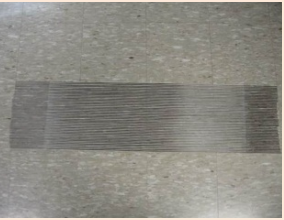




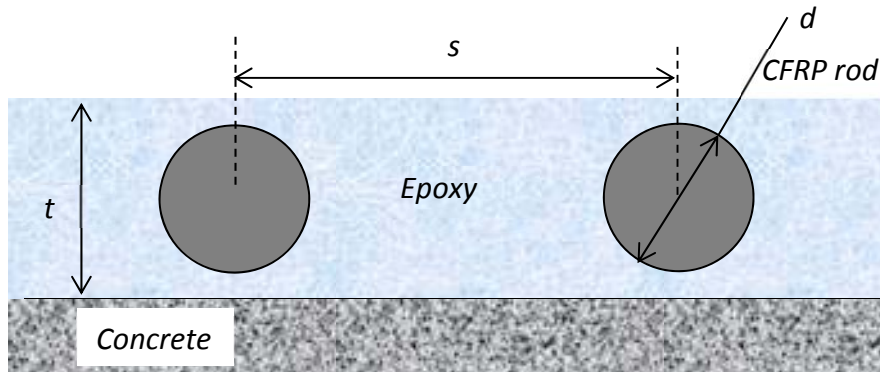


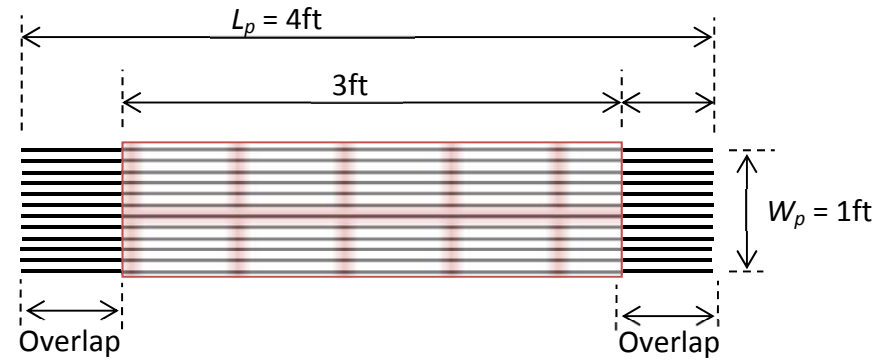
# CatStrong CRP-X<sup>3</sup>

				
<p style="text-align: center;"><b>CatStrong CRP-X<sup>3</sup> Rod Panel</b></p>	<p style="text-align: center;"><b>Step 1 Application of resin on concrete girder</b></p>	<p style="text-align: center;"><b>Step 2 Application of rod panel on resin</b></p>	<p style="text-align: center;"><b>Step 3 Application of resin coat on rod panel</b></p>	<p style="text-align: center;"><b>Girder strengthened with rod panel</b></p>
<p><b>Product Description</b></p>	<p><b>CatStrong CRP-X<sup>3</sup></b> (X<sup>3</sup> = XXX = 070, 145, 195, etc.) is a <u>C</u>arbon Fiber Reinforced Polymer <u>R</u>od <u>P</u>anel (CRP) that can resist XXX,000 pounds of force per 1-ft wide section. The CRP-195 panels weigh 6.84 ounces per square foot. One square foot of <b>CatStrong CRP-195</b> is equivalent to a square foot of A36 steel that is 0.28 inches thick and weighs 183.2 ounces (or 27 times the weight of CRP-195)</p>			
<p><b>Product Application</b></p>	<p><b>CatStrong CRP-X<sup>3</sup></b> is bonded to existing reinforced and prestressed concrete structural members to increase their capacity in bending and/or in shear. It is intended to strengthen concrete structures.</p>			
<p><b>CatStrong CRP Manufacturer</b></p>	<p>Department of Civil Engineering and Kentucky Transportation Center, University of Kentucky  Contact: Dr. Issam Harik, Professor of Civil Engineering, and Program Manager, Structures, Kentucky Transportation Center University of Kentucky, Lexington, KY 40506-0281 e-mail: <a href="mailto:iharik@engr.uky.edu">iharik@engr.uky.edu</a> , Phone: (859) 267-3116</p>			
<p><b>Carbon Rod Manufacturer</b></p>	<p>Diversified Structural Composites 1512 Interstate Drive Erlanger, KY 41018  Contact: Mr. Lee Burch, Senior Vice President of Operations e-mail: <a href="mailto:lburch@dsc-us.com">lburch@dsc-us.com</a> , Phone: 859-282-4885</p>			
<p><b>Sponsor for Product Development</b></p>	<p>Kentucky Science &amp; Technology Corporation KSTC Award Program : Kentucky Commercialization Fund Award Agreement No. : KSTC-144-401-10-039 Project Title : High Performance Materials for Structural repair</p>			
<p><b>Sponsor for Product Deployment</b></p>	<p>Kentucky Transportation Cabinet and Federal Highway Administration</p>			
<p><b>CatStrong CRP Contact</b></p>	<p><b>Dr. Issam Harik</b>                      <b>Phone: 859-257-3116</b>                      <b>e-mail: <a href="mailto:iharik@engr.uky.edu">iharik@engr.uky.edu</a></b></p>			

# CatStrong CRP-XXX Rod Panels



Carbon panel placement



CFRP Rod Panel (CRP)

Table 1: CFRP-XXX Rod Panels

Designation	Rod Diameter <sup>a</sup> <i>d</i> (in)	Rod Area (x10 <sup>-3</sup> in <sup>2</sup> )	Strength <sup>a</sup> (kip/rod)	Rods Per Panel	Spacing <i>s</i> (in)	Weight (lb/panel)	Panel Strength (kip/ft)
CRP-070	0.078	4.78	1.53	48	0.25	0.66	73.4
CRP-090	0.088	6.08	1.95	48	0.25	0.81	93.4
CRP-115	0.098	7.54	2.41	48	0.25	1.00	115.8
CRP-145	0.136	14.53	4.65	32	0.375	1.30	148.7
CRP-195	0.156	19.11	6.12	32	0.375	1.71	195.7

<sup>a</sup> The guaranteed minimum and other properties of the rods are:

- Tensile Strength: 320 ksi (2.34 GPa)
- Tensile Modulus: 19.5 x 10<sup>3</sup> ksi (134 GPa)
- Tensile Strain: 1.3%
- Fiber Volume: 67%
- Matrix Material: Bis F Epoxy
- T<sub>G</sub>: 212 °F (100 °C - Glass Transition Temperature)
- Diameter Tolerance: +/- 5%