

TECHNICAL REPORT TITLE PAGE

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Galvanized Bridge Deck Reinforcing	Final Report, 10-66 to 7-92
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8. ABSTRACT	
<p>The deterioration of bridge decks due to steel corrosion is a problem encountered several years ago. This project, using galvanized reinforcement, began over twenty years ago. Since that time, epoxy coated reinforcement has become the specified material used in bridge decks.</p> <p>The decks researched in this project are located on I-35 in Story County. They were constructed in 1967.</p> <p>The results from the testing done on this project show that galvanizing protects steel from corrosion due to deicing salts, resulting in less/no concrete deterioration.</p>	
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DISCUSSION OF RESULTS

The results of the tests performed on these bridge decks showed that galvanized reinforcement showed little evidence of corrosion. There was no direct correlation of concrete deterioration related to corrosion of embedded steel reinforcement. It is also possible that any corrosion that did occur could have occurred before or immediately after placement of concrete.

SUMMARY

Based on some researchers' findings in the past, it is believed that galvanized steel develops sacrificial expansion products resulting in concrete deterioration. This has not proven true in this instance. Recent research has not uncovered any significant long term problems with galvanized reinforcement. Galvanized steel was at a disadvantage at first because both mats had to be galvanized, while with epoxy, only the top layer of steel was required to be coated. Approximately 4 years ago epoxy coated steel was also required on both layers because of transverse cracking which allows deicing salt brine to reach the bottom layer. From this and other studies that have been completed, it appears galvanized reinforcement has proven to be an effective method of preventing corrosion in bridge decks.

CONCLUSIONS

1. Galvanized reinforcement on this bridge provided satisfactory resistance to corrosion with a 2 1/2" or greater cover.

2. The galvanized reinforcement caused no problems on this bridge deck.

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