

# STRONGWELL

## APPLICATION PROFILE



### COMPOSITES OFFER SOLUTION FOR WASTEWATER TREATMENT TECHNOLOGY

Few places have a more corrosive environment than in a wastewater treatment facility. That's why Mike McManus, a consulting wastewater engineer and principal owner of Geo-Form, Inc. in Girard, Pennsylvania, was determined to use corrosion resistant composites in his revolutionary design for a moving bed biological reactor. He calls his design the Geo-Reactor, and it is a direct replacement for traditional rotating biological contractors (RBCs).

RBCs are relatively low in cost compared to other wastewater treatment technologies and are common in the U.S. However, traditional RBCs are made of steel and plastic and have a life span of only four to six years because of the corrosive environment. Maintenance of RBCs is often both difficult and costly. McManus saw this problem and set out to find a solution.

"I wanted to build a better mousetrap," said McManus, so he worked with Penn State University's Applied Research Laboratory to develop his idea of an all-composite Geo-Reactor that could withstand even the most corrosive wastewater. The resulting design features a plastic drum filled with thousands of plastic media specially designed to catch and remove waste-eating bacteria from the water. At the center of the drum is a filament wound composite shaft to which either EXTREN® 4" square tubes or EXTREN® 2" round tubes are attached. The EXTREN® stringers rotate in the drum and help circulate the plastic media and oxygenate the water.

"We chose to use EXTREN® because of its high strength, light weight, and above all its corrosion resistance," said

McManus. The Applied Research Laboratory actually introduced McManus to Strongwell's materials and recommended them because of their high quality. EXTREN® and the other composite materials used allow McManus' Geo-Reactors to have a projected life span of 20 years or more with minimal maintenance. Combined with the ease of installation, these benefits result in a significant cost savings for Geo-Form's customers. Geo-Reactors are available in 12-, 5-, and 3-foot diameters.

### TECHNICAL DATA

Product:	All-Composite Biological Reactor
Process:	Pultrusion
Materials:	EXTREN® Series 500 fiberglass reinforced polyester
Sizes:	2" Round tube 4" Square tube
For:	Geo-Form, Inc.



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