

# @YourSurface

## HEALING IN PERFECTION

Get inspired by a wide variety of specialists on perfection in the creation and operations of cure and care facilities



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# THE FINISH LINE



Welcome to @YourSurface. In this issue, we show you how Sika provides floor, ceiling and wall finishes that combine stunning aesthetics with high performance to support quality of care and improved health outcomes in short- and long-term care environments.

While researching the articles in this magazine, we spoke with hospital directors, medical professionals, architects and interior designers. We gained valuable insights into current and emerging issues and trends in healthcare facility design.

Many of the people we consulted spoke about increasingly different requirements for what they called “cure” and “care” environments. They described “cure” environments as doctors’ offices, outpatient facilities, even spaces within a hospital, that are typically used to provide short-term care. They described “care” environments as those spaces in hospitals as well as facilities such as rehabilitation centers and memory care facilities that are typically used to provide longer-term care.

While each type of “cure” and “care” environment has specific criteria for the safety and well-being of patients, visitors and staff – and for operational efficiencies and flexibility in space use – there is growing recognition that the physical environment can impact patient and staff outcomes, satisfaction and productivity. As a result, healthcare design professionals are being given greater freedom to create inspiring, comfortable and aesthetically pleasing environments, particularly in hospitals and longer-term care facilities.

We combed our photo files, picked the brains of industry experts and culled international best practices to fill this issue with inspiring ideas and practical information that you can use to address these and many other complex issues in today’s healthcare facilities.

In “Innovations In Health Care: How LEAN Principles Reduced Process Time Up To 95%”, Ronald Aalbersberg, LEAN Advisor at St. Elisabeth Hospital in Tilburg, The Netherlands, shares how streamlining processes and simplifying workflow logistics helped to reduce blood test times from sixty five to three hours. In “Keeping Floors, Walls And Ceilings In Excellent Health”, Dr. Sarah Peake, Sika’s Corporate Product Engineer for hygienic wall coatings, looks at the ABCs of using a healthcare facility’s most abundant finishes to prevent and control the spread of infection.

If you’ve known Sika as a leading manufacturer of high-quality finishes that meet the highest standards of hygiene for pharmaceutical and food manufacturing facilities, this magazine will introduce you to our commitment to healthcare facilities. It will also build your understanding of the design options Sika offers – a broad array of integrated solutions for the widest variety of applications – and our focus on providing high-value, sustainable solutions.

Thank you for reading.

A handwritten signature in black ink, consisting of several fluid, overlapping strokes that form the name 'Remo van der Wilt'.

Remo van der Wilt  
Head of Corporate Target Market Flooring  
Sika Services AG



At Sika we do care what we can do to provide bright, warm and cheerful interior environment for those kids who suffer from a brain injury, multiple disabilities or complex health needs. Read more about the story of **Rainbow House on page 44.**



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### IMPRINT

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# SELECTING INTERIOR FINISHES FOR HEALTHCARE FACILITIES: A CHECKLIST

Examination rooms. MRI suites. Operating rooms. Inpatient rooms. Nurses' stations. Administrative offices. Restaurants and retail stores. Every space in a healthcare facility has unique floor, ceiling and wall finish requirements based on the room's purpose, occupants and equipment. With so many surface options available – particularly for flooring – choosing the appropriate product or products for the wide array of clinical and non-clinical applications can be confusing. To help you evaluate which options may be the best match for a particular space, we've created the following checklist of 10 major factors to consider when selecting interior finishes for healthcare applications.

## 1. SAFETY

Hundreds of millions of patients globally are affected each year by healthcare-associated infections (HAIs), also known as “nosocomial” or “hospital” infections. In the EU, approximately 4.1 million patients acquire a HAI every year, and at least 37,000 patients die as a result of these infections. On any given day in the U.S., about 1 in 25 hospital patients has at least one HAI. In 2011, an estimated 75,000 U.S. hospital patients with HAIs died during their hospitalizations. Research shows that floors are likely to get contaminated by pathogens that can cause HAIs. Thus, ease of cleaning and sanitizing and the ability to prevent growth and transmission of molds, bacteria and other pathogens are important factors when evaluating surface options for healthcare facilities.

In hospitals, slips, trips and falls are the second most common cause of injuries leading to lost workdays. Slips, trips and falls may occur through a combination of factors such as floors being wet from spills or cleaning solutions, cluttered with equipment or patients taking medications which affect their balance. To help prevent these accidents, it is important to consider how a floor surface's slip-resistance properties will hold up throughout its service life and – in the case of product to be specified at building entrances – in all weather conditions.

High-tech equipment needs continuous protection from electrostatic discharges which can cause equipment malfunctions in operating rooms, intensive care units and other hospital spaces cause sparking that can result in fires and can thus be threatening all building occupants' safety. Therefore, it is important to consider a floor covering's ability to eliminate or reduce the amount of static electricity in an environment.

In a fire, standard paints can generate severe fumes and contribute to the fire whereas engineered paints typically include fire-retardant additives.





## 2. COMFORT

The impact of floors, ceilings and walls on patient and staff comfort takes a variety of forms in healthcare environments.

Consider each surface's sound absorption and sound transmission properties. For example, flooring that reduces noise contributes to a quieter environment, which has been linked to improved patient satisfaction.

Resiliency refers to a floor covering's ability to spring back after being compressed. Floors with higher resiliency feel soft and comfortable underfoot and help prevent body fatigue but can be more difficult for staff to push hospital beds and other heavy rolling loads over. The right balance, or level of resiliency, should be carefully selected. Consider including reference visits and onsite testing in your selection process.

Protection against cold air rising from the floor, or excessive thermal conductivity in the case of under-floor heating, is important to consider when selecting flooring. The product's thermal insulation rating provides accurate information about the product's ability to reduce heat exchange between its surface and the environment. Low thermal conductivity

is equated with high insulating capability. Floors and walls with porous finishes or joints are more difficult to clean. If not cleaned properly, mold and bacteria can grow on these surfaces and emit unpleasant odors. In contrast, easy-to-clean, seamless floors and walls may contribute to a healthier, fresher-smelling environment.

## 3. RESISTANCE TO INTENDED USAGE

Floor and wall finishes must stand up to the demands of the space for which they are specified. In an operating room where sharp instruments may accidentally fall to the floor and heavy equipment may get knocked over, surfaces with low impact-resistance properties are more likely to be damaged.

Hospital beds and other heavy equipment can leave permanent, unsightly dents in highly resilient flooring. In situations involving patients with control challenges - where there is a greater risk of falling to the floor - highly resilient flooring provides shock absorption and protection against further injury.

In addition to the impact of static and dynamic loads such as tables, chairs, lockers and equipment on floors, consider the impact of rolling loads. In general, the

load resistance of heterogeneous resilient surfaces with foam backing is less than those of harder, solid floor coverings or surfaces with a firmer backing, making it more difficult for staff to push beds, carts and other heavy rolling objects.

In emergency rooms, areas near doors and elevators, and other high-traffic or fast-paced environments where there is a higher risk of beds, gurneys and other equipment bumping and causing damage to walls, products such as fiber-mat-reinforced paint systems have high mechanical strength to resist damage.

Floor surfaces in healthcare facilities are typically exposed to a wide range of stain-producing chemicals such as blood, urine, iodine, hydrogen peroxide and hand cleaning alcohol and gel. They are also typically exposed to cleaning detergents containing acids, alkalis, surfactants, sterilants and disinfectants. When specifying floor and wall finishes, consider how effectively each product resists stains and damage from chemicals as well as its resistance to scrubbing and other mechanical impacts.



# HEALTH CARE FACILITY AS A PERFECT ENVIRONMENT TO FEEL LIKE HOME

## 4. AESTHETICS

Hotel-like patient rooms. Exposure to daylight. Views of Nature and art. Research indicates that an aesthetically pleasing healthcare environment incorporating such elements helps relieve patient stress and increases satisfaction with quality of care.

Floor, wall and ceiling surfaces should support the overall design of a space. Consider materials such as liquid applied products that have inherent flexibility to easily accommodate changes in design schemes, color palettes and operational requirements. Matching floor and wall finishes helps to create a balanced and pleasing design.

Additionally, using surface finishes with the same maintenance and cleaning regimes improves cleaning efficiency and provides greater assurance that janitorial crews will adhere to the desired plan, helping to maintain the intended design for long periods of time.



## 5. MAINTENANCE

As discussed in the “Safety” section above, infection prevention and control is a critical issue in healthcare facilities. Blood and other bodily fluids which are frequently spilled in healthcare environments contain infectious microorganisms. If not cleaned up effectively, these substances can be sources of infection. Some infectious bacteria, when suspended in tiny droplets of blood, are capable of prolonged survival on surfaces for as long as the drops remain liquid.

To help minimize and prevent the spread of infection from these types of spills, it is important to select finishes for floors, walls and ceilings that enable effective cleaning. Incompatibility between a cleaning agent and a finish may have an adverse effect on the physical properties of the finish, resulting in unwanted surface changes such as softening or hardening, reduced flexibility, cracking, flaking and discoloring.

The majority of floor failures are related to seams and moisture penetration. A crack or joint failure of just 0.1 mm wide by 1 cm deep by 10 cm long creates a potential reservoir of microorganisms that can hold 140,000 bacteria. To put this in context, ingesting as few as 10 bacterial cells can make a person ill.

Porous floor, ceiling and wall surfaces carry an elevated risk of microbiological growths such as molds and algae. In contrast, non-porous, seamless surface solutions are easier to clean and maintain than porous surfaces with joints and seams, and they do not create environments that are hospitable to microorganisms.

A properly designed and executed cleaning regime is key to maintaining healthy interior finishes. Consider the time and cost of cleaning and maintaining different types of flooring materials. Hard synthetic and mineral surfaces typically require daily dust mopping, regular wet cleaning and periodic deep cleaning.



Some hard surfaces such as certain vinyls and linoleums need additional periodic polishing and waxing. Seamless surfaces are typically cleaned in the same way as hard synthetic surfaces but cleaning is more effective due to the lack of seams, which can trap dirt. Soft surfaces such as carpet may require daily vacuuming and periodic wet cleaning with soap and water.

Regular testing for the presence of peptides (bacteria) on floors is a simple, scientific method for determining the surface's cleanliness.

Additional maintenance considerations include the ease of repair to a damaged surface and the availability of a local partner for maintenance support.

## 6. DURABILITY

The life expectancy of any surface finish is related to wear. To ensure that a surface continues to look good and perform well over its expected lifespan, choose a product designed to withstand the intended use of the space. The more durable the wear layer, the less chemicals and labor will be required for routine maintenance and surface renovations.

Additionally, products with greater

resistance to ultraviolet (UV) radiation have greater color stability and are likely to look better longer than products with low UV resistance that are more susceptible to fading. Wall finishes should be flexible enough to withstand expansion, contraction and damage from minor impacts without the need for additional protection. Finishes such as liquid applied coatings allow for walls that are free from joints, crevices and fissures that negatively impact product durability.

When specifying ceiling finishes, consider the product's contact with water vapor and the expected humidity levels in an area.

## 7. SUSTAINABILITY

An important health consideration for floor, walls and ceiling finishes in hospitals and other healthcare facilities is the volume of volatile organic compounds (VOCs) that materials emit into the interior environment. Products that meet or exceed standards for low VOC emissions contribute to healthier indoor air quality and reduced impact on patients, staff and the environment.

In the EU, look for flooring and other construction products that comply with the French AFSSET, German AgBB and

## RUN THE FACILITY WITH PERFECTION

Finnish M1 guidelines for low VOC emissions. For liquid architectural coatings and paints, look for compliance with EG Decopaint, EPA and SCQAMD guidelines.

When evaluating surfaces, look for products that have been certified by a third-party to internationally recognized, environmental sustainability standards such as LEED and BREEAM as well as to ISO 14001, an Environmental Care Management system, and OHSAS 18000, a labor safety system.

ISO 14040:2006 is an environmental management standard for life cycle assessment (LCA), or the assessment of the environmental impact of a given building or product throughout its lifespan. It provides a uniform way to measure environmental impact, providing a fair and independent basis for comparison.

Ease of removing dust and particulates from the interior environment may be a design criteria for pathology labs,

research areas and other critical areas where indoor air pollutants can negatively affect ongoing, critical processes. Look for products that have been certified as Cleanroom Suitable Materials (CSM). CSM is a global standard commonly used in the pharmaceutical industry.

### 8. QUALITY ASSURANCE

It's not enough to simply check that a floor, wall or ceiling solution comes with a long-term warranty holding the supplier accountable for the product's quality. You also need to read the fine print and do your due diligence.





Warranties should protect the buyer against manufacturing defects. The issuing party should be able to back-up warranty obligations throughout the warranty period. Find out if the supplier uses a quality management system such as ISO 9001 which assures uniformity in manufacturing and adherence to a product's published specifications. Ask if the installation crew has been trained and certified to install your selected product. Look for labels indicating that the product has been independently certified to internationally recognized quality standards such as the CE mark. Ask about options that may exist to extend the supplier's quality commitment and

assure quality performance over a longer period of time.

