

Reactive - or ahead of the game?

In an interview given in the Autumn of 1993 on his retirement as managing director of J B Broadley, the UK-based coatings specialists, Howard Gordon made an heretical prediction to the effect that the days of the western hemisphere's domination of breathable coatings and membranes were definitely numbered. He based his observation on the continued growth in vertically integrated companies operating on the Pacific Rim and their logical progression into coatings technology as the 20th century drew to a close. His timing was a little out – by about five years – but his prediction was proven correct. In part.

Howard Gordon was often quoted as 'a man ahead of his time' but in his assessment of the waterproof breathable (wpb) membrane sector it is suggested that he had seriously underestimated the tenacity of the leading players – the owners of the most prestigious brands in the business. Despite working to a common agenda, the two market leaders W L Gore and Sympatex Technologies have chosen strikingly different routes to place their products in front of the final consumer, but both have chosen to keep their roots firmly in the west.

Initially a manufacturer of wire and cable products, it wasn't until 1969 that Gore discovered the potential in expanded polytetrafluoroethylene (ePTFE) as a means of producing a stabilised film that was capable of mimicking some of the characteristics of human skin. Given the apparent lack of any competition at the time, it is perhaps surprising that the company chose to keep in-house the whole of the application of the technology to a textile format. In the sports and active leisure sector Gore-Tex is a series of finished fabrics in a variety of specifications geared to precise performance parameters. Not all of them are intended to be fully waterproof, but all use the transpiring properties of the hydrophobic and micro-porous membrane's structure to give an added measure of comfort.

Much of the rest of Gore's ePTFE output is concentrated on the medical market and it celebrated the first million surgical implants in 1986. Wire and cable production continues apace as part of a consolidated industrial products division. The company continues under the overall control of the Gore family.

Sympatex, by far the younger of the two brands, concentrated on hydrophilic membrane manufacture and development and, originally, left the problems of lamination to a series of licensees. The parent company – Akzo Nobel – disinvested itself of a great deal of its textile technologies in the late 1990s and Sympatex eventually became the property of a group of re-investors among whom are an original lamination licensee (Ploucquet) and specialist fabrics processor Porvair plc.

When it first came to the market in the early 1980s, Sympatex built a particularly strong presence in the fashion sector (at one stage being the volume sales leader in Europe as a consequence) and came to active leisure mainly as the result of enquiries channelled by the licensees. Since then there have been a number of market-driven developments, most markedly where the extreme elasticity of the product could be used to advantage, i.e. footwear and gloves.

It has to be admitted that many protagonists of outdoor activities are guilty of navel-gazing, and therefore it is not surprising that both W L Gore and Sympatex Technologies are occasionally viewed as being more reactive than proactive in their product development programmes. The timeline on the following page shows the active leisure developments logged year on year as they occurred.



Sympatex sportswear and protectivewear

Gore-Tex membrane with full leather lining



It's a start

New on the sports activewear block is Belgian group DSM with its Arnitel copolyester wpb membranes. Designated as 'monolithic', and therefore not microporous, Arnitel uses a familiar

