

A lush green forest scene with sunlight filtering through the trees, creating a warm and natural atmosphere. A white rectangular text box is overlaid on the left side, and a small green square is positioned above its top-left corner.

Fibercare[®]

Refining case study

Trial Situation



Mill target:

Improve tensile strength
of tissue paper



Mill problem:

Poor tensile strength

Trial Situation



Paper grade:
14.6g/m² Roll tissue paper



Machine speed:
1720m/min

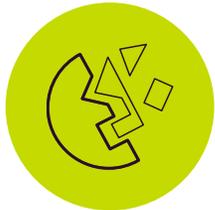


Pulp and white water situation:

- Pulp in Hydraulic Pulper:
T = 35°C, pH = 6.7
- White water: pH = 6.5-7.5
- Post-refiner Pulp: T = 40°C
- Headbox Pulp: T = 35-38°C

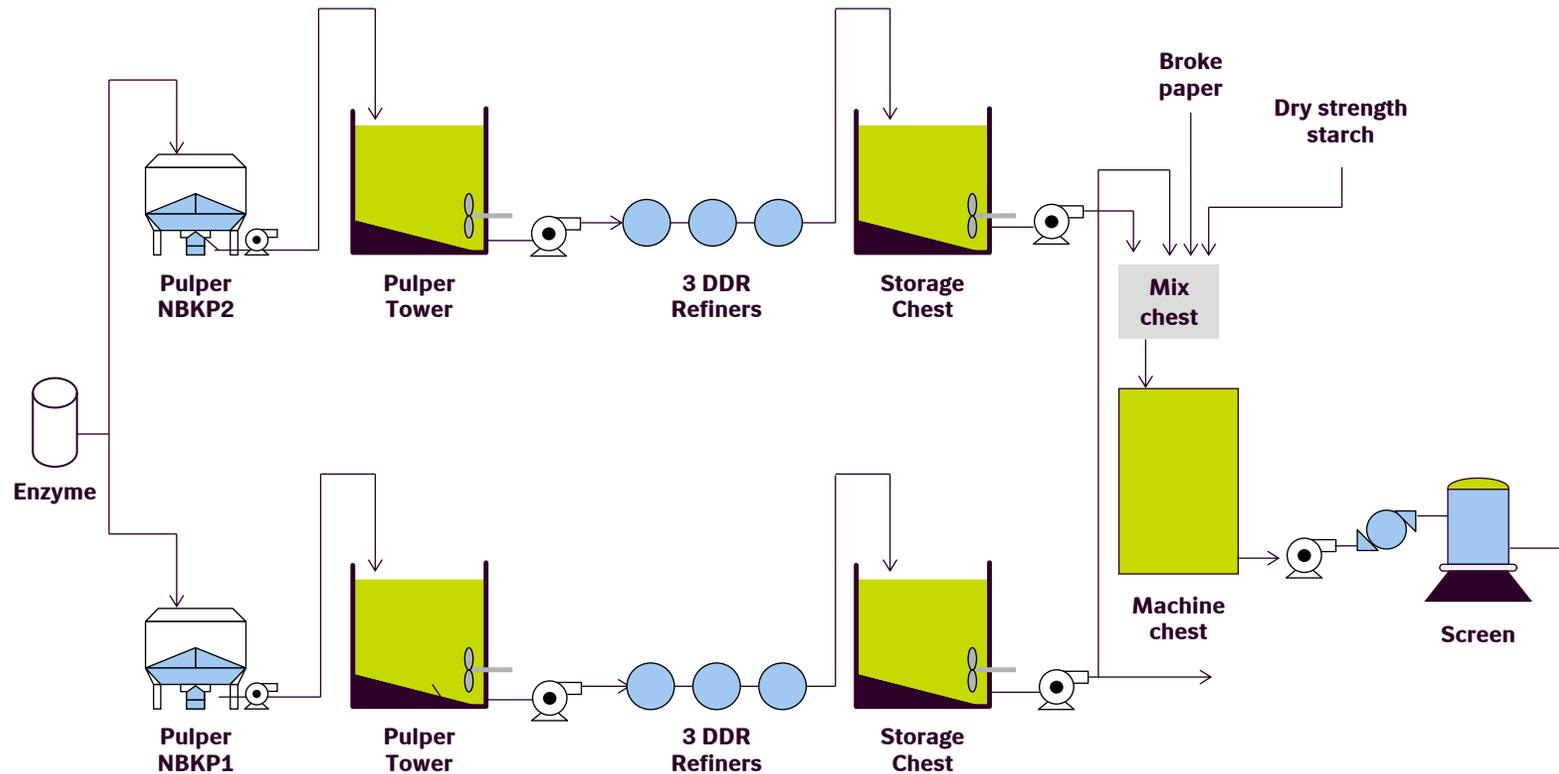


Furnish:
10% bleached softwood kraft pulp
/ 90% bleached hardwood kraft
pulp



Enzyme treated pulp:
Mixed bleached softwood/
hardwood pulp

Trial Situation



- **Adding point:** Pulper
- **Enzyme dosage:** 70g/t
- **Enzyme treatment time:** around 1 hour before refining

Trial Situation

Baseline conditions: strength aid added as follows:



25kg/t

pulp of dry strength aids
in polymer form



7kg/t

pulp of cationic starch

Refiners: 2 sets of DDR refiners

Trial Result

	Baseline (pre-trial)	Fibercare®
Enzyme dosage	0kg	0.07kg
Dry strength aids (polymer)	25kg	0kg
Refining energy consumption	60kwh/t	20kwh/t
Freeness of Refined pulp	390CSF	460CSF
Cylinder speed	1720m/min	1800m/min

Trial Conclusion



0.07kg/t
FiberCare®



Reduced
refining energy
by 67%, saved
40kwh of
refining energy
per ton of pulp



Eliminated need
to add 25kg dry
strength aids



Delivered better
tensile strength,
facilitating an
increase in
machine speed

Thank you