

Proper Gasket Selection Helps Maximize Tank Service Life

by Steve Benet & Richie Richardson



Many products transported in ISO tanks need to be tightly sealed or their fugitive emissions (small leaks that cannot be detected by bubble leak testing) can cause corrosion damage to the sealing surfaces that requires costly repairs. These repairs are costly and take tanks out of dedicated service prematurely. Pictures show examples of this corrosion damage on HF and refrigerant tank manways sealed with spiral wound gaskets. Most refrigerant and HF gas leaks/emissions from manways and other tank connections, form hydrofluoric acid droplets when exposed to a moist atmosphere. These droplets accumulate to form pitting and broad surface corrosion on the flange surfaces as seen in the pictures of these two tanks.



Broad Surface Corrosion (HF Acid Tank)



Droplet/Pitting Corrosion (Refrigerant Tank)

In the past, before this emissions/leakage/corrosion mechanism was well understood, spiral wound gaskets were typically used for these T&G manway connections. Shippers and Leasing Companies just accepted this leakage/corrosion damage as another "cost of doing business". These are costly repairs for the Shippers and Leasing Companies, all because they're unknowingly using an inexpensive, "leaky" gasket. In order to prevent this corrosion and expensive repairs, 20 years ago VSP Technologies developed CycleTight® gasket technology which provides a significantly tighter seal utilizing the same bolt load/torque. The result is T4/T5 Tightness performance versus T2/T3 Tightness performance associated with traditional spiral wound gaskets. That's 40,000X lower leakage/emissions with the CycleTight® gasket!

Fugitive Emissions Comparison By Gasket Type

