



EPOXYTEC™

Grease Trap Rehab and Lining

Cloud 9 Services, Inc. and Epoxytec teamed up to find an economically viable solution to rehab the epoxy lining in a grease trap located in Orange County, Florida. After years of deterioration caused by acidic grease and hydrogen sulfide (H₂S), a structural epoxy system was implemented to restore the underground structure and enable its return to service with a renewed, protected life.

The grease trap, located on 33rd Street in Orange County was identified in January 2009, as being in dire need of either reconstruction or rehabilitation. The county approved grease trap rehab methods, including the use of Epoxytec CPP for the wall coating and ceiling and the use of Epoxytec 17G system for the floors. This project was offered with a five-year warranty; therefore, Epoxytec representatives were on-site for two days to approve the application and certify the epoxy lining application for the warranty. Similar to the Lift Station and Manhole Lining Systems often executed by Epoxytec Certified Contractors, grease traps are underground structures typically constructed using concrete; when left unprotected, they corrode due to the effects of H₂S.

The first stage of the grease trap rehab process began with draining and bypassing the grease trap to be worked on. This allowed the structure to remain open for use while the trap was being rehabilitated.

A Vac Truck was utilized to drain and dispose of the grease accumulated in the trap, and a bypass pump system was put into place. The constant accumulation of grease retains sulfuric acid, and the waste becomes very corrosive, eventually causing the breakdown and deterioration of the porous concrete in the structure, as you can see below.

Once the grease trap was completely drained, we then proceeded to the next stage of the application, which involved surface preparation. This is the most crucial part of the application process. Because some of the walls were spalled between 2 and 3 inches in depth, the walls were resurfaced with

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Featured Products

CPP Sprayliner

CPP Sprayliner 61

CCP Sprayliner MH

CCP Gel: Crack Injection



Project Information

Location

Orlando, FL

Completion Date

January 2009

Structure

Grease Trap

Applicator

Cloud 9 Services, Inc.





Grease Trap Rehab and Lining (cont.)

a quick cure mortar, the Epoxytec Mortartec Silicate to allow a build-out of the concrete in certain areas and the fast turnaround time needed to apply the epoxy, thus coating and repairing the trap. Although this is not an ideal application because there were numerous active leaks and highly spalled concrete, Cloud 9 did a good job of getting the area prepped and mortared in such a hostile environment.

The surface preparation process involved a number of steps. The first entailed water blasting the substrate at 2,500 psi with a 70 gallon-per-minute pressure washer from the Vac Truck. While that psi is lower than the psi offered by other blasters, its ability to pump 70 gallons per minute equates to blasting five or six times per blast which is more effective than using a higher psi with a lower water volume. This procedure was done several times before using the 6000 psi water blaster. A combination of the two blasters was used six times. Normally it only takes two to three times, but the grease on this particular trap took extra blasting to ensure a clean surface with nice hard concrete.

After the initial water blast, the substrate was sprayed down with a degreasing agent (100% simply green), brushed down with a steel brush, and water blasted again. Then, the degreasing agent was applied to the substrate a second time. After letting it settle for a few minutes, the substrate was blasted one last time. At that point, the surface was inspected to ensure that it was completely cleaned of grease and that we had a sound concrete surface to which we could apply the mortar.

The substrate was then rinsed two times to ensure that any laitance left by the mortar application was removed. This step is very important, but many contractors frequently overlook it, leading to many failures. Once it was inspected and after Epoxytec and Cloud 9 determined that we had sound concrete to work with and that there were no more contaminants on the surface, the application process began.

The walls and ceiling were coated with Epoxytec CPP at 1/8" which provides significant protection in such an aggressive environment. CPP was chosen because of its ability to serve as a resurfacer and liner all in one. Epoxytec CPP was chosen because it has great adhesion, extremely good chemical resistance, and excellent compressive strength (16,000 psi). It acts as a corrosive barrier, and adds strength to the structure. Grease traps are very contaminated, and they require the use of a very forgiving product to avoid failures.

Once the coating was applied on the walls and ceiling, it was smoothed down with water to give a nice smooth finish. This smooth finish is vital in minimizing grease buildup on the surface, and it allows for easy cleaning and maintenance. After the ceiling and walls were completely coated, the coating was inspected to ensure that it had no holidays (voids/ holes). Holidays in the coating would allow the corrosive chemicals to get to the concrete substrate, and the concrete would begin degrading again.

After all the walls and ceiling were lined, we were ready for the last part of the application: the coating of the floor. The floor was lined with Epoxytec 17G system at 1/4". This offers a significant amount of protection for this type of environment. The 17G was chosen because it acts as a resurfacing material and a sealer. The high compressive strength (17,800 psi) makes it ideal for repairing and sealing spalled concrete floors. The 17G was mixed and poured and then it was applied to the substrate with a trowel.

Once completed, the structure was entirely coated, and the curing process began.

When completely cured, this grease trap, like the many manholes and lift stations rehabilitated and lined with Epoxytec, was returned to service sealed, protected, restored, and better than ever with a high-build epoxy protection.

