



## ELECTRICAL SUBSTATION Freeport, Texas



## EXPLORE OUR FULL LINE OF FRP SOLUTIONS

DEFI Structural Fiberglass offers a wide variety of structural products made of fiberglass-reinforced polymer manufactured by Bedford Reinforced Plastics, including PROForms® shapes, PROGrid® molded grating and PROGrate® pultruded grating. Our team of skilled engineering, design and manufacturing professionals is dedicated to helping customers maximize the benefits of FRP.

### PRODUCTS

- Structural shapes
- Grating
- Decking
- Stairs and handrails
- Ladders and cages
- Fabricated structures

### SERVICES

- Engineering
- Design and drafting
- Fabrication, including CNC machining and assembly
- Secondary coating and painting
- In-house testing



When you receive a ready-to-ship date from Bedford, it's **GUARANTEED\***. If they miss the promised ship date, they pay significant penalties back to you. Bedford also offers Express Response options with shorter, guaranteed lead times.

\*Terms and conditions apply. Download the complete guarantee at [bedfordreinforced.com](http://bedfordreinforced.com) or contact us for details. Ship date guarantees available in most areas. Ask Bedford for details.



DESIGN - ENGINEER - FABRICATE - INSTALL  
STRUCTURAL FIBERGLASS

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# ELECTRICAL SUBSTATION

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Humid coastal areas like the Texas gulf coast call for building materials that stand up to the elements. And safety is critical around electricity. Fiberglass-reinforced polymer (FRP) products provided the perfect solution for this project, delivering high corrosion resistance and low conductivity.

## CHALLENGE

The customer needed to construct a connected system of elevated platforms for electrical generators to provide power for a nearby chemical facility. They also wanted to use a building material that offered corrosion resistance, low conductivity and safety.

Traditional materials like steel or aluminum weren't ideal for this project for several reasons. The jobsite is located in a flood zone just a few miles from the Gulf of Mexico, so it's subjected to corrosive salt air, the hot Texas sun, and the potential for hurricanes and flooding. In addition, any metal used around electricity requires proper grounding, which would add time and labor to the installation.

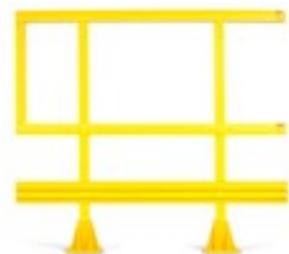
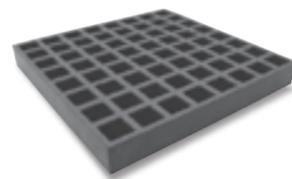
Materials like steel also require heavy equipment to move it into place, along with welders and special tooling for cutting and assembly – another factor that can add time and cost to a project.

## SOLUTION

The customer chose FRP for the project based on its unique properties and benefits. FRP is corrosion resistant. It does not require grounding. And it offers excellent strength with light weight, making it cost-effective to transport and install. The PROGrid® molded grating used in this project also has a gridded non-slip surface that's designed for safety on stairs, platforms and walkways.

DEFI Structural Fiberglass worked with Bedford Reinforced Plastics, its FRP manufacturer, to design kits for 15 stair towers with FRP stair treads, handrails and molded grating.

DEFI Structural Fiberglass fabricated the kits in its Lafayette, Louisiana, facility and shipped them to the jobsite ready to assemble. All the contractor had to do was put them together. Aside from unloading the truck, no heavy equipment was required; components were all put in place and hand-assembled using standard tools – no cutting or painting required.



**PRODUCTS USED:**  
Bedford PROForms®  
Structural Shapes and  
PROGrid® Molded Grating



PROGrid® molded grating features a non-slip surface for a safer work environment. All of the handrails and stair towers were fabricated per OSHA regulations.

PROForms® structural profiles offer excellent corrosion resistance and low conductivity – perfect for the application and the coastal climate.