

**SEMI-ANNUAL EVALUATION REPORT**

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

Location: Livingston, Montana. Interstate 90, MP-332, Park County

Project No.: IM90-7(63)331

FHWA No.: Experimental Project MT 00-01

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

Evaluation Date: October 3, 2003

Date Constructed: November 1999

Report Origin: Craig Abernathy  
Experimental Project Coordinator

**Objective**



Figure 1

The purpose 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, to compare this material in determining its design function as a possible alternative for MDT's current design specifications for the construction of snow fences (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 is 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 becoming missiles that may have caused a safety concern to the nearby interstate. (refer to May, 2001 report).

Inspections 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 TS1 as seen on October 3, 2003.

### **Evaluation**



The evaluation consisted of a visual inspection of the FRP material and the structural supports. Special attention was given to the attachments 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. The TS1 has been rated as performing well. The next evaluation will be conducted in March 2004.

To view this and other snow fence reports, visit the Research experimental website at;  
[http://mdtinfo/research/projects/livingston\\_snowfence.shtml](http://mdtinfo/research/projects/livingston_snowfence.shtml)

Specific reports mentioned in this evaluation:

November 1999 Construction Report  
[http://mdtinfo/research/docs/eps/livingston/livingston\\_constrpt.pdf](http://mdtinfo/research/docs/eps/livingston/livingston_constrpt.pdf)

May 2001 Evaluation  
[http://mdtinfo/research/docs/eps/livingston/livingston\\_may01.pdf](http://mdtinfo/research/docs/eps/livingston/livingston_may01.pdf)