#### **9. REFERENCES**

Every flooring supplier should be able to provide a list of references. Check them. Additionally, visit installations to see first-hand the quality of the job, to build your trust and confidence in the supplier, and to pick up ideas that may improve your own project.

#### **10. COST OF OWNERSHIP**

When judging the capital efficiency of a floor, wall or ceiling surface, it's important to consider hard costs such as the solution's initial costs (including purchase

price, delivery and installation) and the costs to maintain the surface over its lifetime and the building's lifetime. Over the life of the facility, the costs of surface maintenance can easily be 10 times higher than the original installation costs. It's also important to consider the impact of the solutions on patient and staff satisfaction, patient and staff health outcomes, and staff productivity.

It's common for architects, builders and building owners to have different priorities during a construction project. Within the team, the architect may place the greatest emphasis on aesthetics, and the builder may place the greatest focus

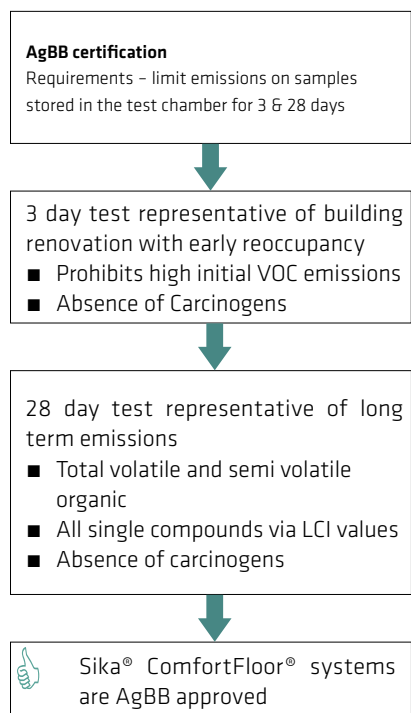


# PERFECT INDOOR ENVIRONMENT NEEDS HEALTHY AIR QUALITY

on costs. Facility managers are very interested in easy cleaning and maintenance procedures. Different medical teams have different needs for their daily operations.

As a building owner, you are responsible for the facility's overall performance and operational costs, which are significantly higher than development or renovation costs. The final decision on products

that impact building performance and costs is best made by you. In the eyes of all stakeholders, working together as a team during a healthcare facility's design phase – whether new construction or renovation – is key to the project's successful outcome. Professional suppliers with proven backgrounds in providing high-end solutions are a great source of information and can be a valuable partner for your design team.



<sup>1</sup> [http://www.who.int/gpsc/country\\_work/en/](http://www.who.int/gpsc/country_work/en/)

<sup>2</sup> [http://www.ecdc.europa.eu/en/healthtopics/Healthcare-associated\\_infections/Pages/index.aspx](http://www.ecdc.europa.eu/en/healthtopics/Healthcare-associated_infections/Pages/index.aspx)

<sup>3</sup> <http://www.cdc.gov/HAI/surveillance/index.html>

<sup>4</sup> <http://www.cdc.gov/HAI/surveillance/index.html>

<sup>5</sup> <https://www.healthdesign.org/chd/research/impact-environment-infections-healthcare-facilities>

<sup>6</sup> <http://www.healthcareglobal.com/hospitals/1706/Is-Your-Hospital-a-Danger-Zone>

<sup>7</sup> [http://www.healinghealth.com/images/uploads/files/hhs\\_hospital\\_noise\\_whitepaper.pdf](http://www.healinghealth.com/images/uploads/files/hhs_hospital_noise_whitepaper.pdf)

<sup>8</sup> <https://www.healthdesign.org/chd/research/role-physical-environment-hospital-21st-century>

<sup>9</sup> <https://www.healthdesign.org/chd/research/role-physical-environment-hospital-21st-century>

# TYPICAL SURFACES AND DESIGN ESSENTIALS

When it comes to interior design and specifying the appropriate products for floor and wall finishing, one needs to consider the main activities in the room. We can differentiate in the following main processes and product families:

Recommended product range		
Category of room space	Main process	Dominant performance criteria
Clinical Dry	Diagnostic areas without special equipment	Design, easy maintenance, comfort
	Patient treatment without special equipment, clean	Design, easy maintenance, heavy duty, comfort
	Physio therapy, fitness	Impact absorbing, easy maintenance
	Short term patient care	Design, easy maintenance, heavy duty
	Long term / permanent patient care	Design, flexibility, comfort, easy maintenance
	Diagnostic areas using sensitive equipment	Electro Static Discharge, easy maintenance
	Patient treatment using sensitive equipment	Electro Static Discharge, easy maintenance, heavy duty
	Clinical Wet	Patient treatment without special equipment, dirty
Assisted bathroom and showers		Slip resistance, easy maintenance, design
Clinical Specialist	Operating suite	High resistance, ESD, hygiene control
	Medium and Intensive care	High resistance, ESD, hygiene control
	X-ray room	Electro Static Discharge, design, easy maintenance
	Laboratories	Heavy duty, hygiene control, Electro Static Discharge
	Aseptic suite	Hygiene control, heavy duty
	Post mortem room	Slip resistance, hygiene control, heavy duty
Non Clinical Dry	Offices	Comfort, design, easy maintenance
	Meeting rooms	Comfort, design, easy maintenance
	Logistic and storage areas	Heavy duty, easy maintenance
	Children day care	Safety, comfort, design, easy maintenance
Non Clinical Wet	Toilets and showers	Slip resistance, design, easy maintenance
	Kitchens	Slip resistance, heavy duty, easy maintenance
	Housekeeping service areas	Heavy duty, easy maintenance
	Technical areas	Heavy duty, easy maintenance
Heavy Traffic	Entrance and main course	Design, heavy duty, easy maintenance
	Corridors and waiting areas	Design, heavy duty, easy maintenance
	Staircases	Slip resistance, heavy duty, design, easy maintenance
	Public lobby, shops and restaurants	Design, comfort, heavy duty, easy maintenance
	Car park, parking garage	Heavy duty, slip resistance, easy maintenance
	Helicopter deck	Heavy duty, slip resistance, easy maintenance





**Recommended product range**

<b>Floor finish</b>	<b>Wall finish</b>	<b>Ceiling finish</b>
Decorative, comfortable, seamless	Hygienic wall coat	Heavy duty wall coat
Decorative, resistant, comfortable, seamless	Hygienic wall coat	Heavy duty wall coat
Resilient, resistant, seamless	Hygienic wall coat	Heavy duty wall coat
Decorative, resistant, comfortable, seamless	Hygienic wall coat	Heavy duty wall coat
Decorative, comfortable, seamless	Hygienic wall coat	Heavy duty wall coat
ESD, seamless	Hygienic wall coat	Heavy duty wall coat
ESD, resistant, seamless	Hygienic wall coat	Heavy duty wall coat
Decorative, resistant, slip resistant, seamless	Reinforced Hygienic wall coat	Heavy duty wall coat
Slip resistant, decorative, seamless	Reinforced Hygienic wall coat	Hygienic wall coat
Resistant, seamless (optional ESD)	Reinforced Hygienic wall coat	Hygienic wall coat
ESD, resistant, seamless	Reinforced Hygienic wall coat	Hygienic wall coat
ESD, decorative, seamless	Hygienic wall coat	Heavy duty wall coat
Resistant, design, seamless (optional ESD)	Hygienic wall coat	Heavy duty wall coat
Resistant, seamless	Reinforced Hygienic wall coat	Hygienic wall coat
Slip resistant, resistant, seamless	Reinforced Hygienic wall coat	Hygienic wall coat
Decorative, comfortable, seamless	Decorative plaster, wall coat	Heavy duty wall coat
Decorative, comfortable, seamless	Decorative plaster, wall coat	Heavy duty wall coat
Resistant, seamless	Heavy duty wall coat	Heavy duty wall coat
Resilient, design, seamless	Hygienic wall coat	Heavy duty wall coat
Decorative, slip resistant, seamless	Hygienic wall coat, decorative plaster	Hygienic wall coat
Slip resistant, resistant, hygienic, seamless	Reinforced Hygienic wall coat	Hygienic wall coat
Resistant, seamless	Heavy duty wall coat	Heavy duty wall coat
Resistant, seamless	Heavy duty wall coat	Heavy duty wall coat
Decorative, resistant, seamless	Hygienic wall coat	Heavy duty wall coat
Decorative, resistant, seamless	Hygienic wall coat	Heavy duty wall coat
Slip resistant, resistant, seamless	Hygienic wall coat	Heavy duty wall coat
Decorative, resistant, comfortable, seamless	Hygienic wall coat	Heavy duty wall coat
Slip resistant, resistant, seamless	Heavy duty wall coat	Heavy duty wall coat
Slip resistant, resistant, seamless		



Jo Vandeurzen

# FLANDERS IS A WARM SOCIETY

INTERVIEW WITH JO VANDEURZEN

Jo Vandeurzen has been the Flemish Minister for Welfare, Health and Family for the past six years. At the beginning of the new year and amidst a full-blown asylum crisis, we managed to set time aside for an interview.

**Poverty remains a major problem. Why is it that a prosperous region like Flanders cannot tackle poverty?**

Based on Flemish standards, the statistics do show a relatively elevated level for poverty. Within Flanders, we have a coordinating minister who is making efforts dealing with this complex issue at various different policy levels. The ultimate solution for poverty does not exist. We must develop various interventions and assure that these complement each other. From within Welfare, I am aiming to make a stronger case against under-protection. There are many legal rights

and mechanisms in place to protect people from being at risk for poverty. It's just that not everyone has been putting these into practice. We must deal with under-protection by pro-actively targeting vulnerable groups and address them. For example, we are aware that a certain group of people isn't fully aware of the health insurance system. As far as I am concerned, we need to engage this group more visibly and closely.

**It seems that there is a task at hand for the primary welfare organisations.**

Yes, although this still isn't running

smoothly. This is why we must strive for primary care that is able to leave a coherent impression. We are currently working on a plan to better define the function of primary access. We intend to improve the cooperation between the Public Centres for Social Welfare, Health Insurance Companies and Social Work Centres. The man in the street doesn't always know where to go with his queries and issues. At these access points the right competencies should be in place in order to clarify and assist with any requests for help. Are there any agreement in place with respect to

# WELFARE IS NOT THE EXCLUSIVE RESPONSIBILITY OF THE MINISTER OF WELFARE

the various access procedures across the region? What would be the optimal regional coverage? We intend to make the access network more inclusive. It is their responsibility as well: ensuring that the most vulnerable are being reached out to. Establishing a clearly recognisable contact point for citizens won't suffice; the care assistance services will need to go out of their way to reach out to people.

## **Is poverty reduction then be mainly a matter of better health care organisation?**

'Health is in all policies'. If you are aiming at a healthful and caring society you will need to make a case for work, education, housing, social security, justice... Welfare is not the exclusive responsibility of the Minister of Welfare. Obviously, our own area of competency should also make domain specific contributions to this distributed project. As a matter of fact, we are well aware that people with a migration background run a higher risk of poverty.

Will the social assistance be prepared to reach this particular group and guide them? Do we speak their language and are we sensitive to cultural differences? More than ever, the current migration movements represent important challenges. Welfare organisations will need to critically assess their readiness. Next year, interculturalisation will play an important role in my policy document.

## **The Maximiliaan Park, where refugees have been sleeping outdoors for weeks now, is practically located right under your desk. Would this be a task for the Minister of Welfare?**

Well, of course, this is my concern. In the meantime, the Flemish Government has

reached a number of agreements. With respect to welfare, both Child and Family and Social Work Centres will play a more active role. Foster Care Flanders will organise a campaign to help unaccompanied minors and families with children to find new foster families and hospitality homes.

## **Child Benefit is an important instrument in the fight against child poverty. What are your plans?**

The Flemish coalition agreement departs from the idea that every child is entitled to child benefit. In addition, a social correction will be introduced that takes into account income and family size. We therefore aim to effectively implement child benefit in the battle against child poverty. The transfer of child benefit to Flanders is a complex transition that will take a considerable amount of time. Acquired rights also come into play in this story. The system will therefore not undergo a radical change.

## **There is a general feeling that the most vulnerable are footing the bill of the crisis.**

A number of taxes were modified in Flanders. Yet, in doing so, selectivity and social correction were taken into account. The social security contributions increased indeed but the more vulnerable faced a lower increase than you and me. In terms of budget, 2016 will prove to be difficult year. But let's be fair, in comparison to other countries, Flanders has never turned to any radical or blind

austerity policy. Over the past years, in collaboration with the federal minister of Health, we have made a case for an increased capacity of residential care centres as well as for hospitals, to cater to the demographic trends in our society, especially with regard to ageing.

If economic growth doesn't pick up in the coming years, budgetary room for investments will remain limited. If we look away from issues such as corporate competitiveness and the dynamics of the economical playing field, we will certainly undermine social security. You need employment in order to be able to pay out pensions, sickness and unemployment benefits.

## **Substantial savings will be necessary in the future, what is your view on this?**

We do face difficult times in terms of budget. Savings will provide budgetary balance. This applies to the policy domain of Welfare, Health and Family as well, as we are having our fair share of cuts and we are requesting substantial efforts. For instance, the social security contributions, that haven't been affected since 2003, will be increased to 50 Euro, and to 25 Euro for people who are entitled to an increased allowance.

