

W.L. Gore provides unique solutions to industrial fluid sealing problems

When faced with tough problems, facility managers often look to outside experts for solutions. W. L. Gore & Associates, a technology-driven enterprise focused on discovery and product innovation, prides itself on providing solutions that not only meet, but exceed expectations. This was the case at two facilities recently, when Gore's sealing specialists found opportunities for cost saving and problem solving.

Gasket tape solves problem in heat exchangers

The first case involved sulfuric acid concentrator units at a facility in Texas. The facility used a train of tantalum heat exchangers, fitted with graphite one-piece gaskets. Complete disassembly of the units was required in order to replace these one-piece gaskets fitted around the exchanger tubes. Overall, this process required about 72 man hours to complete each exchanger; the maintenance team consisted of three people working over three shifts.

Looking for a more efficient solution, the customer turned to Gore and installed GORE® Series 300 Gasket Tape. Formed in place, GORE® Series 300 Gasket Tape simply goes around the tubes for installation, without the need to remove the bundle, saving the plant a significant amount of time, money and trouble.

Made of 100 percent expanded PTFE, GORE® Series 300 Gasket Tape is chemically inert and stands up to the challenge of critical sulfuric acid applications. Strong and resistant to creep and cold flow, the tape also withstands the challenges of thermal cycling in heat exchanger applications, leading to a long term reliable seal and improved safety.

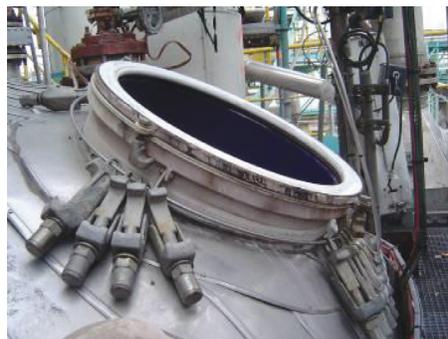
The use of GORE® Series 300 Gasket Tape has also resulted in reduced cost and dramatic improvements in productivity at the plant. The man hours required for installation have decreased from 72 to 12 for each exchanger. This means that for each installation, the production unit saves \$6,000 in man hours alone. Across a bank of exchangers, those savings add up quickly, and also free up hundreds of man-hours that can be invested towards other plant maintenance and operations needs. By also eliminating the need

for a crane to fully remove the tube bundle, additional savings of \$2,400 over three days per unit was realized.

Finally, the ability to immediately make up gaskets for any shape and size flange eliminated the need to wait for custom-cut gaskets and allowed the plant to come back on line quickly, while reducing costly expedited procurement, high inventory carrying costs, shipping and handling.

Universal Pipe Gaskets withstand temperature variations, stay tight

GORE® Universal Pipe Gaskets recently solved a challenging seal issue for one of the company's customers. The client, a chemical industry production facility, was looking for a solution to the problems with the existing PTFE envelope manway gaskets on a glass-lined steel reactor. The manway protection rings in use meant the application required two gaskets, one on each side of the ring. Irregularities in the surface of the glass required the use of shims to attain a reasonable



GORE® Universal Pipe Gasket (Style 800) installed on a DN 600 glass-lined steel manhole.



GORE® Series 300 Gasket Tape installed on a heat exchanger with tube bundles.

seal. The installation of these shims was both troublesome and time consuming. The operating temperature of the process cycles from ambient to 120 degrees C. After several cycles, the seal at the manway failed. The envelope gaskets were either pulled inward from vacuum or leaked significantly at operating temperature and pressure.

One-quarter-inch thick GORE® Universal Pipe Gaskets were installed on either side of the protection ring. The ability of GORE® Universal Pipe Gaskets to conform to the irregular glass surface eliminated the need for shims altogether. The inherent material strength properties of these gaskets also eliminated creep and cold flow that lead to loss of bolt load and subsequent failure of the envelope gaskets. After the first thermal cycle, the operators checked and retorqued the J-clamp bolts as a safety measure. No additional maintenance is required and the manway seal now remains tight and secure for the 18 months between plant shutdowns.

W.L. Gore & Associates is a technology-driven company focused on discovery and product innovation. Well known for waterproof, breathable GORE-TEX® fabric, the company's portfolio includes everything from high-performance fabrics and implantable medical devices to industrial manufacturing components and aerospace electronics. Founded in 1958 and headquartered in Newark, Del., Gore posts annual sales of more than \$3.2 billion and employs approximately 10,000 associates with manufacturing facilities in the United States, Germany, the United Kingdom, Japan and China, and sales offices around the world. Gore is one of a select few companies to appear on all of the U.S. "100 Best Companies to Work For" lists since the rankings debuted in 1984. The company also appears regularly on similar lists around the world.

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