

Metrix™ Horizon Delivers Strength & Productivity for North American Recycled Containerboard Producer



BACKGROUND

A leading recycled corrugated medium producer sought to enhance the strength and productivity of their product while optimizing their manufacturing processes. The board machine consistently ran over nominal weight on several grades to achieve quality specifications even with the use of a strength program. The mill had the desire to create more sustainable grades with higher ring crush and weight to strength ratios not achievable with the current program. They decided to explore innovative technologies that could not only meet their performance goals but also align with their commitment to sustainability and future goals.

SOLUTION

Metrix™ Horizon is an innovative solution which helps customers achieve their sustainability goals and improve costs with stronger, lighter paperboard packaging.

Nalco Water's new innovative strength and retention and drainage program provided improved key strength quality metrics of the corrugated medium product and unlocked significant speed and productivity increases. The improved strength allowed for a reduction in refining and provided a significant impact to dewatering on the table and reduced steam demand in the dryers. The reduction in steam demand allowed for increase paper machine speeds that increased the area of board produced per ton paper to improve profitability. Additionally, the new retention and strength program allowed for quicker grade changes and improved press operations increasing uptime and total paper produced.

ANNUAL SAVINGS



PRODUCTIVITY

Production increase

12,000 tons



ENERGY

Refining energy reduction

1.5 million kWh



GREENHOUSE GASES

Metric tons — CO₂

976



TOTAL VALUE DELIVERED

\$3,100,000

RESULTS

The implementation of the Metrix™ Horizon solution delivered significant compressive strength as compared to historical levels, creating productivity and financial improvements, energy savings and GHG reductions. The new operating window provided more flexibility in achieving higher strength targets and new grade potential for future market penetration.

- 8.3% Increase in Ring Crush over the incumbent program
- 15-20% compressive strength gain over no chemistry baseline
- Increased strength at a 40% reduction in refining horsepower day/ton providing for significant production increases
- Reduced greenhouse gases by 976 metric tons/year

CONCLUSION

The Nalco Water Metrix™ Horizon solution provided the customer a new operating window and paperboard sheet quality improvements over historical operations. The net benefit of \$3.1 M annual profit improvement along with a carbon footprint reduction of over 900 metric tons carbon were saved by implementing the new program.

RING CRUSH INDEX

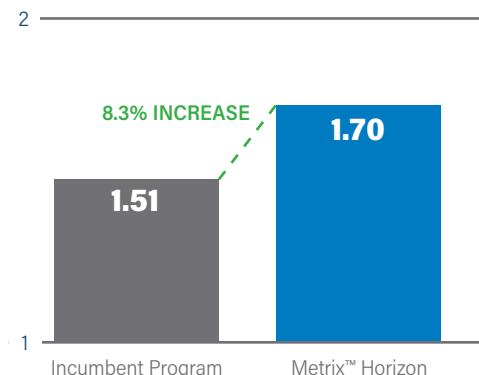


FIGURE 1: Ring Crush Strength delivery comparison of incumbent program vs. Metrix™ Horizon

REFINING HPD/T

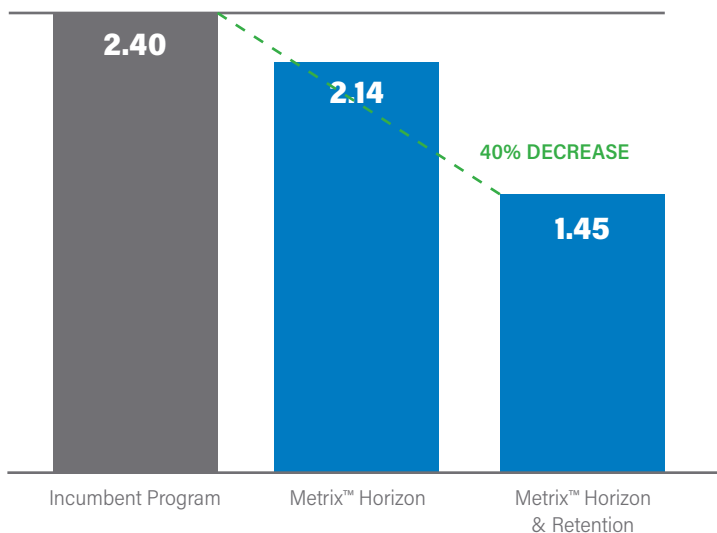


FIGURE 2: Refining HPD/T comparison of incumbent program, Metrix™ Horizon and Metrix™ Horizon + Retention

Nalco Water, an Ecolab Company

North America: 1601 West Diehl Road • Naperville, Illinois 60563 • USA
 Europe: Richtstrasse 7 • 8304 Wallisellen • Switzerland
 Asia Pacific: 52 Jurong Gateway Road, #16-01 Jem Office Tower, Singapore 608550
 Greater China: 18G • Lane 168 • Da Du He Road • Shanghai China • 200062
 Latin America: Av. Francisco Matarazzo • nº 1350 • Sao Paulo – SP Brazil • CEP: 05001-100
 Middle East and Africa: Street 1010, Near Container Terminal 3, Jebel Ali Free Zone, PO BOX 262015, Dubai UAE