

FEATURED PROJECT

Chemically Resistant Coating System

APPLICATION OF A HYDROCARBON RESISTANT TANK COATING SYSTEM
CUSTOMER
 KL Chempak

APPLICATION TEAM
 Gartner Coatings

SYSTEM
 Chemically Resistant Novolac Epoxy Coating

LOCATION
 Houston, TX

DATE OF APPLICATION
 May 2016

SUBSTRATE
 Carbon Steel

PROBLEM

A new tank farm was installed to handle the storage and distribution of specialty hydrocarbon products for KL Chempak in Houston, TX. The tanks stored alkyl phenol, purified fatty acids, and other materials. When the first load of chemicals was removed from the tank, the product was discolored and flakes of coating were found. Upon inspection of the tanks, the polymeric coating had completely failed, showing indications of chemical attack as it was swollen and soft to the touch. In order to protect the tank and purified products, a more chemically resistant coating was needed.



Figure 1 Failed Coating System Inside of Storage Tanks

After analyzing the failed coating system and the materials planned for storage, Advanced FRP Systems specified a highly chemical-resistant, 100% solids, epoxy novolac coating system: HP-410 Novo. A minimum DFT of 30 mils was specified to ensure maximum protection.

STEPS:

1. The failed coating was removed and the surface was grit blasted to an SSPC SP-10 Near-White Metal Finish.
2. Pits, corners and weld seams were stripe coated with HP-410 Novo.
3. The HP-410 Novo was applied via plural component, airless spray equipment in two coats at 15 - 20 mils per coat to minimize pinholing.
4. The coating was allowed to cure for 24 hours at ambient temperature.
5. High-voltage holiday testing was done and repairs were performed.



Figure 2 Tank Farm and Plural Component Equipment Used for Application

HP-410 Novo was applied to all 12 storage tanks to ensure more batches of product would not be destroyed by impurities. The project was completed on-schedule and on-budget, and the tanks have been in service without any issues for over 4 years.

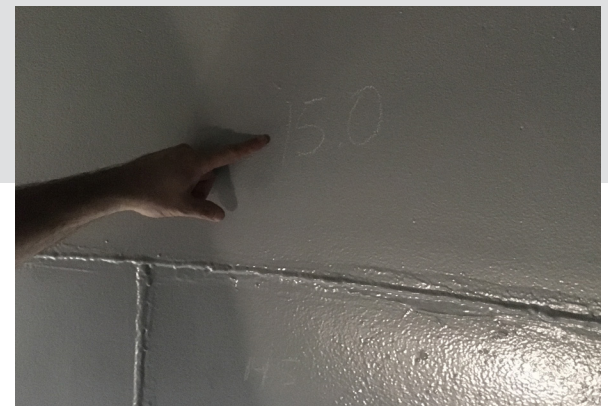


Figure 3 Thickness Assessment after 1st Coat of HP-410 Novo in Grey

SOLUTION
BENEFITS

- The coating system was easy to install and did not require an elevated temperature cure
- Provides excellent all-around chemical resistance and does not leach into the products
- A zero-VOC coating system minimized pinholes and ensured solvent entrapment would not occur.
- Coating will provide a 20-year, maintenance-free service life for the tank owner.