

IFS Spotlight

Customer newsletter of the IFS Group

Summer 07

1982 to 2007 - A story of International success

25 Years
1982 - 2007

Twenty five years ago, IFS Chemicals was one of the first independent polyurethane chemical formulation system houses, and its success certainly encouraged other individuals and organisations to come into the marketplace. However, in its 25th anniversary year The IFS Group of companies is one of only a

small handful of such companies which retains its independence and flexibility, two of the factors which have contributed to its international success since 1982.



The IFS site in Roydon, Norfolk

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Today IFS is a group of four companies providing polyurethane chemicals to a wide cross section of global industries – refrigeration, industrial insulation, marine, automotive and leisure. Each company is involved in a specific aspect of polyurethane technology, with the result that each has a well deserved international reputation for its 'expert solutions'. As the companies have no corporate attachments to any of the multi-national chemical companies, its chemists and technologists can optimise their formulae to meet the specific requirements of the customer, without application compromise.

Innovation has always played a major role in IFS material solutions, and the company left its competitors behind when it introduced a product based on the use of a zero ozone depletion potential blowing agent in 1988, long before climate change and global warming became today's topics of worldwide concern. The in-depth interview which IFS Group Managing Director Dr Barrie Colvin gave for this 25th anniversary of Spotlight (page 4) makes the company's strategic direction in the years ahead absolutely clear. It will support its

customers by remaining at the forefront of polyurethane material innovation, whilst ensuring that all its solutions reflect the need for everyone to be committed to the care of the planet.

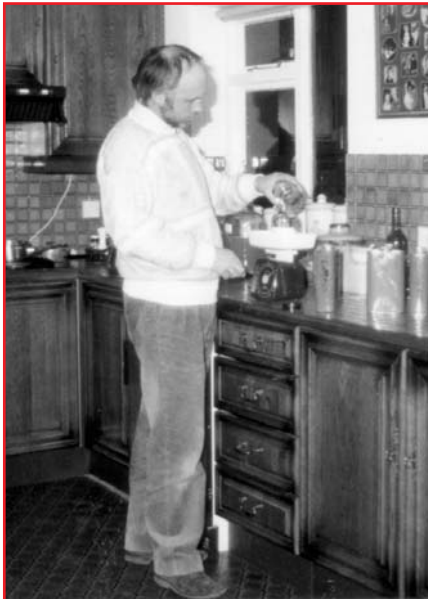


IFS's laboratory facilities

How it all began

In 1982, Barrie Colvin and Ian Widdowson, polymer and rubber technologists respectively, and Diwy, Barrie's wife whom he met while working in Holland, took the biggest step of their lives. They branched out on their own. At the time, both Barrie and Ian were working for BT Urethanes in Kings Lynn.

They founded IFS Chemicals when an opportunity in the form of a Government Loan Guarantee Scheme gave them the chance to borrow the money they needed. Before they could afford to rent premises in Kings Lynn, Barrie used to mix chemicals at home on his kitchen table.



Early products were formulated in Barrie Colvin's kitchen.

The 1980s were a time of rapid structural expansion in the Middle East, and this was one of the markets that Barrie and Ian targeted – a business decision which paid dividends. A major breakthrough came when a contact in the Middle East was faced with what seemed to him an insoluble technical problem. He turned to IFS, and Barrie and Ian were able to devise a solution. It was the success of this first contract that laid down the business parameters which IFS works within today – devising solutions for specific problems encountered by clients.

One of the keys to the company's success has been the development of environment-friendly products. The first milestone occurred in 1988 when IFS developed the first CFC-free polyurethane foam in the world, which Portakabin began using in 1989 to insulate its eponymous buildings. This award-winning invention attracted global attention and business expanded quickly. IFS went on to be the first company to develop a low global warming product and Envirofoam, with a zero ozone depletion rate, both of which meet current stringent legal requirements.

The move to IFS's present site in Roydon took place at Christmas 1997, and as sales continued to grow, the company's employee headcount rose steadily from 12 to the 45 people it currently employs. It is testimony to IFS that some of the company's first customers remain its principal clients twenty five years later.

IFS Products & Applications

Over the last twenty five years, IFS Chemicals has worked with many companies in a diverse range of global industries, specifying and supplying polyurethanes which have enabled those companies to manufacture their products to the required material specifications and tolerances.

The following overviews are indicative of the breadth and depth of product and application experience which has been developed at IFS Chemicals since 1982.

Coldroom:

Williams Refrigeration was one of the first companies to use a zero ozone depletion potential blowing agent foam insulation for the complete range of its commercial refrigerators. This 'green' foam was hailed as a 'major breakthrough in the development of CFC-free products'.



