

The ChemLine® coating system from Advanced Polymer Coatings has gained a worldwide acceptance for a range of corrosion prevention applications, including covering concrete against splashes and spills of hazardous chemicals and other liquids, and in concrete secondary containment areas. The following case studies provide a worldwide look at some of these various locales.

B.F. Goodrich Chemical Company Secondary Containment

The LaPorte, Texas B.F. Goodrich plant required a lining for its concrete secondary containment storage area. Storage tanks at the site hold various chemicals such as ethylene dichloride, perchloroethylene, trichloroethane, methylene chloride and other chlorinated solvents.

After testing a number of linings, B.F. Goodrich chose APC's ChemLine® coating, "Because it was the only lining that resisted all of our solvents," according to their personnel. ChemLine® has maintained its excellent chemical resistance after years of service in the hot Texas sun.

Chemical Solvents, Incorporated Drum Storage Containment Area

At Chemical Solvents in Cleveland, Ohio, approximately 12,000 square feet of drum storage area, loading docks and ramps were lined with a non-skid version of APC's ChemLine® coating system.

Initially, the company lined only outside loading docks and ramps to test the coating's capability of handling hot summers and cold winters, plus the impact from dropped drums and dragged forks. After the one-year test period, Chemical Solvents lined the balance of the area including 6,000 square feet of the secondary containment area with ChemLine®.

Department of Transportation – State of Connecticut Hazardous Chemical Areas

In this project, the State of Connecticut wanted to build and line Emergency Hazardous Chemical Areas at all weight stations and rest areas along interstate highways in the state. The reason for this was to address the problem and potential danger of leaking hazardous chemical tanker trucks.

After one year of laboratory testing of more than 70 products, APC's ChemLine® coating was selected because of its excellent chemical resistance to acids, alkalis, solvents, and for its ease of repair. These emergency areas also included multiple truck parking and a large sump containment area.



Secondary containment areas at B.F. Goodrich holds various chemicals.

The first of these emergency areas on Interstate I-95 were lined with the ChemLine® coating system, including a non-skid version. The State of Connecticut was the first state to address this innovative safety approach.

Pennsylvania Power and Light Lines Secondary Containment Area

Pennsylvania Power and Light required a lining for its 98% sulfuric acid and 50% sodium hydroxide concrete secondary containment storage area. The utility set up a specification requirement that stated, "Lining must last at least 30 days in immersion in both chemicals."

APC's ChemLine® coating was the only lining of a number that were tested that was able to pass these rigid specification requirements. After years of spill containment and weathering the elements, the ChemLine® coating is still performing its secondary containment service.

Eldorado Chemical Corporation Requires Advanced Flooring Protection

Eldorado Chemical Corporation in San Antonio, Texas, manufactures various types of paint strippers for aircraft refurbishing. The company has a number of plants throughout the United States. Over a period of years, Eldorado had used a wide range of coatings from epoxy paints to vinylester fiberglass-reinforced flooring to protect its concrete floors, with no success.

A test patch of an APC's ChemLine® non-skid coating was applied in a heavily traveled area to test its capability of resisting the acids, solvents and caustics used to manufacture Eldorado's products.

After six months of testing, Eldorado decided to coat one complete plant with the ChemLine® coating. Within one year Eldorado then lined all its plants' concrete floors with ChemLine® and has recommended Advanced Polymer Coatings and its coatings to many of its customers.

Hukill Chemical Company Lines Concrete Containment Areas for Handling Solvents

Hukill Chemical in Bedford, Ohio, is a solvent recovery company handling a wide range of solvents including methylene chloride, MEK, acetone, methanol, perchloroethane, etc.

After testing four different linings for a period of several months in the various solvents, an APC ChemLine® coating system was the only one that survived. According to Hukill's general manager, "Some linings claiming to be resistant for a minimum of 30 days failed in less than 24 hours."

Hukill has since lined more than 10,000 square feet of concrete containment areas with the ChemLine® coating. ChemLine® has handled the heat of the summer sun reaching 120°F (49°C) to the freezing cold at -20°F (-29°C), with complete success.



ChemLine® coating for concrete protection.

Luz International Solar Facility Uses ChemLine® for Hot Application Requirements

At the Luz Solar Electric Generating Plant, Mojave, California, electric energy was produced by solar heating oil as it flowed through a glass pipe. The hot oil 735°F (390°C) was used to convert water to steam that then turned the turbine generators to produce electricity. Solar panels covered hundreds of square acres at the plant. California law required that all concrete be lined with an impermeable liner capable of withstanding the 735°F (390°C) hot oil.

Sargent-Lundy Engineers, (in Chicago, Illinois), contacted Advanced Polymer Coatings about this requirement. After extensive tests dropping 735°F (390°C) hot oil on an APC ChemLine®-coated concrete surface, as well as on other coating candidates, the ChemLine® coating was chosen for its superior performance. Other key requirements for the lining material included

- An ambient cure
- Resistance to summer high temperatures of 135-145°F (57-60°C)
- Nighttime lows of 32-40°F (0-4°C)
- Resistance to ultraviolet from the sun's rays

The plant had one trauma event when a section of glass pipe broke, sending 735°F (390°C) hot oil onto the ChemLine® coating's surface. ChemLine® performed as it was engineered to, by not allowing any hot oil to penetrate into or through the concrete into the desert sand.

Tokyo Fire Department Calls on ChemLine® for Lining of Underground Utility Tunnels

Tokyo Power in Tokyo, Japan, utilizes underground utility tunnels that carry telephone and power cables throughout the city. Because of the tremendous problems and disruptions that could happen if these cables were damaged, these tunnels are built to be earthquake-proof.

In some areas, the tunnels are near chemical facilities with underground tanks storing MEK, Toluene, Acetone and other types of highly explosive solvents. Due to the fear of these tanks rupturing during an earthquake, and the vapors penetrating into the utility tunnels, the Tokyo Fire Department (TFD) researched protective coatings that can withstand these chemicals.

The TFD invited coatings manufacturers to send samples for testing to see which could resist these solvents. After analyzing all the coating products from around the world, APC's ChemLine® coating was selected because of its total resistance to all solvents and its high bond strengths to concrete. Two coatings of ChemLine® were applied to provide the solution for the TFD.



Tokyo Fire Department lines underground utility tunnels with ChemLine® for preventive protection.