Making choices going forward.

Embracing the energy revolution. Chinese Impressions.

Skis become a platform for art. The new Gurit work-wear.
Gurit is proud to present the first issue of *shape*. With a comprehensive range of advanced composite materials, technology and engineering services, Gurit is certainly contributing to shaping the face of the world.

One of many examples is the European Yacht of the Year 2006, the Shipman 63, featuring Gurit engineering and materials, as did a previous winner the Shipman 50. In addition, Gurit has signed a further contract with Seaway for the upcoming models, Shipman 72 and Shipman 80. Our ambition is to provide the materials for your ideas to take *shape*. 
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INVESTORS MEETING GURIT

A group of 20 international investors and analysts visited Gurit (UK) last November. The full-day programme started with a corporate presentation during the bus transfer from London Heathrow to Southampton. On the Isle of Wight, the visitors, who are well acquainted with the financial side of Gurit, were taken on a hands-on tour through the labs, production and the prototyping facility of Gurit (UK). Over lunch, Gurit Management provided additional insight into the three targeted market areas as well as R&D.

The feedback received after this first Gurit Investor Day was very positive as the analysts and investors were impressed with what they saw and the enthusiasm they sensed among the Gurit employees for what they do.

GURIT WORK-WEAR

As part of the Gurit branding implementation, all production sites have now equipped themselves with a new range of work-wear, such as Gurit branded T-Shirts, Polo shirts, sweatshirts and jackets. The new work-wear collection is helping to successfully reinforce Gurit’s strong global image across all areas of the business.

MARINE ENGINEERS MOVED FROM SOUTHAMPTON TO ISLE OF WIGHT

Gurit has relocated the team of structural engineers from Southampton to Newport on the Isle of Wight. Bringing engineering services and manufacturing closer together at Gurit (UK), greatly facilitates the ability to provide marine customer with more complete SP branded composite technology and product packages.

The structural engineers can now more closely interact with research and development and enjoy a more direct access to the material testing and prototyping facilities of Gurit (UK).

Learn more about prototyping on page 14.
Gurit (Zullwil) used to be by far the largest consumer of drinking water in the little village of Zullwil, located in the Swiss Jura Mountains. Apart from tapping cooling water from a nearby spring next to the old farm house shown above, the company bought an average of 30,000 cu.m of prime drinking water each year to quench the thirst of its machinery.

The water from the spring does not meet the stringent quality standards for drinking water in Switzerland and the local authorities asked Gurit to ensure that none of the water it tapped was able to flow back into the village water mains. While undertaking the necessary modifications, Gurit (Zullwil) opted for a complete redesign of its water management system. Cooling water now comes exclusively from the spring and remains in a closed circuit. After use it is pumped into a large open pool, where it cools before returning for another processing cycle.

As a result of the new system, Gurit (Zullwil) has reduced its water consumption by more than 95%. And, as Paul Loeliger, Managing Director of Gurit (Zullwil) explains, the costs saved on water will enable the company to recoup its investment in just three years.
shape spoke with Jouni Heinonen, CEO of Gurit Holding AG, to learn more about the Group’s strategy for the future.
Strategy is one of the most widely used terms in business. How do you define it?

The most important goal of any strategy is to make certain long-term choices that will make our business more successful. The world is full of options and therefore choices. As an industrial Group focusing on Advanced Composites, we have to decide what we do and – perhaps even more importantly – what we don’t do.

And who is involved in these choices?

Management is responsible for making them. But everyone in the organization needs to understand the reasons for and the objectives of the choices made. A clear strategy creates a common path through the thick forest of options, gets everyone focused and makes life much easier for us all.

So what is your ultimate target, your vision for Gurit?

Our vision for Gurit is to be recognized as the undisputed leading provider of composite technology to our selected markets worldwide.

And how do you break this vision down into strategic goals?

This vision implies that certain choices are made. For instance, we speak about ‘selected markets’. So in the context of our strategy definition, we carefully selected the markets we want to be active in – Wind Energy, Transportation as well as Marine, Sport and Civil Engineering.

