

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

By Kevin McGonigal

Silo cleaning is a routine task that will help prevent contamination, blockages, and general safety risks. 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 silo cleaning services.

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
- Buildup
- Bridging
- Clinging
- Out-and-out blockage
- Tunneling or "ratholing"

When these issues occur, it's time to review how your silo is performing. Whether you're looking for a DIY solution or professional help, we'll walk you through the importance of silo cleaning and how it's done correctly.

When Do I Need Silo Cleaning Services?

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.

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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 silo's 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.

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.

What Are the Benefits of Silo Services?

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

- Material will flow at optimum efficiency
- Productivity will be increased
- The work environment will be safer and cleaner
- Combustion-generating "hot spots" will be eliminated
- Live storage capacity will be maximized
- Downtime will be decreased
- Long-term financial savings due to sustained operations

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 Dry Clean a Silo: 8 Essential Steps

To effectively clean your plant's silo, follow these easy-to-remember guidelines:

- 1. Pre-Job Safety Briefing & Equipment Inspection:** Conduct a full safety review, confirm lockout/tagout status, confined-space classification, gas monitoring, communication signals, retrieval plans, and inspect all tools and PPE.
- 2. Material Evaluation & Silo Condition Assessment:** Evaluate material type, moisture, compaction level, bridging, rat-holes, and flow history to determine whether a Bin Whip alone is adequate, or if a Bin Drill or other tools/equipment will also be required.
- 3. Establish Safe Access & Install Work Platform / Flange:** Set fall-protection, position access systems, mount whip/drill entry flange, secure retrieval systems, and confirm the interior drop zone is clear.

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- 4. Lower the Bin Whip & Begin Cutting Buildup:** Lower the whip head to operating level, select the correct whip line, and begin controlled cutting passes to remove buildup safely without overloading the discharge outlet.
- 5. Work Through Bridging, Rat-Holes, and Hung Material:** Systematically cut hardened deposits, break rat-holes and domes, and work top-down with constant communication with the ground crew.
- 6. Deploy the Bin Drill as Needed:** If material remains blocked or too hard, lower the Bin Drill to bore a pilot hole and restore flow, then resume whip cleaning.
- 7. Full Clean-Out & Final Whip Passes:** Perform finishing passes to remove remaining buildup on walls, cone, and pocket areas until the silo is returned to optimal operating condition.
- 8. Post-Cleaning Inspection & Documentation:** Verify cleanliness visually or with a camera, remove all dislodged material, secure site, document the work performed, and return vessel to service.

How to Avoid Needing a Silo-Cleaning Company

If you want to reduce the need for professional-level 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.

Frequently Asked Questions

Q: Do you need to enter the vessel?

A: No. Our preferred method is always our 2-man crew “no-entry” silo cleaning, which keeps personnel out of confined spaces. Using specialized equipment such as Bin Whips and Bin Drills, we restore material flow without placing workers inside the vessel. On occasion, there are build up problems that do require entry. In those circumstances, our plant contact is notified for approval and our 3-man crew confined space entry protocol (Atmosphere tests, ventilation, permits, etc.) is presented for acceptance.

Q: What power or utilities are needed?

A: Our equipment is pneumatically powered. The compressed air requirement for the Bin Whip is 100 CFM at 90 psi; we also require standard plant power (120VAC) for support tools, eg, lights. If the Bin Drill is needed, we require 220/440V/3Ph/60Hz power. If job site compressed air is limited, we can quote a rental compressor and air distribution accessories.

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Q: How fast is the cleaning process?

A: Cleaning time depends on silo size, material condition, blockage severity, and accessibility. Many jobs are completed in hours to a day; severe hard-set product or multiple vessels can take longer.

Q: What happens to the removed / discharged material?

A: As silos are being emptied, material must be removed from the discharge outlet. Depending on its condition, it may be reclaimed or be disposed of in compliance with plant, local, and state environmental regulations. Some customers manage this process directly, others contract us to arrange collection, transport, and disposal as part of our service.

Q: How often should a silo be cleaned?

A: Preventive cleaning is recommended annually or bi-annually depending on material flow, climate, and operating conditions. Signs that cleaning is overdue include reduced capacity, slower discharge rates, or arching/rat-holing issues.

Q: Can you prevent the problem from returning?

A: We recommend flow-aid improvements (aeration, vibrators, air cannons, internal liners) and process adjustments (humidity control, fill temperature, material residence time). We can quote options matched to your vessel, material and budget.

Q: What if there is a fire, smolder, or emergency inside the silo?

A: Our crews are trained to recognize and respond to smoldering or fire conditions. Depending on severity, specialized firefighting or inerting methods may be required. We coordinate closely with plant safety and emergency responders in such cases.

Q: Who do I contact to start service?

Contact **AIRMATIC** at 215-333-5600, submit a quote request online, or email infocenter@airmatic.com with a completed Application Data Sheet.

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