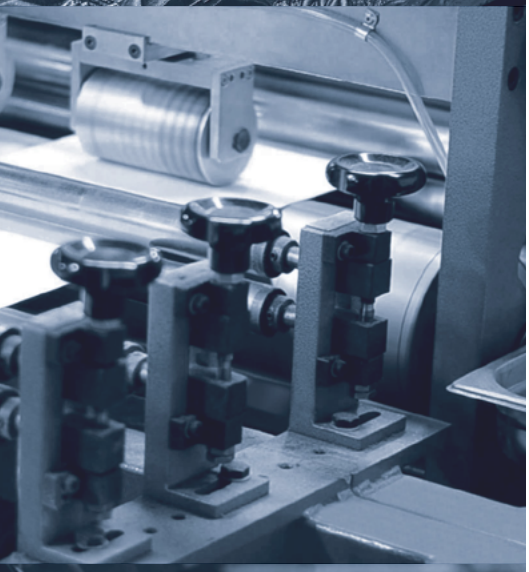

THE GREENEST PAPER
COATING COMPANY
IN THE
WORLD
IT'S NOT JUST OUR NAME – IT'S OUR WAY OF LIFE
ecologicalfibers, inc.
ENVIRONMENTALLY SOUND COVER SOLUTIONS



OUR **HISTORY** **SPEAKS** FOR ITSELF

When you look back at the environmental impact of Ecological Fibers, you'll notice that our major achievements weren't the result of environmental regulations, far from it. Our dedication to being environmentally responsible comes from an internal desire to do the right thing. Today, companies are forced through laws and regulations to consider things like responsibly sourcing materials, removing harmful chemicals, and concentrating on carbon emissions or "footprint". Ecological Fibers has had this in mind since inception. In other words, we decided to be a sustainable company before it became a selling point. For us there is no other option.

The origins of our mindset are simple. When Ecological Fibers was founded in 1972, founder Stephen Quill vowed that no employee of Ecological would ever become ill because of working conditions or materials used during production. Steve also believed that our neighbors should have complete trust that our facilities would not produce emissions or pollution that would put them or their loved one's health in jeopardy. 50 years later, Ecological Fibers stands out as the leader in environmentally sound covering materials, with the lowest carbon footprint in the industry. We vow to always search for innovative ways to be the leading example of how a company should operate.

EARTH

Over 700 tons per year of solid waste from our solvent-free coatings are isolated & sent to compost.

AIR

Our facilities have produced ZERO air pollutants & harmful exhausts since 2000.

FIRE

We use natural gasses for our high efficiency furnaces which produce 30% less CO_2 than traditional oil-powered methods.

WATER

Our in-house wastewater treatment system filters over 1.2 million gallons of water annually and sends it safely into Narragansett Bay.

CLEAN WATER IN... CLEAN WATER OUT.

Ecological Fibers' in-house water filtration system

Wastewater Before vs. After Ecological Fibers' in-house water treatment system

Our water treatment system recently received a major upgrade. This modern, more efficient system allows for decreased chemical usage, the reuse of wastewater, and a drastic reduction in solid waste. So, how does it work?

This state–of–the–art new filter press system is a large steel-framed machine with special filter cloths that create 2 disposable waste products: a clean water stream, and a dry, compostable substance called a filter cake. Additionally, this new system incorporates a clean water recycling tank that collects the water from our filter press, which is then reused for cleaning our coating mills, and will go back through the treatment process once it's been used. This ensures that Ecological Fibers remains compliant with state water discharge regulations.

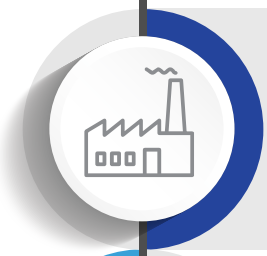
Trimmed paper waste is repulped into our recycled products

The life cycle of our products doesn't come to a halt when it comes to scraps and waste created during production. While these often discarded extras can easily be taken away to a recycling center, or in some cases composted, at Ecological Fibers we've found a better solution. Our kraft paper scraps are repulped and made into different products, such as our CompCover™ and EnviroCover® materials.

Repulping differs slightly from recycling in that it specifically refers to the waste's ability to turn back into pulp, whereas recycling refers more to the industrial capability of turning into something new. Because we use our own waste to create these products, they're an economical choice on top of already being an environmentally responsible choice.

