

Above Ground Storage Tank

Storage Tank 8770-B

Project type	Floating roof repair
Area	45m ²
Design	4-20-E
Productivity	6 days
Date	November 2010
Location	Megara, Greece

Summary

The use of SPS Overlay to reinstate areas of corroded floating roof using "No Hot Work" delivered.

- Ability for tank to safely remain in service while roof was repaired
- Use of offshore industry "No Hot Work" techniques
- Prevented rain water ingress to 5 pontoons
- Reduced the likelihood of roof sinking

Background

Hellenic Petroleum is Greece's largest refiner and operates 3 refineries. The Aspropyrgos oil refinery is a complex type and one of the most modern in Europe. Located near the refinery is the Megara tank farm, an essential crude oil supply hub. Due to corrosion on the roof of tank 8770-B, it required rehabilitation and repair. As the tank had to remain in service, SPS Overlay "No Hot Work" was chosen as a safe, non disruptive means of repair.

Details

Using the patented SPS Overlay technique, 45m² of corroded steel was repaired, reinstating structural integrity and preventing ingress of rainwater into the floating roof pontoon. The safe, non disruptive nature of the repairs allowed the tank to be repaired in service and avoid the huge out of service expense that a traditional crop and replace repair would have required. SPS Overlay used the existing steel pontoon deck as one side



of a composite sandwich. The composite is constructed by attaching perimeter bars (steel flat bar sections) to the existing plating using structural adhesive, and then using the same material to secure the new top plate to the perimeter bars to form a shallow watertight cavity into which two chemicals are injected to completely fill the void. The chemicals react within approximately 10 minutes to form a solid elastomer core that permanently bonds with the two plates. The resulting composite permanently restores or enhances the strength of the original structure. The process is extremely safe, quick and uses a fraction of man hours required for a conventional repair.

"The repair by the IE team was very professional and a great project from start to finish."

Mr. P. Ioakimidis, Head of Oil Movement Dept., Hellenic Petroleum S.A.

Product Specification

SPS Overlay

Fast

Short repair schedules, minimal labour and reduced downtime

Non-disruptive

Safe, flexible, permanent improvements

Economic

Reduced repair costs; lower operating costs and increased revenue potential

SPS Technology

SPS Overlay uses existing corroded or worn plating as one side of a steel composite panel formed by a new top plate and an elastomer core. The resulting composite fully restores or enhances the strength of the original structure.

SPS Overlay is the marine repair application of the patented Sandwich Plate System (SPS) technology and is approved globally by the Classification Societies.



Fully Supported Solutions

At Intelligent Engineering we have over twelve years experience designing, securing regulatory approval for and executing SPS Overlay projects. We work with you, and your selected contractor, to ensure an effective, efficient repair, anywhere in the world.

Typical SPS Overlay Application

1 Prepare existing surface

Hydro blast and clean



2 Create cavities

Adhere perimeter bars and new top plate to form an air tight cavity



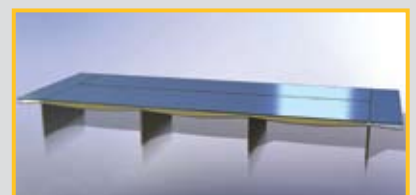
3 Inject elastomer

Cavities filled



4 Repair complete

New, flat, impact and vibration resistant surface



SPS is a registered trademark of Intelligent Engineering