

AFT Case Study

FB3

- **Improved OCC quality**
- **Increased Plate Life**

AFT Finebar® refiner plates represent a breakthrough in refiner plate technology. Using a patented technology, this advanced manufacturing process allows the production of plates with very fine bar patterns and high volumetric capacities. Low intensity refining and high material purity create a number of opportunities to improve pulp quality, increase plate life, and improve refining efficiency.

AFT Finebar® refiner plates were supplied to an Eastern Canadian linerboard mill to increase ring crush and overcome problems of poor plate life.



The Background

The subject mill produces 90,000 tpy of brown and white top 2-ply linerboard. The mill has a 26" Sprout refiner with a 450 HP/ 700 RPM motor operating at 85-100% of full motor load. Typical refiner flow is 950 GPM at 3.7% consistency. The existing cast plates had a 1.5, 1.9, 4.0 bar-groove-depth configuration (dimensions in sixteenths of an inch) with a bar edge length of 18 km/rev, providing a refining intensity of 1.0-1.2 Ws/m. Plate life was averaging 6-8 weeks.

The mill objectives were to have longer plate life and improved sheet quality in relation to ring crush.

The Solution

Following an analysis of the refiner system operating conditions, AFT Finebar® recommended a plate pattern with more edge length and a higher groove volume. Our 26" active diameter plates with a 1.0, 2.0, 4.5 bar-groove-depth increased the edge length to 24 km/rev and reduced the refining intensity to 0.7-0.8 Ws/m. The recommended plate pattern also increased groove volume by 50%.

The Benefits

After the installation of AFT Finebar® refiner plates, the mill achieved the following process improvements and savings:

- Improved ring crush properties with less applied energy.
- Average energy savings of 0.5 net hpd/t.
- Plate life doubled to an average of 16 weeks life as a result of lower intensity refining, higher purity metallurgy and increased groove volume.

