

PVC TODAY

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MAKING POSSIBILITIES TOGETHER · SPRING 2010

White as Snow:
Igloos in Switzerland

Resilient as Never Before:
Roof Membrane in South Africa

Elegant as Always:
Handbags in Belgium

SO SOFT – SO FLEXIBLE
MEETING THE NEEDS OF MODERN LIFE

Flexible Quality

Whether it involves sterilised blood bags for medical emergencies or easy-to-clean flooring and perfectly-designed roofing membranes, plasticisers enable flexible PVC products with exactly the desired material properties. Innovative chemical additives allow for ideal end products and widen the possibilities of use for PVC. This is how new recipes for products with extraordinary qualities are created.

The year 1913 is considered the birth of PVC when Fritz Klatte received a patent for the “polymerisation of vinyl chloride”. But its real breakthrough as one of the most widely-produced plastic materials in the world came after 1945. Today, almost 100 years after Klatte, flexible products make up approximately one third of all PVC applications. In addition to established products from the building sector

with special material properties. These include flexibility, impact and tensile strength, sealing quality, stability of shape, or resistance to acids and alkalis. Accounting for 67 percent of the market, the most widely-used plasticisers in Europe today are DINP and DIDP as well as DPHP, three newer generation plasticisers that have been rigorously tested for consumer safety. In recent years, these plasticisers have largely replaced



This practical travel companion can certainly be shown around town. The bag made of PVC-coated lorry tarpaulins also offers great deal of storage space.



Extensively tested plasticisers enable the production of elastic PVC products such as easy-to-clean flooring in attractive designs.

such as cable, film, flooring and roofing membranes, you can also find products in the fields of medicine, design and recreation. The reason for the wide range of PVC products is due to the different formulas used. Like creating recipes in cooking and baking, completely different “culinary delights” are possible by using a few basic ingredients plus subtle combinations of additional additives.

A Multi-functional Material

Whether it involves soft seat cushions for artificial-leather upholstery, life-saving tube systems for enteral feeding, or durable flooring, it would be difficult to imagine living without the comfort and convenience of such products today. Plasticisers provide the PVC in all of these applications

DEHP that was formerly the most widely-used plasticiser on the market, improving the quality of products further. Other substances that are also used as plasticisers to achieve specific material properties are adipates, citrates, polymer plasticisers and phosphates. The Swedish company Bolon recently announced that beginning in 2010 it will use plasticisers based on renewable raw materials to manufacture its woven vinyl flooring. Further innovation is expected in all of these areas in the coming years.

Cables and power lines are the lifelines of modern life. The majority of flexible PVC is processed in such products.



Well-Researched

PVC has probably undergone more testing in terms of its effect on people and the environment than any other product on the market over the past 50 years. And this also applies to plasticisers that are used to give it soft and flexible properties. Because of their application in PVC products which come into contact with food and the human body it is not surprising that plasticisers are some of the most tested chemical substances. Comprehensive examinations of the most important plasticisers have shown that they are safe for people and the environment. The highest safety and quality requirements are required for any products being introduced on the market.

Companies are continuously working on the development of new and better products: first, to improve consumer safety in accordance with the latest scientific findings and second, to improve the processing of the material and the desired product properties. Recent examples have been the introduction of the plasticisers Hexamoll® DINCH and Palatino® 10-P from BASF. The latter is ideally suited for applications in automotive and outdoor use. It more than meets the critical fogging requirements of the automobile industry and has outstanding weathering properties for outdoor use such as in cables, films, and coatings. Hexamoll® DINCH was specifically developed

INNOVATION 2010

The European vinyl manufacturer SolVin has invited entries for the 4th edition of their 'Award for PVC Innovation' competition. And for good reason: the response to the award has previously been extremely enthusiastic. In 2007, for example, the award attracted some 104 participants. The application deadline for the 2010 competition is 30 April.



Photo: BASF SE

"We recognised the market trend early on with Hexamoll® DINCH. In the meantime our plasticiser for sensitive applications has received several recommendations and approvals from international institutions and authorities. Our customers' demand confirms the need for Hexamoll® DINCH. And this is how our innovation chain has come full circle from the original conception to extensive performance testing to the successful market introduction of the product."

