

# ambitions

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## Sika at Work

### Cutting production time in half

The Ohashi Junction in Tokyo, Japan, connects a ring road with a metropolitan expressway. The four-level trumpet intersection eases the transfer from major commercial areas to other parts of the city. The project was completed in March 2010 and during the upcoming three years the plan is also to create a park on top of the junction – Japan's first 'sky park' and recreational space for the city's residents. The construction of the junction at such a spot in the middle of the metropolitan center demands specialists. The job site availability is restricted to a limited period and underground water exerts high pressure for basement waterproofing. In addition, surface toughness is required to bear the mechanical load applied during the installation of a shield tunnel. The high requirements could be achieved using "CV spray," Sika's two-component, ultra-fast curing polyurethane spray system. It is used for underground framework structures and achieves a highly reliable waterproof effect. The CV Spray is applied directly to



earth-retaining walls without making a substrate, and thus saving time. On the Ohashi Junction in Tokyo an area of 22,500 m<sup>2</sup> could be completed using the CV spray system, which in the end shortened the job-site period by half. Furthermore the coating system "Cerazex" was used for 6700 m<sup>2</sup> of the inner tunnel wall. The "CV spray" as well as the coating system "Cerazex" are both products of the

company Dyflex, in which Sika acquired a majority stake in June 2010. Dyflex is the market leader in liquid waterproofing in Japan, with well established brands and channels. Its business has been growing by double digits in recent years, despite the fact that the Japanese construction market has faced strong recession for the last decade.



### One step ahead

As of December 2010, a new substance specification 67/548/EWG will restrict the sale of products containing methylene diphenyl diisocyanate (MDI) in Europe, thereby enforcing principles that Sika has followed for more than three decades.

To ensure greater protection of man and the environment, the Directory of Community legislation constantly updates the rules on classification, packaging and labeling of substances while taking scientific and technical progress into account.

By the end of 2010 a new restriction will be launched concerning all polyurethane (PU) products containing more than 0.1% MDI. Sika, as leading global supplier of polyurethane (PU), exerts substantial effort in offering products with very low MDI content. The **Sikaflex®** and **SikaBond®** product range for the construction industry, sold via specialized trade and DIY channels, will not be affected by the new regulation as these products have contained less than 0.1% MDI for decades.

Sika has high ethical standards and ambitious environmental and safety goals, and therefore continuously invests in R&D to find ways to reduce emissions.

In autumn 2010, Sika will launch the new i-Cure technology, which will enable Sika's polyurethane products to meet the highest and increasingly stringent emission standards of current and upcoming regulations in many countries.

The term i-Cure stands for "intelligent curing" and is the chemical base for the new crosslinking technology for polyurethane sealants and adhesives.

The new products exhibit unsurpassed adhesion to porous and non-porous substrates and unlike many sealants and adhesives, **Sikaflex®** and **SikaBond®** i-Cure sealants and adhesives are solvent-free and completely odorless.



## Our Employees

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### Digging for gold – the sparkle of research



Dr. Wilfried Carl  
Principal Scientist, Corporate  
Research – Membranes  
Sika Technology AG

Dr. Wilfried Carl, Principal Scientist of Sika's Corporate Research – Membranes team, gives an insight into a current research project and describes the challenges and the motivation of his job.

"As a research department, we are constantly searching for new technologies that can bring added value to our Sika products, ranging from "leading edge" nanotechnology to stimuli-responsive materials and sustainable technologies.

An example for the latter is using ground tire rubber as filler in our materials.

Today's tire rubber is a true high-tech material that is designed to last. On the other hand, several million tires are also scrapped and burnt every year – a tremendous burden on the environment and a gigantic loss of precious resources.

The use of ground tire rubber, for example in athletic facility playing surfaces, has been known for several years. We are exploring new ways to use this resource for Sika products.

Although chemically quite similar, it takes considerable effort to make tire rubber cohere with our products, but we hope that we will find a way to open this path to a real sustainable solution.

Research is like digging for gold – you have to dig many holes and sometimes very deep, but once you see the sparkle of gold, this is a big reward. This, together with the truly unique Sika spirit, is what drives us."



## Interacting with tomorrow's leaders and thinkers

Sika seeks exchange with tomorrow's explorers to work on new ideas and suggestions for improvement. In Sika's Experience program, students and young professionals are offered internships as well as other valuable opportunities.