In addition to the necessary savings, we will also continue to create a caring Flanders. We are doing this in a time of budgetary difficulties, to free up a substantial part of the budget to invest in welfare, care and family. In 2015, as

# WE WILL ALSO CONTINUE TO CREATE A CARING FLANDERS



much as 65 million will be reserved. This will be necessary to cater to the ever-increasing care needs and need for family support, now and in the future. We will therefore allocate the 65 million to high priority groups: disabled persons (40 millions), children (20 million for child-care) and youngsters (5 million to youth care). We will also expand the capacity for elderly care. By the end of 2018, 8,413 new residential units in residential care and short-stay centres will have been added.

During the budgetary control 2015, the Flemish Government decided not to apply any further budgetary cuts to the policy area of Welfare, Health and Family. In concrete terms, this means that there won't be any additional savings within the policy area, for staff or the operational side of our care and welfare facilities and that the bills will not be picked up by Flemish families.

**You were granted additional power as a result of the sixth government reform. On which domains will you focus first?**

The total budget 2016 for the policy area Welfare-Health amounts to more than 10 billion after the sixth government reform. This covers more than 27% of the total Flemish budget.

The transfer of powers in the implementation of the sixth government reform confronts us with a series of new challenges, and at the same time offers ample opportunity. The sixth government reform doesn't leave any policy area within Welfare-Health untouched. Thus, in elderly care, with the financial leverage we're receiving over time, we can shape a policy that arms the elderly with a person-bound budget to find their way within a network of care. For child benefit we can reinforce the Flemish family policy, linked to each individual child and taking into account its specific needs. In mental health care we have the opportunity to establish a more targeted policy and within the judicial framework being introduced, we're offered an

opportunity to invest in the interface between care and justice. A combined action with an increasing social relevance. Firstly, we are currently making a case for securing the continuity across all sectors.

**Do you see a possibility for other policy areas to contribute to 'more' health?**

Yes, and not only for preventive health, but actually for health in general, including primary care and residential care.

It is simply impossible to close the health gap solely from within the budget and scope of preventive health. This is why instruments from the preventive health policy are being introduced to implement the health policy in domains such as education, workplace, local community, sports and cultural clubs.

In addition to the instruments, the Logo's are also providing guidance and coaching with respect to local health policies of councils and Public Centres for Social Welfare. Therefore, there are many examples of domains in which these instruments are used and that contribute to 'more' health.

**There is plenty of work left if we want to warrant equal opportunity for a healthy life for everyone?**

That is true, and as the minister of Welfare, Health and Family, I am in charge of a few, but certainly not all policy areas within my power to deliver a share of the work. I am also counting on my fellow ministers to revise the initiatives within their policy areas from a health perspective.

**Do you see any options to further reduce the health gap?**

Rather than health gap, we prefer to speak of initiatives that take the social gradient of society into account. With regard to the preventive health policy we have high expectations of the 'Healthy Municipality' methodology. At the moment, this is being implemented successfully and it is here that we find opportunities to anchor the awareness of social gradient in local policies, at the level of cities, councils and neighbourhoods.

Still, we are also expecting some efforts to be made in the curative sector: primary care and the intramural care, such as hospitals, residential care centres.... More so than within prevention, accessibility within care should be warranted from the perspective of social gradient.

I would also like to point out that the 'closing the health gap' as a goal in itself can sometimes be counterproductive. Many initiatives, especially in the area of prevention aimed at the general population, promote the health of many sections of the population. For instance, when we are establishing health gain for people of a lower socio-economic status, this does not always necessarily lead to a reduction of the gap, since the middle class will also benefit from such initiatives and, as a consequence, will achieve health gain as well. Therefore, I would rather depart from the following guideline 'while establishing health gain we must adequately consider reaching people of lower socio-economic status'.

## EQUAL OPPORTUNITY FOR A HEALTHY LIFE

## CASE STUDY

### SEAMLESS RESIN FLOOR FOR THE INTERIOR OF HOSPITAL AZ GROENINGE



**AZ Groeninge is one of the oldest hospitals in Belgium. It is a large teaching hospital, affiliated with the Flemish KU Leuven Hospital network, in the Belgian city Kortrijk.**

The interior design of the AZ Groeninge project was to create a completely new and modern atmosphere for the hospital environment. Part of the design is a sleek, uniform look of the flooring surface which provides not only extra footfall comfort, but also the possibility of many color choices. Of course, easy maintenance and possibility of easy renovation were important factors for the floor system specification as well.

Apart from the points mentioned above, it was also important to meet hospital design standards with proper certificates and compliance guarantees such as: fire resistance, cleanroom, slip-resistance class, etc. Ideally, it is a system which can eliminate joints in lavatory areas where joints allow dirt and bacteria to harbor, which means a seamless floor was preferred.

Sika ComfortFloor® met all of these requirements and was applied on 46,000 m<sup>2</sup> floor surface in the hospital.

For different areas, Sika provided different system buildups including :

Sika ComfortFloor® system for the corridors, rooms and other areas: Sikafloor® -156 with Sikafloor® -327 as levelling screed, with Sikafloor® -330 and Sikafloor® -305W as top coats.

Sika Shower System in the lavatories: Schönnox waterproofing system with Sikafloor® -305 W in three layers for an attractive finish.

ESD system for specific functional areas with static-sensitive electronic devices or volumes of flammable material: Sikafloor® -156 and Sikafloor® -327 as levelling screed, with Sikafloor® -328 as tough-elastic PU screed layer and Sikafloor® -305 W ESD in two top coats.

One of the important considerations of specifying a Sika resin flooring solution was also the product quality and professional service.



If healthcare facilities are to make patient wellbeing their first priority, the flooring and wall coating systems incorporated within them must be safe, easy to clean, and inviting for all.

# KEEPING FLOORS, WALLS AND CEILINGS IN EXCELLENT HEALTH

Infection prevention and control is of utmost importance in healthcare facilities. Building owners, facilities managers, healthcare architects and all others involved in healthcare design decisions need to consider how the materials used within a building contribute to this issue.

TEXT: SARAH PEAKE

In the UK, for example, the National Health Service (NHS) Constitution mandates that all healthcare organizations should, “ensure that services are provided in a clean and safe environment that is fit for purpose, based on national best practice.” First published by the Department of Health in 2011, Health Building Note (HBN) 00-10 provides best practice guidance in the UK, outlining the policy and performance

requirements that must be considered when constructing or refurbishing a healthcare facility.

## **SAFE, ACCESSIBLE AND INVITING FOR ALL**

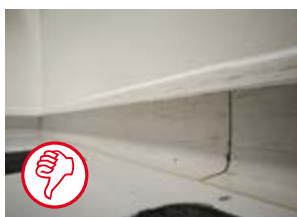
HBN: 00-10 states, “Healthcare facilities should provide a therapeutic environment in which the overall design of the building contributes to the process of healing and reduces the risk of

healthcare-associated infections rather than simply being a place where treatment takes place.” These facilities must be safe, accessible and inviting for all, including patients, doctors, staff and visitors.

The key requirements for every floor, wall and coating system used in a healthcare environment can be divided into two main performance themes – cleanability



# SEAMLESS FLOORING MATERIALS AND WALL FINISHES HAVE BECOME AN INCREASINGLY COMMON SPECIFICATION TO ACHIEVE THE ESTABLISHED STANDARDS



Places which are critical can be easily solved by Sika solutions shown above.

and life-cycle maintenance. Both are intrinsically linked to infection prevention and control.

## FOCUS ON PREVENTION

The majority of people being treated in healthcare facilities are immunocompromised, making infection prevention and control vital. Because weakened immune systems and other afflictions make patients more susceptible to infections,

healthcare providers have a responsibility to minimize the potential risk of these patients acquiring a HealthCare-Associated Infection (HCAI).

HCAIs affect an estimated 6.4 percent of hospital patients each year. Therefore, floors, walls and ceilings must be carefully designed to enable effective cleaning, and all coatings and finishes should be chosen with this in mind. If

a floor or wall finish is incompatible with cleaning agents, this may cause changes to the physical properties or quality of the finish, leading to softening or hardening, reduced flexibility, cracking, flaking or discoloring. This looks unsightly and can affect the efficacy of the cleaning regime.

**MAINTAINING STANDARDS –  
CRACKS, TEARS AND JOINTS**

When specifying wall, ceiling and floor finishes in healthcare facilities, it is imperative to consider the expected level of traffic for each area of use. If a finish can't stand up to the use intensity in situ, cracks, tears and other defects can occur. Left uncorrected or repaired inadequately, these imperfections can negatively impact the cleaning regime, creating protected niches for microbial growth and biofilm formation and resulting in potential sources of infection.

Because healthcare facilities are subject to a range of hazardous substances,

including bodily fluids, all floors, walls and ceilings should be smooth, nonporous, hard and seamless. Surfaces that are free of fissures, open joints and crevices are unable to retain or permit dirt and moisture passage, and they will not become breeding grounds for disease-inducing microorganisms.

**SEAMLESS, HIGH PERFORMANCE**

Sika offers a range of high-performance resin floor systems and hygienic wall coatings suitable for the most demanding healthcare environments. Sikafloor® solutions and Sikagard® hygienic coatings have been designed with cleaning in mind. Their smooth and seamless qualities make cleaning easier.

They are formulated to resist regular scrubbing and a variety of common cleaning detergents, further supporting healthcare facilities' infection prevention and control measures.

Sikafloor® and Sikagard® solutions are offered in a variety of systems and thicknesses to mirror different life-cycle requirements. A wide range of detailing options for construction joints, floor-to-wall connections and surfaces are also available, providing a total solution that meets and exceeds guidelines.

Sikagard® hygienic coatings are single-component, water-based products that are easy to apply by brush, roller or airless



Sika's standard Sika® ComfortFloor® flooring installed in a refurbished single room at York Hospital, UK.

# IF SURFACES ARE FREE OF FISSURES, OPEN JOINTS, AND CREVICES, THEY ARE UNABLE TO RETAIN OR PERMIT DIRT OR MOISTURE PASSAGE



## SARAH PEAKE

Sarah Peake, Ph.D., Chartered Marketer (MCIM), has served as Sika's product manager for Hygienic Surfaces since January 2012. She is also the product sustainability manager for Sika in the UK, a position she has held since March 2014. Dr. Peake received a BSc (Hons) degree from the University of Central Lancashire in 2001 and a Ph.D in Microbiology, Cell to Cell Signalling in *Escherichia coli*, and *Campylobacter jejuni*, at the same university in 2007. From September 2006 to January 2012 she served as market manager for New Build and Special Projects at Sika Liquid Plastics. If you would like to speak with Dr. Peake to discuss your healthcare project needs or to request a presentation for your design team, please contact your local Sika representative to make arrangements.

spray. With a wet scrub resistance of Class 1, according to EN 13300, the standard for water-borne coating materials and coating systems for interior walls and ceilings, Sikagard® hygienic coatings outperform traditional wall paints. Wall paints that claim to be washable must have a wet scrub resistance of at least Class 3, which falls substantially short of the Class 1 standards set by the Sikagard® product line.

Additionally, Sikagard® hygienic coatings are elastomeric and highly flexible in nature, enabling them to withstand expansion, contraction and minor impacts without cracking or flaking. Because the systems are liquid-applied, they are also easy to repair, optimizing their life expectancy and minimizing maintenance requirements throughout the building's life-cycle.

Sikafloor® and Sikagard® solutions provide a simple, highly effective method for achieving surfaces that are easy to clean, hard-wearing and free from joints, seams and other features that create hiding places for dirt and bacteria. Just as seamless care has become a core value of the UK National Health Service, seamless flooring materials and wall finishes such as Sikafloor® and Sikagard® solutions have become an increasingly popular strategy for achieving infection prevention and control standards and requirements in hospitals and other healthcare facilities in different parts of the world.



At a new delivery suite at Poole Maternity Hospital, UK, Sikagard®-205W (Sterisheen®) - a high performance surface coating that would meet stringent infection control procedures, was used on the walls and ceilings of the operating theatres.



# COLOR, EMOTION AND ARCHITECTURAL SPACE

A well-crafted color palette can do wonders for a healthcare facility. The use of color and graphic images can align to the existing logo and symbolic color of the facility to achieve an overall visual aesthetic, while it can also elicit emotions and unique perceptions of space. It has an ability to calm or excite, can make a room appear smaller or more grandiose, or even trigger subconscious reactions. Color is the most vital, impactful and expressive design element in a designer's toolbox.



**Red** – With the most power and energy of all colors, red advances in a space. In interiors, it can be used as an accent color, but may be too strong when used as the dominant color in a room. Darkened and muted, maroon exudes allure, while bright, intense red accents can stimulate and excite. It is suggested that looking at the color red can increase pulse, heart rate and blood pressure, and can help to cure depression.

- Associations: passion, heat, love, courage, anger, excitement, danger, strength



**Orange** – When lightened and muted, orange can have a cool, refreshing effect. Orange can effectively trigger a human being's temperament and also promote food digestion. Bright hues should be considered carefully as they have such stimulating properties.

