

RENEWWRAP®

Systems Repair & Strengthen Hospital Parking Facility



STRUCTURAL STRENGTHENING

PROJECT OVERVIEW

When the parking deck of a busy Kentucky hospital was found to have cracks appearing in its slabs and columns the facility's owners called on design engineers SSE Inc to develop a plan to mitigate the problem. They in turn called on Shield Systems, Inc., a manufacturer's representative of GeoTree, who had access to a range of partners that could lend their expertise to help create a comprehensive strategy to attack the issue.

SOLUTION

GeoTree was immediately brought into the discussion due to the broad array of strengthening systems along with world class structural engineering support. Following a review and consultation with GeoTree to cover the various restoration options available for each defect, a decision was made to develop a design based upon the RenewWrap Systems offered. First, RenewWrap NSM CFRP bars were designed to be embedded on top of the deck slab while a RenewWrap ESR CFRP system was selected to strengthen the slabs from underneath.

After an open bid process GeoTree worked closely with the awarded contractor, Concrete Strategies, to ensure materials and support were available in the desired construction timeline. Facing multiple scheduling challenges due to the impact of Covid-19 and the desire to minimize impact to the parking facility and its front-line workers, the rehabilitation started on time during the summer of 2020. During the installation, Shield Systems and GeoTree provided field support to ensure both the contractor and the client were comfortable with the process and outcome.

As a result of the cooperation and communication among all parties involved, the project was completed on time and within budget. The engineer was impressed with the physical properties of the RenewWrap products and the capability to design a solution that could be quickly implemented by the contractor.

CASE STUDY:

Our Lady of Bellefonte
Hospital, Ashland, KY

PROJECT DETAILS

Location: Ashland, KY

Application: Strengthening of post-tensioned concrete slabs

Client: Our Lady of Bellefonte Hospital

Product Used: RenewWrap NSM CFRP Bars / RenewWrap ESR CFRP system

Design Engineer: SSE Inc. - St Louis, MO

Contractor: Concrete Strategies, Inc.

Field Support: Shield Systems, Inc. / GeoTree Solutions

Installation: July 2020



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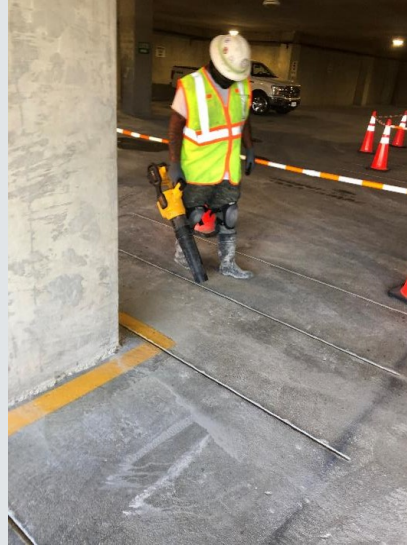
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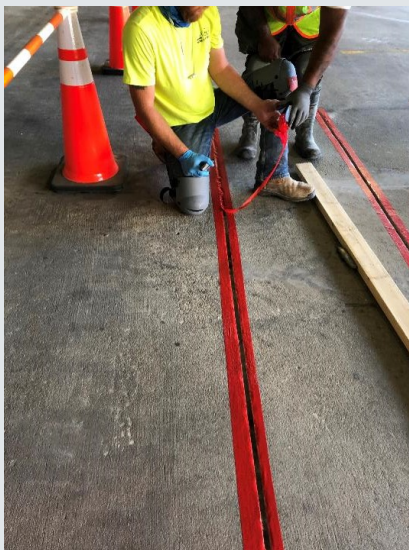
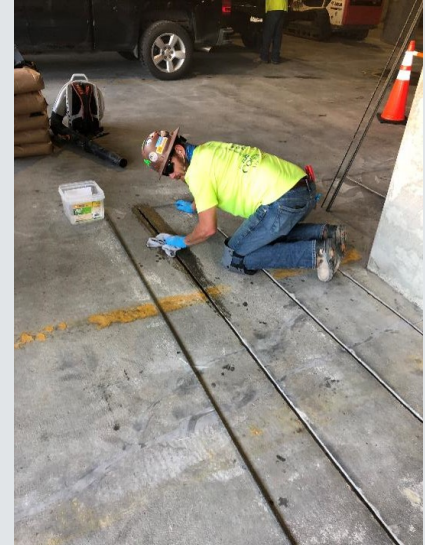
INSTALLATION OF RENEWWRAP NSM CFRP BARS



