

# IFS Spotlight

Customer newsletter of the IFS Group

Winter/Spring 2009

## Environmental innovation creates continued growth

**Improved insulation efficiency coupled with environmentally-attractive chemical systems increases IFS Chemicals' lead in the commercial refrigerator market.**

Significant technical developments from IFS Chemicals have resulted in another first for the company. The introduction of a completely new type of refrigerator-grade insulation system has been confirmed, following trials on a series of refrigerators for the commercial refrigerator market.

The new polyurethane foam system uses polyols derived from rapeseed oil, which are manufactured at the company's Norfolk site. In addition, the

zero Ozone Depletion Potential (ODP) blowing agents have a Global Warming Potential (GWP) of "less than 5", a requirement of the BRE's Ecohomes Policy. However, what makes this latest development so significant is the high efficiency of the insulation material. Measurements show that an insulation value of 0.019 W/mK can be consistently achieved, an improvement of almost 20% over current polyurethane foams used in this industry. This important development comes at a time when all refrigerators are being assessed and compared for energy ratings.

Managing Director of IFS, Dr Barrie Colvin, stated that this development would become commonplace in the future: "We are widely recognised as the most innovative formulating company in Europe and this latest development again keeps us ahead of the competition in high quality, environmentally-acceptable polyurethanes".



Rapeseed oil-based polyurethane insulation in Precision Refrigeration's products

At a time when general economic forecasts look rather gloomy, IFS has never been busier. The combination of innovative environmental chemistry, customised formulations, high levels of customer collaboration and increasing commercial support from important suppliers has led to increasing successes in a number of business areas.

### Contents:

#### Page 2:

- What a shower!
- IFS on the road... for driving safety
- The proof of the pudding ...

#### Page 3:

- Engineering polymers for sub-sea applications

#### Page 4:

- Spotlight on... Jonathon Siddall
- The need for successful partnerships



Polyol plant using renewable rapeseed oil raw materials

# What a shower!

The design of bathroom showers has changed dramatically over the last few years, with the result that shower trays have tended to become more stylish and often a little larger than their earlier counterparts. This changing shape and increase in size has created a number of manufacturing and installation issues, not least of which is weight in respect of the latest safe working lifting guidance.

Over recent months IFS Chemicals has been working with various UK manufacturers of shower trays to formulate new materials which are capable of providing both shower tray practicality and wet room styling.

The result is two versions of a castable polyurethane; both offer greatly improved processing capabilities, and therefore reduced manufacturing costs in comparison to traditional materials; one also has an added lower weight advantage.

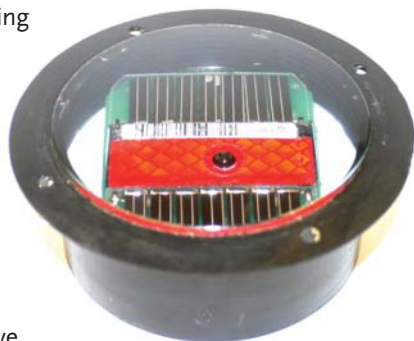
Sales Director Ian Widdowson is now looking forward to working with other bathroom and kitchen equipment manufacturers, saying: "I believe the manufacture of many bathroom and kitchen products could change significantly as a result of our recent material developments for shower trays and wet rooms."



Shower base development at IFS

## IFS on the road... for driving safety

IFS Chemicals is making a major contribution to road safety. The company has devised the formulation, and is supplying the material used by Astucia of Bicester in Oxfordshire, to manufacture innovative solar powered road studs set to revolutionise night driving for millions of motorists worldwide. It is over seventy years since Percy Shaw transformed road safety with the introduction of cats' eyes; these new solar powered, LED intelligent road studs will provide up to a ten-fold increase in visibility and much enhanced durability in the most demanding of conditions.



Dr Barrie Colvin comments: "IFS Chemicals regularly works alongside companies to devise formulations for specific purposes. We fulfil precise requirements, in this case developing a polyurethane material with very high clarity, resistance to continual impact by road traffic and an ability to be cast around electronics with minimum reaction exotherm. This material enables drivers to see their route for up to a kilometre ahead, even in reduced visibility caused by fog or surface spray. I am confident that these new studs will play a major role in improving road safety both at home and abroad."

## The proof of the pudding ...

As in baking a cake, the quality of the ingredients used in the manufacture, has a direct bearing on the finished product. Second rate ingredients equal second rate products; first class ingredients equal first class products. This theory holds true within the IFS Group, where IFS Chemicals supplies the first class raw materials that go into the manufacture of a superb range of polyurethane street furniture.

Bollards International has a deserved reputation for the supply of bespoke and standard polyurethane bollards, street signs, and post and rails – in fact most items of street furniture. Its products can be found in shopping centres, marinas, major cities and many of our coastal resorts the length and breadth of the UK.

What sets Bollards International's street furniture apart from the usual cast iron or wood, is its environmental sustainability and product durability. Firstly, IFS manufactures polyurethane derived from either recycled material or natural and renewable products, thus minimising the effect of its manufacturing processes on the environment. Secondly, unlike cast iron and wood, polyurethane neither rusts, chips or rots, rendering maintenance costs minimal, an attractive feature for developers and local authorities.



