



FLOORING

SIKA FLOORING AND COATING SOLUTIONS

BUILDING TRUST



SIKA'S FLOORING AND COATING CAPABILITIES FOR A HEALTHIER AND SAFER URBAN SPACE

Sika flooring and coating solutions are based on many technologies, including : Epoxy, PUR and PMMA resins; combinations of different binder technologies such as PU & Cement and EP & Cement for solutions covering all types of requirements for industrial and commercial applications. Sika's quality products are designed for the latest trends and requirements and comply with all regulations and standards, e.g. ISO 9001 and 14001, AgBB, CE-MARKING, M1, CSM, etc. Additionally, Sika is the world leader in VOC and ESD / ECF flooring technology.

Sika flooring and coating solutions are used in various function areas in buildings and facilities, for example for industrial floors with mechanical and chemical resistance, food industry walls with hygienic requirements, floors and walls in clean room environments, and decorative floors and walls in commercial and residential buildings. Their application can be used in almost all project types in an urban space :

- Manufacturing Industry (automotive, electronics, assembly plants, chemicals, etc.)
- Life Science Industry (food and beverage, pharmaceuticals, professional laboratories, etc.)
- Warehouse and Distribution (storage and transportation)
- Car park, Parking garages (public, commercial, private)
- Commercial Buildings (hotels, shops, offices, exhibition centers, etc.)
- Institutional Buildings (schools, hospitals, libraries, museums, athletic centers, etc.)
- Interior Finishing (residential and small commercial, distribution business)
- Carriers (marine, trains and rail, trucks and busses)

Sika flooring has more than 50 years experience and is worldwide technology leader in seamless flooring. It is the ideal option for all flooring needs. Its important contributions to the worldwide flooring construction material technology development are :



- Early 80's: the first modular concept for Epoxy Systems which is partly still in use today.
- EpoCem® - the first hybrid in the market.
- Sikafloor®-263 - first self-levelling floor - upright application process.

- Sikafloor® PurCem® - High end industrial floors with best cost / performance ratio.
- More innovation to come in the future.



Solutions for storage, Logistics and Sales Areas



Solutions for Multi-Storey and Underground Car Parks.



Solutions for Production and Processing Areas.



Levelling solution for perfectly even and smooth floor substrate.



Solutions for Cleanroom Areas.



Solutions for Commercial, Public and Residential Areas.



Solutions for Electro Static Discharge (ESD) Protection and Control.



Solutions for Walls and Ceilings.



Solutions for Secondary Containment Areas.



Detailing and Jointing Solutions for Flooring Applications.

DESIGN SUSTAINABLE CONSTRUCTION WITH SIKA HIGH PERFORMANCE FLOORING SYSTEM



DESIGN LIFE

This is possibly the most fundamental criterion and is certainly the first question to ask when selecting a floor: What is the required design life - 2, 5, 10 or 20 years? Is frequent or regular maintenance feasible or desirable? The floor specification must obviously be designed to meet this life expectancy and durability, including the intended maintenance-free periods.

* Note :

1. The 3D graphic in this brochure are not to scale and they are only intended to illustrate the system build-ups.
2. The symbol such as  represent typical project related performance requirements and these are all listed and discussed on pages 50 to 52 of this brochure.



STRUCTURAL REQUIREMENTS

The static and dynamic loadings that will be imposed during both construction and service have to be considered. The floor topping must be capable of withstanding these demands, but it can only function as well as the substrate to which it is applied, i.e. the structural concrete slab or screed.

