

ALABAMA DEPARTMENT OF TRANSPORTATION

DATE: August 27, 2019

Special Provision No. 18-0600

EFFECTIVE DATE: December 1, 2019

SUBJECT: Cement.

Alabama Standard Specifications, 2018 Edition, SECTION 815 shall be replaced with the following:

SECTION 815 CEMENT

815.01 Type I Portland Cement.

Type I Portland Cement shall meet the requirements of AASHTO M 85 and the additional requirements shown below.

815.02 Type II Portland Cement.

Type II Portland Cement shall meet the requirements of AASHTO M 85 and the additional requirements shown below.

815.03 Type III Portland Cement (High Early Strength).

Type III Portland Cement shall meet the requirements of AASHTO M 85 and the additional requirements shown below.

815.04 Type IS Portland Blast Furnace Slag Cement.

Type IS Portland blast furnace slag cement shall meet the requirements of AASHTO M 240, Blended Hydraulic Cement.

815.05 Type IL Portland Limestone Cement.

Type IL Portland limestone cement shall meet the requirements of AASHTO M 240, Blended Hydraulic Cement.

815.06 Masonry Cement.

Masonry cement shall meet the requirements of ASTM C 91.

815.07 Chemical Properties.

The Specifications for all cements as covered by Articles 815.01 to 815.06, inclusive, are amended to the effect that the total alkali content of any cement used, calculated as the percentage of sodium oxide (Na_2O) plus the product of 0.658 times the percentage of potassium oxide (K_2O), shall not exceed 0.60 percent.

In addition to the above, for Type II cement covered by Article 815.02, the standard chemical requirement shown in Table 1 of AASHTO M 85 for Tricalcium Silicate (C_3S) is hereby waived.

815.08 Testing of Cement.

All cement furnished for use shall be tested before use or be from an approved producer meeting the requirements of ALDOT-227, Quality Control of Portland and Blended Hydraulic Cements, and listed on List I-2, PRODUCERS OF PORTLAND AND BLENDED CEMENT, of the Department's "Materials, Sources, and Devices With Special Acceptance Requirements" Manual. Refer to Subarticle 106.01(f) and ALDOT-355 concerning this list.

815.09 Flash Set and False Set.

Flash set and false set, as determined by ASTM C 451, shall be cause for rejection of the cement.

815.10 Unusual Appearance.

Unusual appearance as to color, etc. shall be sufficient grounds for rejection of the cement.

815.11 Use, Care, and Handling.**(a) Use.**

1. Bulk cement will be permitted provided the bulk cement is handled as follows:
 - a. Portland cement shall be measured by weight {mass}, considering that one bag of cement is equivalent to 94 pounds {42 kg} net of cement.
 - b. Handling equipment and the equipment used for weight {mass} determination shall be inspected by the Engineer prior to use. Cement shall be fully protected from contamination or damage during handling.
 - c. Bulk cement shall be batched by weight {mass}, and scales may be of either the beam or springless dial type and shall be the product of a reputable manufacturer. Scales shall be accurate to within a tolerance of 5 pounds per 1000 pounds {2 kg per 455 kg} net load in the hopper. The value of the minimum gradation of any scale shall not be greater than 0.1 percent of the scale capacity.
 - d. Provisions shall be made to indicate to the operator that the required load in the hopper or container is being approached, such as a springless dial indicator or tare beam. Such device shall indicate at least the last 50 pounds {22 kg} of load.
 - e. After the required weight {mass} of the cement is batched, it shall be protected from loss in handling or in transit.
2. Only cement of the same "Type" shall be used in the construction of any structure or unit (substructure or superstructure) except as permitted in writing. All cement in any container having lumps of cement or caked cement, or cement which for any reason has become damaged or partially set, shall be rejected. Cement salvaged from discarded or used bags shall not be used. Cement shall not be used while its temperature is more than 150 °F {65 °C}.
3. The Contractor shall keep accurate records of the deliveries of cement and its use in the work including that from ready-mix plants. Copies of these records shall be furnished the Engineer at the close of each day's work or 8 hour run, in such form as he may require, showing the quantity used during the day or run at each part of the work.

(b) Care and Handling.

1. The Contractor shall provide suitable means for storing and protecting the cement against dampness. Cement not for immediate use shall be stored in suitable weather proof buildings. Buildings shall be placed in approved locations. Provisions for storage shall be ample and the shipment of cement as received shall be separately stored in such a manner as to provide easy access for identification and inspection of each shipment. On small structures, storage in the open may be permitted by authorization, in which case a raised platform and ample waterproof covering shall be provided. Stored cement shall meet the test requirements at any time after storage when a retest is ordered.
2. Cement of different types, even if tested and approved, shall be stored separately and shall not be mixed.