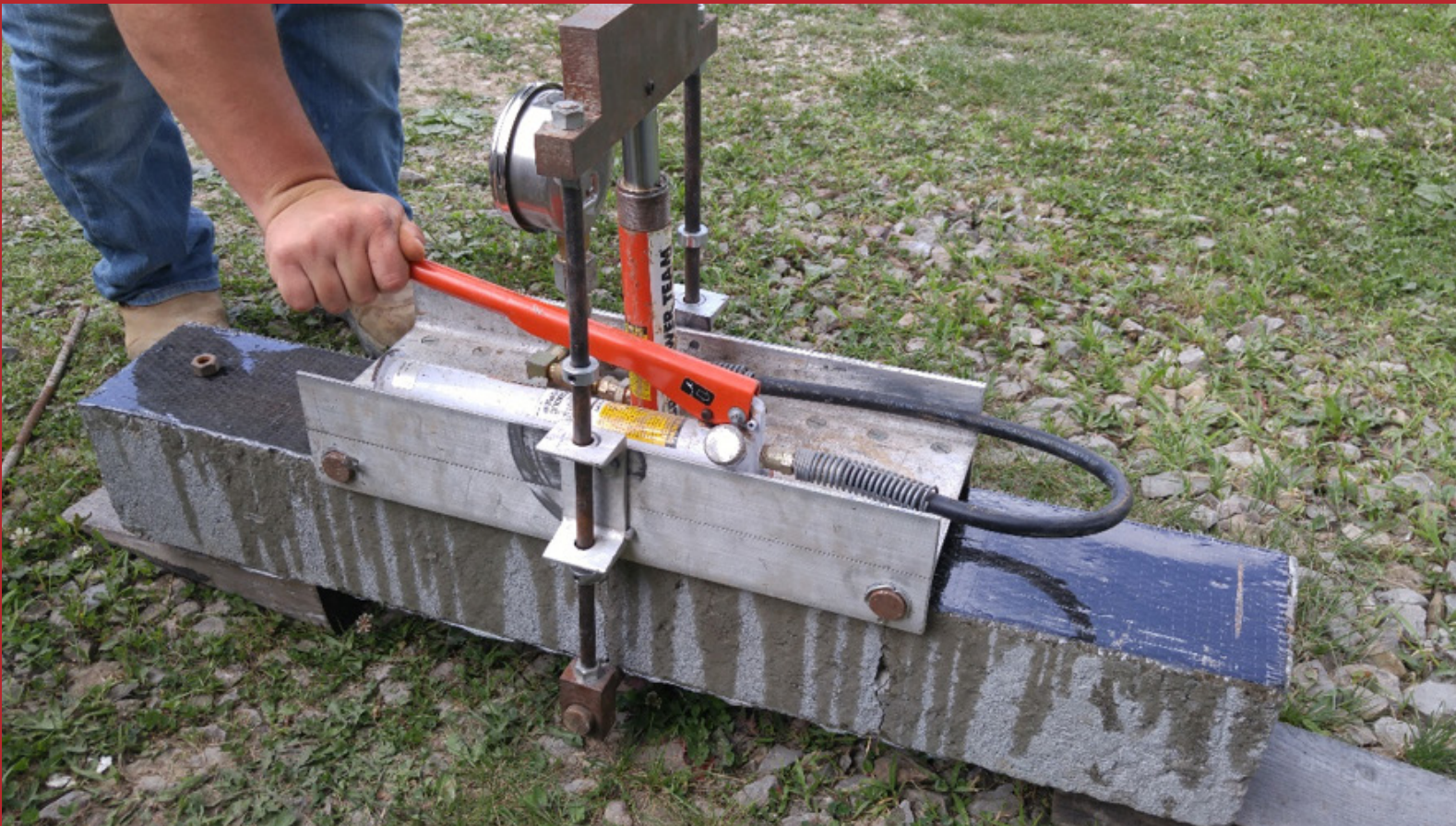




**RHINO**  
CARBON FIBER  
REINFORCEMENT PRODUCTS

CFRP CASE STUDY

# BEAM FLEXURE STRENGTH TEST



## LOCATION

Heath, Ohio

## CLIENT

Internal Test

## PRODUCTS USED

- Rhino Carbon Fiber CFRP (Unidirectional, Vertical): 400 GSM, 6" Wide
- RCF Saturant-Adhesive Epoxy



## CASE BACKGROUND

In bridge construction, due to schedule restraints and the fast paced nature of the work, beam flexure tests are used quite often to verify that newly poured concrete has reached sufficient strength to support the necessary construction loads prior to full cure.

The **Rhino Carbon Fiber** company obtained a beam that had been broken twice in a flexure test from a local project, and pulled it back together with a ratchet strap.