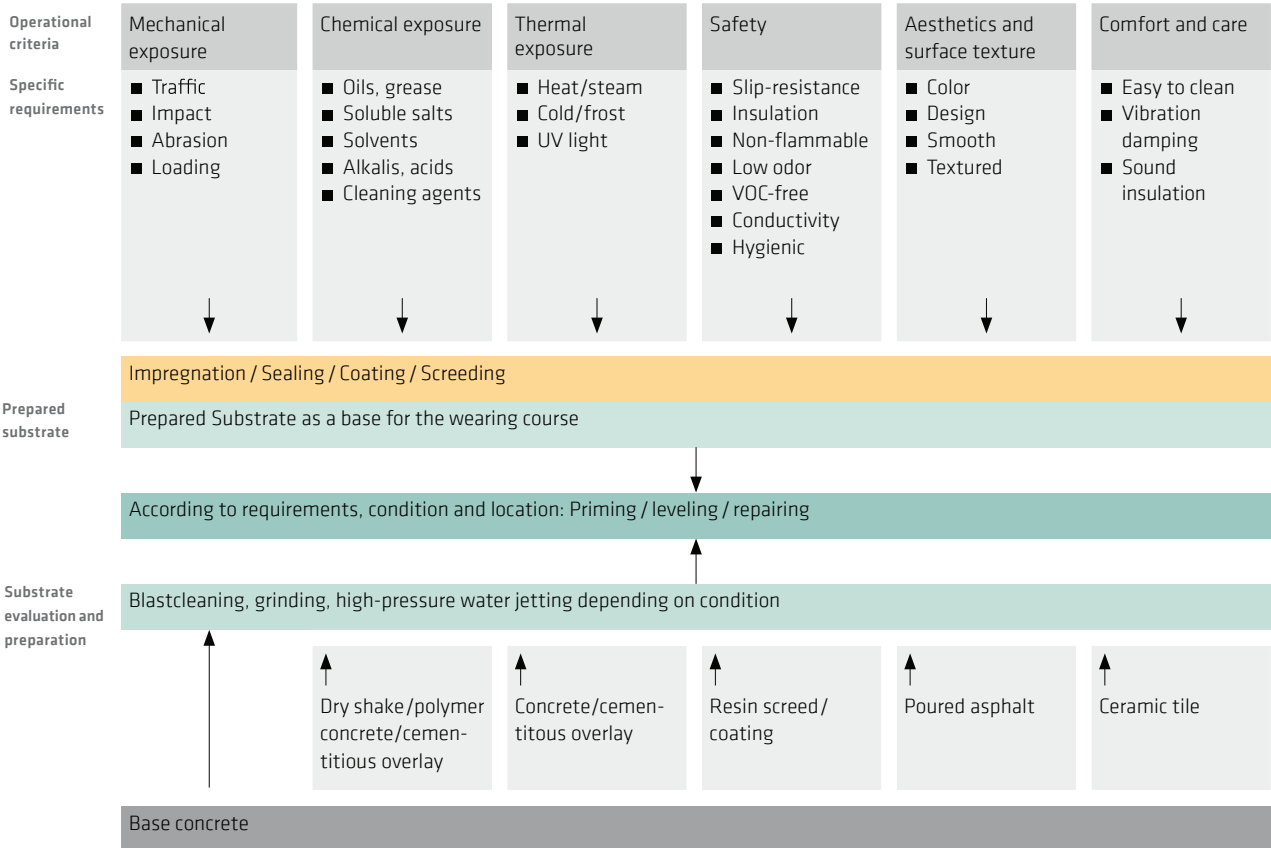
* Note : In some instances the floor slabs may require additional structural strengthening - for example with Sika® CarboDur® Composite Strengthening systems.



COLOR & APPEARANCE

In addition to providing seamless concrete protection againsts corrosive liquids and mechanical wear, flooring systems should also meet easycare, hygiene, safety dan durability requirements with the appropriate color for the environment. Achievement of both the architect and the owner's requirements always requires consideration of both functional and aesthetic criteria. With Sikafloor® systems a wide variety of colors, textures and visual effects can ben produced in floors which will also provide the overall functional performance.

KEY REQUIREMENTS FOR CONSIDERATION IN SELECTING A FLOOR SYSTEM



PROJECT RELATED PERFORMANCE REQUIREMENTS



TRAFFIC AND MECHANICAL WEAR

Heavy and frequent traffic increases the physical requirements for mechanical resistance measured as abrasion. Often the greatest wear or exposure occurs in localized areas. Trucking aisles or sections around specialized plant for example, may require different or additional treatment to the surrounding general floor area.



CHEMICAL RESISTANCE

Resistance to chemical attack is a major factor for many floor finishes. Assess the effects on the floor of the individual chemicals present plus their combined or mixed effects and the consequences of any chemical reactions. Higher temperatures usually increase the aggressive nature of chemicals.



SERVICE TEMPERATURE

Thermal shock resistance can be a major requirement for floors. It is important to consider not only the temperature of operating machinery and the products in the processes, but also the temperature of adjacent areas. At either end of the scale, the temperature extremes from hot water or steam used for cleaning and cold from blast freezers for example can create extremely demanding environments; fortunately many Sikafloor® systems can durably accommodate these.



SLIP RESISTANCE

Floor areas may require different degrees of slip resistance, dependent on their environment, i.e. 'wet' or 'dry' processing areas. This is principally a question of reconciling the floor's surface profile and finish, with the demands for ease of cleaning and the type and likelihood of spillages. Generally speaking the greater the profile, the greater the slip resistance.



HYGIENE

Today's floors have to fulfill the highest hygiene demands and increasingly very specific requirements for the prevention of contamination, particularly in the nuclear, pharmaceutical, cosmetic, food, beverage, chemical and electronic industries. There are many Sikafloor® systems designed to meet even the strictest requirements of the latest cleanroom hygiene conditions.



IMPACT RESISTANCE, POINT LOADING

In areas where goods are mechanically handled such as production areas, warehouses, loading bays and the like, compressive and dynamic loads are generated by the movement of these goods on the lines, forklifts and pallet trucks etc. It is essential to ensure that the stresses generated are not higher than the strength of the floor topping material and / or its bond to the substrate, which is reliably achieved with Sikafloor® systems.



