1. **Scope**

This standard specifies requirements and procedures for a certification system that shall be applicable to all Producers/Importers/Distributors of Fly Ash.

This standard may involve hazardous materials, operations and equipment. It does not address all of the safety problems associated with their use. It is the responsibility of those using this standard to consult and establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

2. **Referenced Documents**

2.1 AASHTO Standards

- M 295 Standard Specifications for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete
- R 18 Establishing and Implementing a Quality System for Construction Materials Testing Laboratories

2.2 ASTM Standards

- C 618 Standard Specifications for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete

2.3 Agency’s Standard Specifications

3. **Terminology**

3.1 AASHTO – American Association of State Highway and Transportation Officials

3.2 ASTM – American Society of Testing and Materials

3.3 CCRL – Cement and Concrete Reference Laboratory

3.4 NIST – National Institute of Standards and Technology

3.5 Import/Distribution Facility – A facility that receives finished fly ash products for distribution.

3.6 Production Facility – A facility that has the capacity for producing fly ash.

3.7 Supplier – A supplier stores and then delivers fly ash produced by another entity to a concrete plant or another supplier.

3.8 Supplier Certification – Certification of fly ash provided by the supplier or importer using representative test results obtained in accordance with an agency approved QC plan and approved testing lab.
3.9 Agency – State highway agency or other agency responsible for the final acceptance of fly ash. Samples and documentation shall be sent to:

WSDOT State Materials Laboratory
Attn: Cement Acceptance Program Director
PO Box 47365
Olympia, WA 98504-47365

3.10 Specification Compliance Testing – Complete testing in accordance with the specification requirements.

3.11 Quality Control Testing – The quality control testing shall be described in the Production/Import/Distribution Facility’s quality control plan. The Production/Import/Distribution Facility’s quality control plan must be approved by the Agency.

3.12 CAP – Cement Acceptance Program

3.13 Mill Test Report – A document provided to the Agency on a monthly basis by a fly ash producer for fly ash that is actually produced at a U.S. or Canadian production facility. This document will list the actual chemical and physical test results of the product sample along with the appropriate AASHTO or ASTM specification limits.

3.14 Certificate of Analysis – A document provided to the Agency on a per shipload basis by a fly ash importer/distributor. This document shall represent a specific shipload of imported fly ash. This document will list the actual chemical and physical test results of the product sample along with the appropriate AASHTO or ASTM specification limits.

4. Significance and Use

4.1 This standard specifies procedures for accepting fly ash. This is accomplished by a certification system that evaluates quality control and specification compliance tests performed by the Production/Import/Distribution Facility according to their quality control plan.

5. Laboratory and Tester Requirements

5.1 Laboratories shall be AASHTO accredited in all tests required by specification compliance testing or meet the following requirements:

5.1.1 Laboratory facilities shall adequately house and allow proper operation of all required equipment in accordance with the applicable test procedures.

5.1.2 The laboratory shall use personnel qualified in accordance with the appropriate sections of AASHTO R 18.

5.1.3 The laboratory shall use testing equipment that has been calibrated/standardized/checked to meet the requirements of each test procedure in accordance with the appropriate sections of AASHTO R 18.

5.1.4 Documentation of personnel qualifications and the equipment certification/standardization/checked records shall be maintained.

5.1.5 The agency at their discretion may review the laboratory in accordance with WSDOT QC 3.

5.1.6 The laboratory must participate in the NIST’s CCRL proficiency sample program.
12.3 If any discrepancies or problems are identified between the Production/Import/Distribution Facility’s test results and the Agency’s test results the Production/Import/Distribution Facility shall respond to the Agency within 30 days and address the following points concerning their results:
   a. Did the results reported accurately reflect the results obtained?
   b. Were the test results properly transferred to the report?
   c. Were the calculations leading to the test result correct?
   d. Did the equipment used to perform the test meet specification requirements?
   e. Did the test procedures conform to specification requirements?
   f. Was corrective action taken to repair or replace defective equipment?
   g. Was the technician instructed of the correct procedure?

12.4 The Production/Import/Distribution Facility shall prepare a response to the Agency, summarizing the results of the investigation, identifying the cause, if determined, and describing any corrective action taken. Comments may include the test facility’s data from CCRL Proficiency Tests.

13. Revocation of Certification Status

13.1 A Production/Import/Distribution Facility may have its certification status with the Agency revoked if found in nonconformance with the Standard Specifications or this Standard Practice.

13.2 The following criteria will be used to judge the conditions of nonconformance:

   13.2.1 Failure to follow the Production/Import/Distribution Facility’s approved quality control plan as required in Section 8.

   13.2.2 Failure to declare that test results indicated that a lot of fly ash was not in compliance with the specifications as required under Section 8.1.

   13.2.3 When a test report shows nonconformance to the applicable specification, the results will be referred for comment and action to the Production/Import/Distribution Facility.

      13.2.3.1 The Production Facility shall submit one sample for retest from the next two available production runs.

      13.2.3.2 The Import/Distribution Facility shall submit two random samples for retest.

      13.2.3.3 If two of three successive samples show nonconformance, the Agency will revoke certification status.

13.3 A Production/Import/Distribution Facility that has had its certification status revoked may seek reinstatement by demonstrating conformance to the qualification criteria shown in Section 7.
3.9 Agency – State highway agency or other agency responsible for the final acceptance of fly ash. Samples and documentation shall be sent to:

WSDOT State Materials Laboratory
Attn: Cement Acceptance Program Director
PO Box 47365
Olympia, WA 98504-47365

3.10 Specification Compliance Testing – Complete testing in accordance with the specification requirements.

3.11 Quality Control Testing – The quality control testing shall be described in the Production/Import/Distribution Facility’s quality control plan. The Production/Import/Distribution Facility’s quality control plan must be approved by the Agency.

