FLOORING AND COATING
Sikafloor® PurCem®
WHEN PERFORMANCE MATTERS

BUILDING TRUST

WHEN PERFORMANCE MATTERS

Are you looking for a floor for your project where performance and function allow no compromise? Sika, as a global leading industrial flooring supplier, understands your requirements, and we will provide the best solution for your needs.

Sikafloor® PurCem® – MAIN ADVANTAGES

DURABILITY
Sikafloor® PurCem® systems are resistant to strong acids, alkalis, solvents, oils and fats, and chemicals used in a broad spectrum of processing industries, including food and beverage production. Our products have excellent impact and wear resistance, and can withstand high temperatures and shocks up to 150°C.

HYGIENE
Sikafloor® PurCem® flooring is seamless, easy to clean and maintain, and does not support bacterial growth.

SUSTAINABLE AND NON-STAINING
Sikafloor® PurCem® is non-tainting, and odorless during application. It meets the lowest VOC emission rate guidelines for flooring systems.

FAST APPLICATION
Sikafloor® PurCem® systems can be applied to substrates, namely concrete, with high moisture content, even within 5 – 7 days of pouring. The flooring cures quickly, ensuring quick start-up.

SAFETY
Slip resistance of the floor finish can be customized to the owner's requirements. Further, electro-conductive versions are available for areas that pose fire or explosion risks.

Sikafloor® PurCem® FLOORING IS SEAMLESS, EASY TO CLEAN AND MAINTAIN, AND DOES NOT SUPPORT BACTERIAL GROWTH

FOOD AND BEVERAGE INDUSTRY

Floors are one of the most abused of all surfaces in a food plant. Often heavy objects fall on them and they have to take it all without cracking or suffering other damage. Temperatures can change from room temperature to beyond the boiling point in a matter of minutes or even seconds. Flooring must be able to expand and contract in concert with the substrate below in order to remain attached.

Because pathogens pose the greatest risk in a food plant, flooring should be free of cracks or other defects where bacteria can grow. At the same time, it should be easy to sanitize quickly and thoroughly. And because employees rely mostly on their feet to get from one part of the plant to another, floors must be designed to prevent slips and falls, which can cause injury.

Floors also need to be durable and long lasting. That's because failures, even seemingly insignificant ones, can cause expensive downtime, product losses, product contamination and, in the worst case, accidents.

A long lasting Sikafloor® PurCem® floor is the best choice for food production and processing areas. Our floors are impervious and dense and easy to clean and maintain. They can be washed with aggressive cleaning agents, including steam, and they are seamless making them easy to clean. All this makes the Sikafloor® PurCem® floor an excellent choice for food production environments.

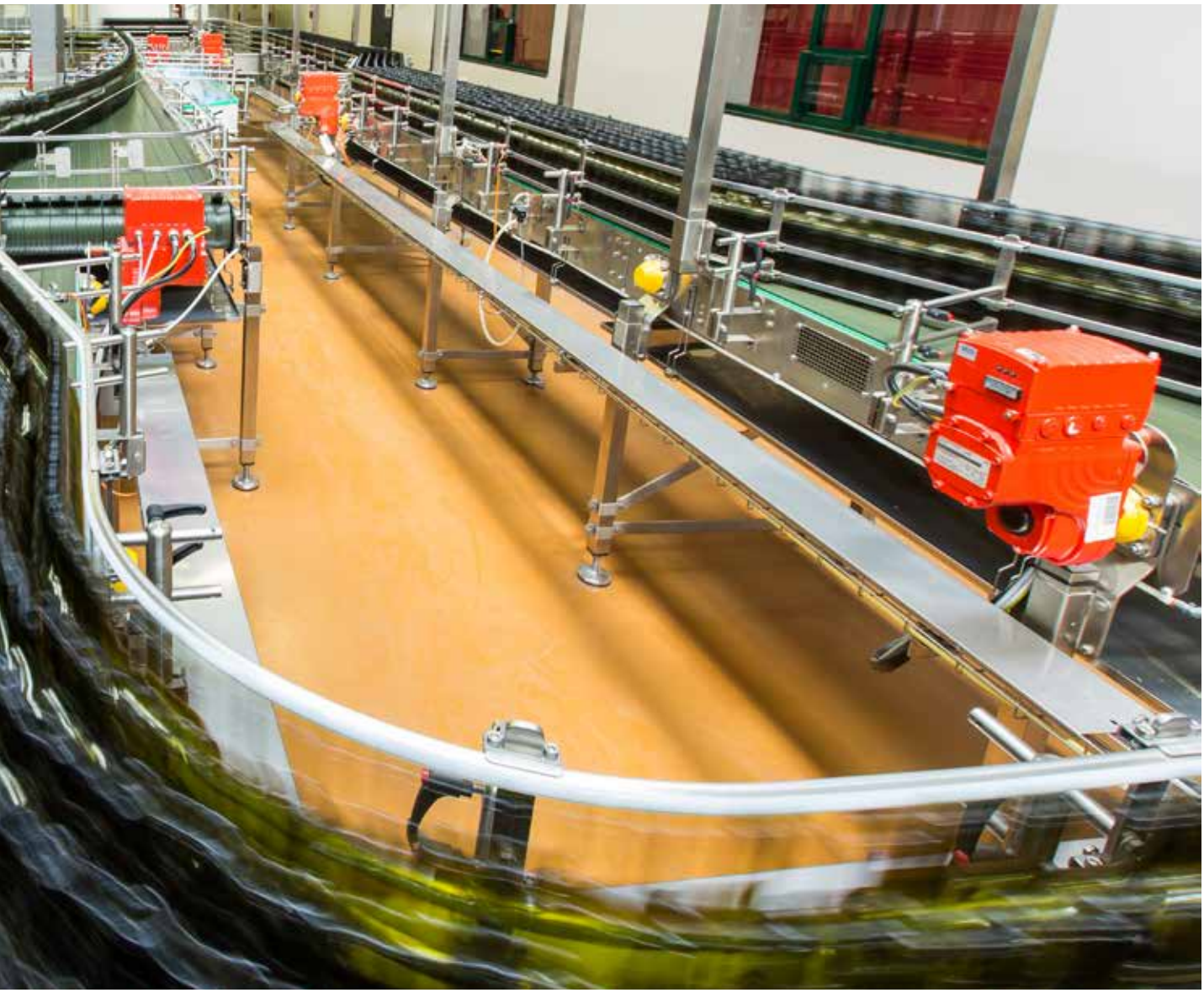
Sikafloor® PurCem® HS-21 is the perfect choice in bottling line ereas.

