

BROWNSTOCK WASHING WITH CARBON DIOXIDE

Commercially-proven and environmentally-effective brownstock washing technology using carbon dioxide, can increase production rates for bleached kraft pulp by as much as 15% through more efficient washing and recovery systems. At the same time, it can reduce effluent loadings and lower bleach plant chemical requirements.

Trials at several Canadian mills have clearly demonstrated the ability of brownstock washing technology to provide operational cost savings with minimal capital expenditures, using traditional or state-of-the-art equipment, with or without oxygen delignification.

APPLICATION

Brownstock washing involves the injection of carbon dioxide (CO₂) into the wash water for the final stage of the washing cycle. The CO₂ dissolves in water to form carbonic acid, which works to reduce the high pH levels found in the process water from the alkali-pulp stock. Lower pH levels in the wash water reduce fiber swelling which promotes better pulp drainage, and results in improved washing efficiency. Lower pH levels in the pulp will also reduce sodium loss during the washing stage.

Another benefit of the CO₂ addition is reduced bleach plant chemical

requirement through lower filtrate chemical oxygen demand (COD), lower applied dilution factors, improved sheet consistency and higher sodium recovery levels through better displacement ratios. Overall, this will result in reduced effluent loadings.

BENEFITS

- Increased production rates
- Improved washing efficiency
- Lower bleach plant chemical requirements
- Reduced effluent loadings

