



*IPR Industrial
Renews Hundreds
of Leeching
Manholes &
Catch Basins;
eliminates need
for costly
replacement.*



Case History: Oil Refinery Manhole Rehab

Pipe Splitting

Cured-In-Place-Pipe

EcoCast™

CCTV Inspection

The Situation:

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

Understanding the nature of the problem, IPR Industrial 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 into 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.

The Solution:

IPR Industrial, a division of IPR, the nation's largest trenchless infrastructure solutions specialist, recommended EcoCast™, an advanced geopolymer lining system. It 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 individual application. It applies evenly, uniformly, and cures quickly to minimize downtime (usually hours vs. days).



One of several hundred leeching and deteriorated manholes discovered at an oil refinery.



Same manhole renewed with EcoCast Advanced Geopolymer Lining System.

IPR Industrial ... SAFE. RELIABLE. PERMANENT.

The Story:

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 team was 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. That is when the refinery officials began seeking a better solution.

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

There are four primary steps to the EcoCast structural renewal process:

1. Cleaning & Preparation - Water jetting and acid bath if necessary.
2. Patch & Fill - All voids and excessive annular space are filled with proprietary non-cementitious grouts to stop the leaks.
3. The EcoCast Application - For manholes, IPR utilized a patented spray applicator, spinning at 5000 RPMs/min. Lowered from a tripod, it steadily applies the GeoSpray for a consistent application. Up to a 1/2 in. can be applied in a single pass. A total of 1-1/2 in. was applied to each manhole. For flat surfaces, such as the catch basins, GeoSpray was sprayed on, and then troweled for a smooth and even finish.
4. Final Inspection - EcoCast is formulated to begin curing quickly and is dry to the touch in just an hour. Although the complete cure takes several days, manholes and other infrastructure can be put back into service within 24 hours.

Typical EcoCast Applications:

Manholes:



EcoCast manhole spray applicator



Completed Manhole 8 hours after application

Catch Basins & Wet Wells:



High pressure hoses dispense GeoSpray



Trowels are used to smooth the finish on flat surfaces

Project Summary:

Problem:

700+ leaking manholes and catch basins at oil refinery

Solution:

IPR Industrial's proprietary EcoCast lining system

Benefits:

- Trenchless, Non-disruptive
- Corrosion resistant
- Fully structural repair
- Fast and permanent
- Reduce down-time, return to service faster
- Cost-effective, eliminates replacement cost

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