

REPAIRING CORROSION OF A CRUDE OIL RESERVOIR'S FLOATING ROOF

In many refinery areas there are sections of tanks and reservoirs for petroleum products. These tanks intended for the storage of petroleum products are exposed to corrosive and aggressive substances that contribute to rapid corrosion of carbon steel. A local contractor from the Middle East contacted CTE BV to consult on the possibility of performing a repair job for the floating roof of a crude oil product reservoir undergoing severe corrosion. This repair was needed quickly, preferably without any downtime for the infrastructure, and resulting in an extended lifetime of the assets.

CHALLENGE

Tanks and reservoirs filled with petroleum products generate vapors that are flammable and explosive, hence create a risky working environment. Engineers involved in the day-to-day maintenance and protection of oil tanks in refineries have a difficult task to perform. The floating roof of the tank, which is made of carbon steel, is protected with an anti-corrosion coating, but nevertheless it has undergone deep corrosion from the inside. At the time the repair started, the roof surface was 100 percent perforated and there were visible traces of crude oil on the outside of the roof.

An important demand was that the repair could be performed quickly to prevent further damage or bigger risks, and without shutting down the infrastructure.

REPAIR

The repair strategy was discussed in a technical dialog between specialists from CTE BV, engineers from the refinery and specialists of a local contractor company. The decision was made to use **epoxy saturated carbon fiber patches** to strengthen and protect the corroded steel surface of the floating roof. Composite materials made on the basis of two compound epoxy can be successfully used not only for wrapping pipes, but also for protecting flat surfaces. In this case they are arranged in the form of patches, and applied on the damaged surface with 50 percent overlap. The epoxy primer and saturator used in engineered composite systems have high adhesive characteristics that ensure permanent protection of the repaired surface.

Composite materials can only be applied on a prepared surface, free of paint and dust. In this case, spark-free 'Bristle Blaster' brush pneumatic grinders were used. Their use allows for safe cleaning of steel surfaces, even in potentially explosive conditions. Thanks to the correct organization of the repair process, the work was carried out quickly and without unnecessary downtime. Composite material was used to secure all locations on the roof of the tank that needed repair. Thanks to the use of appropriate repair technology the service life of the tank roof was extended by 20 years.

Thanks to all of this, the solution resulted in a lasting repair and a high return on investment.

REASONS TO CHOOSE CTE BV:

- Fast solution
- Long term improvement
- Experience
- Safety

SOLUTIONS USED

- RevoWrap110
Composite system

WANT TO KNOW MORE ABOUT OUR SOLUTIONS? PLEASE FEEL FREE TO CONTACT US.

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