In line with the company's anniversary in 2010, Sika established the webspecial "Sika Experience" in which students could learn about the history of Sika and also about sustainable initiatives for a promising future. Furthermore the company offered trips on which students could win a journey to Sika projects, all related to sustainability, to get a real first hand impression about Sika's initiatives.

The Sika Experience was a real success, attracting more than 70,000 visitors to its website and hundred of applications for one of the project trips or even for a permanent job within Sika.

After this great response, Sika decided to expand the concept to offer students or young professionals opportunities within the company. In the year 2011, the Sika Experience page will be updated with new competitions and incentives.

**Sompol Suntharasantic, Thailand,**  
**Master in Electrical Control System Engineering, winner of the web-special "Sika Experience"**



"I accidentally saw Sika on a poster 'WIN A TRIP' at my departmental notice board. That was the first time that I noticed the company and learned what Sika is doing. The idea to get involved further with Sika came to mind when I visited Sika's website and read the three key questions about different ways how technology can contribute to sustainability, and the actions Sika is taking in this direction for example to reduce CO2 emissions by using lightweight material for cars. After the Sika Experience I was invited to make speeches about it, one to the customers of Sika Thailand and one to the employees. For me, this has been a great opportunity to meet people, I can work on my presentation skills and contribute my experience to Sika Thailand."

Beyond this, Sika broadly invites site visitors to also become active and trigger a Sika donation for sustainable projects by telling friends about the site, downloading a banner or motivating others to join the corresponding facebook fanpage.

During this year, a substantial donation amount was triggered by the site users, which Sika will increase to a total of USD 300,000.-, donating the money to two sustainable projects.

### **Sustainable Projects supported by Sika:**

The Water project in Indonesia

[www.watsanaction.org](http://www.watsanaction.org)

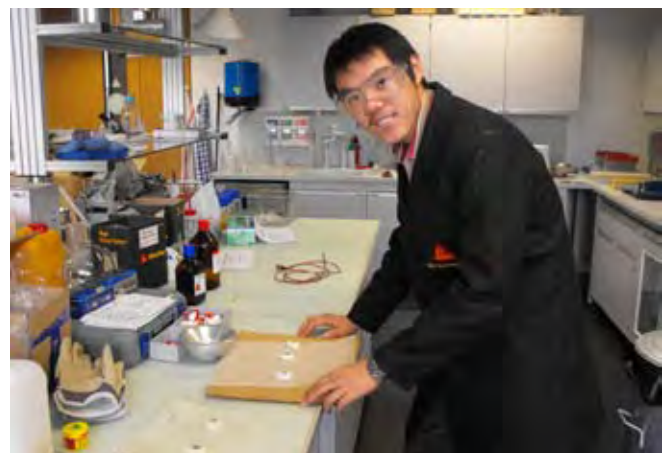
The YES-Initiative

<http://www.actis-education.ch/>

Sika Experience Page

<http://experience.sika.com>

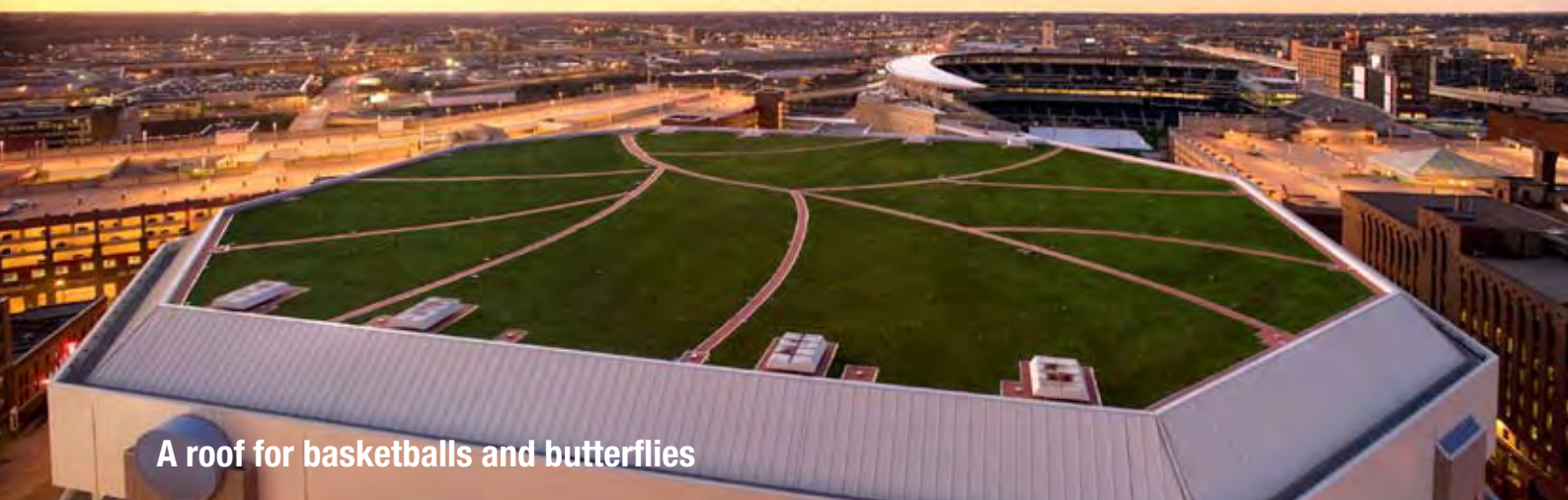
**Yaobo Ding, China,**  
**Master in Material Science and Engineering, winner of the web-special "Sika Experience"**