The elaborate finial of one of the polyurethane bollards installed in Norwich.

As we said, "The proof of the pudding ...!"

# Engineering polymers for sub-sea applications



IFS Technical Support Engineer in South America

**The world's sea beds are literally littered with pipelines to enable the resource rich nations to supply oil and gas to other less well endowed countries around the world, and maintaining the integrity of those pipelines is obviously of paramount importance.**

IFS Chemicals has been involved in many sub-sea engineering projects over the last twenty five years, typically working with companies which win the huge contracts associated with jointing and laying the pipelines. Regardless of the application, the pipelines themselves are typically coated steel pipes, but the polyurethane materials which the company supplies for pipe jointing need to have very different properties and qualities dependent upon whether the completed pipeline is to carry gas or oil.

The coated steel pipes that form a sub-sea pipeline are loaded onto large ships and taken out to sea to be welded and jointed on board before being laid on the ocean floor. This is effectively a production line procedure and means that all polyurethane materials supplied for on board pipe jointing need to offer easy processing and fast curing properties.



Solid polyurethane field joint

The elastomers used for jointing are transported in large on-board tanks and, as the projects get larger, so do the tanks which are used to contain the materials. If the material ingredients settle out during transit and storage, processing can be significantly delayed, so for this reason IFS Chemicals has developed non-settling materials for many sub-sea engineering projects.

Oil is a viscous substance which needs to be maintained at a relatively high temperature to ensure satisfactory flow along pipelines; if it cools the flow can quickly cease so the elastomers used for pipe jointing on oil pipelines must possess specific qualities relating to insulation values.

Traditionally the elastomers used to joint oil pipelines have contained mercury based catalysts to aid the curing process, but international concerns about potential mercury contamination of the world's oceans have now resulted in significant changes to pipeline specifications for many of the latest sub-sea projects. IFS Chemicals has developed a full range of mercury-free materials, and external testing has shown that the mercury-free products from IFS process better than similar products from alternative suppliers.

Unlike oil pipelines, those used to transport gas along the sea bed do not need thermal qualities and therefore the polyurethane material used to joint such pipelines is a completely different specification. A

low density open-cell polyurethane foam with high impact properties is used for the jointing material. Cellafoam 161/10 has become the industry standard for this application. It is a material that cures quickly, thus ensuring high rates of production, an important consideration on expensive lay-barges. Cellafoam 161/10 has been extensively tested and specified for impact performance, a necessary consideration in view of the widespread use of deep-water trawling activities.

Dr Barrie Colvin, Managing Director of IFS Chemicals, believes the company's experience in sub-sea polymer engineering will continue to develop saying:

"The concerns about climate change and our environment are driving the rapid development of new fuels. I don't expect it will be long before we are asked to become involved in the development of materials for pipelines which will carry those fuels from nation to nation."



IFS field joints on gas pipeline

## Spotlight on ... Jonathon Siddall



Jon Siddall is IFS's Technical Sales representative covering Birmingham and the South of England. He has over 25 years experience in the polyurethane industry, beginning as a laboratory technician and progressing to formulating foam systems for a range of applications.

"My role is to support the customer," Jon comments. "I have been both supplier and customer, so I can empathise with the needs of both, and I'm looking forward to contributing to the continued success of IFS."

Jon is an accomplished skier, a love he shares with his three children. He also enjoys fresh water coarse fishing, and is contemplating re-entering match fishing at club level.

Dr Barrie Colvin comments, "Jon brings many years of business and technical expertise with him, which will benefit both IFS and its customers."

## The need for **successful partnerships**

'Success requires partnerships' was the headline of an earlier IFS spotlight. In response to an increased demand for IFS's products, Dr Barrie Colvin outlined his plans to modify relationships with raw material producers to secure the supply of base products at high volume and at reasonable prices. "We have reached agreements with many of our regular suppliers, both within Europe and the Far East," says Dr Colvin, "agreements which are proving successful for us all."

One supplier that has now entered into this special relationship is the Chinese isocyanate manufacturer, Wanhau Yantai, which ships raw materials by sea from China to Rotterdam. There, it is stored in large tanks prior to shipment to IFS by means of 20 tonne tankers to a port in the region, thus saving both time and transportation costs.



Barrie Colvin of IFS with Yantai Chairman Mr Ding Jiansheng

On a more personal level, IFS has played host to one of Wanhau Yantai's employees, who has visited the company's research and development centre in Norfolk, where a project is underway on high functionality polyurethane systems.

### **STOP PRESS**

When buildings are demolished there is always a risk that harmful blowing agents used in the manufacture of the building's insulation may be released into the earth's atmosphere and further damage the ozone layer.

Whilst site surveys will identify the presence of insulation, physical inspection will not be able to determine the presence of harmful blowing agents within the foam used to create that insulation.

However, IFS Chemicals has identified a hand-held blowing agent detector which may be of use to the demolition industry if it is to be faced with further regulation on this issue. Visit [www.ifs-group.com](http://www.ifs-group.com) to learn more

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