We selected these markets, because we are good at them, they offer many opportunities and offer high growth potential. Focusing on these three market areas we want to achieve our mid- and long-term financial goals.

What are Gurit’s financial targets?

We want to increase sales by an average of 15% a year, so that by the year 2010 we’ll have doubled our sales volume. And of course, we need to do this profitably.

15% growth is ambitious. What makes you confident you’ll meet that target?

First, we’ve selected the right markets. And, second, we’ve set ourselves the goal of generating 30% of our sales with products that are less than three years old.

This clearly defines the job for our research and development people: they need to be working on the next generation of composite materials today. Once they know our goals, they organize themselves in such a way that they can achieve them. We now have three bespoke R&D teams that focus on discrete areas but work very closely together.

And what is the strategy for your three target markets?

Let’s look at Wind Energy first, where we generate about half of our sales. We want our materials and technologies to contribute to the success of this renewable energy form. More precisely: we have to make sure that prepeg emerge as the leading technology. With the wind energy industry becoming truly global, we have resolved to follow our key customers around the globe so we can offer them leading-edge products at competitive prices worldwide.

This explains why we have decided to expand: we’ve already announced our intention to build a production site in China and to double our structural foam capacity in Canada.

What about the other market areas?

In Transportation we focus on aerospace, automotive and rail applications. Our excellent position in aircraft interiors should enable us to break into secondary or even primary structures. In the automotive sector, we’re looking into the manufacture of certain finished parts. At the moment our range of automotive products is too wide.

Gurit hat sich auf die Marktbereiche Wind Energy, Transportation sowie Marine, Sport and Civil Engineering ausgerichtet. Mit dieser Spezialisierung hat Gurit auch seine Entwicklungstätigkeiten klar ausgerichtet und will gruppenweit ein Wachstum von 15% pro Jahr erreichen.

Gurit a choisi les marchés Wind Energy, Transportation, Marine et Sport and Civil Engineering. Cette spécialisation détermine clairement l’orientation dans la recherche pour réaliser une croissance de 15% par an.

Gurit Magazine 01_2007
“We are set to grow.”

Our engineers have developed the first carbon prepregs to feature what’s known as a Class A surface; these components can be painted like the metal body parts of a car. This is an area we’re looking to expand. To support these goals, we have established a new prototyping facility at Newport and are investing in production equipment for finished parts. In addition, we have signed an important prepreg contract with a Chinese train carriage manufacturer. You see, things are moving on many different fronts. We are set to grow.

If we are to generate more business, we need to expand our customer base by type and geography.

In winter sports, we want to strengthen our position as the leading supplier of composites in a market that is consolidating globally. Last but not least, we’ve just set up a third production line for civil engineering products. So we are ready to grow here as well.

What impact does your strategy have on people in the workshops?

In the course of the past year, we’ve done a great job on the operations side. We’ve established a truly joint manufacturing platform group-wide, which has allowed us to move the manufacture of our products closer to our customers. What’s more, with the same equipment we are now producing considerably higher volumes and want to improve this even more. Capacity utilization has increased remarkably.

Is there anything else you find key to Gurit’s strategy?

The people, of course! In my first full year as CEO, I’ve discovered that we are a fantastic group of individuals. Over the past 12 months, we’ve already achieved a lot together. Fostering the Gurit spirit within our organization worldwide is very important to me. Last but not least, it’s one of the reasons for the launch of our Corporate Magazine.

What about external growth?

Our solid cash flow has enabled us to build our own production site in China and to expand our foam capacities in Canada. In a second step we will invest in further expansion capacities for our foam products – again as close to our customers as possible. Besides this, our Corporate Development team is always looking at acquisition opportunities. But you will understand that I can only speak about that when we have something concrete to say.
“The aim is to generate 30% of our sales with products that are less than three years old.”
Gurit engaged in a wide-ranging strategy process in 2006. Each business unit developed their plan according to their own market needs but it soon became apparent that they shared one common vision. In order to meet the overall sales growth targets, and to provide a global reach as well as a local supply of Gurit materials and services to our fast growing customers, Gurit needed a manufacturing plant in China.

