

IPR Industrial Services: Oil Refinery Manhole Rehab

Case Study



The Situation

A southeastern US oil refinery contacted IPR Industrial Services to evaluate the condition of its process sewer manholes at one of its refinery sites. Refinery officials discovered leaks while conducting a routine 5-year inspection of the process sewer line. Inspection results revealed numerous manholes and catch basins had begun to leak where the trunk lines entered these structures.

Understanding the nature of the problem, IPR Industrial Services responded immediately. After conducting an initial assessment of the most critical areas, IPR determined the primary source of the leaks were coming from poorly sealed annular space around the pipes where they penetrated the manholes. Although not all the manholes appeared to be leaking, the owner proactively chose to have all of them thoroughly inspected and repaired as necessary.

Since process sewers carry potentially hazardous and toxic fluids, it is vital for the sewer system to be structurally sound, corrosion resistant and leak free. Any discovery of a leak must be acted upon immediately and permanently repaired.

In this case, the IPR Industrial Services crews were onsite within 24 hours of the owner's initial inquiry for an assessment. It was at that time that IPR learned there were already several attempts to "dig and replace" one of the manholes with no success.

With several hundred manholes identified for repair and preventative maintenance, IPR Industrial Services set up a staging system to improve efficiency and reduce total downtime.

The Solution

IPR Industrial Services, a division of IPR, the nation's largest trenchless infrastructure solutions specialist, recommended EcoCast, an advanced geopolymer lining system. EcoCast is used in municipal and industrial sewer applications to provide corrosion protection and structurally restore manholes, pipes, and culverts.

EcoCast is a patented eco-friendly, structural and extremely versatile non-cementitious geopolymer mortar, that can be centrifugally cast, sprayed or trowel applied, depending on the existing shape and texture of the surface.

EcoCast is considered a permanent repair and is formulated to meet the design and performance specifications of each application. It applies evenly, uniformly, and cures quickly to minimize downtime (usually hours vs. days).



EcoCast Manhole Spray Applicator.



Trowels are used to smooth the finish flat surfaces.



Manhole renewed using the EcoCast geopolymer lining system.