Florida Department of Transportation Research

Steel Bridge Coating and Recoating Warranty Requirements

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Project Number
BED02

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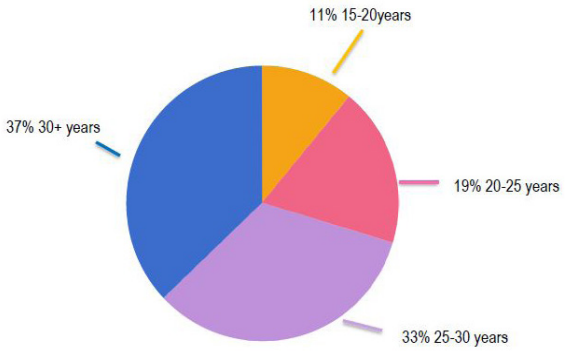
Current Situation

The Florida Department of Transportation (FDOT) has faced challenges with the service life of steel bridge coatings, which sometimes fall short of the expected durability. This results in increased maintenance costs and the need for more frequent repainting. The project aimed to evaluate the potential benefits of warranty terms included in painting contracts to ensure higher-quality steel coatings, longer maintenance intervals, and cost savings. While warranties for bridge coatings are rarely used in Florida, other states have seen success with them, but enforcement of such warranties remains a concern.



In a survey for this project, representatives from 26 different agencies were asked how long does their steel bridge coating typically last until removal and replacement. This figure represents their responses.

Research Objectives

The main objective of this research was to assess the value of incorporating warranty provisions into bridge painting contracts to improve the performance and durability of steel coatings.

The project aimed to investigate current warranty practices for bridge coatings; develop performance measures that can be included in coating warranties; create contract language for a steel protective coating warranty; and design an implementation plan to demonstrate the feasibility and benefits of warranties for steel bridge coatings.

Project Activities

The research began with a national survey of bridge owners to understand how warranty contracts are currently used and to identify best practices. The survey results showed that warranties are infrequently applied, but agencies that use them reported benefits in terms of ensuring high-quality work and contractor accountability. The team also conducted a survey of Florida bridges, analyzing coating condition data collected during FDOT's bridge assessments. Field inspections of 35 bridges across multiple Florida districts were performed to evaluate coating conditions, corrosion, color retention, and delamination.

The team recommended performance measures for warranty criteria, such as acceptable corrosion levels, color consistency, and delamination thresholds. Additionally, the team developed draft contract language for a "Value-Added Steel Protective Coating" warranty and proposed a phased implementation plan. This plan included finalizing specification language, conducting pilot projects, monitoring coating performance, and performing cost-benefit analyses.

Project Conclusions and Benefits

Warranty contracts for bridge coatings can incentivize higher-quality work and extend maintenance intervals, leading to cost savings for FDOT. Performance measures for coatings, including corrosion, color consistency, and delamination, can be effectively used in warranty language. Implementing a warranty system with clear specifications will improve contractor accountability and reduce the frequency of repainting.

The proposed implementation plan, which includes pilot projects and ongoing coating condition monitoring, will help FDOT assess the long-term benefits and refine the warranty provisions. By adopting warranties, FDOT can enhance the durability and performance of steel bridge coatings, ultimately reducing maintenance costs and improving the service life of bridge coatings in Florida.

For more information, please see fdot.gov/research.