THE PROFILE NEWSLETTER

WINTER 2007

Newsmaker: HS ARMOR

Fiberglass Armor Exceeds Ballistic Specifications

Three .44 magnum bullets are totally encapsulated by the fiberglass panel.

Strongwell's HS Armor panels were initially designed for the U.S. military. The panels provided overhead protection for troops stationed in Iraq. Since then, Strongwell has advanced the ballistic panel technology to include a wider range of armor types.

Designed for ballistic resistance, the HS Armor panels are assembled using specially constructed glass reinforcements in a proprietary resin matrix. The panel components are then cured in a controlled cycle. When a projectile strikes the composite armor, the panel delaminates in a way that absorbs the energy and stops the projectile.

HS Armor panels are independently tested on a regular basis to ensure conformance to specification requirements. The fiberglass composite panels have exceeded UL 752 levels 1 through 3 and NIJ (National Institute of Justice) Levels 1, 2A, 2 and 3A. HS Armor has also been tested against storm damage. States such as Florida require 3/4" plywood to withstand a direct hit from a flying 2" x 4", traveling at 39 m.p.h. A 1/8" HS Armor panel has been shown to deflect the beam at speeds exceeding 80 m.p.h.

Ballistic resistant HS Armor absorbs energy by delaminating and encapsulating ballistic projectiles.

As security concerns heighten, the demand for the ballistic armor technology has launched Strongwell's HS Armor Panels into more non-military markets. HS Armor is well suited for commercial applications, including judge benches, jury boxes, bank teller areas, convenience stores, safe rooms and storm shelters. Strongwell is also working with door manufacturers to produce bullet resistant security doors using the HS Armor Panels.

HS Armor panels are a better choice than plate steel armor because the fiberglass panels are significantly lighter in weight, providing more protection, pound for pound. Standard size 4' x 8' panels are available and range in thickness from 5/32" to 1/2". Additional lengths are available upon request.

The corrosion resistant properties of the fiberglass ballistic panels ensure less maintenance and a longer product life than steel alternatives. The lightweight armor panels are easy to fabricate using ordinary carpenter's tools. Installation of panels can be accomplished with bolts, screws or industrial grade adhesive.

For more information about the armor panels, download the HS Armor Panels flyer from the Strongwell website or visit the Composite Armor section of the website.●

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STRONGWELL

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Case History: SAFRAIL™, DURAGRID®, EXTREN®

Chlorine No Problem for Fiberglass Waterpark Platform

New water play equipment at the Bridgeland's Recreation Center in Cypress, Texas, is supported by Strongwell's pultruded fiberglass. In the summer of 2007, the park was outfitted with a Multi-Play Climb & Slide from waterpark entertainment experts Aquatic Recreation Company. Aquatic Recreation selected a fiberglass platform from Strongwell because of the pultrusion leader's ability to build rust-resistant, climbable structures for the waterpark industry.

The 10' square slide platform was designed using Strongwell's EXTREN® series 525 structural shapes. DURAGRID® T-1800 1" pultruded grating with a non-skid surface was selected for the raised platform's flooring and stair treads. A custom SAFRAIL™ fiberglass handrail system surrounded the platform and stairs. Matching fiberglass pickets were installed to prevent children from going underneath the platform.

Unlike wood or metal structures, the fiberglass platform is well suited for a chlorine-rich waterpark environment. To insure UV protection, the fiberglass components were painted with blue and white polyurethane paint. The fiberglass slide will require minimal maintenance, resulting in a satisfied customer and a safe, solid structure for children's water play activities. ●

Case History: DURAGRATE®

Molded Grating Adds Aesthetic Touch To Train Station

In July of 2007, the Metrolink commuter train service in California opened a new station in Buena Park, Orange County. The station is part of a new trend of "transit-oriented" development that promotes building around stations as cities look to revitalize aging areas. The Buena Park station is expected to serve 500 people daily and liven up a stagnant area currently comprising industrial buildings, townhomes and a housing complex owned by the California State University, Fullerton.

The sophisticated station design included 680 foot passenger platforms, passenger waiting area canopies and an overpass with towers and elevators. With the station playing a key role in revitalization efforts, the project's general contractor ACE Engineering, Inc. selected Strongwell's 2" DURAGRATE® molded grating to complement the modern design. DURAGRATE® is primarily used as floor grating, but the product's attractive grid pattern made the molded grating an excellent choice for the architectural screening application.

