PROFILE
STRONGWELL NEWS & APPLICATIONS • SUMMER 2019

Case Study: STRONGRAIL®

Library Greets Patrons with Pultruded Handrail

A public library in New Jersey recently needed to replace handrail on its main entrance ramp which was no longer fit for service. Originally designed with an egress, the ramp and the original handrail provided walking and wheelchair access for those with disabilities.

In an effort to prevent further access limitations, the local government hired an outside contractor, specializing in waterproofing and restoration projects, to provide a solution to accessibility.

Winters in the Northeast can be hard on metallic railings. Oftentimes, the below-freezing temperatures can alter the molecules of metals by manipulating the transitioning points of ductility to brittleness of these materials.

The constant snow shoveling and extended exposures to calcium chloride-based snow and ice treatments accelerated the removal of coatings designed to prevent corrosion of traditional metals. Compounding the stress, the summers of the Northeast also created thermal cycling challenges with the potential of dangerously hot-to-the-touch surfaces. Over the years, the existing handrail suffered galvanic corrosion challenges as well, which began at the posts of the handrail and eventually transitioned to the railings.

With multiple materials to compare, the contractor decided that Strongwell's STRONGRAIL® rounded 3" top rail Architectural Handrail System was the best solution. Originally designed for commercial applications in corrosive areas with high concentrations of salt air and brackish conditions, the pultruded system with thermoplastic connectors has also been tested extensively to ensure compliance with both ADA and IBC 2009 loading requirements. The handrail offers a pultruded molded-in color with a polyurethane UV coating solution to provide a strong, attractive, and durable solution for the library ramp entrance, as demonstrated by almost two decades worth of product case studies in a variety of demanding environments.

The installers were happy with the simplicity of the field fabrication of over 600 linear feet of STRONGRAIL®, with its internal connection system. In their opinion, the handling and installation process was much simpler, compared to traditional steel. With no hot works or specialty steel fabrication crews required, installation was faster, easier, and less expensive than steel, and should provide years of low- to no-maintenance performance. ●

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Case Study: Fabrication

Creative and Inspirational Applications with Fiberglass Composites

Fiberglass composites are becoming more and more prevalent in the replacement of traditional materials on industrial and commercial projects across a number of industries. For years, Strongwell's Design Manual and CAD blocks have also been a free public resource for innovators, designers, engineers, and fabricators to use. As a result, Strongwell's products have been sourced and used by fabricators and contractors alike to illustrate the diversity of Strongwell products.

Below are three notable projects where fabricators used Strongwell composites in creative ways to solve problems in unique settings.

1 (BEFORE)

1 (AFTER)

PROJECT 1

A neighborhood pool within a small residential community needed to replace a corroded commercial stainless steel staircase which provided access to a water slide. In most instances, pool contractors would have prescribed another stainless steel structure, which in turn would have corroded again after a few years of service. This fabricator used his knowledge of Strongwell's products to take a bespoke approach. With a bit of design, the fabricator was able to utilize SAFRAIL™ handrail, T-1000 pultruded grating treads, EXTREN® channels, square, and round tubes to construct a wider staircase for safer access to the water slide. Paint match was also done to this structure with an additional polyurethane coating for added UV protection. The end result is equally as strong and will provide many years of maintenance-free service.

PROJECT 2

A customer needed to camouflage a commercial exhaust fan that was protruding from an established structure, while preserving sight lines and ensuring code compliance. Instead of utilizing masonry and labor, the fabricator suggested utilizing EXTREN® 3/8" plate and angle for a fan cover disguised as a chimney. Aesthetically, the chimney was color matched and designed to duplicate existing brick design.

2

3

2

3

A polyurethane coating was applied to the exterior for additional UV protection. Passersby don't notice the exhaust fan, and a great deal of specialized labor and cost were saved.