	Sympatex	Gore-Tex
1969		Bob Gore discovers Gore-Tex expanded PTFE. Gore-Tex products kick off in 1970.
1970	Development of polyester co-polymers. Possible end-uses: wound coverage, packaging of blood products, fracture dressings and artificial veins.	
1972		Gore-Tex industrial fibre is first manufactured.
1974		Japan Gore-Tex Co. Ltd a joint venture of Gore and Junkosha is founded to manufacture and sell Gore-Tex products in Japan.
1976		Gore receives the first commercial order for Gore-Tex fabric, the first waterproof, breathable fabric.
1978		Bob Gore introduces a second generation Gore-Tex fabric.
1979		Gore seam sealing machine and Gore Seam Tape are launched.
1980	New Business Group for introduction of a waterproof, breathable fabric.	Gore-Tex gloves insert invented.
1982		Introduction of Gore-Tex Z Liner (first liner product rather than laminate.) Gore-Tex fabric bootee invented.
1984		First Gore-Tex stretch fabric produced.
1985	First agreements with laminators and manufacturers for the use of the Sympatex brand. First garments with Sympatex insert laminate	'Rain Gear Without Compromise' introduced with strong emphasis on garment design.
1986		Gore-Tex stretch fabric sock introduced. First sales of Gore-WS Windstopper in Sweden.
1987		First Gore-Tex Ltd fabric produced in Scotland.
1988	Introduction of Sympatex (textile) footwear.	
1989		The Gore-Tex fabric 'Guaranteed to Keep You Dry' warranty is introduced. Gore-Tex Partners in Performance licensing launched.
1990	Ten micron Sympatex introduced. First orders for contract and work wear: Deutsche Bundespost supplies its postmen with Sympatex jackets.	Gore-Tex fabric on Antarctica. An international team traversing the continent wears Gore-Tex outerwear, and one explorer credits the fabric with saving his life.
1991	Sympatex in leather and dress shoes.	
1992	Elastic membrane introduced.	Gore Activent technology is introduced.
1993	3D glove inserts.	
1994	Introduction of Emera windproof products based upon Sympatex membrane technology.	Launch of Gore-Tex Ocean Technology. Gore Dryloft fabric brought to market to enhance the performance of insulated garments and sleeping bags.
1995	Market extended to children's wear, active wear (Sympatex Professional) and motorcycling.	
1996	Launch of black membrane into fashion sector.	Gore introduces RET as a measurement of breathability of its fabrics and clothing systems.
1997		First Gore-Tex running shoe launched. Prada introduce Gore-Tex fabric into their collection.
1998	First Sympatex thermo-polyurethane membrane.	Launch of Gore-Tex Paclite fabric. Gore-Tex coastal technology launched. Launch of Gore-Tex S Key gloves.
1999	Inauguration of the Sympatex brand family: Allweather: The traditional wpb Professional: High functionality for active wear Thermotion Wear: Extra insulation with less weight and bulk High2Out: A combination of hydrophilic lining with a hydrophilic membrane.	Gore-Tex Paclite 1 launched.
2000		Launch of Gore-Tex XCR 3 layer fabric. First Gore-Tex Leather laminate produced. Launch of Gore-Tex Summer Technology - footwear (super breathable shoe).
2001	Reflexion, nano-technology with 40 nanometers of aluminium. New Dimension socks. 2D hats and gloves inserts.	Launch of Gore-Tex XCR 2 layer fabric. Launch of Windstopper N2S (Next To Skin) fabric.

The two major brands running in parallel. Over thirty years of development geared to producing physical well-being whatever the activity.



Gore-Tex Ocean Technology

chemical chain reaction driven by relative humidity to move water vapour from inside a garment to the outer shell.

In a policy originally developed for roofing applications, DSM differs from the market leaders in that it supplies copolymer granules to its customers, and it is they in turn who produce the finished film. Last year the company introduced the products into the medical and general garment sectors – and now it is intended to offer them at 15 microns+ thickness to outdoor activities garment manufacturers.

DSM says that the finished film is soft, pliable and highly elastic which should make it of particular interest to accessories and footwear producers. The possibility of adding colour suggests some value as a lightly supported lining for some clothing applications.

include sportswear on the basis that Teflon is an ideal treatment for activewear, providing practical protection from weather while facilitating the removal of dirt and stains. Brand names such as adidas and Prada are already using the process as a key feature of their marketing activities.

Teresa Kleinhans, global textiles manager for DuPont Teflon, commented:

"The new lifestyle concept emphasises the carefree, easygoing lifestyle consumers will experience while enjoying their clothes, uniforms, upholstered furniture, and home textiles. It demonstrates the 'let life happen' essence of the Teflon brand stain protection."

Derryck Draper



And another thing...

The events that led to the development of expanded polytetrafluorethylene (ePTFE) by W L Gore and Associates are relatively new by comparison with the discovery of the original resin back in 1938. Described unselfconsciously as 'an example of serendipity, a flash of genius, a lucky accident ...or even a mixture of all three' the product subsequently branded Teflon by the DuPont organisation has undoubtedly made a gift of an almost total lack of friction to so many aspects of modern life.

As a means of providing added value in apparel and furnishings Teflon could be said to be ideal. Relatively inexpensive in process and only visible by its absence, DuPont says that a recent study suggests that 75% of those who are aware of the Teflon process consider that the main benefits are protection against spills and stains, reduced cleaning costs, water repellency, crease reduction and improved longevity.

Now DuPont Teflon is repositioning its fabric protection business with the aid of an international relaunch using the slogan 'let life happen' which stresses the life-style enhancements afforded by the application of PTFE as a stain and water repellent.

Target market segments for the programme specifically