Wilco
Acid Plants and Terminals

Our custom-engineered Wilco™ acid plants utilize three or more 10,000-gallon high-density cross-linked polyethylene (HDXLPE) tanks with 10,000-gallon HDXLPE reclaim tank and 6,000-gallon cone-bottom HDXLPE mix tanks.

Tanks

The acid plant Wilco Machine & Fab. builds includes three (or more) 10,000 gallon High Density Cross-linked Polyethylene (HDXLPE) tanks with a 10,000 gallon HDXLPE reclaim tank and 6,000 gallon cone-bottom HDXLPE mix tank. Storage and reclaim tanks come with full drain outlets and sit on Assmann seismic tank supports and restraints. Inside sit six (or more) 560 gallon HDXLPE cone-bottom additive tanks and a 30 gallon self-filling water flush tank to purge the line clean after the use of an additive.

Control system

The plant is controlled using a Bivens Enterprises PLC control system that allows the operator to control all the valves and pumps in the system with a click of a mouse. Radar level sensors are used to maintain inventory and manage use while computer-read flow meters measure the chemicals being mixed. This allows the operators and managers keep very close tabs on usage and ensure quality blends. It also provides a safeguard against many operator errors that could result in spills, contamination, or damage to the plant. The plants valves are actuated by compressed air from a provided air compressor and dryer through solenoid valves controlled by the computer.

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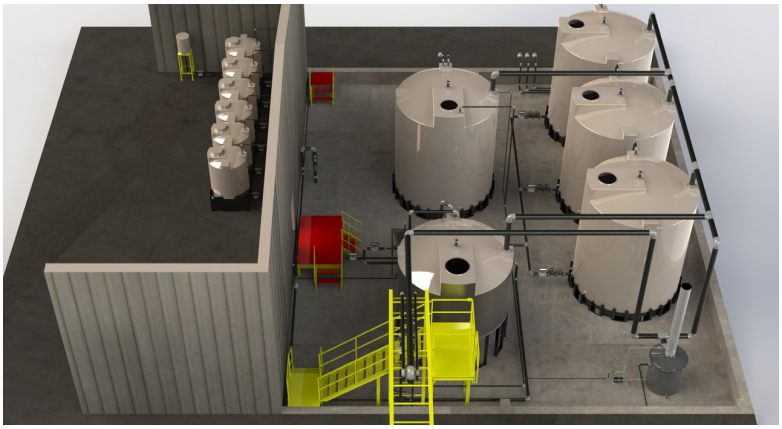

Pumps and plumbing

Wilco uses twin 5-hp ANSIMAG K+ magnetically driven non-metallic pumps for blending and loading acid into the truck. The pipes are situated in a way so that if either pump goes down, the plant will still be able to operate off the remaining pump. Sumps in the containment pit are drained into the reclaim tank using 1.5-hp Pacer pumps and the additives are pumped into the mix tank using a Liquiflo gear pump.

The plant is piped using SCH80 CPVC sealed with full-face Viton gaskets and secured using Hastelloy C276 hardware throughout. Fiberglass components are used as necessary including all valves. Storage tanks have double protection at the drain with twin Tefzel lined steel diaphragm valves. The piping system and tanks are isolated from the vibration of the pumps using Teflon lined fiberglass fully floating expansion flex joints. Tanks and piping can be heated and insulated against cold environments.

Safety and additional features

The entire system is vented using a Cortrol Process Systems HCl fume absorber which can absorb vent gas from 36% HCl with 99% efficiency and includes a water recirculation pump to keep the vent clean. A truck vent line is used with a Ultra-high molecular weight polyethylene (UHMW) fume cap to catch the fumes that come out of the truck while it is being loaded with product. The truck is also vented through the fume absorber.

The city water system is protected from contamination using a double check backflow preventer as well as numerous check valves throughout the plant, or alternatively Wilco can provide a water storage tank. Emergency showers and eyewash stations are provided.

In addition to the liquid additives held in the additive tanks inside the warehouse, a stinger hose is provided so additives from tote tanks can be pumped straight into the mix tank or to refill the additive tanks. Dry additives can be mixed into the blend using a dry additive eductor outside. Dry powder can be put into a small hopper where a jet of water mixes with it and conveys it into the mix tank.

A painted steel platform with FRP grating can extend up to two feet toward a waiting transport for loading while an overhead gantry supports the fill hoses and truck vent. Elsewhere in the plant, platform and stairs are FRP.