



# Wilco Stationary Bulk Plant

We have extensive experience in building bulk plants and bulk storage silos and tanks. Pressure, vacuum, and non-pressure bulk and tank systems can be built to one of our proven designs or custom to fit your requirements. Systems can be designed and configured for stationary plant, offshore, mobile marine, or trailer-mounted installations and can meet ASME, DOT, DNV, or other applicable design requirements. We will work with you to design and construct a plant to best suit your needs.

We've been a leader bulk systems and vessels for over 30 years, with the manufacturing technology, experience, and skilled craftsmen to always ensure superior quality.

## Standard Vacuum Plant Features

**Bulk storage silo** – 12-ft diameter tank with an internal volume of 3,000-cubic feet and a non-pressure design for use in vacuum plants. Engineered for stability in wind and seismic loadings for anywhere in the continental U.S. and for rapid material movement and ease of maintenance. External fill and vent pipes and full 5-in. discharge pipe. Aeration consists of an air distribution manifold and eight jets that can be changed without having to enter the tank, as well as an air purge to assist with discharging material and cleaning the discharge pipe afterwards. A ladder and cage allow access to the top of the tank, with crossover bridges to other tanks. Atop the tank are the pressure and vacuum relief valves and a strapping port. Custom tank sizes or ASME Code variants are available along with options such as scales or radar level sensors.

**Scale/blend tank** – 10-ft diameter with an internal volume of 400 or 700 cubic feet and ASME Code design for 40-psi and 30-in. Hg at -20°F. Engineered for stability in wind and seismic loadings for anywhere in the continental U.S. and for extremely fast blending and ease of maintenance. Ports atop the scale tank allow material to be drawn from the silos in individual load pipes, preventing material contamination. Aeration consists of an air distribution manifold and eight jets that can be changed without having to enter the tank, or four jets and four pads. The scale tank is vented through a top-mounted dust collector, and blend tanks may also be vented through top-mounted dust collectors or to the waste tank. Dust collectors are accessible by ladders and work platforms. A scale system is standard on the scale tank and optional on blend tanks.

**Scale/blend tank dust collector** – Mounted on top of the scale tank and using four Donaldson-Torit Ultraweb filters and cleaning technology, this ASME Code pressure/vacuum dust collector efficiently cleans the outgoing air before releasing to the environment. The Donaldson filter cleaning system uses compressed air to clean the filters after every use and during idle time. When required, filters are extremely easy and fast to manually clean or replace without having to enter the tank. Dust collector is standard on the scale tank and optional on blend tanks. Traditional sock-type dust collectors are also available.



**Electronic weighing system** – A Rice Lake Weighing Systems scale system is used on the scale tank to weigh materials as they are added to the blend. A custom-written scale program prepares a receipt of material weights in the blend and can maintain an inventory of material in the silos and produce usage reports. A pallet scale under or near the additive hopper allows the recording of weights of sack additives to the blend receipt.

**Waste tank** – 12-ft diameter tank with an internal volume of 3,000-cubic feet, non-pressure tank allows the atmospheric venting of all the bulk storage tanks, blend tanks, and transport trucks. Engineered for stability in wind and seismic loadings for anywhere in the continental U.S. and for rapid material movement and ease of maintenance. A ladder and cage allow access to the top of the tank, with crossover bridges to other tanks. Atop the tank are the pressure and vacuum relief valves, a strapping port, and the dust collector. Custom tank sizes or ASME Code variants are available along with options such as scales or radar level sensors.

**Waste tank dust collector** – Mounted on the waste tank, this Donaldson-Torit CPV-8 dust collector efficiently cleans the outgoing air before releasing to the environment. The dust collector uses the same Donaldson-Torit Ultraweb filters and cleaning technology as in the scale/blend tank collectors. The Donaldson filter cleaning system uses compressed air to automatically clean the filters when needed. When required, filters are extremely easy and fast to manually clean or replace without having to enter the tank. This collector is sized so that three trucks may simultaneously load into the plant and is equipped with a suction fan to provide a slight negative pressure on the vent system. This helps keep the vents clean and reduces dust around the operators when loading to and from trucks.

**Additive hopper** – Hopper for vacuum drawing of sack additives into scale tank, complete with 5-in. discharge pipe, sack cutting screen, and throttling and purge valves. An optional workstation filtration system draws airborne particles away from personnel and traps them for disposal, promoting employee health and helping to maintain a clean workspace.

**Control panel** – A tried and true, simple control panel consisting of pneumatic switches and gauges to control pneumatic actuators in the plant and push-pull electric switches control compressor equipment functions. Pneumatic system enables logical troubleshooting when problems arise without dependence on electrical systems or complex computer code.

**Vacuum compressor system for scale tank** – Dekker liquid ring vacuum pump provides near-full vacuum on the scale tank, through the dust collector, clear cyclone filter, and 5-micron inlet filter. Electrically driven, 25- and 40-horsepower variants available with full soft-start to reduce inrush load on the electrical system.

**Conveying air compressors** – Two Curtis NX series rotary screw compressors supply air to the scale and blend tanks and the silos and waste tank. Compressors operate separate plant systems but may be used redundantly. Compressor systems are equipped with a twin-tower regenerating desiccant dryer, volume tanks, and multiple particulate and oil removal filter packages. Each 100-horsepower electrically driven compressor is equipped with a soft-start to reduce inrush load on the electrical system. Other compressor makes are available, or one compressor may be replaced with a roots blower package if desired.

**Control air compressor** – A smaller Curtis NX series rotary screw compressor supplies air for the control panel and pneumatic actuators, dust collectors, automatic sample catchers, and any other ancillary plant functions. The unit is equipped with a twin-tower regenerating desiccant dryer, volume tank, and multiple particulate and oil removal filter packages. Electrically driven compressor is sized from 10-hp to 20-hp depending on plant size.

**Manifold package** – Onsite manifold installation is custom designed for each plant. Piping is kept almost entirely overhead, with silos spaced such that one may walk unencumbered anywhere in the plant, allowing for easy cleaning and maintenance. Ongoing maintenance is a main concern, with high-wear areas being easily removeable to be patched or remanufactured. Design methodology is to use individual manifold systems for each silo, avoiding “common” manifolds that can introduce contamination between blends. Each silo has its own fill pipe from a delivery truck, vent pipe to the waste tank, and discharge pipe to the scale tank. Piping is designed with very few bends, maximizing material flow rate and minimizing pipe wear. Blend and plant discharge piping utilizes a “from anywhere, to anywhere” manifold that gives the operator the freedom to mix and stage blends as desired.