

Construction & Building Materials

Solutions for the Concrete Industry



RJ Lee Group is a unique, full-service laboratory with consulting scientists experienced in petrographic, chemical, and physical testing. Our materials experts specialize in the scientific determination of the root cause of degraded performance, the evaluation and testing of construction materials, and durability modeling to predict service life. From roads to bridges, pipes to buildings, we utilize standard methods and both optical and modern scanning electron microscopy techniques to rapidly uncover root cause of failure with standard ASTM, AASHTO, FHWA, DOT, BS EN, and CSA Methods.

Industrial Forensics Approach

- » **Investigate:** Root cause of degraded performance, deterioration, or structural failure
- » **Support:** Defining structural condition assessments of reinforced concrete structures
- » **Maintain:** Evaluate and qualify raw materials, and provide QA throughout the lifecycle

Case Study

INDUSTRY: Construction Materials

An east coast government agency was concerned about the structural integrity of a viaduct on a main north-south highway that handled approximately 75,000 vehicles a day. The agency had hired a civil engineering construction firm to oversee repairs but had contacted RJ Lee Group to provide information on the current state of the concrete, failure analysis, and an estimation of service life. The prospect of dealing with a structure this large in multiple environments was intimidating but our experts took up the challenge and completed the project, generating a comprehensive report in just two months.

Analysis of the concrete cores determined that the viaduct deck and pier concrete was affected by the ASR. Results demonstrated the benefit of covers and protection systems for concrete exposed to harsh environments providing much needed data to the engineering firm tasked with generating and overseeing repairs.

Petrographic Examination

- » Air Content
- » Water-to-Cement Ratio
- » Corrosion Analysis
- » Raw Materials Testing



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DELIVERING SCIENTIFIC RESOLUTION