

Protection At The Speed Of Light

CASE STUDY

DiamaPro® UV-HS Plus Solves Acid Corrosion Problem for Toyota Forklifts

CUSTOMER

Toyota Forklifts of Atlanta is a carrier of Aichi, Bendi, Cushman, Drexel, Princeton and Toyota Industrial Equipment forklifts, lift trucks, aerial work platforms and specialty material handling equipment. In addition to selling and renting new and pre-owned equipment, the company provides complete parts and service and valuable on-site safety and compliance training. Toyota Forklifts of Atlanta has been supplying customers with material handling equipment for more than 40 years, and has four locations throughout north Georgia. It has received numerous awards for its quality service.

PROJECT EVALUATION

Recently Toyota Forklifts undertook renovation of the concrete flooring at its Atlanta location. The project entailed 15,000 square feet of refurbishing and polishing, along with a 400 square foot battery charging area that required a specialized coating able to resist deterioration due to acid corrosion.

Like its customers' manufacturing, industrial and warehousing sites, the concrete flooring at Toyota Forklifts of Atlanta undergoes extreme abrasion, staining and corrosion from heavy rolling vehicle traffic. Periodic maintenance on the floor at Toyota Forklifts of Atlanta resulted in the accumulation of several layers of epoxies and paints that had to be removed as part of the restoration process. The floor also required extensive oil remediation prior to sealing.

RECOMMENDATIONS

Concrete Floor Systems was chosen to supply the required shot blasting, grinding, scraping, polishing and dust collection equipment to be used on the job, along with the diamonds, sealers, coatings and colorants. In addition, Concrete Floor Systems



supplied DiamaPro UV-HS Plus coating to protect the customer's battery charging area, and trained and certified the flooring crew in its use.

The goal of the renovation was to produce a highly abrasion and stain-resistant floor that was easy to maintain, appealing to its employees and customers, and could be relied upon for years of performance.

PROCESS

Restoring the floor was a matter of grinding and polishing the concrete, along with repairing cracks, filling joints and treating oil and grease stained areas. The polished floor was densified, sealed and dyed a classic black color. Polished concrete is incredibly strong for high traffic material handling applications. Its abrasion resistance is excellent, and it offers a high coefficient of friction to ensure safety. Wet or dry, polished concrete floors meet and often exceed OSHA standards for slip resistance. And the highly polished resin-free surface virtually eliminates tire marks from vehicles and fork trucks, and creates less drag on tires and floor cleaning equipment.

GRINDING & DUST COLLECTION

For the grinding process, Concrete Floor Systems recommended the Lavina® 32GRX Grinder and Metabo® hand grinders. Lavina grinders feature forced, belt-driven planetary movement with floating heads, and an anti-clogging water delivery system that is nozzle-free.

Safe, efficient dust collection was accomplished with Ermator T8600 and T7500 vacuums. The Ermator T7500 has a massive 50 square foot pre-filter and a proprietary Jet Pulse filter cleaning system that replenishes filters from outside the tank via negative air pressure. The T8600 has two oversized HEPA filters, Jet Pulse filter cleaning, and sock-style pre-filters that combine nonstop grinding with long service life. These machines feature HEPA dust extraction systems that meet or exceed all environmental and safety standards to ensure optimal worker and environmental protection.

DENSIFIERS & SEALERS

Removing stains on the floor from forklifts and other machinery was done with the aid



of Ameripolish® Oil Eater™. This formulation is 100 percent biologically based and environmentally safe. Ameripolish 3DHS™ was used in the polishing process, along with Ameripolish SR2™ subsurface stain resistor and Ameripolish SureLock™ Dye. Ameripolish 3DHS hardens concrete surfaces, and locks in dyes for long-lasting color. The stain resistor features a small molecular structure for maximum penetration of the concrete floor and superior protection against moisture, water-carried salts, grease and oil.

COATINGS

Concrete Floor Systems recommended DiamaPro UV-HS Plus to provide optimal protection of the concrete floors in the customer's battery charging areas. DiamaPro UV-HS Plus is a single component, aliphatic urethane that is exceptionally resistant to water and chemicals, and cures instantly upon exposure to ultraviolet light. Diama-Pro UV-HS Plus enables concrete floors to be returned to service immediately after curing, and ensures outstanding resistance to abrasion and scratching. It also has a sharp, distinct finished appearance.

"DiamaPro UV-HS Plus was the hands-



DiamaPro Systems UV-HS Plus is one part, no mixing needed. It comes in 1 gallon or 5 gallon sizes and has an extremely long shelf life.

down best choice for the caustic environment of the battery charging and storage area," said the Coating Specialist from Concrete Floor Systems. "It's ability to protect is unmatched by traditional epoxies. It's been demonstrated to reduce the marring caused by forklifts and similar material handling equipment. And instant curing means the customer is back in business immediately."

Concrete Floor Systems specialists trained Toyota Forklifts personnel and plant managers in recommended floor maintenance procedures. Prepping the battery storage area—including stain remediation and grinding—and applying DiamaPro UV-HS Plus coating and safety lines was accomplished in only 12 hours.

OUTCOME

Renovating the floors at Toyota Forklifts of Atlanta was completed on time and within budget. Plant managers can expect longer service life with reduced annual maintenance costs from the polished and UV coated floors. "I would say the folks at Toyota Forklifts of Atlanta and Augusta are extremely satisfied with their refurbished concrete floors," said Concrete Floor Systems manager.



DiamaPro UV- HS Plus was tested by a registered laboratory to evaluate the effects of Eastman Skydrol® LD-4 airplane hydraulic fluid. Using the covered spot method per ASTM D1308-13 Standard Test Method for Effect of Household Chemicals on Clear and Pigmented Organic Finishes, a drop of Skydrol® LD-4 was placed onto the surface of the coating and covered with a watch glass. The sample was then placed in the test room for 7, 10, and 14 days at 73.4 ± 3.5°F and 50 ± 2% humidity. At the conclusion of each test period the sample was checked for visible signs of discoloration, blistering, softening, swelling, loss of adhesion, or special phenomena. No significant sign of distress under these categories was observed.