Schweppes cabinets:

Manufacturers MK Refrigeration needed an HCFC-free insulation system to meet a set of most exacting environmental specifications. The resulting custom-formulated chemical system exhibited excellent foam flowability with mechanical properties to match.

IFS Products & Applications



Heatrae-Sadia:

a foam insulation system was required to meet the low global warming specifications of this manufacturer's customers. This was accomplished whilst retaining other important foam properties, particularly low foaming pressures during application.



Flat roof insulation:

flat roofs in Saudi Arabia were insulated on the outside using a fast reacting spray foam. This process minimised the disruption to the dwellings and had the added benefit of producing a joint-free insulation blanket.

Insulated doors:

domestic doors are produced using a foam with very low global warming insulation materials. IFS Chemicals optimised its range of environmentally acceptable products to be used in narrow cavity applications, such as doors. These new products also enabled much higher door production rates to be achieved.



External pipe insulation:

IFS Chemicals has supplied large amounts of custom-formulated materials for use as an insulation

material on hot pipes within deep sea environments. The insulation is applied using a controlled rotational casting technique; it has included the simultaneous application of up to four separate materials.



Portakabin:

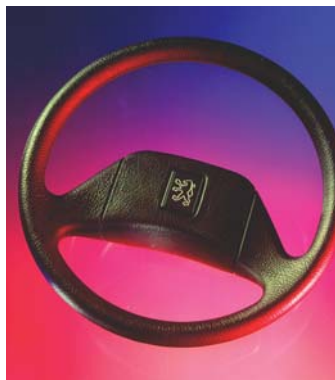
the very first use of a CFC-free and HCFC-free polyurethane insulation in a building application was implemented by Portakabin in 1988. The company has continued to be a leader in the technical and environmental aspects of building materials.

Rolls-Royce: the latest safety specifications necessitated the development of a high-impact bumper. A modified polyurea chemical system was developed by IFS Chemicals, enabling the bumper to be manufactured in a low-cost tool using a spray-applied, high performance material.



Landrover internal fascia components:

this application required a foam with a particularly good flow, coupled with a fast demould time. IFS Chemicals developed a material which satisfied all the technical requirements, including the ability to increase production levels by 40%.



Vehicle steering wheel:

a custom-formulated polyurethane was developed for the manufacture of Peugeot steering wheels. The mouldings needed to be blemish-free and be capable of being demoulded within four minutes. This was achieved using a high density integral-skin moulding grade.



High impact mouldings: these are produced using a specially developed reinforced foam system from IFS Chemicals. The technical requirements for these products were significant, and the company was able to meet these demands as well as achieving fast processing times.

Marine buoys:

a spray-applied, high performance elastomer was developed by IFS Chemicals, and this has been successfully used to manufacture many hundreds of large buoys, fenders and anchor pendants. Due to the harsh environments in which they are used, the polyurethane needed to conform to exceptionally high specifications.



Thermal break resins:

these were first developed by IFS Chemicals in the 1980s. The company has continued to be a leader in this industry, with continually improving materials in terms of impact properties, low shrinkage and high heat distortion grades.

Self-lighting road studs:

self-lighting road studs require a crystal-clear polyurethane resin suitable for embedding delicate electronics. The brief was to provide a material which would develop a low exotherm during manufacture and resist the effects of traffic over a long period of time. Again, IFS Chemicals custom-formulated a suitable material.



...and so to the Future

An interview with Dr Barrie Colvin



“The next few years will be exciting ones, during which we shall cement relationships with our clients and play a lead role in furthering technological developments within our industry.

Increasingly we are talking to both the buyers of our polyurethane materials and their customers to ensure that the end product meets the required criteria and specifications. I foresee that commercial relationships with our clients will continue to deepen, with IFS working in partnership with them.

“I believe IFS will expand its supply of insulating and protective materials for the energy sector. The company has already developed material for breaker dams to give vital protection to oil pipelines running from the Caspian Sea to the Mediterranean. Similarly, it supplied a foam system to joint a gas pipeline running across Western Africa. With the increasing development of wind energy, such systems will be able to protect wind farm cable connections with the National Grid; this will be particularly relevant in the case of off-shore wind farms where damage from salt water and sea activity is a particular issue.

“The supply of raw chemicals from traditional sources remains tight, and we are actively seeking opportunities to establish partnerships in developing countries, especially China, where we envisage the expansion of the use of locally procured natural oils and fats in the formulation of polyurethane. We are looking for opportunities to licence more plants of this nature around the world.

