

**OKLAHOMA DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISIONS
FOR
Cement Kiln Dust**

These Special Provisions revise, amend, and where in conflict, supersede applicable sections of the 1999 Standard Specifications for Highway Construction, English and Metric. Units of Measurement Are Provided in the Subsections in Both English and Metric Equivalents. The Units for this Project Will Be Those Specified in the Project Plans.

(Revise the Title as Follows:)

**SECTION 702
FLY ASH, GROUND GRANULATED
BLAST FURNACE SLAG, AND CEMENT KILN DUST**

(Revise the description as follows:)

Description. This section covers fly ash and cement kiln dust to be used to modify or stabilize soils and ground granulated blast furnace slag and fly ash to be used as an admixture for concrete.

(Add the following:)

702.03. CEMENT KILN DUST.

- (a) Definition.** Cement kiln dust is a by-product of the manufacture of Portland cement. This material is comprised of the fines gathered by dust collection systems during the cement manufacturing process. It is a very fine material with a particle size between 6 and 100 microns, specific gravity of approximately 2.75 and consisting of a particulate mixture of partially calcined and untreated raw feed, clinker dust, and fuel ash, enriched with alkali sulfates, halides and other volatiles.
- (b) Chemical Composition.** Cement kiln dust will be tested under the appropriate sections of ASTM C 25 and AASHTO T 105 to determine the total calcium oxide (CaO), the total alkalis ($K_2O + Na_2O$), the total sulfates (SO_3), and the loss on ignition. In addition the hydration modulus is calculated as $CaO / (Al_2O_3 + SiO_2 + Fe_2O_3)$.

<u>PROPERTY</u>	<u>LIMITS</u>
Total Calcium Oxide, %, minimum	35
Total Alkalies, %, maximum	10
Total Sulfates, %, maximum	10
Loss on Ignition, %, maximum	30
Hydration Modulus	2.0 to 2.6

- (c) **Acceptance.** The product of only one plant shall be used on the project, unless otherwise approved by the Engineer. The Contractor shall provide suitable means of storing and protecting the cement kiln dust against contamination and dampness. Cement kiln dust which has become partially set, contains lumps of caked cement kiln dust, or has been contaminated will be rejected. All methods of sampling and testing shall be in accordance with the above requirements except as modified by the Department's acceptance policy published as: "Procedure for Sampling, Testing and Acceptance of Cement Kiln Dust." Copies of the procedure are available at the office of the Materials Engineer.