

TEADIT[®] Acrylic Acid CASE HISTORY

INDUSTRIAL SEGMENT

Chemical

Application

Fluid: Acrylic Acid

Equipment

Heat Exchanger



SCENARIO

A rectangular heat exchanger, responsible for 28% of the plant's acrylic acid production, was leaking during hydrotesting prior to the plant's planned start-up. According to the manufacturer, the equipment had been tested and was supplied in good condition. However, Teadit's field services team noticed that the flanges were warped which was causing an uneven gasket loading that was leading to the sealing failures. Repairing the flanges would cause significant delays to plant start-up, but the currently specified 1/8" thick rigid PTFE sheet gasket was unsuitable for the existing flange conditions at the current torque. It was also determined that it was not possible to increase the torque to create more gasket load.

SOLUTION

Teadit's technical team specified a multidirectional expanded PTFE tape, Teadit style 25BI, for the application. This material allows for adequate sealing at the existing torque and offers better compressibility to handle the flange conditions. Additionally, it provides better creep performance than rigid PTFE. The appropriate torque was calculated, and a tightening sequence was created.

CUSTOMER GAINS

The customer avoided the significant costs of flange repair and delayed start-up. Additionally, the acrylic acid monthly production was increased by more than 60%, resulting in production gains of over \$600,000 in a 4-month period.