# OKLAHOMA DEPARTMENT OF TRANSPORTATION
# SPECIAL PROVISION
# FOR
# CEMENTED TREATED BASE

These Special Provisions 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.

## 317.01 DESCRIPTION

This work consists of constructing a cement-treated base (CTB) using a soil, aggregate, and cement mixture.

## 317.02 MATERIALS

Provide materials in accordance with the following section or subsections:

| Material | Section or Subsection |
|---|---|
| Portland Cement | 701.02 |
| Water | 701.04 |
| Fly Ash | 702.01 |
| Curing Agents | 701.07(d) |

Provide a separator fabric that conforms to Section 712.05 with the following exceptions. Ensure the fabric meets the requirements of AASHTO M288, Class 1 and has a minimum weight of 15 oz/yd$^2$ (500 g/m$^2$).

Provide aggregates that comply with the requirements of Subsection 701.15, "Aggregates for Econocrete Base," with the following exceptions:

- Submit to the Resident Engineer a single-point gradation for the combined aggregates with a plus and minus tolerance for each sieve.
- The maximum aggregate size is 1½ in [38 mm].

## 317.03 EQUIPMENT

Use equipment for producing and placing the CTB in accordance with Subsection 301.03, “Equipment,” except, only use stationary plants and equipment that combines placement and initial compaction.

## 317.04 CONSTRUCTION METHODS

**A. Mix Design and Proportioning.** Submit the mix design to the Resident Engineer for approval before placing the CTB. Identify the following in the design:

(1) The source of each material,
(2) The proportion of each material,
(3) The properties of the mixture, and
(4) The compressive strength of the mix at 7 days.

Ensure cementitious materials consist of at least 75 percent portland cement, and no more than 25 percent fly ash.

Ensure a compressive strength for the mix design of at least 600 psi [4,150 kPa] and no more than 1,200 psi [8,300 kPa] at 7 days. Test the compressive strength in accordance with OHD L-53.

**B. Placement.** Before spreading the CTB, moisten the surface of the compacted subgrade unless the subgrade has been primed. Finish and compact the CTB to produce a smooth, dense surface that is free of surface compaction planes, cracks, ridges, or loose material.

Compact the CTB within 2 hr of adding water to the aggregate and cement. Follow the recommendations of the mix design. Compact the CTB to at least 95 percent of the standard density and test in accordance with OHD L-53. Place the CTB in a single layer. Ensure the compacted thickness is from 4 in [100 mm] to 6 in [150 mm]. After strike off and consolidation, finish the CTB to meet the required elevation, cross section, and smooth surface finish. Use equipment that automatically controls both grade and line to trim the surface of the CTB.

Keep the CTB surface moist during finishing operations and until the application of the curing agent. Apply a curing agent on the finished CTB surface at the rate of at least 1 gal per 150 ft² [4 L per 14 m²].

Use butt or sawed longitudinal construction joints; those between driving lanes shall match the longitudinal joint of overlying pavement. Place other longitudinal joints, outside the driving lanes, within 3 ft [1 m] of the longitudinal joint of the overlying pavement and construct transverse joints as butt joints. Before placing the overlying pavement, sweep the CTB surface. Place and secure the separator fabric onto the surface of the CTB in such a manner that the fabric remains free of wrinkles and cracks.

Limit construction traffic on the CTB to that necessary to apply the fabric, and overlying pavement. Do not use the CTB layer as a haul road. Allow only concrete delivery trucks necessary to deposite fresh concrete directly in front of the paver. Place overlying pavement on the base after compressive strengths reach at least 600 psi [4,150 kPa] in accordance with OHD L-53. Repair damage to the CTB at no additional cost to the Department.

**C. Weather Limitations.** If the aggregate or subgrade is frozen or the ambient air temperature in the shade is 40 °F [5 °C] and rising, do not mix CTB. Protect CTB from freezing for 7 days after placement.

**D. Tolerances.** Finish the CTB in accordance with Subsection 301.04.A, "Tolerances."

## 317.05 METHOD OF MEASUREMENT

The Resident Engineer will measure the surface area of the completed *Cement Treated Base* placed at the thickness shown on the Plans.

## 317.06 BASIS OF PAYMENT

The Department will pay for each pay item at the contract unit price per the specified pay unit as follows:

| | |
|---|---|
| Cement Treated Base | Square Yard [Square Meter] |

The Department will consider the cost of separator fabric to be included in the contract unit price for *Cement Treated Base*.