Dr. Detlef Kratz, Group Vice President Industrial Petrochemicals Europe, BASF SE

for sensitive applications with close human contact. Product examples can be found in the toys, medical, and food area. This new, exhaustively tested, plasticiser is characterised by its low migration rate and consequently received widespread endorsement from international institutions and authorities thanks to its unique product attributes. Its above-average results compared to other plasticisers in an independent eco-efficiency analysis by TÜV Rheinland indicates that it offers the lowest impact on the environment across the entire life-cycle of a product.

Increased Demand

The development of new plasticisers, which take into account increasing technical and environmental requirements for flexible PVC applications, has been rewarded with success in the market for their producers. For example Evonik Industries has made a multi-million investment in a new plant in Marl in Germany to manufacture the plasticiser alcohol 2-propyl heptanol. This facility produces PVC plasticisers which are characterised by especially low-temperature properties and low volatility for use in cable insulation, tarpaulin material, flooring, and various automotive components. Proof that innovation generates growth is offered by the fact that the new facility has been working at full capacity from its start up. Evonik is also investing in the manufacture of the plasticiser Vestinol® 9 (DINP) based on the alcohol isononanol, a plasticiser which according to the strict EU risk assessment poses no risk to human health or the environment. Thus the company is able to provide plasticisers for a wide range of applications in paste-PVC processing as well as in thermo-

plastic processing and is constantly opening up new markets with innovative products.

Good Evaluations for Flexible PVC

Products made from flexible PVC have been extensively researched and have fared well in numerous tests and life-cycle assessments. An example of this is PVC flooring which is one of the most frequently-used applications of flexible PVC alongside cable and film. An environmental profile issued by the British institute Building Research Establishment (BRE) has recently awarded a German flooring manufacturer an 'A' supplier classification (on a scale from A to E in terms of the 60-year life span of the products). BRE examined the use of raw materials, energy consumption, means of transport, and amount of waste, among other things. The expert group eco-devis at the Swiss ecobau Association in Bern also came to a positive conclusion. Special PVC flooring from energy-optimised production was classified as 'ecologically fairly interesting' receiving a better assessment than alternative flexible flooring products.

Re-evaluating PVC Products

The example of PVC flooring shows that a comprehensive approach is extremely important in assessing products in terms of their ecological as well as their economic and social impact. New products not only have to be affordable and desirable: they must also meet high standards in terms of quality and safety. Manufacturers and converters in the PVC industry have made substantial progress over recent years by developing all aspects of their products. And this has resulted in a re-evaluation of PVC in various target groups.

www.weichmacher.basf.com,
www.oxeno.de



Photo: Hartmut Bühler

"Due to an increase in technical and environmental requirements for flexible PVC applications, high-molecular-weight plasticisers such as DINP are in particularly high demand and show above-average growth. They are some of the most widely-researched chemical substances and have been designated as risk-free in examinations performed by the European Union."

Dr. Norbert Scholz, Head of Product Stewardship, Evonik Industries



Successful innovation: Isogenotec® insulation film immediately returns to its original shape under heavy mechanical stress.

The competition is targeted at the plastic-processing industry, manufacturers of additives and machines producing plastic materials, end customers, purchasers, as well as the media, designers and students. The organisers are looking for innovative, versatile, cost-effective and safe products which contribute to the well-being of society. Improved mechanical, chemical, and aesthetic properties are considered as being just as innovative as simple processing or improved product quality. The entries submitted are required to be either in the developmental phase or have already arrived on the market by 1 January 2008.

With a prize fund of 100,000 euros the rewards in the competition are attractive. The prize money is distributed among three main prizes and two special prizes in the categories of recycling and design. After the submission deadline, an independent jury will determine the winners. The official award ceremony will take place on 28 October 2010 at the Plastics Fair K 2010 in Düsseldorf. Potential entrants for the SolVin Award for PVC Innovation can find further information at www.solvinaward.com.