Strongwell's DURAGRATE® has high resin content (65%) that will provide the station extended maintenance free performance. The light weight panels are also very easy to fabricate. Strongwell distributor McNichols made fabrication even simpler by providing ACE cutting templates. Mike Coleman of McNichols stated "Use of the molded pattern greatly added to the overall appearance." ●

Case History: DURADEK®

Pultruded Fiberglass Grating Safeguards Draining Trench

A major national home builder selected Strongwell's DURADEK® I-6000 fiberglass grating to safely guard a newly built drain trench in a Brentwood, California community. The concrete trench was in close proximity to the sprinkler system, so metal grating would have presented corrosion and rust issues. Safety was also important because the 3' deep trench bordered a public bike trail.

The DURADEK® fiberglass grating solved all the issues by providing a sturdy covering for the trench that was corrosion resistant and attachable to the concrete with discrete stainless steel clips. The client was extremely satisfied with the user friendly grating and mentioned that the Strongwell team was very helpful in product selection, delivery requirements and installation assistance. ●

Case History: SAFPLANK®, EXTREN®, FIBREBOLT®

Fiberglass Composites Chosen for Cellular Antenna Screening

With cellular dependency growing, signal boosting antennas are continually springing up to meet demand. Many find the structures intrusive and some municipalities require that cellular antennas be hidden from view. Concealing the antennas with standard building materials such as steel and aluminum becomes a challenge because metals can interfere with cellular signals and degrade an antenna's performance. The solution is Strongwell's fiber reinforced polymer (FRP) composites. The fiberglass composites are electro-magnetically transparent, making them invisible to cellular signals, radio waves, microwaves and other electromagnetic frequencies.

ComposiCon, Strongwell's fabricator in Northern California, has worked with several cellular antennae screening applications. The fabricator knows that screening the antennas with Strongwell's FRP structural shapes will not distort the signal strength and can be designed to achieve an aesthetically pleasing look.

ComposiCon combined Strongwell composite products to produce beautiful cellular antenna screenings, as seen on this rooftop in San Francisco. The fabricator used EXTREN® structural tube for support posts. SAFPLANK®, Strongwell's interlocking fiberglass panels, was attached to the square tube with FRP plate clips and Strongwell's composite nut and bolt system, FIBREBOLT®. ComposiCon completed the application with their custom fiberglass cornice. The resulting screen does not affect cellular signals, completely camouflages the antenna and blends aesthetically with the design of the building. FRP was the only reasonable option and the customers were well pleased with the results. ●

Case History: EXTREN®, SAFRAIL™, DURADEK®

Corrosion Resistant FRP Best Choice for Wastewater Clarifiers

The primary clarifiers at the Albert Lea Wastewater Treatment plant in Albert Lea, Minnesota were in immediate need of an overhaul. The trapped gases inside the covered clarifiers had deteriorated the aluminum grating and rusted the steel framing to the point the walkway was no longer safe. The consulting engineers selected Strongwell's fiberglass composite products as the best solution to this corrosion problem.

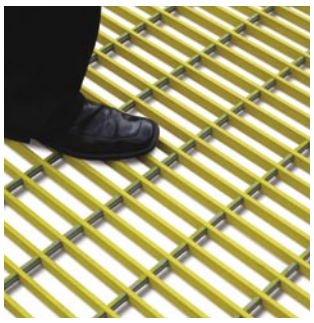
The new walkway was built with Strongwell's EXTREN® series 525 beams and tubes. A SAFRAIL™ fiberglass handrail system with 2-line side mounted posts and a 4 inch kick plate was assembled on location. Strongwell's 1.5" DURADEK® I-6000 pultruded grating was selected to serve as the new walkway's flooring.

Rice Lake Construction, contractor for the project, found the fiberglass walkway to be much lighter and easier to install than steel. Rice Lake's site supervisor, Brad Knight, added that Strongwell engineers were very helpful and he was very happy with the final outcome of the project. ●

New Product News

DURAGRID® R-8300 Grating Introduced!

Strongwell has specially designed a new DURAGRID® R-8300 1" fiberglass grating for use in environments such as cooling towers where maximizing vertical air flow is important. The smooth rectangular bar construction yields 83% open space allowing excellent airflow while still providing 60 lbs. per square foot load capacity on a 36" loading span. The grating can be safely used for maintenance walkways and access platforms. The bearing bars are produced with a synthetic surfacing veil to enhance corrosion resistance and to help protect the bar from particles from the air passing through the grating. For more information, visit the product literature section of Strongwell's website, www.strongwell.com. ●



Website Updates

New Information on Strongwell.com

Strongwell is committed to providing the latest news, product literature and information on our up-to-date website. Visit www.strongwell.com to see our latest updates and tools!

• **Strongwell Specifications** are now downloadable in an online Word document. A link is located on the home page.

• An **Architectural Solutions** page has been added to our *Selected Markets* section. Visit this new page to learn more about the benefits of fiberglass for architectural applications.

• Read more about how Strongwell is making headlines in our "**In the News**" section. Links to the most recent news articles, along with the latest product information, are located on the home page of Strongwell.com. ●

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