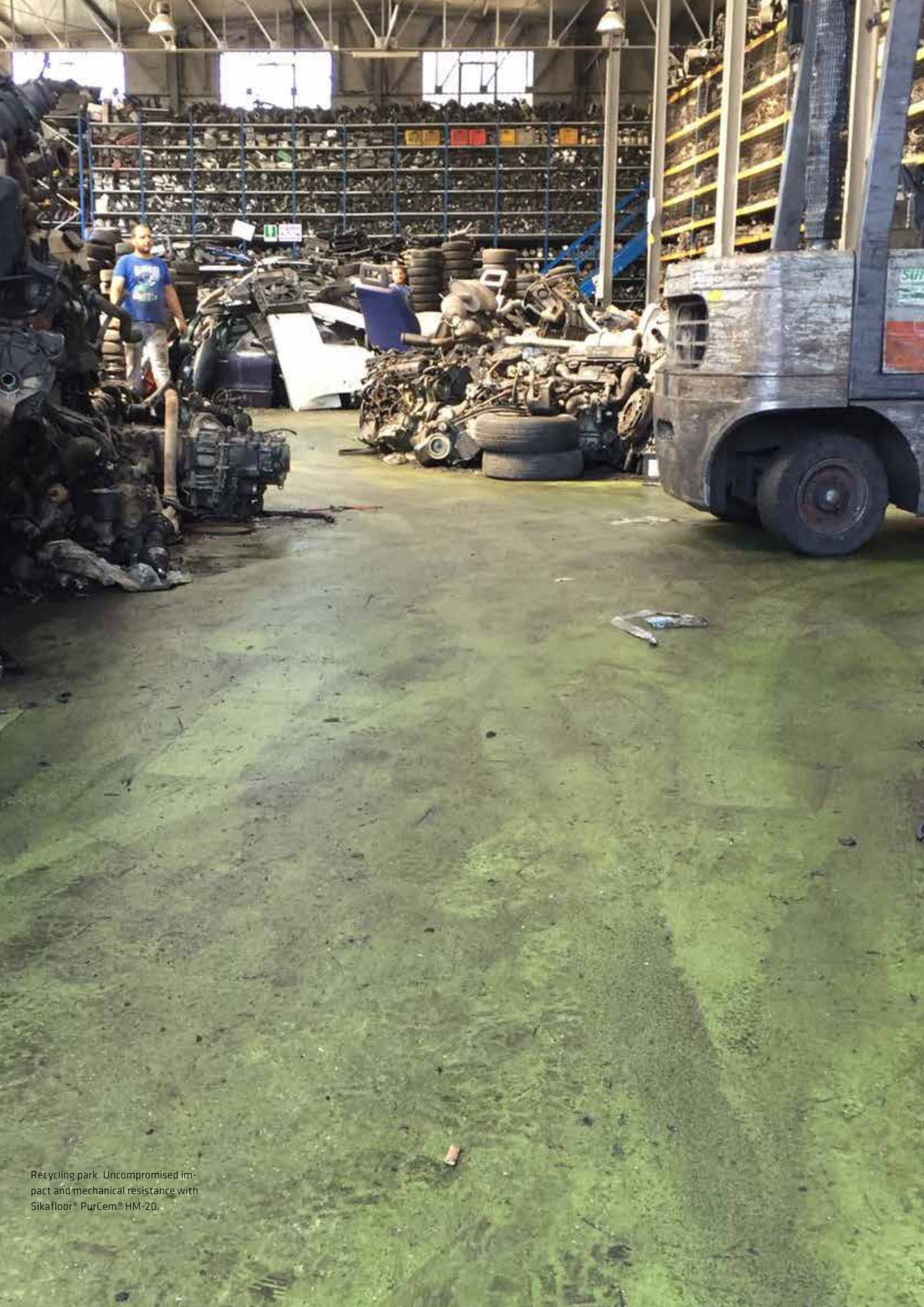
The hygiene in milk and dairy production areas is especially important. The floor must be easy to clean and resistant to impacts and wear. Sikafloor® PurCem® HM-20 is a long lasting and safe solution.

Sikafloor® PurCem® flooring systems in food processing can be used for:

- Catering, industrial kitchens
- Meat processing and abattoirs: cutting, packaging and preparation areas
- Fish processing and packaging
- Milk processing and dairies
- Beverages: breweries, distilleries, soft drink, mineral water and juice plants
- Ready-made meal production
- Vegetable and fruit processing and packaging
- Food ingredients
- Bakeries
- Cold storage and freezer rooms
- Food processing areas in retail

Sikafloor® PurCem® products have been tested, approved, and certified for use in food and beverage processing and handling facilities. They comply with HACCP, ISEGA, USDA, and EHEDG guidelines.





Recycling park. Uncompromised impact and mechanical resistance with Sikafloor® PurCem® HM-20.

CHEMICAL AND OTHER PROCESSING INDUSTRIES

Chemical and other heavy processing industries place rigorous demands on floors and floor finishes.

First, floors must be durable. They must be able to withstand a variety of chemicals, sometimes very hot ones, that may spill onto them from the process or leaking valves, or ones applied for cleaning purposes. Floors can be contaminated from these and other materials for long periods before being washed. Floor finishes must be able to handle these and others so hazardous liquids won't destroy the concrete slab below or penetrate and pollute ground water. Sikafloor® PurCem®'s high mechanical resistance and excellent resistance to acids, alkalis, salt solutions, solvents and oils makes it an ideal solution for chemical industry environments.

Flooring in a chemical plant must also be slip resistant for employee and material trafficking safety. Sikafloor® PurCem®'s wide range of slip resistant finishes meet your needs.

Some industries use chemicals and powders that can cause explosions if exposed to static electricity. In these cases, floors must be electro-static conductive. The electrical conductivity of the Sikafloor® PurCem® HS-25 is designed to keep static electricity in control.

Typical use of Sikafloor® PurCem® flooring systems for chemical and processing industries include:

- Chemical processing
- Pulp and paper production
- Power generation
- Petrochemicals and refineries
- Mining
- Battery production
- Waste treatment and recycling
- Pharmaceuticals
- Warehouse and storage

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1. Chemical processing plant. The electric conductive Sikafloor® PurCem® HS-25 ECF withstands the spillage and leakeages from the process and controls the static electricity discharge.

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2. Distribution center, DSV Slovakia s.r.o. Functionality by high wear resistance and low dirt pick up. Sikafloor® PurCem® HS-26 Gloss.

TEMPERATURE RESISTANCE

Sikafloor® PurCem® hybrid flooring systems can withstand high temperatures and thermal shock.

Independent tests show that they will remain intact and not soften below 180°C. They have relatively low modulus and thermal expansion factors that are close to concrete.

This means Sikafloor® PurCem® flooring can be used in cold rooms and freezers as low as -45°C as well as in areas with thermal shocks and full steam cleaning up to 130°C, with occasional spillages reaching 150°C.

Thermal shock resistance of a specific Sikafloor® PurCem® floor depends on its thickness, which is what allows time for the flooring to absorb heat that can cause stress between the floor and its substrate (concrete). Other important factors for thermal shock resistance and good adhesion are good substrate quality and preparation.

DIRECTIONAL SERVICE AND THERMAL SHOCK RESISTANCE OF Sikafloor® PurCem® SYSTEMS

Service Temperature and Thermal Shocks	Thickness (mm)	Sikafloor® PurCem®
-45 to +130°C (occasional spillages up to +150 C)	12	HM-20, HM-20 HSR
-40 to +120°C (occasional spillages up to +130°C)	9	HM-20, HM-20 HSR HB-21, HB-22, HB-23, HB-21 Gloss, HB-22 Gloss, HB-23 Gloss
-25 to +80°C	6	HM-20 HB-21, HB-22, HB-23, HB-21 Gloss, HB-22 Gloss, HB-23 Gloss
-20 to +70°C	4	HB-21, HB-22, HB-23, HB-21 Gloss, HB-22 Gloss, HB-23 Gloss

Gürpinar Fish market cold rooms and freezers, Turkey.
Sikafloor® PurCem® HS-21

CHEMICAL RESISTANCE

Processed foods and their ingredients, such as fats, vegetable oils, alcohols, fruit concentrates, and water can contaminate and corrode standard resin flooring. Floors in food and beverage plants are cleaned and disinfected regularly with alkaline and acidic agents, often at elevated temperatures.

Meanwhile, in the chemical industry, including plants for fertilizers, petrochemicals, and pharmaceuticals, attacks on floors are caused mainly by the product manufacturing process.

Attack on the floor depends on concentration, temperature, and exposure time. And in cases where floors may not degrade, they can still be stained. Good housekeeping and flushing decrease chemical impact, keeping floors stain free and looking their best.

Sikafloor® PurCem® flooring is resistant to a variety of aggressive chemicals, regardless of concentration, temperature or exposure duration. Gloss grades have excellent stain resistance owing to their high impermeability and density.

A TYPICAL CLEANING PROCEDURE AND USED CHEMICALS IN A FOOD PLANT'S CIP AREA (CLEAN-IN-PLACE).

