Reviewed by:
R.F. Cauley, P.E.
Materials & Research Engineer

Prepared by:
P.L. Carter
Date: Nov. 19, 1996

RESEARCH UPDATE U 96-27

TYFO S FIBERWRAP

REFERENCES:

Report WP 94-R-7

INTRODUCTION:

Bridge #60 in Williston underwent rehabilitation in June, 1994 to repair damage from salt intrusion in the columns and piers. Rather than employ a standard concrete encasement, TYFO S Fiberwrap was applied to the columns of pier #1 of bridge #60. If successful, the fiberwrap process could prove to be a cost efficient alternative to rehabilitation through concrete encasement.

PRODUCT DESCRIPTION:

The TYFO S Fiberwrap system employs a fiberglass fabric impregnated with a two part epoxy resin. The fabric is wrapped with tension rollers around a concrete structure and then painted. The distributor, R.J. Watson, Inc., claims that the resulting column wrap is resistant to salt, soil, and UV radiation and offers increased shear and flexural strength.

EVALUATION:

All five piers of Bridge #60 were inspected by Research and Development personnel on November 7, 1996, approximately 2 years and 5 months after the product was applied. The three columns of pier #1 were examined and found to be in excellent condition. The fiberwrap material shows no signs of cracking, bulging, or discoloration. Similarly, the gray paint covering the product was in surprisingly good shape in spite of weathering two winters of salt spray from high speed traffic. Although it is not certain if the product has increased the structural integrity of the column, it is clear from the condition of the material that further contamination from chloride has been greatly reduced, if not totally abated.

Additionally, the TYFO S Fiberwrap is a very aesthetic repair material compared to the concrete patch on the adjoining columns. The columns of piers #2 and #3 have highly visible shrinkage cracking and discoloration, while the TYFO S Fiberwrap is noticeably more solid in appearance to the traveling public.

FOLLOW UP:

The long term durability of TYFO S Fiberwrap will continue to be evaluated through periodic inspections.

PIER #1, BRIDGE No. 60, INTERSTATE 89
TYFO S FIBERWRAP
November 7, 1996