

Combating Spillage from Carryback in FRAC Sand Applications

One of the most prevalent problems associated with FRAC sand production is spillage as the result of carryback. FRAC sand, after all, is a valuable commodity and spillage and carryback equals wasted materials. Spillage as the result of carryback wastes time, energy, and money and can also compromise the safety of workers.

Dry Side

While carryback and spillage are challenges throughout the whole FRAC sand conveying process, the causes are different. On the dry side of the operation, carryback as the result of static electricity is a real problem. While drying the sand, a static charge develops, which causes the sand to stick to the belt. This situation is especially prevalent in the winter months in colder climates when the humidity is low. In this case, cleaners are essential to keep the system moving and reduce maintenance to your rollers and surrounding areas.

Wet Side

Carryback is one of the biggest challenges faced during wet side FRAC sand processing. The fineness of the sand combined with the water from rinsing creates an abrasive slurry that can be difficult to clean off the belt. During the process, sand slides between the belt and precleaner and the slurry gets knocked off on each return. The resulting piles contain wasted material and can also cause safety hazards for workers when they are located in walking paths and accumulate high enough to block the views. This condition is where a secondary cleaner can be important and impactful.



Carbide precleaner on dried sand conveyor

Precleaners and Secondary Cleaners

Cleaners are essential to the FRAC sand process. In most cases, belt conveyors should be equipped with both precleaners and secondary cleaners.

Precleaners should be mounted to the head pulley and below the material flow. They are ideal for removing large pieces of material – 60-70 percent of initial carryback. With the exception of wide/slow feeder belts and high static instances, secondary cleaners should be used in conjunction with precleaners because they are especially good at removing fines. Secondary cleaners are located just past where the belt leaves the head pulley and anywhere else down the beltline. Cleaning efficiency increases approximately 20 to 30 percent when a secondary cleaner is added to a line with an existing precleaner.

Placement and correct mounting of the cleaners is essential to their success. Also, ensuring that the cleaners are properly tensioned is key to the performance of the cleaner. Finally, the cleaner blade should match the material's path on the belt for effective cleaners and reduction of differential blade wear.

Other Benefits of Cleaners

Adding properly mounted cleaners to a system not only helps rid the belt of material and discourages carryback, but cleaners also prevent problems that may occur with other belt components. Managing carryback can prevent belt mistracking, deter buildup that may cause the seizing of rollers, and even increase belt life. The maintenance on these components, along with the maintenance time dedicated to cleaning up the spillage that occurs, is drastically reduced by choosing the correct cleaner.

Selecting your cleaner

Precleaners from Flexco

Dry side:

HV Precleaner

Precleaners with urethane blades are not recommended where high static electricity is present, so HV cleaners are perfect for the job. HV precleaners are highly efficient and have a long blade life. HV cleaners can be used only with endless or vulcanized belts.

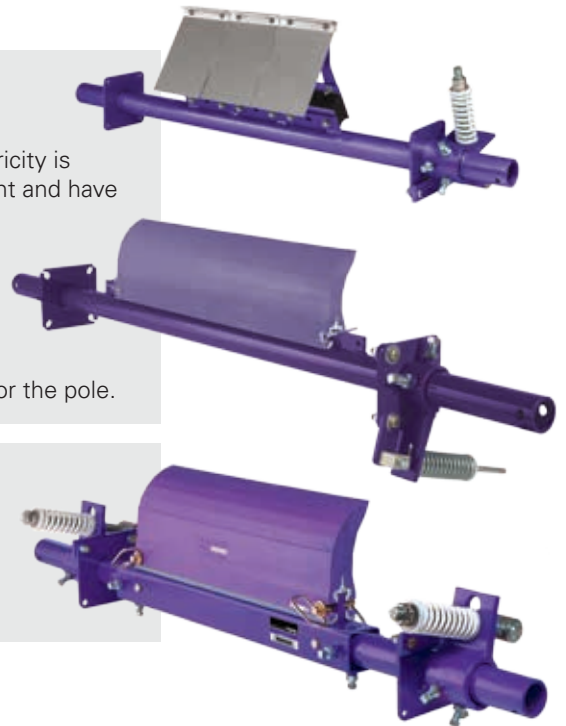
EZP1 Precleaner

This cleaner features a unique uni-blade design that combines simple, do-it-yourself installation, quick maintenance, and effective cleaning results. The spring tensioner allows the blade to quickly move away from the belt when a splice passes. Its streamlined contours prevent material buildup on the blade or the pole.

Wet side:

MMP Medium Mine-Duty Precleaner

The MMP Medium-Duty Precleaner is the ideal solution for tough applications that call for more than a standard-duty system, but don't require the aggressiveness of a heavy-duty cleaner.



Secondary Cleaners from Flexco

Wet and dry side:

MHS Secondary Cleaner with Service Advantage Cartridge™ *

This cleaner has an Enhanced Service Advantage Cartridge for easy removal and replacement, dual springs allow clearance to remove the cartridge from the chute, and three options for locking cartridge in place ensures easy maintenance even in the dirtiest conditions. The innovative design limits material build up and prevents corrosion. V-tips recommended for vulcanized belts.

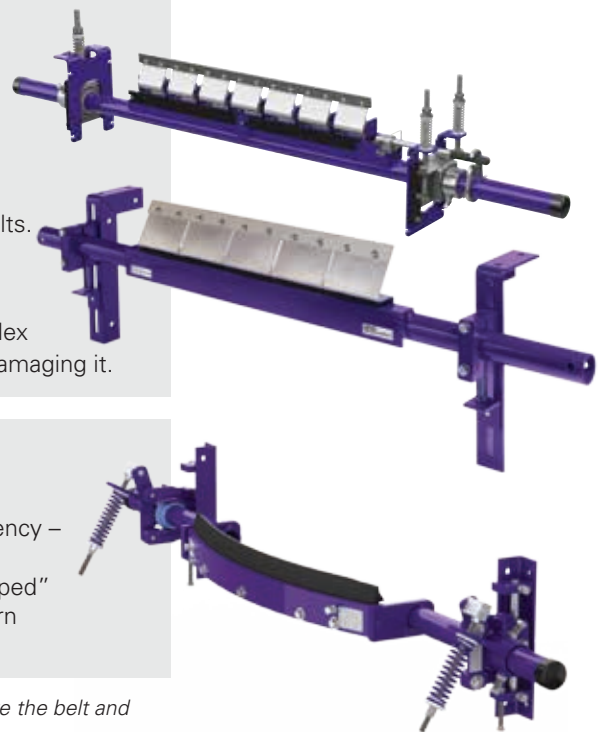
EZS2 Secondary Belt Cleaner *

The thin, hard edges of the carbide-tipped blades deliver high belt cleaning efficiency and long wear life. The tips are impact-resistant with exclusive FormFlex cushions that allow the blades to move away from the passing splice without damaging it.

Wet side:

U-type® Secondary Cleaner *

This innovative secondary cleaner is unmatched for superior belt cleaning efficiency – especially in tough applications with wet, sticky carryback. Blade tips scrape off stubborn carryback, while rubber backers “squeegee” wet material. The “U-shaped” design conforms to the belt, allowing the tungsten carbide tips to shear stubborn carryback materials away from the surface.



**Hold down rollers are always recommended in the secondary cleaner position to stabilize the belt and increase the cleaning efficiency.*

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