



Rice terraces in Yunnan Province, China, a source of rice husks for recycling.

CREDIT: JIALANG GAO / WIKIPEDIA

RECYCLING MAKES SENSE

Jones & Vining of Brockton, Massachusetts USA, has been producing shoe lasts for almost 80 years. Back then there were forty US companies producing over five million pairs of wooden lasts every year. They are now the only one left and all lasts are made from polypropylene. Up until the 1980s, dimensional accuracy and consistency in lasts production had been manually controlled. Then, in 1984, J&V introduced a revolutionary system called Compu-Last. This was a fully integrated, computer-controlled last production system that digitally defined the last, precisely graded and reproduced it and, at the same time, guaranteed consistency of both quality and fit no matter where the footwear was to be produced. The first of its kind, the system remains the foundation of all last-making equipment and processes today.

With one last factory in the USA and five spread across the Asian footwear producing countries, a great deal of plastic waste is created. Fortunately, being a thermoplastic type polymer, this waste could be shipped to a recycling facility and then reprocessed into other plastic components that did not require the same performance criteria as that needed for shoe lasts. This focus on recycling set a pattern that the company has followed ever since.

FOOT BEDS, ETC

Over the years, J&V further diversified its range of products and, in particular, became a recognised leader in the cushion foam insole material business. In 1992, it formed a partnership with the manufacturers of Polyurethane to offer a cushioning system that would provide the extra foot comfort that wearers increasingly demanded and, at the same time, a built-in moisture management system to reduce perspiration build-up and bacterial growth inside the shoe.

The basic machinery and unskilled labour in many Asian factories at that time meant that upper sections of sports shoes had to be glued together before stitching to ensure



Last turned from a moulded polypropylene block.

CREDIT: JONES & VINING

“...as a matter of fact...”

RECYCLED vs. SUSTAINABLE

Sustainability is the best way to go as no waste is created that must be recycled later on. You are making use of products that grow naturally and have by-products that can be exploited.

Recycling remains important so that companies don't waste materials that can be used again. This has the benefit of reducing the amount of virgin material that must be produced to meet production demands.

accuracy. This in turn reduced the upper's breathability to such a degree that perspiration became a major problem. While consumers expressed concern about potential health factors, they still wanted to wear the shoes as, despite this drawback, they were extremely comfortable and made an all important 'lifestyle' statement. J&V's new product offered a solution.

Poliyou is a patented open cell crystalline polyurethane that offers excellent cushioning for the foot coupled with compression set properties up to 5%. The open cell structure also allows moisture to pass through it and away from the foot by capillary action for even greater comfort. It has been constantly refined over the years to increase odour control, anti-bacterial and anti-fungal protection, higher energy return, shock absorption and shape memory capabilities.

It is also a great consumer of recycled materials. Mark Landwehr who has been with J&V for 36 years says: "The company made a conscious decision almost 20 years ago to find a partner in China with the ability to use recycled materials. Our management was convinced this would be both environmentally responsible and economically feasible. Our marketing team recognised that these very significant selling benefits would differentiate our footbeds from our competition." Of the nine footbed materials now available, no less than five contain recycled material:

- Poliyou – approximately 70% recycled material
- Bamboo-Poliyou – Poliyou (70% recycled) plus bamboo active carbon
- Poly-Cork – Poliyou (70% recycled) plus natural cork granules
- Winpad – unprocessed Poliyou with recycled PU foam clearly visible (normal active carbon and Aegis antimicrobial are not added)
- Polisport – high-tensile strength open cell foam with 10% recycled rubber from used car tyres

The use of recycled open-cell PU foam scrap that would normally end up as landfill greatly reduces the volume of virgin raw material the company needs. To give some idea of



Recycled content is clearly visible in Winpad foam.

CREDIT: JONES & VINING

just how important this is, J&V sells millions of pairs of Poliyou footbeds a year and each contains approximately 70% recycled content. That makes for big savings all round. In a further environmentally friendly move, the company was an early convert to non-toxic water-based adhesives for bonding covering materials to the foam bases of its footbeds.

The company manufactures many other products using recycled materials including BiFit insole board and Double R outsoles. Bi-Fit contains approximately 80% used polyethylene or polypropylene plastic bottles and containers that would otherwise certainly go into landfill. Double R contains sustainable rice husks. Rice is one of the most plentiful food sources in the world and, when harvested, the plant's husks are normally discarded. Double R uses them mixed with natural latex rubber to produce a sustainable soling compound.

Making these products in China was a far-sighted decision in more ways than one. Not only are they produced in the largest available market, but the country's rapid industrial growth has also made it a huge source of recycled materials. Charles Wang, Managing Director of China Operations remarks: "I have spent a significant amount of time over the last 10 years looking for new eco-friendly materials and factory processes to enhance our product line and provide environmentally friendly benefits that our customers and their end-users can appreciate while, at the same time, maintaining a competitive price point."