China has seen five years of double-digit growth in composites. Known for some time as a base for low-cost manufacturing for export, the demand in the composites sector can now be better explained through the overall growth of the domestic Chinese economy, growing at some 10% annually. This puts increasing pressure on the transport system with the migration of workers and creates a huge thirst for energy in industry. With this also comes an increasingly wealthy set of consumers with a desire for travel and luxuries.
CHINA NEEDS CLEAN ENERGY

By the year 2020, China wants to increase the contribution of renewable energy for its power requirements from the current 7 to 15%, including 30,000 MW wind power, which compares to a current installed capacity of about 1,260 MW. To put this into context, global installed capacity increased from 59,000 to 74,000 MW during 2006.

With the majority of power stations in China being coal-fired, putting in new capacity comes with considerable lead-times and a large environmental cost contributing to the already poor air quality. Wind power offers short lead times and clean energy. To support this growing demand, Vestas, Gamesa, Suzlon and LM are all producing or due to start producing blades in the Tianjin area of China in 2006 and a rule requiring 70% local content demands their suppliers follow. A recent Airbus announcement that they intend to commence local manufacturing in the Tianjin area will hopefully also provide significant opportunities.

PURPOSE-BUILT PLANT RISING

At the end of August 2006, the Board of Directors gave formal approval for the CHF 20 million investment project. Gurit (Tianjin) Composite Materials Co., Ltd became a legal entity by the end of September.

Gurit has purchased over 30,000 m² of land in an investment zone called YSP, part of the larger TEDA (Tianjin Economic-Technological Development Area) just to the north of Tianjin city. The official ground-breaking ceremony took place at the end of November and the purpose-built factory of some 10,000 m² should be ready in summer 2007.

Gurit has decided to commence supply of Corecell structural foam products earlier than the purpose-built plant would have allowed by leasing a temporary office and manufacturing space. This will allow Gurit to supply Corecell from beginning of April with further Corecell equipment being installed, along with prepreg machines, into the main facility for supply at the start of the 4th quarter.

PEOPLE MAKE IT HAPPEN.

«Overall the plant will employ around 110 people in its first phase», says Joe Summers, Corporate Development at Gurit. «The first employees of Gurit (Tianjin) have started to join us. We now have the full management team in place including General Manager, HR, Customer Support, Purchasing, Finance and Logistics and are up to 19 employees in total. By the end of March this will be 45 and we will be ready to start production.

We welcome our new friends and colleagues in China and look forward to facing the challenges of this new venture as a team.»

The name below, and its translation, will be the name of our legal entity in China.

固瑞特（天津）复合材料有限公司
Gurit (Tianjin) Composite Materials Co., Ltd.

The words Tianjin and Composite Materials are direct translations. Gurit has been transliterated as follows:

固瑞特 (gu rui te)

By literal translation, 固 (gu) means ‘solid, durable’; 瑞 (rui) means ‘propitious’ and 特 (te) means ‘special’.
Markets: Marine, Sport and Civil Engineering

A revolutionary new vessel, the M80 Stiletto, has been undergoing testing with the United States Navy.

This vessel has been developed as part of a proposed adaptive force using high numbers of smaller, faster, networked vessels designed for littoral, or near shore, waters and costing less to build than conventional ships.

Built from advanced composite materials, the M80 uses a revolutionary hull form to provide a stable yet fast platform on which a variety of sensors or weapons can be mounted. Gurit’s SP branded materials were chosen to build the boat.

One of the key features of a revolutionary new US Navy vessel called M80 Stiletto will be its ability to offer crews a smooth ride at a speed of up to 50 knots even in rough conditions. Existing patrol and reconnaissance vessels can place extreme stress on their crew when running at speed and this in turn can compromise effectiveness.

The US Navy intends to use the M-class of vessel for patrol and interdiction roles where speed is of paramount importance. It accomplishes this feat by using channels in the hull to force air under the vessel to provide some uplift which cushions the overall structure and protects its operators from the effects of high speed slamming in a marine environment.
Key to the success of this concept is a lightweight yet uncompromisingly strong structure. The designers chose a carbon fibre sandwich structure as it offered the most benefits both during construction and throughout the operating life of the vessel. Gurit’s SP branded SPRINT prepregs and Corecell structural foam materials were chosen to build the hull to ensure a high quality laminate and a consistent production process. The M80 Stiletto is notable because it is the largest U.S. Naval vessel built using carbon fibre composites and epoxy building techniques.

