

AFT Case Study

FB5

- **Reduced Energy**
- **Improved Pulp Quality**

AFT Finebar® plates represent a breakthrough in low consistency refiner plate technology. An innovative, patented technology is used to create significantly finer patterns than conventionally manufactured refiner plates - with exceptional strength and durability. Proven benefits in pulp quality, energy savings and plate life have been achieved for a wide range of fiber types and pulping processes.

Subject mill had two 34" Andritz refiners for 3rd stage RMP LC post refining. The refiners were equipped with cast refiner plates consuming approximately 400 hp on no-load energy. Reduced periphery AFT FINEBAR® refiner plates were installed leading to a significant reduction in no-load energy consumption. In addition, shive reduction and strength development of the pulp was improved.



The Background

The subject mill is an integrated U.S. pulp and paper, producing various high quality printing and writing grades. The mill has three paper machines with total capacity of 600.000 MTPY and basis weights of papers range from 52 to 130 g/m2.

Two 34" Andritz refiners in its RMP mill's 3rd stage LC refining were run with same conditions for years. While the general performance of the refiners was satisfactory, the mill had not been able to optimize their operation due to restrictions in cast refiner plate technology. As a result, the LC refiners were consuming approximately 400 horsepower in no-load power.

The Solution

The unique AFT Finebar® manufacturing technology enabled a use of a customized ultra low intensity refiner plate pattern and an active refiner plate periphery, reduced from 34" to 28". At the same time, the effective refiner plate edge length was doubled to ensure the best possible quality development of the pulp.

The Benefits

The no-load power of the refiners was reduced by 61% from 400 to 155 hp. With an energy cost of \$0.05 /kWh, this would correspond to an annual electrical energy savings of approximately \$160,000 /year for the two refiners.

The increased bar edge length allowed the mill the option of saving the energy, or to apply the additional available energy to achieve increased shive reduction and strength development.

