ECOSYNTHETIX®
SUSTAINABLE POLYMERS FOR PLANET EARTH™

SurfLock™ Improves the Dry Strength of Pulp-Based Products, Increases the Use of Lower-Cost Fiber and Fillers, while Reducing Carbon Footprint

PLATINUM Top 1% 2023 ecovadis Sustainability Rating

SurfLock™ biopolymers are a USDA BioPreferred Certified family of products that increase fiber strength in pulp, recycled packaging, virgin packaging, and tissue applications.

USDA CERTIFIED BIOBASED PRODUCT PRODUCT 96%

SurfLock is comercially proven and has been used in tissue and packaging operations since 2021.

What is SurfLock™?

SurfLock is a biobased fiber strength enhancement polymer. This all-natural strength aid is added to the pulp fiber mix in pulp production and in forming a variety of paper-based products like tissue and packaging board.

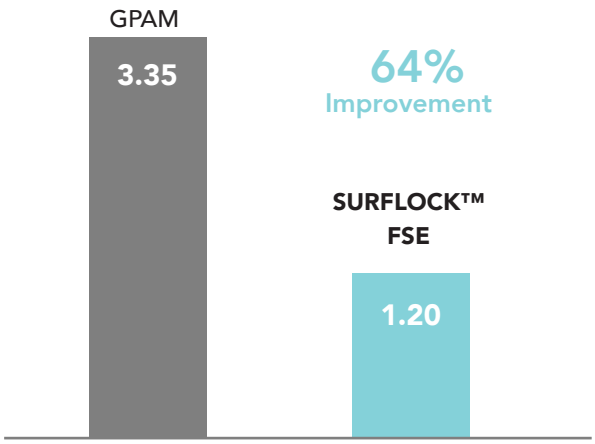
Why SurfLock™?

The addition of SurfLock to pulp-based products has enabled strength improvements of more than 20% in multiple commercial operations.

This improvement enables optimized production costs and rates, and offers a significant improvement in environmental footprint.

CO2 Reduction Benefits

(Kilograms CO2 Equivalent per Kilogram of Product)



Note: Example comparison vs. one common fossil-based chemistry

Key Benefits for Pulp and Paper Milling Operations

The addition of SurfLock to the production of pulp-based products has demonstrated a range of valuable benefits, including:

- Increased Burst, SCT and Scott Bond
- Achieved similar performance with shorter fiber
- Improved dry strength – tensile
- Replaced petroleum based dry strength agents
- Reduced retention aids
- Improved runnability – less breaks on machine
- Increased line speed/output
- Potential for increased ash content
- Improved strength of fiber-based products
- Increased use of lower cost fiber, recycled fiber and low-cost fillers
- Reduced refining energy
- Reduced Biochemical Oxygen Demand (BOD) and Chemical Oxygen Demand (COD)
- Dry product is easily dispersed in water on site
- Improved carbon footprint compared to incubent chemicals
- Drop-in solution with no negative impact on existing process

Easy-to-Use

SurfLock is simple to include in any manufacturing operation and can be added dry or easily made down into a cold water dispersion.

With Critical to Quality dosing in mind, the recommended dosage for SurfLock can range from 2kg/t to a maximum of 5kg/t.

CASE STUDY: Toilet Tissue Made from 100% Virgin Fiber and SurfLock™ Increased Strength and Reduced Weight

Mill Overview

- Grade: Toilet Tissue
- Furnish: 40% long fiber
  40% short fiber
  20% BCTMP

Retention System

- cap Emulsion + PEI

Mill Objectives

- Increase tensile strength
- No negative impact on softness and dusting

SurfLock Approach

- 2 - 2.5 kg/t addition
- Biopolymer added to outlet mixing chest long fiber line only

Results

Not only did the tissue strength increase by 30%, but the basis weight was also reduced by 40%. Additional benefits include:

- Reduced breaks » Increased Speed
- Increased productivity
- No negative impact on softness
- Dusting reduced up to 50%
- No increase in COD/BOD

About EcoSynthetix

EcoSynthetix offers a range of sustainable engineered biopolymers that allow customers to reduce their use of harmful materials, such as formaldehyde and styrene-based chemicals.

The Company's flagship products, DuraBind™, Surflock™, Bioform™, and EcoSphere®, are used to manufacture wood composites, personal care, paper, tissue and packaging products, and enable performance improvements, economic benefits and carbon footprint reduction.

The Company is publicly traded on the Toronto Stock Exchange (T:ECO).

Contact Information:
3365 Mainway, Burlington, Ontario Canada L7M 1A6
Tel: 1-905-335-5669 I Email: info@ecosynthetix.com I www.ecosynthetix.com