As well as supplying a comprehensive materials package to the construction of the vessel, Gurit also engineered the hull structure. As this vessel is unique, the engineers were called upon to use experience gained from working across a wide range of disciplines including marine, aerospace and automotive.

Another key feature of this hull design is the significantly reduced draft over conventional vessels of this size. With a full payload of fuel, personnel and equipment the M80 draws only 3 feet. This makes the vessel ideal for operating in ‘brown water’ environments where the ability to enter rivers and navigate coastlines is greatly enhanced. If need be, the vessel can even be placed deliberately on a beach to transfer equipment or personnel.

Following on from the M80, the designers of M Ship Company have plans for other vessels using the M shaped hull technology. Both smaller and larger versions of this vessel are on the drawing board for use as patrol vessels or a mobile base of operations, as well as concepts for use in the commercial world including a radical design for transporting containers near shore and up shallow rivers and bays.

Das revolutionäre Schiff M80 Stiletto wurde mit Hochleistungsverbundwerkstoffen von Gurit gebaut und ist auch in rauher See dank einzig-artiger Rumpfform sehr schnell.

Le bateau M80 Stiletto, construit largement avec des matériaux composites, navigue très rapidement même dans la mer agitée grâce à sa forme extraordinaire.
TechTalk: Prototyping

A HANDS-ON SHOWCASE FOR GURIT MATERIALS

The newly created prototyping facility in Newport allows Gurit to test its products at real-life scale. It also offers customers the opportunity to see for themselves what Gurit materials are capable of achieving.

With the aim of providing technical and production development of composites processes for the creation of new structures, the new state of the art prototyping facility is a key part of the total composite package offered by Gurit.

The prototyping facility is located close to the Gurit materials manufacturing site in Newport on the Isle of Wight. The 3000m$^2$ site has been designed and equipped to be flexible in its operation and to accommodate a number of smaller projects or individual large-scale work. Within the facility there is a 75m$^3$ static oven that can accurately manage temperatures of up to 150°C. Additionally, the whole site can be transformed into an oven as required to cure large components.

Steve Main, Prototyping Technical Project Manager is proud of the new hands-on showcase: «The nature of the work that goes on here means that one week we will be creating large numbers of a relatively small component, for example an automotive part, the next we might be working on a much larger structure such as parts for the next generation wind turbine blades.»

Steve, with over 13 years composites manufacturing experience behind him, has worked at Gurit for the past 8 years and has been involved in projects across the whole range of Gurit activities. Specialist functions of the prototyping facility include, mould manufacture, part prototyping focusing on wet lay-up, resin infusion, pre-preg and SPRINT processes as well as application of vacuum bagging and Airstream carbon fibre technology applications specially developed for the wind energy market.


La capacité de construire des prototypes ainsi que des séries limitées a été étendue chez Gurit (Newport). Les clients peuvent s’y familiariser avec les nouvelles technologies et caractéristiques révolutionnaires des produits Gurit.
Since the inception of the facility the workload has been impressive: Projects have involved both the development of Gurit materials and the creation of prototype parts for a number of customers. The Royal National Lifeboat Institution commissioned Gurit to create a whole new manufacturing process for the construction of a high performance vessel for the same cost as a low performance vessel.

Gurit thus developed an entirely new product package and production method for the mass construction of a Rigid Inflatable Boat (RIB). RIBs are particularly appropriate for this type of work as they are inherently very stable and the inflatable section of the boat forms a protective barrier around the boat to protect it from damage when coming alongside other vessels in heavy seas.

The finished structure was fully moulded and bonded removing the need for costly, time-consuming over bonding. The programme included the production of the first 22 boats that have been delivered to the RNLI as well as a comprehensive production manual that will now be passed on to the RNLI's chosen supplier.