- Associations: cheerful, excitement, stimulation, aggression, sunset

Colors carry the potential for physiological and psychological effects as varied as the number of colors on the spectrum. Reactions associated with color are spontaneous, can be positive or negative, and yet are often unique to each person. Therefore, color should be considered carefully when designing for healthcare facilities, when taking into account the wide range of professionals, visitors and patients with varying levels of disability who will use the space.

Color provokes psychological sensations in the mind and physiological effects which cause changes in the body. Color affects a person's feelings about space—where light and cool colors seem to expand a space, dark, warm colors tend to enclose space making it feel smaller. The perception of weight and size are felt similarly – where light, cool colors

seem to feel less heavy than dark, bright colors. Colors have a proven effect on body temperature – warm tones (red, orange, yellows) can raise one's temperature whilst cool colors have an opposite effect. Color can affect a person's perception of time—warm-colored spaces tend to make one feel as though they have been there longer than they have and time seems to pass more slowly. Colors in a variety of forms and brilliance can stimulate or excite, induce boredom or calmness, and can even contribute positively to a patient's recovery process. Such facts are becoming more recognized and implemented by architects and interior designers to good effect.

The typical white environment of a hospital evokes a rather stark image of white walls, a white bed, white uniforms, and blue robes, which at once arouses a

holy, hygienic impression whilst leaving patients feeling cold, pale, bored and without a sense of vitality. For those who have serious diseases, facing this environment can make them feel loss of hope or fear of death. Today, significant design shifts are taking place to improve the atmosphere in healthcare facilities where the sensitive use of colors is applied according to the type of malady or clinic.

It is important to note however, emotional responses to color strongly depend on their saturation and brightness. For example, less saturated, bright colors like sage green are relaxing to look at. On the other hand, colors that are highly saturated yet dark like rich sapphire blue, can feel rather energizing. Each hue carries it's own unique associations and emotional triggers.



**Yellow** – Taking on the tones of other colors, yellow is reflective and adds flattering highlights. Yellow can stimulate the nervous system, improve brain function and stimulate appetite. It is ideal in an entrance hall or room with little natural light, since it gives an illusion of direct sunlight. When grayed or muted, yellow has a refreshing effect, although bright high-value shades are the most impactful and should be considered carefully.

- Associations: warmth, welcoming, optimism, compassion, enlightening, sunlight



**Green** – When grayed, warmed or cooled, green makes a good background. When lightened, green makes one feel restful and calm, while reducing blood pressure and pulse, which alleviates the burden on the heart. When brightened, it can feel energizing and invigorating. The colors of nature, leaves and trees can be wonderful hues to use in a healthcare facility, where views outside to nature may not always be accessible.

- Associations: nature, serenity, safety, peace, hope, envy, passiveness

### Suggested Application of Color in a Healthcare Facility

Normally, it is recommended not to use more than three main colors within one interior space. The color of the ceiling should be lighter than or the same as the wall, and it could be white or match the hue of the wall. Connected spaces should use a similar hue, while individual closed spaces can use different colors. For large areas, light and elegant colors are recommended rather than vivid color. The basic principle of using colors effectively in interior space is to keep it harmonious overall while allowing for contrast at the detail level.

Using a children's hospital as an example, warm colors like orange, yellow or red can be applied to the entrance area to welcome the children. Warm yellow can be applied to the waiting room to

encourage an interesting, warm feeling. The corridor, consultation and treatment rooms can be light blue or green to feel relaxing. While yellow and pink can be used as small decorations or accents. Bright colors and playful patterns like animals or trees can be applied to the public zone within the patients' area. Finally, light orange or yellow can be applied inside the patients' rooms to stimulate the appetite of the children.

#### Functional factors to consider when designing with color in healthcare facilities include:

- Effect of lighting and materials on color
- Ages and gender of people who will use the space: Men have been shown to have low preference for red and purple, and children may find preference for bright or medium value

colors and more imaginative patterning. Bright, easily discernible colors are more appropriate in facilities for the aged than light pastels, which are barely visible to those with failing eyesight.

- The nature and severity of the illness: For example, the use of highly stimulating colors and patterns should be avoided in environments tailored to those with neurological disorders, as it may trigger seizures.
- Types of tasks, amount of contrast desired and required for the visual acuity level: For example, highly illuminated warm colors can encourage increased alertness, which would be good for muscular effort in a physical therapy gym.



**Blue** – As a key interior decorating color, all tints of blue can be used with success in a space, especially to create a soothing atmosphere ideal in healing, relaxing spaces. It is suggested that looking at blue can aid in sleep, provide calmness, reduce the heart rate, relax one's mood and lessen physical pain sensitivity. Many people are attracted to blue as it relates to the expansiveness of sky and water.

- Associations: sky, sea, expansiveness, tranquility, loyalty, formality



**Violet** – Often used as small accents, violet or purple can be very dramatic. On large surfaces it can be disturbing. Violet tends to stimulate the creative part of the brain, and it is suggested that the color can help cure brain disease and mental disorder.

- Associations: royalty, opulence, mystery, worship, dignity, power, drama



- Is the space for patients, staff, or visitors, and what is the typical length of time these people will be exposed to the colors?
- Is the goal to emphasize or to camouflage?
- Is the goal to organize spaces using color as the cue?
- Use as wayfinding cue: For example, a brighter color can be used in a field of pastel or neutral color to highlight the intended path of travel or call attention to an area.
- Use to denote hazards: For example in the United States, color coding has been developed to aid in decision making by specifying color stereotypes-- warning information in red, caution information in yellow, and advisory information in another color clearly discernible from red or yellow. Similar universal color-coding

standards introduced by ANSI and ISO include green for safety. Such standards for safety colors, signs, and graphics are designed to reduce accidents and injuries in public facilities such as hospitals worldwide.

- Geographic and cultural bias: For example, in northern climates with long, harsh winters, warm colors might be more appropriate than cool; in the west, the quality of light is a warmer and more intense color than in the East; in tropical areas, strong saturated colors (hot pink, orange, purple, lime green) are often favored.
- Consider maintenance: Maintenance is very important in healthcare, as color plays a role in the perception of a clean environment. Dark colors can show white lint prevalent in healthcare or the cloudy stain of an alcohol-based hand sanitizer.

- Consider aesthetics: As an example, although studies may indicate a blue accent wall is desirable for a coronary-care patient, the specific saturation and hue along with the way the color is used are entirely dependent on the designer's skill and talent. Therefore, even though the initial color palette may not have been developed based on intuition or personal taste, the final product bears the image of the individual designer's talent.



**White** – White may give the appearance of more space in a room, which is useful for small spaces which a designer would like to open up. In patient corridors however, the absence of color (all white environment) can actually create a visual hazard for people with reduced visual acuity; colors can give visual cues of spatial references in order to prevent falls.

- Associations: airy, open, stark, institutional, sterile, clean



**Grey** – A great color to pair with other more vibrant tones to neutralize their effect, grey can be combined with almost any hue.

- Associations: neutral, warm tones can be relaxing and calming, cool tones can be bleak or depressing

## Sika® ComfortFloor® CASE STUDIES

**In this sports center in the Netherlands,** a bright shade of yellow creates an open, inviting lobby and dining area. The use of color is successful in energizing users to engage in sports activities, even when the view outside in winter may be dreary.



**In this library in Denmark,** a bright, glossy red-orange accent band playfully creates a path which draws people into the space. This Sika® ComfortFloor® solution uniquely weaves a ribbon from flooring into shelving and spatial dividers, which attracts and excites users to feel energized as they meander about the library looking for a book or subject matter.



**In this Fine Arts Museum in Belgium,** muted sage green walls and warm grey Sika® ComfortFloor® is used to good effect in creating a natural, yet neutral backdrop. The tones of green and grey subtly enhance the subject matter of the artwork without disrupting the focus. It gives the eye a relaxing hue to look at whilst passing between paintings, which greatly reduces eye fatigue that high contrast colors may cause.



**In this high school in the Netherlands,** a Sika® ComfortFloor® creatively combines an energizing palette of colors. Medium-value blue, refreshing green and an accent of orange are laid out to create an imaginative multi-purpose space, perfectly suited for growing young minds.



# THINKING LEAN IN HEALTHCARE

## STREAMLINING PROCESSES EVERY MOMENT OF THE DAY



‘Lean could become a full-time undertaking if you reduce inefficiency.’ That was the challenge medical analyst and lean advisor **Ronald Aalbersberg** accepted more than eight years ago for the laboratory department at the Elisabeth-TweeSteden hospital in Tilburg, Netherlands. And, with great success. Efficiency in the lab increased significantly after work processes were redesigned using lean principles. Here, Ronald shares how he did it.

“Lean has been standard practice in the construction and automotive sectors for many years. It is relatively new in health-care even though major efficiency gains can be realized in hospital environments. A quick example: by implementing lean principles in our Laboratory for Medical Microbiology and Immunology (LMMI), we were able to reduce the process time for certain blood tests from an average of 65 hours to just three hours. This has helped to realize major benefits for patients and care professionals.”

### RENOVATING THE LAB

“Lean is all about improving the layout of day-to-day processes. This is something we realized after visiting an external lean consultant. I was fascinated by what he had to say and, before I knew it, I started to spend a lot of my time focusing on lean methods. The knowledge I acquired was very useful when we decided to renovate the laboratory. The main aim of the new design was to eliminate inefficiency from the processes we implemented. That led to surprising results. For instance, we thought we would need more space but by thinking and acting based on lean principles, we actually reduced the lab

surface area by 15 percent and even have 15 percent vacant space.”

### WALLS ARE FLOW BLOCKERS

“In the old set-up, each laboratory discipline worked in separate little compartments, of which there were 30 in total. But, walls are flow blockers. They slow down processes and make you work in batches. That is why we opted for one large lab area. This makes things a lot more transparent – you can see what is going on everywhere else. It also makes you more flexible. If you need greater capacity for, say, microbiology, then you can simply expand that section without breaking down walls. You can also deploy employees more flexibly and certain equipment can be shared. This allowed us to significantly reduce the number of emergency showers from 28 to three, and we went from 35 wash basins to eight.”

### FLEXIBLE LAYOUT

“The new lab layout is based on three main flows: blood, non-blood and a mix of blood and non-blood. Because material reception and system input are the first performed processes, it was logical to place them close to each other at the

front of the lab. In the past, someone from the admin department walked approximately 500 km a year to bring materials to the department. With the redesign, this has been reduced to a maximum of 40 km. We also adopted a lean approach for new furniture. Tables are not fixed in place, allowing them to be easily disconnected and moved elsewhere, if necessary. Each table is supplied separately with water, electricity and data via a column that’s incorporated into the nearest pillar. If you want to remove a table, all you have to do is loosen the couplings. We can transform the whole lab in no time at all, without needing to perform any demolition activities.”

### PROCESS IMPROVEMENT – EVERYONE IS PARTICIPATING

“5S is an important part of lean. The 5S approach helps you to improve the layout of your work station. If, in the morning, you examine what you will need for the rest of the day, you can keep your work station clean and do not have to keep a lot of stock close to where you work. As a result of using this approach, after the renovation we were able to empty and remove 28 double archive cabinets from



the laboratory. All in all, lean has allowed us to work a lot more efficiently – and thus improve productivity – with a fewer number of people, in a smaller surface area. We also learned that waiting until the test equipment was full to run it led to people waiting for results which created inefficiencies in other processes. Now, we run the equipment continuously, full or not, which leads to faster output and helps the organization to become more efficient.

By implementing a variety of lean methods, the lab increased speed and, through that, efficiencies. We already provided services to other hospitals, but we used our efficiencies to offer services to more hospitals and that increased our volume. The night emergency crew became a standard night shift to get all the work done. As a result, our bacteriology department is now operational 24/7, which is unique in Europe. By continuously examining processes and actions, we have made process improvement an

integral part of the day-to-day activities performed by our employees. Toyota, which is often referred to as the founding father of lean, implemented the approach over 60 years ago and feels it is only halfway. So, we still have a lot of work ahead of us. Not only in the lab but all throughout the Elisabeth-TweeSteden hospital.”

#### BRIEF INSIGHT INTO LEAN AT LMMI

- Improvement in workplace design via 5S: Sort, Streamline, Sanitize, Standardize and Sustain.
- Value Stream Mapping, to identify and reduce inefficiency in processes.
- Standardization and sustention of work processes, to reduce levels of unpredictability.
- Make processes faster and more streamlined; standing still is inefficient.
- Introduction of improvement boards, which can feature suggestions for process improvement.