SOURCING RECYCLED MATERIALS

The recycled material used in Poliyou is waste polyurethane scrap collected from furniture, carpet and other industrial manufacturing processes by recycling companies which sell it on for further processing by customers such as J&V who buy it, sort it, and grind it down to specification for further use. The ground down plastic

“...and another thing...”

BIOZYME

Biozyme is a new additive that could have a significant environmentally-friendly impact. When added to PUs or EVAs, it causes them to biodegrade in around 20 years in landfill; without it they can take up to 1,000 years.

It is unique in that a component containing it will not begin to biodegrade until organisms present in the landfill interact with it, so it will not degrade while still in use.

bottles and containers for BiFit are obtained the same way from a variety of industrial and domestic sources. 80% is then blended with virgin material and extruded as sheets to be die-cut or moulded to produce the finished insoles.

While enhanced performance is not the primary objective of using recycled materials, J&V has discovered that in many cases it actually does. The bamboo carbon in Bamboo-Poliyou, for instance, improves moisture wicking and odour absorption by some 36% when compared with standard Poliyou. While not compromising the performance of the virgin materials used, the recycled content adds the unique benefit of creating largely recycled products that are helping to sustain the environment in a way that is visibly eco-friendly to the consumer.

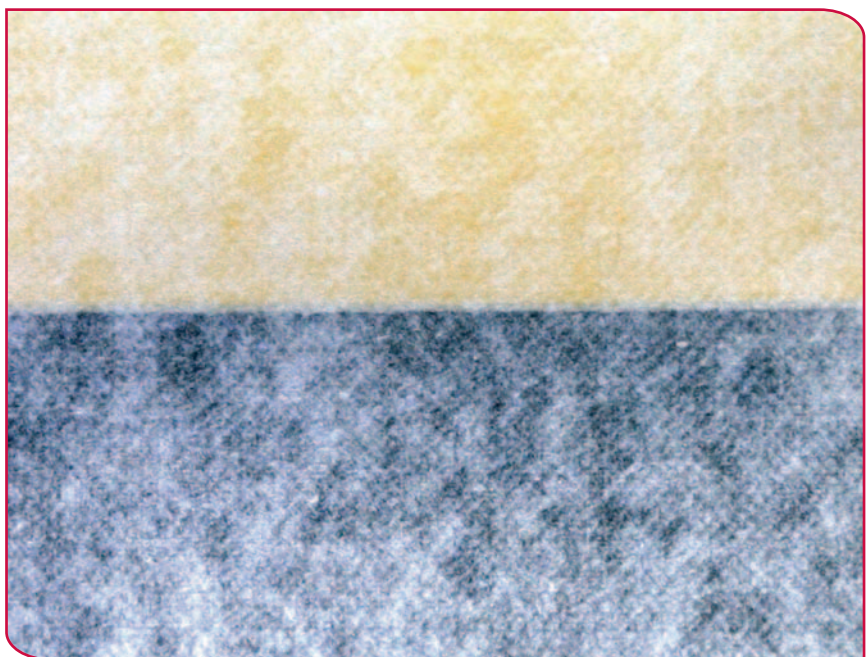
NOT ALWAYS AN EASY PATH

Using recycled materials can be a complicated process when trying to balance eco-friendly and performance parameters. As with recycled paper and recycled glass bottles, the correct balance must be struck in order to achieve the right specification needed to meet the expectations of the end-user. As an early proponent of recycling J&V was something of a pioneer. Frank Roppolo, VP International Sales says: “J&V has been promoting recycled products for almost 20 years, even when they were not popular. Now, eco-friendly products are finally seen as good for the environment and that has been great for our business.”

The heightened awareness of consumers and the need for high profile brands to address recycled and sustainable products is causing many manufacturing companies to re-think their business strategies. Industry material shows now feature a mass of green products as companies try to cash in on the trend. No doubt this will become normal practice once all the hype settles down. J&V, however,

addressed this long ago and has reaped the benefit through increased volumes of business where others have struggled by not adapting fast enough.

Let Michel Ohayon, Chairman and CEO have the last word. “In today’s market where ‘green’ is the latest trend it’s great to have had almost 20 years of experience both manufacturing and marketing eco-friendly products. We are enjoying the rewards that come from our long-standing environmental ethics matching up with today’s market demand for such products.” Over 50% of J&V’s product lines are environmentally friendly and that rather proves the point. 🌱



Extruded Bi-Fit contains 80% recycled material (light portion is soft, dark portion hard).

CREDIT: JONES & VINING