

TECHNICAL GLOSSARY

From Annealing across LMD-Filter™ up to White liquor.

Annealing

Process in which metal is heated, retained at a suitable temperature, then cooled rapidly or slowly to reduce internal stress. As a result, the metal becomes softer and more workable, particularly in cold processes.

APMP/P-RC™

Alkaline Peroxide Mechanical Pulping

A refining process preceded by multi-stage impregnation with alkaline peroxide bleach liquors. The wood chips are compressed and destructured prior to addition of the bleach liquors. APMP systems can operate without a post bleach plant since bleaching takes place up front in the process. P-RC™ APMP is a technology that distributes chemicals between the impregnation steps and a small interstage bleach tower located between the primary and secondary refining stages. P-RC stands for Preconditioning Refiner Chemical.

Approach flow system

Feeding system that provides stable feeding conditions for the following paper/board machine.

ARC

Ash Recrystallization

Process in which chloride is removed from fly ash in a recovery boiler plant.

Black liquor

Mixture of spent cooking chemicals and dissolved wood material remaining after sulphate cooking. Black liquor is recovered during pulp washing, concentrated by evaporation, and burned in the recovery boiler to regenerate the cooking chemicals and also produce energy for the mill.

Brownstock

The pulp obtained directly from the cooking process, before intercellular materials and cooking liquors have been removed.

Chemical pulp

A generic term which describes pulp produced by chemical (as opposed to mechanical) processes. These chemical processes include kraft (sulphate) and sulphite processes.

Chemical recovery

In chemical pulping, the collection, recovery, and regeneration of cooking chemicals so that they can be utilized again in the process.

Chipping

A process in a woodyard in which the debarked logs are converted into chips for pulping or refining processes. Chipping is typically done by horizontally or gravity-fed disc chippers.

CrescentFormer

Sheet forming section in a tissue machine, with the pulp suspension jet-out of the headbox flowing between a felt and a wire both moving at the same speed.

CVD

Chemical Vapour Deposition

A coating process, which generally uses a gas-phase precursor to deposit thin films on the surface of a substrate. Metal-organic precursors can be used to deposit corrosion resistant coatings on metals surfaces.

Deinking

A process in which most of the ink, filler, and other extraneous material are removed from printed and/or unprinted recovered paper. The result is a pulp which can be used in the manufacture of new paper, including tissue, printing, writing and office papers.

Delignification

Removal of lignin from wood fibers. This is performed primarily in the cooking process and further carried out in the washing and bleaching process. In bleaching, ECF pulp mills use chlorine compounds (chlorine dioxide) for this process, although it can be achieved with oxygen, hydrogen peroxide, or ozone (which do not create organo-chlorines).

Digester

A pressure vessel, typically cylindrical, used to treat wood chips or other cellulosic materials with chemicals under elevated pressure and temperature, so as to produce pulp for papermaking.

Distributed Control System (DCS)

DCS is used in industrial applications to monitor and control distributed equipment with remote human intervention, for example a pulp mill.

ECF

Elemental Chlorine Free pulp

Pulp bleached without the use of any elemental chlorine. However, chlorine compounds (e.g. chlorine dioxide) may be used in the bleaching process.

EPC

Engineer Procure Construct

A project delivery where one supplier assumes total responsibility for product and project engineering, equipment and construction procurement, and on-site construction.

Extrusion

A continuous process in which animal feed components are cooked under pressure in a combination of frictional and steam heat in order to expand the resulting product and convert it into feed granulate. This process is very common in production of pet food, fish feed, and cereals.

Fiberline

The machines and process systems involved in converting wood chips into pulp. Process steps can include cooking, washing, screening, knot separation, refining, and, if required, bleaching.

Flash dryer

Thermal dryer in which pulp is carried pneumatically while the material is dried. In many cases the drying is carried out in two stages.

Green liquor

Aqueous solutions of the smelt resulting from the burning of thickening waste liquor in the recovery boiler. Mainly consists of sodium carbonate and sodium sulphide.

Hammer mill

Machine used for pulverizing raw materials for various applications including animal feed and preconditioning for refining applications; the raw materials are hammered by a series of steel hammers. The pulverized material exits through a screen plate with apertures. The size of the apertures and hammers, including the number of hammers, can be changed to achieve desired results.

