

C.J. Mulanix Co., Inc.

www.cjmulanixco.com

Acid Etching and Caustic Chemical Immersion Cleaning

Getting the most from your gasketed plate heat exchangers:

Gasketed plate heat exchangers (PHE) are the "Holy Grail" of the heat exchanger world, able to provide approach temperatures as close as 1° Centigrade in a wide variety of fluid applications. They must be serviced and maintained properly to perform to their potential.

PHE plates should be cleaned with a four (4) step acid etching-caustic chemical immersion process to restore their "Optimal" heat transfer efficiency. At **C.J. Mulanix Co., Inc.**, this consummate process carried-out at our Buffalo, NY plant will typically cost NO More than on-site pressure "power washing" offered by competitors or performed by in-house crews.

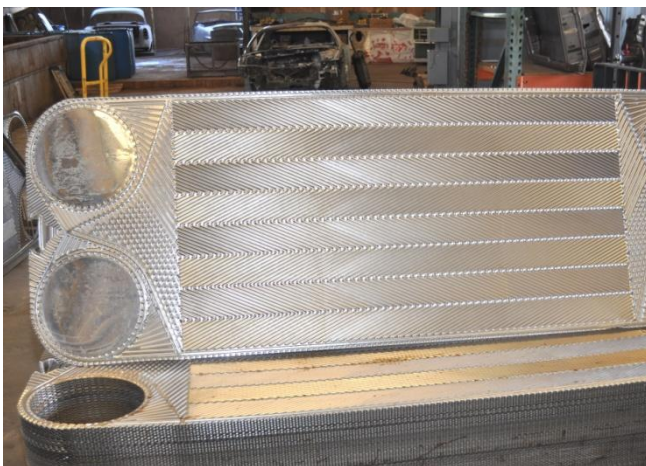
Service shortcuts such as "power washing" oftentimes achieves only 50% to 70% restoration of the full "heat transfer" efficiency depending on the specific foulant build-up. Over time this "lost" efficiency accumulates and can result in higher energy usage, shorter service cycles, and operating disruptions. Customers can demand and receive 100% without additional cost.

- 1) concentrated inspection review and assessment to check for any cracks, pin holes, fissures, or erosion.
- 2) heated caustic immersion cleaning to remove any adhesives, gum, grease, sediments, or contaminants.
- 3) nitric acid bath etching to remove any mineralizations, reaction buildups, corrosion, or crystallizations.
- 4) hot caustic high pressure "power washing" to remove any cleaning compounds & add a protective layer.

Gradual surface buildup as described on line #3 will create an insulating layer bonded to the metallic plate surface reducing the heat transfer rate. The fouling causes can be quite complex, containing one or more of these types of build-ups and layers which cannot be removed with high pressure "power washing". PHE manufacturers recommend acid etching-caustic immersion cleaning to restore plates to their full OEM specification and "Optimal" 100% heat transfer efficiency. Plates cleaned with our acid etching-caustic process will evidence this 100% re-furbishment and appear "like new" as depicted below.

Lastly, on an important "green" note, all chemical cleaning is performed at our Buffalo, NY Plant, not on your site. Subsequently, we retain all of the *hazardous material* (HAZMAT) "residual" byproduct which can reduce your DEC monthly levels. We are an EPA licensed and NY State registered to handle and dispose of all HAZMAT.

100% ten year old plates chemical cleaned



Acid etching-caustic chemical immersion