3.12 CAP – Cement Acceptance Program

3.13 Mill Test Report – A document provided to the Agency on a monthly basis by a fly ash producer for fly ash that is actually produced at a U.S. or Canadian production facility. This document will list the actual chemical and physical test results of the product sample along with the appropriate AASHTO or ASTM specification limits.

3.14 Certificate of Analysis – A document provided to the Agency on a per shipload basis by a fly ash importer/distributor. This document shall represent a specific shipload of imported fly ash. This document will list the actual chemical and physical test results of the product sample along with the appropriate AASHTO or ASTM specification limits.

4. Significance and Use

4.1 This standard specifies procedures for accepting fly ash. This is accomplished by a certification system that evaluates quality control and specification compliance tests performed by the Production/Import/Distribution Facility according to their quality control plan.

5. Laboratory and Tester Requirements

5.1 Laboratories shall be AASHTO accredited in all tests required by specification compliance testing or meet the following requirements:

5.1.1 Laboratory facilities shall adequately house and allow proper operation of all required equipment in accordance with the applicable test procedures.

5.1.2 The laboratory shall use personnel qualified in accordance with the appropriate sections of AASHTO R 18.

5.1.3 The laboratory shall use testing equipment that has been calibrated/standardized/checked to meet the requirements of each test procedure in accordance with the appropriate sections of AASHTO R 18.

5.1.4 Documentation of personnel qualifications and the equipment certification/standardization/checked records shall be maintained.

5.1.5 The agency at their discretion may review the laboratory in accordance with WSDOT QC 3.

5.1.6 The laboratory must participate in the NIST’s CCRL proficiency sample program.
12.3 If any discrepancies or problems are identified between the Production/Import/Distribution Facility’s test results and the Agency’s test results the Production/Import/Distribution Facility shall respond to the Agency within 30 days and address the following points concerning their results:
   a. Did the results reported accurately reflect the results obtained?
   b. Were the test results properly transferred to the report?
   c. Were the calculations leading to the test result correct?
   d. Did the equipment used to perform the test meet specification requirements?
   e. Did the test procedures conform to specification requirements?
   f. Was corrective action taken to repair or replace defective equipment?
   g. Was the technician instructed of the correct procedure?

12.4 The Production/Import/Distribution Facility shall prepare a response to the Agency, summarizing the results of the investigation, identifying the cause, if determined, and describing any corrective action taken. Comments may include the test facility’s data from CCRL Proficiency Tests.

13. Revocation of Certification Status

13.1 A Production/Import/Distribution Facility may have its certification status with the Agency revoked if found in nonconformance with the Standard Specifications or this Standard Practice.

13.2 The following criteria will be used to judge the conditions of nonconformance:

   13.2.1 Failure to follow the Production/Import/Distribution Facility’s approved quality control plan as required in Section 8.
   13.2.2 Failure to declare that test results indicated that a lot of fly ash was not in compliance with the specifications as required under Section 8.1.
   13.2.3 When a test report shows nonconformance to the applicable specification, the results will be referred for comment and action to the Production/Import/Distribution Facility.
       13.2.3.1 The Production Facility shall submit one sample for retest from the next two available production runs.
       13.2.3.2 The Import/Distribution Facility shall submit two random samples for retest.
       13.2.3.3 If two of three successive samples show nonconformance, the Agency will revoke certification status.

13.3 A Production/Import/Distribution Facility that has had its certification status revoked may seek reinstatement by demonstrating conformance to the qualification criteria shown in Section 7.
3.9 Agency – State highway agency or other agency responsible for the final acceptance of fly ash. Samples and documentation shall be sent to:

WSDOT State Materials Laboratory
Attn: Cement Acceptance Program Director
PO Box 47365
Olympia, WA 98504-47365

3.10 Specification Compliance Testing – Complete testing in accordance with the specification requirements.

3.11 Quality Control Testing – The quality control testing shall be described in the Production/Import/Distribution Facility’s quality control plan. The Production/Import/Distribution Facility’s quality control plan must be approved by the Agency.

3.12 CAP – Cement Acceptance Program

3.13 Mill Test Report – A document provided to the Agency on a monthly basis by a fly ash producer for fly ash that is actually produced at a U.S. or Canadian production facility. This document will list the actual chemical and physical test results of the product sample along with the appropriate AASHTO or ASTM specification limits.

3.14 Certificate of Analysis – A document provided to the Agency on a per shipload basis by a fly ash importer/distributor. This document shall represent a specific shipload of imported fly ash. This document will list the actual chemical and physical test results of the product sample along with the appropriate AASHTO or ASTM specification limits.

4. Significance and Use

4.1 This standard specifies procedures for accepting fly ash. This is accomplished by a certification system that evaluates quality control and specification compliance tests performed by the Production/Import/Distribution Facility according to their quality control plan.

5. Laboratory and Tester Requirements

5.1 Laboratories shall be AASHTO accredited in all tests required by specification compliance testing or meet the following requirements:

5.1.1 Laboratory facilities shall adequately house and allow proper operation of all required equipment in accordance with the applicable test procedures.

5.1.2 The laboratory shall use personnel qualified in accordance with the appropriate sections of AASHTO R 18.

5.1.3 The laboratory shall use testing equipment that has been calibrated/standardized/checked to meet the requirements of each test procedure in accordance with the appropriate sections of AASHTO R 18.

5.1.4 Documentation of personnel qualifications and the equipment certification/standardization/checked records shall be maintained.

5.1.5 The agency at their discretion may review the laboratory in accordance with WSDOT QC 3.

5.1.6 The laboratory must participate in the NIST’s CCRL proficiency sample program.