



**RHINO**  
CARBON FIBER  
REINFORCEMENT PRODUCTS

CFRP CASE STUDY

# RESIDENTIAL HOME CRACK REPAIR



## LOCATION

Walkersville, Maryland

## CLIENT

Mission Home Services

## PRODUCTS USED

- Rhino Carbon Fiber™ CFRP (Bidirectional): 560 GSM in Various Widths
- RCF™ Saturant-Adhesive Epoxy



## CASE BACKGROUND

The Mission Home Services company out of Walkersville, Maryland was contacted to assess numerous cracks on the exposed CMU basement walls of a 10 year old addition on a 30+ year old home.

When the addition was built, the exterior wall was not tied into the structure properly. The crack that formed where the new exterior wall of the addition met the existing structure was wider at the top than the bottom, indicating settlement had occurred at the corner of the addition. This settlement also caused cracks to form at the door and window along both the back and side walls of the addition.

Drawings stamped by a Maryland Licensed Professional Engineer were required for this project. After determining the appropriate repair method, a drawing detailing these repairs was created and Ingram Engineering Services, Inc., out of West Chester, PA provided the engineering technical report.

The Mission Home Services company completed an onsite analysis and determined that CFRP would be the best solution for the repair. They



contacted the **Rhino Carbon Fiber™** company and after reviewing a variety of options from their line of concrete crack repair and structural strengthening products, determined that 560 GSM in various widths of **Rhino Carbon Fiber™ CFRP (Bidirectional)** would be used on each crack and applied with **RCF™ Saturant-Adhesive Epoxy**. The bidirectional weave orientation was chosen to provide strength across the cracks and help hold sections of the walls together.

## THE SOLUTION

Following the technical report, the Mission Home Services company was able to proceed with the repairs. Parging on the exterior of the wall had to be ground off in order to allow the CFRP to be attached directly to the block.

The CFRP was installed with saturant-adhesive epoxy and after the epoxy had cured, the crew came back in and parged over the CFRP that was installed on the exterior of wall; parging not only protects the CFRP, but provides a seamless repair that can be painted over and blends in with the surrounding parging over time. Even though **RCF™ Saturant-Adhesive Epoxy** is UV resistant and does not break down when exposed, it is recommended that all exterior structural repairs be covered. CFRP was also installed around the interior windows and on the surrounding cracks for reinforcement.

The mission Home Services company used **Rhino Carbon Fiber™** concrete crack repair and structural strengthening products to meet the needs of the project. They were able to select the appropriate products for the repair and next day delivery allowed for the project to be completed on schedule.



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