PROFILE

STRONGWELL NEWS & APPLICATIONS • SUMMER 2020

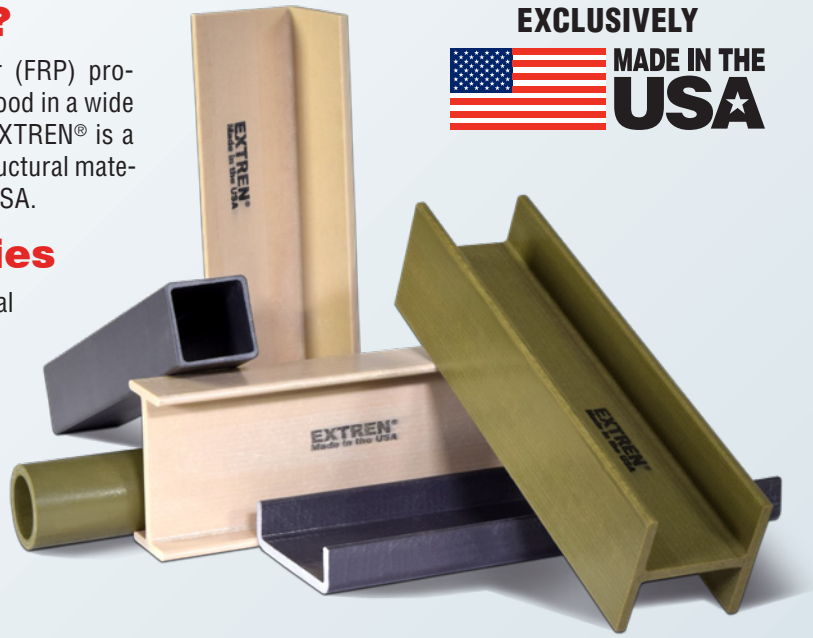
What is EXTREN®?

EXTREN® fiber reinforced polymer (FRP) profiles replace steel, aluminum, and wood in a wide variety of structural applications. EXTREN® is a durable, lightweight, cost saving structural material that is exclusively Made in the USA.

EXCLUSIVELY MADE IN THE USA

The EXTREN® Series

EXTREN® is pultruded structural composite profiles and plate produced exclusively by Strongwell with the EXTREN® logo embedded in the surfacing veil. It meets or exceeds the minimum published mechanical, physical, electrical, flammability, and corrosive properties of the respective Series published in the *Strongwell Design Manual.*



EXTREN® Series 500

- Premium Polyester Resin
- UV inhibitor added
- Standard Color: olive green

A general purpose resin with excellent corrosion properties.

EXTREN® Series 525

- Premium Polyester Resin
- UV inhibitor added
- Flame retardant additives
- Standard Color: slate gray

A general purpose resin with excellent corrosion properties and improved fire performance.

EXTREN® Series 600

- Premium Vinyl Ester Resin
- UV inhibitor added
- Standard Color: light gray

For harsher corrosive environments and higher temperature applications.

NEW

EXTREN® Series 625

- Premium Vinyl Ester Resin
- UV inhibitor added
- Flame retardant additives
- Standard Color: beige

For harsher corrosive environments, higher temperature applications, with improved fire performance.

Advantages of EXTREN®

- **Lower Installed Cost**
- **High Strength-to-Weight Ratio**
- **Easy Installation**
- **Maintenance Free**
- **Corrosion Resistant**
- **EMI/RFI Transparent**

See the NEW *EXTREN® vs. Traditional Materials Flyer* to learn more.

Recent Enhancements to EXTREN®:

NEW: Series 600 - Similar to Series 625 when additional fire retardant is not necessary.