FROM START TO FINISH

The Ecological Fibers process

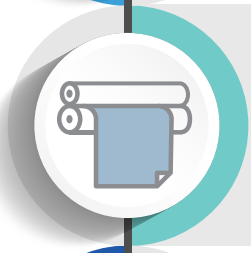


PAPER MILL

For over 50 years, Ecological Fibers has built relationships based on trust and respect with select paper mills around the world that exclusively use responsibly sourced materials.

WAREHOUSE

Ecological Fibers operates as a zero debt company, therefore we have the ability to store a considerable amount of raw materials that assist us in producing our finished materials in a timely manner.



COATING

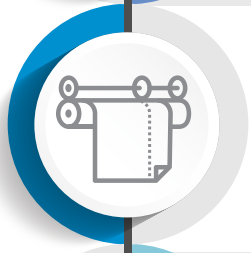
Ecological Fibers developed the industry's first 100% water-based coatings for our products that contain zero solvents, hazardous chemicals, and heavy metals. Our innovation has led the industry to attempt to follow in our footsteps.

PRINTING

We use gravure printing cylinders to add seamless, water-based print patterns to our materials with numerous styles such as leathers, fabrics, and more.

EMBOSSING

Embossing patterns are added to our materials using our custom built, high efficiency machinery to apply one of our 100+ embossing patterns.



SLITTING AND SHEETING

Ecological Fibers will convert our materials into the exact size roll (slitting) or sheet (sheeting) required for your project. This reduces waste and guarantees that the excess material is properly recycled or repulped.

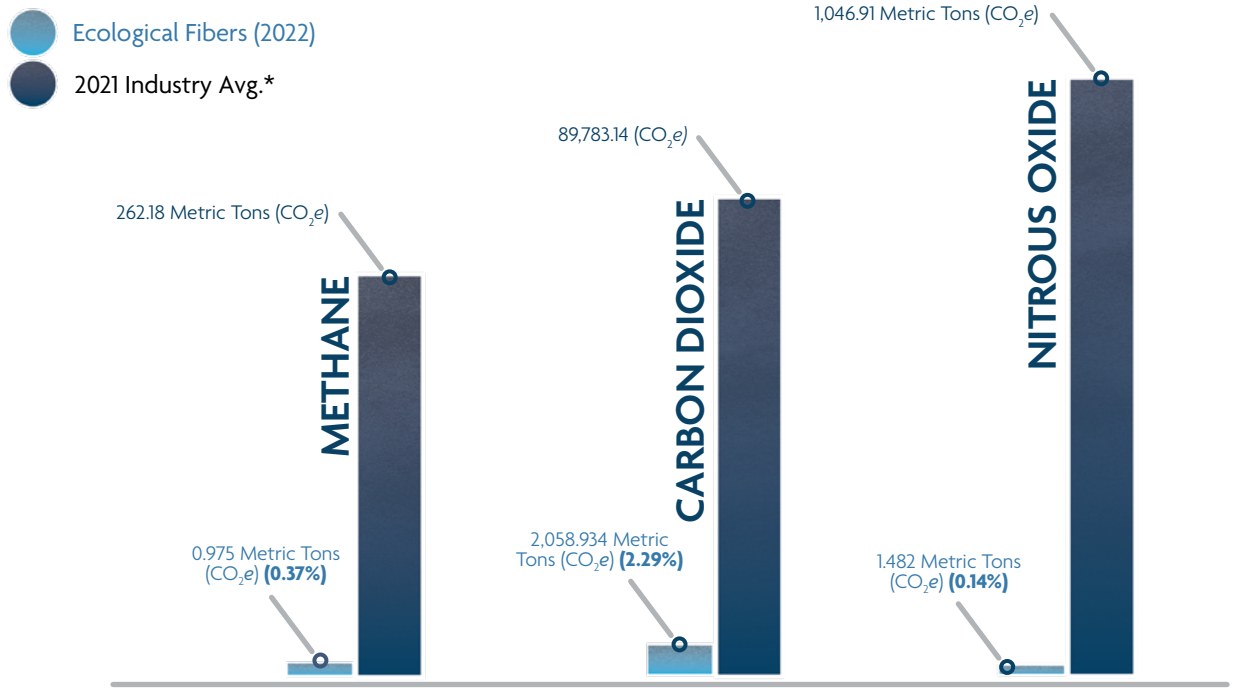
SHIPPING AND DISTRIBUTION

Ecological Fibers has strategically placed warehouses all around the world, making global shipping both economically and environmentally responsible. This allows you to save time and money, as well as making the lowest environmental impact possible.

CO_2 ECOLOGICAL FIBERS GENERATES 97.12% FEWER CARBON EMISSIONS THAN THE INDUSTRY AVERAGE

It's true, Ecological Fibers generates 97.12% fewer carbon emissions than the industry average. How did we accomplish this? It's simple, when environmental stewardship is a priority of your corporate identity, achievements like this come naturally.