IMPERMEABLE TO LIQUID

Sikafloor® system can provide an impermeable seal to protect both the concrete from attack by aggressive liquids and the underlying groundwater and the environment from the leakage of pollutants. This includes flexible and crack bridging system that help to ensure the reliable containment of any ecologically harmful materials, or conversely to maintain the purity of contained drinking water.



FLOOR COATING ON GREEN & DAMP CONCRETE

In new construction the delay before fresh concrete slabs can be coated and allow the building works to continue, or the area to be put into service is a major problem. In refurbishment projects waiting for existing concrete moisture content to reduce to an acceptable level for over coating with impermeable resin coatings is also a big problem. Sika® EpoCem® Technology is an innovative solution that can be used to reduce all of this waiting time dramatically.

PROJECT RELATED PERFORMANCE REQUIREMENTS



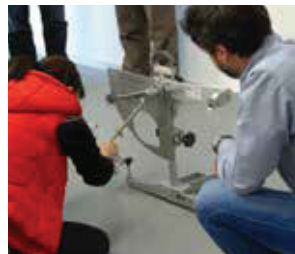
CRACK-BRIDGING ABILITY

Static and dynamic crack-bridging properties are often required of floor coating systems in order to adequately protect the substrate and accommodate movement and vibration. This is a particular requirement on exposed car park decks for example. The crack-bridging properties of selected Sikafloor® systems can safely accommodate this movement and the Sikafloor® systems are tested for crack-bridging performance down to at least - 20° C.



NEUTRAL ODOR, VOC-FREE

Total solids, 100% solids, or solvent free flooring systems that have neutral odor and low VOC emissions should now always be considered wherever possible to be sustainable and help to meet Green Building objectives, which all helps to protect the environment. This is especially the case in occupied indoor / internal or closed areas, where Sikafloor® systems are the ideal solution.



ELECTRICAL CONDUCTIVITY / ESD

There is an increasing demand for conductive flooring solutions, including ESD, DIF and ECF systems. These types of flooring systems are used to protect sensitive devices from damage or to avoid the potentially explosive effects in flammable atmospheres. Sika is a world leader in this technology for both floor and wall coatings.



CLEANING & MAINTENANCE

In order to ensure that Sika flooring solutions stay in good condition and continue to perform and function as required to protect your investment and give years of satisfaction, we also provide fully detailed cleaning and maintenance advice and guidelines. These are available for your assistance in the Sikafloor® Cleaning Regime, which is available to download from : idn.sika.com



MULTIPLE COLOR SHADES

The Sikafloor® range is available in almost every color shade with stable pigments available and special color can be made to order or matched to a client's specific requirements. This includes Sikafloor® systems produced to all major national and international color standards including RAL, BS 4800 and NCS.



FLATNESS & LEVEL

Underlayments required for providing a smooth (flat) or horizontal (level) surface for low performance requirements, such as prior to the application of carpets, resilient flooring, wood floors, sports floors or tiling in indoor residential areas; plus for high performance specifications requiring extreme values, such as for forklift traffic in high bay storage facilities for examples.



FOR FOOD CONTACT

Flooring in the food and beverage industry has to be suitable for direct contact, or to be in close proximity to food stuff, without adversely affecting them: as well as being able to withstand the extremely intensive cleaning regimes and frequent exposure to aggressive chemicals. Many Sikafloor® systems have full foodstuffs and potable water contact approvals.



PARTICLE EMISSIONS

Cleanroom suitability also considers all of the additional parameters relevant to the manufacture of the specific products under clean conditions, such as particle emissions, which are tested and assessed for this purpose in accordance with ISO 14644. Sika has developed special floor and wall systems with the lowest particle emissions results.

FLOORING APPLICATION PROCEDURES

Substrate inspection and preparation

THE CONCRETE SUBSTRATE IS THE BASIS OF A NEW FLOOR WHETHER IT IS NEW OR EXISTING

Thorough inspection and assessment are essential to determine its condition and the necessary surface preparation for a successful flooring system to be applied.

A durable bond must be achieved between the new flooring system and the substrate, which requires a clean and contaminant free, dry (according to the system requirements) and sound surface to be mechanically prepared to remove any cement laitance, loose or friable

particles and provide the profile required for the selected floor system. The final surface should be vacuumed to remove any dust prior to the application.

Please refer to our product method statement for proper investigation and preparation of the substrates or contact your local Sika technical department.



MEASURING THE COMPRESSIVE STRENGTH

The compressive strength of the substrate should not be less than 25 N / mm² (25 MPa). To meet defined loads, a higher strength may be required. It is advisable to take a number of measurements across the floor and in all parts of the proposed installation to confirm the compressive strength i.e. with a Schmidt hammer.



