Numerous extruded and sheet goods are made from rubber-plastic composite materials by a small north Texas (USA) company, Rumber® Materials, Inc.

Rumber® was founded in 1991, which started in Muenster, Texas as a result of local economic development efforts. Beginning with one production line, it has expanded over 14 years to seven productions lines. While it began by using only truck tyre buffings from retreaders, since 2004 it has been using a blend of buffings and post-consumer whole tyre-derived rubber crumb, sourced from State Rubber (see separate report on State Rubber) through a broker and other companies.

Blending recycled tyres and plastics in an exclusive patented process, Rumber® is strong and highly durable with unlimited potential uses. Rumber® is an environmentally-friendly material, a natural choice for a number of specialized products.

Products

Rumber’s Profile Products are products which have a definite shape and are used as a wood substitute produced in various lengths. The sizes currently being produced are common sizes for North American lumber: 2x8's, 2x6's, and 2x4's. The length can vary up to 24 feet (the North American standard lengths in lumber are multiples of 8 feet). These boards are tough, durable, shock absorbing, rot-resistant, insect proof and friendly toward the environment.

The 2x8 boards are being promoted as trailer flooring for livestock trailers and heavy equipment trailers. It is also being used as flooring in cattle and buffalo squeeze chutes. Some livestock trailer manufacturers specify Rumber® flooring in some of their trailer lines. Also, an increasing number of livestock trailer owners are requesting Rumber® flooring when they have their trailers re-floored. It is the only livestock trailer floor available with a 20 year limited warranty.

The 2x6 boards are being promoted as a...
residential decking surface, among other uses, in Green Building programs. It is a decking surface that requires no maintenance, can be cleaned by washing with water and has a 25 year limited warranty. Unlike wood lumber, Rumber® boards will not rot and are not susceptible to damage from termites, carpenter ants, carpenter wasps, woodpeckers or other wood destroying pests.

The 2x4 boards are being promoted in Green Building programs as a sill plate for residential housing. Termites can not eat it and it is not affected by water. Rumber Materials believes there is a large and growing market for Rumber® profile products.

Composite Material has a wide variety of uses such as injection moulding, rotational moulding, pressing into shapes and extruding into sheets. It is also an impressive impact modifier when mixed with other plastic products.

The board products are mostly 60 percent recycled rubber (a blend of lorry tyre buffings from retreaders and rubber crumb from post-consumer whole waste tyres) and 40 percent recycled plastics. The crumb rubber input is in the 10 to 20 mesh category, and must be high quality. The sheet materials and moulded materials made out of Rumber® sheets are mostly 10 percent recycled rubber and 90 percent recycled plastic. Rumber® Composites can range from 3% rubber to 70% rubber.

The Rumber® product line recognizes that industries across North America are discovering the safety-enhancing, productivity-boosting, maintenance-reducing benefits composite rubber and plastic products provide. Rumber® does not need costly sealants to ensure its wear and is not damaged by termites or insects. This strong
and durable material cleans easily because it does not absorb water and repels common industrial spills like oil, diesel fuel and grease.

Impressed by its performance and considerable advantages, businesses are constantly developing new ways to use Rumber®. Among them:

- Dumpsters & Skips Flooring
- Utility Trailer Flooring
- Equipment Trailer Flooring
- Cargo Trailer Flooring
- Bridge Crossing Decking
- Dunnage Boards
- Seaside Boardwalks
- Implement Trailer Flooring
- Sill Plates
- Pallet Material
- Golf Course Steps
- Marina Pier Decking
- Marina Pier Bumpers
- Decking/Flooring on Oil Rigs

Rumber® is currently being used in various projects by Texas, Oklahoma, and Colorado Departments of Transportation with studies underway that could expand the use of this environmentally sound material. One of the Texas projects is a Rumber®-faced seawall at Port Aransas, Texas.

Rumber® products are ideal for the marina market because they are impervious to saltwater and treated water, impervious to ultraviolet rays, and repel petrol, bunker oils, diesel and other fuels, making them the perfect choice for marina decking, docks, seawall facing, etc.

Ferry slip decked with Rumber® material. Even a marine environment seems to have no negative effect! Photo courtesy of Rumber® Materials, Inc.

Rumber® has supplied composite compound for Goodyear Tire & Rubber Company and others for the manufacture of composite pallets, helping to fill the void in pallet availability caused by the problems inherent in using soft & hardwood pallets in importing and exporting activities when many countries are restricting or banning wood materials in shipping uses to avoid the unintentional infestation of their countries by diseases and non-native wood destroying pests.