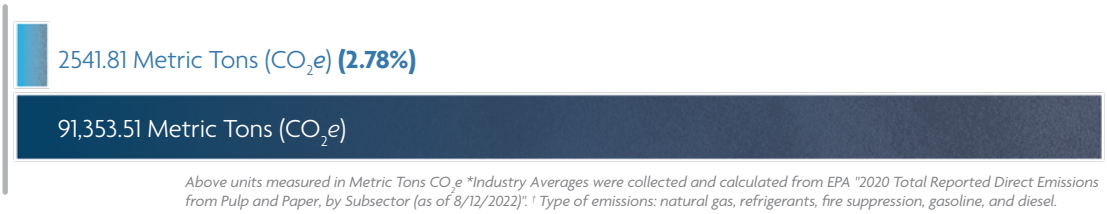
Total Direct GHG Emissions for 2022 (Scope 1)**: 2062.891 Metric Tons (CO_2e)



Ecological Fibers (2022) 1.5 Metric Tons of Refrigerants (R-22 & R-410A) (Industry average not reported)

Total Indirect GHG Emissions for 2022 (Scope 2): 478.92 Metric Tons (CO_2e)**

Total GHG Emissions for 2022: 2541.81 Metric Tons (CO_2e)



*Above units measured in Metric Tons CO_2e *Industry Averages were collected and calculated from EPA "2020 Total Reported Direct Emissions from Pulp and Paper, by Subsector (as of 8/12/2022)". † Type of emissions: natural gas, refrigerants, fire suppression, gasoline, and diesel.*

UNDERSTANDING THE NUMBERS

The data collected for our GHG emissions include electricity, gas, and other fuels for facility use or transportation of supplies and employees. The quantification of our GHG emissions consists of the data collection process and the application of documented emission factors from the EPA Greenhouse Gas Inventory Guidance forms. This quantification comprises two different methods.

* Direct emission sources in which combustion of fuels occurs and indirect emissions from consumed electricity. Emissions of CO_2 (t CO_2e) = Mass/Volume of Fuel x Emission Factor.

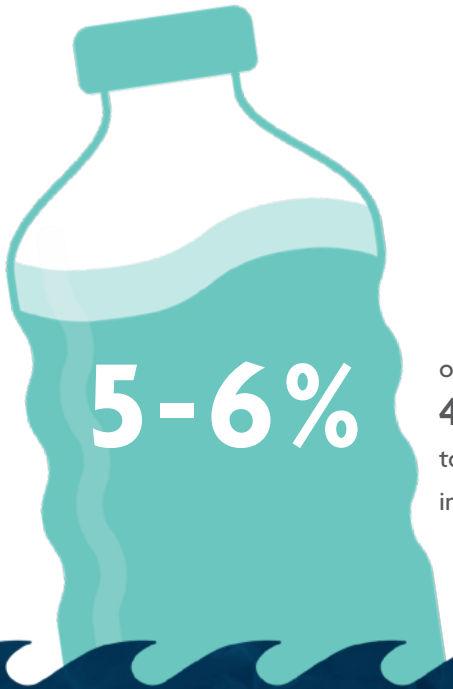
** Direct emission sources where no combustion of fuel occurs (fugitive emissions) or if the results in GHG emissions are different than CO_2 are converted to metric tons of CO_2e (Carbon Dioxide Equivalent) using the Global Warming Potential (GWP) values provided by the EPA :Emissions of CO_2 (t CO_2e) = Mass/Volume of Fuel x Emission Factor

PLASTICS HAVE BECOME A MAJOR PROBLEM, SO WE PRODUCED A SOLUTION

Each year, 400 million tons of plastic is produced worldwide, the majority intended for single use. Much like our history in removing solvents, we are removing plastics from our materials while continuing to create strong, high-quality products. Ecological Fibers is dedicated to remaining at the forefront of environmental innovation in our industry.

~36%
of all plastic produced is used to create packaging.

85%
of which ends up in landfills.



of the
400 million
tons of plastic produced in 2021 was recycled.

DEFINING PLASTIC

It has become a common practice to redefine the term "plastic" rather than invest in solutions. We recognize that this is not the way to handle this, so we decided to develop a 100% organic, plastic-free coating that contains no petroleum-based ingredients.