MEASURING THE COMPRESSIVE STRENGTH

Concrete floors generally have some cement laitance with low cohesive strength in the top few mm. This weak layer must always be removed during the substrate preparation. Withstanding stresses from concrete shrinkage, thermal shock or loading requires a minimum cohesive strength. This should be : $\geq 1.5 \text{ N/mm}^2$ ($\geq 1.5 \text{ MPa}$) and this is usually measured by a number of Pull-off test across the floor.



SUBSTRATE MOISTURE CONTENT

It is extreme important to measure the substrate moisture content because cement bound substrates should normally only be over-coated at a moisture level of < 4% pbv. ASTM D4263 is a simple test with a Polyethylene - sheet of at least 1 m² taped to the concrete surface. This should be left in position for at least 24 hours, prior to removal and testing. Moisture Meters such as the Tramex Concrete Encounter CME 4 can then give a clear reading of the moisture content as a & pbv. Moisture content > 4% by volume. or visible rising moisture (condensation) on the bottom of the sheet, indicates the need for additional drying time or the use of Sikafloor® EpoCem® Technology.

SIKA FLOORING & COATINGS

TECHNOLOGY OVERVIEW - FOR INDICATION

■ FLOORING TECHNOLOGIES ARE NOT ALL SUITED TO SAME REQUIREMENTS

Characteristics <i>(For Indication)</i>	Cement	Epoxy	PU	PU Cement	
Mechanical Resistance	0 / +	+	0 / +	+	
Impact Resistance	- / 0	- / 0	0 / +	+	
Chemical Resistance	-	+*	+*	+*	
Thermal Shock Resistance	- / 0	- / 0***	- / 0***	- / 0***	
Flexibility / Crack Bridging	-	-	0 / +	-	
Hygienic Level	-	+	+	+	
Low Odor (of fresh mixture)	+	0 / +	0 / +	0 / +	
Slip Resistance of smooth finish	- / 0	-	0	0 / +	
Aesthetic Incl. Color Variety	-	+	0 / +***	- / 0	
Curing speed & Application. by low temp.	-	- / 0	- / 0	0 / +	
Cleanability	-	0 / +***	0 / +***	0 / +***	

+ : Good / Main Feature
 * See chemical charts

0 : Average / Sufficient for most application
 ** Depends on Type or Formula

- : Low / Not main feature
 *** Depends on Build-Up and / or texture

SOLUTIONS FOR LOGISTICS, STORAGE & WAREHOUSE (Light, medium, Heavy Traffic)



- **Sikafloor® Syntop-103**
Dryshake floor hardener emery based, medium to heavy abrasive traffic, need slip resistance. Moh Scale 8.
- **Sikafloor® MetalTop 200**
Dryshake floor hardener metallic aggregate. Floor with high abrasion and for flooring with metallic finishing. Moh Scale ∞.
- **Sikafloor® 2 Syntop 2**
Non rusting hard corundum aggregate dry shake floor hardener
Moh Scale 9.
- **Sikafloor® Curehard 24**
Liquid floor hardener, dust proofer, sealer for concrete floor, sodium silicate based.
- **Sikafloor® Chapdur**
Ready to use mixture of cement, pigments, additives and hard aggregate of mineral origin.
- **Sikafloor® QuartzTop 100**
Mineral dry-shake surface hardener for industrial floors.
- **Sikafloor® QuartzTop 100 LC**
Mineral dry-shake surface hardener for industrial floors.
- **Sikafloor® Curehard 20 LI**
Liquid floor hardener, sealing for concrete floor, lithium silicate based.
- **Sikafloor® CC 700**
Liquid floor hardener, dust proofer for concrete floor, magnesium-fluorosilicate based.
- **Sikafloor® 933 Densifier**
Colloidal silica based densifier, enables reliable application of higher amount of dry shake powder, make the final floor surface denser, harder and glossier.
- **Sikafloor® 40 PurCem®**
Three parts, water dispersed low to medium strength coloured polyurethane modified, cement and aggregate screed with self-smoothing properties.
- **Sikafloor® 940 ColourSeal**
Coloured high performance dust proof coating.

SOLUTIONS FOR PRODUCTION & PROCESSING AREA

Pharmaceutical & Automotive



- **Sikafloor® 161 HC Substrate**
Three components solvent free epoxy mortar screed
- **Sikafloor® 2530 W LP/GL**
Two components water dispersed epoxy coating
- **Sikafloor® 263 SL HC**
Two components solvent free epoxy coating
- **Sikagard® Wall Coat ID**
Coloured, Water dispersed two part epoxy resin based coating
- **Sikafloor® 81 EpoCem®**
3 parts cement and epoxy combination mortar for selfsmoothing floor screeds of 1.5 to 3mm

AUTOMOTIVE



- **Sikafloor® 161 HC Substrate**
Three components solvent free epoxy mortar screed
- **Sikafloor® 374 CP SL**
Three components cost performance solventless epoxy based for thin self smoothing epoxy.
- **Sikafloor® 264 HC**
Two components solvent free epoxy coating