Success on the Market

Whether it involves biaxially-oriented PVC pipes from Wavin or window designs with bonded glass from Inoutic, many of the competition entries from previous years have in the meantime established themselves on the market. One example is the high-tech insulating film Isogenotec® by Klöckner Pentaplast, which was nominated for the SolVin Award in 2007. This insulating covering made of hard PVC film combines the flexibility of a plastic covering with the appearance of sheet-metal. In contrast to sheet-metal, Isogenotec® does not permanently deform under heavy mechanical stress, but rather returns immediately to its original shape. It is impressive not only in terms of its appearance, but also because of its internal properties. The material is highly UV-resistant and therefore opens up a large spectrum of applications in the field of insulating coverings.

www.solvinaward.com, www.kpfilms.com

EDITORIAL

DETAILED PROGRESS

Companies manage to surpass themselves again and again when competing for innovation. And we are not only talking about a few outstanding developments here. We mean progress throughout the complete value chain of products. This is impressively evident from the Award for PVC Innovation from the European vinyl manufacturer SolVin, in which companies in the PVC field are invited to participate. The most recent competition in 2007 resulted in such an enthusiastic response from its 104 participants that the organisers are hoping for similar success for this year's fourth award. The entries submitted represent a range of different companies and embody the overall life-cycle of PVC products from raw material production to the recovery of used products.

New developments for flexible PVC products are only one example of the innovative potential of modern plastic materials. In our cover story, we shed light on the role of plasticisers in this process. These chemical substances provide products with very special properties that can vary greatly according to their application. This is also the case with the new Cape Town Stadium in South Africa, which was built especially for this year's World Cup. The extremely tension-proof PVC-coated membrane forms part of the unique roof construction. In the process, it must be so flexible and tear-resistant that, together with its glass roof, it is able to withstand the notorious "Southeaster" wind. In the Swiss Alps, huge inflatable PVC balloons are covered in snow so that igloo villages can be created with hollow interiors. The air-filled shells must retain their shape under the weight of the snow and remain extremely stable. In contrast, the story of handmade bags by the Belgian company Delvaux shows the tremendous potential of this flexible plastic material. The special edition of the "Brillant" handbag classic, made of dark and transparent vinyl, keeps women enthralled. Modern PVC products enrich our daily lives and provide a number of improvements in architecture as well as in design, art, and medicine. You will certainly be able to think of examples from your own lives. Therefore, we have a request. We encourage you the readers to share your experiences and write to us when you notice innovative PVC products. We look forward to your suggestions and showcasing them in upcoming issues.

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Pipes for Waste Water Project in Africa

ECVM (the European Council of Vinyl Manufacturers), in partnership with Dutch NGO Agua4All, has donated PVC pipes and technical expertise for a new waste water system on Pemba Island in Zanzibar. The project, which uses international aid to enable local communities to help themselves, is designed to improve the quality of life for local residents, minimise the environmental impact of waste water on the marine ecology and sustain the local economy.



Teeing Off on Deck

A unique hotel ship has lowered anchor near Prague: the golfYacht Prague. Besides first-class food, comfort and well-being, the floating hotel on the Vltava River also offers indoor golf courses and the possibility to tee off right from on-deck.



Heavenly: The golfYacht Prague on the Vltava River offers exquisite hotel comfort and enjoyment for golfers.

The luxury ship is popular especially because of its regal interior.

The vinyl design tiles in a natural-looking wood finish are an important asset to the cabins, shop, and spas.

The creator of the 80-metre-long golf and hotel yacht is Jan Vlcek, a ship-lover and passionate golfer. The plan to use the former club ship of the Czechoslovakian Inland Waterway Transport was developed by designer Miro Pistek from Bayreuth. In the process, he created an imaginative and fashionable atmosphere on an available surface of 2,400 m².

Where a Golfer's Heart Beats Faster

Expectant guests find 34 hotel rooms, an exclusive restaurant, a sun deck, and a spa area with





management issues, leading to the reduction in risks associated with waterborne diseases. It will also improve the local municipality's environmental management processes.