"I was doing mechanical tests on concrete mortars in the workshop of the construction materials laboratory at school, when suddenly a yellow plastic barrel with a cute logo 'Sika' surrounded by a red triangle caught my attention. I began to notice that these yellow bottles, boxes and barrels were everywhere in the laboratory! That was how I came to know about Sika.

Afterwards I was very lucky to be selected as one of the participants of 'Sika Experience – Automotive'. I was impressed by the innovative ideas and products that Sika engineers come up with and also by the very friendly working environment that is created within the group. These most motivating aspects really pushed me to search for possibilities of interacting more with this company. After inquiring and discussing with researchers in the R&D department, I finally got an internship opportunity and just started working last week on the topic of polymer foam materials. If in the future I get the chance to work for Sika, I truly believe it would be a self-improving and delightful experience!"

## Sustainable Solutions



### A roof for basketballs and butterflies

It's not often that a roof serves butterflies and professional basketball players, but the new roof at the Target Center in Minneapolis, Minnesota, USA, does both. The new green roof not only provides shelter to the National Basketball Association's Minnesota Timberwolves and their fans, but it also features vegetation designed to attract the Karner Blue Butterfly. But attracting butterflies wasn't the main reason the city of Minneapolis went with a green roof when it replaced the existing EPDM (Ethylene Propylene Diene Monomer) roof on the sports arena.

"We had a problem in the city with sewer overflow problems, and every drop of water that went on the old roof went on to the sidewalk, into the sewer system and then into the Mississippi River," said Minneapolis City Council member Lisa Goodman.

The new green roof is designed to capture 0.9 inches of rain before run-off

occurs, and is expected to prevent an estimated one million gallons of storm water from creating a combined sewer overflow problem and draining into the Mississippi River each year.

The **Sarnafil® G 476** waterproofing membrane was chosen for the vegetated roof because it can handle the effects of root growth, is resistant to bacteria, and can handle varying hydrostatic pressures. According to Council member Goodman, "Not only does this roof save us from storm water run-off, but it also reduces energy costs, since this roof doesn't get nearly as hot as the old rock ballast roof."

Sika provides a range of water-based pre-treatment solutions for glass, wood and concrete.

Customers can thereby avoid solvents, consequently improve working conditions and save costs in potential investments for ventilation systems.

## Company Investments



### Sika's expansion in China

Sika is expanding its concrete admixtures business farther in Western/Southern China. In 2008 the company acquired a majority stake in Sichuan Keshuai Additive Co., Ltd, an admixture fabricator located in the Sichuan Province, in the west of China. This initial venture was quickly followed by another.

In 2010, the joint venture invested in a new factory in Kunming, Yunnan Province, in the south of China, making an official announcement to expand the Chinese market.

The Kunming factory covers an area of 20,000 square meters and is expected to have an annual capacity of 40,000 tons of concrete admixture.

Mr. Shuai Xiwen, Vice President of Sichuan Keshuai Admixture Co., Ltd. expressed that rich resources in Yunnan were the main reason for the establishment of a branch in Yunnan. The waste water, fly ash and phosphate rock generated from the sugar refining in Yunnan may be used to produce the admixture.