NEW: I-Beam Available - 18" x 1/2" x 8" x 3/4"

Increased Stock Inventory of plate, including additional lengths (Call Customer Relations for current availability)

Literature Updates (listed on page 3)

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Case Study: Baffle Panel & EXTREN®

Baffle and Diffuser Walls Aid in Aeration

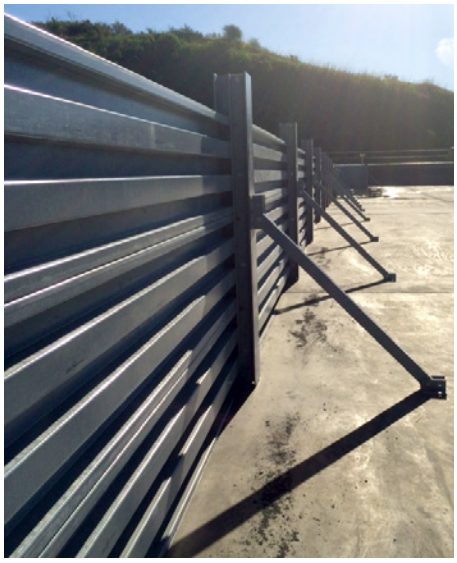
A water district system in California underwent a refurbishment process at its wastewater treatment facility to better serve its more than 17,000 service connections. In addition to the facility, the district operator is also responsible for the maintenance and upkeep or over 250 miles of pipelines, eight storage reservoirs, six booster stations, nine groundwater production wells, and 6,500 wells. A main component of this refurbishment process included the installation of Strongwell's baffle and diffuser walls to aid in the processing of increasing water treatment volumes.

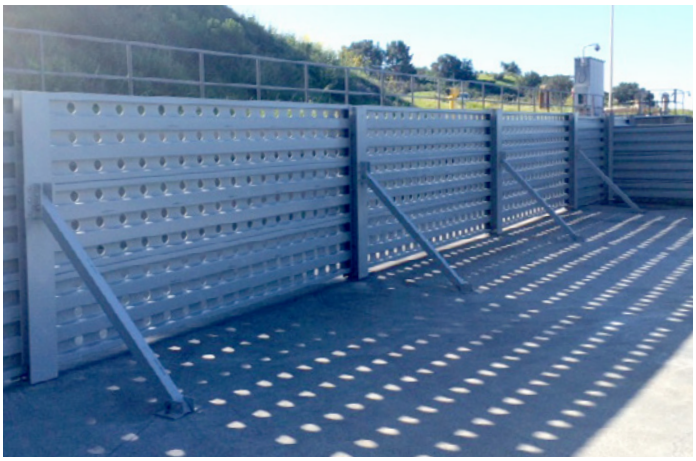
With high exposures to chemical and organic matter, baffle panels are primarily used to aid in the coagulation and flocculation processes in primary water and wastewater treatment. Prior to fiberglass, water flow controls were designed with legacy materials such as concrete, steel, or wood. Since the introduction and adoption of fiberglass, operators have turned to composites as a way to increase water processing volumes and combat material replacement issues related to rot or corrosion. By reducing material replacement cycles, operators can lengthen the lifecycles of treatment facilities.

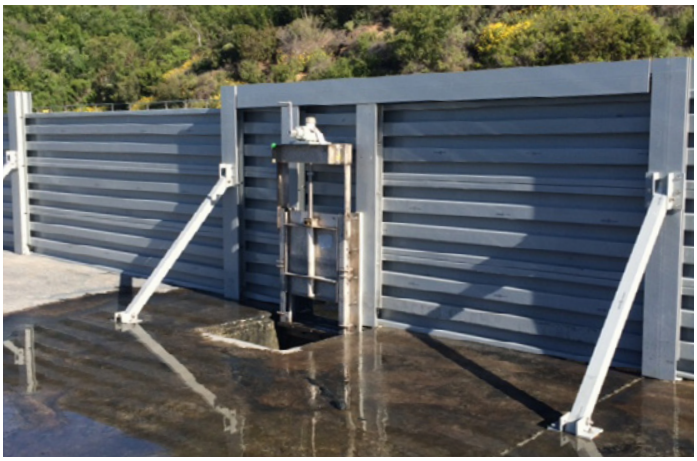
To further assist in water processing, Strongwell fabricated a diffuser aeration wall to play a vital role in the secondary treatment phase. Diffusers use oxygenated bubbles created by mechanical means to encourage bacteria to feed on organic matter.