A Partnership Approach

ECVM was one of a number of international and local Pemba Island organisations that helped to make the 185,000 euro project a reality. "Our ECVM-Aqua4All partnership

focused on developing new services in favor of the local populations by taking on additional risks and filling in gaps in the financial market. Our input helped to overcome the limits the local organizations initially faced to ensure that this project happened", said Jean-Pierre De Grève, Communication & Advocacy Director, PlasticsEurope. He also added that the project demonstrated that PVC is a sustainable product, ideally suited to use in developing countries, as it will remain in place for more than 50 years.

The new sewage system was built to serve Msingini, Mtoni and Kichungwani.

www.pvc.org

Pemba Island, part of the Zanzibar Islands, is situated in the western Indian Ocean. A combination of the natural terrain, lack of awareness around pollution and financial restraints, has resulted in raw sewage being discharged into the marine environment resulting in a significant decline in fish catches over recent years.

A New System

To tackle these problems, a brand new sewage system with a sub-surface flow constructed wetland, was built to serve Msingini, Mtoni and Kichungwani. ECVM donated 80,000 euros worth of PVC piping totalling a length of 12.1 km, as well as 590 inspection chambers plus the expert assistance for local implementation.

The Value of PVC

PVC pipes are ideal for this type of project and underline specific advantages for the material offering a unique combination of toughness, light-weight, stiffness; coupled with excellent corrosion resistance and the ability to make reliable pipe joints easily. The service performance of PVC sewage pipes is also outstanding with low failure rates and minimal deterioration.

Important Benefits

The new waste water system promises to reduce marine pollution, empower the local community to take responsibility for their waste management and increase public education and awareness on waste water



Residents on Pemba Island in Zanzibar are happy about the brand new sewage system which ECVM donated in partnership with Dutch NGO Aqua4All.

Pipe installation on Pemba Island: This engaged project uses international aid to enable local communities to help themselves.

Photos: ECVM



Natural-looking PVC flooring in wood finish creates a luxurious atmosphere and is also easy-to-clean, robust, and durable.

sauna or massage rooms spread out on four decks, along with other facilities. Golf fans get their money's worth especially. On the sun deck, one finds the yacht's own putting green and a unique tee where one can hit the ball to a specially-designed green on the shore. There are also three simulated indoor golf courses and a golf bar. Right next to golfYacht Prague there is a driving range with 60 tees. And downtown Prague is only ten minutes away.

An Inviting Interior Design

All the cabins are exquisitely furnished. Mirrors and partitions made of glass within the rooms provide a spacious atmosphere, and bright colours offer timeless elegance. PVC floors in wood design enhance this effect, which is why Scala design tiles by Armstrong with a genuinely natural look were used here. Due to their high print quality, these tiles offer a wide spectrum of amazingly realistic wood designs with various types of wood, grains,

and shades of colour. That is the reason Pistek also decided on design tiles for other areas and chose a total of six different finishes. The hallways are covered with rustic, dark, and heavily grained flooring where the large-size floorboards provide an ideal spatial effect and an authentic look. In contrast, the lighter and finer mahogany finish gives the restaurant its distinctive character.



The spa invites you to relax. Light colours create a contrast to the dark wood and stone finish.

With the factory-made protective coating 'PUR Eco system', vinyl flooring by Armstrong can be cleaned quickly and easily so that it is very economical. The high resilience to dirt, scuffing, and scratches also increases the life of the flooring which is an advantage for a hotel ship with heavy traffic.

www.armstrong.eu, www.miro-pistek.com, www.golfyacht.com

Rustic, heavily grained Scala design tiles made of vinyl provide an ideal spatial effect and give an authentic look.

Large portholes, wooden furniture, and flooring in wood finish give the restaurant its unmistakable maritime flair.

