



# Bercen, Inc.

Where Innovative Solutions Begin!

## BERSTRENGTH 5000

Increases Production – Maintains Ring Crush with a Reduction in Basis Weight

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### MILL OVERVIEW:

**Mill:** Southern Linerboard  
**Grades:** 42#, 56# 62#, 69# Linerboard  
**Furnish:** Softwood/OCC  
**Machine:** Fourdrinier  
**Production:** 1200 tpd

### PRE-TRIAL OBJECTIVES:

A lab study was completed prior to the trial comparing **BERSTRENGTH 5000** to Raibond 15. Hand sheets were made at 5 and 10 lbs. per ton. **BERSTRENGTH 5000** improved strength approximately 20% over the current system.

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### SYSTEM OVERVIEW:

**Temp:** 140°F  
**pH:** 5.0  
**Speed:** 1200 – 2300 fpm

Wet End Chemicals:  
Alum, Rosin Size, Water-based Defoamer, Barium Control

### APPLICATION:

**BERSTRENGTH 5000** will be evaluated on a 56 lb. grade. There will be two application points, one at the suction side of the filler machine chest pump and the second at the liner fan pump. Two gear pumps will have the capacity to pump a maximum of 25 lbs. per ton. **BERSTRENGTH 5000** will be added at equal flow rates to the Raibond 15. The current application rate is 5 lbs. per ton to the liner fan pump and 10 lbs. per ton to the suction of the filler machine chest pump.

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### MILL OBJECTIVE AND TESTING REQUIREMENTS:

Attempt to replace the current strength system with improved ring crush at higher speeds. The cost of the current system is \$6.00/ton. **BERSTRENGTH 5000** needs to display better strength properties at the same or lower cost.

### RESULTS:

**BERSTRENGTH 5000** performed very well. Wet end data showed a reduction in turbidities of 70% to 80%. The charge profile reduced the cationic demand by 50%, reaching a state of relative equilibrium 5 hours into the trial. Throughout the trial, the speed of the machine increased from 1400 fpm to a maximum speed of 1590 fpm. Basis weight was lowered from 58.0 lbs. to 56.5 lbs while averaging a 128 ring crush. The minimum ring crush specification required is 115.

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Ring crush, mullen and STIFI will be monitored on each reel. FPR, turbidities and a charge profile will be developed prior to and during the trial. Bercen personnel will monitor wet end chemistry while in house testers monitor strength parameters.

