



Packing rubber mouldings in 1908

FOOTWEAR PROFILE


Suppliers to the footwear industry are usually specialists. There is one American company which is not but, having many of its roots within the industry, continues to be actively involved.

American Biltrite Inc

The origins of American Biltrite Inc. (ABI) go back nearly 100 years to the founding of Panther Rubber Manufacturing in Trenton, New Jersey, in the USA by two Russian immigrants, Miah Marcus and Frank Bernstein. New England was the centre of the American shoe industry and in 1910 the manufacture of rubber heels and soles was transferred to Stoughton, Massachusetts. By 1917 the company needed more space and expanded to Chelsea, Massachusetts, where it substantially increased the output of soles and heels. In 1951 the company changed its name to American Biltrite Rubber Company. It had also become the world's largest manufacturer of rubber soling materials.

Beginnings of diversity

When the Chelsea plant was expanded in 1917, the original Trenton facility was converted to the manufacture of Amtico rubber flooring. This operation continued to expand into a worldwide producer of rubber and vinyl flooring. In 1957 the company purchased the Boston Woven Hose & Rubber Company, which was a major US manufacturer of industrial rubber products including hosepipes, conveyor belts, sheet rubber, and friction and rubber tape. Shortly thereafter the company went public and is still listed on the American Stock Exchange.

During the 50s, 60s and 70s, the company continued to expand and became a large diversified manufacturer of rubber and plastic products. In 1982 the two founding families decided to split the company, with the Bernstein family retaining the rubber soling operations within the USA. The ongoing American Biltrite company was reorganised under the Marcus family to focus on floor coverings, pressure sensitive tape products and, through its facility in Sherbrooke, Canada, a variety of extruded and moulded rubber products including its original production of heels and soles. In 1983 the company diversified further with the purchase of K&M Associates, a supplier of costume jewellery to leading retail groups in the US.

True to its roots, the American Biltrite of today continues to manufacture products for the footwear industry. Heels and soling materials are still produced in Canada and at plants in

Honduras and Guatemala. The Amtico flooring operations were merged with Congoleum Corporation, which is still controlled by American Biltrite and is a major manufacturer of both sheet vinyl and tile products. The K&M jewellery operation has continued to expand and is a well-known supplier of fashion-forward products to retailers. In addition, the Tape Division has also continued to expand. In 1986 Ideal Tape Co. was acquired from Chelsea Industries.

Ideal Tape Co.

The ABI company best known to the footwear industry is Ideal Tape Co., which was founded by the Garfield family in Lowell, Massachusetts, in 1955. Fifty years ago the concept of using adhesive coated woven tapes to reinforce shoe uppers was something of a novelty. 3M had produced paper and simple cotton seam tapes since the 1930s but had never developed them further. The Garfields set out to change all this.

Lowell was located on a series of falls in the Merrimack River and, in the early 1800s, used water power to become the centre of America's industrial revolution, weaving cotton from the plantations further south. The Garfields were an old cotton ►



Adhesive coater at Ideal Tape Co (Lowell).
36m long, 3m wide, 5m high with 1.6m coat width.



Cutting tape on a lathe. Coated fabric is made into a log the same length as the final roll of tape (usually 55m) and slit by a free-moving circular blade on a lathe that automatically cuts to the required width. All topline tape is cut this way due to its narrow width (3-5mm).

family and knew that by varying the directional count and weights of thread, it was possible to change the strength and elasticity of cloth. Indeed, adhesive coated backers had been widely used for some time, applied either with latex or an iron-on adhesive. The breakthrough was to combine weaving, adhesive and tape cutting technologies to produce reinforcement tapes with specific properties to match specific applications.

Lowell was also located close to the shoemaking centres of New England, so it was relatively easy to find shoemakers with problems. The main one was that of uniformity in an age of mass production. At that time, some major producers even had separate production lines running in parallel, one making left feet and the other right. Making consistent pairs of shoes at high speed was therefore not easy, and the idea of using relatively cheap adhesive coated tapes to produce uppers that were closely uniform in strength and stretch factors was as appealing as it was revolutionary.

Innovation & growth

Among the most significant developments was 'Topline Tape'. This clever product combined nylon warp (directional) with bunches of cotton weft (cross) threads. The nylon threads provided high directional strength with a degree of controlled elasticity to produce strong toplines that would still 'give' a little with the foot. The bunching of the cross threads enabled the tape to be easily conformed to quite extreme curves without losing directional strength. It revolutionised the mass production of women's shoes.

By 1962 Ideal had built up a chain of distributors around the world. Many of these were in Europe and the company decided to look for a converting facility somewhere in Europe. Belgium was chosen because of the generous government subsidies then being offered in order to try and protect the country's own textile industry. In 1976 the Garfield family decided to retire and sold the business to Chelsea Industries—again based in Massachusetts—which was also heavily involved in the shoe industry through companies such as Emtex.

By 1980 Ideal had begun to branch out and had launched a series of products outside the shoe industry, aimed at the



Cutting tape on a Cameron rewind slitter. This machine takes the coated fabric in 'jumbo' roll form (approx. 1000m) in which it leaves the coater, cuts it to width and rewinds it on to pre-cut cores of the appropriate width. This method is most often used for cutting nylon and nonwoven tapes.

electrical, printed circuit board (PCB), heating, ventilating and air-conditioning (HVAC), as well as other specialised areas such as cheque books. In 1986 Chelsea Industries decided to divest its interests within the shoe industry and move into other areas. At the same time American Biltrite was looking to expand its self adhesive tape interests which already included a substantial production of specialist adhesive tapes for other industries. A marriage was made and, 20 years later, sales by ABI's Tape Division have grown to over \$100 million worldwide.

Ideal Tape today

ABI's Tape Division now has converting and distribution capacity for all its tape products placed strategically around the world. Ideal Tape Co. Belgium deals with Northern Europe. ABItalia in Italy covers the valuable markets of southern Europe and North Africa, while American Biltrite Far East in Singapore is well placed to service the expanding markets of India and the Far East.

The parent company in the US has two plants comprising some 40,000m². Shoe, electrical and HVAC products are made in the original three-coater plant in Lowell, whilst application tape, protection, and the more recent autowrap car body protection tape are all made in a new six-coater plant in Moorestown, New Jersey.

Some readers may ask what application tape is. When you buy a modern vinyl display decal for your truck or van—or indeed any other form of display—it comes with a low tack (not very sticky) paper or plastic top layer to enable it to be applied accurately. This is application tape and ABI makes 40 million square metres per year. One great advantage that ABI possesses is its experience in adhesive technology which enables it to formulate adhesives to the highest standards for a wide range of applications.

Shoe reinforcement tapes have always been considered to be a minor item by many footwear manufacturers—if not by designers and production managers. They do in fact represent a far more important ingredient than that of their cost per pair of shoes. The best shoemakers recognise this fact and that is why Ideal Tape continues to survive in the industry and why American Biltrite continues to support it. 