The previous project pretty much filled up the whole building: The aim for this project was the creation of a series of 4.5-metre diameter carbon fibre ducts for the new British Hovercraft 130 model.

The brief was to create a stable structure that would not deflect, allowing the tolerances between the tips of the rotor blades and the duct to be reduced which would in turn increase efficiency. Initially engineered by Gurit, this large structure was constructed from SPRINT materials resulting in a straightforward manufacture process combined with a very low void content to ensure consistent performance of the part. British Hovercraft has now completed 2 of the new models and Gurit have provided four ducts to support this production.
EMBRACING THE REVOLUTION


La consommation d’énergie ne s’arrête jamais. Les éoliennes deviennent de plus en plus performantes grâce aux matériaux de Gurit. Non-polluante, l’énergie éolienne aujourd’hui est économiquement déjà bien attrayante et continue de croître de 20% par an.
Climate change is a real and very serious threat. Burning of fossil fuels has been raising the concentration of carbon dioxide in the earth’s atmosphere at an accelerating rate for almost a century. This pollution traps sunlight and warms the earth, changing our weather, melting glaciers and disrupting eco-systems. In more recent years, the scarcity of fossil fuels and their concentration in unstable countries has led to war, rising fuel costs and the continuing threat of disruption to our energy supply. Governments all over the world are waking up to the seriousness of these issues, with the USA declaring itself «addicted to oil».

Whilst this is happening, the world population is exploding and global energy demand will double within 25 years. The solution to the energy problems lies in the best combination of nuclear, oil, gas, coal, wind and biomass technologies coupled with a radical change in behavior of governments and consumers. These are challenging and exciting times offering tremendous opportunity for business – not least for Gurit.

The renewable energy business has been growing at an increasing rate for more than twenty years and is dominated by hydropower, biomass technology and wind power. Solar and other novel power technologies are ten years away from substantial contribution to global energy supply because of scale and technology issues. The composite material solutions of Gurit for wind turbine blade manufacturers have enabled advances in machine size and efficiency for more than fifteen years. Gurit is proud to be part of an industry making such positive steps toward energy security and sustainability.

**FAST MOVING TO GLOBAL SCALE**

The global wind turbine market continues to grow at more than 20 percent annually and is expanding all over the world, constrained only by its own supply chain, which includes gearboxes, towers, generators, bearings and of course, blades. Government targets for wind energy installation far outstrip the capability of manufacturers to deliver machines, which has led to two year delivery times and increasing turbine prices. These are good times for the wind business.

As a major turbine manufacturer puts it: «It is gratifying to see that the sub suppliers of the wind turbine industry have started to invest in increased capacity, although it will take years until the total capacity of the industry will be able to meet the demand». There are several Wind power companies listed on global stock exchanges and deals for machines run into hundreds of millions of dollars. At the moment, the industry is going through a period of adolescence, growing from a collection of successful national and continental machine manufacturing businesses into global mass manufacturing organizations.

Thus, the modern wind turbine business is challenging its supply chain to support its stellar growth rate with both increased volumes and much higher demands on cost effectiveness, delivery, quality and global partnership.

**GURIT OFFERS ENABLING TECHNOLOGIES**

The fantastic increase in the size of wind turbine blades is a significant challenge for blade manufacturers, with the largest blades now weighing up to 18,000kg each. Gurit has been involved in every step of this technical advancement and continues to decrease the cost of energy with advanced composite technology. Blade manufacture is complex and we are unique in offering the industry a combination of structural engineering, materials development and manufacture, combined with on-site expert technical support and prototyping facilities.

The wind turbine business started in Denmark and Germany, which is why European wind turbine installations are well ahead of the rest of the developed world. More recently, governmental support for wind energy in the USA, China and India has sparked explosive growth in demand for wind turbines in these areas.
SKIS – A PLATFORM FOR ART

Gurit has broadly launched a revolutionary digital printing technology at ISPO 2007 in Munich. The PURE™ process prints striking, high-resolution images onto ski and snowboard top sheets.

The traditional printing technologies in use today can only achieve image resolutions as low as ~60dpi in sublimation or of ~50dpi in silk-screen printing. This is clearly a limiting factor when it comes to more complex prints. For many producers, printing continues to be a time-consuming, if not a bottle-neck, production step. Gurit has introduced a new technology that provides solutions to both problems.

