

## HT Crude Surge Tank Nozzle

### Overview

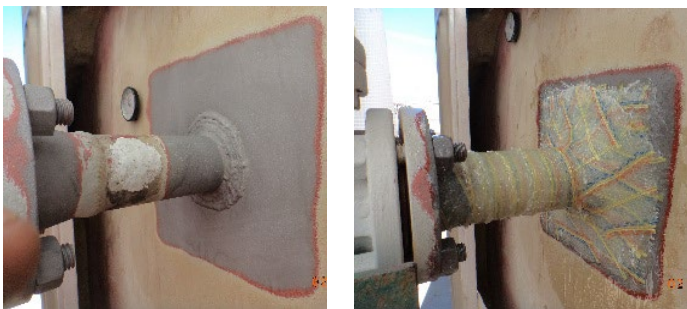
A valve on a crude surge tank had developed a through wall defect in one spot and the surrounding area had minimal wall thickness. The nozzle and valve needed to remain operational, the through wall defect area was sealed using walker technical techno putty before the valve and nozzle were wrapped landing on the tank surface. The temperature requirement of the HT resin required a heat tape to provide an elevated temperature (80°C) cure.

### Scope

The line had the following specifications;

Design Pressure	1,960kpa
Design Temperature	121°C
Application Temperature	60°C
Surface Preparation	Sa2.5
Design Life	2 years
Wrap Length	650mm
Pipe Diameter	60.3mm
Corrosion Type	Internal / through wall
Defect Details	150mm circumferential slot (complete section loss)
Geometry	Tee (and wrap over valve body)

The repair required post curing for each laminate applied. This was provided by electric heat tapes. The heat tapes required a critical permit for operation.



### Challenges

The main challenge for this repair was to ensure the Technowrap design was appropriate for the geometry with limited landing areas around the valve and nozzle arrangement. This meant designing for a 150mm circumferential, through wall defect. Other challenge's included high tank surface temp and multiple vacuum applications to the tank surface.

### Solution

The solution to this project included;

- Technowrap 2K™ HT system with temperature capability up to 220°C;
- A start-up design was used to bring the line on live as early as possible (saving two days);
- Heat tape required for elevated temperature cure;
- Design for complex geometry;
- Vacuum application techniques;
- Versatility by delivering by a patch solution rather than a typical wrap repair. This created a more cost effective solution whilst still achieving the desired outcome.