In addition to the Yunnan Market, the admixture as produced in Yunnan will be supplied to Guangdong, Guangxi and even the Southeast Asian markets in the future. As is known, Yunnan has a geographic advantage, since from there connections to the hubs of the Southeast Asian markets are made easily, which will help to reduce the export transportation cost.

Mr. Shuai Xiwen explained that currently China's cement production amounts to 55% of the whole world's output. However, the application of concrete admixture in China is only 30% of the global quantity. One task in establishing the Yunnan factory is to promote admixture technology in the Yunnan market. Also possible is a significant contribution to sustainability, as the use of admixture in cement production and the improvement of concrete standards saves nearly 30% of production water.



## Superlative cleanliness

The Cleanest Cleanroom in the world is located at the Fraunhofer IPA, Europe's largest application-oriented research organization. Joerg Willmann, Manager Global Key Accounts of the Sika Group discussed the challenges of product selection for such a project with the Head of the Ultraclean Technology and Micromanufacturing Department Dr. Udo Gommel from the Fraunhofer IPA.

**Sika: Cleanroom technology is no longer concentrated on just a few industries. How do you ensure the cleanroom suitability of a wide variety of materials and equipment?**



Mr. Gommel:  
The industrial alliance CSM – Cleanroom Suitable Materials Alliance – was founded by the Fraunhofer IPA Institute with the objective of establishing a sound scientific

basis for assessing the cleanroom suitability of materials and for determining material selection criteria for clean applications. The quality of our testing facilities ensures most accurate results. The motto for building our cleanroom was “simply the best”.

**Sika: The Cleanest Cleanroom in the world is such a testing facility and it honors us that you have chosen Sika's cleanroom floor and wall coating solutions. What convinced you to decide in favor of Sika?**



**“A total of 300 m<sup>2</sup> of state-of-the-art cleanroom facilities – 10 x cleaner than ISO class 1. The facts and figures of the newly refurbished and extended cleanroom facilities at the Fraunhofer IPA are very impressive.”**

Joerg Willmann, Manager Global Key Accounts of the Sika Group



Testing of cleanroom equipment.

Mr. Gommel:  
The neutral CSM testing ensures that members and customers are able to choose the most appropriate materials for their facilities based purely on their performance. More than 700 products have been tested and results published on our database “Tested Device” [www.tested-device.com/](http://www.tested-device.com/)

One can easily search for the right products, compare them and simply chose the best performing materials. This is exactly the process we went through for selecting the right materials for our new cleanroom facilities. **Sikafloor®-269 ECF CR** and **Sikagard®-183 W CR** fulfilled our stringent requirements with regards to particle and outgassing emissions.

The trend to improve the cleanliness of manufacturing processes can be witnessed in many industries today, for example in solar panel, bio pharmaceutical and medical device manufacturing. Sika has developed a range of cleanroom suitable products.

## Smart

### As good as new

The prestigious Longfellow complex is located in the heart of downtown Boston on the Charles River. The 38-story apartment building was constructed between 1970 and 1972. Inspections conducted in 1997 identified numerous areas of spalls due to corrosion of the steel reinforcement. More recently, sealant joints at the sliding glass doors, AC units, and windows were failing and allowing water to leak into the apartments. In 2001, inspection engineers carried out a comprehensive investigation to determine the extent of damage and the root cause. Among other things, they determined spalling had increased by 25% since 1996. Exposed column faces, balcony edges and floor slab edges had the least cover and most spalls. There was chloride contamination, carbonation and low cover throughout. Wherever the cover was less than 2" there were high



levels of active corrosion. The goal of the owner, Equity Residential Properties, and the engineer was to repair the spalled concrete and leaking joints and to provide long-term protection to the building.

The repair program design required **Sika® MonoTop®-615** repair mortar for the spall repair. Reinforcing steel exposed while removing delaminated concrete was coated and protected with **Sika® Armatec® -110 EpoCem®** and leaking joints were sealed using **Sikaflex®-2 C**. Active corrosion was mitigated using **Sika® FerroGard®-903** surfaced applied corrosion inhibitor. The building was protected using **Sikagard® Elastocolor** and **Sikagard®-550 W** elastomeric coatings. Finally, areas of the building are remotely monitored to confirm effectiveness of the repair and protection program and to guarantee long-term durability for all the inhabitants.

