A New Image For Toner Processing (4210)

Chemically produced toner (CPT) is fast becoming the technology of choice in the imaging field as it produces a more controlled particle shape and size, while using less energy and producing less waste than conventional processing. The process does, however, require a solid-liquid separation step to recover the toner, and at the same time, the filter cake must be efficiently washed to a very low residual contaminant level.

Early CPT producers concentrated on using horizontal filter presses for this step, but the latest installations now consider employing the Larox range of automatic vertical filter presses for a number of reasons.While both C and DS Series filters can be used in CPT isolation, the DS filter especially offers considerable advantages over other filter types. These advantages include:

- Totally enclosed operation with the option to make the filter gas-tight and even operate in inert atmospheres if needed.
- Multi-step washing—up to three alternative wash paths that can guarantee the most effective cake washing.
- Elimination of the risk of cake cracking (which can lead to poor washing) by keeping the filter cake under pressure during wash cycles.
- Efficient dynamic solids washing with wash ratios of less than 30 cubic meters per ton compared to filter presses using up to 120 cubic meters per ton or more.
- Conductivities in the filter cake down to approximately 6 µS.
- Less wastewater treatment as less wash is used.
- 70 percent or better dry solids at discharge to form the filter.
- Solids losses of less than 1,000 parts per million.
- Fully automatic clean-in-place both inside the filter chamber and externally throughout the housing, which signifies that one unit can easily handle four to six colors.
- 100 percent automatic operation, including cake discharge and cloth cleaning, during every discharge cycle.
- Filtration areas up to 160 square meters.

The success of the filter is a result of the filter chamber design. Every chamber has a filtrate collector plate on both the upper and lower side, each covered with a section of the endless filter cloth. This produces double-sided filtration as the filter cake forms on both the upper and lower sides of the chamber, while the slurry is fed into each filter chamber.

The filtration chamber design is also suitable for slurries that filter slowly due to a design that effectively causes the chamber to expand as the filter cake forms. By incorporating both chamber sides to build up the cake, less chambers are required

as thinner cakes can build on double the surface area.

Furthermore, the horizontal configuration of the filter plates ensures an even cake buildup on both sides. As a result of this even structure, cake washing and subsequent squeezing and blowing can be configured to provide optimal product.

With areas from 1.8 to 160 square meters in three plate sizes, there is a Larox DS filter to meet almost any application.

Source URL (retrieved on *03/10/2014 - 2:43am*):
http://www.chem.info/articles/2009/01/new-image-toner-processing-4210?qt-most_popular=1