CREATIVITY PUTS ART ON SKIS

At ISPO 2007 in Munich, Gurit has broadly launched PURE™, a new printing technique that reproduces images onto ski and snowboard top sheets with amazing clarity. PURE™'s range of Thermoplastic Polyurethane (TPU) products enables designs to be duplicated at a stunning resolution of 600dpi. This is comparable to high-end resolutions in book printing.

Customers showed great interest in the new process. «We expect to see quite a change in the art-work for skis, now that the ski manufacturers have the technical ability to print designs in top quality,» says Erwin Käser of Gurit. «Imagination and creativity are now the limits for the art-work reproduced on skis and snowboards».

STREAMLINING THE MANUFACTURING PROCESS

With PURE™, ski and snowboard manufacturers can now combine the sourcing of their top-sheet materials with the printing in one operation and stream-line their manufacturing set-up. Manufacturers simply transfer the image data of the ski designs – or rather ski art as the resolution now permits – to Gurit and receive the printed top sheets ready for final production. The innovative Gurit printing process runs at high speed from roll to roll.

The first series of skis manufactured using the revolutionary PURE™ printing technology were also launched at ISPO 2007. Gurit has worked closely with industry experts Völkl to fine-tune the technology.

The walls at Gurit’s exhibition stand at ISPO provided a good example of what kind of artwork we soon may expect to find on skis and snowboards.
HITTING THE MARK WITH GURIT MATERIALS

At the 2006 IFAA archery world championships held in Sopron, Hungary, top results – including a new world record – were scored with two Olympic Recurve Bows, both of which were made with various Gurit carbon composite materials.

One of the bows, a custom-made Olympic recurve, scored the highest number of points in 3D target shooting, speeding up to 232 ft/sec at a tension of only 42 lbs. In this discipline, participants shoot at 28 targets placed outdoors at unknown distances between 10 and 50 metres. They are allowed to shoot between one and three arrows per target over a period of four days. Another bow, a full carbon hunting recurve, shot arrows at impressive speeds of up to 242 ft/sec at a tension of 52 lbs.

The fastest arrow in the world was shot by Swiss archer Urs Züllig, who can claim to possess the fastest recurve bow produced to date. Both bows were designed and built by top-rank Swiss archer and craftsman Willi Heuberger using pultruded carbon fibre composites produced at Gurit (Zullwil) in Switzerland. As one of the world’s most celebrated bow builders, Heuberger is constantly exploring new manufacturing techniques. «The further we get away from traditional methods, the more exciting our bows become,» he explains.

Apart from 500-year-old olive wood, Heuberger is turning increasingly to composites and has been using Gurit materials for some time now. «Only carbon spring elements can generate the power and energy required for the extreme performance features found in today’s bows.» Material safety and consistency are of the utmost importance for Heuberger. «The pultruded profiles made by Gurit are in a class of their own,» he adds.

According to Gerd Rauenbusch, Head of Pultrusion at Gurit (Zullwil), it is the extremely high, homogenous and absolutely parallel carbon fibre content of the profiles that make Gurit’s material so special. «I would even go so far as to say there are no alternatives of the same calibre as our materials on the market.» The extremely high density of the carbon and the special resin used allow the material to cope with tremendous mechanical loads while maintaining a degree of elasticity. This gives the customer new ways to work the material. Heuberger hones the pultruded profiles to shape to achieve optimum distribution of tension over the entire bow. This generates the perfect momentum required to accelerate the arrows. Gurit provided Heuberger with lots of hands-on ideas as to how best to bond and work composite materials. Over the years, Heuberger has refined his technique over and over again.

Willi Heuberger produziert mit Gurit-Materialien top Pfeilbögen, mit denen immer wieder neue Rekorde aufgestellt werden.
Willi Heuberger produit des archets de sport de haute gamme en utilisant des matériaux de Gurit.

