



Wood- *Impact on the process*

Characteristics

- Yield
- Density
- Chemical composition

Impact

- Wood consumption
- Energy costs
- Chemical costs

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Wood- *Impact on the process*

Examples

- Higher yield means lower wood consumption but has a negative impact on the steam production in the Recovery Boiler.
- Higher lignin content means higher bleaching chemicals consumption but higher steam production on the Recovery Boiler.

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Wood- *Impact on the product*

Characteristics

- Fibre morphology
- Chemical composition

Impact

- Paper properties
 - Optical, physical – coarseness, width
 - Mechanical - cellulose and hemicellulose content
- Fine paper vs. board, dekor

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Wood- *Impact on the product*

Examples

- Higher coarseness means more fibers which implies better optical properties
- Stiffer fibers give better bulk but probably higher beating demand
- Higher hemicellulose content gives softer pulps but higher air resistance

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Wood- *Non-process elements (NPE)*

Elements

- Ca, Mg, P, Mn, K, Cl

Impact

- Scaling(Bleach plant, Evaporation)
- Recovery boiler (pluggings)
- Lime kiln (efficiency)
- Environment impact (effluents, leachates)

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Wood- *Mill solid residues***Is there any use in forest operations? Is it feasible?**

- Wastes from woodyard operations
- Bark boiler ashes

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Wood- *the optimal compromise*

- Stable quality
- Lower costs (higher yield)
- Fibre characteristics that bring good mechanical and optical properties

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