

State of Illinois
DEPARTMENT OF TRANSPORTATION
Bureau of Local Roads and Streets

SPECIAL PROVISION
FOR
CALCIUM CHLORIDE APPLIED

Effective: June 1, 1958
Revised: January 1, 2007

All references to Sections or Articles in this specification shall be construed to mean a specific Section or Article of the Standard Specifications for Road and Bridge Construction, adopted by the Department of Transportation.

Description. This work consists of furnishing and applying to aggregate base or surface courses, a solution of calcium chloride. The same type of solution shall be used throughout the work.

Materials. Materials shall meet the requirements of the following Articles of Section 1000 - Materials:

Item	Article/Section
(a) Water.....	1002
(b) Calcium Chloride - CaCl ₂ (Note 1)	1013.01

Note 1. The Engineer shall determine percent calcium chloride required. The Contractor shall provide the State with the appropriate mixing formula for Type S and water to achieve the required percentage. The Contractor shall supply the Type L at the percent calcium chloride specified.

Equipment. A tank truck or spreader unit assembly, equipped with spray bars and nozzles shall be used. A positive displacement pump driven from a power source or from the wheels of the spreader/unit assembly shall be used to develop sufficient pressure at the spray bar nozzles to insure uniform distribution of the solution at the specified application rate. Spray bars of various lengths shall be used so that the solution may be applied in widths varying from 1.2 to 7.2 meters (4 to 24 feet). The motor vehicle shall be capable of maintaining a constant speed during the time of application. The tank truck or spreader/unit assembly shall be equipped with a suitable device, visible to the driver, to accurately determine the rate at which the solution is applied. Suitable charts shall be furnished to enable correlation of the vehicle speed and rate of application.

When the tank truck is used to mix calcium chloride Type S with water, the pump and piping shall be so arranged that thorough mixing of the ingredients will be accomplished as rapidly as possible without excessive heating.

Certification. At the time of delivery, the supplier shall furnish the purchaser two copies of the delivery report that shall contain the following data:

- (a) The liters (gallons) at 25 °C (77 °F) and weight of solution delivered.
- (b) The specific gravity and temperature of the solution at the time of loading.
- (c) The percentage of calcium chloride in the solution.
- (d) The percentage of magnesium chloride and alkali chlorides contained in the solution

Sampling and Testing. The first truck load shipped of a contract will be sampled at its destination by the purchaser's personnel. Random check samples representing 10% of the contract quantity shall be taken of subsequent loads. The samples shall be packaged in an 1 quart plastic container and sent with the certification data sheet to the Bureau of Materials and Physical Research, 125 East Ash Street, Springfield, IL 62704, for testing.

CONSTRUCTION REQUIREMENTS

General. The rate of application per square meter (square yard) and the quantity shown in the contract is based on the amount of chloride to be applied. The actual application rate shall be the rate shown in the contract divided by the decimal equivalent of the percent chloride.

Application Rate. The rate of application shall be _____ kg per square meter (_____ pounds per square yard)

Note 2. The normal application rate is 0.68 kg per square meter (1.2 pounds per square yard). The specified application rate shall be between 0.45 to 0.84 kg per square meter (0.8 to 1.5 pounds per square yard).

Application of Calcium Chloride Solution. The solution shall be applied to the base or surface course through the spray bars in not more than two applications. The entire surface shall be covered uniformly without excessive transverse or longitudinal overlap. The solution may be applied to irregular-shaped areas by means approved by the Engineer.

Method of Measurement. Calcium chloride applied will be measured for payment by mass (weight) in metric tons (tons).

The quantity of calcium chloride for which payment will be made will be the total mass (weight) multiplied by the decimal equivalent of the percent of anhydrous chloride.

Basis of Payment. This work will be paid for at the contract unit price bid per metric ton (ton) for CALCIUM CHLORIDE APPLIED.