

CASE STUDY NUMBER:	Case Study 21
DESCRIPTION:	FLANGE SURFACE CLAMP
CLIENT:	

SERVICE:	H2S
Line size	N/A
Design Pressure	4
Operating Pressure	1,45
Design Temperature	440
Operating Temperature	150
Material	A350 Gr LF2 / A182 Gr F12
Line Class	N/A

ANOMALY DESCRIPTION:
A leak has been detected on the body flange of a vessel during gas regeneration process. The Vessel flanges had a diameter of 2700mm

ROOT CAUSES
A worn out flange gasket caused gas leak through the vessel body flanges. Leak occurred when gas temperature increases in regeneration cycle.

INTEGRITY CONCERNS (INCLUDING PICTURES)
<p>During regeneration cycle, gas temperature increases as well as its pressure causing process service to leak through the worn out flange gasket.</p> <p>Since the process service is highly corrosive, its leakage would corrode the vessel flanges and bolting system.</p> <p>Corrosion of the vessel flanges and bolting system would result in weakening of the vessel's structural integrity followed by excessive leakage of a very flammable and toxic process service.</p>





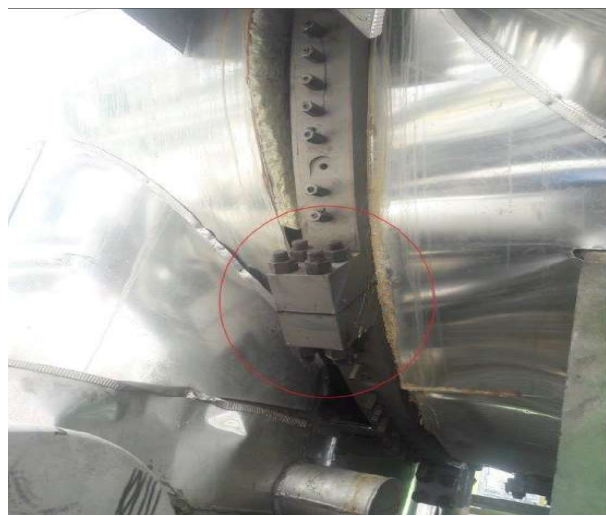
**THE BERUSEAL SOLUTION (WITH PICTURES)**

A mechanical/surface clamp was designed according to ASME VIII Div 1 to enclose the space between the body flanges.

A polymer compound was then injected into the enclosed space between the flanges to stop and seal the leak.



**INSTALLATION PICTURES**



**CONCLUSION**

A successful tight seal was obtained by injecting polymer compound into the enclosed area between the vessel flanges.