Lime kiln

A long, slowly rotating kiln used to reburn lime mud (calcium carbonate) to form calcium oxide, which can be re-used in recausticizing.

LMD-Filter™

The LMD-Filter™ is a lime mud precoat filter designed to achieve optimum dry solids with excellent washing efficiency for lime mud. The filter ensures efficient lime kiln operation at low heat consumption. LMD stands for Lime Mud Drying.

Market pulp

Pulp produced from wood and sold on the open market, as opposed to that which is produced for internal consumption by an integrated paper mill or affiliated mill.

MC

Medium Consistency

Pulp suspension with a consistency of 6-18%.

MDF

Medium Density Fiberboard

Board made of mechanical pulp from the refiner process.

Mechanical pulp

A generic term describing pulp produced by a mechanical (as opposed to a chemical) process. Also known as “high-yield” pulp as the processes utilize a higher proportion of the wood raw material than the chemical processes. Mechanical pulp is produced using either grinders or refiners. They are principally used in the production of newsprint, magazine papers, printing papers, specialty papers, tissue, towelling, paperboard, and wallboard.

NBSK

Northern Bleached Softwood Kraft

The industry’s benchmark grade of pulp for pricing and inventory data. Produced primarily in Canada and the Nordic countries. Some NBSK is also produced in the Northwestern USA and in Russia.

OCC system

System for preparation of Old Corrugated Containers.

Pickling

Process for chemical treatment of oxidized steel, applied to obtain a clean metallic surface. Here, the steel is dipped into a hot bath of diluted sulphuric or hydrochloric acid.

PrimeReel™ Centerwind

The centerwind reel accurately controls the nip pressure at very low loads to retain the bulk of sensitive tissue and towel grades. It increases productivity by winding larger diameter rolls and reduces paper losses by controlling the nip and torque throughout the entire process.

PrimeRun™

The sheet stabilization system improves productivity by efficiently transporting the web from the Yankee to the reel. The active and passive stabilizers convey the web without deteriorating the paper properties and can remove dust from the sheet and local area.

PVD

Physical Vapour Deposition

A coating process used to deposit various materials onto various surfaces in a vacuum chamber. The coating material first has to be evaporated and is then condensed on the cold surface of the substrate.

Recausticizing

A process by which green liquor from sulphate pulping is converted to white liquor, thus allowing the cooking chemicals to be re-used. In recausticizing, sodium carbonate of green liquor is converted to sodium hydroxide by using calcium oxide. Lime mud, which is formed in recausticizing reactions, is reburnt in the lime kiln.

Recovery boiler

An important process step in the production of kraft pulp. A special boiler, where the black liquor from the cooking process is burned, after concentrating it in an evaporation process. The residual carbon is burned and the inorganic sodium salts are melted and recovered.

Recycled paper

Paper partly or wholly made from recycled fiber.

Refiner

Machine used to grind pulp between two discs. Refiners can operate at low consistency or at higher consistencies. At low consistencies the material is fed to the refiner using a pump. At higher consistency levels conveying devices are used. Other refiner types are used for breaking down wood chips into fibers.

RTS™

Retention time, Temperature, Speed refining

A TMP process producing better quality mechanical pulp at lower energy consumption. Improved fiber properties are obtained by rapid heat treatment of the fibers at higher temperatures, while optical properties are preserved due to the low retention time. The process is operated at higher refiner disc speeds, most commonly 2,300 rpm.

Slab press

Equipment used to press flash dried pulp into bales then fed to the baling line.

Sludge

Waste created during the biological process of treating effluent from a manufacturing or municipal wastewater process.

Stock pump

Special centrifugal pump for water and fiber suspensions.

TAD

Through-Air Drying

Process for tissue drying with the paper web running over a perforated drum, where hot air is blown through the web.

TMP

Thermo-Mechanical Pulping

A refining process in which wood chips are refined in a pressurized refiner. The process can involve from one to three refining stages in the mainline; however, two stages are most common. The higher temperatures help soften the chips, which results in higher pulp strength compared to atmospherically refined pulps (RMP). TMP relies on mechanical energy rather than chemicals to convert wood into pulp. TMP pulps are most commonly used in newsprint and magazine papers.

White liquor

A strongly alkaline solution used in the cooking (digesting) process. Mainly consists of sodium hydroxide and sodium sulphide.