## Extraordinary

### Sika makes neighbors green with envy

The saying "the grass is always greener on the other side of the fence" implies that other people's things or situations always look better than your own.

The new **Sika® Garden System** turns the saying on its head; you can stand out with your remarkable green garden lawn. No more watering on a weekly basis and no more fall and spring applications of fertilizer. The **Sika® Garden System** consists of artificial garden grass that is easily fixed to any concrete, tile or bitumen substrate with the polyurethane based **Sika® Garden Adhesive**.

Every square meter of your new lawn saves 980 liters of water per year otherwise needed for watering. The only effort required are two hours for installation and EUR 20 for the equipment. That's a very low investment, especially taking into account the time that can be spent in a lounge chair while others cut their grass.

The **Sika® Garden System** is a solution for everyone; for any private or public garden, around pools or even for children's playing fields.

The installation doesn't depend on the climate; the system is suitable for applications all over the world.



#### Sistema Sika® Garden

Sika® Garden Grass 018 / 025 / 125

Sika® Garden Adhesive 10 / 20

Sika® Garden Tape 30

Sikadur® 800 Garden



## Sika Products in Use

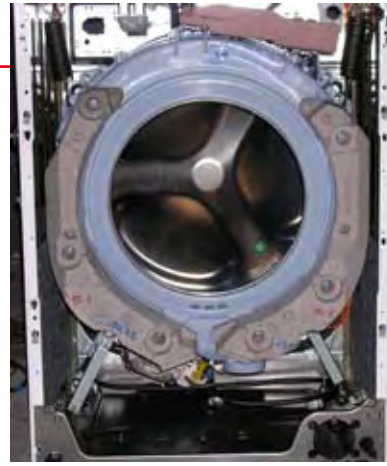
### Elastic bonding counterweights traditional techniques



Elastic bonding in the manufacture of household appliances is increasingly assuming the role formerly held by mechanical joining techniques such as riveting, screwing or welding. This results in a raft of benefits for the manufacturer. Thanks to this bonding technique, not only can innovative materials be used, it also has positive effects on production processes and costs in addition to outstanding material properties and quality.

BSH Bosch Siemens Hausgeräte GmbH has been convinced by comprehensive studies of the advantages of bonding. Since 2006 the company has manufactured washing machines with the counterweight being bonded to the drum.

Thanks to the force transmission of the elastic bonding, dynamic peak stresses are limited and assembly could therefore be fully automated. Previously an elaborate screw connection with threaded sleeves and bolts was used.



After the first bonding production line at BSH in the Nauen production plant near Berlin, Germany met expectations without any problems for four years, a second production line was built and put into operation. The requirements of BSH for the bonding are high: after just a few minutes the bonded surface must develop an early strength high enough to be able to withstand the performance test, including the spin cycle, which is carried out directly afterwards. After extensive tests under the direction of Sika Technical Service, **Sikaflex®-254** proved to be optimally suited to this. After all, the adhesive has to be able to bond the roughly 6.2 kg heavy concrete, half-ring counterweight to the polypropylene drum. To achieve a rapid curing, the adhesive is mixed with a Sika Booster paste developed especially for BSH.

The best solution for the customer, BSH, could only be achieved through the focused project work of all those involved.

## Company News

### ambitions-direct no. 4

Sika' international newsletter to customers

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## Winner of Global Automotive Award

In the year 2010 Sika wins the award as best-in-class innovator for the company's global automotive adhesives and sealants competitive strategy leadership.

The result is based on the findings of the best practices research team of Frost & Sullivan. Frost & Sullivan is a business research and consulting firm which operates a growth partnership service. The service provides a CEO and the CEO's growth team with disciplined research and best practice models to drive the generation, evaluation and implementation of powerful growth strategies.

Mr. Fritsche, Head of Sika's Industry department, gratefully received the Frost & Sullivan Award and dedicated the honor to his Sika team, the persons responsible in automotive products, Marketing and R&D.

„We are very proud of the award, especially having experienced several very tough years in Automotive in the past. The Sika Management believes



from the left:  
Dr. Jan Olaf Schulenburg, Development BIW Adhesives, Sika Technology AG  
Dobrivoje Jovanovic, Product Manager Adhesives & Sealants, Marketing Automotive OEM, Sika Schweiz AG  
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and supports the Automotive team in all important actions and activities. Success is solely the result of the hard work.“

