Introducing Eovations™ Technology

A Revolutionary Fully-Fibrous Material with a Combination of Strength, Stability, Durability and Other Properties Beyond Wood Itself
Eovations™ extruded oriented technology creates a fully fibrous thermoplastic composite delivering a combination of strength, stability, lightweight and durability unheard of in wood-plastic composites and even wood itself. With strength and stiffness in a class with engineered wood products – plus toughness, weatherability and workability – Eovations composite material is a candidate for almost any application where wood, wood-plastic composites, plastics and even some metals fall short in either performance or value.

This remarkable technology is now available under flexible licensing arrangements designed to fully support successful development and commercialization of differentiated and high-value products across a wide range of industries and applications.

**Stronger, Tougher and Lighter than Almost Any Other Lineal Composite**

Unlike most other composites, Eovations material can be used in structural, non-structural and decorative applications. Its longitudinally-oriented fiber structure and oriented molecular construction provide strength that is unprecedented in an extruded thermoplastic-based composite and puts Eovations lineal material in a class with engineered wood products for structural use. As shown in the graph below, the material's strength approaches that of hardwoods at densities of only 0.5g/cc to 1.0 g/cc. The fully-fibrous structure also makes Eovations material physically tough and durable with better resistance to impact, scrapes and marring than other uncapped composites. Eovations material also resists warping, twisting, sagging and dimensional changes that can plague other composites.

**TM** Eovations is a trademark of Eovations, LLC.
The Fibrous Lineal Composite That Replicates and Improves on the Strength, Durability and Aesthetic Properties of Wood

Stands Up to Harsh Environments
No matter what the world throws at Eovations material, it shrugs it off and keeps looking and performing beautifully. Extended immersion testing under vacuum shows maximum moisture absorption values of less than 0.2%, which gives Eovations material an enormous advantage in weatherability, freeze-thaw stability, and rot resistance. It doesn’t support the growth of mold and mildew; stands up to sunlight and high wind forces; and resists damage by microorganisms, insects, aquatic life and chemicals.

Beautiful Aesthetics that Last Longer
Eovations material is manufactured in a wide range of molded-in textures and colors to help you harmonize it with environments and in assemblies. It can also be factory- or field-coated. Since it can be easily worked, you have complete freedom to create custom assemblies and trim lineals in the field. Plus, the weatherability and toughness of Eovations material keep your designs looking great longer.

Workability Like Wood
Eovations material can be sawn, drilled, planed, routed, milled and fastened using carpentry skills and conventional woodworking equipment. It provides excellent holding power for nails, screws and staples. Compared to wood, the fiber structure of Eovations material provides greater resistance to splitting and makes Eovations material more forgiving during assembly.
The lineal material created by Eovations™ technology results from a patent-protected thermoplastic-mineral composite extrusion and orientation process. This highly efficient and productive process produces a lineal material that is very cost-competitive with wood-plastic composites, PVC and the other materials it is designed to replace...including, in some cases, wood itself. Yet Eovations material offers significant advantages in strength, stability, light weight and durability not demonstrated in the marketplace by these other products.

**Unique Manufacturing Technology**

Eovations technology is a patented, proprietary extrusion/drawing process that combines mineral particles within a thermoplastic matrix. The process yields lineals of a fully fibrous and molecularly-oriented composite system that is a remarkable replication of wood's fibrous network and structure. Densities between 0.5g/cc and 1.0 g/cc can be achieved with excellent control. Although no blowing agents are required, the extrusion process creates an internal structure that reduces material weight without sacrificing strength. Several thermoplastic polymers may be used with Eovations technology, and processing windows are wide, enabling a broad range of targeted final properties.
Flexible Licensing Opportunities

Eovations technology is now available to product designers and manufacturers to support the successful development and commercialization of differentiated and high-value products across a wide range of industries and applications. Two unique and flexible licensing arrangements – facilitating either component sourcing or actual fabrication – are available. License arrangements are designed to fully support your product development and commercialization activities and protect the intellectual property and other proprietary assets of Eovations, LLC and its licensees.

Application Licensing Model – In this relationship, Eovations, LLC acts as a component supplier, applying Eovations technology to produce fabricated components to meet your design specifications. This model allows you to license Eovations technology and trademarks for specific applications and, depending on terms of the agreement, you may also receive support from Eovations, LLC in developing and commercializing your products. In certain cases the components may be supplied by an Eovations production licensee.

Production Licensing Model – Under this business model, Eovations, LLC licenses Eovations extrusion technology and trademarks for use in your own processing operations to produce Eovations components for specific applications. In its role as licensor, Eovations, LLC will enable the technology transfer and provide the assistance you require to identify suitable production equipment, plan production, formulate matrix materials and optimize the production operation. You may also elect to receive commercialization support from Eovations, LLC as defined in your individual licensing agreement.
Imagine the Innovation and Commercial Possibilities Made Possible by Eovations™ Technology

Where the limitations of wood, wood-plastic composites, plastics and metals stand between you and successful innovation, Eovations™ technology may be the answer. It opens up highly differentiated, value-based possibilities that extend significantly beyond the performance capabilities of other materials. Here are just a few of the possibilities we’ve identified so far. Now imagine what Eovations technology can do for you!