Photos: Armstrong/Werner Huthmacher



Weekends and sunshine: Boating in folding kayaks has been a popular sport for over a hundred years now.

thereby transported more easily. Master-tailor Johann Klepper sensed that this was a profitable business idea. In 1907, he purchased the licence from Heurich for the sole production of the folding kayak made of ash wood and canvas. True to their earlier advertising slogan, "Travel joyfully into the wide world with Klepper boats and tents", the company from

Rosenheim then started to build folding kayaks for world travellers. They also constructed a special model with which Captain Franz Romer accomplished the unthinkable in 1928: crossing the Atlantic from the Canary Islands to St. Thomas in the Caribbean.

Boat in a Bag

When days become longer and warmer after the cold winter months, it is time to think about summer activities. These may include a short boat ride on a nearby river or a longer journey to exotic regions. Folding kayaks with PVC-coated hulls are easily transportable travel companions to go for a ride or to take on an adventure tour. These kayaks have gone through a great deal and have turned longing for adventure and wilderness into a reality.

Alfred Heurich from Metz in Lothringen is considered the inventor of the folding kayak, which has become the most widely-built small boat today. In 1905, he produced a 4.5-metre long and 0.5-metre wide racing boat in only three weeks, spending only 30 German marks on the materials. It could be dismantled and stored in individual pieces of luggage and



Photos: Klepper, Faltbodywerft

Luxury in Snow

Every year Adrian Günter builds igloo villages in snow-covered mountain landscapes for winter sport vacationers. But by spring these hotel complexes melt away in the truest sense of the word. No matter whether it involves furniture, sculptures or protective walls, the white igloo villages are made up almost entirely of snow. The structures are temporary and have to be rebuilt each year.



Snow artists create the interior design of the igloos from snow and ice.



Snow blowers cover the inflated PVC balloons with snow.

Romantic weekend in the igloo: Cosy sleeping bags and lambskin provide for a warm, snug night.

From the end of December into April, nature lovers and winter sport enthusiasts can spend their holidays in one of seven igloo villages: in Davos-Klosters, Engelberg-Titlis, Gstaad, St. Moritz and Zermatt in Switzerland, on the Zugspitze in Germany, and in Grandvalira in Andorra. Besides comfortable lodgings and an extensive recreational program, all locations offer ideal conditions for the successful events. Each igloo village consists of a restaurant, an igloo bar and a kitchen, as well as hotel rooms which are arranged around the restaurant in a circle. Furthermore, a spa with a sauna or Jacuzzi offers unforgettable winter enjoyment in a harmonious icy landscape and guaran-

tees an unparalleled view of the snow-covered mountain panorama.

Brilliant Concept

The inventor of the igloo village is Adrian Günter. The enthusiastic snowboarder wanted to arrive on the mountain very early in the morning and glide over untouched snow. In the winter season 1995/1996, he built his first igloo directly in the mountain landscape and went right to the slope after a comfortable night in his sleeping bag. He quickly found a fan base for his original lodging idea. In the following winter, this aspiring hotel manager opened the first igloo village in Scuol for 15 guests.

tes an unparalleled view of the snow-covered mountain panorama.



Photos: @www.iglu-dorf.com



World innovation: The first solar hybrid folding boat by Klepper moves with only the power of the sun thanks to extremely light solar cells.

and anodised aluminium, and boat covers made of waterproof cotton. One should not forget the flexible hull which consists of a PVC-coated polyester fabric and a surface seal of acrylic paint for many of the models. The high-quality, very robust, and well-insulating fabric guarantees high flexibility even in temperatures ranging from 25 degrees below zero to 65 degrees Celsius.

With the Sun over the River

The starter model Smartline with a PVC-coated hull is new on the market. This tip-resistant kayak is suitable for trips on calm waters and can also be used as a sailboat. As a global innovation at this year's "Boat Fair" in Düsseldorf, the Klepper shipyard from Rosenheim presented the solar-powered hybrid folding kayak. The kayak is equipped with extremely light solar cells and moves almost inaudibly over the water completely without human power thanks to solar energy. The solar modules can be manually directed towards the sun with one hand in order to obtain an optimum amount of energy. This is the ideal form of transportation for boaters who love to watch the world go by. The energy stored in the batteries can also be used outside of the boat, e.g. for mobile phones, GPS devices, tents, and mobile homes.