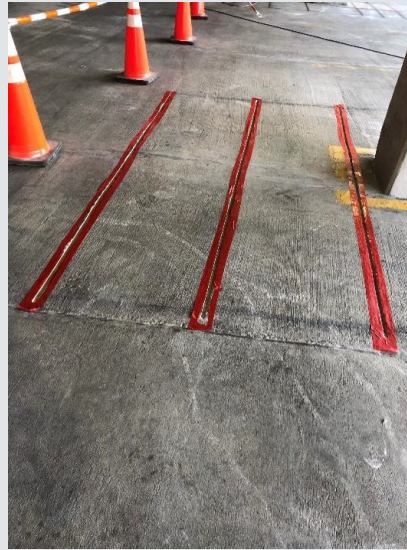
1. Saw cuts were made along columns in preparation for the NSM CFRP bars.



2. Cleaning out channels; blowing out dust and solvent wiping.



3. Cuts taped off and ready for NSM CFRP bar installation.



4. O rings applied to 3/8" NSM CFRP bars to provide proper placement into the cut.

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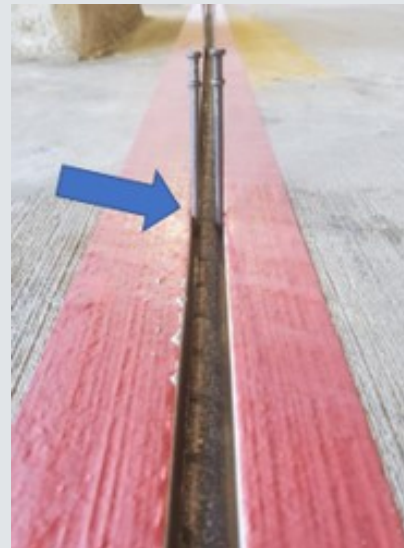
CASE STUDY:

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INSTALLATION OF RENEWWRAP NSM CFRP BARS CONTINUED



5. RenewWrap NSM Gel was placed into the cut prior to CFRP bar placement.



6. RenewWrap NSM CFRP #3 bar placed into cut. Nails were used to stabilize the rod during initial set of NSM gel. This assured 100% encapsulation of the rod with the gel.

