Suppliers' Tips

How can I improve overall screening efficiency for an older screener?

The good news is that the screener's age probably has little to do with screening efficiency. As long as the screener is vibrating properly, it should screen your material as efficiently as a new screener would.

The bad news is that you'll probably need to have someone with screening expertise help you work through your screening efficiency issues.

Since I don't know what type of screener you operate or what efficiency problems you're having, I'll list some general possibilities:

- Incorrect screen selection. It's possible that your screen isn't the correct size. High-efficiency screen cloths are available, and selecting the correct type and mesh size is critical to reaching your application's screening requirements.
- Blinded screen(s). If your screen is plugged up (blinded), incorporate a screen cleaning device to minimize this issue. There are various screen cleaners available, including sliders, balls, rings, and rotary brushes. Some screeners can also have a vibrating rim or an ultrasonic cleaner, which is necessary for some high-accuracy applications.
- Improper screener feedrate. Sometimes a screener's feedrate is too high and the mesh is being flooded with too much material. Decreasing the feedrate will allow the screener to properly screen your material.
- Screener adjustment. Consult your screener supplier about information on machine adjustments you can make to increase your screener's efficiency.

Tom Radank, consultant, Sweco, 859-240-4544

Screening efficiency can be elusive when the machine is being overfed. Make sure that your feedrate matches the screening rate. The worst thing you can do to any screener is overload it with material. This prevents fine particles from finding a hole to pass through because larger particles block and clog the pathway down to the screen openings. The finer particles ride on top of the oversized particles and exit the equipment without being screened. Overloading can cause screen blinding, screen rips, and inefficient separation. It's better to err on the side of underfeeding the machine to prevent these issues.

Some older screeners also run into problems with the weight of the overload. Older machines aren't as powerful and capable as newer screeners and tend to lose the energy needed to properly convey the material across the screen when overloaded. The extra material weight absorbs the vibrational energy. This in turn slows material discharge and exacerbates the problem by causing the screen to fill up even faster, often resulting in a ripped screen.

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Efficiency for any screener (or sifter), no matter the age, begins with proper routine maintenance. Maintenance should include considering the screener's location, employee training, and maintenance inspection schedules and checklists. Whether the sifter is used for processing or quality assurance, examining all the separations produced by the screener can tell you a lot about the unit's operating condition. Routine upkeep will ensure that the screener continues to run smoothly and minimize your downtime.

Screener location. Make sure the screener is installed on a level floor and offers easy access for maintenance and inspection of all mechanical and nonmechanical parts, including the drive mechanism, inlets, outlets, and the tailings canister. Workers should be able to move easily around the entire machine to access all parts. The location should also provide adequate room for screen removal and replacement.

Employee training. Train employees to know which screener components to inspect and how to perform preventive maintenance and repair or replace these parts. Advanced training allows employees to recognize component wear, suspicious noises, or changes in sifting performance. These identifiers can help prevent the machine from slowing, stopping, or causing variation in product quality. If a problem is detected or identified, it's always a good idea to call the manufacturer for support in fixing the machine or to request original equipment manufacturer parts.

Inspection schedule and checklist. The screener's inspection schedule will be affected by the application and materials being sifted. When your screener operates at a higher speed or handles abrasive materials, maintenance may need to be done more frequently. A checklist should include components requiring repeated inspection, such as screens, screen frames, screen cleaners, gaskets, drive mechanisms, and inlet and outlet sleeves. The checklist should allow space for notes, issues discovered, and record keeping.

To make sure you have a complete and proper maintenance inspection schedule and checklist, be sure to talk with your screener manufacturer, who can also offer expert tips to enhance your screener's staying power.

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