DEFINING BIODEGRADABLE

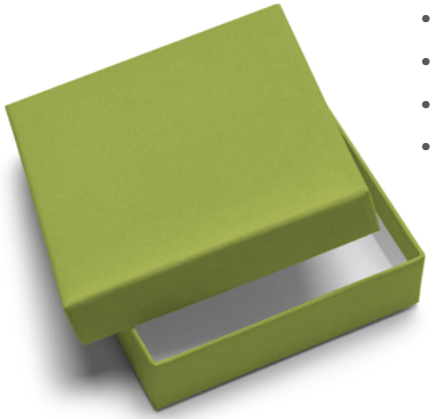
A term loosely used to claim that most any material will break down and return to a natural state. In reality, almost everything is biodegradable if given enough time. However, understanding the global environmental crisis demands real world timelines. Our coating's organic composition will decompose quickly and safely, without leaving behind solvent residue or microplastics.

It is estimated that between **75 and 199 million** tons of plastic is currently polluting our oceans.

PLASTIC FREE COATINGS
THE INDUSTRY'S FIRST 100% ORGANIC COATINGS

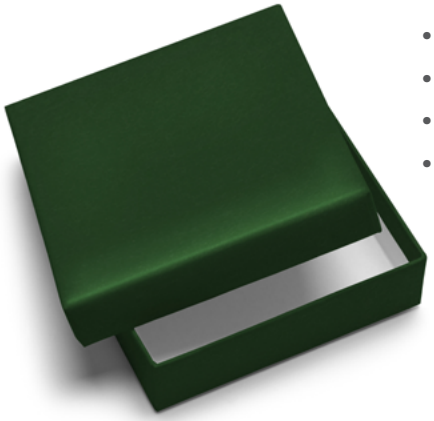
In late 2020, Ecological Fibers developed a coating formula that was completely organic, petroleum free, plastic free, and solvent free, as well as recyclable, biodegradable, and repulpable. We carry 6 plastic free products in a variety of looks, styles, and textures.

Rainbow® 3 PLASTIC FREE



- Clear coating
- Easily foldable
- Wrapping objects
- Any stocked color

ultima® libre
RECYCLABLE – REPULPABLE – REVOLUTIONARY
PLASTIC FREE



- Colored coating
- Light folding
- Boxes
- Dark colors

Rainbow® Woodgrain

PRINTED WOOD PATTERN AND EMBOSSING

Rainbow® Marble

PRINTED MARBLE PATTERN

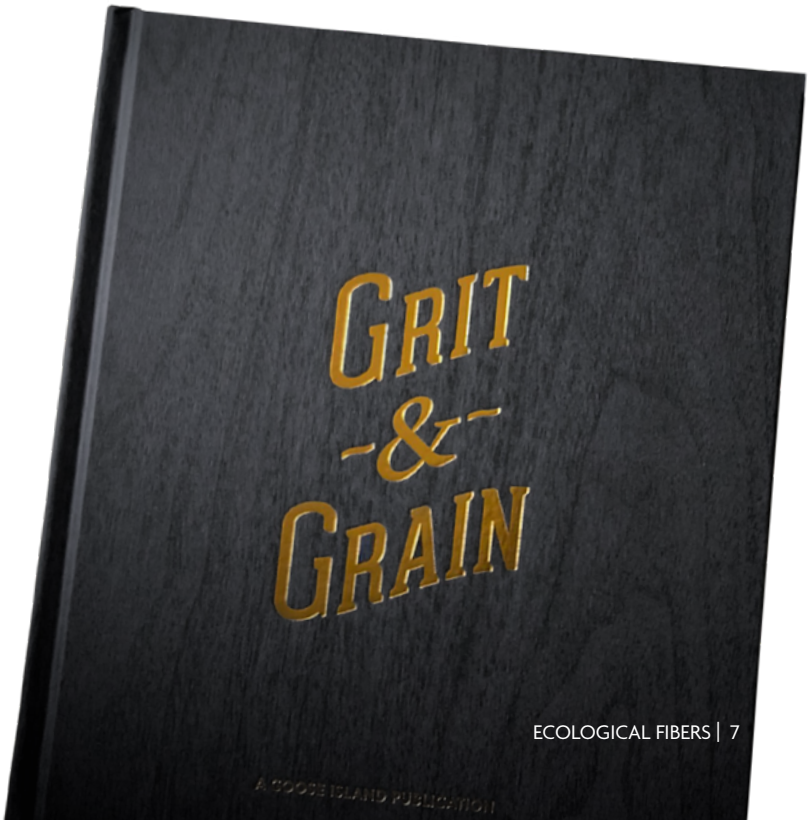
Rainbow® Lumina

WATER-BASED LUMINOUS TOP COAT

Essex™

PRINTED CLOTH-LIKE PATTERN AND EMBOSSING

The book Grit & Grain: The Story of Bourbon County Stout using our Rainbow® Woodgrain.



