

HR-290 Ice Retardant Pavement

Key Words: Ice, Verglimit, Winter maintenance

ABSTRACT

During 1986, the City of Des Moines placed on experimental asphaltic concrete overlay containing an ice retardant additive (Verglimit) on Euclid Avenue (U.S. Highway 6). Verglimit is a chemical multi-component deicer which is added to the surface course of an asphalt overlay. The additive was uniformly distributed through the mix at the asphalt plant which allows exposure of the particles as the finished surface wears under traffic. During a snowfall, the exposed particles attract and absorb moisture creating a deicing solution which dampens the pavement.

The Verglimit additive used on this project cost \$1,180 per metric ton. The Verglimit was added at a rate of 6.3 percent by weight, which was 126 pounds per ton, or \$66.38 per ton of hot mix asphalt. The purchase of Verglimit additive was funded by the Iowa Department of Transportation through a research project recommended by the Highway Research Advisory Board.

The pavement surface experienced severe wetting due to the additive's affinity for water immediately after the project was completed and during periods of high humidity. This wetting created slippery conditions both on the project itself and where vehicles tracked the additive. The only way to remove the slipperiness was by flushing the street with water.

The ice retardant overlay appears to perform as expected in reducing the adherence of ice and snow, especially at temperatures just below freezing. It performs better in light snowfalls than in heavy ones. The ice retardant overlay is effective in eliminating thin coatings of ice due to freezing drizzle or widespread frost. The accident data showed a reduction in the number of snow and ice related accidents but due to the low number of this type of accident the results are inconclusive.