Infrasense Non-Destructively Evaluates Condition of Bridge in Virginia Beach, Virginia with Infrared Thermography and Ground Penetrating Radar

Infrasense conducted a multi-faceted non-destructive survey and report for a bridge deck in Virginia Beach, Virginia. The report provided the client with a comprehensive set of condition results with no disruption to traffic or physical damage to the structure.

VIRGINIA BEACH, Va. (PRWEB) November 19, 2018 -- Infrasense completed a vehicle-based inspection of a bridge deck in Virginia Beach, Virginia. The methods of testing included Ground Penetrating Radar (GPR), Infrared Thermography (IR) and High-Resolution Imaging (HRI). Testing was performed in August and September, with the goal of mapping rebar depth and quantifying areas of concrete deterioration, rebar-level delamination, spalling, and patching.

The GPR data was collected using a 1-GHz horn antenna vehicle-based system, manufactured by GSSI in the United States. The survey was carried out according to ASTM D 6087-08. The vehicle was driven across the bridge deck in a series of lines spaced at a maximum of 3 feet transversely. The survey included 15 lines of data; each representing a cross sectional slice of the deck. The DMI distance data is continuously recorded into each GPR record, so that each GPR data scan has an associated distance. The analyzed GPR data is presented in the form of contour plots with potential areas of deteriorated concrete identified by a threshold.

The Infrared and visual data were collected simultaneously at mid-day when the heat differentials in the deck are peak. Similar to the GPR survey, IR was collected by driving over the structure in a series of passes; one for each lane and shoulder. The resulting datasets are perspective corrected and stitched together to produce IR and visual plan-views of the entire deck. IR and HRI data were also reviewed simultaneously, so that when analyzed, heat signatures from subsurface defects can be differentiated from surface features such as discoloration, oil stains, sand, rust deposits, and debris. The result of the analysis was a digital plan view rendering of the bridge where all observed delaminations, spalls, and patching were transposed over the GPR results showing areas of concrete deterioration. This gives the client a comprehensive picture of the condition of the structure that allows for planning future maintenance and rehabilitation efforts.

About Infrasense, Inc.
Since 1987, Infrasense, Inc. has applied advanced technologies to address the most difficult challenges in subsurface scanning. Infrasense's engineers nondestructively extract critical information from a diverse range of structures. In addition to providing ongoing subsurface evaluation services to clients across the country, the firm has also conducted numerous research programs to advance the field of subsurface detection and nondestructive evaluation. To learn more about Infrasense and the services we provide, visit our website: http://www.infrasense.com
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