ECOPRINT™ 7

And the end of plastic film in books

Film lamination is an often-overlooked contributor to plastic pollution; many printed goods are coated with a thin, plastic layer to preserve and protect the finished product. An issue arises when it comes to recycling, because plastic and paper have vastly different recycling processes, making products with film coatings almost impossible to dispose of responsibly. Our solution? EcoPrint™ 7. A curbside recyclable, water-based alternative to remove the thousands of tons of plastic required for traditional film lamination. In fact, since its inception in late 2020, **EcoPrint™ 7 has prevented enough plastic from being used to cover Central Park, which stretches 1.32 mi^2, over 6% of Manhattan's land area.**

PHOENIX™

What about plastic that's already produced?

While recycling plastic is a great alternative to disposal, plastic degrades every time it's recycled. Unfortunately, this means that all plastic will inevitably have to be thrown away. Instead of taking up space in landfills, the oceans, and other places it shouldn't be, Ecological Fibers puts these discarded plastics to good use. Our Phoenix™ woven fabric material has brought new life to old plastic. **There is roughly 10 water bottles worth of plastic used to make each yard of Phoenix™!**

A MONUMENTAL MILESTONE

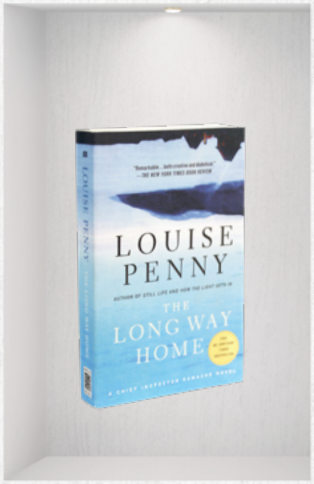
Thanks to EcoPrint™ 7, Ecological Fibers has prevented **37 Million square feet** of plastic film from being used. That's enough to cover New York's Central Park.

FSC® CERTIFIED PRODUCTS

LUMINA®

RAINBOW® 70

PRESTIGE®



IMAGINE®

RAINBOW®

AURORA™
ACURA®
COMP COVER™
ECO-COVER™ (17, 22, 25)
ECOPRINT™ I
ECOPRINT™ II
ECOPRINT™ 7
ENVIRO COVER®
ESSEX™
EXCEL®
EXPOSE™
EXTREME™
FLEXBOARD™
FLEXPAK®
HALFLINNEN™
GALAXY®
GLACIER™
GREY BACKLINER
IMAGINE™
LUMINA®
LUMINA® PEARLESCENT
MATADOR®
MIRAGE®
NATUURLINNEN™
PRESTIGE®
RADIANCE®
RAINBOW® 100
RAINBOW® 17 & 22
RAINBOW® 3
RAINBOW® 500
RAINBOW® 70
RAINBOW® 80
RAINBOW® 80 HEMP
RAINBOW® ENDLEAF
RAINBOW® LX
RAINBOW® RENEW
RAINBOW® WOODGRAIN
SABLE™
SPORTSCOVER™
SPORTSCOVER™ GOLF
ULTIMA®
ULTIMA® LIBRE

CERTIFICATIONS & COMPLIANCES

REACH COMPLIANCE

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

FSC www.fsc.org FSC® C005425 The mark of responsible forestry

ASTM INTERNATIONAL Standards Worldwide

EN 71

Prop 65

CPSIA CPSIA Compliant

ISO

RoHS COMPLIANT

TREE FREE OPTIONS

At Ecological Fibers, you can feel comfortable about the origins of our products. Yet, we still understand the struggle in choosing between recycled and virgin fibers. While there is no right or wrong answer, we wanted to create options that remove any headaches with choosing the right material for the job. Rainbow® Renew Tree Free and Flexpak™ Tree Free are made from a blend of recycled bamboo and sugarcane fibers, making these some of our most sustainable materials yet.

Using renewable resources like bamboo and sugarcane completely eliminates the risk of deforestation. While bamboo is often mistaken for a tree, it's a species of grass that boasts the fastest growth times of any other plant on the planet. Because it's regenerative, it will grow back after every harvest.

Sugarcane is harvested mainly for its juice. During this process, a byproduct called bagasse is left behind from the pulp of the sugarcane plant. Bagasse can be used in energy production, building materials, and paper making. In fact, tropical regions have been using bagasse to produce paper since the 1930s! This process reduces the amount of waste produced in sugarcane juice extraction, and eliminates the need to harvest new materials.