Both structures measured considerably in length. The baffle wall structure measured over 170 feet and the diffuser wall measured over 50 feet. Fiberglass was also used to support both structures. EXTREN® wide flange beams were used for columns and knee braces were fabricated with square tubes, channels, and angles.

All materials on this project were pultruded with a premium polyester resin, compliant with the NSF/ANSI 61 standard. The installer, Cushman Contracting Corporation, was thoroughly pleased with the delivery, service, and installation of the overall products. ●







Case Study: Baffle Panel & FIBREBOLT®

Pultruded Fiberglass Makes a Splash

Currently, Michigan's largest indoor waterpark measures 50,000 square feet and contains waterslides, raft rides, a lazy river, action river, sports pools, wading pools and other assorted features. Within these features lies an area called "Splash Village." The main feature within this area of the waterpark is a dumping bucket capable of dumping almost 400 gallons every 10 minutes. To complement this feature, the operators needed a trough, which was corrosion resistant, yet durable enough to withstand the impact of the water dump and generously dispersing splashes to eager patrons.

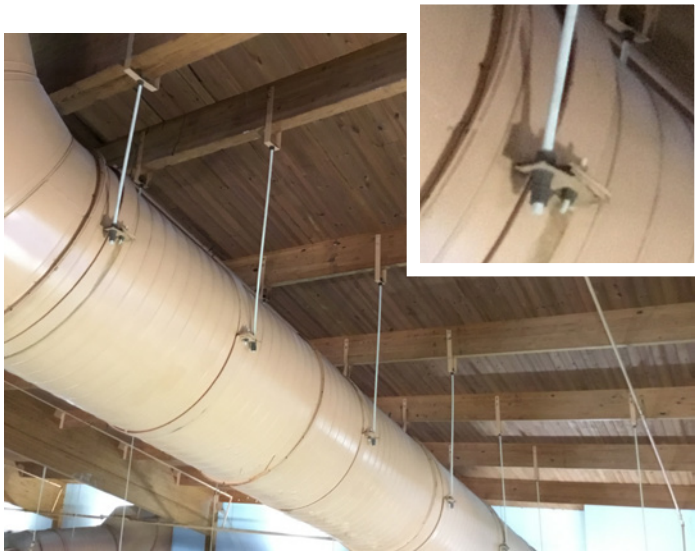
The park, with the aid of Strongwell's Corrosion Resistance Guide and its portfolio of detailed aquatic fiberglass case studies, decided that using inverted baffle wall panels for the trough roof was a great way to eliminate the use of metals in this type of application. The shape was pultruded with a polyester resin. Baffle walls were originally designed for underwater flow control applications in aeration chambers, contact chambers, retention basins, and water process applications. This project shows a very creative use for the baffle panel, but also one that takes advantage of the benefits of its design and materials of construction.

Outside of aquatic play, year-round indoor waterparks continue to push the envelope for innovative design to entertain guests and meet needs. The aquatic industry also must provide a healthy, safe, and inviting environment for indoor swimming and recreation. Especially important in indoor aquatic environments, the multiple air exchange standards, set by ASHRAE (American Society of Heating, Refrigerating, and Air Conditioning Engineers),

offer the guidelines for regulating the quality of air, water, humidity, ventilation, and chemistry. These standards have greatly expanded the implementation of complex ventilation and high-end HVAC systems in indoor waterparks.

The park decided that pultruded fiberglass FRP threaded rods were the best material option to replace the corroded stainless steel rods supporting the aquatic center's network of ducts and vents. The threaded rods were attached to support pillars and ductwork utilizing FIBREBOLT® studs and nuts to minimize metallic exposure.

