ARDOT TRC TRANSPORTATION RESEARCH COMMITTEE

Problem Statement No. 2

Research Problem Statement

Date: 10/15/2021	**Project Area:** Design

Title: Evaluate the Potential for Using MMFX Rebar for Bridge Design

Problem Statement:

State DOTs are pressured to increase bridge service life while minimizing life cycle costs. One way to attain this goal is through using new and improved materials. MMFX microcomposite steel is a proprietary material made by MMFX Steel Corporation of America. MMFX is an uncoated, corrosion-resistant, high strength reinforcing steel used for bridge deck reinforcement. The steel has a yield strength up to 100 ksi. The high strength material results in requiring less steel material with corresponding less labor cost. The proposed study will evaluate the potential for using MMFX steel at ARDOT bridges.

Potential Solution to Problem:

The investigator will :
evaluate corrosion behavior properties of MMFX steel;
determine changes in design details for MMFX steel to be ARDOT adopted; and
compare life-cycle cost between carbon steel, epoxy coated reinforcing steel, and MMFX reinforcing steel. The potential for using MMFX steel for bridge design will be determined by: analyzing current research through a literature review,material testing, and an ARDOT bridge deck installation using MMFX steel. Life -cycle cost will be used as the metric to decide on the benefits of using MMFX rebar for ARDOT bridge design.
Installation labor cost per unit weight of MMFX steel is similar to epoxy coated rebar. Initial capital cost difference is in the material cost.

Estimated Project Duration: 24 **Months**

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Standing Subcommittee Ranking	Advisory Council Ranking	Statement Combined with Statement Number(s)
1/2	1/14	