Bamboo can grow up to roughly 1.5 inches per hour.

Source: OneTreePlanted.org

RECYCLED PULP *vs.* **VIRGIN** PULP

The environmental benefits of responsibly sourced paper

Many see the word recycled and immediately believe that represents the most environmentally responsible type of material. While recycled paper removes the requirement to harvest trees, responsibly harvested virgin pulp and recycled paper pulp are both sustainable, just in different ways...

RECYCLED

LESS ENERGY, TREES, & WATER REQUIRED TO MANUFACTURE

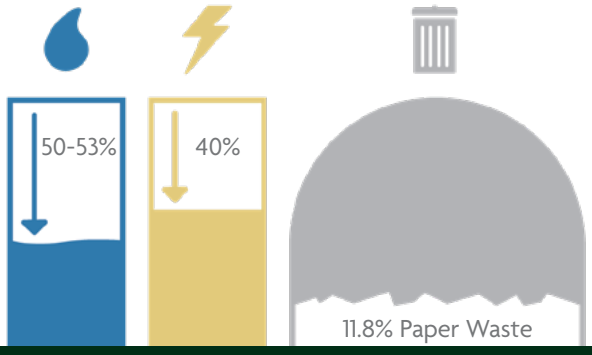
Recycled pulp reduces the number of trees harvested specifically for paper production, **uses 50-53% less water** than manufacturing from raw materials, and reduces the amount of **energy required by 40%**.

REDUCED SPACE IN LANDFILLS

Paper waste makes up approximately 11.8% of the municipal **solid waste** found in US landfills. Recycling reduces what is sent to landfills, in turn reducing the amount of methane released from those landfills.

SUPPORTS YOUR "GREEN INITIATIVES"

Recycled paper can provide a positive image for your company's brand by allowing you to promote ethical, responsible manufacturing processes.



VIRGIN PULP

FEWER NET EMISSIONS

Manufacturing paper using virgin pulp is typically powered by an organic by-product of wood harvesting called "black liquor", burned to generate heat and electricity to run the mill. Using black liquor as a fuel source is a carbon neutral substitution for fossil fuels.

STRONGER & EASILY TAILORED FOR SPECIFIC USES

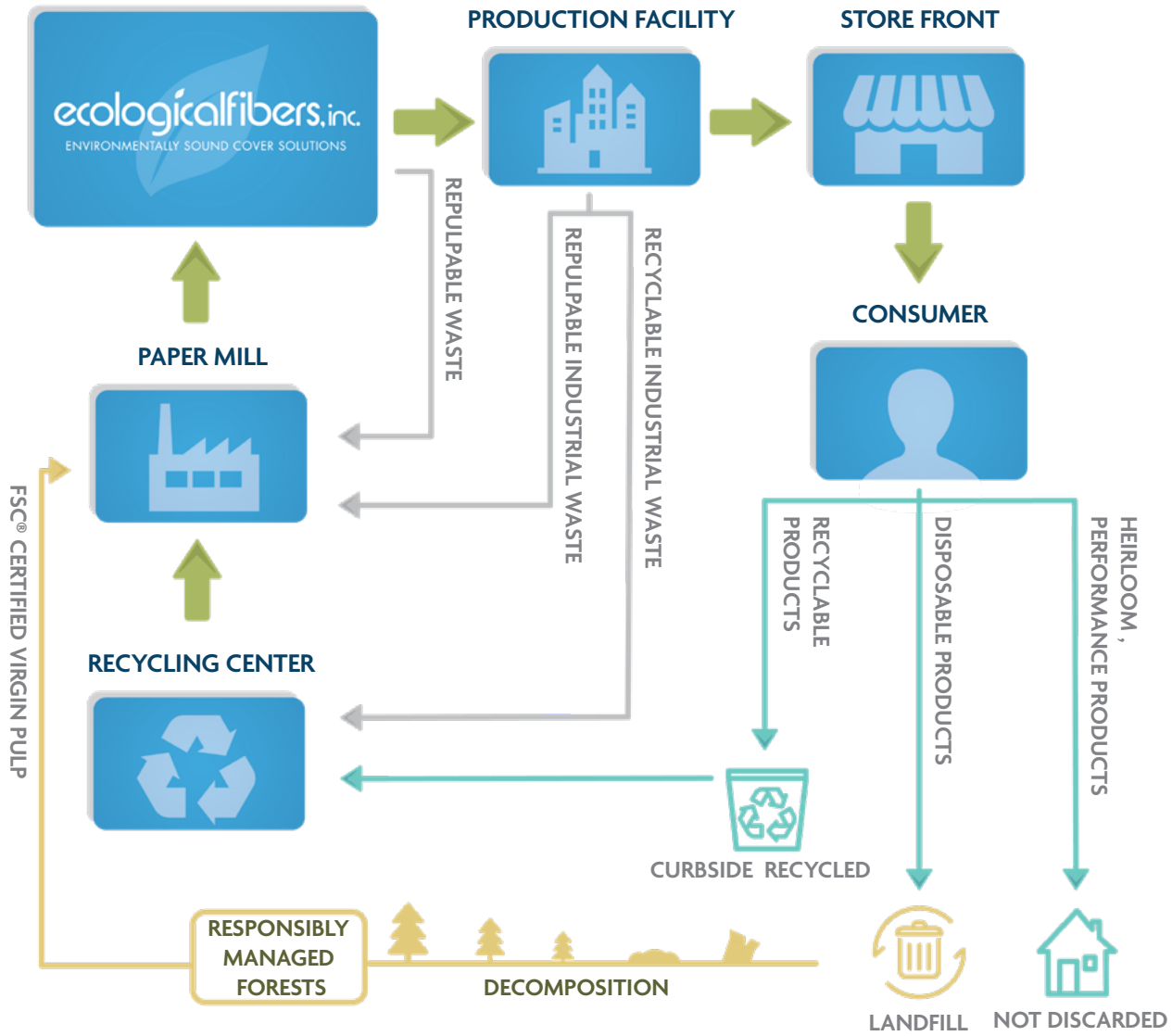
Virgin cellulose fibers are longer than recycled fibers, allowing them to bind to each other effortlessly. This creates a stronger bond resulting in a sturdier paper. Virgin fiber papers can also be used for more specific technical purposes that recycled papers often cannot fulfill. This can include the need for robust and sterile packaging, a smooth surface to print on, or a stronger paper to hold up to repetitive folding or intensive manufacturing processes.