Outdoor Products
Eovations material can help you design products that stand up to the water, sun and physical abuse typical of outdoor environments – in all climates – for years of maintenance-free service. It offers benchmark mold and mildew resistance. And Eovations material may be extruded in a range of colors using conventional pigment systems. Or, apply decorative finishes in the plant or in the field using a variety of surface coatings.

Key Applications:
• Fencing
• Decking
• Retaining Walls
• Furniture
• Outdoor Structures
• Posts, Signage and Benches
• More

Building Materials
In building applications, components made with Eovations lineal material have the strength to do structural jobs that wood-polymer, cement-based or cellular PVC composites can’t even approach. Eovations material also offers light weight, superb moisture resistance, and low thermal expansion. This makes Eovations material ideal for use as decking, siding and exterior soffit, and roofing and trim – even in the wettest environments, in submerged applications, and through extremes of freeze-thaw cycling. Eovations material is easy to work with in the plant and on the job site, using conventional woodworking tools and carpentry skills to mill, shape, cut, drill, join, fasten and assemble.

Key Applications:
• Door and Window Frames
• Roofing, Siding and Trim
• Basement Renovations
• Concrete Forms
• Decking
• Railing
• Porches
• More

Industrial and Commercial Applications
Eovations material can take the punishment of industrial operations, construction sites and commercial facilities. Its impact resistance, flexural strength, durability and resistance to water and many common chemicals make it an ideal choice for greatly extended service life in high-traffic areas exposed to heavy machinery, harsh weather and other hostile conditions.

Key Applications:
• Utility Flooring
• Loading Docks
• Railing and Barriers
• Rig Mats
• Temporary Roads
• More
Transportation and Material Handling

The transportation industry needs the light weight, toughness and water resistance of Eovations material. It provides extended service life against shifting loads, vibration, scrapes and impacts. Eovations material is an ideal candidate for insect-proof and durable shipping pallets, boxes and bins used for domestic and international trade. The workability of Eovations material makes assembly and field repairs easy using common wood-working tools.

Key Applications:
- Pallets
- Truck Beds
- Trailer Components
- Temporary Road Beds
- Rig Mats
- Signage
- More

Parks and Recreation

Eovations technology produces a material that's strong enough to create safe play structures, more comfortable stadium seating, durable boardwalks, and other park and recreational equipment without issues related to chemical leaching, splintering, or structural or aesthetic deterioration. Eovations material is also a great choice for walls, fencing, benches, picnic tables and other structures in high-traffic areas like park headquarters and interpretive centers.

Eovations lineal material can be produced with wood-grain surface textures and can be pre-colored or coated to blend unobtrusively into park settings. Eovations material also offers the right combination of strength, light weight and water resistance for structural and decorative uses in RVs.

Key Applications:
- Decking
- Stadium Seating
- Boardwalks
- Play Structures
- Signage
- More

Agricultural

On the farm, in processing, or in transit, Eovations material delivers high strength, light weight, and outstanding moisture and insect resistance. Inside livestock stables, Eovations material is tough, resilient and virtually impervious to water and other fluids. Outside, it's a strong, lightweight and long-lasting alternative for building exteriors, bins, boxes, posts and more.

Key Applications:
- Barn Flooring and Partitions
- Livestock Pens and Stables
- Fencing and Posts
- Pallet Boxes and Harvest Bins
- Truck and Trailer Floors
- More

Marine

Eovations material provides the toughness to manage heavy weight, pounding wave action and watercraft bumpering. Eovations material floats and it absorbs almost no moisture, so it can be used in both water exposure and full-immersion applications, including structural pilings and sea walls. Eovations material also has many advantages in boat construction, especially as bulkheads or other structural components. It is tough, lightweight, bends when other materials break, does not rot, and provides extended service.

Key Applications:
- Docks
- Piers and Pilings
- Sea Walls
- Boat Bulkheads
- Bumpers and Skids
- Shoreside Structures
- Trailer Runners
- More
Learn More about Eovations™ Technology and its Commercial Potential

The unique, fully-fibrous and oriented material created by Eovations technology opens the door to entirely new possibilities for the creation of high-value differentiated products in a wide range of applications. Learn more about this remarkable technology and how you can use it to fuel innovations and significantly enhance your current or planned projects.

Eovations, LLC is actively seeking licensing relationships with organizations that wish to commercialize Eovations technology through our flexible application and production licensing models. We are focused on structuring an agreement that fully supports your product development process and your commercial success. Please visit us online, email or call us today to learn more.

For further information, visit:
www.eovationsllc.com