SOLUTIONS FOR PRODUCTION & PROCESSING AREA

Food and Beverages



1. Production Area 5° - 60° C

- Sikafloor® Ucrete® MF
- Sikafloor®-21 PurCem® LP

2. Thermal Shocked, Cold Storage, Blast Freezer & Kitchen (temperature -25° - -40° C & 80° - 120°C)

- Sika® Ucrete® UD200
- Sikafloor® 20 PurCem® LP

Seal Coat and Coving

- Sikafloor® 161 HC Screed
- Sikafloor® 315
- Sikafloor® 29 PurCem® LP
- Sikafloor® 31 PurCem® LP

SOLUTIONS FOR CAR PARK

Commercial Building, Data Center & Airport



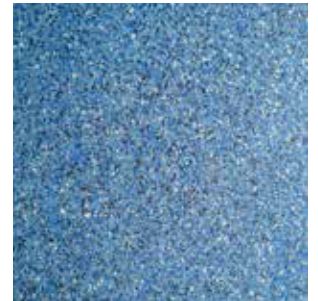
Sika® Chapdur
Sikafloor®-264 HC
Sikafloor®-263 SL HC
Sikafloor®-374 CP SL
Sikafloor® 81 EpoCem®

Sikafloor® DECORATIVE SOLUTIONS

THE DECORATIVE FLOORING SOLUTIONS from Sika allow the creation of an almost unlimited combination of functional and aesthetic requirements. The results of this flexibility in design are rooms so unique and distinctive that people like and appreciate living and working there.



BROADCAST FLAKE



COMPACT / QUARTZ



PRODUCT :

Sikafloor® - 161 HC Substrate

Sikafloor® - 263 SL Decor

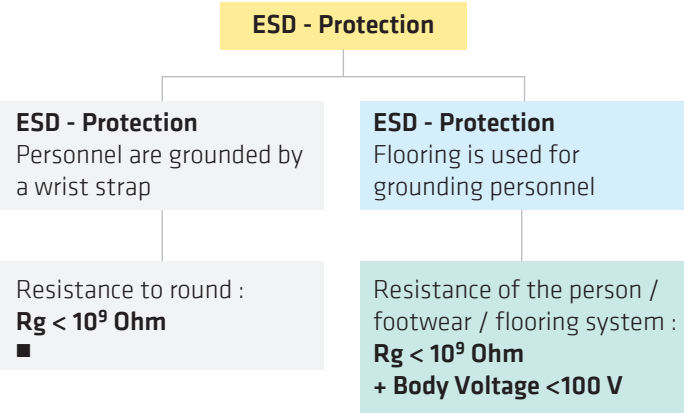
Sikafloor® - 374 Decor

SOLUTIONS FOR ANTI STATIC



EVEN WHEN AREAS AND PEOPLE are equipped to handle such static-sensitive devices, inadvertent contact and damage can occur. Sikafloor® ESD (Electro Static Discharge), DIF (Dissipative Flooring) and ECF (Electrically Conductive Flooring) systems, can safeguard your entire process. These systems can be designed to produce a floor tailored to meet your specific needs.

ESD PROTECTION WITH FLOOR COVERINGS 2016 VERSION
 ESD Protection with floor coverings 2016 version requirements accoding IEC 61340-5-1 & ANSI/ESD S20.20-2014



Definition : Conductive / Dissipative Flooring Material (ECF / DIF)

Conductivity refers to the ability of a material to conduct a charge to ground. In non-absolute technical terms, this means its ability to conduct an electrical current. Conductive floors and electrostatic dissipative floors are classified according to their electrical resistance to ground.

Conductive Flooring Material (ECF)
 (e.g. according to ASTM F150) A floor material that has a resistance to ground between 2.5×10^4 and 1.0×10^6 ohms

Dissipative Flooring Material (DIF)
 (e.g. according to ASTM F150) a floor material that has a resistance to ground between 1.0×10^6 to 1.0×10^9 ohms

ANSI / ESD S 20.20
 This standard covers the requirements necessary to design, establish, implement and maintain an **ElectroStatic Discharge (ESD)** Control Program for activities that manufacture, process, assemble, install, package, label, service, test, inspect or otherwise handle electrical components, plus assemblies and equipment susceptible to damage by electrostatic discharge greater than, or equal to 100 volts Human Body Model (HBM). This standard is also harmonized with the IEC 61340-5-1.

ASTF F150
 This standard is a test method that covers the determination of electrical conductance or resistance of resilient flooring, either in tile or sheet form, for applications such as hospitals, computer rooms, clean rooms, access flooring, munitions plants, or any other environment concerning personnel-generated static electricity.