www.klepper.de

Ready for Departure in 15 Minutes

The ingenious technology of the Klepper folding kayak, which has improved over the years, is well known. The kayaks, which are still hand-made today, can be assembled in about 15 minutes and afterwards stored in one to three packing bags. At the same time, the boat in a bag is extremely durable with an average lifespan of 20 years, which can easily be extended to 35 years with the proper care. This is due to the special durability and quality of the materials. This includes the collapsible wooden frame made of air-dried mountain ash and Baltic birch, patented slip and snap fittings made of specially hardened



Inflated balloons made of elastic PVC tarpaulins give shape to the igloo villages.



Igloo villages are hotel complexes made of snow in the midst of magnificent mountain landscapes.

Balloons provide the Shape

In the following years, Günter consistently developed his business idea. Since classic igloo construction proved to be too slow and time-consuming for building so many villages, he developed an igloo construction which in the meantime has been patented. In the process, huge balloons made of flexible

PVC tarpaulins are inflated and then covered with snow by a snow blower. This results in a coating of snow that is several metres thick and freezes in the cold. The balloons are so stable that they withstand pressure from the enormous weight of the snow without losing their shape. The result is a dome-shaped structure with a hollow inner area. After the air is released from the balloons, work is started on the interior design of the snow hotels with furniture, a bar, and sculptures. Equipped with picks, shovels and power saws, the snow artists create a suitable ambience for a special, romantic holiday experience close to nature.

www.iglu-dorf.com

CLASSIC MEETS MODERN

The Belgian company Delvaux has been producing luxuriously handcrafted leatherwear with stylish

elegance since 1829. The traditional handbag manufacturer celebrated its 180th anniversary in a

multifaceted way with both an exhibition and a special limited

edition of the classic "Brillant" handbag made of dark vinyl.



For its 180th anniversary, Delvaux came out with the limited edition handbag "Brillant Troublant" made of dark vinyl.

Photo: Delvaux



For the 50th anniversary of the legendary handbag "Brillant", a version was made of transparent vinyl.

Since January 2010, the high-quality vinyl "Brillant Troublant" handbag has been available for purchase in all Delvaux shops and at the e-Shop at an attractive price of 340 euros, a bargain for anyone who normally cannot afford the handcrafted leather handbags by this Belgian manufacturer. And this is a classic that can definitely be shown around town. The "Brillant" model developed by Paule Goethals for Expo 1958 in Brussels has become a collector's item over the decades for fashion-conscious women. It is no wonder since the luxurious handbag has reinvented itself over and over again. No matter whether it involves flawless calf, ostrich or crocodile leather, the iconic model of the Delvaux collection has been produced in a wide range of styles, formats, and colours.

Timeless Beauty

The exhibition "Delvaux: 180 years of Belgian Luxury" through mid-February in the Fashion Museum in Antwerp was dedicated to Delvaux's 180th anniversary. The classic "Brillant" handbag also played a prominent role here. The transparent-vinyl model produced for the handbag's 50th anniversary became the leitmotif of the Delvaux show. Like the current dark PVC version, this handbag combines the past, present, and future of Delvaux in an exemplary manner. In both cases, the contemporary and seemingly futuristic PVC material is presented in a timeless classic design, without sacrificing its practicality. Finally, the bag offers enough room for storing articles which women like to take along with them.

www.delvaux.com, www.momu.be

Photos: MoMu, Antwerpen, Michael James O'Brien



The Fashion Museum in Antwerp dedicated an exhibition to the 180th anniversary of Delvaux. The classic "Brillant" handbag was constantly the focus of the exhibition.

The Cape Town Stadium – constructed by gmp (von Gerkan, Marg und Partner) for the World Cup 2010 – replaced the former Green Point Stadium. Today, it is affectionately called “The Diva of Cape Town”. It is one of ten World Cup stadiums in nine cities and seats 68,000 spectators: the multi-functional stadium with its undulating forms is respectfully integrated into the landscape between Table Mountain and the Atlantic.