#### LEAN AT LMMI IN FIGURES

- Reduced working surface area by 15%, with 15% to spare
- Reduced process time for certain tests from 65 to 3 hours
- Went from 28 to 2 emergency showers (at €1,200 a piece)
- Went from 35 to 4 wash basins
- Removed 28 double archive cabinets; fewer new cabinets purchased after renovation



# Sikafloor® AND Sikagard® SOLUTIONS FOR INTERIOR SURFACE FINISHING

Recommended		Floor Solutions				
		Sika® ComfortFloor®			Sikafloor® DecoDur	Sikafloor® MultiDur
		PS-23 PS-24	PS-27 HD	PS-63 PS-64 PS-65 PS-66	ES-22 Granite ES-26 Flake EB-26 Quarz EM-21 Compact	ES-28 ECF/EQ
Optional		Anti-Slip	Anti-Slip ESD	Anti-Slip ESD	Anti-Slip	
Category of room space	Main process					
Clinical Dry	Diagnostic areas without special equipment					
	Patient treatment without special equipment, clean					
	Physio therapy, fitness					
	Short term patient care					
	Long term / permanent patient care					
	Diagnostic areas using sensitive equipment Patient treatment using sensitive equipment					
Clinical Wet	Patient treatment without special equipment, dirty	+ Anti Slip				
	Assisted bathroom and showers	+ Anti Slip	+ Anti Slip			
Clinical Specialist	Operating suite					
	Medium and Intensive care					
	X-ray room					
	Laboratories					
	Aseptic suite Post mortem room					
Non Clinical Dry	Offices					
	Meeting rooms					
	Logistic and storage areas					
	Children day care					
Non Clinical Wet	Toilets and showers	+ Anti Slip	+ Anti Slip			
	Kitchens					
	Housekeeping service areas					
	Technical areas					
Heavy Traffic	Entrance and main course					
	Corridors and waiting areas					
	Staircases					
	Public lobby, shops and restaurants					
	Car park, parking garages					
	Helicopter deck					

\* Note: These are guide recommendations, always consult a local Sika expert for specific project advise and specifications. Local site conditions and regulations may require a taylor made specification.



			Sikafloor® MultiFlex			Sikafloor® PurCem®			Wall Coating Solutions			Ceiling Solutions	
ES-25 ESD	EB-24 ES-24	WS-10	PB-21 PB-26 PB-51 UV PB-52 UV	HS-21 HS-21 Gloss HB-21 HB-21 Gloss	AS-13 AS-53	WS-11	PS-11	AS-13	WS-11	PS-11	AS-13	WS-11 PS-11	
	Anti-Slip	Anti-Slip											
	Broadcast												
	Broadcast												
	Broadcast												
	Broadcast												
	+ Anti Slip												
	Broadcast	+ Anti Slip											
	Indoor	Indoor	Top Deck										
						N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	

Performance Selection 
  Premium Selection



# SEAMLESS PERFECTION ONLY TAKES A FEW STEPS

Sikafloor® is designed to provide long lasting beauty and performance. We have developed a proven process of application stages for our liquid applied flooring materials. This unique process is the only way to achieve seamless floors throughout your facility and maintain lasting beauty and easy maintenance. A global base of experienced, well trained flooring experts are available to take care of your flooring needs. Please feel free to also consult our experts on adequate procedures for old floor removal in case of refurbishment projects, to ensure proper subfloor preparation and floor detailing.



**STEP 1.** After inspection and preparation of the subfloor by cleaning (and if needed shotblasting, grinding, sanding and/or leveling), we will start mixing our liquid materials.



**STEP 2.** A liquid primer is applied to assure good bonding of the flooring, which is typically done by trowel and roller. The adequate method can be selected depending on the quality of the subfloor.



**STEP 3.** Self-leveling materials are applied in one or several layers to create a seamless base. Experts will pour and distribute the liquid material by using special squeegees, hand trowels, stand-up trowels and spike rollers in the process to assure a perfectly even and smooth surface.



**STEP 4.** A wide selection of liquid resin products is available in an almost unlimited amount of colors to address many types of use. Decorative flakes or anti-slip aggregates may be broadcasted into the wet surface.



**STEP 5.** The finishing touch is the application of a transparent or pigmented topcoat. Typically this step involves a roller or spray application. The top coat secures the desired final design, and adds friction and wear resistance qualities to the buildup.



**STEP 6.** Enjoy your floor for many years to come. Follow the recommended maintenance procedures, including a possible pre-treatment, to assure long lasting beauty and performance.



# Sikafloor® SOLUTIONS - A SEAMLESS MATCH FOR YOUR SPECIFIC NEEDS



What makes a floor a Sikafloor®? At Sika, the global leader in innovative flooring solutions, we listen carefully to what our customers want and need, stay abreast of changes that can impact your business, and make significant investments in research, development and testing in order to bring you trusted, engineered solutions based on evidence and best practices. Our time-tested, proven approach is rooted in more than 100 years of experience developing technologies used in flooring as well as concrete production, below-ground waterproofing, roofing, sealing and bonding, and other industrial applications.

We know that your business has its own unique flooring requirements in terms of impact resistance, rolling load resistance, wear resistance, safety regulations, antistatic performance, chemical or fire resistance and, increasingly, quick and efficient installation. Because our products can be customized to meet your technical requirements while still complying with government regulations, you're assured of getting excellent solutions that have only the characteristics you want and need.

Sika is a global expert in all core technologies commonly used in our specialty area of seamless flooring. And, all Sikafloor® solutions are developed and manufactured according to industry standards as well as our own strict standards for quality assurance and business ethics. To ensure the perfect solution for your business, we offer several flooring families for you to choose from. The families are based on core technologies. Variations within each family allow you to find solutions fine-tuned to your individual needs. All of the families are bonded together by our core flooring values: seamless solutions for your needs, innovative designs, durable and sustainable performance by offering more value at less impact, and full professional support by expert field personnel who are not only the best at what they do but who also take great pride in their work and care about your project.

We design every seamless Sikafloor® product using liquid-applied synthetics or synthetic-cementitious-hybrids. Our synthetic solutions are ideal for a wide variety of applications which is why you find them in industrial buildings, food and pharmaceutical facilities, car parks, schools, libraries, hospitals, shopping malls, museums, apartment building balconies, private residential properties and other settings.

Our cementitious flooring solutions are designed for ready-to-use and subfloor preparation applications. For time-critical projects, we offer a unique technology that reduces the waiting time for moist concrete to dry - our Sikafloor® EpoCem® intermediate layers can be installed directly on green and damp concrete.



Whether you're a building tenant, owner or applicator, Sika has you covered. In addition to our array of product offerings, we can supply you with industry certifications, proof of product performance and a global network of flooring specialists. For applicators, we also offer training programs to ensure proper installations. We do these things because we believe in Building Trust.



## SIKA PRODUCT OFFERINGS:



### Sikafloor® MultiDur

Epoxy flooring systems by Sika, a global standard. Your workhorse for heavy-duty performance, these flooring systems offer excellent mechanical strength, wear-resistance and chemical-resistance. Although seamless floors, by definition, are aesthetically pleasing, color and design are typically not our customers' major driver in choosing these flooring options. Rather, functionality and delivering long-lasting performance is where these floors excel. Choose from smooth, textured, broadcasted (slip-resistant) and mortar finishes to ensure the usability, safety and cleaning regime best fitting your needs.

Within the Sikafloor® MultiDur family you will find special solutions with extremely high chemical resistance;

solutions approved for cleanroom usage; and electrostatic discharging, dissipative and electrically conductive flooring. For more basic flooring use and high performance wall coating needs, we offer water-borne coating systems.

Sikafloor® MultiDur solutions are commonly found in:

- Storage, logistics and sales areas
- Production, processing and cleanroom areas (dry and wet)
- Ground-bearing decks, car parks and parking garages
- Commercial, public and residential areas

### Sikafloor® DecoDur

Decorative epoxy flooring systems by Sika. These added design options for heavy-duty flooring are perfect for projects where you want more than a traditional, uni-color design and need the performance of an epoxy floor. Within the Sikafloor® DecoDur family, we offer flooring solutions with different grades of mechanical and chemical resistance, all in a speckled design. Patterns range from a granite effect up to a larger full-flake design and are available in a variety of colors.

Typically, Sikafloor® DecoDur floors are installed with a smooth or lightly broadcasted surface texture. At your preference, we can finish the floor with a matte sealer designed to withstand common household and light-industrial chemicals or a tougher, more chemical-resistant, glossy finish.



Sikafloor® DecoDur floors are commonly found in:

- Life science facilities
- Laboratories
- High-pedestrian traffic zones in commercial and institutional buildings
- Food courts



### Sikafloor® MultiFlex

Polyurethane flooring systems for heavy duty and industrial usage by Sika. Sikafloor® MultiFlex systems are known for their higher elasticity which allows for crack-bridging designs. Further, these floors excel in absorbing base floor movements.

Sikafloor® MultiFlex solutions include designs installed directly on top of elastic waterproofing membranes and are available with or without special surface protection. These floors are installed in smooth, light broadcast and heavy broadcast (high anti-slip) designs.

Sikafloor® MultiFlex can commonly be found in:

- Storage, logistic and sales areas (raised floors)
- Production, processing and cleanroom areas (dry and wet)
- Car parks, intermediate and top decks

### SIKA® ComfortFloor®

With decorative, polyurethane flooring systems for commercial and residential applications by Sika, perfection has never been so close. Global technology leadership in industrial and resilient flooring comes together in our Sika® ComfortFloor® family, offering seamless, high-end aesthetics for even the most discerning clientele. An environmentally friendly solution, Sika® ComfortFloor® is mainly based on natural oils and organic raw materials. Its backing – comprised of resilient, acoustic isolation pads – are made of recycled rubber and foam particles.

Sika® ComfortFloor® products offer nearly unlimited design freedom. They are typically installed in a matte finish and are available in 72 standard colors. Custom colors are also an option, as are two-tone “concrete-look” designs and the ability to create your own floor art. Additional options include broadcasted colored flakes for a speckled design and



a light, anti-slip surface texture for use in wet areas such as showers and toilet rooms. All products offer very high color stability.

Sika® ComfortFloor® solutions are commonly found in:

- Institutional buildings such as schools,

museums, libraries and hospitals

- Commercial buildings such as shopping malls, hotels, office buildings and restaurants
- Residential buildings of high-end, modern design
- Therapeutic, restorative and exercise facilities, such as yoga or spa spaces



### Sikafloor® MonoFlex

One-component, polyurethane flooring solutions for easy installations, by Sika. Sikafloor® MonoFlex flooring solutions have earned their excellent reputation based mainly on their performance as a waterproof finish for balconies, walkways and staircases with pedestrian traffic. These moisture-triggered solutions are true innovations in terms of sustainability and ease of application.

Upon request, broadcasted colored flakes can be added for a speckled design. A light or medium anti-slip surface texture can also be provided. All products in this family offer very high color stability.

Sikafloor® MonoFlex solutions are commonly found in:

- Balconies
- Pedestrian walkways and staircases

### Sikafloor® PurCem®

Polyurethane cementitious hybrid flooring systems by Sika. These innovative flooring solutions deliver extreme performance in terms of mechanical and chemical resistance as well as reduced environmental impact. Because they're durable, low maintenance and available with resurfacing options, our versatile Sikafloor® PurCem® range of products is gaining global appreciation and can be found in a wide variety of heavy-duty applications. The special core technology of an elastic resinous binder reacting with cementitious fillers is what makes this product family resistant to high temperature variations, even thermo shocks for certain designs. Installation on damp concrete surfaces is possible with Sikafloor® PurCem®.

Typically, Sikafloor® PurCem® floors are installed in a light or heavy anti-slip broadcast or in a full mortar build-up to ensure high performance in wet areas. A smooth/light-textured surface finish is available for dry areas.

Sikafloor® PurCem® Gloss is the latest innovation to our Sikafloor® PurCem® family. This product's glossy finish allows for significantly easier floor cleaning. Specified with a smooth surface finish and in a low- to medium- thickness, this solution can be an alternative to some Sikafloor® MultiDur products.

Sikafloor® PurCem® solutions are commonly found in:

- Food and beverage processing facilities
- Professional kitchens
- Cool storage areas
- Heavy-duty processing areas, especially wet processing





### Sikafloor® Pronto

Methacrylate (P.M.M.A.) flooring systems that speed up installation times to the maximum, by Sika. Our Pronto family is known for its high resistance to a wide variety of uses. The super-fast curing time of these synthetics allows for super-quick refurbishments, though proper ventilation is required during installation to avoid inconveniences from odors.

When applied to areas with pedestrian traffic, Sikafloor® Pronto surfaces are typically installed in a smooth or light broadcast finish. A colored-flake broadcast finish can be provided upon request. A heavier broadcast finish is available for applications where there is vehicle traffic.

Sikafloor® Pronto solutions are commonly found in:

- Commercial kitchens



- Processing areas
- Pedestrian walkways, such as balconies and staircases
- Animal facilities
- Multi-story and underground car parks

### Sikafloor® OneShot

The fastest way to finish your car park and bridge deck, by Sika. This unique, innovative solution allows two steps in one shot. Our super-fast, spray-applied polyurea coating assures high mechanical strength. And, by spraying the fillers

needed to provide the surface's anti-slip texture at the same time, a significant amount of labor is saved, making it possible to prime, finish and seal in one day. Finishing options are available in both polyaspartic and polyurethane technology.

Sikafloor® OneShot solutions are commonly found in:

- Car parks, parking garages
- Bridge decks







### Sikafloor® HardTop

Concrete surface hardening, curing and sealing and heavy-duty industrial screeds, by Sika. Our dry shake Sikafloor® powders are broadcasted directly onto the fresh concrete – before the powerfloat finish is applied – to create an extremely hard-wearing, monolithic concrete floor. Additional performance can be achieved through various liquid-applied surface hardeners, curing compounds and surface sealers.

