Protecting Concrete Surfaces with ChemLine® Coatings

ChemLINE®
CASE STUDY

Advanced Polymer Coatings' ChemLine® coatings are well-known for superior corrosion protection of steel surfaces for tanks and piping. Another excellent use for patented ChemLine® polymer coatings is for concrete and secondary containment protection, serving as a barrier if an occasional splash or spill occurs at production and storage facilities.

Turkey's UDME Chooses ChemLine® Coatings to Safeguard Concrete Surfaces Against Corrosive Fertilizer Chemicals

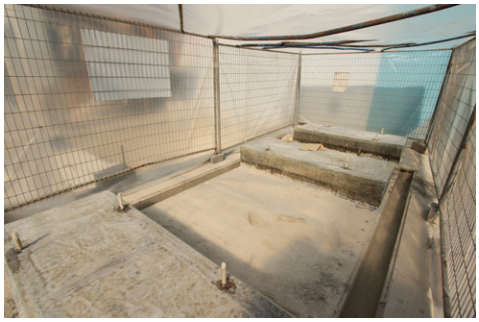
At the GÜBRETAS Fertilizer Factory in Turkey, a company owned by UMDE Müh. Müt. Tic. Ltd. Şti., the manufacturing operations produce a range of fertilizers and related products that are used in the Turkish agricultural sector.

UDME consulted with APC's Turkish offices (MarineLine Turkiye) to review what high performance coatings would provide acid resistance on new concrete pads that will hold chemical tanks used in fertilizer production and the surrounding areas at the facility.

UDME is focused on protecting these concrete areas from any potential leakage of chemicals from valves-lines to and from the tank, and also any release directly from the tanks

Early preparation work of the new concrete (top right) included two layers of fiberglass application at 1,000 micron thickness minimum (right), then sanding to create a concrete profile for good mechanical bonding for the ChemLine® coating. APC/MarineLine Turkiye constructed temporary protective enclosures (below) with safety signs for the application and heat curing work.

SERVICE CONDITIONS



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Reviewing the Customer's Needs

APC/MarineLine Turkiye also studied the cargo (chemicals) and temperature service conditions to monitor what types of potential splash, spill and leakage situations that could occur, and checked these against ChemLine®'s coating resistance list. These conditions included:

- 18% Phosphoric Acid
- 10% Hydrogen Sulphate-Sulphuric Acid
- 98% Chlorine - Fluoride
- Operating temperatures between 95 to 105°C (203 to 221°F)

All the concrete surfaces coated are new, and the entire project is expected to be completed in 2015. The total area of coverage for the ChemLine® coatings to date has been approximately 1,000 square meters of concrete surfaces.

SURFACE PREPARATION, APPLICATION, AND HEAT CURING

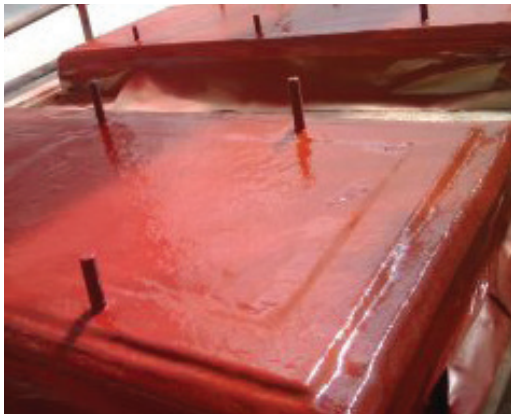
A For surface preparation prior to coating application, two layers of fiberglass were applied at a 1,000 micron thickness minimum. After the fiberglass was dry, it was sanded so the surface would provide good mechanical bonding to the ChemLine® coating.

B The first coatings application was ChemLine® Primer Blue, as a primer coat at 200 micron DFT.

C Next, ChemLine® 784/32 Red was applied as a base coat at 200 micron DFT.

D Finally, ChemLine® 784/32 Grey was put on as the top coat at 200 micron DFT.

E For heating curing the ChemLine® coatings in the these large outdoor areas, APC built a protective enclosed area using plastic sheeting wrapped around the staging as a support. This provided adequate protection during the heat curing stage.



(Above) ChemLine® 784/32 red base coat applied at 200 micron DFT on all surfaces.
(Below) ChemLine® 784/32 grey top coat applied at 200 micron DFT on surfaces and heat cured.

Result

For the work that has already been completed, UDME is very pleased with the results to protect these concrete areas. In addition, APC will yet coat ChemLine® on another 700 square meters of concrete surfaces around the storage tanks.