“Two important criteria have had an effect on the design of the structure: first, the city’s restriction on the height of the stadium; secondly, the dominating influence of the horizontal silhouette of Table Mountain”, states Knut Göppert, Managing Director of **schlaich bergemann und partner**. This company in Stuttgart is responsible for the structural engineering of the roof and façade of Cape



The Diva of Cape Town



Silver glass mesh fabric wraps the linear-structured façade of the new stadium in Cape Town. The curved roof is harmoniously integrated into the landscape.

Town Stadium. The office has already worked on 25 stadium projects, including those for the World Cup in South Korea, Germany, and South Africa.

Stressing Changing Colours

The outer shell of the impressive sports facility in Cape Town is surrounded by a steel struc-



Knut Göppert is the Managing Director of **schlaich bergemann und partner, structural consulting engineers**. Together with his staff, he has been responsible for 25 completed and nearly completed stadium projects, including those for the World Cup in South Korea, Germany, and South Africa. This also encompasses structural engineering work on the roof and façade of the Cape Town Stadium. In the meantime, he has received numerous awards such as the Detail Prize 2009. At the moment, Göppert is hard at work on the sporting facilities for the London 2012 Olympic Games, the 2012 European Football Championship in Poland/Ukraine, and the 2014 World Cup in Brazil.

No matter if in Hamburg, Stuttgart or Munich, football stadiums with breathtaking roof membranes have set standards far beyond German borders. This is also evident from the recently-completed Cape Town Stadium in South Africa. Many German companies have made their contribution to this architectural masterpiece, where eight matches will be held at this year’s World Cup in Football. The curved glass ceiling with a suspended roof construction made of PVC mesh membranes is unique.

View of the roof membranes of the Cape Town Stadium: The resistant PVC-coated mesh membranes provide protection against the weather and make a remarkable impression.

Stable Protection

The glass structure supports a light membrane roof made of 35,000 m² of PVC-coated fabric built by the American company Birdair. Spanned between the radial cables, the extremely high tensile mesh membranes not only filter the light, but also dampen sound and effectively display the roof. Moreover, the translucent material with its extreme tensile strength and flexibility provides effective protection against strong winds together with the glass roof since the notorious “southeaster” blows down with full strength from Table Mountain onto the 300-metre-long stadium at the beginning of summer. “Considering its location on the ocean and the extreme winds in Cape Town, wind loads were naturally the critical factor in designing the entire structure“, Göppert continues. This will be reassuring for football fans who will gather here in June and July, in all kinds of weather, to cheer on their teams from safe and comfortable seats.



Spectacular location: The new Cape Town Stadium in South Africa is situated at the foot of Table Mountain directly on the Atlantic.

ture with vertical and horizontal supporting elements. The linear façade is divided into 14 horizontal stripes wrapped in silver mesh glass fabric. The translucent surface of the material absorbs and reflects the changing lighting and thereby continuously achieves new colour accents. In the evenings, the façade emits a silver-golden hue. The company Hightex from Rimsting, which specialises in membrane structures, installed 27,000 m² of coated glass mesh fabric in Cape Town.

The Glass Pearl of the Atlantic

Special attention has been given to the appearance of the stadium roof. After all, it is clearly visible from the city vantage points as

well as from the more highly elevated areas in Green Point. Accordingly, the design of the roof is unique. “In order to create a contrast to Table Mountain, the eaves of the structure were consciously given a curved shape. This led to a roof construction which is comprised of a heavily undulating compression ring, a suspended cable net, and an elevated trussed structure on the top”, states Göppert. It is the first time that the roof of such a structure has been made completely of glass. Pfeifer Seil- und Hebetchnik covered the steel framework with 38,000 m² of specially-enamelled laminated safety glass from Germany and also built the cable construction for the roof.



Good things take time: The construction of the new stadium took from 2007 until 2010.

www.sbp.de, www.hightexworld.com, www.birdair.com, www.capetown.gov.za, www.pfeifer.de, www.gmp-architekten.de