RESPONSIBLY HARVESTED

Ecological Fibers uses responsibly harvested virgin pulp. This means that no wood fibers come from land that has not been previously designated for tree harvesting, **ensuring that trees will be re-planted and re-harvested when they mature.**

Each company may focus on different avenues of sustainability. If you are focusing on levels of recycled content, emissions or your carbon footprint, we can provide you the perfect material to help you achieve your environmental stewardship goals.

A RESPONSIBLE APPROACH TO



OUR PRODUCTS LIFE CYCLE

CURBSIDE RECYCLED

NOT DISCARDED

Uncoated & Plastic Free

- 100% plastic free, zero petroleum-based components
- Recyclable, repulpable, & archival
- Dyed-through & color coated options
- Both recycled & virgin pulp-based materials
- No hazardous waste or air pollutants created
- FSC® Certified – NC-COC-003258*
- Meets EU Reach, RoHS, CPSIA, EN71 Part 3, TSCA, ISQ 8124 Part 3, ASTM F963, and Prop. 65 compliant

*Paper Products

Coated & Recyclable

- 100% water-based, solvent free coatings
- Recyclable, repulpable & archival
- Dyed-through & color coated options
- Both recycled & virgin pulp-based materials
- No hazardous waste or air pollutants created
- FSC® Certified – NC-COC-003258*
- Meets EU Reach, RoHS, CPSIA, EN71 Part 3, TSCA, ISQ 8124 Part 3, ASTM F963, and Prop. 65 compliant

*Paper Products

Performance & Durable

- 100% water-based, solvent free coatings
- Designed with durability & longevity in mind
- Saturated paper, PU, or leather-based coated products
- No hazardous waste or air pollutants created
- FSC® Certified – NC-COC-003258*
- Meets EU Reach, RoHS, CPSIA, EN71 Part 3, TSCA, ISQ 8124 Part 3, ASTM F963, and Prop. 65 compliant

*Paper Products

GLOSSARY

ANSI (AMERICAN NATIONAL STANDARDS INSTITUTE)
A neutral, non-profit organization administering and coordinating the U.S. voluntary standards and conformity assessment systems.

AQUEOUS COATING
Coatings formulated with a water carrier meaning when the coating dries, only water vapor is emitted. The alternative to this is a solvent-based coating, which contains harmful chemicals and vapors.

ARCHIVAL
Paper that resists deterioration due to being made using an alkaline paper making process. With such a high alkaline reserve, the paper can keep its original color and texture for centuries. All archival paper is acid and lignin free.

