

Rehabilitation of the Cairo Ohio River Bridge

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The Kentucky Transportation Cabinet recently completed a rehabilitation project of the Cairo Ohio River Bridge that spans between Ballard County, Kentucky and Alexander County, Illinois. The project plans were completed by Palmer Engineering Co. with coordination with the KYTC. This project included the repair of the bridge joints, removal of the existing bridge deck using both mechanical milling and hydrodemolition, and a new latex modified concrete overlay. Rehabilitation of the existing bridge deck is the most cost-effective way to extend the overall lifespan of the bridge.

This bridge is 5,866 feet in length, totaling approximately 14,665 square yards of area to be repaired. Due to the large size of the project, it was important to use experienced contractors and subcontractors with a long track record of success, to ensure the high quality construction of a strong, long-lasting bond of the new overlay surface. Intech was chosen as the prime contractor for the project. Intech then chose Modified Concrete Suppliers to supply the latex modified concrete overlay, and Hydro-Technologies to complete the hydrodemolition surface preparation.

It is the combination of these technologies that provides an excellent rehabilitation product. Hydrodemolition surface preparation is able to clean and roughen the deck, while simultaneously selectively removing any corrosion damaged concrete. This leaves the bridge surface in the perfect condition for the latex modified concrete overlay. This overlay material is highly bondable to the existing surface, highly resistant to wearing over the years, and the properties of the latex modified

concrete provide a waterproof barrier that protects the underlying bridge.



One of the difficulties for this project was the bridge is quite narrow. The structure is only two lanes in width, and one lane was required to be open to traffic throughout the construction schedule. This meant that the work was being completed in very close proximity to the traveling public. Again, this is where the importance of the experience of the contractor and subcontractors comes into play. Proper shielding was maintained throughout the hydrodemolition operation to ensure that no flying debris damaged adjacent vehicles.

In the end, this project proved to be a successful operation for all involved. The use of hydrodemolition with a latex modified concrete overlay will provide a high quality and long-lasting wearing surface of the bridge, that will increase the lifespan of the bridge deck over 25+ years.