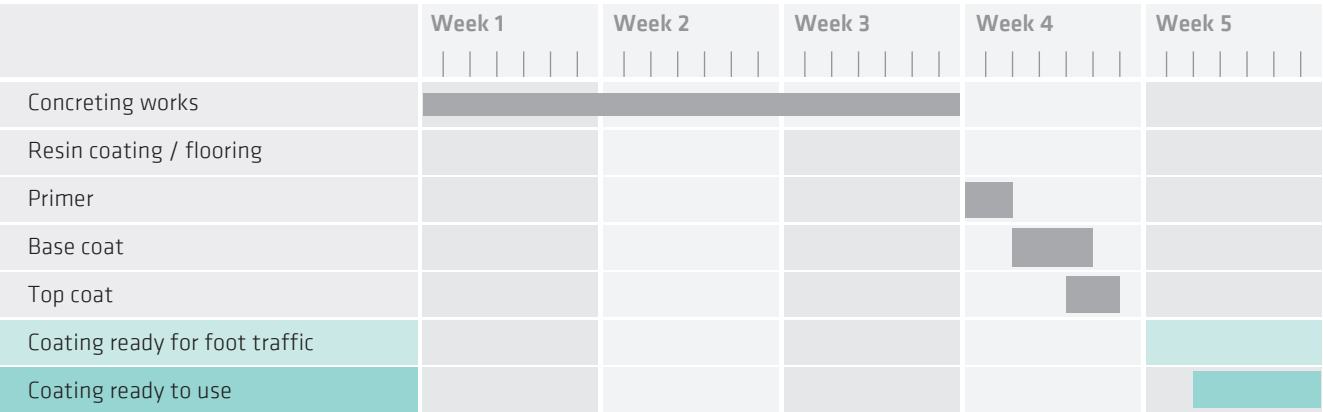
SJ/T 11294-2003
 This chinese standard is the general Chinese specification standard for floor coatings for electrostatic protection.

UNIQUE SOLUTION TO BOOST YOUR ACTIVITIES - EPOXY ONLY

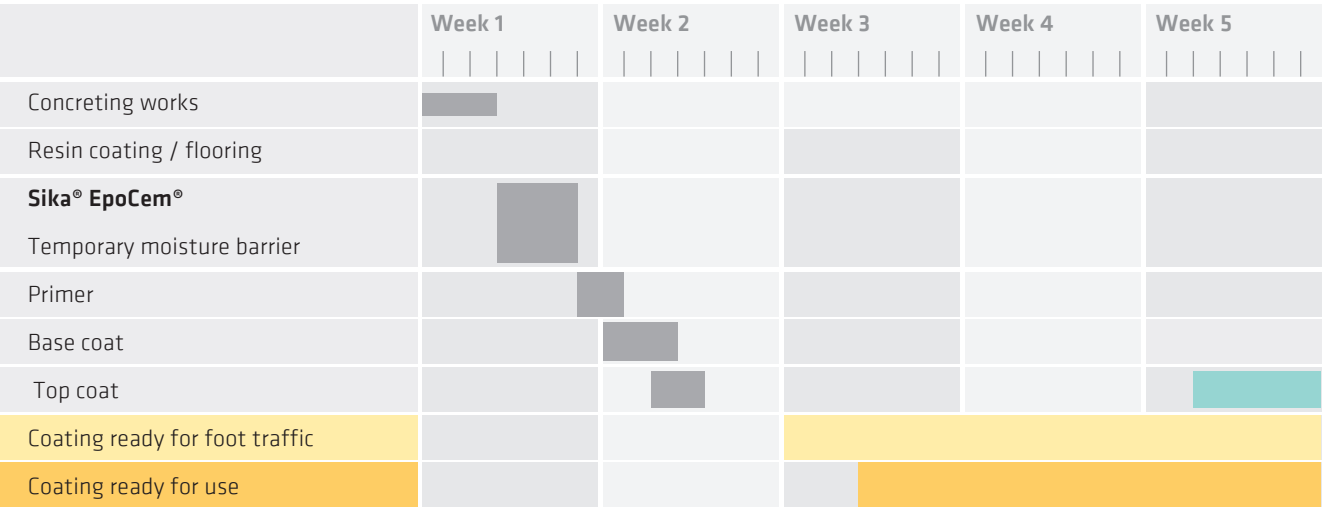
SCHEMATIC OF PLANNED TIME savings with Sika® EpoCem® technology for concrete substrate which doesn't have yet ideal condition the floor finishes are usually done under time pressure. If you have to wait until the ideal conditions (pull-off strength 1.5 N/mm²) and humidity (<4 % pbv) in the concrete slab are achieved, then most flooring materials require a waiting time of at least 28 days, according to their data sheets and the respective standards.

You can cut this waiting time significantly by using the unique intermediate layers Sikafloor®-81. These can be applied directly on to the new concrete after just 7 to 10 days and also directly on concrete substrates recently prepared by high pressure water-jetting. In refurbishment works for example. The benefit is substantial.