“These processes have already begun. But as the push for a greener world gathers momentum, pressure will be put on us all to make more use of reclaimed materials, for example, domestic waste or waste from power stations. Our sister company, Bollards International, already manufactures street furniture from recycled vehicle tyres, so I see IFS Chemicals firmly at the forefront of the development of products from green sources.”



IFS joins the war against international **global warming**

With a global warming potential of 'less than 5', IFS's new Envirofoam 16.335 polyurethane material meets the UK Building Research Establishment [BRE] criteria for an insulation material which avoids the use of ozone-

depleting substances. The company is providing the UK building industry with the tools to ensure that it meets the Government's Climate Change directive which becomes fully enforceable this summer.

And it's not just in the UK that IFS materials help tackle the issue of global warming. Its environmentally friendly low density foam system (36 kilos per cubic metre) is now supplied to a West African manufacturer of building and cold room panels where it is a key element in the production of 100mm thick panels.

Back in the UK, IFS is continuing to work with manufacturers in the building and construction industry to ensure their material specifications are changed in time to comply with the new directive.

Norfolk's **New** natural oils plant

IFS Chemicals has developed both plant and processes which enable locally occurring oils and fats to be used to manufacture polyurethanes for use in the production of refrigeration, general insulation, building and moulded automotive components.



A recently commissioned plant at its Roydon factory manufactures polyol from rape seed oil. The entire operation is East Anglia based – industrial grade rape seed oil is produced in the region, the crop having been grown by local farmers. The new plant turns it into polyol which is then used in the manufacture of polyurethane.

The advantage of using natural oil-based polyols, especially in parts of the world where transport is difficult, is that they can be manufactured close to the local market, and immediately included in a fully formulated material system.

Natural oils are easily replenished and use low levels of energy in their conversion to polyols. With over 7 million tonnes of polyurethane chemicals used annually in a wide variety of applications, polyols of this type have the ability to make a significant environmental impact.

Old **vehicle tyres** 'back on the street'

In response to the EC Landfill Directive, IFS Chemicals has perfected a process to manufacture a stylish range of street furniture from polyurethane material produced using regenerated used vehicle tyres. The UK produces over half a million tonnes of scrap tyres every year from which the government expects complete recovery of value. Central government departments, local authorities, and a growing number of environmentally concerned commercial organisations are now buying bollards and other products manufactured in Enviro-cast by IFS's sister company, Bollards International Limited.

The process uses a high level of rubber crumb from shredded tyres which produces environmentally friendly, non-corrosive and virtually maintenance-free bollards of exceptionally quality. The versatility of the material renders it able to accommodate most individual customer requirements, to the extent of incorporating logos, emblems and coats of arms into the design. Once finished in a top quality polyurethane paint, these bollards have great appeal to any organisation seeking to fulfil its environmental obligations.



Buyers in all industries can help protect the planet if they insist on only using components manufactured using environmentally friendly materials and processes.

Spotlight on ...

Barrie Colvin

Barrie is a Norfolk man, born and bred, with his home now firmly established in Gayton, a village in the west of the county. He lives there with his wife Diwy, a partner in the business, and his two sons aged 19 and 16. After graduating from Manchester University as a polymer technologist, he initially joined Shell before he returned to his native Norfolk to work, and eventually founded IFS Chemicals not far from his home patch.



Barrie Colvin flies for both business and pleasure

His leisure activities are diverse. Besides his involvement with family activities, and with two sons these are extensive, he is a very keen flyer. Barrie is not only interested in conventional light aircraft; he also flies a microlite, and makes use of his hobby for both business and pleasure. His unconventionality doesn't stop there. A heavy involvement in the fascinating, if unusual, study of poltergeists – noisy ghosts which among other manifestations move furniture - takes him all round the world. His current field of study is 'rapping' poltergeists.

Ian Widdowson

Although originating from the Midlands, Ian has lived and worked in Norfolk for over 30 years and could consider himself to be a Norfolk man if he wished! He is a graduate of Loughborough University who qualified as a rubber technologist; he has been working with polyurethanes for 34 years. He and Barrie were work colleagues in Kings Lynn before they founded IFS Chemicals together in 1982.

As a family man with 6 children of his own and two step children, much of his leisure time is taken up with his younger children's activities. However, Ian is an avid sportsman himself, and is actively involved in his 'love', hockey. He has been a keen player for most of his life, but hockey is a fast and furious young man's sport. He has now hung up his hockey stick and umpires rather than plays.



Ian Widdowson is now a hockey umpire in his leisure time

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