Type	Chemical	Concentration	Temperature	Sikafloor® PurCem®
Alkaline cleaning	Caustic Soda	< 5 %	80 – 90°C	√
Acidic cleaning	Nitric Acid	< 5 %	Cold	√
	Phosphoric Acid			
	Sulphuric Acid			
Disinfection	Parecetic Acid		Cold	√
	Sodium Hypochlorite			
	Hydrogen Peroxide			
	Water		80 – 90°C	

Durable Sikafloor® PurCem® seamless flooring is an excellent choice for areas that are constantly wet or exposed to chemicals.

This is a guide to assist customers, consultants and contractors to select the most appropriate Sikafloor® PurCem® floor exposed to different chemicals. The data in this guide are based the chemical testing according to EN 13529, the additional immersion tests carried out by Sika laboratories. Important issues to consider when assessing the chemical resistance and the functionality of the floor:

- Concentration. Aggressiveness of the chemical attack depends on the co-operative action of the concentration and the temperature of the chemical. Typically the higher the concentration, the harder the attack.
- Temperature. The severity of the chemical attack grows within the increase of the chemical temperature.
- Duration. The sooner the chemical is removed from the floor and washed down, the less aggressive the attack on the surface.
- Cleaning and maintenance. With appropriate housekeeping and frequent cleaning the chemical attack can be limited.
- Discoloration. Many chemicals will stain and discolour the surface, however without causing any deterioration or loss of mechanical properties.

Chemical	Concentration %	Temperature °C	Sikafloor® PurCem® systems	
			Spillage (3 days)	Immersion (1 day)
Acetic acid	40	23	A/D	A/D
Acetone	100	23	A	B/D
Ammoniac	25	85	A/D	A/D
Apple juice	–	23	A	A/D
Beer	–	23	A	A
Blood	–	23	A	A/D
Brake fluid	–	23	A	A/D
Calcium chloride	50	23	A	A
Calcium hydroxide	Saturated	23	A	A
Chromic acid	30	23	A/D	A/D
Citric acid	5	85	A/D	A/D
	42	23	A/D	A/D
Crude oil	–	23	A	A
Ethanol	100	23	A	A/D
Fats	–	23	A	A
Fatty acid	100	23	A/D	A/D
Formalin	37	50	A/D	A/D
Formic acid	10	23	A/D	A/D
Gasoline	–	23	A	A/D
Glycol	100	23	A	A/D
Hydrobromic acid	20	23	A	A
Hydrochloric acid	10	23	A	A
Hydrogen peroxide	30	85	A/D	A/D
Isopropanol	100	23	A	A/D
Kerosene	–	23	A	A/D
Lactic acid	80	23	A/D	A/D

Chemical	Concentration %	Temperature °C	Sikafloor® PurCem® systems	
			Spillage (3 days)	Immersion (1 day)
Methanol	100	23	A	A/D
Milk	–	23	A	A/D
Motor oil	–	23	A	A
Nitric acid	5	85	A/D	A/D
Oleic acid	100	23	A/D	A/D
Orange juice	–	23	A/D	A/D
Oxalic acid	10	23	A/D	A/D
Paracetic acid	15	85	A/D	A/D
Paraffin	–	23	A	A
Phenol	5	23	A	A/D
Phosphoric acid	20	23	A	A
	30	85	A/D	A/D
	85	23	A/D	A/D
Red wine	–	23	A/D	A/D
Sodium hydroxide	5	85	A/D	A/D
	50	23	A	A
Sodium hypochlorite	10	23	A/D	A/D
Sulphuric acid	5	85	A/D	A/D
	80	23	A/D	D
Toluene	100	23	A	A
Urea	20	23	A/D	A/D
Vegetable oils	–	80	A	A
Water (distilled)	–	23	A	A
White spirit	–	23	A	A/D
White wine	–	23	A/D	A/D
Xylene	100	23	A	A/D

A = Resistant — The flooring system is resistant, meaning stable and unchanged for the stated limit. A slight decrease in hardness does not affect mechanical performance.

B = Limited resistance — The flooring shows swelling and moderate loss or hardness. In the case of heavier mechanical wear during exposure to chemicals, the coating may be damaged. In the case of chemical exposure only, the initial resistance will be obtained again once the area is cleaned, although slight swelling might remain visible.

C = Not resistant — The flooring system is not resistant; a softening occurs followed by the destruction of the coating and/or forming of bubbles.

D = Discoloration and/or loss of gloss — Under the effect of chemicals the flooring system discolors and loses its glossy finish. This is irreversible.

DURABILITY

Sikafloor® PurCem® flooring is good value for money, because it is extremely durable and long lasting when correctly specified and installed for the desired application. Repair, maintenance, and downtime costs are minimal, while maximum chemical, temperature, mechanical, and other resistances, including impacts and abrasion, support our promise of durability.

Impact and wear resistance of our floors are supported by layer and material composition. Our hybrid flooring is a combination of polyurethane resin, cement, and tough aggregates. The resin-rich compound provides strength and resilience against impacts. Abrasion resistant aggregates provide extremely good wear performance, while the thickness of the flooring maximizes adhesion against service stresses.

Thickness of Sikafloor® PurCem® flooring systems range from 3 to 12 mm, along with a number of system build-up options you can choose to match your project to specific wear and impact stresses. For example, in high slip-resistant broadcast systems we'll recommend tough bauxite-based aggregates as a better choice than quartz-based ones if the flooring is exposed to hard impacts and high wear.

Pallet stackers and forklifts with small nylon or hard plastic wheels have high pointloads and cause extreme wear in frequently trafficked storage areas. Sikafloor® PurCem® HS-21 is a long life solution and hygienic choice in such conditions.

HYGIENE AND CLEANABILITY

For a floor to be hygienic, it must be easy to clean and non-biodegradable. It must be free of cracks and pores and able to withstand harsh functional and environmental stresses.

Removing dirt and debris requires application of energy onto the floor surface. This can be in the form of aggressive cleaning agents, heat, and abrasion. In food handling plants, all three may occur at the same time. Our hygienic floors are durable and not affected by these stresses.

Sikafloor® PurCem® floors are dense and impervious to heat and abrasion. They are inert and do not support bacterial or fungal growth. They are extremely durable and can be cleaned using aggressive chemicals and hot water, steam cleaning, and intense scrubbing.

Joints and junctions are the most vulnerable areas of a hygienic floor. Sikafloor® PurCem® floors are seamless. Limited joints reduce areas where bacteria can reside and makes the floor much easier to clean.

Please ask for detailed cleaning guidelines from your local Sika flooring agent.

CERTIFIED AND TESTED
Food producers use third-party quality certifications and guidelines, such as HACCP and EHEDG, to ensure their floors will not compromise food safety. Sikafloor® PurCem® products are used throughout the world in the food industry and other environments where the highest standards of hygiene are required.

Riboflavin Cleanability Test
The Riboflavin cleanability test is a widely used method to measure surfaces in a clean room environment, including floors. Sikafloor® PurCem® flooring has shown extremely good Riboflavin test results.

Biological Resistance Test
CSM (Cleanroom Suitable Materials) testing for biological testing is carried out according to ISO 846. The material sample is exposed to fungi and bacteria and then analyzed after four weeks of incubation. Sikafloor® PurCem® flooring show no growth of microorganisms.

Good floor cleaning and disinfection helps to secure hygienic production in food processing plants.

Sikafloor® PurCem® HM-20 in an ice cream plant.

GOOD HOUSEKEEPING HELPS TO KEEP THE FLOOR LOOKING ITS BEST AND ENSURES A SAFE AND ATTRACTIVE WORK ENVIRONMENT

SLIP RESISTANCE

Slips and falls happen four times more often in food and beverage plants than in other facilities because of wet and contaminated floors.