A pleasure boat marina uses Rumber® boards for its piers and decks. Photo courtesy of Rumber® Materials, Inc.
Horse and Livestock Trailers

Unlike wood flooring, Rumber® withstands the harsh demands of transporting livestock, reducing the need for frequent replacement.

Heavy Equipment & Implement Trailers

As one of the most important trailer elements, flooring has to be exceptionally strong and durable enough to last for years without cracking, warping or rotting.

Boards

Combining strength and durability, Rumber® Boards are a viable alternative to wood and other materials.

Dunnage Boards

Made of 100% recycled tyre materials, Rumber® Dunnage Boards will not rot, crack, splinter or absorb water, are extremely tough, termite and insect-proof, and unaffected by UV rays.

Sheets

Rumber® Sheets have proven to be a superior material for trailer sides, stall dividers and other uses in ranching and related industries. Rumber® Sheets can be Thermo-formed.
Composite

Rumber® Composites can be used at 100% strength to create new products, or as an impact modifier additive to existing formulas.

Saddle Rack

The selection of a saddle involves a lot of time and care, and represents a substantial investment. Protecting that investment is a primary concern for all horse owners.

Trailer Bumper

A new solid bumper that can be cut and drilled to customer specifications.

Chock Block

Safety is the Rumber® Chock Block’s number one advantage due to it’s strength and durability. And because of the patented extrusion manufacturing process, Rumber can make blocks in whatever lengths fit a customer’s needs.

Rumber®’s Marketing, Distribution and Sales

The distribution of Rumber® Profile Products is primarily through appointed representatives (distributors). The primary purchasers are livestock trailer manufacturers and companies re-flooring existing trailers. Rumber® has been a steady and consistent provider of quality trailer flooring for five years. Recognition of the superior qualities of Rumber® Trailer flooring, along with the 20 year limited warranty, is contributing to increased sales.

Rumber® has four outside salesperson constantly on the road, and one inside salesperson dealing with telephone orders.

The marketing of Rumber® Composite Materials is done directly to users of impact modifiers and other users. At this time, sheet manufacturers are the largest consumer of composite materials.
Rumber®’s Production

Rumber® Materials, Inc operates its production facility in Muenster, Texas around the clock, using three shifts. This makes plant economics better, while also being required to meet market demand for its products.

The crumb rubber/buffings mix is blended with recycled plastics in the proportion necessary for the end product being manufactured (60/40 blend or 10/90 blend). The specific blends are pre-mixed and dumped into “Gaylord” boxes and stored in racks until needed.

When needed, the specific blend is placed into an extruder, which heats the blend into a molten mass, with the plastic acting as the binding agent. The molten blend is extruded into the appropriate mould, where it cools enough to set. The moulded blend is then pulled from the mould and placed on a cooling rail.

The cooled, moulded material is then sawed to specification for all dimensions, and put onto a 2nd cooling rail for final cooling.

Appropriate products are then sent to packaging, or to storage.

Research & Development

Rumber® Materials checks every load of materials being brought into its facility as a feedstock, and uses an independent laboratory to test its products as required by some customers.

Rumber® Materials, Inc is continually expanding its product lines through extensive research and development, and working with existing customers to find new market niches for Rumber® products. Current efforts include focusing on the needs of trailer fleet operators/owners like major logistics companies and trailer rental companies, and the US military.

The proprietary process developed by Rumber® is roughly like this, based its description. This process diagram by EER Limited.
**Contribution to Recycling**

Last year, Rumber® Materials, Inc used 5.76 million pounds (2,613.1 tonnes) of recycled materials as feedstock, evenly divided between rubber and plastic. About 80 percent of its overall production was for 60/40 blend products and 20 percent was for 10/90 blend products. If ½ of the rubber used is crumb rubber from whole post-consumer tyres, then Rumber® Materials is responsible for recycling about 103,000 whole passenger tyre-equivalents, the retreader’s buffings from about 96,000 lorry tyres being retreaded, and about 1,306.55 tonnes of recycled plastics.

**Why a Best Practice?**

Rumber® Materials, Inc shows that ingenuity and creativity can be used to develop special products for niche markets while being commercially viable. Rumber®’s best practice is in combining research and development with marketing and customer interaction to constantly improve and upgrade its product lines while expanding its market. Rumber® takes its slogan to heart daily: “Durable Stuff Making Stuff Durable”.

And, end of life Rumber® products can be recycled and used as feedstock for new Rumber® products.

**Additional information:**

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