



STAHLIN NON-METALLIC ENCLOSURES

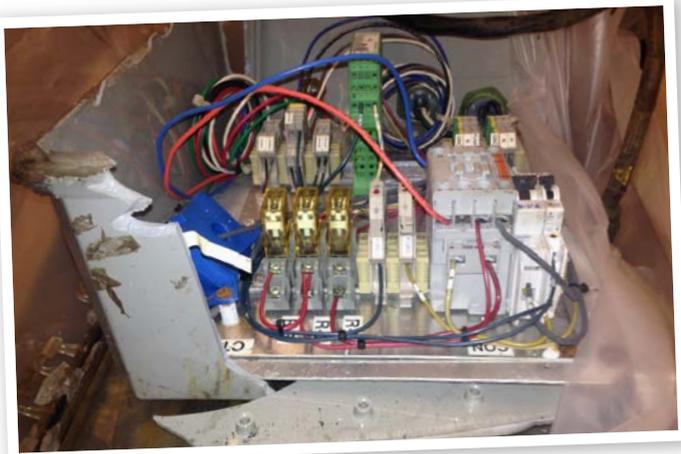
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Stahlin Non-Metallic Enclosures solves the need for major utility company to reliably protect pump controls in an extremely hot and humid environment.

THE SITUATION:

A large east coast utility company was experiencing failure of controls installed in manholes vaults underground that were monitoring the water level in steam tunnels and underground vaults. The controls managed floats and pumps for pumping water and fluid from steam tunnel vaults situated below city level. These controls are critical for sump pump operations because they will turn on the pumps whenever the water reaches a level deemed unsafe for city streets. Such controls needed to meet a 90 percent uptime mandate and was currently at 70 percent.



Polycarbonate enclosure failed to protect controls in a high heat and humidity environment.

Knowing the working environment was aggressive from a corrosion standpoint, the engineering team felt metal, even stainless was not an adequate choice so they decided on non metallic enclosures to address the corrosion issue. When the utility engineering team initially specified the non-metallic enclosure option to house the controls they were under the impression that the controls would be at least 12 feet away from the steam. After some research, the team deemed that a polycarbonate option would be the best cost-effective option and was purchased for the application.

However, after initial installation of controls housed in the polycarbonate enclosure, the engineering team discovered many field failures because many of the installed controls were closer to the steam than 12 feet, thus, they failed due to high heat and humidity that would transfer through the steam tunnels and conduit raceway. The team needed to find a better enclosure material option.

THE CHALLENGE:

The environment these controls are placed in is extremely tough on the enclosures and controls inside. The environment is hot, humid, and exposed to corrosive elements such as chemicals every minute of every day. As these utilities engineers discovered, polycarbonate is not a good non-metallic option for these extreme conditions. They had to start over and find the best material that could protect the controls properly.

The enclosure needed to protect controls from:

- Possible submersion
- Working temperature 150-212° F
- Humidity – 100%
- Chemicals – Road salt, rain water, oil, grease, diesel, and others unknown

THE ANSWER TO THE CHALLENGE:

After some additional research, the engineering team selected several fiberglass enclosures to test, including the J Series from Stahlin Non-Metallic Enclosures. The team tested the enclosures in a submersed vault, registering more than 212 degrees. The goal was to see what option could last the longest. The **Stahlin J Series** survived for two to two-and-a-half months before being removed for inspection and was found still in working order while a competitor's product failed within weeks.

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ACTUAL FIELD TESTING:

Putting an enclosure in the field for testing is essential, especially when you need to prove the change will guarantee a 90 percent uptime of the controls.

The utility team ordered over 500 enclosures to place in the actual environment with the controls installed to test real-time performance in the field before making the final commitment to replace all enclosures with the Stahlin J Series.

Because of the success of the Stahlin enclosures during the field-testing in this high heat and humidity application, the utility company continues to purchase Stahlin J Series fiberglass NEMA 4X enclosures for these critical controls.



Steam from test vault

STAHLIN NON-METALLIC ENCLOSURES:

Stahlin Non-Metallic Enclosures is a brand of Robroy Enclosures, a subsidiary of Robroy Industries that has served the electrical products industry since 1905. Stahlin is a proud U.S. manufacturer and is a primary producer of all of our enclosure components.

www.stahlin.com



The Stahlin Non-Metallic Enclosure after 2 1/2 months in a vault at 212+ degrees



Polycarbonate enclosures failed due to high heat and humidity that would transfer through the steam tunnels and conduit raceway



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