Overall, the end-user has been pleased with the product, ease of installation, and the projected decades' worth of performance from pultruded fiberglass products. ●



Spotlight on Strongwell Talent

Fran Ramos
Bilingual Administrative Assistant - Mexico

Fran Ramos has joined Strongwell as Bilingual Administrative Assistant for STRONGWELL S. de R.L. de C.V. She will report to the Human Resources Manager, Mexico and will be supporting administrative activities for the Mexico Location. A native of Monterrey, Fran has been studying Mechatronics Engineering at the Universidad Regiomontana since January 2017. She was previously employed at Franel Comercializadora as Administrative Assistant where she gained a great experience in administrative support.

Amy Ferguson
Corporate Accounts Associate - Bristol

Amy Ferguson has joined Strongwell as a full-time employee. Since January, Amy has been working as a contract employee. Amy will serve as Customer Account Associate, reporting to the Customer Relations Manager. Amy brings more than 12 years of experience in data entry in various roles in bookkeeping, administrative support, and other various roles in corrections at the Duffield Regional Jail, and most recently working in customer billing for Ballad Health.

Josh Maggert
Plant Manager - Chatfield

Josh Maggert has accepted the position of Plant Manager. Josh will report directly to the Vice President of Minnesota and Mexico Operations. Josh began his career with Strongwell as a Process Engineer in 2007 after receiving a Bachelor of Science degree from Winona State University in Composite Materials Engineering. He later took on the Engineering Manager role in 2013, followed by the Manufacturing & Engineering Manager in 2016.

Literature Updates:

- *Design Manual Sections (I+M): Preface, 2, 3, 5, 6, 10, 18*
- *EXTREN® Brochure*
- *EXTREN® Specification*
- *Intro to EXTREN®*
- *EXTREN® vs. Traditional Materials Flyer (NEW)*
- *EXTREN® Fabrication and Repair Manual*
- *Corrosion Resistance Guide*
- *Availability List (I+M)*
- *SAFPLATE® Flyer*
- *Industrial Product Line Brochure*
- *Oil & Gas Industry Brochure*
- *Fiberglass Structures Brochure*
- *UTILICOVER® Flyer*
- *DURAGRATE® Brochure (I+M)*

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What's in this Issue:

Case Study: EXTREN®, DURADEK®, & SAFRAIL™

Corrosion Management Implemented on Industrial Rooftop Structure

A chiller support frame with an adjoining platform was recently designed and installed for a premiere manufacturer of carbon steel tubing in the Midwest. This manufacturing facility houses multiple tube mills, cutting equipment, and an annealing furnace to supply domestically sourced steel tubes across multiple industries.

In many manufacturing facilities, chillers are required to dissipate waste heat. In this particular application, the company expanded its machine shop footprint and capabilities, which required the addition of a rooftop chiller. Advantic, LLC designed the chiller support frame and access platform. Since the chiller is water-cooled, the end-user requested a lightweight, corrosion resistant structure. Advantic's design utilized EXTREN® Series 525 for structural support and DURADEK® I-6500 for walking surfaces, both of which provided UV and corrosion resistance from the natural elements. Persistent condensation from the chillers had corroded previous steel platforms, so the end-user also requested that a material be used which avoided the need for hotworks to ensure no damage was done to the existing roof.

Even with those design challenges in play, Advantic, LLC was able to quickly design and fabricate an easy-to-assemble modular support platform. The platform was fabricated offsite and assembled at the worksite in easy-to-lift segments for a simple, drop-in installation.

The platform and access points were fabricated with DURADEK® I-6500 pultruded grating and EXTREN® Structural Shapes: channels, plates, wide flange beams, I-Beams, and equal leg angles.

To ensure fixed climbing access to the tanks, the pigmented OSHA safety yellow SAFRAIL™ ladder system was installed on multiple levels complete with side rails and rungs.

Originally installed in May 2018, the customer has reported that both the design and fiberglass products have outperformed their expectations in ease of installation, corrosion resistance, and overall performance. ●

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