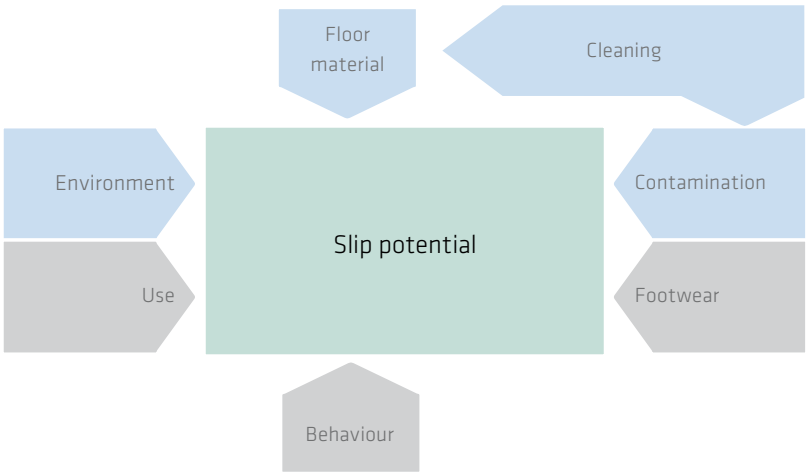
CONSIDER THE FOLLOWING ASPECTS OF SLIP POTENTIAL AND FLOOR DESIGN:

- Contamination. Floors can be contaminated by a wide variety of things, such as water, oils, fats, food debris or a combination thereof. Keep in mind the higher the viscosity of the contaminants, the higher the amount of texture you should build into your floor surface.
- Cleaning and higher surface roughness go hand in hand – more roughness requires more cleaning, water volume, and thorough scrubbing. Better cleaning results in fewer slips and falls.
- Slopes are needed to ensure proper drainage. Slopes that are too steep present falling risks and transportation problems. In general, flatter floors are safer floors.

SLIP POTENTIAL TESTING

Sikafloor® PurCem® systems feature many surface textures to handle specific slip and user requirements. Slip resistance of our floors has be tested according to international standards, such as DIN 51130 and TRRL pendulum test.

FACTORS INFLUENCING ON SLIP POTENTIAL



GUIDE TO Sikafloor® PurCem® SLIP RESISTANCE

Pendulum test: EN 13036-4	
Wet floor value	Sikafloor® PurCem® system
Moderate slip potential (25 – 35)	HS-21, HS-24
Low slip potential (above 35)	HM-20, HM-20 HSR, HB-21, HB-22, HB-23 HB-21 Gloss, HB-22 Gloss, HB-23 Gloss

Ramp test: DIN 51130	
Ramp test value	Sikafloor® PurCem® system
R10	HS-21, HS-24
R11	HM-20, HB-21, HB-21 Gloss
R12	HM-20 HSR, HB-22, HB-22 Gloss
R13	HB-23, HB-23 Gloss

Please contact your local Sika representative to find the right system and surface texture for your project.

Sydney Fish Market, Australia.
Textured Sikafloor® PurCem® HB-22.

CONSTRUCTION AND APPLICATION

For high performance industrial floors the right high performing product is essential, however more is also needed.

Construction of an industrial floor begins with good design. Important aspects include location and installation of joints, drains, slopes and details. Concrete slab or "screed", foundation is also of utmost importance. It's what carries all loads and stresses. Any compromise on its quality or in correct preparation could lead to adhesion problems of the floor finish and ongoing maintenance costs after the project is completed. The high performing Sikafloor® PurCem® floorings are applied by professional and trained applicators. In their main areas of use they also show some important application related benefits:

ODORLESS AND SOLVENT-FREE
Sikafloor® PurCem® products are user friendly, and their application properties fit well with the environments and projects for which they are designed. Our floors are solvent-free, have extremely low VOC emission rates, and are virtually odorless during and after application. They do not affect food products or raw material quality in any way.

SUBSTRATE MOISTURE TOLERANCE AND FAST CURING
In food and beverage projects, whether new or refurbished, substrates carry various degrees of moisture. Sikafloor® PurCem® products are not sensitive to substrate moisture and can be applied within 5 – 7 days of pouring. Once applied to a new substrate, our floors cure quickly and can be ready for use with 36 – 48 hours. This enables floor installations to occur over a weekend, reducing plant downtime during normal working hours. Further, our fast curing Sikafloor®-10 PurCem® FS curing primer can reduce application time even further.

Sikafloor® PurCem® HM-20 HSR is a textured trowel-grade system with high slip resistance. Typical application is done with a trowel or "screed box."

DETAILS

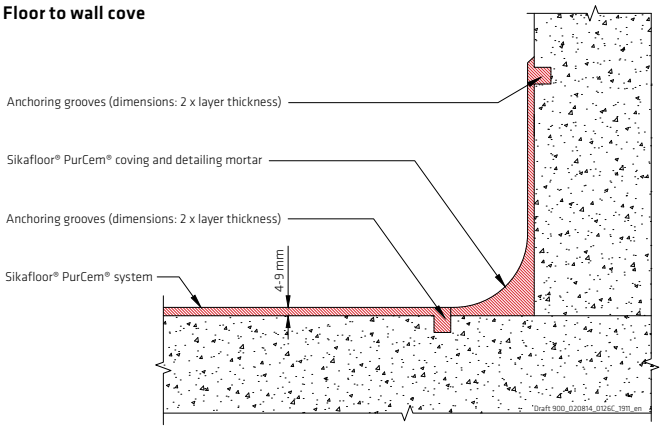
Properly designed and correctly installed edge, curb, cove, joint, trench, drain, and machine base details, among others are crucial to the creation of a successful and long-lasting floor finish. This particularly applies where severe service conditions need to be accommodated, such as elevated temperature gradients and steam/hot water cleaning.

Sikafloor®-29 PurCem® completes the Sikafloor® PurCem® flooring system range. It is a high strength coving and vertical-grade detailing mortar based on the Sikafloor® PurCem® polyurethane hybrid technology providing similar durability and hygiene properties like all Sikafloor® PurCem® flooring grades. Sikafloor®-29 PurCem® is used in making coves, covering curbs and machine bases or any vertical surfaces requiring robust surface treatment securing seamless and durable connection to Sikafloor® PurCem® flooring.

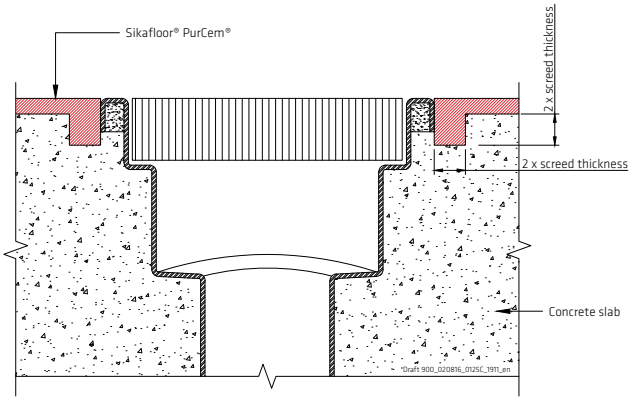
Joints and junctions are the weakest parts of flooring system in industrial environment. Many times they are exposed to similar stresses as the floor itself, but also need to accommodate possible movements in the structure or between building components. Elastic and high resistant Sikaflex® Pro 3 joint sealant is the right product providing an elastic and high resistant connection in floor joints and floor to drain junctions. It accommodates movement of the structure providing a durable seam.

Sika® has an extensive database of detail drawings including the most frequently occuring detail options. For more information and support please consult local Sika® flooring expert.