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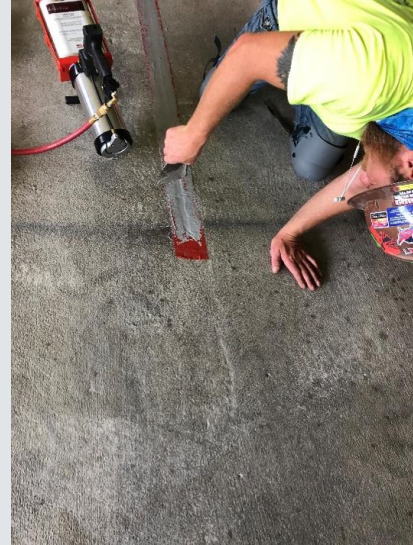
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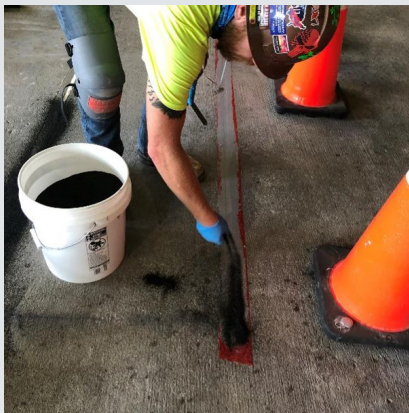
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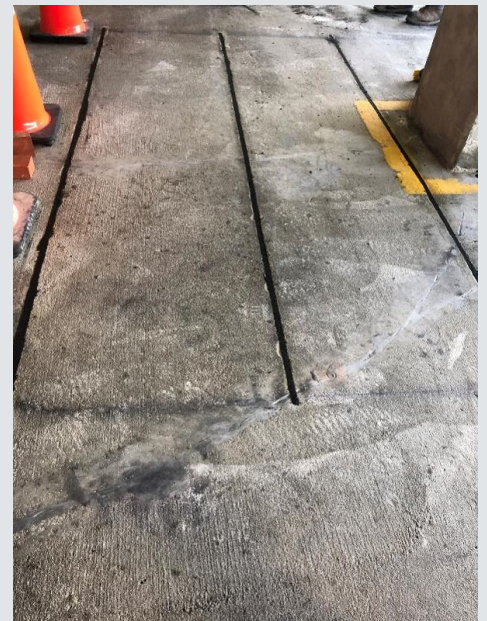
INSTALLATION OF RENEWWRAP NSM CFRP BARS CONTINUED



7. RenewWrap NSM Gel applied over inserted rod and tooled flush with substrate.



8. Aggregate was broadcast onto wet gel, and then excess was removed after cure of sealant. This step was an option selected to enhance adhesion of traffic coating to follow.



9. Completed installation of RenewWrap NSM CFRP bars.

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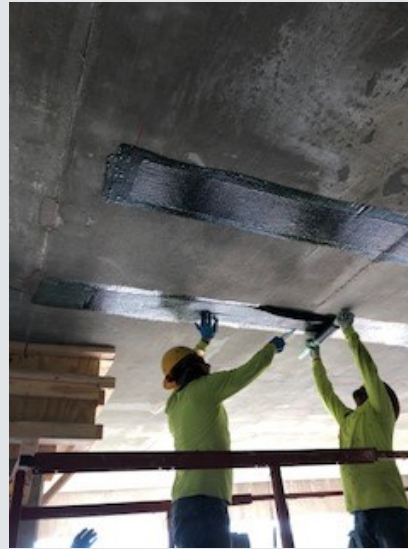
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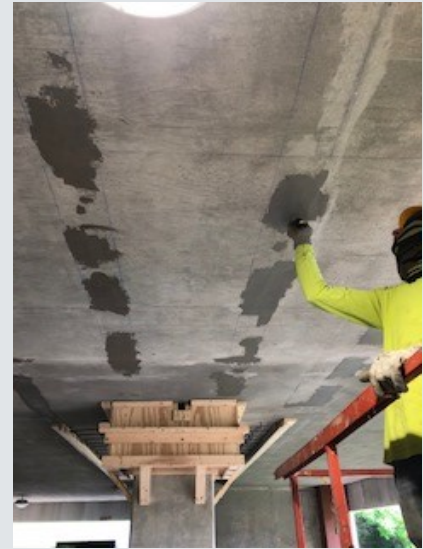
INSTALLATION OF RENEWWRAP ERS CFRP SYSTEM



1. Strengthening of parking deck partially completed.



2. RenewWrap ESR CF600 fabric being applied to slab.



3. RenewWrap EZ Paste is applied to fill bugholes and imperfections in the substrate.



4. The slab preparation is completed prior to the application of the RenewWrap CFRP system.

The RenewWrap ESR CFRP system was used to strengthen the slab from the bottom. The fast and clean installation required minimal preparation and was completed using CF600 EZ-Slit fabric.



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Before using any GeoTree product, the user must review the most recent version of the product's technical data sheet, safety data sheet and other applicable documents, available at www.geotreesolutions.com or by calling +1.855.655.6750.

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