

Field report glass grinding

Background

One of the leading manufacturers of flat glass for special applications is grinding glass with a high silicon content. His facilities include 3 beveling machines. The machines are supplied with coolant water from a central receiving tank with a capacity of 18,000 l; the total water requirement of all the machines is 6,000 l/h.

The resulting glass grit makes its way into the coolant water circuit. Previously the grit had been removed using chemical precipitation with a flocculation aid followed by dehydration with a filter press.

Large precipitation tanks had been installed for this process. However, besides the large amount of space required and the operating costs for the precipitating agent, the disadvantage of this method lay in the associated expense for regular cleaning operations of the entire pipework system, since post-precipitation caused a build-up of deposits. The annual costs of such cleaning operations were 30,000 EUR.

Particularly in the beveling units, the coolant water nozzles became blocked by the precipitation agent, to the point that machines could no longer be run profitably.



automatically discharging
separator, model A-25

Solution / Realization

Upon consulting with STA, a solution was found in which chemical agents were no longer needed: STA installed a centrifugal separator with automatic discharge, model A-25, which was connected in bypass at the 9,000 l tank in the coolant water circuit.

In 2006, more grinding machines were purchased, and the complete system was upgraded with 2 more separators type A-25.

One separator processes 3,600 l per hour, and at the same time it reduces the concentration of the finest glass particles (down to a minimum size of 2 µm) from an average of 2,000 ppm to less than 500 ppm throughout the circuit. This results in discharge of 50 kg sludge per separator and per hour, which is compressed to have minimum water content due to the high centrifugal forces.



separated glass sludge from STA centrifuge – compact and dry cake solids

The financial efficiency of the system was soon demonstrated when cleaning became unnecessary, but mainly due to the significant rise in productivity that occurred with the elimination of idle times for the beveling machines.