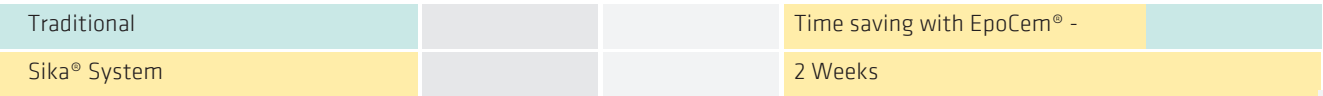
TRADITIONAL CONSTRUCTION PROGRAMME



PROGRAMME SIKA SYSTEM



TIME SAVING WITH Sika® EpoCem®



SOLUTIONS FOR LEVELLING

1. Temporary Moisture Barrier and Levelling

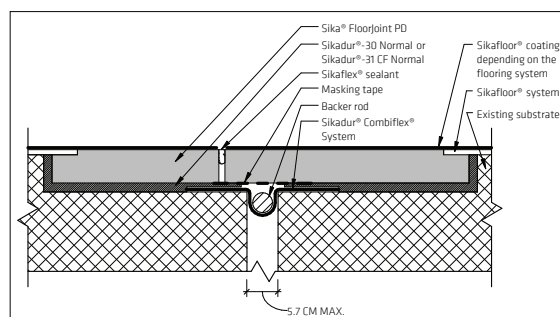
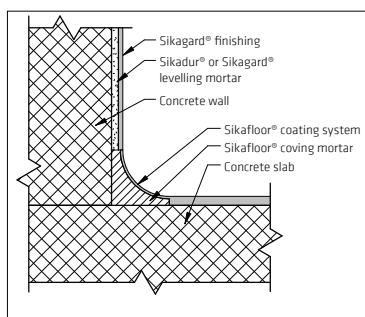
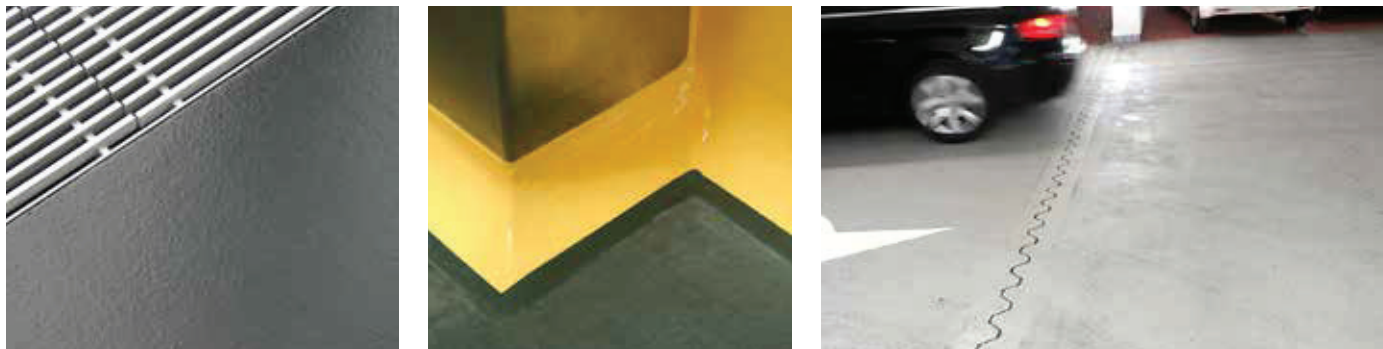
- Sikacrete Floor Level
- Sikafloor 81 EpoCem

2. Concrete Floor Levelling / Cement Floor Under Layment

- Sikacrete Floor Level
- Sika Hardtop 135 PG
- Sika Level 564
- Sikafloor 55 level
- Sikacrete 330 Metal Top
- Sikafloor 161 HC Screed



DETAILING AND JOINTING FOR FLOORING APPLICATIONS

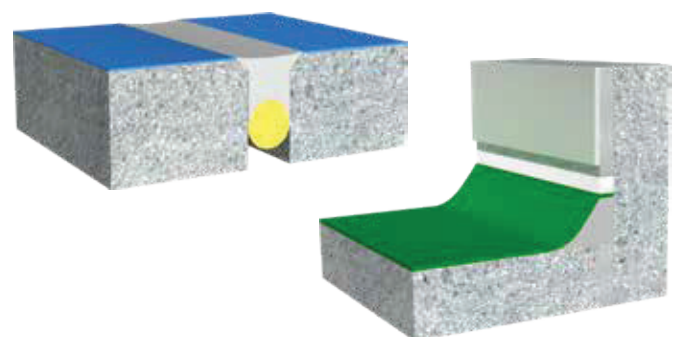


COVING

Wherever seamless coving is required for easy to clean wall-to-floor connections. Sika provides very easy to apply coving mortars composed of Sikafloor®-161. Ready to use kits such as Sika® repair EP can also be used for this purpose.

