

SEMI-ANNUAL EVALUATION REPORT

**FIBER-REINFORCED POLYMER
(FRP) PULTRUDED DECKING MATERIAL AND HELICAL ANCHORING SYSTEM FOR
USE IN SNOW FENCE APPLICATIONS**

Location: Livingston, Montana - Park County

Project No.: IM90-7(63)33, Interstate 90, MP-332

FHWA No.: MT 00-01

Description: Ninth semi-annual analysis of remaining test section of snow fence using proprietary EZ-Deck Fiber-Reinforced Polymer (FRP).

Evaluation Date: February 2004

Date Constructed: November 1999

Report Origin: Craig Abernathy
Experimental Project Manager

The goal of this study is to evaluate the feasibility of using a fiber-reinforced polymer (FRP) material in the construction of snow fences. FRP is a process where continuous glass-fiber strands are pulled through a thermosetting polyester resin (or matrix) to form a composite. The main purpose of testing the FRP product is to determine its structural integrity based on MDT's current snow fence design specifications, especially with the harsh climate these structures are subjected to in the

state of Montana. In addition, this experiment was to compare a new design as submitted by the contractor. The modified design deleted the interior rear supports (Test Section 1 [TS1] vs. Test Section 2 [TS2]), as explained in the November 1999 construction report (document address located at the end of this report). As noted in the May 2001 report, TS2 was found collapsed, which was assumed a structural-related failure due to the three rear (sole) supports buckling or snapping in high winds.



The final purpose was to test the Helical Anchoring System as a reliable ground attachment for snow fences (used only in TS2). As stated earlier, section TS2 was found collapsed, the helical anchors were not affected by this failure. In addition, the anchor supports competently held the FRP braces on the ground preventing FRP sections from becoming missiles that may have caused a safety concern to the nearby interstate. (refer to May, 2001 report).



Site visits are held in late winter or early spring and late fall to document the environmental effects of seasonal extremes to the FRP material as well as stability of design. Figure 1 shows the remaining fence TS1, as seen on February 11.

Evaluation

The evaluation consisted of a visual inspection of the FRP material, structural supports and ground attachments. Special attention was given to the hardware of the FRP planks, (setting screws, bolts, FRP clips).

No additional deterioration of the attachment hardware and planking material was observed since the last inspection. No deflection of supports have been noticed. TS1 is rated as performing well. February 2005 is the next scheduled evaluation. This will be the project's final report.

To view this and other snow fence reports, visit the Research experimental website at;
http://www.mdt.state.mt.us/research/projects/livingston_snowfence.shtml