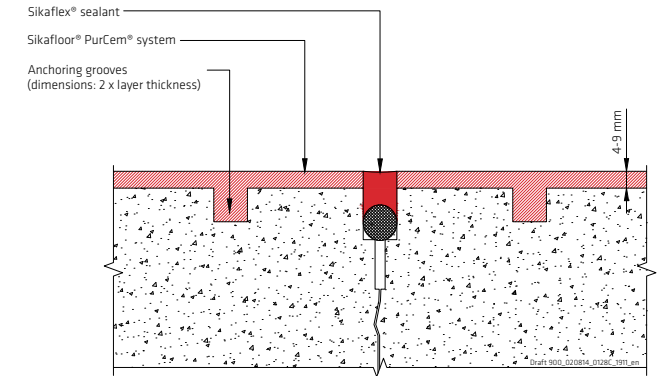
Floor to wall cove



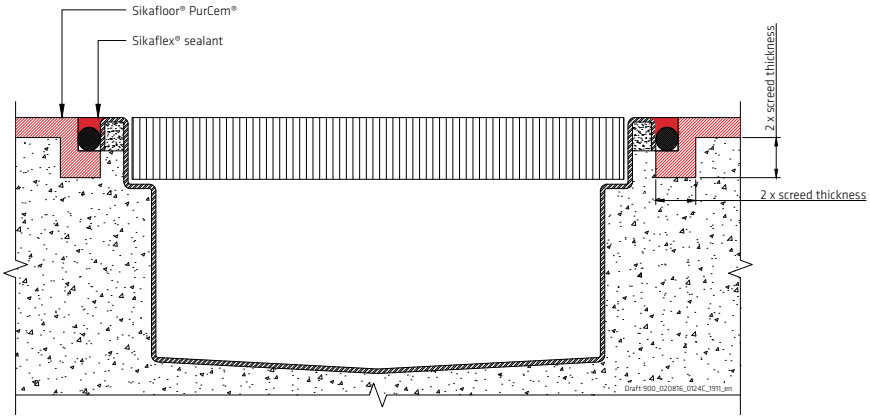
Gully



Contraction joint



Drain channel



SYSTEMS

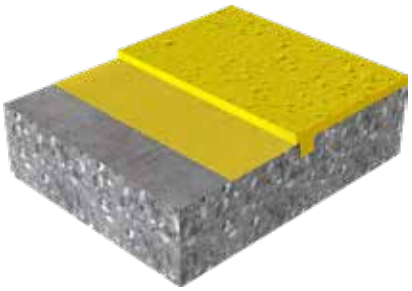
TEXTURED FINISH TOWEL APPLIED SYSTEMS

Trowel applied mortar systems are designed for the harshest environments and stress issues. Sika's program combines two systems with different surface textures-medium and high-slip resistance. The typical layer thickness varies from 6 – 9 mm, but can be extended to 12 mm if needed.

Sikafloor® PurCem® HM-20 and HSR systems are typically used in food, beverage, and other processing industries in areas where the floor must resist high temperature shocks, chemical attacks, and extreme impacts and wear.

Sikafloor® PurCem® HM-20

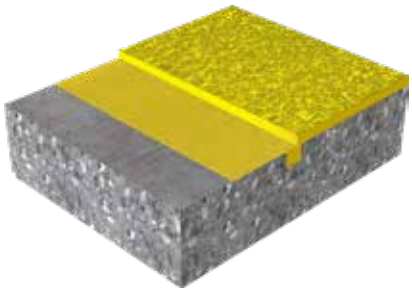
Heavy duty, trowel applied, light to medium anti-slip matt finish applied to 6 – 12 mm thickness. Thermal shock resistance from -40 to +130°C. (Occasional spillage up tp 150°C).



1. Primer or scratchcoat (optional)
2. Wear coat:
   Sikafloor®-20 PurCem®

Sikafloor® PurCem® HM-20 HSR

Heavy duty, trowel applied, high anti-slip matt finish applied to 9 – 12 mm thickness. Thermal shock resistance from -40 to +130°C. (Occasional spillage up tp 150°C).



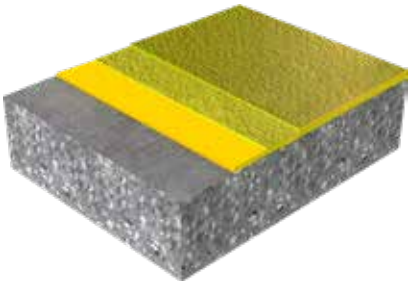
1. Primer or scratchcoat (optional)
2. Wear coat:
   Sikafloor®-20 PurCem® HSR

TEXTURED FINISH BOADCAST SYSTEMS

In broadcast systems, slip resistance has a lot to do with surface finish. Different aggregates, such as quartz sand or bauxite, are broadcast onto the basecoat layer to provide the required roughness grade. The harder the aggregate, the higher wear, impact resistance, and slip prevention the floor will deliver. Basecoat thickness can be adjusted to withstand thermal shock requirements. The top sealing layer can have a matt or gloss finish.

Sikafloor® PurCem® HB-21

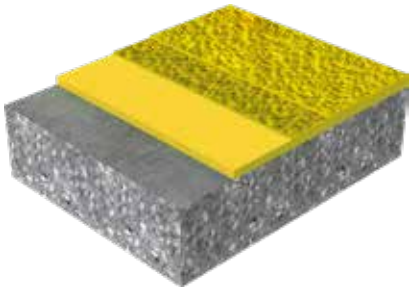
Heavy duty, broadcasted, light to medium anti-slip matt finish applied to 4 – 9 mm. Thermal shock resistance -40 to +130°C.



1. Scratch coat (optional)
2. Basecoat:
   Sikafloor®-21/-22/-24 PurCem®
3. Broadcast:
   Quartz sand 0.4 – 0.8 mm
4. Topcoat:
   Sikafloor®-31 PurCem®

Sikafloor® PurCem® HB-22

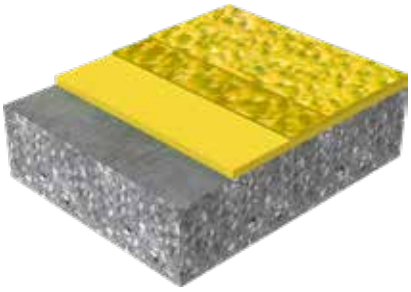
Heavy duty, broadcasted, medium to high anti-slip matt finish applied to 4 – 9 mm. Thermal shock resistance -40 to +130°C.



1. Scratch coat (optional)
2. Basecoat:
   Sikafloor®-21/-22/-24 PurCem®
3. Broadcast:
   Quartz sand 0.7 – 1.2 mm or
   Bauxite 0.9 – 1.4 mm
4. Topcoat:
   Sikafloor®-31 PurCem®

Sikafloor® PurCem® HB-23

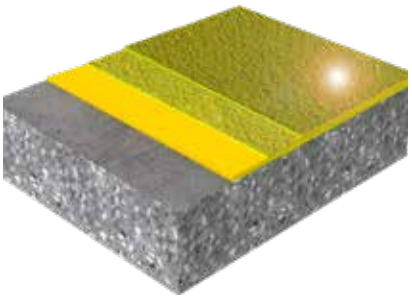
Heavy duty, broadcasted, high anti-slip matt finish applied to 4 – 9 mm. Thermal shock resistance -40 to +130°C.



1. Scratch coat (optional)
2. Basecoat:
   Sikafloor®-21/-22/-24 PurCem®
3. Broadcast :
   Quartz sand 1 – 2 mm or Bauxite 1 – 2 mm
4. Topcoat:
   Sikafloor®-31 PurCem®

Sikafloor® PurCem® HB-21 Gloss

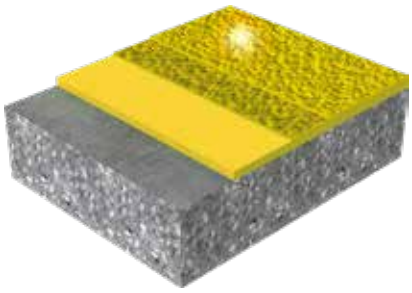
Heavy duty, broadcasted, light to medium anti-slip glossy finish applied to 4 – 9 mm. Thermal shock resistance -40 to +130°C.