In his workshop in Unterggen/St. Gallen, Heuberger produces small series of standard sporting and hunting bows. He made himself a name as a specialist in manufacturing custom-made bows. «I cannot describe the feeling when I see world-class athletes scoring top results, or even breaking world records, with my bows. It makes all my efforts worthwhile», says Heuberger. And he should know what he is talking about: he became senior-class world champion again in 2005.
Production boat designs are becoming ever more detailed and complex. Producing accurate, stable and high surface quality patterns and moulds is one of the core tasks for production boat builders. With T-Paste 70 Gurit has introduced a new material solution that is assisting production boat builders in achieving this goal. T-Paste 70 can lead to a substantial time reduction from the original CAD boat design to perfect CNC-finished moulds.

«The use of T-Paste 70 at Nautor saved significant time and costs in the pattern manufacture.»
Kjell Vestö - Technical Director, Nautor’s Swan

Typically the paste is applied to High Density Expanded polystyrene that has been rough CNC machined to 15mm negative offset from the final surface of the pattern or mould. The low-density paste does not even drip or sag when applied on a vertical surfaces up to a thickness of 40mm. T-Paste 70 is mixed on the spot using a mixing machine and is then applied to the polystyrene either by hand or using the CNC machine. After a 1-day cure at ambient, the product can easily be carved by gantry or robotic CNC machines. The result is a very smooth and durable mould surface that can feature a lot of very precise details.

The use of T-Paste 70 at Nautor saved significant time and costs in the pattern manufacture.»
Kjell Vestö - Technical Director, Nautor’s Swan

T-Paste 70 is an interesting material solution for production boat builders. This low-density product is applied to low cost foams. Once cured, T-Paste 70 can easily be carved by highly accurate CNC machines to give the mould a smooth, very detailed and long-lasting surface.

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COST EFFECTIVE CARBON FIBRE CAR BODY PARTS

«ALBOS» was the name of a project funded by Aston Martin Ltd in association with the UK Department of Trade and Industry and the Department for Transportation looking at ways to produce Affordable Lightweight Body Structures. Gurit (UK) were among several major industrial partners that were invited to cooperate in this project. Gurit successfully demonstrated how to build car body parts that feature a Class A surface that can be painted just like any steel or aluminium car body part.

A COMBINATION OF PRODUCT AND TECHNOLOGY

Dr. Ken Kendall, head of new technologies for Aston Martin is quoted in an article published in High-Performance Composite in November 2006: «Participation in ALBOS provided Aston Martin with the platform to investigate new concepts for carbon fibre body panels on its sports and racing cars, and produced Gurit with the platform to prove its new materials and process technology.» To meet ALBOS’s cost goals, the right tooling was as much a necessity for success as were the right materials. Martin Starkey of Gurit (UK) explains: «The tools we use had to be durable, dimensionally stable, thermally conductive and cost-effective. This led us to using an electroformed nickel tool, not unlike the ones typically used for aerospace applications to process prepregs in an autoclave.» The big challenge for Gurit was to bring the cycle time down to 90 minutes per moulded part to meet the established target set by Aston Martin. Gurit’s answer to this is a cost- and time-effective direct-heat process, using a pressurized water system to rapidly heat and cool the thin nickel tool.

COUNTING MINUTES

During the test phase, Gurit managed to produce finished parts within the required 90 minutes: After preparing the mould, the kitted forms were arranged within the first 22 minutes. Then the vacuum bag was carefully applied during then next 20 minutes, then the vacuum was pulled and the pre-kitted material was infused with resin. Now the mould was ready to be heated up. Using a pressurized water heating and cooling system, the part was cured and cooled down during the next 38 minutes. Adding 10 minutes to prepare the mould for the next cycle makes the 90-minute-cycle complete.


READY FOR PRODUCTION

Gurit is convinced that the production of carbon SPRINT car body parts as demonstrated in the ALBOS project will be a production technology of choice for smaller series of cars. Currently, Gurit is building up a special production unit for the manufacture of finished car body parts at Gurit (UK) in Newport.
KNOCKOUT CHAMPIONSHIP NEWPORT

More than 500 people attended the annual summer barbeque at Gurit (Newport) in late September. The family day was kicked off with a very competitive “It’s a Knockout” championship game.

