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Accurate Prediction of Service Life of Concrete Bridge Decks and Pavements Due to Chloride Induced Corrosion

Chloride induced corrosion is one of the major durability problems in concrete bridges and pavements in the USA. Each year \$90 billion dollar are spent by Federal Government for rehabilitation and retrofit of reinforced concrete bridges and pavements due to corrosion. Currently, one third of US bridges are functionally deficient and they are in dire need of major repair and maintenance. My research will evaluate accurate prediction of service life of concrete bridge decks and pavements, which involves two parts: One is corrosion initiation time and other one is corrosion propagation time using experimental data of diffusion coefficients and electrical resistivity of concrete. These experiments have been already conducted in my infrastructure laboratory for last one and half years and now the research results for diffusion coefficients and electrical resistivity of several high performance concrete mixtures can be implemented in the model for reliable prediction of service life of concrete bridge deck slabs and pavements.