

Silo Services: When, Why and How to Clean and Maintain Your Silo

By Kevin McGonigal

Silos are somewhat simple in terms of concept and design, yet a surprising number of structural things can go wrong based on how they are used and maintained. Fortunately, almost everything that might go wrong can be avoided or corrected with regular inspection and cleaning.

In many cases, you don't even need an inspection to tell you that something is wrong. When the flow of material out of the silo has stopped or become erratic, or the capacity of the silo has diminished, there is a problem.

The specifics can vary with the material stored in the silo, but common problems with flow include these:

- Arching
- Out-and-out blockage
- Bridging
- Tunneling or 'ratholing'
- Buildup
- Clinging

The When and Why on Silo Cleaning

Silos that are clogged or running slow as a result of these problems will be detrimental to the efficiency and profitability of a plant. Worse yet, conditions can deteriorate to the point where an emergency cleaning is necessary. And, off-center loading caused by buildup inside a silo can potentially damage the structure due to the non-uniform pressure on the interior walls.

Unsure if it's time to clean your silo? It's time if you're experiencing any of these scenarios:

- The bulk material discharges in lumps or chunks
- The material discharges off-center
- The outlet/discharge plugs discharge regularly
- The silo's capacity is diminished – meaning the silo needs filling more frequently and/or the time it takes to fill has decreased.



PLANT MATTERS

Naturally, you will also want to clean your silo if the stored material is going to be changed out or the silo is going to be decommissioned.

There are many benefits to keeping your silos clean and operating in top condition:

- Material will flow at optimum efficiency
- Productivity will be increased
- Combustion-generating “hot spots” will be eliminated
- Live storage capacity will be maximized
- Downtime will be decreased
- The work environment will be safer and cleaner

Immediate benefits of Airmatic's silo cleaning service include the fact that material that had been considered “lost” can be recovered. In at least one case we know of, our silo cleaning crews have recovered enough “lost” material to pay for the cost of the cleaning.

How to Clean a Silo

Power washing can sanitize silos, prevent cross-contamination, and remove mold, but when the problem is build up, blockage, or an erratic flow of material, a different approach is required.

For the silo cleaning team at AIRMATIC, the go-to industrial silo cleaning equipment are the bin whip, the bin drill, and the chunk buster. Bin whipping is the most commonly used procedure, but 30 to 40% of the time, conditions require that we start with bin drilling to open a flow channel through exceptionally tough clogs. Bin whipping then follows.

Remember that there's no need to take on any undue risk to clean a silo. Hazardous techniques like explosives and water and air lances are not necessary. Nor do you need to put personnel inside the silo in order to clean it – we clean from outside the vessel!

How to Avoid Needing a Silo-Cleaning Company

If you want to reduce the need for cleaning and optimize your efficiency and productivity, consider installing flow-aid devices on your silos. Air cannons, bin aerators, sonic horns, and vibrators are all options to consider. Talk with us for expert advice on what would best serve you and your operation.

Kevin McGonigal is an Account Manager at AIRMATIC and has 12 years of experience in bulk materials handling equipment sales, installation and maintenance services.

Thanks for reading our post. If you'd like learn more about Silo Cleaning or other AIRMATIC Installation and Maintenance Services, please contact one of our experts at +215-333-5600 or at infocenter@airmatic.com.