Sikafloor® HardTop solutions are commonly found in:

- Storage, logistics and sales areas
- Non-critical, heavy-duty industrial areas such as dry processing facilities
- Car parks, parking garages

### Sikafloor® Level

Subfloor preparation and leveling solutions, by Sika. To assure compatibility of base floor preparation materials with final, high-end synthetic finishes, Sika offers a full range of leveling underlayments. Professional flooring contractors and general construction craftsmen recognize Sika leveling compounds for excellent performance and workability. Each underlayment has a matching range of primers to ensure solid performance on different types of substrates, both in new and refurbishment projects. We offer solutions for absorbing cementitious and calcium-based slabs, and solutions to go over existing ceramic tile or synthetic flooring.

When time is of the essence, we can help to reduce your project lead time with the Sika® Level Rapid solution. This product's fast-drying properties typically enable underlayment and overlaying in the same day.

Sikafloor® Level products can be used in combination with our own Sika® ComfortFloor®, Sikafloor® MultiDur, Sikafloor® DecoDur and Sikafloor® MultiFlex flooring solutions and with

a wide variety of common commercial floors. Within our SikaBond® family, you'll find adhesives for synthetic, textile and wood flooring products.



### SikaCeram® Tiling System

For successful and long lasting finishes, it is essential not only to have the right quality of tile adhesives and grouts, but also a full build-up and installation system tailored to your project needs. Such things to consider are correct surface preparation, waterproofing and joint movement allowance for applications including indoor and outdoor tiled finishes in all different tile types and sizes. Sika offers special systems for new and refurbishment works, with quality solutions that will ensure long lasting finishes.

SikaCeram® Tiling System solutions are commonly found in:

- Commercial, institutional and residential projects
- Functional areas (laboratories, bathrooms, kitchens, swimming pools)
- Service areas (reception halls, restaurants, corridors)



### Sikagard® WallCoat

A wall coat that blends specific, engineered performance requirements with decorative designs, by Sika. When you

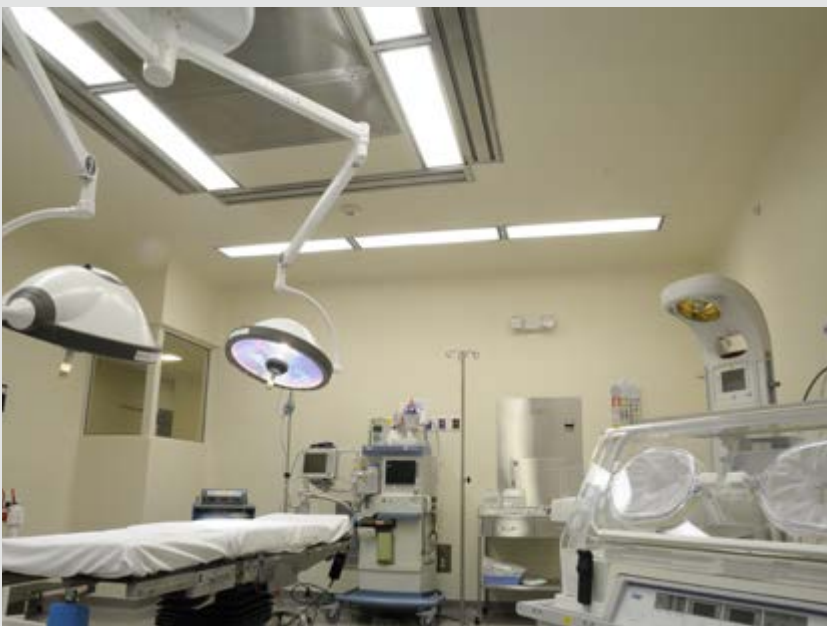
need more than just paint, our family of Sikagard® WallCoat performance and decorative wall coating systems delivers unique benefits for demanding surface

finishing, including chemical resistance and heavy-duty mechanical resistance.

Our wall coat has the ability to withstand chemicals used in cleaning regimes and in-film preservatives providing finishes that do not promote the development of fungi, bacteria and other micro organisms. Our wall coat systems come in an array of colors, many of them match specified Sika flooring product colors. Sikagard® WallCoat solutions do it all easily.

Sikagard® WallCoat solutions are commonly found in:

- Cleanroom certified areas
- Food and beverage processing facilities
- Hospitals and laboratories
- Concrete surface protection
- Tunnels
- Commercial, institutional and residential interior finishing





Rainbow House in Lancashire, UK

# RAINBOW HOUSE CHARITY, UK

SIKA DONATES HYGIENIC FLOORING AND WALL COATING SYSTEMS TO RAINBOW HOUSE CHARITY.

Legacy Rainbow House works with children who have a brain injury, multiple disabilities or complex health needs.

Legacy Rainbow House was created in 2001 by Joanne Mawdsley, who had two boys who were tragically struck with a rare genetic disorder, resulting in brain damage and disability. It was her passion and drive to help her boys that founded this innovative service. The services were funded by The Mawdsley Family until 2004, at which time it became a charity. Providing assistance for other children, Ms. Mawdsley enriched her own life and surrounded herself with like-minded parents who supported and guided each other through a very dark process. In doing so, therapy was provided thereby helping their children to help themselves.

The Legacy Rainbow House works with children who have a brain injury, multiple disabilities or complex health needs. The correct specification of facilities, and in particular flooring, is vital. Sika® ComfortFloor® Pro from Sika proved ideal for the children and staff at Rainbow House. The system's chemical composition and texture absorbs impact and offers the perfect surface for intensive therapy work done at the facility, while also providing a high degree of comfort.

The Sika® ComfortFloor® system and Sikagard® Hygienic Wall Coatings have helped deliver a high-performance, visually stunning solution for this challenging and innovative application. Three colors were used in the main areas of the facility

to create a rainbow effect – Sika Sun Fire, Sika Wild Orchid and Sika Spring Grass. For the cleaners' room, an office and a kitchen, Umbra Grey was selected, with an additional aggregate added to complement the rooms' functionality.

In demanding hygienic environments such as Rainbow House, standard paints are no match for this range of specifically developed hygienic coatings. The liquid applied system was quickly and easily installed in the therapy areas by Crown Flooring as one seamless piece, meaning no joints which can harbor bacteria. In addition, the floor's constitution resists the growth of bacteria or fungus and is very easy to clean.

Sika has also donated its Sikagard®

Hygienic Wall Coatings for the entire interior of Rainbow House. The coatings complement the flooring system by offering the same seamless properties as Sika® ComfortFloor®. Sikagard® Hygiene Coatings are designed to provide exceptional durability as well as an enhanced resistance to cracking, splitting and flaking.

Ms. Mawdsley continues to develop, create and implement strategies to generate the income needed to continue all services. She leads a small but efficient team that manages development, parent support, key workers, finances, trusts and grants, media and marketing. The charity is supported by a professional board of directors, who ensure and safeguard all services.



Physical therapy sessions for disabled children.



**READ THE  
WHOLE  
ARTICLE  
HERE.**



# INDEPENDENT CERTIFICATION OF SIKA FLOORING AND COATING

## CSM



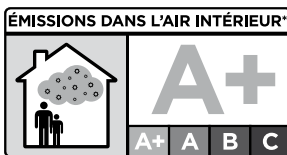
"Cleanroom Suitable Materials" is the world's first standardized product qualification according to the ISO 14644 and GMP standards for use in cleanrooms.

## AgBB



AgBB (Ausschuss zur gesundheitlichen Bewertung von Bauprodukten) is a scheme for health-related assessment of emissions of Volatile Organic Compounds (VOC, VOC and SVOC) from construction products in Germany. The scheme has criteria for testing and assessment for VOC emissions from construction products suitable for indoor usage. It sets quality standards and restrictions relevant to VOC emissions for future production of construction products for indoor usage.

## A+



ANSES (The French Agency for Food, Environmental and Occupational Health & Safety) provides Collective Expert Assessment of applications for the marketing of pesticides and biocides, as well as chemicals within the framework of the REACH regulations, according to defined procedure and criteria. It issues marketing authorizations, following assessment work, of plant protection products, fertilizers and growing media, and their adjuvants.

## LEED



LEED is now the world's best known and largest 'Green Building' certification system. It was developed in 2000 by the US-GBC (US Green Building Council) and is most relevant for North America, but is also used in many other regions around the world, such as South America, Europe and Asia. It is based on a set of rating systems where specific topics are assessed, such as transportation, recycled content, etc., however the LEED program is not currently LCA based. To receive LEED certification, building projects satisfy prerequisites and earn points to achieve different levels of certification. Prerequisites and credits differ for each rating system, and teams choose the best fit for their project.

## ISO 9001 / ISO 14001



ISO 9001 is one of the standards within the range of the international standards ISO 9000. It sets out the criteria for a quality management system that will provide real benefit to an organization to help manage the business effectively and implement best practice methodology. This standard has a strong customer focus, as it promotes top management and helps to continuously improve the process approach.

The international environmental management standard ISO 14001 specifies globally recognized requirements for an established environmental management system. This standard contains numerous further standards governing various aspects of environmental management, including life cycle assessments, environmental indicators and environmental performance evaluation. It can be applied to both manufacturing as well as service provider companies.

## CE-MARKING



The CE (Conformité Européenne) marking is the manufacturer's declaration that the product meets the requirements of the applicable EU product directives or EU regulations that apply to it. CE Marking on a product also indicates to government officials that the product may be legally placed on the market in their country and allows the free movement of the product within the EFTA & European Union (EU) single market (total 28 countries). CE Marking on a product permits the withdrawal of non-conforming products by customs and enforcement/vigilance authorities.



# HYGIENICALLY SEALED DETAILS

Traditional flooring systems produce gaps and joints when installed, which then become the weakest part of the floor and allow dirt and bacteria to harbor. These joints are most apparent between different components, between floors and walls and around columns and entrances. Because such joints are sensitive to local water issues, water must be removed immediately to prevent the water penetrating into the joints and damaging the adhesive.

In general, joints make daily cleaning and maintenance more difficult and time consuming when compared to the new generation of cleaner, more hygienic resin flooring. Building owners and managers often agree that joints are their biggest, most expensive problem when dealing with their current flooring system.

Therefore, it is ideal in healthcare facilities to provide surface solutions with hygienic, jointless connections. Sika provides liquid-applied flooring system solutions which cure to provide a completely seamless, smooth floor with no cracks, gaps or joints - even where there are color changes in the design or between floor and wall transitions. Unique advantages with jointless, hygienic connections provided by Sika products include the following key features: anti-microbial, non-porous, easy to clean, long-term durability and maintenance, hard-wearing, enhanced aesthetic appearance and increased user comfort.

Sikafloor® flooring systems and Sikagard® wall coating systems do not support the growth of bacteria or fungus. As an anti-microbial coating, such products prevent the growth of bacteria on the surface thanks to the material constitution and lack of joint crevices. Because they are completely seamless, there are no hiding places for dirt and bacteria. Thus, it is

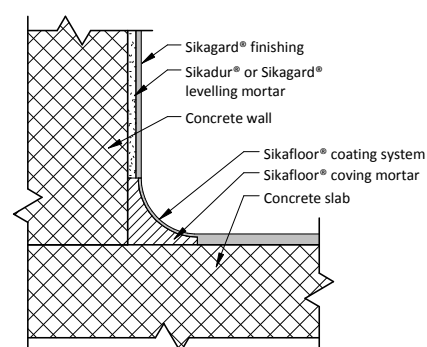
easier and faster to clean and maintain a hygienic environment. However, there is no way to prevent all of the joints in floors. Since they are causes of the major damages in flooring applications, the proper planning and design of a floor joint, has to be performed with specific precautions to prevent future damage. Sikaflex® sealing solutions for floor joints are designed to hygienically seal surfaces, with specified joint movement and mechanical wear resistance from traffic and structural movement. Water, aggressive disinfection and sterilizing liquids used in healthcare facilities also can impact the durability of floor joint sealants. Therefore, they must have suitable mechanical strength, chemical resistance and excellent adhesion. Precise requirements are dependent on the function and location of the respective joints.



Sikaflex® elastic sealants fulfill all these requirements and have outstanding fast-curing and bacteriostatic features.

As shown in the below detail drawing and image, the radius cove is a standard Sika detail which is free of joints and makes a practically maintenance-free, smooth curve transition. Such coving is often required at the floor to wall connection and other horizontal to vertical connections in hygienic areas. In such cases where drainage channels or gullies are designed in floor areas as in the detail drawing and image below, Sika flooring experts provide tailored detail drawings and provide advice for joint sealing solutions according to each unique site situation. Resin flooring has rapidly become popular in healthcare facilities because it has many advantages compared to

## Sikafloor® FLOOR-WALL COATING CONNECTION WITH RIGID COVE



# CEILINGS, WALLS AND FLOORS MUST BE SMOOTH, JOINTLESS, AND WASHABLE WITH DISINFECTANTS OR OTHER METHODS OF DISINFECTION. THE WALL SURFACES SHOULD BE SHOCK RESISTANT, AND THE FLOORING SHOULD BE LIQUID-TIGHT AND SMOOTHLY CONNECTED TO THE WALL WITH A SEAMLESS COVE.

