

The Worlds First Double Skinned Hydrochloric Acid Tank



Simon Storage builds new hydrochloric acid import facility with the successful installation of Fuelvac® double skin liner.

Simon Storage has completed building a brand new import, storage and distribution hub for hydrochloric acid (HCL) at its Seal Sands Terminal. The facility is one of the largest sea-fed facilities of its type in the UK with a capacity of over 2,000 tonnes of HCL storage. The tank storage protection was a 'World First' application of this type using Fuelvac® double skin liner, a patented process from Washington-based company Abfad Ltd.

Simon has constructed specialist HCL storage and handling facilities at the Seal Sands Terminal for a long-term contract with their client and the facilities incorporate innovative protection technology to create corrosion-resistant storage with an in-built lining failure detection system.

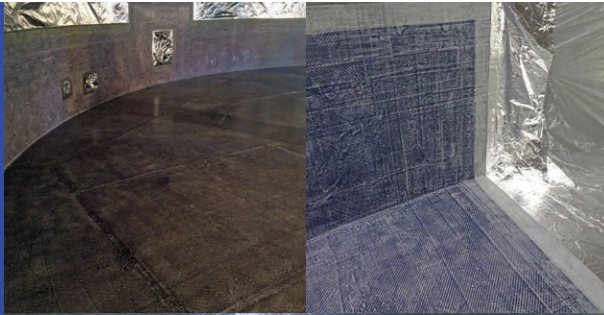
Due to the highly corrosive nature of the hydrochloric acid it was decided to install Fuelvac® double skin liner which provides two levels of coating protection in the tank, ensuring that even if there were a breach in the double skin layer, the tank steel would still be protected against the corrosive acid.

Fuelvac® double skin liner, which is a patented process, is a proven system developed and installed by the specialist storage tank division of Abfad Limited, a Washington-based advanced engineering company.

	<p>1. Scaffolding erected.</p> <p>The double skin was installed up to a height of 12.5 metres around the tank walls and over the 14.8 metres diameter floor area, therefore Abfad arranged for scaffolding to be erected. This consisted of six lifts and a dance floor at the top.</p>	<p>2. Grit blasting.</p> <p>The tank was grit blast cleaned to SA2.5 standard, including the underside of the tank lid.</p>		
<p>3. Bacterial Corrosion.</p> <p>The grit blasting revealed underlying corrosion pitting's which were repaired using epoxy engineering compounds.</p>		<p>4. Single Skin Coating.</p> <p>An initial single skin coating was applied to the blasted clean tank to 1,000 microns nominal thickness using a specialist plural component heated spray pump to ensure full encapsulation of the steel work. All areas of the tank were visually inspected and holiday tested to ensure no pin holes existed in the single skin coating.</p>		
				
<p>5. Double Skin Materials.</p> <p>Double skin lining materials were applied by Abfads fully trained specialist teams, who have worldwide industry experience in working in this type of safety critical environment, once single skin was signed off, the side walls were the first to be installed.</p>			<p>View of double skin materials on side wall 12.5 metres high</p>	
				

6. Double Skin Overlapping.

The tank was sectioned off into six separate double skin zones each with its own vacuum monitoring instrument gauge to allow for more precise monitoring of the tank. Each double skin zone was overlapped onto the previous zone to ensure all areas of the tank were vacuum monitored as per the European Standard BS EN 13160-7.



7. Double Skin Finish.

Once the double skin materials had been installed and commissioned, the final protective coats were sprayed to complete the installation.



The tank is double skinned from the 12.5 mtr level down to floor and is split into 4 quarters around the sides and the floor is split into two.

1-4 = Wall Zones
5-6 = Floor Zones

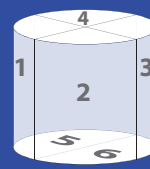


Fig. A

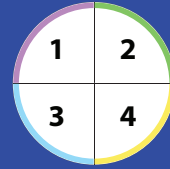


Fig. B

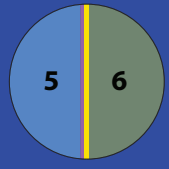
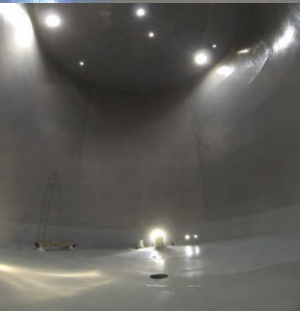


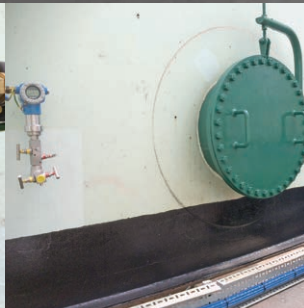
Fig. C



8. Monitoring.

The system has been designed to operate successfully with a range of vacuum monitoring equipment that can be linked to a client's on-site control room alarm system and can notify any number of identified persons or departmental locations anywhere in the world.

All areas of the tank are monitored 24/7 ensuring safe storage of hydrochloric acid in the North East of England, this installation we believe is the first of its kind in the world.



Fuelvac® can also be installed in Underground Storage Tanks



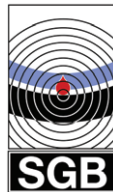
Fuelvac® double skin liner has been installed in underground, petrol forecourts and above ground tanks since 2006 and is proven to operate successfully in any size of tank.



Internationally Acclaimed Suppliers



Endress+Hauser **EH**
People for Process Automation



International



Please see our Fuelvac® Installation Process and Hydrochloric Acid Project presentation videos on our websites



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