

RECLAIMED STABILIZED BASE, LIQUID CALCIUM CHLORIDE

**\*\*From Westfield-Jay-Troy STP 2903(1)**

- xx. DESCRIPTION. This work consists of incorporating liquid calcium chloride into a previously pulverized or constructed subbase material, and mixing the materials together to create a homogeneous calcium chloride stabilized base. This work also consists of compacting, shaping, finishing, and fine grading of the stabilized base to the grades and dimensions shown on the Plans.

The work under this Section shall be performed in accordance with these provisions, the Plans, and the appropriate provisions of Section 310 of the Standard Specifications.

- xx. MATERIALS. Liquid calcium chloride shall meet the following requirements:

Calcium Chloride	35% ±1%
Alkali Chloride as NaCl	2% max.
Magnesium as MgCl	0.1%

The calcium chloride solution shall be provided by the manufacturer as a true solution and shall not be reconstituted from flake calcium chloride. The calcium shall meet the following material specifications (see AASHTO M 144 (ASTM D 98)).

The typical concentration in pounds per gallon of calcium chloride solution shall meet the following requirements:

Calcium Chloride	5.050
Sodium Chloride	0.200
Magnesium Chloride	0.004
Calcium Sulfate	0.004
Water	6.002
Total	11.260

- xx. EQUIPMENT.

- (a) Liquid Injection and Mixing. A liquid injection and mixing unit shall be used to introduce the liquid calcium chloride solution into the pulverized material. The mixing unit shall contain a liquid distribution and mixing system which has been specifically manufactured for full-depth reclamation (FDR) with liquid calcium chloride injection type work, capable of mixing the pulverized material with an evenly metered distribution of liquid calcium chloride into a homogeneous mixture, to the depth and width required as shown on the Plans or as directed by the Engineer.

The reclaimer shall be capable of treating a minimum width of 84 inches in a single pass and shall have a full width spray bar consisting of a positive displacement pump interlocked to the machine speed so that the amount of liquid calcium chloride being added is automatically adjusted with changes in machine speed. The additive system shall be capable of incorporating up to 5.0 gal/yd<sup>2</sup>, with an allowable variation from any specified rates not to exceed 0.02 gal/yd<sup>2</sup>. Individual valves on the spray bar shall be capable of being turned off as necessary to minimize application overlap on subsequent passes. For the bulk blending process of liquid calcium chloride and the second pass reclaim layer, under no circumstances shall the liquid calcium chloride be spray applied on the road surface in front of the reclaimer.

- (b) Pressure Distributor. The distributor for surface application of the solution shall be capable of applying liquid calcium chloride in accurately measured quantities at any rate between 0.1 to 2.0 gal/yd<sup>2</sup> of roadway surface, at any length of spray bar up to 20 feet. The distributor shall be capable of maintaining a uniform rate of distribution of material regardless of change in grade, width, or direction of the road. The distributor shall be equipped with a Digital Volumetric Accumulator capable of measuring gallons applied and distance traveled. The volume and measuring device shall be equipped with a power unit for the pump so that application is by pressure, not gravity. The spray nozzles and pressure system shall provide a sufficient and uniform fan-shaped spray of material throughout the entire length of the spray bar at all times while operating, and shall be adjustable laterally and vertically. The spray shall completely cover the roadway surface receiving the treatment.

- xx. CONSTRUCTION REQUIREMENTS. The entire depth of existing pavement on the travel way shall be pulverized together with a predetermined depth of underlying gravel into a homogeneous mass per the provisions of Section 310. All pulverizing shall be performed with equipment in accordance with Section 310 that will provide a homogeneous mass of pulverized material, processed in-place. The existing road shall be reclaimed to the depth shown on the Plans; during this initial pass water may be added as necessary as per the provisions of Section 310.

Following completion of the first pass, new aggregate shall be added as necessary to achieve lines and grades indicated in the Plans, and compacted for final stabilization. A second pass of a reclaimer shall be completed per these provisions with injected liquid calcium chloride solution at a rate of 0.75 to 0.90 gal/yd<sup>2</sup>, with a reclaim depth as shown on the Plans. Following base compaction, shaping, and fine grading, and finish compaction/rolling, a final capping of 0.10 to 0.25 gal/yd<sup>2</sup> of liquid calcium chloride shall be applied with the pressure distributor to the finished surface. Total calcium chloride application rate from the combined processes shall be targeted at one (1) gal/yd<sup>2</sup>.

xx. METHOD OF MEASUREMENT. The quantity of Special Provision (Liquid Calcium Chloride for Base Stabilization) to be measured for payment will be the number of liters (gallons) of material in place in the complete and accepted work, as determined from the load tickets or other method as approved by the Engineer.

The quantity of Special Provision (Reclaimed Stabilized Base, Liquid Calcium Chloride) to be measured for payment will be the number of square meters (square yards) constructed to the depth specified, complete in place in the accepted work.

xx. BASIS OF PAYMENT. The accepted quantity of Special Provision (Liquid Calcium Chloride for Base Stabilization) will be paid for at the Contract unit price per liter (gallon). Payment will be full compensation for furnishing, blending, transporting, and testing the material specified and for furnishing all labor, tools, equipment, and incidentals necessary to complete the work.

Payment for the handling and placing of Liquid Calcium Chloride for Base Stabilization in the complete and accepted work will be made separately under Special Provision (Reclaimed Stabilized Base, Liquid Calcium Chloride).

The accepted quantity of Special Provision (Reclaimed Stabilized Base, Liquid Calcium Chloride) will be paid for at the Contract unit price per square meter (square yard). Payment will be full compensation for furnishing, handling, transporting, and placing the necessary materials; pulverizing and adding or removing moisture; shaping, placing, and compacting the designated materials; maintaining the finished base until it is paved over, and for furnishing all labor, tools, equipment, and incidentals necessary to complete the work.

Water used to adjust the moisture content prior to stabilization, for compacting the pulverized material, and for dust control after the reclamation will not be paid for directly, but will be considered incidental to the appropriate Reclaimed Stabilized Base item.

Payment for new aggregate for fine grading will be made separately under Contract item 301.28.

Payment for the first pass reclaim will be made separately under Contract item 310.20.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
900.625 Special Provision (Liquid Calcium Chloride for Base Stabilization)	Gallon
900.675 Special Provision (Reclaimed Stabilized Base, Liquid Calcium Chloride)	Square Yard