Guideline for Hospital Hygiene and infection Prevention by Federal Health Department / Robert Koch Institute

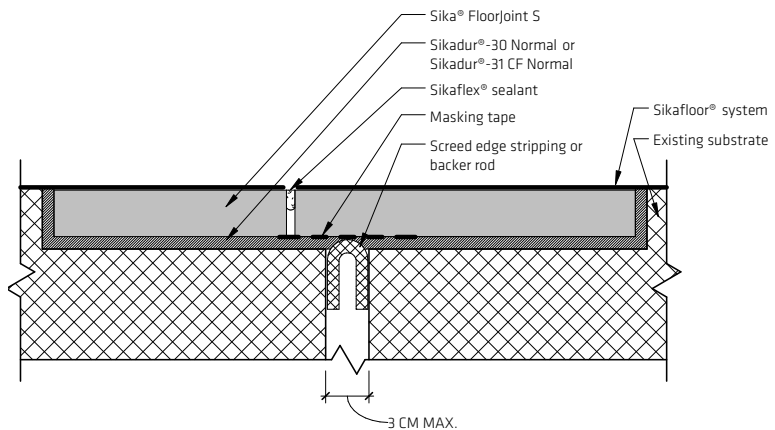
traditional flooring systems. The most attractive feature for architects is its uniform, smooth appearance, which creates a clean aesthetic without interruption of joint lines and is both beautiful and functional. Healthcare facilities

users, many of whom may be in wheelchairs, on rolling beds, or using wheeling carts carrying fragile liquids or medicine, will have a smoother, more comfortable experience while moving across the floor without protruding or recessed joints.

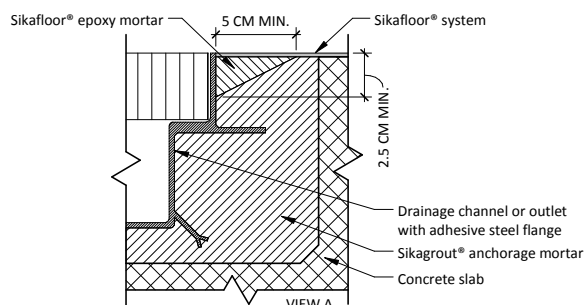
Jointless connections create a continuous surface and user-friendly experience, in addition to the numerous other benefits and long-term lifespan of the surface material.



## Sika® Floorjoint S FLOOR MOVEMENT JOINT



## Sika® PurCem® DRAINAGE CHANNEL DETAIL



# SIKA@WORK FOR FLOORS, WALLS AND CEILINGS IN HOSPITALS

**A selection of healthcare facilities where Sika flooring solutions have been applied in USA:**

- Childrens Hospital, Omaha, NE
- Childrens Memorial Hospital, Chicago, IL
- Citizens Memorial Hospital, Bolivar, MO
- Cox Medical Center, Springfield, MO
- Custom Care Pharmacy, Tampa, FL
- Denver Health, Denver, CO
- Exemplar, Lewisville, CO
- Golden Valley Hospital, Clinton, MO
- Greater Regional Med Ctr, Creston, IA
- H Lee Moffitt Cancer Center, Tampa, FL
- Hacienda Surgical, Hacienda, CA
- KU Med Center, KC, KS
- Lake Forest Hospital, Lake Forest, IL
- Manati Hospital, Manati, PR
- Mercy Hospital, Cedar Rapids, IA
- Methodist Hospital, Chicago, IL
- N Kansas City Hospital, KC, MO
- Olathe Med Center, Olathe, KS
- Riverside Methodist, Columbus, OH
- SRI Surgical Express, Tampa, FL
- SF General Hospital, San Francisco, CA
- Saint Joseph's Hospital, Tampa, FL
- Saint Lukes, Cedar Rapids, IA
- UCSD Jacobs Medical Center, San Diego, CA
- Univ. of Pennsylvania, Philadelphia, PA
- Univ. of Wisconsin Hospital, Madison, WI
- Via Christi, Pittsburg, KS
- Wash Co Reg Hospital, Fayetteville, AR



**SAINT CONSTANTIN HOSPITAL,  
BRASOV, ROMANIA**

**Sika solution:**

Sikagard® Hygienic Coating for the walls and ceilings



**QUEEN MARY'S HOSPITAL,  
ROEHAMPTON, GREAT BRITAIN**

**Sika solution:**

Sikagard® Hygienic Coating for the walls and ceilings



**POOLE HOSPITAL, DORSET,  
GREAT BRITAIN**

**Sika solution:**

Sikagard® Hygienic Coating for the walls and ceilings





**VIA CHRISTI HOSPITAL, PITTSBURG, KANSAS, USA**

**Sika solution:**  
Sikafloor® DecoDur Flake for renewal and extension of the Hospital



**HOSPITAL SOUSA MARTINS, GUARDA, PORTUGAL**

**Sika solution:**  
Sika® ComfortFloor® for renewal and extension of the Hospital



**YORK HOSPITAL OPERATING THEATRE, GREAT BRITAIN**

**Sika solution:**  
Sika® ComfortFloor® for floor refurbishment



# FLOOR CARE IN HEALTHCARE

Proper cleaning and eventual maintenance are needed to ensure that your Sika flooring system stays in the best shape and gives you years of satisfaction.

TEXT: PATRICK VAN DE GRAAF, Global Sector Marketing Director Healthcare, Diversey Care  
ARNAUD HANTISSE, European Portfolio Manager Floor Care Chemicals and TASKI Machines, Diversey Care

## HEALTHCARE MARKET DYNAMICS

Healthcare is a large market, and the trends support further growth. This growth will be driven partly by developing markets, where governments are working to expand access to healthcare for their growing populations. Population aging will remain another long-term growth driver, most noticeably in Western Europe, North America and Japan.

Greater public scrutiny of Healthcare Associated Infections (HCAI) in hospitals is another important trend in healthcare. HCAI, emerging pathogens and multi-drug-resistant organisms are the top concerns of infection prevention professionals.

## HAND HYGIENE AND FLOORS

Infection prevention starts with hand hygiene. Many illnesses and diseases are most readily spread by personal contact

or by touching contaminated surfaces. Private companies such as Diversey Care are actively partnering with the World Health Organization (WHO) to celebrate World Hand Hygiene Day and promote better hand hygiene through WHO's annual global campaign "SAVE LIVES: Clean Your Hands". This campaign contributes significantly to the improvement of hand hygiene in healthcare. As a result of "SAVE LIVES: Clean Your Hands", the use of alcohol hand rubs



has increased steadily over the years. Consider that a healthcare worker performs hand hygiene as much as 6,000 times per year. The increased use of alcohol dispensers is a very positive development for the prevention of infections, but it has implications for the floor and can be very challenging for the Facility Manager. In many hospitals, the drips and spills that typically go along with using the dispensers cause damage such as white spots to the floor below. Thus, alcohol-resistant floors and proper cleaning and maintenance procedures are a major need.

#### **SURFACE DISINFECTION AND FLOORS**

Cleaning and disinfection are performed in virtually all areas of a healthcare facility. Recent scientific medical studies show the importance of maintaining a thoroughly clean and disinfected care environment to ensure the safest possible experience across patient rooms, isolation areas and operating theaters. To achieve superior cleaning and disinfection, it is important to understand the threat of environmental transmission of pathogens as well as the products, procedures, trainings and validation programs that provide the best cleaning and disinfection results.

Some areas in a hospital are deemed to be high-risk settings for the spread of pathogens while others are considered lower-risk. Critical control points in high-risk areas such as operating rooms, intensive care and isolation rooms should receive special attention. Visually inspecting floors for stains isn't enough. Swabbing floors and testing for the presence of polypeptides, which would indicate the presence of micro-organisms, should also be performed.

It is important to note that opinions about the need to disinfect floors and the practices for disinfecting them differ globally. Many government organizations and regulations state that the infection risk associated with floors is low and thus recommend cleaning, with no

#### **ABOUT DIVERSEY CARE:**

The well-being of people everywhere depends on a sustainable world. Sealed Air's Diversey Care Division offers solutions for infection prevention, kitchen hygiene, fabric care, building care and consulting. Our solutions protect brands, deliver efficiency and improve performance for our partners in healthcare, food service, retail, hospitality and facility services. Our leading expertise integrates product systems, equipment, tools and services into innovative solutions that reduce water and energy usage and increase productivity. By delivering superior results, we help create profitable, sustainable enterprises for a cleaner, healthier future.

disinfection. There are, however, countries and regions where daily disinfection of floors is common practice. Some surface disinfectants are based on traditional chemicals such as chlorine or quat. Others are based on a new generation of more sustainable technologies such as the Oxivir® disinfectants powered by AHP® technology which utilizes accelerated hydrogen peroxide. It is important to understand the use of disinfectants when selecting a floor for a healthcare facility.

#### **CLEANING AND MAINTENANCE OF FLOORS**

What a floor looks like is one of the most significant aspects in the overall appearance of a building's interior, especially in the healthcare market. The difficulty is in how to achieve the desired results in terms of appearance, protection and safety when you're dealing with diminishing budgets, shortages of staff and lack of time. Certain maintenance methods such as stripping and refinishing can be problematic, as it is not easy for the cleaning team to strip and recoat traditional floors such as linoleum, PVC or LVT which also require additional protection. This level of maintenance requires qualified personnel, time and closing off the areas where this work is being performed – something that is very difficult to do in hospitals that function around the clock.

However, the flooring market is changing, and many newly built floors

for the healthcare sector do not require any additional layer or treatment. These floors are designed as ready-to-use solutions that require no initial maintenance or polymer applications. These solutions are a real plus in healthcare environments where customers need a simple way to clean the floor, maintain its appearance and preserve their long-term investment. Diversey Care recommends the use of a non-film, build-up chemical formula in conjunction with proper cleaning pads for cleaning these types of surfaces. Diversey Care also offers a floor polish that is 100 percent dedicated to the healthcare market. This polish is designed specifically to resist hand sanitizers and prevent damage or discoloration to the floor.

Proper cleaning procedures offer a considerable reduction in facility operating costs by lowering the need for interim floor maintenance and the time required to strip and install floor finishes, while maintaining a long-lasting aesthetic appearance. All Sika flooring systems are tested in the lab with different cleaning products to ensure customers receive appropriate cleaning instructions. This eliminates the guesswork and hassle of trying to figure out proper floor maintenance on your own and helps you achieve superior, consistent, cleaning performance and enhanced cleanliness of non-treated floors. Having the flooring manufacturer and cleaning solutions supplier jointly provide cleaning instructions is an ideal approach to achieving facility requirements for efficiencies, cost savings, high-quality appearance and longer preservation of the floors.

Sika partners with cleaning chemicals suppliers such as Diversey Care to provide Sika's flooring customers high-level, after-sales service, with a specific focus on cleaning and maintenance. We also provide support for life-cycle cost analyses and maintenance budgets for floors in a wide range of projects.

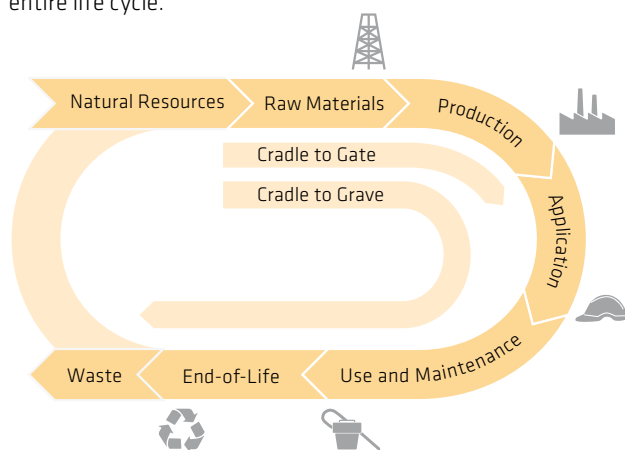




# SIKA SOLUTIONS AND SUSTAINABILITY

Limited resources, climate change, water, and infrastructure are global megatrends which are re-shaping Sika's markets and also guiding Sika's business. As an innovator and technology pioneer, Sika thinks ahead and is committed to a better environment through an integrated product approach.

Sika's innovative solutions and our products sustainability are Sika's contribution to the sustainability of your projects. Being aware that environmental impacts occur at each stage of the product life cycle, Sika uses Life Cycle Assessment (LCA) methods according to the ISO 14040 series and Standard EN15804 to provide quantitative evaluation of the potential environmental impact of our products and services over their entire life cycle.



Sika has always been a pioneer in supplying solutions to meet the highest environmental standards and actively aligns itself to various green building certification programs, including LEED, BREEAM and DGNB. Sika is looking to genuinely provide sustainable values and is a member of WBCSD, UNEP (SBCI) and Responsible Care.

Sika sustainability solutions focus on:

- Durability of the building materials
- Very low VOC and particle emissions from Sika product ranges to be tested and approved to the most stringent global standards for emissions including AgBB, AFSSET, and M1, etc., plus they also have the lowest fire ratings.
- Ease of use and ease of maintenance once the products have been applied.
- Development of recycling processes and facilities for Sika products.

Promotion of alternatives in specifying refurbishment solutions to contribute to a sustainable future with far less investment and resources than a rebuild.