JOINTING

There is no way to prevent all of the joints in floors, but they are causes of the major damages in flooring applications due to different reasons. Therefore, the proper planning and design of a floor joint has to be performed with specific precautions to prevent future damage. Furthermore, industrial floors require reliable joint sealants to resist chemical and mechanical wear, particularly floors designed for vehicular traffic or cleaning machines, etc. Sika solutions for these joint sealants include the well proven and reliable Sikaflex® Pro - 3 for many types of floor joints including connecting joints between different materials. We have also developed pre-fabricated panels for joints in car parks and industrial floors.



Primer : Sika® Primer - 3 N

Joint Sealant : Sikaflex® Pro-3

A moisture curing, 1-part elastic sealant based on polyurethane resin and designed specifically for flooring.

Joint Dimensions :

Min. / max. width = 10 / 35 mm



Sika® Floorjoint

Hardly any vibrations noticeable and quick return to service

Sika® FloorJoint - THE ULTIMATE JOINT SOLUTION

Structures are designed with expansion and contraction joints at appropriate places to allow inevitable movements. The design of the joint is important for the overall design to function correctly. Sika provides a huge range of elastic joint sealants to seal and protect joints in walls and ceilings. However, joints in floor substrates have to withstand a lot of different stress: direct traffic with heavy forklifts or cars, chemical attacks and mechanical abrasion, etc. Often a floor joint also has to be waterproof to protect the substrate from corrosion. Ordinary joint solutions with a joint sealant or with metal profiles aren't resistant enough to withstand this stress and might fail after a short time.

The Sika® FloorJoint range is designed to meet those demands under various exposures. Furthermore Sika® FloorJoint provides many unprecedented advantages.



DESCRIPTION

Sika® FloorJoint is a prefabricated, carbon fiber reinforced polymer composite floor panel system with high mechanical resistance. Its wave like joint design permits improved load distribution and results in minimum vibrations under direct car and forklift traffic.

Sika® FloorJoint panels are used for the installation and refurbishment of joints in concrete slabs and concrete screeds. They can be used for parking lot decks, garage floors, ramps, inside storage areas and assembly halls, maintenance workshops, hospitals, schools and warehouses with normal to medium wear. The different models in the Sika® FloorJoint range meet the various demands in each area.

- Significant reduction of wear with components such as wheel bearings, etc. from forklifts.
- High mechanical and chemical resistance.
- Easy application with the screed or resin application.
- No welding, easy detailing, easy to repair.
- Waterproofing solution for the connection between horizontal and vertical construction elements.
- Bonded with Sika adhesives without screws
- Thin installation.
- Short downtime.
- Overcoatable with resinous coatings.
- Waterproof connection flange.
- Fire resistant.

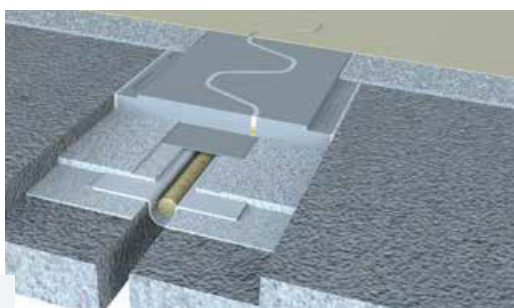
CHARACTERISTIC / ADVANTAGES

- 100% waterproof when installed with Sikadur-Combiflex®
- No corrosion, free of metal.
- Grindable profile for level integration into the floor surface.
- Hardly any vibrations noticeable under direct car and forklift traffic

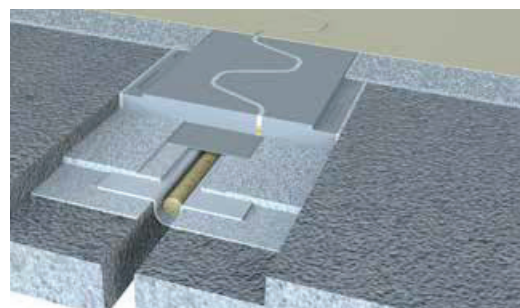
FUNCTIONALITY AND SAFETY IN MULTI-STORY PARKING LOTS

Floor joints in parking garages and parking decks are a major challenge in both new buildings and when refurbishing existing structures. Watertightness is one of the key factors

Sika® FloorJoint PD



Sika® FloorJoint PDRS





GLOBAL BUT LOCAL PARTNERSHIP



WHO WE ARE

Sika is a globally active specialty chemicals company. Sika supplies the building and construction industry as well as manufacturing industries (automotive, bus, truck, rail, solar and wind power plants, facade). Sika is a leader in processing materials used in sealing, bonding, damping, reinforcing and protecting load-bearing structures. Sika's product lines feature high quality concrete admixtures, specialty mortars, sealants and adhesive, damping and reinforcing materials, structural strengthening systems, industrial flooring as well as roofing and waterproofing systems.



Our most current General Sales Conditions shall apply
Please consult the most current local Product Data Sheet prior to any uses

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BUILDING TRUST

