

CASE STUDY

Above Ground Storage Tank
Inner Shell Vertical Weld
EXCESS WELD REINFORCEMENT



Customer needs

- Secured and durable floating roof sealing system.
- Prevent rainwater ingress during maintenance and operation.
- Ensure a low concentration of hazardous vapors at the sealing system area.

Challenges

- Optimized gap sealing at Excess weld reinforcement area.

Applications

- Qualitech BlueSky® Improved Sealing Device.
- Qualitech Flattening excess welding solution.
- Following Qualitech's recommended guidelines for tank maintenance.

OVERVIEW

During maintenance work on an above ground storage tank, a client of ours discovered rainwater ingress to the tank floor. A large puddle accumulated on the tank floor.

COMPILING DATA

A Qualitech technician was assigned to examine and characterize the sources of water ingress.

As part of a variety of inspections conducted at the site. The primary sealing vapor barrier was found to be filled with water.



On the tank floor, there were several puddles around the floor legs. The floor center has one large puddle as well.



Visual inspection reveals open sleeves on the roof legs. The water drains to the center of the floor, built cone down.

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RESULTS



- Fit for purpose in accordance with API 653 standards.
- The seal gap measurement base line inspection for primary and secondary seal exceeded the criteria set by the EPA.
- Control unwanted fires and explosions while maintaining vapor concentration below the lower explosive limit (LEL).

Weld reinforcement out of tolerance according to API 650 8.5.2

There are about 12 vertical welds between the storage tank inner shell and the secondary seal rubber profile tip. As a result, rainwater is trapped in the primary gasket fabric.

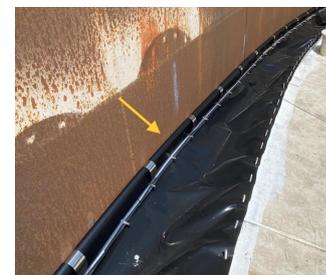
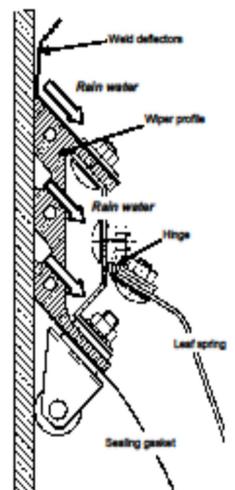


SOLUTIONS

Repair and flattening of weld defects in accordance with API 653 4.3.8.2 .

In the event of rainy weather, it is necessary to recover the floating roof legs after lowering the roof for maintenance.

Enhancement of the primary seal by adding an improved sealing device. The unique features of this device, is specially adapted to deal with problems of abnormality in the container wall.



Qualitech BlueSky® seal system provide near-zero emission levels that are in compliance with stringent emission standards.