

Reclamation (frost protection)...
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moisture from the air. This means CaCl_2 will deliver moisture where it is most needed -- in the subgrade and on the surface of the road.

- CaCl_2 lowers the freezing point of water in roads so effectively that it greatly reduces frost heaving. Even at concentrations of one percent by dry weight, CaCl_2 in soil kept at 0°F for 21 days reduced frost heaving by over 60 percent.

Listing of Relevant Studies

Gow, Davidson & Sheeler, Highway Research Board, National Research Board Bulletin 282, February, 1961.

M.K. Reckard, *Economic Aspects of High Speed Gravel Roads*, State of Alaska Department of Transportation, Report No. FHWA-AK-RD-83-20, 1983.

F.O. Slate, *Use of Calcium Chloride in Subgrade Soils for Frost Prevention*, Purdue University, 1941.

Trow Ltd., *Calcium Chloride Use for Gravel Road Stabilization and Strengthening*, Foss Road Trial, Pelham Ontario, 1985.

Emery, J., *Evaluation of Calcium Chloride Base Stabilization Trials*, Town of Pelham, Ontario 1986.

Gill, M. and R. Jenkins, *Full Depth Reclamation/Stabalization Techniques with Calcium Chloride*, RTAC Conference, 1990.

For more information on reclamation or the use of calcium chloride please call the Technology Transfer center at 800-423-0060 or 603-862-2826. ■

Corrosion

Plastic Flamecoating, a new corrosive resistant product, is now being tested in New England

Road agents and public works directors have expressed concern about the use of calcium chloride because of its corrosive properties.

Corrosion, however, is not a problem unique to calcium chloride. Sodium chloride, common New Hampshire road salt, is also a major source of corrosion.

Metal corrosion occurs when negatively charged chloride ions meet with metal in the presence of oxygen.

Oxidation takes place and the metal gradually breaks down. Negatively charged chloride ions are formed when salt comes in contact

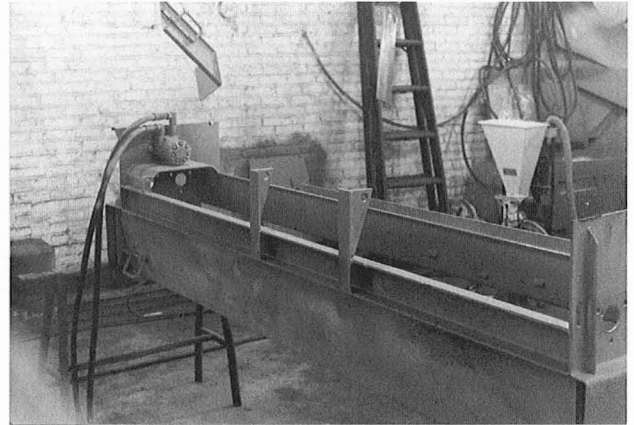
with water. It is suspected that calcium chloride tends to cause more corrosion than sodium chloride because of its hygroscopic property. This means that calcium chloride will attract moisture from the air even at fairly low levels of humidity. Furthermore, liquid calcium chloride is, by definition, already in solution. Thus calcium chloride is often in contact with water, oxygen, and your equipment all at the same time. A prime combination for corrosion.

The corrosion problem in your hoppers and on your trucks is similar to the corrosion you've run across in an old flashlight. But flashlights are easier and less expensive to replace. In the U.S. alone, \$7 billion is spent annually to fight the inevitable corrosion of metals. Public agencies, whose equipment is subjected to an extremely corrosive environment, are often forced to scrap otherwise mechanically sound pieces of equipment.

As equipment budgets shrink, it has become necessary to extend equipment

life to the limit. One solution to the corrosion problem is to put a protective coating on the metal.

A new coating technology, Plastic Flamecoat, is now being used by public agencies nationwide to address this issue. In New England, Dan Bennett, Director of Equipment Maintenance, City of Burlington, VT, has Plastic Flamecoated one of his newly ordered road salt auger-



Above: A tailgate spreader is undergoing Plastic Flamecoating, a thermoplastic powder-coating system designed to resist corrosion and abrasion

boxes. Dan is testing this coating system on the auger-box, as it is traditionally the most corrosion prone piece of equipment in his fleet. If successful, Plastic Flamecoat will be specified on critical areas of his new equipment (e.g. snow plows, dump beds, sweepers, vac trucks, lawn equipment, salt-hoppers, etc.). We understand that the NHDOT is also testing this new coating. These test applications will be tracked throughout the winter. The results will be published in a future *Road Business* for your benefit.

The Plastic Flamecoat being tested and discussed above is manufactured by DuPont. It is a thermoplastic powder-coating system. It is designed to be corrosion, chemical, and abrasion resistant. For more information contact Dan Bennett, City of Burlington, VT, (802)864-0166 or Patrick McDonnell, Righter Corporation, Woburn, MA, (617)938-7124. ■