1. Scratch coat (optional)
2. Basecoat:
   Sikafloor®-21/-22/-24 PurCem®
3. Broadcast:
   Quartz sand 0,4 – 0,8 mm
4. Topcoat:
   Sikafloor®-310 PurCem®

Sikafloor® PurCem® HB-22 Gloss

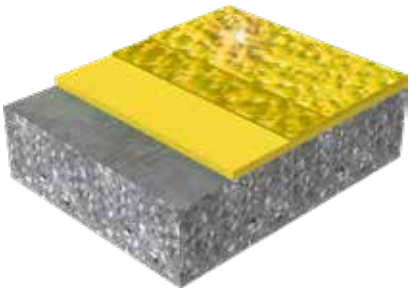
Heavy duty, broadcasted, light to medium anti-slip glossy finish applied to 4 – 9 mm. Thermal shock resistance -40 to +130°C.



1. Scratch coat (optional)
2. Basecoat:
   Sikafloor®-21/-22/-24 PurCem®
3. Broadcast :
   Quartz sand 0.7 – 1.2 mm or
   Bauxite 0.9 – 1.4 mm
4. Topcoat:
   Sikafloor®-310 PurCem®

Sikafloor® PurCem® HB-23 Gloss

Heavy duty, broadcasted, high anti-slip glossy finish applied to 4 – 9 mm. Thermal shock resistance -40 to +130°C.



1. Scratch coat (optional)
2. Basecoat:
   Sikafloor®-21/-22/-24 PurCem®
3. Broadcast:
   Quartz sand 1 -2 mm or Bauxite 1 – 2 mm
4. Topcoat:
   Sikafloor®-310 PurCem®

SYSTEMS

SMOOTH FINISH SYSTEMS

Sika self-smoothing top layers are available in matt and gloss finishes. Smooth finishes work well in areas that have low contamination and low slip resistance requirements. Sikafloor® PurCem® HS systems are extremely dense and wear resistant making them ideal for hard forklift and vehicle traffic.

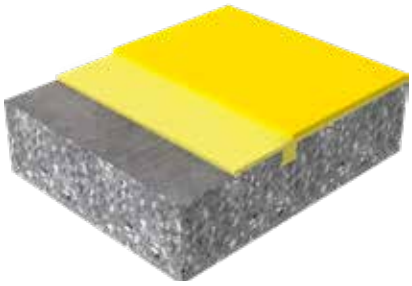
Sikafloor® PurCem® HS-21

Heavy to meadium duty, smooth, matt finish applied to 4 – 6 mm. Thermal shock resistance -20 to +70°C.

1. Scratch coat:
   Sikafloor®-21 PurCem®
2. Wear coat:
   Sikafloor®-21 PurCem®

Sikafloor® PurCem® HS-24

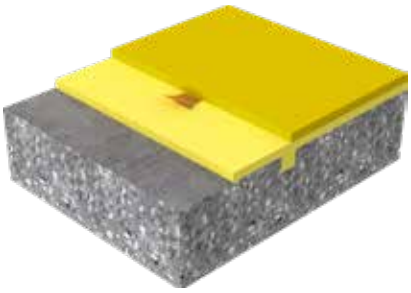
Heavy to meadium duty, smooth, matt finish applied to 3 – 4 mm. Thermal shock resistance -20 to +60°C.



1. Scratch coat:
   Sikafloor®-24 PurCem®
2. Wear coat:
   Sikafloor®-24 PurCem®

Sikafloor® PurCem® HS-25 ECF

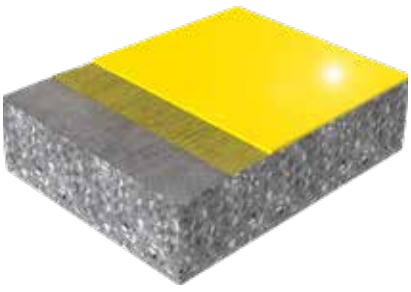
Heavy to medium duty, smooth, electric conductive , matt finish applied to 4 – 6 mm. Thermal shock resistance -20 to +70°C.



1. Scratch coat:
   Sikafloor®-25 S PurCem® ECF
2. Earthing:
   Sikafloor Earthing Kit
3. Wear coat:
   Sikafloor®-25 PurCem® ECF

Sikafloor® PurCem® HS-21 Gloss

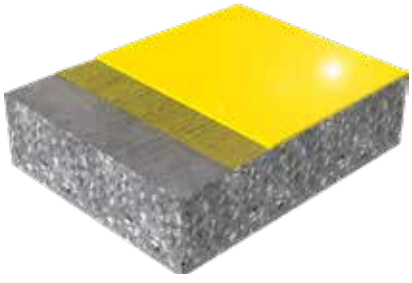
Heavy to meadium duty, smooth, gloss finish applied to 3 – 6 mm. Thermal shock resistance -20 to +70°C.



1. Scratch coat:
   Sikafloor®-21/-210 PurCem®
2. Wear coat:
   Sikafloor®-210 PurCem®

Sikafloor® PurCem® HS-26 Gloss

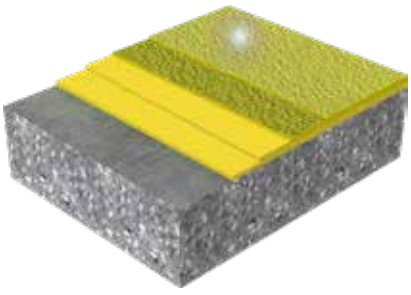
Light to medium duty, smooth, glossy finish applied to 2 – 3 mm. Thermal shock resistance -20 to +60 C.



1. Scratch coat:
   Sikafloor®-21/-260 PurCem®
2. Wear coat:
   Sikafloor®-260 PurCem®

Sikafloor® PurCem® HB-26 Gloss

Light to medium duty, ligth textured glossy finish applied to to 3 – 6 mm. Thermal shock resistance -20 to +70 C.



1. Scratch coat :
   Sikafloor®-21/-22/-210/-260 PurCem®
2. Wear coat:
   Sikafloor®-21/-22/-24/-210/-260 PurCem®
3. Topcoat:
   Sikafloor®-310 PurCem®. Backrolled broadcasted quartz sand 0.4 – 0.8 mm

Our reference in Soave, Italy:
Sikafloor® PurCem® HS-21.

THE NEXT GENERATION
Sikafloor® PurCem® Gloss

Sikafloor® PurCem® Gloss systems are the latest development in our polyurethane hybrid flooring family. They combine functional and economical advantages of polyurethane hybrid and resin-based flooring, featuring a hard finish with excellent scratch and wear resistance. Their dense surfaces are easy to clean and minimize dirt build-up, while offering improved chemical resistance and lower discoloration that can result from chemical attack.

Sikafloor® PurCem® Gloss floors are available in both smooth and textured finishes. Smooth finishes are often specified for dry production, storage and other areas in food and beverage plants, and in industrial and processing facilities requiring good chemical resistance and high durability. Textured finishes, on the other hand, are ideal for areas requiring good slip resistance and cleaning performance. They are produced by sealing a broadcast Sikafloor® PurCem® basecoat with a Sikafloor®-310 PurCem® gloss topcoat.

Sikafloor® PurCem® Gloss

- Dense and hard surface
- Glossy finish

- Extremely good scratch resistance
- Low dirt pick up
- Improved chemical resistance
- Durable and long lasting

- Low cleaning and maintenance cost
- Long term and economical
- Improved aesthetics

Raimbek dairy, Kazachstan.
Sikafloor® PurCem® HS-21 Gloss.

Tigros bakery, Italy.
Sikafloor® PurCem® HS-21 Gloss.

SELECTION GUIDE

Selecting the most suitable flooring system for a project depends on numerous factors. The following check-list can help you guide you through the decision making process.

MATCHING UP THE INTENDED USE
When evaluating floor systems do your research to ensure they will stand up the demands of their intended use, ie. stay functional under the facility operations and stresses including mechanical stresses, temperature shocks, and chemical attacks

PERSONAL SAFETY
While it is impossible to keep the floor all the time free of contamination and residues from operations, the floor must have a certain grade of slip resistance to avoid slipping and accidents. Combination of the floor texture and the cleanability keep the floor safe for operations and employees.

