



Case Study: EXTREN® & DURAGRID®

Composites Bridge Install was a Simple Chip Shot

Located in the Blue Ridge Mountains of North Carolina, a private golf course community looked to replace five pedestrian bridges. The timber bridges interconnected multiple isles to form a long network of walkable area for pedestrians over a large lake. The main cause for replacement of the original bridges was due to the ongoing and labor-intensive process of painting and staining the structures.

During the design and material selection stage of the project, the owners of the community prioritized a long-term solution to ensure decades of maintenance-free operations on each of the five connecting bridges. With this in mind, they worked with the designers at Areté Engineers to balance the community design specifications and functional needs of the property.

In the spring of 2020, each positive camber bridge was connected with each isle within a tight construction timeline. Each of the bridges measured



between 5' to 6' 5" in width and spanned either 80' or 180' in length.

The bridges' structural parts (EXTREN® Series 525) were pultruded in the custom color of rustic brown. This was done to best resemble the color of timber and to blend with the natural forest surroundings. The durable flooring choice on each of the five bridges was DURAGRID® T-1800 pultruded FRP grating. This type of durable, non-skid, pultruded grating will stand up to decades of daily foot traffic.

On fabrication and preassembly, Areté Structures was able to complete all of the necessary work at their facility in Boone, NC. The final installation process was handled by a third-party contractor at the residential community.

In addition to their positive feedback about the bridges themselves, the owners were also equally impressed with how a project of this magnitude required minimal activity and disruption to the community and will last many years into the future. ●



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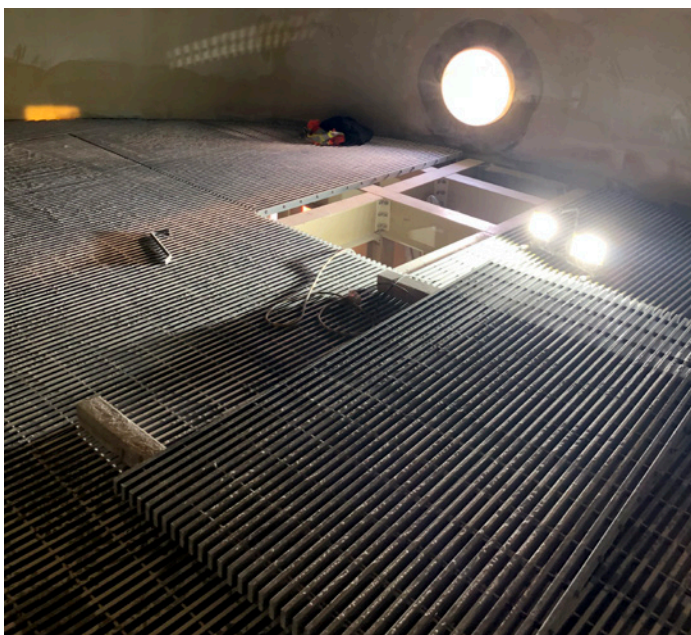


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Composites Deal with Scrubber Corrosion

In many instances, hydrogen sulfide gas is produced as a byproduct of water treatment or raw material manufacturing processes. If left untreated, the corrosive gas can be detrimental. Most facilities use scrubbers to neutralize the harmful gas prior to atmospheric release.

This is why a pulp processing company wanted to install a new H₂S vertical packed bed scrubber measuring 26' in diameter and 55' in height at one of their facilities in Alberta, Canada. In operation since the late 1980s, the pulp mill has been capturing and converting captured biogases for onsite renewable electricity usage.



As a way to filter and capture some of these gases for renewable electricity, this type of scrubber uses air pressure and water to recirculate the captured gases into the compacted bedding system for further processing within an operational temperature range of -40°C to +40°C.

The end user hired Structural Composite Technologies (SCT) located in Winnipeg, Manitoba, for their 60+ years of experience designing, fabricating, and assembling industrial designs within the mining, milling, smelting, refining, and manufacturing sectors.

For this particular scrubber tank support application, SCT needed to ensure long-term structural integrity coupled with exceptional corrosion resistance. EXTREN® Series 625 wide flange and I-beams were used to support 2" DURAGRID® HD-6000 pultruded grating with 6" cross-rod spacing. Combined together, these two products hold all of the packing material within the scrubber. As an added measure to prevent chemical attack, the components were mechanically fastened with Hastelloy instead of 316L grade stainless steel.

Strongwell worked with SCT in designing, fabricating, and piece marking the platform's components to ensure that the sections would be dropped into place without further fabrication upon delivery.

At the conclusion of this project, SCT and other involved companies were complimentary of the overall supply, delivery, and design experience of the scrubber's internal FRP platform. ●



"When the parts showed up, everything was precut, predrilled, and labeled perfectly. We did not have to cut or redrill anything. We saved a lot of time on the assembly, which was a huge contributor to the project being on time and on budget."

- Brian, SCT General Manager



Literature Updates:

- Availability List (I+M)
- SAFRAIL™ Ladder & Cage System Brochure
- Design Manual Section 13 (I+M)
- FRP Ladders and Cages and Fabrications Specification

Visit www.strongwell.com for the latest resources.