Participating in the competition was as much fun as watching the teams struggle through the assault courses filled with soap and water. Senior Management proved to be good sports when they came in second behind the team ‘Superkalafragalistic-expialadocious,’ which comprised colleagues from Quality Management, Engineering and Operations. Families enjoyed the many attractions for kids as well as the great food and drinks that were served throughout the day. After sunset, the crowd gathered at the Gurit Casino and Bar or danced away at the Disco featuring funky 70s music.

ONLY A LONG, LONG WALK

At 6am on a sunny Saturday morning in July, Theo Botha, Sophie Eales and Tom Beezer set off briskly from Petersfield into the English countryside on what was to be the hottest day of the year. The four were heading 100 km (62.5 mile) cross-country towards Brighton along the South Downs in aid of the Ghurkha charitable foundation. “Walking was pretty easy and the views were fantastic for the first twelve hours or so”, Theo recalls.

“The last ten hours were increasingly uncomfortable, as my lower body became a general area of pain and fatigue. 22½ hours walking isn’t tiring in itself, it’s the discomfort that stopped a third of starters from finishing. The torturous endlessness of it was crystallised as we ran down the final straight of Brighton racecourse at 4:30am to finish.” The team’s goal was to finish the course and raise a thousand pounds. The team would like to thank Gurit for the contribution to the £1500 raised on the way to a finishing position in the top 15%.
YOUNG SWIMMER RECEIVES GURIT (UK) AWARD FOR EXCELLENCE

The Gurit (UK) Award for Excellence scheme has been running for over 5 years, supporting those in the Isle of Wight community who are striving to achieve excellence in their chosen field. The latest winner selected is 14 year-old swimmer, Mikael Popov. In 2006 he was champion in the 100m and 200m breaststroke at both County and South East Region level and is currently ranked no.2 in the UK.

This year Mikael will be one of the youngest swimmers competing at the World Youth Island Games in Corsica and is aiming for a medal position, and Gold by his final year of the competition in 2008. He will be using his award to attend a warm weather training camp, helping him towards his ultimate goal of representing Great Britain. Mikael’s achievements are not only a credit to himself but also to his swimming coach: Gurit (UK) Training & Development co-ordinator, Trevor Collins. In his 8 years with the company, Trevor has had much success with the Training and Development area securing many Island, regional and national awards in his area for Gurit.

As a swimming coach, Trevor has spent over 25 years with the West Wight Swimming Club running 7 training sessions per week. His most famous protégé is Darren Mew, who he nurtured to European medallist standard, and is now the 3rd fastest breaststroke swimmer in history and a favourite for a medal in Beijing 2008.

Darren Mew and his coach Trevor Collins.

GURIT ANNUAL MANAGEMENT MEETING

Gurit Management gathered in late January on top of Mount Rigi, the Queen of Mountains, in Switzerland. During this three day meeting, many group meetings were scheduled to discuss a wide range of strategic issues, review the business of the past year and – most importantly – define the targets for the months ahead.
GURIT AGENDA 2007

2007 looks to be an exciting year with Gurit set to showcase its wide range of material solutions and technologies and launch a number of new innovative products at a series of trade shows all over the world. Following that, Gurit’s full range of capabilities and innovations will be featured at JEC Composites in Paris in April and later during the year at the China Composites Expo in Beijing.

If you are interested in Marine applications, SP, the Marine technology brand of Gurit, will be exhibiting at the Monaco Yacht Show in Monaco, IBEX in Miami and METS in Amsterdam, whilst material solutions for transportation applications are the main interest at Aircrafts Interiors Expo in Hamburg and the SPE Automotive Conference in Troy.

The Gurit team look forward to meeting you and introducing the latest in advanced composites at the following shows:

» JEC Composites 3-5th April, Paris
» Aircraft Interiors Expo 17-19th April, Hamburg
» SPE Automotive Conference 11-13th September, Troy
» China Composites Expo 12-14th September, Beijing
» Monaco Yacht Show 19-22nd September, Monaco
» IBEX 10-12th October, Miami
» METS 13-15th November, Amsterdam