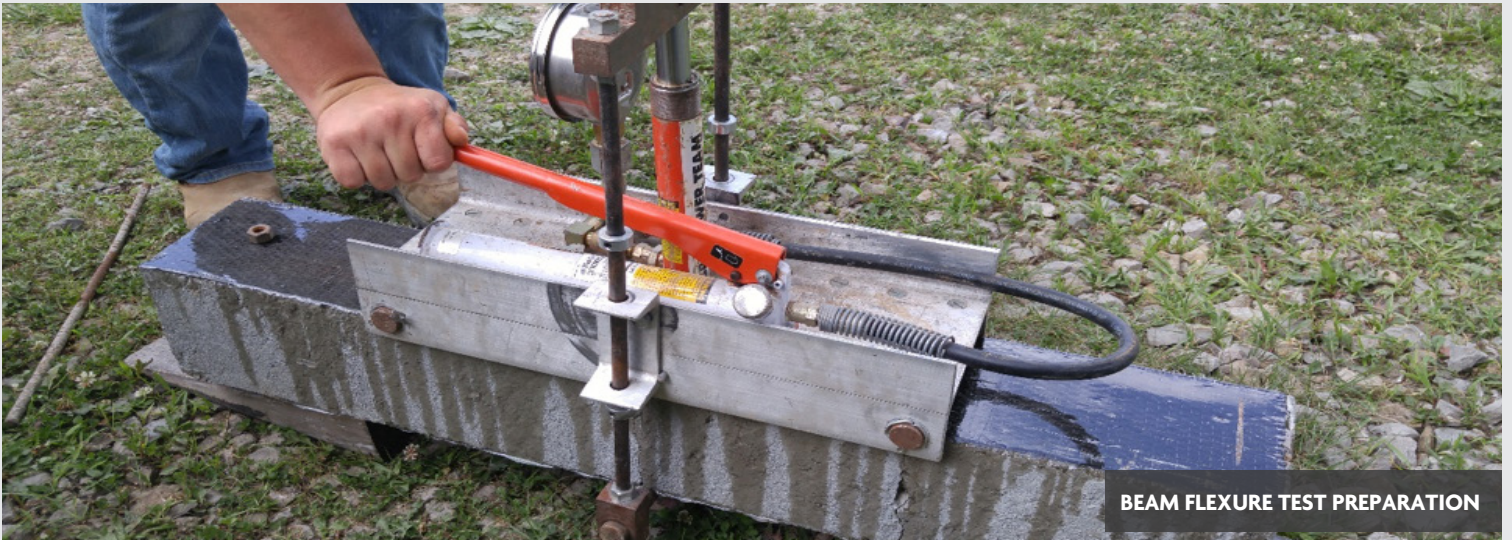


## THE SOLUTION

400 GSM, 6" wide **Rhino Carbon Fiber** CFRP (Unidirectional, Vertical) was applied to the beam with **RCF Saturant-Adhesive Epoxy**. Once the epoxy was cured, the same flexure test was performed on the beam that broke originally. The load was placed at the location of the prior break and taken up to 650psi, the strength required to proceed with loading newly poured concrete on Ohio Department of Transportation (ODOT) projects. The result of this test was that the concrete had gained strength although the beam was already broken.

The load was then taken up to 935 psi and the test was performed over both of the prior breaks - the carbon fiber did not fail.

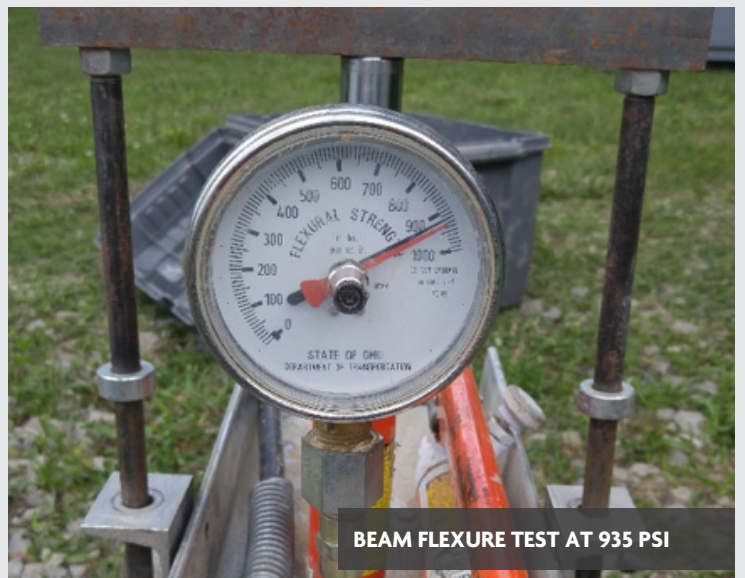
Since the concrete was already broken at the test locations, the flexural resistance that we saw was solely showing the strength of the CFRP in conjunction with epoxy, and its bond to the concrete. This is just one illustration of the potential use of **Rhino Carbon Fiber** products for concrete crack repair and structural strengthening. Results may vary and each case is unique. Consult your engineer to determine if **Rhino Carbon Fiber** products are right for your project.



BEAM FLEXURE TEST PREPARATION



RHINO CARBON FIBER CFRP  
(UNIDIRECTIONAL, VERTICAL)



BEAM FLEXURE TEST AT 935 PSI

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