

Case Study: Oil & Gas – Storage Tank Farms

Composite Repair System



Industry

Oil & Gas–Storage Tank Farms

Customer

One of the largest National Oil Companies in the Middle East, the company operates vast storage facilities for oil, petroleum, and refined products, which are supplied to a wide range of end-users, including a major international airport.

Back-ground

A 68 mm Diameter Storage Tank Roof with 65 locations of severe external & pitting corrosion leading to numerous through wall defects. The aim of composite repair system is to restore the tank roof upper skin plates using a patch repair process. The defect sizes were varying through wall penetrations of 10–250 mm diameter extending up to 3,000mm in length in varying locations.

Challenges Faced

- Applications during summer months with high ambient air temperatures Bespoke
- adhesive required to cope with thermal movement of the tank
- Due to spark risks, the surface preparation is limited to ST-3.

Operating Conditions

1. Tank Diameters: 68 mm
2. Media: Hydrocarbons (Highly Flammable)
3. Environment: Near

Solution & Benefits

After reviewing all available repair solutions, the client opted for a **composite repair system** due to its superior material properties and proven performance in restoring structural integrity. The composite system effectively reinforces areas affected by severe external and pitting corrosion, providing long-term protection against hydrocarbon exposure and environmental degradation.

Despite challenges such as high ambient temperatures, limited surface preparation (ST-3), and the need for a specialized adhesive to accommodate thermal expansion, the composite repair delivered reliable containment and durability. Having successfully utilized this technology since 2015–16, the client continues to trust the composite repair system as a preferred solution for critical tank restoration projects.