PROJECT 3

An aquatic waterpark recently needed a structural deck that could easily be removed from the bow and stern of the nautical ship. The end-user also specified a non-skid grit with a significant live load requirement for this application. This fabricator utilized Strongwell's COMPOSOLITE® structural building panels with color matched paint to offer corrosion protection and playability for years to come. ●

Case Study: Baffle Panel & EXTREN®

Baffle Panels Used to Upgrade Retention Basins

As communities continue to expand and develop, so will the need for water reclamation. Currently, emerging technologies within the water reclamation sectors are expanding the roles of facilities in water saving initiatives, ecosystem preservation, and developing a more sustainable water cycle.

Over the past two years, wastewater treatment and water reclamation facility in Ohio has been systemically retrofitting a total of seven basins as part of a large capital improvement project. Upon completion, it will be the largest facility in the world to utilize a membrane bioreactor to produce effluent of high clarity and significantly reduce pathogen concentration. In addition to performance, membrane bioreactors also allow treatment plants to leave a smaller footprint while increasing the retention time of solids.

In municipal and industrial wastewater systems, baffle panels are highly effective and provide significant benefits over concrete, wood, and steel in aeration chambers, contact chambers, and retention basins. In addition to better gain yields in underwater flow control, corrosion and ultraviolet resistance is much improved over the traditional material options.

Within this three-stage construction overhaul, Strongwell collaborated with Shook Construction in providing 3" baffle wall systems, as well as EXTREN® wide flange beams, square tubes, angles, and bracing. With new baffle panels, each chamber was able to generate higher biomass solids concentration resulting in better bio-treatment.

Both the installers and end-user were pleased with the overall processes of scheduling, delivery, fabrication, and installation. ●

Spotlight on Strongwell Talent

Mark Haynes

Sales Director for the Central Territory (Region F) - Bristol

Mark Haynes has been promoted to Sales Director in Region F. In his new role, Mark will report directly to the Vice President of Sales and Engineering, and will be responsible for the states of Illinois, Missouri, Kansas, Nebraska, Colorado, Utah, Nevada, California, and Hawaii. Mark began his career with Strongwell in 1995 and has held several positions within the company. After assuming roles at the Highlands facility as Shift Facilitator and Manufacturing & Quality Administrator, Mark moved to the Bristol Location where he served as Production Materials Planner, Shipping and Receiving Manager, Special Projects Account Manager, and Customer Logistics Manager. Prior to his current role as Customer Service Account Manager, Mark led the efforts at the Highlands Location as Manager, Highlands Manufacturing.

Ubaldo Gómez

Accounting Analyst - Mexico

Ubaldo Gómez has joined Strongwell as Accounting Analyst for STRONGWELL S. de R.L. de C.V. Ubaldo will report to the Accounting Supervisor and will support the accounting and financial activities for the Mexico Location. A native of San Luis Potosí, Ubaldo received his Bachelor's Degree in Accounting from Universidad Autónoma de Nuevo Leon (UANL) in 2017. He was previously employed at Deloitte as Accounting Staff where he gained strong experience in auditing processes.

Ashley Robinson

Corporate Sales Account Manager - Bristol

Ashley Robinson has accepted the position of Corporate Sales Account Manager, with a focus on Territory G. Ashley began her career with Strongwell in 2006 with the Cooling Tower Department in Bristol Operations. She then moved to Production Control where her primary responsibilities were scheduling, shop order creation, production data entry, and production reports. In 2014, Ashley accepted the position of Sales Data Administrator where she was responsible for working with the Customer Service Department with the daily function of customer order entry and assisting the Sales Department, as needed.

Frances Pung

Quality Improvement Coordinator - VA Operations

Frances Pung has accepted the position of Quality Improvement Coordinator, reporting to the Manager, Quality Assurance for Virginia Operations. Frances has 18 years of experience in quality in the metal extrusion and automotive businesses. She was previously the Quality Engineer for Bonnell Aluminum and, most recently, was a Quality Engineer for Atlanta Precision Metal Forming. Frances earned a Bachelor of Science degree in Metallurgical Engineering from Missouri University of Science & Technology. She is currently completing a degree in Computer Science through Chattahoochee Technical College.