We believe that in the future, this positive approach will remain crucial to Sika's success in the global market, and we will continue to anticipate and respond strongly to major environmental challenges ahead, which will undoubtedly continue to result in better and more sustainable solutions for all areas of construction.

Therefore Sika works to develop:

- Energy-efficiency solutions
- Climate protection solutions
- Material-efficiency solutions
- Water-efficiency solutions
- All of which can contribute towards sustainable construction



# QUICK RENOVATION AND TURN AROUND SOLUTIONS

## RECYCLE YOUR FLOOR IN-HOUSE.

A big concern in the use of floor in healthcare facilities is to renovate it after a certain time period when the floor has naturally reached its end of life. By using Sikafloor® systems for the floor, this becomes relatively easy.

Sikafloor® has been used for many years in many different industries where high traffic, severe abrasion, impact and shock are daily stresses on the floor. Different techniques are available to regenerate Sikafloor® systems and extend the service-life of the whole floor. These techniques are:

- Recoating with a thin top coat compatible with the original system. This solution provides a brand new surface with the added option of changing the color.
- Refurbishment with diamond grinding pads. This technique is only possible with a thicker layer and smooth floor.

The result is a regenerated floor where existing surface damage is removed and the floor retains its original color.



Sika employees participate in the missions of Operation Smile as volunteers.

# SIKA HELPS CREATE CHANCES FOR A BETTER SMILE

We all have a chance to contribute to make a profound difference for such situations. Operation Smile is dedicated to providing free treatment to children and adults suffering from cleft lips and cleft palates. Sika actively offers sponsorship and participates in projects of Operation Smile in Asia.

## NEWS FROM VIETNAM

Since 1989, Operation Smile Vietnam has conducted medical programs in 35 cities across "Vietnam. Statistics showed that 3,000 children, or one in every 500 children, are born with cleft palates and lip deformations in Vietnam every year. Operation Smile has provided medical intervention to children with such conditions. Sika Vietnam has provided sponsorship to this organization, with which Operation Smile Vietnam was able to

sponsor 11 local missions between March, 2010 and July, 2013 by offering surgery to 798 Vietnamese children who were born with cleft lip and palate. In 2015 Sika Vietnam - together with Operation Smile Vietnam - is implementing a program of five surgical missions throughout the country in order to bring new smiles and better lives to those people. Three missions were already conducted in Ho Chi Minh City, Hanoi and An Giang. Additional missions are going to take

place in Hanoi, Nghe An and Ho Chi Minh City. So far 319 patients were screened and 225 patients received surgeries. 30 Sika employees so far have done voluntary work in 2015 in Vietnam.

## NEWS FROM THAILAND

Since 1997, Operation Smile Thailand has treated over 7,000 children with an average of 10 surgical missions per year in most rural areas as well as medical missions to neighboring countries, Laos



**ROMUALD BURKARD FOUNDATION**

Social sponsoring at Sika is mainly organized through the Romuald Burkard Foundation. Its main goals, among others, are to support community infrastructure development for social projects, to promote training in construction professions and trades, and to provide emergency aid to disaster-stricken regions.

EVERY THREE MINUTES SOMEWHERE IN THE WORLD, A CHILD IS BORN INTO THE UNCERTAINTY OF LIFE WITH A FACIAL DEFORMITY

2 MILLION PEOPLE LACK ACCESS TO ANY SURGICAL CARE

BILLIONS MORE PEOPLE LACK ACCESS TO SAFE AND WELL-TIMED SURGERY



and Myanmar. Sika Thailand supported Operation Smile Thailand to conduct a weeklong medical mission in Maesot, Tak on November 2-7, 2014. 156 patients (cleft lips, cleft palates and other facial deformities) were screened, and 107 patients (110 procedures) received free surgeries. In addition to the financial support, Sika staff volunteers their time during the mission in order to assist Operation Smile Thailand and its medical teams in coordinating logistic works.

# FULL RANGE SOLUTIONS FOR A WATERTIGHT AND SECURE BUILDING ENVELOPE

## 1. HIGH PERFORMANCE ADMIXTURES FOR CONCRETE

Concrete structures and elements including the foundation, basement, walls, columns, beams and floor slabs form the main part of the overall building envelope. Sika's solution includes concrete admixtures which increases the performance factors of such concrete components, such as strength, workability, watertightness and many other features. Sika experts also provide tailored solutions for architects to create special design effects when specifying concrete as a key visual design element in their projects.

## 2. WATERTIGHT BASEMENTS AND OTHER BELOW GROUND STRUCTURES

In healthcare buildings, below ground areas and structures are frequently used for essential service functions such as parking garages, plant rooms, storage and laundry areas. In these areas, waterproofing requirements may not be so stringent. However, for basements used for patient care and treatment, laboratories and technical areas, offices, computer centers and archives, the structure must be totally watertight and sometimes also vapor-tight. Sika has over 100 years of experience in providing below ground waterproofing solutions. The selection of the most appropriate waterproofing concept and system for any specific project is dependent on many factors, and it is important to involve a qualified waterproofing specialist at the early stages of design. Your local Sika Technical Services Department can provide expert advice and proper solutions to all your problems.

## 3 & 4. SEALING AND BONDING FOR WATERTIGHT FACADES AND WINDOW INSTALLATION

Energy efficiency requirements for exterior walls are becoming more stringent, strongly influencing building standards worldwide. Sika has developed sealing and bonding technologies and systems for facades to help designers meet higher energy efficiency and environmental requirements, whilst ensuring safe, economical installation and also reducing overall construction time. Sika works in close cooperation with leading façade designers and manufacturers using the latest material technologies for all types of facade construction.

## 5. CORROSION AND FIRE PROTECTION OF STEEL STRUCTURES

Steel structures in buildings all need to be protected against corrosion caused by exposure to the surrounding environment. In healthcare facilities, they also have to meet stringent building regulations for fire protection. Sika has a proven track record of providing durable and reliable corrosion and fire protection coatings on steel structures for over 50 years. Our coating systems are available in different colors and comply with the latest National and International Standards including ISO EN 12944 for steel corrosion protection, and ISO EN 13381-8 for fire protection.

## 6. DURABLE AND LONG LASTING ROOFING

A long-lasting watertight roof is essential for the reliable operation and sustainability of a building. Rain, snow, wind uplift forces, sun light, and many other environmental influences can cause failure of the roof system. This results in leaking and damage which require costly repairs, and possibly re-roofing. As the global leader with a proven record of over 50 years, Sika produces high quality and long-lasting Sarnafil® and Sikaplan® polymeric membranes, plus SikaRoof® MTC liquid applied membrane that meet the specific needs and budgets of roofing for health-care facilities.

Sika supplies solutions for the new-build and refurbishment of the following roofs:

- exposed roofs
- gravel ballasted roofs
- green roofs
- helipads
- solar roofs
- balconies



**SOLUTIONS FOR:**

**1**

Admixtures for concrete

**2**

Basement waterproofing

**3**

Sealing and bonding for glazed facades

**4**

Facade joint sealing/Window installation

**5**

Fire and corrosion protection for steel structures

**6**

Roofing

INTERIOR ENVIRONMENTS CAN ONLY RUN PERFECTLY WHEN PROTECTED BY A PERFECTLY TIGHT BUILDING ENVELOPE. TAKE CONTROL OF YOUR ENVIRONMENT WITH BUILDING ENVELOPE SOLUTIONS FROM SIKA.

## SIKA AT A GLANCE

17,000	TEAM MEMBERS
90+	COUNTRIES
160+	FACTORIES WORLDWIDE

# SIKA AS A RELIABLE AND INNOVATIVE PARTNER IN THE CONSTRUCTION OF HEALTHCARE FACILITIES

Sika is a specialty chemicals company with a leading position in the development and production of systems and products for bonding, sealing, damping, reinforcing, and protection in the building sector and the motor vehicle industry. Sika has subsidiaries in more than 90 countries around the world and manufactures in over 160 factories.

### 100 YEARS OF EXPERTISE

Our reputation for quality and reliability is virtually unmatched, and is illustrated through a comprehensive portfolio of problem solving products that have been employed for many years in a diverse range of applications. Whether we are waterproofing your basement or your roof, protecting your floors and wall, sealing your skyscraper or your car, or working with you on your building, you will see why we are renowned for Building Trust. For the full range of solutions from basement to roof, please refer to our brochure on healthcare facilities.

### WORLDWIDE PRESENCE FOR CUSTOMERS

Sika has a long track record of success as a complete system and problem solution provider on many different healthcare facility projects all around the world. Please visit the "reference" section on [www.sika.com](http://www.sika.com) to see a selection of these projects. With extensive technical expertise and solid practical experience on every continent and in all types of climate and environments, Sika is a highly qualified and reliable partner for all of your projects. Sika has highly professional technical and sales teams to support our customers and their clients. These teams include qualified engineers and technicians with expertise in all of the relevant technologies and applications, together with technical service engineers that have extensive practical installation and on-site training expertise to help ensure that the work is completed correctly and is 'right the first time.'

### WHAT MAKES SIKA SUCCESSFUL IS THE COURAGE FOR INNOVATION

873 employees globally are dedicated to research and development. Sika's success and reputation is based on our long-lasting tradition of innovation.

Accordingly, the core of Sika business is the innovation management and the focus on developing quality products and the best solutions for customers. Sika Technology AG in Switzerland takes the lead in long-term research programs for the whole Sika Group, whilst the responsibility for the development of new solutions sits with our 20 Global Technology Centers plus 18 Regional Technology Centers worldwide. New products and systems are also developed on a regional level to meet local markets' specific needs and requirements.

### MORE VALUE, LESS IMPACT

Sika is committed to pioneering sustainable solutions to address global challenges, and to achieve this safely at the lowest impact on resources. Creating and increasing value while reducing impacts – that is the goal. Our strategy fully integrates sustainability into all of our business processes, and we strive to create value for our customers and partners along the whole supply chain and throughout the lifespan of our products. The value created far outweighs the impacts associated with production, distribution and use.



SIKA HAS PROVIDED WATERPROOFING SOLUTIONS FOR MORE THAN

**100 YEARS**

THE FIRST PRODUCT – Sika®-1 – IS STILL ON THE MARKET

EVERY YEAR SIKA SUPPLIES ENOUGH ROOF MEMBRANES TO COVER THE

**WHOLE OF  
MANHATTAN**

MORE THAN

**30%**

INTERIOR NOISE REDUCTION IN VEHICLES THANKS TO SIKA'S ACOUSTIC SOLUTIONS

USING SIKA'S LONG-LASTING WINDOW INSTALLATION SEALANTS, MORE THAN

**1 MILLION**

WINDOW FRAMES ARE SEALED EACH YEAR HELPING TO SAVE MORE THAN

**10,000**

TANKER LOADS OF HEATING OIL OVER THEIR COMPLETE LIFETIME

SIKA'S CLEANROOM FLOORING SYSTEMS RELEASE

**1,000 TIMES  
LESS EMISSIONS**

THAN STANDARD LOW VOC SYSTEMS

WITH

**84 AWARDS**

IN 16 YEARS, SIKA IS THE COMPANY WITH THE MOST CONCRETE REPAIR PROJECTS AWARDED WORLDWIDE

THANKS TO SIKA'S RANGE OF WATER REDUCERS OVER

**25,000 MILLION  
LITERS OF WATER**

ARE SAVED ANNUALLY IN CONCRETE PRODUCTION

IN OVER 80 COUNTRIES, MORE THAN

**10,000  
ROOFING CONTRACTORS**

ARE TRAINED AND CERTIFIED BY SIKA

**50%**

OF ALL CARS PRODUCED WORLDWIDE USE SIKA PRODUCTS

# SIKA FULL RANGE SOLUTIONS FOR CONSTRUCTION:



WATERPROOFING



CONCRETE



REFURBISHMENT



MERCHANT



SEALING AND BONDING



FLOORING



ROOFING



INDUSTRY

## FOR MORE INFORMATION:



### WHO WE ARE

Sika Limited and Sika Ireland Limited are part of the global Sika Group, specialising in the manufacture and supply of chemical based products. Sika have a leading position in the development and production of systems and products for bonding, sealing, damping, reinforcing, and protecting in the building sector and the motor vehicle industry. Sika has subsidiaries in 97 countries around the world and manufactures in over 190 factories. With over 17,000 employees Sika generates annual sales of CHF 5.75 billion (£4.69bn). We are also committed to providing quality, service, safety and environmental care.

In the UK and Ireland, we provide market-leading solutions for concrete, waterproofing, roofing, flooring, refurbishment, sealing & bonding, and industry, and have manufacturing sites in Welwyn Garden City, Preston, Leeds and Dublin with more than 700 employees and a turnover of more than £220 million.

The information, and, in particular, the recommendations relating to the application and end use of Sika® products, are given in good faith based on Sika's current knowledge and experience of the products when properly stored, handled and applied under normal conditions. In practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any written recommendations, or from any other advice offered. The proprietary rights of third parties must be observed. Please refer to our homepage [www.sika.co.uk](http://www.sika.co.uk) for our current standard terms & conditions applicable to all orders. Users should always refer to the most recent issue of the Product Data Sheet for the product concerned, copies of which will be supplied on request.



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BUILDING TRUST

