

MATERIALS DIVISION



MEMORANDUM

<b>GENERAL SUBJECT: Calcium Chloride Surface Treatment of Gravel Roads</b>	<b>NUMBER: MD 383-14</b>
<b>SPECIFIC SUBJECT: Addition of Section 309.07 to Materials MOI to Provide Guidance and Requirements for Application of Calcium Chloride to Aid in Stabilizing Gravel Roads</b>	<b>DATE: December 1, 2014</b>
<b>DIRECTED TO: District Materials Engineers</b>	<b>SIGNATURE:</b> <b>Charles A. Babish, PE</b> <i>Signature on original copy of memorandum</i>

*This Memorandum notifies the users of the Materials Division Manual of Instructions that a new Section 309.07 has been added that provides guidance and requirements for application of calcium chloride (CaCl<sub>2</sub>) to aid in stabilizing gravel roads.*

## **Add the following Section 309.07 to the MOI**

### **Sec. 309.07 Application of Calcium Chloride to Aid in Stabilizing Gravel Roads**

VDOT has found the application of calcium chloride (CaCl<sub>2</sub>) as a surface treatment for gravel roads to reduce costs and labor of maintaining gravel roads. This section provides guidance and requirements for ensuring quality application of CaCl<sub>2</sub> for this purpose.

There are two methods in which CaCl<sub>2</sub> can be used as a surface treatment. The first method is to add a CaCl<sub>2</sub> solution to the aggregate at the quarry, pugging the brine solution and aggregate and then stockpiling. The second method is to apply the brine solution to the gravel road, and lay down a gravel layer separately, either immediately before or after application of the salt. Whichever method is used, the aggregate-brine mixture should then be compacted and graded into the existing gravel road. The work may be done by VDOT forces or by Contractor; brine-aggregate material may be purchased from quarries, or brine may be purchased from vendors and aggregate from quarries separately.

Regardless of the method used, VDOT requires 2.2 gallons of 32% liquid (Type L) CaCl<sub>2</sub> by weight per ton of aggregate. The aggregate used may be 21B, 21A, or crusher run aggregate No. 25 or No. 26. In order to ensure this, the Contractor, quarry, or vendor from which VDOT purchases the material shall provide certification for acceptance; certification shall include purity of CaCl<sub>2</sub> solution, quantities of CaCl<sub>2</sub> used, and quantities of aggregate treated. VDOT reserves the right to sample and test treated aggregate per VTM-133 or to test brine by the Materials Division Chemistry Section at Contractor's or Producer's expense to verify material properties. Rain may wash the brine out of treated aggregate stockpiles after several months unless covered.

Application and working of the material on the road surface is normally done under the supervision of the VDOT Residency. FHWA in cooperation with the South Dakota Local Transportation Assistance Program has produced a resource entitled "Gravel Roads Maintenance and Design Manual", November 2000, that provides guidance on application of stabilizers to gravel roads. The following is a link to the document online:

[http://water.epa.gov/polwaste/nps/gravelroads\\_index.cfm](http://water.epa.gov/polwaste/nps/gravelroads_index.cfm)

cc:	Deputy Chief Engineer	Virginia Center for Transportation Innovation and Research
	Division Administrators	Virginia Ready-Mixed Concrete Association
	District Administrators	Precast Concrete Association of Virginia
	District Location & Design Engineers	Virginia Transportation Construction Alliance
	District Construction Engineers	Federal Highway Administration
	District Maintenance Engineers	American Concrete Paving Association
	District Bridge Engineers	NE Chapter, Southern Region
	District Traffic Engineers	Old Dominion Highway Contractors Association
	Virginia Asphalt Association	