Bryan Walker

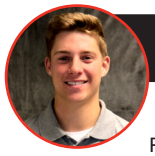
Manufacturing Manager - Bristol

Bryan Walker has accepted the position of Manufacturing Manager, Bristol Operations. In this role, he will have responsibility for the Pultrusion and Fabrication departments. Bryan has a strong background in project management. He has served as Material Manager and Field Engineer for General Electric where he was site coordinator for several multimillion-dollar projects. He earned his Bachelor's Degree in Business Management with a concentration in Logistics and Supply Chain Management. Bryan is currently finishing his MBA at King University with a July 2019 completion target.

Gerald Dollar

Pultrusion Supervisor (Crew 1) - Bristol

Gerald Dollar has assumed the role of Pultrusion Supervisor (Crew 1). Gerald has worked for Strongwell since March of 1981. He started his career as a 3rd shift trainee and worked his way through the ranks. Through the years, Gerald has demonstrated his knowledge of all aspects of the pultrusion operation.



Parker Holmstrom

Process Engineer - Chatfield

Parker Holmstrom has joined Strongwell in the position of Process Engineer. Recently, Parker graduated from Winona State University with a Bachelor of Science degree in Composite Materials Engineering.

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What's in this Issue:

DURABILITY STUDY

Will Your 30 Year Old Grating Still Perform?

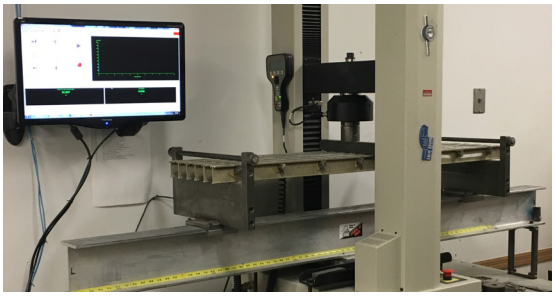
The Westfall Company recently acquired a sample of T-Bar grating from a water reclamation facility which has been in service since the late 1980s. As an effort to study durability, Strongwell and the Westfall Company wanted to see how the grating would still perform against lab testing. Upon initial inspection, the grating was submitted with the original product sticker "AFC, Div. of MMFG" still intact.

Although this particular model of T-Bar grating has been discontinued, it was originally designed with a drip edge. Upon closer examination, the grating showed exposed glass fibers on all sides due to prolonged daily exposure to ultraviolet light and hydrogen sulfide gas. Greg Bond, PE, Structural Engineer, was responsible for the flexural failure testing of the sample.

At the completion of the testing, it was concluded that the grating sample still retained approximately 85 percent of its flexural modulus while outperforming its published maximum load table.

CONCLUSION

Strongwell products, including pultruded grating, have been produced in conformance with quality standards that ensure the products meet, or exceed, published load table values at the time of production. This durability study demonstrates that, in this case, Strongwell's pultruded grating strength still exceeded industry-recognized, in-service design loads, for a 30-year, and counting, service life, and measured stiffness decreases were negligible. Strongwell's pultruded grating is a structural alternative to steel and aluminum grating, especially when long-term durability is a concern. Additional benefits include: fabrication requiring fewer tools, lighter weight, measured strength against impact, measured fire resistance and strength retention at increased service temperatures, and a measured decrease in maintenance. Strongwell has worked to continually improve product strength, durability and impact resistance of its pultruded grating. ●



Literature Updates:

- *Design Manual Sections: - 1 (I+M), 2 (I+M), 3 (M), 12 (I+M), 15 (I+M)*
- *SAFSTRIP® Carbon Flyer*
- *COMPOSOLITE® Brochure*
- *COMPOSOLITE® Secondary Containment System Flyer & Installation Guidelines*
- *Bridge Components Brochure*
- *DURADEK® Brochure*
- *DURAGRID® Brochure*
- *DURADEK® vs. DURAGRATE® Comparison Flyer*
- *DURADEK®/DURAGRID® vs. Steel Comparison Flyer*
- *Waterpark Market Flyer*

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