

AFT Case Study

SC5

- **Improved Lifetime**
- **AFT MacroFlow™ Screen Cylinder - with VariProfile™**

AFT MacroFlow™ screen cylinders represent the state-of-the-art in screening technology. Its advanced wedgewire design features both the increased open area afforded by a continuous slot - and superior strength relative to a resistance-welded wedgewire construction. AFT's patented VariProfile™ option enhances the operation of MacroFlow™ screen cylinders by modifying the screen cylinder design along its length to respect the changes in the character of the pulp along the screening zone.

In this case study, AFT MacroFlow™ cylinders were installed in a recycled pulp application where cylinders were wearing out in as little as 3 months. As the cylinders wore, the screens would have problems with reject thickening and runnability. The AFT MacroFlow™ cylinders - with the VariProfile™ option - have provided a dramatic increase in product lifetime. After 8 months of operation, the cylinders have yet to show any visible wear. The mill has already achieved a 200 to 300% increase in product lifetime.



The Background

The subject mill is located in Europe, and produces 77 MTPY of corrugating medium and linerboard from recycled fiber (OCC and mixed waste). The two paper machines at the mill are supported by three separate screen systems, each of which has a three-stage, feed-back configuration.

Each of the screen systems is comprised of Voith screens (GR20/GR10/GR05). Slot widths are in the range of 0.20 to 0.35 mm with different widths being used in different stages and for different products.

Screen cylinder wear was the issue of concern at this mill. Lifetimes varied from 3 to 4 months in some positions to 6 months in other positions. As screens wore, the erosion of the contour would cause problems with increased thickening, lower accept capacity and increased fiber loss.

The Solution

AFT reviewed the operations of the mill, and recommended that MacroFlow™ cylinders with the patented VariProfile™ option be installed in all screen positions. The VariProfile™ configuration chosen for this mill featured: 1) a thicker level of chrome and 2) a deeper contour, at the reject end of the screen cylinder. Wear was found to be concentrated near the reject end and the higher level of chrome would extend the level of protection in this zone. The deeper contour would promote the passage of long fibers in this zone and reduce any tendency for reject thickening.

The Benefits

The screens were inspected after 8 months operation and found to have no visible wear. The full lifetime of the cylinders has yet to be determined for this particular application, but the mill has already obtained a 200 - 300% increase in product lifetime. In addition to the savings in screen cylinder purchases, the more stable operation of the system has made it possible to consider a future change to smaller, more efficient, slot widths.

