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FEATURED PROJECT

Secondary Containment Coating System

APPLICATION OF A SECONDARY CONTAINMENT COATING FOR AGGRESSIVE FRACKING CHEMICALS

CUSTOMER
Texas Area Fracking Fluid Company

APPLICATION TEAM
Cameron Industries LLC.

SYSTEM
Chemically Resistant Secondary Containment System

LOCATION
Texas

DATE OF APPLICATION
March 2020

SUBSTRATE
Concrete

PROBLEM

A new fill station for fracking fluids was under construction in Central Texas. The fracking fluid company determined that the acidic nature of the chemicals necessitated a secondary containment system to protect the concrete containment from chemical attack. A drive-up fill station also had to be protected in case a small spill occurred during filling. The remote location of the facility, coupled with daily temperatures that regularly reached over 100 °F in direct sunlight, made installation of the secondary containment system especially difficult.

Figure 1 Concrete Containment Area Prior to Coating

SOLUTION

The owner of the fill station turned to Advanced FRP Systems to help design a long-term, maintenance-free solution. The coating system had to be able to withstand exposure to strong acids, caustics, and specific hydrocarbon reagents that could be spilled onto the surface. The drainage sump was also an area of concern as it was susceptible to cracking.

STEPS:

1. The concrete was shot blasted to remove any laitance and provide a rough profile.
2. FRP 200 Concrete Sealer was applied at 3 - 5 mils to reduce pinholing.
3. The drainage sump had one layer of a high-strength carbon fiber composite applied to it to resist cracking of the concrete.
4. First coat of HP-400 Novo was applied at 10 - 15 mils.
5. Any pinholes were covered with FRP Repair Putty.
6. Second coat of HP-400 Novo was applied at 10 - 15 mils.
7. Non-slip aggregate was applied on all walkways.

Figure 2 Fill Station After Final Coat of HP-400 Novo

The chemical-resistant coating system was installed on-time and on-budget, with the secondary containment system successfully turned over to the construction company for installation of the storage tanks.

Figure 3 Close-up of Non-Slip Finish on Walkways

BENEFITS

- The coating system was installed over hot concrete in direct sunlight without issues.
- The system offered a crack-resistant, carbon fiber composite solution for high-risk areas.
- The Novolac epoxy provides excellent chemical resistance against acids, caustics, hydrocarbons, and solvents.
- The coating system will provide a 20-year, maintenance-free service life