



ROAD BUSINESS

A newsletter for municipal employees, public and private road-related organizations, and citizens.

On the Road in NH:



Subgrade Stabilization Using Portland Cement in Deerfield

By Chris Bourque, UNH T² Project Assistant & UNH Civil Engineering Student

Special thanks to Alex Cote, Deerfield Road Agent, for providing this information.

The Town of Deerfield has been experimenting with a new technology for road reclamation. This involves mixing portland cement with subgrade materials to obtain a stronger and more stable road base. This process is called full-depth reclamation with cement stabilization (FDRC).

Alex Cote, Deerfield Road Agent, knew of other towns using the technology and researched it for himself. He found the cost of stabilizing the reclaimed subgrade with cement to be comparable to the cost of standard full-depth reclamation (FDR).

Reclaiming involves using a pavement reclaimer (such as an Asphalt Zipper, Caterpillar RR-250, or Roadtec SX-7) to pulverize the existing pavement and base. This pulverized material is graded and compacted to be used as the subgrade for new pavement. A percentage by weight (usually 3 to 5 percent) of portland cement is spread over the reclaimed material in FDRC. The material is then roller compacted, watered, and shaped with a grader.

Advances have been made to improve the efficiency and quality of cement spreading. Rather than using a blower to distribute the cement, a hydraulic system was used in Deerfield to easily distribute the cement evenly.

Alex reports his crew has used FDRC on over four road miles, including Ridge Road and portions of Mt. Delight Road and Middle Road. He is impressed with the final product and intends to continue using it in future projects.

Though the cost of cement is fairly high, Alex says the cost is recovered with the time saved by using FDRC. The process was very quick for his projects, and he says the reduced time saved money on labor, machinery rentals, and traffic control.

It is too early for Alex to see the extension of pavement life for this project. However, he has noticed that the roads do not require a wearing course as quickly as other roads. Generally, a wearing course is applied about one year after paving a base course. It has been two years since Mt. Delight Road was reclaimed and Alex says that it still does not need a wearing course, despite drainage issues and troublesome clay soils.

For more information, contact Alex Cote, Deerfield Road Agent, 603-463-7736 or dflroads@townofdeerfieldnh.com.

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