Spotlight on Strongwell Talent



Karie Castle

Environmental, Health, and Safety Specialist - Virginia Operations

Karie Castle has joined the Strongwell team as Environmental Health and Safety Specialist reporting to the Corporate Director, HR & EHS. Karie brings a strong background in environmental regulations and procedures. Karie obtained a Bachelor's degree in Environmental Health from East Tennessee State University. Most recently, Karie served as Laboratory Manager of the wastewater treatment plant for a mid-size municipality. Prior to that, Karie gained experience as a laboratory analyst at Environmental Monitoring, Inc. and at East Tennessee State University.



Judy Cross

Staff Accountant - Bristol

Judy Cross has accepted the position of Staff Accountant. In her new role, she will report to the Accounting Manager. Judy earned her Associate of Science degree in Accounting and Data Processing from Virginia Highlands Community College. She has most recently held positions as Accounting Clerk and Human Resources Clerk for a southwest Virginia Community Action Agency.



Christopher Kerley

Manager, Contractual Relations and Administration - Corporate

Christopher Kerley has joined Strongwell as Manager, Contractual Relations and Administration reporting to the President and CEO. Chris brings 27 years contractual, business transaction, patent, IP, trademark, worker's compensation, EEOC, and corporate law experience to Strongwell. He obtained his Bachelor's degree in English Literature from the University of Tennessee and a Master's degree in English Literature from East Tennessee State University. He earned his Certified Paralegal (CP) designation through NALA. Chris' primary responsibilities will include managing corporate contracts and providing project support to the President and CEO.



Andy Diercks

3rd Shift Supervisor - Chatfield

Andy Diercks has joined Strongwell as a Production Supervisor. He will report to the Minnesota Operations Production Manager and will oversee the 3rd shift production. Andy has a Bachelor's degree in Organizational Management and has nearly two decades of production management experience at a variety of companies in the Midwest.



Scott Holmes

Manager, Machine, Tooling, and Design - Virginia Operations

Scott Holmes has been promoted to Manager, Machine, Tooling, and Design for Virginia Operations. In his new role, Scott will report to the Director of Virginia Operations. Reporting directly to Scott will be the Machine shop, Machine Build, and Design/Drafting. Scott began his career at Strongwell in 2016, most recently in the role of Project Engineer. He has 22 years of experience in design and tooling. He earned a Bachelor's degree in Engineering Technology from East Tennessee State University.



Daniel Leathers

Process Engineering Manager - Virginia Operations

Daniel Leathers has joined Strongwell as Manager, Process Engineering, reporting to the Manager, Manufacturing Engineering. Daniel brings a broad background in Manufacturing and Process Engineering to Strongwell. Some of his most recent experience comes from a food manufacturer and a tooling and industrial materials manufacturer and supplier, both in northeast Tennessee. He earned a Bachelor of Science degree in Aerospace Engineering with a minor in Management from Hertfordshire University in England. Daniel's primary responsibility will be management of the Process Engineering Department.

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NEWS & APPLICATIONS



Case Study: EXTREN®

Clock Faces Cellular Needs with FRP

There was recently a need for an aesthetically-pleasing structure to encapsulate several cellular antennas at a location close to the San Diego International Airport, off Interstate 5, near the southern tip of California. In addition to blending in with the current city sightlines, the structure had to adhere to the material and design standards of the city's zoning ordinances.

Porter Conco was hired to accomplish this job due to their extensive experience with the fabrication of composites for architectural and structural applications. The team at Porter channeled their creativity and past experience to design and prefabricate a functioning clock tower, which also conceals the cellular antennas. The four-sided structure was comprised of LARR-approved materials, including: EXTREN® 1/8" plate, 4" tube, and 4" inch angle.



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What's in this Issue:



Composites Bridge Install was a Simple Chip Shot



Composites Deal with Scrubber Corrosion



Literature Updates



Spotlight on Strongwell Talent



Go Digital



Pumping it Up with SAFRAIL™



Case Study: SAFRAIL™ Ladder

Pumping it Up with SAFRAIL™

The processing of blackwater and greywater discharges are reliant on key infrastructure instruments within any municipality. To address changes in elevation, water discharges from households and businesses are heavily dependent on the role and strategic locations of lift stations within their respective communities.

Although all lift stations complete an identical task, their individual engineering and designs can vary due to the demands of their workloads. Each lift station is typically outfitted with a receiving well, pumps, piping, motors, power supply, alarm system, and an odor control system.

Romtec Utilities, Inc., an engineering company specializing in the design, engineering, and supply of pumping systems across all water types, worked with the Northshore Utility District to design a site-specific lift station for its medium water support needs in a residential community.

With durability in mind, engineers wanted the material that had the highest corrosion resistance in the marketplace due to the presence of corrosive offset gases emitted through the movement of wastewater.

For the wet well portion, an 11' section of SAFRAIL™ ladder was used to ensure decades of maintenance access to essential pump valves and critical equipment. The nonconductive and corrosion resistant product was an easy decision versus coated or uncoated metallic options.



Manufactured by Strongwell in the USA since the 1950s, fiberglass ladders have demonstrated outstanding durability in complete fluid immersion applications versus steel and aluminum.

Since the date of original placement into service in 2018, both the end-user and installer have been pleased with how the overall product has performed in the field. ●