ACID FREE
A term loosely used for papers and other materials with a pH of 6.0 or greater, referring to acidity at the time of manufacture.

LIGNIN
An organic substance in plants making cell walls strong and rigid. When left in paper made from wood pulp, the paper becomes acidic due to the lignin chemically degrading and over time brittles and browns.

ASTM F963
The Standard Consumer Safety Specification for Toy Safety, a comprehensive standard addressing numerous hazards that have been identified with toys. Compliance requires no harmful chemicals on their list to be in products.

BINDERY MATERIALS
Materials used to produce hard and soft cover books. We offer construction grades like reinforcing strips used for bookcases before any cover or spine material is applied. We do not handle text paper, adhesives, printing, or foils.

BIODEGRADABLE
Organic substances that decay naturally without causing harm by bacteria or other living organisms.

CPSIA (CONSUMER PRODUCT SAFETY IMPROVEMENT ACT)
Passed in the US in 2008, imposing testing requirements and new acceptable levels for several substances common in consumer products.

COMPOSTABLE
Products that are biodegradable, specifically intended for a composting environment. They break down and release carbon dioxide, water, and other substances in approximately 90 days leaving behind a nutrient-rich organic material called humus. Humus creates a healthy soil environment for new plant growth.

DYED-THROUGH KRAFT
Homogeneous paper that is produced by dying the fibers during the manufacturing process. This results in paper that maintains its color throughout the entire sheet. The alternative to printed sheets, which leave the edges and non-printed areas of the paper their original color.

EN71-3
The standard for toy safety on the migration of certain elements and chemicals into the body if a toy or toy component were to be swallowed by a child.

FSC® CERTIFIED
Ensures that products come from responsibly managed forests that provide environmental, social, and economic benefits. The FSC® principles and criteria provide a foundation for all forest management standards globally, including the FSC® US National Standard (v1.0) that guides forest management certification in the U.S.

ISO 8124-3
A document that specifies maximum acceptable levels and methods of sampling, extraction, and determination for the migration of the elements antimony, arsenic, barium, cadmium, chromium, lead, mercury, and selenium from toy materials and parts.

PCW (POST-CONSUMER WASTE)
A product that has been purchased and used by a consumer, disposed of, and diverted from landfills through recycling processes.

PLASTICS

PCB (POLYCHLORINATED BIPHENYLS)
A group of man-made organic chemicals consisting of carbon, hydrogen, and chlorine atoms. PCB Plastics have no known taste or smell, and range in consistency from an oil to a waxy solid.

PVB (POLYVINYL BUTYRAL)
A clear, colorless, amorphous thermoplastic obtained by the condensation reaction of polyvinyl alcohol and butyraldehyde. The resin is known for its excellent flexibility, film-forming, adhesion properties, and UV resistance. PVB Plastic is non-toxic, and some grades have received food contact approval.

RECYCLED
The process of collecting and processing materials that would otherwise be thrown away as trash and turning them into new products.

RECYCLABLE
Meaning a product contains materials that can be easily sorted and recycled. A product that is considered non-recyclable can either contain materials that cannot be reused, or combine recyclable materials in a way that does not allow them to be reused again.

REPULPABLE
Paper material that can be broken down in water through the pulping process of creating new paper. This occurs in paper mills, as opposed to recycling which occurs in recycling centers.

ROHS (RESTRICTION OF HAZARDOUS SUBSTANCES)
A register of restricted materials that are hazardous to the environment, pollute landfills, and are dangerous in terms of occupational exposure during manufacturing and recycling.

TSCA (TOXIC SUBSTANCES CONTROL ACT)
Provides the EPA authority to require reporting, record-keeping, testing requirements, and restrictions relating to chemical substances and/or mixtures.

Headquarters

Lunenburg, MA
40 Pioneer Drive, 01462 USA
Phone: (978) 537 - 0003

Factory

Pawtucket, RI
730 York Ave, 02861 USA
Phone: (978) 537 - 0003

Warehouse

LA Mirada, CA
15220 Canary Avenue 90638 USA
Phone: (562) 229 - 1535

Warehouse

El Mirador, Naucalpan
Valle de Mexico 8-1, 53050 Mexico
Phone: +(52) 55 5560 6688

ecologicalfibers, inc.

ENVIRONMENTALLY SOUND COVER SOLUTIONS

40 PIONEER DRIVE LUNENBURG, MASSACHUSETTS 01462 USA

TEL: (978) 537 - 0003 • FAX: (978) 537 - 2238 • INFO@ECOFIBERS.COM

WWW.ECOFIBERS.COM