FOOD SAFETY AND HYGIENE
Food safety and hygiene have become increasingly top-of-mind with consumers, industry, regulators and other stakeholders. This requirement applies for the whole food processing chain and the production facility ha sto be designed and constructed in ways that prevent the any possibility of food contamination. Choosing the right flooring, walls, and other surfaces can make this happen. Seamless flooring that is easy to clean and sanitize works actively to remove any viruses and bacteria that might be present.

DURABILITY
A durable floor is the one that resists deterioration and loss of performance. Durable floors feature quality materials, good design and sound workmanship throughout. The life expectancy of any surface finish is related to a combination of mechanical, chemical and thermal stresses. These must be take into account when designing and installing flooring that is neither under-built now over-built, but ideal for the application at hand.

FUNCTIONALITY AND DETAILS
Durability, ease of cleaning, slip-resistance, and chemical resistance are critical functional aspects of industrial flooring, yet of equal importance i.e. floor detailing (drains, ramps, slopes, etc.) and attached structures.

Floor falls should be as simple as possible, watertight coves joining floor edges to walls are important to facilitate cleaning. Floor joints should be positioned away from acticity areas.

MAINTENANCE
Cleaning and sanitation principles are common to all food processing facilities,

SELECTION GUIDE

Functional Zone	Sikafloor® PurCem®									
	HM-20	HM-20 HSR	HB-21 HB-21 Gloss	HB-22 HB-22 Gloss	HB-23 HB-23 Gloss	HS-21	HS-24	HS-21 Gloss	HS-26 Gloss	HS-25 ECF
Wet Processing	■	■	■	■	■	▣		▣		
Dry Processing	▣		▣			▣	▣	■	■	
Bakeries	■	▣	▣			■	■	■	■	
Meat Processing	■	■	■	■	■	▣				
Powder Processing	▣		▣			▣	▣	▣		■
Wash rooms	■	■	■	■	▣	▣		▣		
Loading docks	▣		▣			■	▣	■	▣	
Dry Packaging	▣		▣			▣	▣	■	■	
Chemical Containment	■	▣	▣	▣		▣	▣	■	■	■
CIP Rooms	■	■	■			▣				
Dairy	■	▣	■			■		■	▣	
Battery Charging			▣			■	▣	■	▣	■
Storage			▣			■	▣	■	▣	
Freezers and Coolers	■	■	■	▣		■				
Bottling lines	■		■			■		■	▣	

■ Ideally suited ▣ Suitable

but the method and frequency of them will differ from one manfacturer to another depending on the type of food that is produced and handled.

Cleaning and sanitation of floors must take into account an expanding constellation of variables – as well as the occasional trade-off. For example enhanced surface profile will improve slip resistance but may also require more frequaent, and vigorous cleaning than perfectly smooth surface. It is critical to keep in mind that, that when selecting the floor that's right for your facility, the effective maintenance of the floor must also factor significantly into your decision.

TOTAL COST ASSESSMENT

When calculating the capital efficiency of a floor, it is important to separate the initial "hard" costs, including materials and installation, from on-going maintenance costs, which can easily exceed original procurement and installation costs. For a while a less expensive floor may save a company at the outset, it may in fact result in significant hidden cost downstream. Like production machinery, flooring should be regarded as an equal component of the life cycle cost of operating a plant.

SUSTAINABILITY

Whether constructing or renovation, an important thing to consider is the volume of volatile organic compounds (VOCs) emitted by a floor finish. Selecting flooring materials that meet or exceed low VOC emission standards helps keep you're the air clean, which results in safer food production and healthier working environment for employees.

The ISO 14040-2006 environmental management standard for Life Cycle Assessment (LCA) is a worthy source of further information about food processing and other sensitive environments.

CHECK-LIST FOR SELECTING Sikafloor® PurCem® FLOORING SYSTEM

1. Chemical attack and exposure

- What is the concentration of the chemical, its temperature?
- What is the duration of the exposure?

2. Thermal shock

- What is the ambient temperature in the area during operations?
- What is the temperature of the liquids and water exposed on the floor?
- What is the volume of the liquid and duration of the thermal shock?

3. Slip-resistance

- What kind of contamination there is on the floor?
- What kind of traffic and operations the room has?
- Are there any falls and slopes in the floor? How large are they?
- What kind of cleaning regime shall be applied?

4. Aesthetics and other functional parameters

- Preferred color?
- Electric conductivity required?
- Details and junctions?

STANDARD COLOR RANGE

All Sikafloor® PurCem® finishes are available in these standard colors. Actual color will vary with the product grade and site conditions. Sikafloor® PurCem® resins yellow under ultraviolet light.

Carmine Red.

Navy Blue.

Golden Yellow.

Beige.

Dusty Grey.

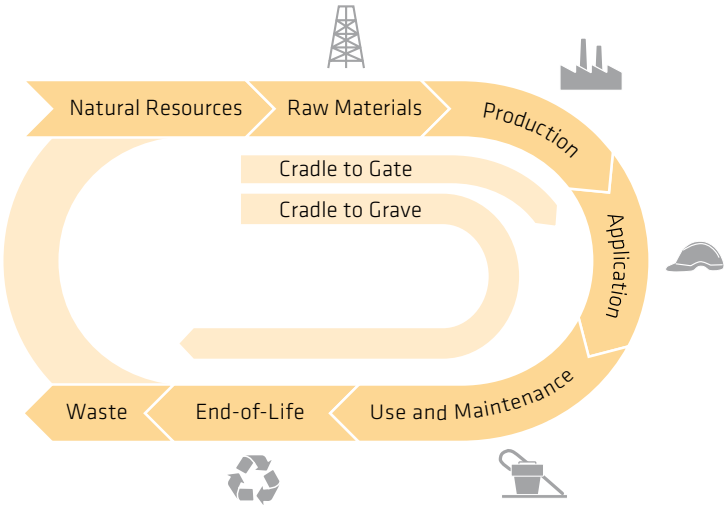
Agate Grey.

Warm Grey.

Yellow Green.

SUSTAINABILITY

Production and application of Sikafloor® PurCem® flooring systems are based on sound environmental principles and methods. They release extremely low VOC and other emissions according to AGBB, AFSSET, and M1 global standards. In addition to being odorless, they are also non-tainting, and feature excellent fire resistance.

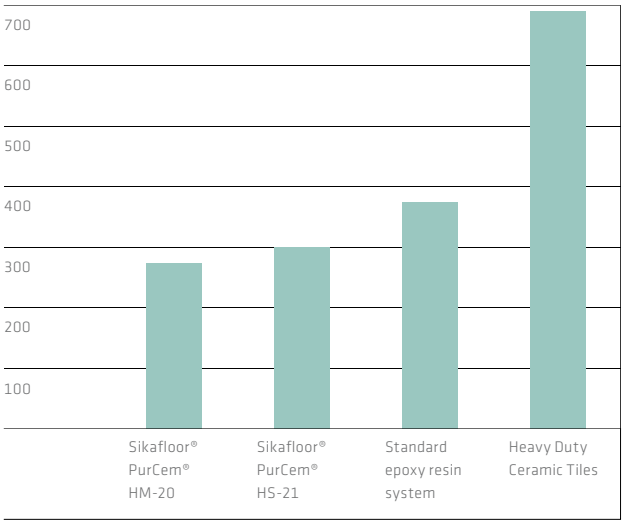


LIFE-CYCLE ASSESSMENT

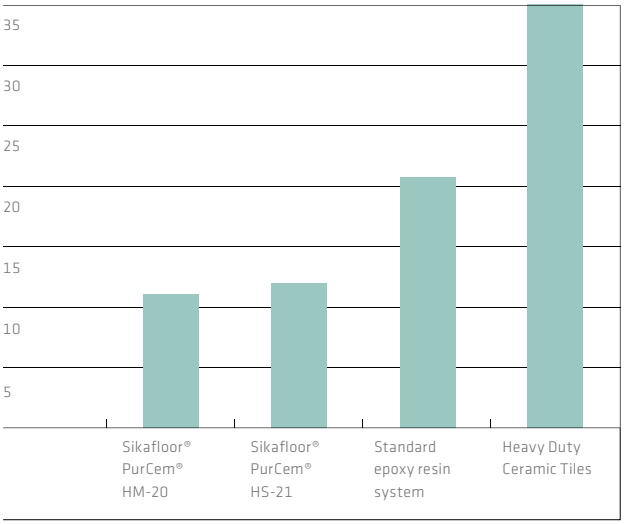
Sikafloor® PurCem® flooring is strong, long lasting, and easy to maintain and clean. LCA studies (see below) show Sikafloor® PurCem® floors have an excellent environmental profile. For instance, they require up to half the Cumulative Energy Demand (CEM) of other flooring systems, such as ceramic tiles. They also feature a long life expectancy of 15 years or more before requiring refurbishing or replacement, which is particularly attractive to food and beverage companies.

