

## SECTION 700 MATERIAL

### SECTION 701—CEMENT

**701.1 GENERAL**—Obtain cement from a producer listed in [Bulletin 15](#) and from silos set aside for Department use. Do not use retrieved or reclaimed cement. Do not use cement with a material temperature exceeding 65 °C (150F) at the time of delivery to the plant.

(a) QC. [Section 106.03\(a\)2](#)

(b) **Certification.**

**1. General.** Conduct a Monthly Mill Test according to [ASTM C 150](#). Submit a copy of the Monthly Mill Test to the MTD for verification of compliance with Department specifications:

- Base the Monthly Mill Test on actual or historical statistical process controls.
- Specify the type of material and cross-reference the test to the bill of lading.
- Ensure that a responsible company official sign the Monthly Mill Test.
- Submit split sample with corresponding test results monthly.

**2. Levels of Certification.** The MTD will determine the level of certification for each producer listed in [Bulletin 15](#) based on the producers' ability to comply with the specifications listed below. Producers will initially be assigned a Level 1 certification until performance dictates a reevaluation. Material provided by producers listed in [Bulletin 15](#) is approved for use only in its intended application(s).

**2.a Level 1.** Test material at the minimum frequency identified in the approved QC Plan. Ship on the basis of certification.

**2.b Level 2.** Test material at an increased frequency according to a revised QC Plan coordinated with the MTD. Continue to ship on the basis of certification. Submit an action plan that demonstrates how material and processes will be controlled to ensure the product consistently conforms to specification requirements.

**2.c Level 3.** Test material at Level 2 frequency and arrange for additional testing at Level 2 frequency by an independent laboratory. Correlate in-house and independent laboratory test results and continue to ship on the basis of certification.

**2.d Level 4.** Test material at Level 2 frequency and arrange for additional testing at Level 2 frequency by an independent laboratory. Correlate in-house and independent laboratory test results. Certify that the material conforms to specifications and submit samples to the MTD for verification. Ship only after notification of acceptable lot test results from the BOCM.

If the producer fails to advance above this level of certification, the Department will initiate action for the producer's suspension and removal from [Bulletin 15](#) according to the State's Contractor Responsibility Program.

**(c) Handling and Transportation.** [Section 106.06](#) and as follows:

For each shipment to the project, furnish two copies of the vendor's bill of lading. Include one copy with the shipment to the project; the vendor shall retain the other copy. Use a form acceptable to the MTD that contains the following information:

- Statement that material has been tested and conforms to Department specifications.
- Type of material
- Silo number
- Company lot identification
- Date of shipment
- Producer's name and location
- Consignee's name and location
- Temperature of cement
- Trailer number
- Quantity (tonnes (tons))
- Alkali content (%)—determined according to AASHTO T 105.

Ship bulk cement in clean, acceptable, metal, rubber, or plastic waterproof containers or compartments. Ship bagged cement (42.6 kg (94 pounds) net per bag) in suitable paper bags with the brand, type, and manufacturer's name printed on them. Protect cement bags from the weather. Reject cement bags with net mass (weight) more than 3% below that specified.

**(d) Storage.** [Section 106.05](#) and as follows:

- Provide storage capacity sufficient to maintain the paving schedule.
- Store bulk cement in acceptable silos.
- Store bagged cement in enclosed buildings.
- Store bagged cement in stacks not exceeding eight bags in height and cover.

**(e) Chemical and Physical Requirements and Testing.** AASHTO M 85 and AASHTO M 240, except sample according to [PTM No. 509](#).

**(f) Limited Number of Sources.** Obtain cement for each project from a single source, unless otherwise allowed by the Representative in writing. If using more than one source, separate cement of different types and from different sources. Use each type and source in continuous, segregated portions of the project. If possible, limit cement used in an individual structure to a single type and source. If this is not possible, use one type and source for footers, piers, and abutments, and one type and source for superstructures.