

## TEADIT® TF1580 CASE HISTORY

**Industry:**

Pulp & Paper

**Application:**

Fluid: Black and White Liquors

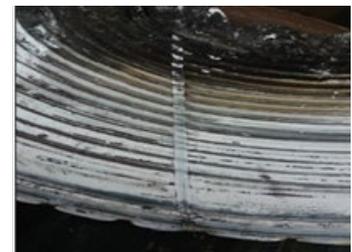
**Equipment:**

Spiral Heat Exchanger



**SCENARIO**

A customer was experiencing internal leakage issues on their spiral heat exchanger equipment. The exchanger's heat transfer channels were being clogged due to fragmentation of the in-place rigid PTFE gasket. The gasket material was too fragile to handle the compressive loads created by the thin sealing surface of the channel dividers. When compressed against the lid, the material's poor strength and susceptibility to creep and cold flow (a phenomenon where a gasket material "runs away" from load) caused the material to embed down into the channels (as pictured to the right). A spiral heat exchanger operates by passing alternating channels of process fluid and a heating/cooling fluid (typically water or steam) through these channels to transfer heat energy through the system. Any interference to the process flow of these channels causes a loss of system efficiency and performance. In this particular case, it caused the customer to have to inject more vapor into the equipment to maintain the expected/required efficiency levels. This increase resulted in an additional bi-annual raw material cost of \$700K for the process.



**SOLUTION**

Teadit's technical team assessed the situation and specified our Tealon TF1580. This restructured PTFE material incorporates a barium sulfate filler to improve the material's compressive strength and creep/cold flow resistance. The Tealon TF1580 material was able to handle the compressive stresses of the exchanger's spiral channels while still exhibiting excellent sealability and chemical resistance properties, making it the obvious solution for this application.



**CUSTOMER GAINS**

After installing the new Tealon TF1580 gaskets, the system was observed and tested, and the solution was determined to be successful, as the equipment efficiency losses due to gasket fragmentation were completely eliminated. Operations for the equipment returned to normal and Teadit was able to provide the customer with a yearly savings of \$1.4 million.