LCA RESULTS FOR POPULAR FLOORING SYSTEMS

Cumulative Energy Demand (CED) for 1 m² flooring system [MJ/m²], 15 years



Global Warming Potential (GWP) for 1 m² flooring system [kg CO_2-eq./m²], 15 years



*Life Cycle Assessment (LCA) is a standardized method to assess and compare the inputs, outputs and potential environmental impacts of products and services over their life cycle. LCA's are increasingly recognized as the best way to evaluate the sustainability of products and systems. As a standard approach Sika evaluates all 8 impact categories. However for flooring, categories considered to be most relevant include: Cumulative Energy Demand (CED), Global Warming Potential (GWP), and Photochemical Ozone Creation Potential (POCP).

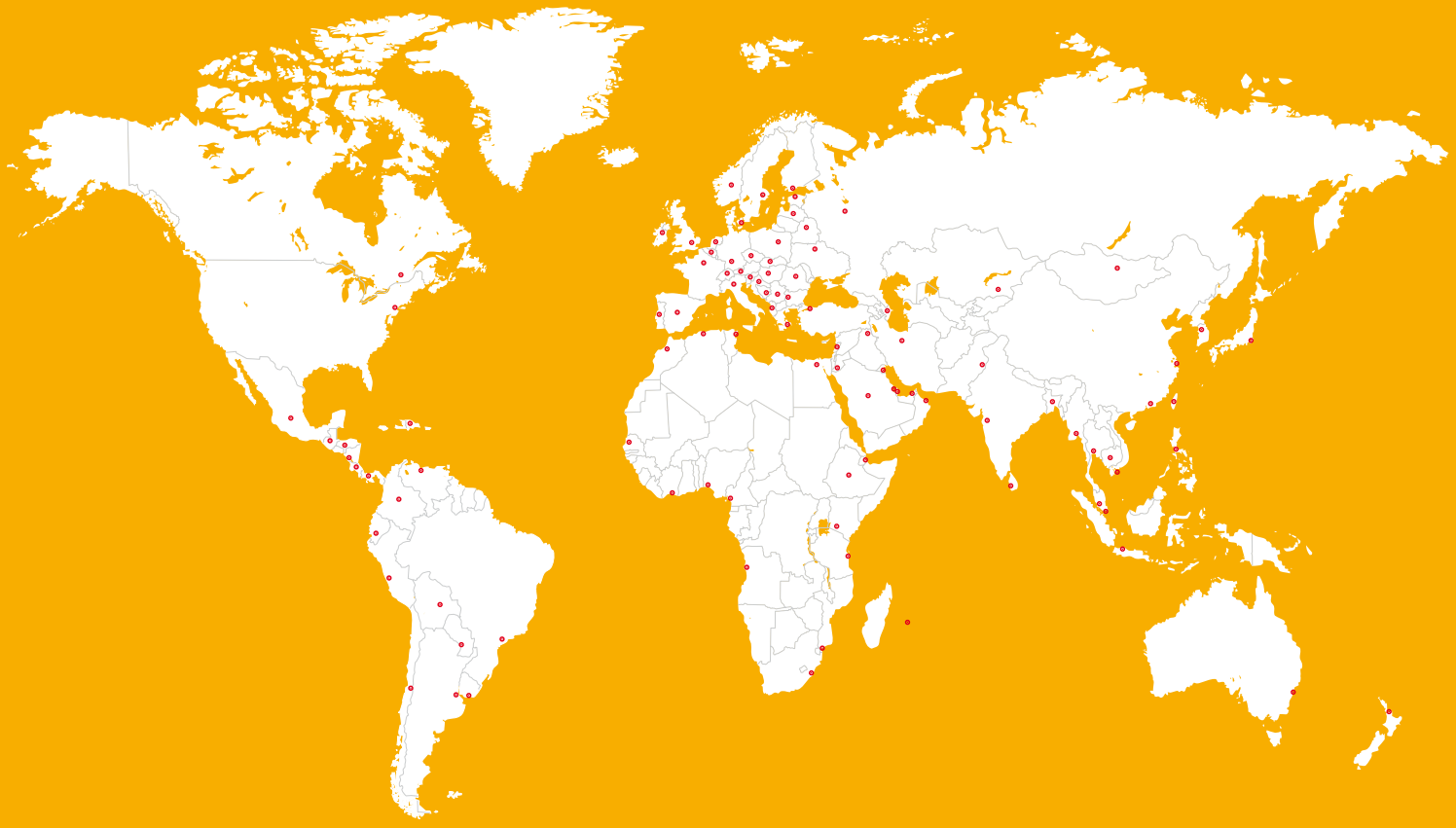
CERTIFICATION

There are number of independent associations that have created assessment and approval programs for food safety and other properties for a floor in hygienic environments. Sika has a large database of external and internal test reports and certificates stating the product properties which claim the suitability of the Sikafloor® PurCem® flooring for ist main areas of use. Sika is pleased to help you sort them out for your particular application and requirements.

INTERNATIONAL STANDARDS

ISEGA	Regulation (EC) No 852/2004 of the European Parliament and of the Council of 29 April 2004 (Annex II Chapter II) on the hygiene of foodstuffs. ISEGA Test institute.
FDA & FSIS	The Food and Drug Administration (FDA) and the United States Department of Agriculture (USDA) Food Inspection Safety Service (FSIS) which share the primary responsibility for regulating food safety in the United States. FSIS has responsibility over meat, poultry and some egg products. FDA regulates all foods other than meat, poultry and some egg products.
HACPP	HACCP (Hazard Analysis and Critical Control Points). Food production, storage, and distribution monitoring system for identification and control of associated health hazards. It is aimed at prevention of contamination before end-product evaluation.
CSM	"Cleanroom Suitable Materials" (1 is the world's first standardized product qualification according to ISO 14644 and GMP standards for use in clean rooms. In food related areas: Biological resistance test assessing the action of bacteria and mould on the material, according to ISO 846. Riboflavin test assessing the clean-ability of the surface. according to "Clean-room Suitable Material" procedure. Fraunhofer Test Institute. [1] "Clean-room Suitable Materials" is the world's first standardized product qualification according to the ISO 14644 and GMP standards for use in clean rooms.
AgBB	AgBB (AusschusszurgesundheitlichenBewertung von Bauprodukten) is a scheme for health-related assessment of emissions of volatile organic compounds (VVOC, 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 and 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 defined procedure and criteria. It issues marketing authorizations, following assessment work, of plant protection products, fertilizers and growing media, and their adjuvants.
Campden BRI	Sensory evaluation of chocolate to test the taint potential of a flooring compound. Campden BRI Test Institute.

GLOBAL BUT LOCAL PARTNERSHIP



WE ARE SIKA
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 protecting in the building sector and the motor vehicle industry. Sika's product lines feature concrete admixtures, mortars, sealants and adhesives, structural strengthening systems, industrial flooring as well as roofing and waterproofing systems.

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BUILDING TRUST