Low specific energy consumption and well-developed fibers after primary refining stage enable use of efficient LC refiners in second stage and rejects treatment.

- Further reduction of specific energy consumption compared to the HC refiner
- Simplified process, easy operation and minimum maintenance
- Excellent pulp property development in LC refiner

P-RC APMP
Improved performance and profitability

Benefits:
- Minimum specific energy consumption
- High chemical efficiency
- Low operating costs
- High process yield
- Superior pulp quality
- High tensile strength at high bulk
- Excellent optical properties – brightness, light scattering, opacity
- Minimum generation of COD and BOD
- Sulfur-free process leads to improved bio-degradability of pulp mill effluents
- Reduction of greenhouse gas emissions (CO₂) due to low specific refining energy consumption
- Flexible operation: wide range of pulp grades and wood species
- Optimized and reliable equipment for a wide range of applications
- Proven in many installations

P-RC APMP
A closer look on high-quality fibers at lowest operating costs
The challenge: Producing high-quality fiber at the lowest operating cost

The ANDRITZ P-RC APMP (Pre-conditioning Refiner Chemical Alkaline Peroxide Mechanical Pulp) process is an advanced technology for the production of high-quality chemi-mechanical pulps. This environmentally friendly process is designed to meet today's and tomorrow's market requirements for high-quality paper and board products at maximum production efficiency.

The solution: The ANDRITZ P-RC APMP system

With the flexible P-RC APMP process, it is possible to produce a wide range of pulp grades with superior quality suited for the production of various paper grades. From UPO to printing/offset to board and tissue.

Chemical addition and bleaching
High brightness with highest chemical efficiency

- Chemicals in the impregnation stage and at the refiner
- Bleaching reaction completed in a high-consistency bleaching tower after refiner
- Alkali efficiently used for wood softening and bleaching
- Flexible in controlling pulp property development
- Pulp efficiently washed after bleaching in a screw press
- High brightness also reached with raw materials considered difficult to bleach

Chemical addition and bleaching
High brightness with highest chemical efficiency

- Proven technology at power loads beyond 30 MW
- Large flat disc refiners provide optimum fiber development and lowest shive levels
- High-speed refining possible for further energy reduction
- Pressurized process for steam and heat recovery

Washing
Reduction of COD, extractives, anionic trash

- Cleaner pulp to 2nd stage refiner and to the paper machine or pulp dryer
- Improved pulp quality and operation of the PM
- Separation of water loops
- Multi-stage counter-current washing possible
- Improved washing efficiency
- Reduced wash water consumption
- Recovery of residual peroxide and reuse for 2nd stage bleaching

High-consistency refining
Optimum pulp quality for low-freeness pulps

- Value-added low-freeness pulp grades (LWC) and wood species with a high demand for specific energy require a two-stage high-consistency refining process.
- Optimum split of specific energy between primary and secondary refiner
- Optimum fiber development in HC refiner
- Steam generated in the pressurized refiner can be recovered and reused in the process

The ANDRITZ Impressafiner provides a highly efficient chip compression and dewatering stage with the following benefits:

- Opens chip structure
- Maximum uptake of chemicals in impregnator
- Reduced energy consumption in refining
- Detwisting (COD, heavy metals, extractives)
- Equalizes chip moisture profile and chip bulk density
- Reaction tower ensures efficient penetration of chemicals and pre-bleaching of chips.

Impregnation
Efficient impregnation is a key to success

The ANDRITZ Impressafiner provides a highly efficient chip compression and dewatering stage with the following benefits:

1. Opens chip structure
2. Maximum uptake of chemicals in impregnator
3. Reduced energy consumption in refining
4. Detwisting (COD, heavy metals, extractives)
5. Equalizes chip moisture profile and chip bulk density
6. Reaction tower ensures efficient penetration of chemicals and pre-bleaching of chips.

Refining
Reliable refining for optimum fiber development

- Proven technology at power loads beyond 30 MW
- Large flat disc refiners provide optimum fiber development and lowest shive levels
- High-speed refining possible for further energy reduction
- Pressurized process for steam and heat recovery

1. Opens chip structure
2. Maximum uptake of chemicals in impregnator
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5. Equalizes chip moisture profile and chip bulk density
6. Reaction tower ensures efficient penetration of chemicals and pre-bleaching of chips.

化学添加和漂白
高亮度与最高化学效率

- 化学品在浸渍阶段和在破碎后
- 脱浆反应完成在高浓度漂白塔后
- 能够有效用于木材软化和漂白
- 灵活控制纸浆性能发展
- 纸浆经过漂白后在螺杆式压榨机中洗涤
- 高亮度也达到了难以漂白的原材料

化学添加和漂白
高亮度与最高化学效率

- 证明了技术在超过30MW的功率负荷
- 大的平盘破碎机提供了最优的纤维发展和最低的废料
- 高速破碎可以进一步节约能源
- 压力过程用于蒸汽和热回收

洗涤
减少COD, 有机质, 阴离子垃圾

- 更清洁的纸浆到第2阶段破碎机和纸机或纸浆干燥机
- 改善纸浆质量及操作于PM
- 水分分离
- 多级逆流洗涤可能
- 改善洗涤效率
- 减少洗涤水消耗
- 残余过氧化氢的回收和再利用

高浓度破碎
最优纸浆质量用于低纤维度纸浆

- 价值添加剂低纤维度纸浆等级（LWC）和木材物种与高对特定能量的需求需要二级高浓度破碎的过程
- 主破碎和二级破碎能量的最佳分割
- 最佳纤维发展在HC破碎机
- 在压榨破碎机中生成的蒸汽可以被回收和再利用在过程中

浸渍
高效浸渍是成功的关键

ANDRITZ Impressafiner提供了一个高效的芯片压缩和脱水阶段，具有以下优势：

1. 打开芯片结构
2. 最大化化学物质在浸渍器的吸收
3. 降低精制中的能量消耗
4. 脱绞（COD, 重金属, 有机质）
5. 等化芯片湿度分布和密度
6. 反应塔确保化学物质的有效穿透和预漂白的芯片。