

ABSTRACT

Federal Highway Administration, Region 15, Demonstration Projects Team has performed a number of demonstration projects to promote the rehabilitation of bridge deck concrete by rebonding delaminations with injected epoxy thereby extending the service life.

The Iowa project, subject of this report, is a 150' x 20' high truss bridge on Iowa route No. 210 over Indian Creek near Maxwell in Story County (Service level D, AADT-730, Inventory Rating HS-16.9, Operating Rating HS-25).

The objective of this study was to evaluate the effectiveness of repairing a delaminated bridge deck by epoxy injection, specifically a bridge deck with a delaminated portland cement concrete overlay.

Observations noted during this project lead to the following conclusions:

The delaminations rebonded with epoxy have remained solid through five years. The percentage of delamination has stayed essentially the same for both the epoxy injected and non-repaired areas.

Epoxy injection appears to be a practical, cost effective alternative to other forms of deck rehabilitation when undertaken at the proper time. Cost effectiveness would reduce dramatically if delayed until breakouts have occurred. On the other hand it would be a slow, labor intensive process if undertaken too early when delaminations are small.