipment:

A completed "Fly Ash Certificate of Compliance" form, supplied by the Department, shall accompany all shipments of fly ash intended for use on state projects. A copy of each form shall also be sent to the Materials Engineer Administrator. This form shall be signed by an authorized representative. The distributor shall keep the certificate on file and issue a new certificate with each shipment to state projects with a copy of the new certificate mailed to the Materials Engineer Administrator.

6. Mill Test Data will be kept on file for three years and the data will available upon request.

PROJECT ACCEPTANCE REQUIREMENTS:

Inclusion of your product on the Approved Materials List is not blanket approval for its use.

All products, regardless of prior approval, shall be sampled in accordance with the Materials Sampling Manual.

DISQUALIFICATION:

The Department reserves the right to remove any source from the Approved Materials Lists at any time confidence is lost in a manufacturer's ability or intent to produce material of uniform characteristics complying with Departmental specifications. Causes for removal from the list may include, but are not limited to the following:

1. Failure of the Plant to provide monthly mill samples in accordance with this procedure.
2. Failure of the supplier to provide proper certifications as required by this procedure.
3. Failing test results obtained by the Materials Section on consecutive mill samples or project verification samples.
4. Continued violation of variability limits.

REQUALIFICATION:

Once removed from the Approved Materials List, a source may gain reinstatement by submitting a written request to the Materials Engineer Administrator for reinstatement indicating the causes and solutions to the problem areas which caused removal, and satisfying all of the preliminary requirements shown herein.

After examination of the information gained from the above, at the Materials Engineer Administrator's discretion, the source may be reinstated after a minimum period of 3 months from the date of request for reinstatement.

DOTD MATERIALS AND TESTING SECTION COORDINATOR

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Approved 10-1-15



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MATERIALS ENGINEER ADMINISTRATOR