

Pallet Technologies

The Pallet Materials and Technology of Tomorrow - Available to you Today!

New Concept Biocomposite Pallet

www.palletechnologies.com

Overview

- Company Overview
- Mission
- Existing Problem
- The Problem with Plastic
- Pallet Technologies Solution
- Composites
- Support Team
- Products

Company Overview

- In January of 2004, as petroleum and conventional material costs for industry continued to rise, investigation of composite manufacturing using agricultural based materials began.
- Later, after concept was tested, a patent for composite manufacturing using agricultural based materials utilizing embedded active Radio Frequency Identification was submitted.

Company Overview

- In 2006, Pallet Technologies was formed
 - Pallet Technologies utilizes its licensed intellectual property to bring to market a new concept Biocomposite Plastic Pallet
 - Pallet Technologies develops and brings to market lower cost pallets that use grain-based materials
- Pallet Technologies Biocomposite pallets conserves and reduces the use of petro-chemicals

Mission

- Pallet Technologies is a developer and supplier dedicated to providing to all industries cost effective and durable pallets made from fiber reinforced polymer composites, which include 100% recycled plastic resin together with a bio-based polymer derived from corn.
- Ensure that our products are environmentally friendly and meet the guidelines and goals of Sustainability

Existing Problem

- Wood pallet life cycle is short and the cost is very high
- Wood pallets break and need repair or replacement every two to four trips
- Wood absorbs liquid, gains weight, breaks, and is difficult to clean
- Current pallets made of wood consume nearly 1 million acres of trees annually
- Wood pallets represent more than 4% of solid waste in landfills
- Industries demand more durable and long lasting pallets

The Problem with Plastic

- The cost of plastics is increasing
- US has a shrinking supply of chemical and plastic refineries
- Plastics require enormous amounts of petroleum and natural gas to produce
- Many carcinogens are required to make plastic
- The manufacture of plastics is a major contribution to greenhouse gas emissions

Pallet Technologies Solution

- Our technology enable manufacturers to reduce and conserve plastic
- We replace a portion of a product's plastic content with grain-based material (Composites)
- Our materials can be as much as 80% less expensive than the material we replace
- Pending Patent "Grain-based Composites"

What Are Composites?

- Composites are materials that include two separate materials, in which the attributes of each is improved when combined
- Inclusion of Grain with Plastic creates a composite
- Until today, composites were typically plastic combined with glass or carbon fiber filler

Advantages of Composites

- Lightweight
- High strength and stiffness
- Corrosion resistance
- Large, unitized parts
- Design flexibility
- Durable; fatigue resistant
- Excellent insulation capabilities
- UV Capabilities

Pallet Technologies “Bio Pallets”

- Made from a combination of 100% recycled resins (HMW PE, HDPE, PP and TPO) along with a patented corn-based polymer component
- Replace Wood, Virgin Plastic and Steel Pallets
- Are environmentally friendly-can be made into new pallets
- Meet the requirements of Sustainability by offering a full cradle to cradle solution
- Strong and durable-meets all standard pallet testing
- Offer technology options such as RFID
- Can be financed or leased

Support Team

- Pete Brown
- Jeff Hunter
- Ron Hagemann
- Universities
 - Iowa State
 - Illinois State
 - Nebraska
 - Wisconsin
 - Mississippi State
- New Composite Partners
- National Composite Center
- National/International Raw Material Suppliers
- Federal Agricultural Research Service

Current Product Variations

- Compression Molding
 - “Charge” with grain biomaterial
 - Fiberglass replacement using grain
- RTM
 - Rigid Foam replacement using grain biomaterial
 - Liquid Resin with extracted corn oil from ethanol production
- Injection Molding
 - PP resin with 10% grain biomaterial
 - PE with 10% grain biomaterial
 - Re-grind PP/PE with grain biomaterial

Pallet Technologies “Bio Pallet”



Pallet Design Features and Specifications:

Size: 48 x 40"; Weight: 55 lbs.

Four-Way Entry

Free span racking capacity: 2,000 -2800 lbs.

Static Load: 25,000 lbs.

Truckload quantity 53' trailer: 540 pallets

Full Picture Frame

Patented hidden interlocking design

Fiberglass rods for strength and support

Environmentally friendly, completely recyclable

Retains value; easily sanitized

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Thank you!

Visit us at

www.palletechnologies.com

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