



case study



> Topp Industries, Inc.

Problem

Topp Industries, Inc. is a leading manufacturer of lift stations and components used to move wastewater from homes, commercial buildings, and other inhabited structures to treatment facilities. Many companies in the wastewater-treatment industry make their products out of steel and concrete. But steel is highly susceptible to corrosion caused by various chemicals in the wastewater stream, and this tendency for corrosion is often accelerated by chloride-rich environments, such as areas with natural salt water concentrations. Ultimately, the life spans of these lift stations are dramatically shortened. As for concrete stations, they tend to crack as they settle, resulting in leakage and typically higher maintenance costs. In addition, both steel and concrete stations are extremely heavy, making them difficult to transport and install.

Furthermore, stations that are composed of a combination of both steel and concrete are also highly susceptible to their environments, leading to shortened life cycles. In high-chloride environments, concrete will inevitably crack over time, allowing the chlorides to reach and corrode the steel. When steel corrodes it expands, causing it to lose its bond to the adjacent concrete, often limiting the total life cycle of the lift station or worse, resulting in failure of the structure.

These problems can be solved by using composite materials consisting of fiberglass reinforcement in a polymer resin. But open spray-up and many of the older fiberglass manufacturing technologies are slow and labor-intensive.

Solution

Topp Industries avoids these problems in part by making lift station components such as manway flanges and top and bottom cover plates out of thermoset bulk molding compound (BMC) and sheet molding compound (SMC). BMC and SMC provide excellent corrosion, chemical, and atmospheric resistance, helping Topp's lift stations last far longer than similar steel units. In addition, BMC and SMC lift station components do not crack in the field like those made of concrete. In most cases, thermoset components are significantly lighter than concrete and steel parts of equal strength. Also, the closed molding process used to make thermoset parts is much more environmentally friendly than open composite-manufacturing processes.

engineered for performance

Results

Closed molding turns out finished composite parts in minutes, compared to hours for open spray-up processes, significantly reducing manufacturing cycle times and labor requirements. In addition, concrete basins made by other firms in the industry weigh several tons, requiring heavy equipment, large quantities of fuel, and considerable human effort to transport the units and handle them on the job site. But thanks in part to its relatively light BMC and SMC components, Topp lift stations are easy to move and handle, which minimizes labor, equipment, and fuel requirements. Once in place, corrosion-resistant Topp stations last at least seven times longer than steel tanks and do not require repairs to fix settlement cracks and other problems that affect concrete units.

Topp does make some products out of steel and cast iron. But with fuel prices increasing, the cost of the casting process has risen significantly in recent years. With this added incentive, Topp plans to make even less use of metals – and more of composites – in the months and years to come.



IDI Composites International is the premier global formulator and manufacturer of thermoset molding compounds for custom molders and OEMs. The company provides customized polyester/vinylester-based bulk molding compounds (BMC) and sheet molding compounds (SMC) for the world's most demanding markets, including automotive, electrical, appliance, food service, and energy.

IDI high-performance thermoset molding compounds are lightweight and exceptionally strong, exhibiting better strength-to-weight ratios than most metals. They are also corrosion resistant, creep resistant, and exhibit excellent thermal properties compared to engineered thermoplastic-based products.

Headquartered in a 200,000 square foot manufacturing facility and research center in Noblesville, IN (USA), IDI has a strong presence in the international thermoset composites market. To support a growing customer base world-wide, the company operates multiple wholly-owned manufacturing facilities in Europe, Asia, and The Americas.



With excellent corrosion resistance, IDI's thermoset materials are an ideal replacement for steel components in wastewater lift stations that aid the movement of wastewater to treatment facilities.

www.idicomposites.com

The Americas

IDI Composites International
407 S. 7th Street
Noblesville, IN 46060 U.S.A.
317-773-1766
Fax: 317-773-3877
info@idicomposites.com

IDI Composites International
P.O. Box 400
Road #3, KM 151.8
Aguirre, Puerto Rico 00704
787-853-2186
Fax: 787-853-2187
lcruz@idicomposites.com

Asia/Pacific

IDI Composites International
No. 8, Lane 275, QianPu Road
New Eastern Section of
Sonjiang Industrial Park
Shanghai, 201611 China
86-21-51096910
Fax: 86-21-67601689
rrodriguez@idicomposites.com

IDI Composites International
Shenzhen Company, LTD.
P.O. Box 107
Fucheng Industrial Park
Hongtian, Xinqiao, Sajing Town
Bao An, Shenzhen, 518125 China
86-755-27229550
Fax: 86-755-27229554
rrodriguez@idicomposites.com

Europe

IDI Composites International
Unit One, Oldbury Park
Popes Lane
Oldbury, West Midlands
B69 4RG U.K.
44-121-552-0038
Fax: 44-121-543-5377
pgarland@idicomposites.co.uk