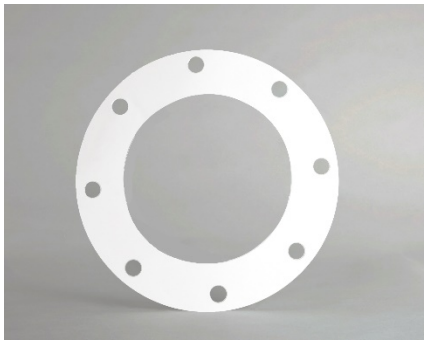
TEADIT® 24SH CASE HISTORY

Industry:
Chemical Processing

Application:
N/A

Equipment:
Heat Exchanger



SCENARIO
A customer was using a rigid silica filled, restructured PTFE gasket in a large rectangular heat exchanger flange in a chemical processing facility. Due to the nature of the process, the flanges were manufactured from 316ss. Additionally, they were only .180" thick. Due to the large overall size and extrememly thin nature of the flanges, waviness and flange rotation/warping were major concerns. On its long side, the flange dimensions were greater than the gasket material's standard available sheet size which required either the use of a segmented gasket with traditional dovetailed joints or heat-fused ("welded") joints. Both options proved to be problematic. The traditional dovetailed gasket was experiencing leaks through the joint because the thin flanges were not capable of generating enough gasket load to compress the material adequately to close up any gaps, leaving a natural leakpath. On the other hand, the heat-fused gasket created issues at the joints due to thickness variances in the material (i.e. high spots) which allowed the process media to leak around the gasket.

SOLUTION
Teadit's approach to solving this customer issue was manifold. First, we replaced the rigid restructured PTFE material with a softer (i.e. more compressible) expanded PTFE (style 24SH) material. This allows for greater conformability to the sealing surface, counteracting the inherent waviness in large thin flanges and generating greater sealing stresses. Moreover, we were able to provide a piece of material that was large enough to manufacture the gasket as a single piece without the need for segments, joints, or welds. Lastly, we recommended that the customer incorporate oversized hardened washers to help distribute the bolt load more evenly arcoss the flange sealing surface. The end result was that an effective seal was created at lower bolt loads without warping or bending the thin flanges, thus eliminating the leaks they were experiencing.

CUSTOMER GAINS
By eliminating the leak issues, they were previously experiencing, the customer was able to run their process more efficiently and effectively and eliminate maintenance and downtime costs.